021126_01

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November 26, 2002

Via Email, Facsimile and Federal Express

Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Airports District Office
Great Lakes Region
2300 Devon Avenue
Des Plaines, IL 60018

**Re: Terminal Area Forecast/OMP EIS**

Dear Mr. MacMullen:

By letter to you dated September 13, the cooperating agencies of the Village of Bensenville, Elk Grove Village and the City of Park Ridge ("the Concerned Communities") provided a number of comments (a copy of which is attached for your convenience and reference) on the scope of the EIS. In general, we strongly urged that the airport sponsor and the FAA initiate a process that facilitates input into the various documents that will be critical to the NEPA review. Our comments cited a number of elements (ALP, AMP, Purpose and Need Statement, B/CA Analysis and TAF Forecast) which we believed must be open to early public view and comment. Specifically as to the Terminal Area Forecast (TAF) our Communities commented (see p. 22-23): 1

> It is necessary for the FAA, prior to issuance of its Terminal Area Forecast (TAF), to define the very basic elements of its forecast and to subject its inputs to the scrutiny of other economists, the public, and impacted communities. Questions like the following should be answered on the public record with full disclosure for public comment before draft conclusions are run and well in advance of reaching and publishing TAF forecast decisions:
>
> - What definition of future scenarios will be presented?
> - What are the basic component elements of the TAF – including assumptions, data, and modeling?
> - On a step by step disclosure, how is the TAF constructed?
> - How is the O'Hare TAF reconciled with TAF forecasts for Midway?

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| Comment | Response |
|---|---|
| 1 | The FAA considered all scoping comments offered by the commenter in the development of the EIS. |
| 2 | Bullet 1 through Bullet 9: A summary of how the FAA TAF is developed, as well as nationwide summaries can be accessed on the FAA website. Chicago O'Hare is one of the 35 Operational Evolution Plan (OEP) airports that in the TAF "…receive a more in-depth review by FAA economists." The FAA considers "… local economic variables and the growth of originating a connecting traffic as well as the price of flying from that airport. The hub forecasts also include assumptions regarding the seating capacity and load factors for aircraft operating out of the airport."<br><br>For the three most recent TAF summaries, the commenter is directed to: http://apo.faa.gov/taf02/taf2002.pdf, http://apo.faa.gov/taf03/taf2003.pdf, and http://apo.faa.gov/taf04/WEB%20SUMMARY.pdf<br><br>Continued on the following page. |

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- How is the O'Hare TAF reconciled with forecasts for the new South Suburban Airport?
- How is the O'Hare TAF reconciled with national growth forecasts?
- How will the forecasting analysis treat the 2001-2002 traffic levels and what adjustments will be made to reflect the "recovery trends?"
- Will the forecast include separate estimates for years 5, 10, 15, and 20?
- Will the industry trends and likely air carrier business practices be discussed before they are included in the model?
- Are they the same forecasts that will be utilized for examining, modeling, and assessing impacts on the National Airspace System as well as for noise impacts?
- The forecasts should include sensitivity analyses – as to the assumptions and as to the distribution of traffic among the current and future airports.
- The database should include radar data input in addition to simulation models. The analyses must examine unconstrained options.
- What models will be presented to evaluate operational and delay conditions for the base case and future scenarios, how will the results be presented?
- Do the forecasts consider the post-September, 11, 2001 changes in demand?
- Do the forecasts reflect decreased reliance on the "hub and spoke" concepts?
- Do the forecasts reflect the relationship between forecasts for national and regional growth?
- Are the forecasts consistent with the TAF?
- Are the forecasts consistent with the long-range plans of carriers using O'Hare? 2

Forecast methodology and factors used to model existing and future airfield and airspace operations need to include: passenger and aircraft volumes, cargo volumes, wind and weather conditions, aircraft fleet mix, demand profiles (daily, weekly), airfield physical configuration, runway selection/utilization criteria, and runway and taxiway operating procedures. 3

We have yet to have any response to our September comments. Information is not forthcoming from the Airport Sponsor, although we hear from second and third hand sources that an ALP and/or AMP may be produced soon. This lack of information continues to be a major concern; such delay will only require more time for the NEPA review to be completed. This is antithetical to the idea of Streamlining. 4

| Comment | Response |
|---|---|
| 2 continued | Bullet 10/17: The forecast used in the EIS is based upon the 2002 TAF, and that forecast is used for the analyses of all impact categories that depend upon a forecast, including noise.<br><br>Bullet 11: There are inherent uncertainties in forecasting, and as such, **Appendix R** of the EIS provides "sensitivity analyses", as requested by the commenter, to assess the variations with regard to the aviation activity forecasts.<br><br>Bullet 12 through Bullet 13: The methodology for each simulation models conducted for the EIS is described in the respective sections on environmental consequences. **Section 5.1** and **Appendix F** includes the results of the noise modeling as well as the model and associated methodology used (INM). **Section 5.6** and **Appendix J** includes the results of the air quality modeling as well as the model and associated methodology used (EDMS). **Appendix D** includes the airspace/airfield modeling results as well as the model and associated methodology used (TAAM).<br><br>Bullet 14/15/16/18: A summary of how the FAA TAF is developed, as well as nationwide summaries can be accessed on the FAA website, http://apo.faa.gov/pubs.asp?Lev2=1/. Also, see response to Bullets 1-10. |
| 3 | All of the parameters the commenter has identified are input parameters for the airfield modeling completed and documented in **Appendix D** of the EIS. |
| 4 | Throughout the EIS process, the FAA has made the appropriate documents available through posting on the FAA's O'Hare Modernization web site (http://www.agl.faa.gov/OMP/) and through direct mailing of electronic and paper copies to various requesters. This information was made available as soon as practical starting at least six months in advance of the public release of the Draft EIS. |

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One element of the NEPA and Master Plan review is peculiarly within FAA's control and that is the TAF. We reiterate our request to have adequate opportunity for the Concerned Communities to review:

- the relationship of the TAF to the FAA's national forecasting;
- the micro and macro assumption that will impact the TAF;
- the specific calculations made due to post:
  - September 11 traffic impacts,
  - the depeaking of American's schedules,
  - the United reduction of its schedules at ORD and system-wide,
  - the financial state of the industry, American and United,
  - allocation of the Chicago region passenger demand between ORD, MDW, the South Suburban Airport (SSA) and other airports in the region;
- the definition of the catchment area for SSA; and
- impacts of constraints at ORD and/or MDW to accommodate future traffic.
- The answers to the first set of questions listed above.

5

We reiterate these requests because various sources have said that the TAF will be released soon. It would be an abrogation of the FAA's effort to create an atmosphere of cooperation, if after the Concerned Communities and other parties[1] have asked to have input into the TAF, the FAA ignores such a request, does not bother commenting on the merits of such public input and summarily issues the TAF.

We do not believe that the FAA would consider such a result. Our purpose here is only to remind the FAA of the need to expose these foundations of the NEPA process to public scrutiny.

We remain ready to review all of the elements of the TAF (or any other forecast used for the O'Hare EIS or Master Plan) and to supply relevant thoughtful comments and/or questions. We believe that it is important to initiate the demanding OMP EIS process on a positive note. We are confident that the notion of issuing a TAF for which there has been no public review

[1] We asked for copies of the scoping comments. We received on November 22, 2002 a 68.9 MB CD that contains all of the submissions. We have only begun to review this massive file. We assume that other parties also made the same request.

| Comment | Response |
|---|---|
| 5 | In response to these issues, the FAA staff involved with the development of the TAF discussed with the commenters their concerns. |
| 6 | Please see response to comment 5. |

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Mr. Michael W. MacMullen
November 26, 2002
Page 4

would not meet your goal of public participation. Please let us know as soon as possible that our understanding of the FAA's intentions is correct and the rampant rumors false. 6

Sincerely,

J. E. Murdock III
Counsel to
Village of Bensenville, Elk Grove Village
and City of Park Ridge

Document #: 1290241 v.1

| Comment | Response |
|---|---|
| 6 | Please see response to comment 5. |

021227_01

J. E. Murdock III
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December 27, 2002

By Federal Express

Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Airports District Office
Great Lakes Region
2300 Devon Avenue
Des Plaines, IL 60018

**Re: O'Hare International Airport Modernization Program – Establishing an Agency Review Committee for the EIS Process**

Dear Mr. MacMullen:

I am writing to follow up on our meeting of December 4, 2002, during which we discussed, among other things, the creation of an Agency Review Committee ("ARC") for the O'Hare International Airport Modernization Program ("OMP") environmental impact statement ("EIS") process. By letter to you dated September 13, the cooperating agencies of the Village of Bensenville, Elk Grove Village and the City of Park Ridge ("the Cooperating Agency Communities") provided joint comments (a copy of which is attached for your reference) on the scope of the EIS and the scoping process for the EIS. The comments of the Cooperating Agency Communities provide, among other things, that the City of Chicago, as the airport sponsor, and the FAA should initiate an open, transparent and objective process for determining the scope of issues to be addressed in the EIS. We continue to believe that the best way to ensure an open, efficient and effective process is through the creation of an ARC. 1

As you are well aware, the purpose of the scoping process is to notify all interested parties about the proposed action, solicit input from the those parties, identify issues that should be analyzed in the EIS, and eliminate those issues that are not significant. *See* 40

| Comment | Response |
|---|---|
| 1 | In a letter dated March 14, 2003 to legal representatives (J.E. Murdock III, Esq., Robert E. Cohn, Esq. and Joseph Karaganis, Esq.) of the Village of Bensenville, Elk Grove Village, and City of Park Ridge, Mr. Barry D. Cooper of the FAA responded to the issue raised by this letter. The March 14, 2003 FAA letter stated, "[a]lthough FAA has determined that it is not appropriate to grant the Municipalities "cooperating agency" status, we are pleased to inform you that the FAA has decided to provide an additional opportunity for public participation, prior to the release of the Draft EIS."<br><br>In reference to the aforementioned "additional opportunity", the FAA notes that the Agency conducted two large-scale public meetings, one on March 19, 2003 related to the preliminary draft purpose and need, and one on October 17, 2003 relating to the alternatives screening process. Further information on public outreach can be found in **Appendix T** of the EIS. |

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December 18, 2002
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C.F.R. § 1501.7. The scoping process is controlled by the lead agency, here the FAA, with participation by cooperating agencies, such as the Cooperating Agency Communities. *See* 40 C.F.R. §§ 1501.5, 1501.6, and 1508.5.[1] The lead agency, the project sponsor, the cooperating agencies and interested stakeholders are to work together in the scoping process to reach the following objectives: (a) to identify the affected public and agency concerns; (b) to facilitate an efficient EIS preparation process, through assembling the cooperating agencies, assigning EIS writing tasks, ascertaining all the related permit reviews that must be scheduled concurrently, and setting time or page limits; (c) to define the issues and alternatives that will be examined in detail in the EIS while simultaneously devoting less attention and time to issues which cause no concern; and (d) to save time in the overall process by helping to ensure that draft statements adequately address relevant issues, reducing the possibility that new comments will cause a statement to be rewritten or supplemented. Scoping Guidance ¶ I.B.; *see also*, CEQ Memorandum for the Heads of Federal Agencies Re: Cooperating Agencies in Implementing the Procedural Requirements of the National Environmental Policy Act (Jan. 30, 2002) ("Cooperating Agency Guidance"), and 40 C.F.R. § 1501.7 (setting forth the purpose of scoping).

As indicated in our comments, the best way to meet these objectives is through the establishment of an ARC. By creating an ARC for the OMP EIS, the FAA will establish an ongoing working relationship and a process whereby long-term cooperative consultation between the FAA, the City, and the interested stakeholders can improve the consistency between long-range community and airport needs and plans. The creation of an ARC will also promote:

-open and frank dialogue on the purpose and need of the OMP and the City's planning, including possible alternatives;

-enhanced intra- and inter- governmental trust and a common understanding of respective governmental roles in the NEPA process;

[1] These CEQ regulations, which address cooperating agency status, implement the NEPA mandate that Federal agencies responsible for preparing NEPA analyses and documentation do so "in cooperation with State and local governments" and other agencies with jurisdiction by law or special expertise. 42 U.S.C. §§ 4331(a), 4332(2).

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-an effective forum for constructive exchanges on the expected benefits, impacts, alternatives, and mitigation prospects;

-serious consideration of community concerns and views, including project adjustments that have merit and are possible, as well as stakeholder proposals that cannot be accommodated and the reasons why;

-the application of available technical expertise and staff support to the project issues, and confidence in the accuracy of the technical data on which the EIS is based;

-confidence in the City's and FAA's commitments to effective environmental mitigation;

-the ready exchange of information, including but not limited to data on existing conditions at the airport and in the surrounding vicinity that is relevant to the EIS, and information concerning relevant State and local environmental (and other) requirements and permits;

-the avoidance of duplicative efforts by the FAA, the State, the City and interested stakeholders;

-reasonable and early access to the information held by any party pertinent to the OMP with respect to the EIS;

-the appropriate allocation of responsibility among the parties for various tasks, including drafting, involved in the EIS process;

-timely review and comment on critical documents;

-the identification, review and efficient and effective resolution of key issues that have a major bearing on the OMP's planning and environmental impacts, and EIS; and,

- perhaps most importantly, the ARC will enhance the FAA's ability to adopt a final OMP EIS and ROD without unnecessary litigation.

We envision the responsibilities of the ARC as including, among other things, reviewing all scoping comments received by the FAA; preparing a post-review report identifying the issues to be included in the DEIS and in what detail; creating a schedule for accomplishing significant milestones in the NEPA process; and assigning responsibilities among the sponsor, lead, and cooperating agencies for development of the DEIS. We believe the members of the review committee should include representatives of the City of Chicago, FAA, the Cooperating Agency Communities, and certain other interested stakeholders that wish to assist in this process.

The creation of an ARC is consistent with FAA and CEQ policies. We noted in our comments that over two decades ago the CEQ recommended the use of ARCs to improve the quality and efficiency of the scoping process. *See* CEQ Memorandum for General Counsels, NEPA Liaisons, and Participants in Scoping Re: Scoping Guidance (Apr. 30, 1981) ("Scoping Guidance") at ¶ II.B.8.e. The FAA's Guide to the Best Practices for Environmental Impact Statement Management (July 2001) also recognizes the benefits of such an entity in that it recommends coordination with Federal, State and local agencies with jurisdiction and environmental expertise during the earliest stages of the EIS process, and concludes that such coordination can "yield benefits in reduced time later in the process." *Id.* at 9. The Guide goes on to state that it is useful to maintain an ongoing working relationship on major projects and, to the degree possible, share technical and project information with key agencies as the information is developed. ...Other agencies should be informed of FAA's project priorities and time schedules. They should be alerted ahead of time when they will receive critical documents (*e.g.* scoping information, technical working drafts, Draft EIS) and notified of definitive deadlines for comment, so that the other agencies may plan and adjust their workload and resources to the extent practicable."[2] *Id.* at 10. Finally, the CEQ's recent guidance to

[2] As indicated in our letter dated December ___, 2002, information is not readily forthcoming from the Airport Sponsor. For example, we have heard from second- and third-hand sources that an ALP and/or AMP and the TAF may be released soon. This lack of information continues to be a major concern and will undoubtedly result in delay of the issuance of the final EIS. The creation of the ARC will ensure that information is shared and reviewed in a more effective and efficient fashion in keeping with the CEQ's and the Guide's recommendations. We also note that the Guide provides that in some locations, a Citizen Advisory Committee has been useful in improving working relationships and communication between the airport and the surrounding community. Such a committee may be established on either a permanent basis or for the duration of a specific project's planning and environmental review. *Id.* at 4.



Federal agencies concerning cooperating agencies provides that "studies regarding the efficiency, effectiveness, and value of NEPA analyses conclude that stakeholder involvement is important in ensuring decisionmakers have the environmental information necessary to make informed and timely decisions efficiently." CEQ, Memorandum for the Heads of Federal Agencies, Cooperating Agencies in Implementing the Procedural Requirements of [NEPA] (Jan. 30, 2002).

The FAA is charged with carefully analyzing and evaluating the impact that a proposed development such as the OMP presents to the environment. This involves a systematic and multidisciplinary approach that complies with the requirements of NEPA and other relevant laws, including State and local regulations. The establishment of an ARC will assist the Agency with satisfying its mandate by providing a means for assured informed decisionmaking and by establishing a framework for communication among the interested parties and assuring timely coordination, technical completion of relevant documents, and efficient resolution of important issues that have a bearing on the OMP EIS.

In closing, the Cooperating Agency Communities remain very willing to participate in an ARC and would be pleased to assist the Agency in establishing such an organization that will ensure that an effective, efficient, and timely environmental analysis is completed for the OMP. Please let us know how we can be of assistance.

With warm regards,

J. E. Murdock III
Counsel to Cooperating Agencies
Village of Bensenville, Elk Grove Village
and City of Park Ridge

cc: Honorable John Geils
Honorable Craig Johnson
Honorable Ronald Wietecha
Joseph Karaganis

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030304_01

March 4, 2003

Mr. Barry Cooper
Manager, O'Hare Modernization Program Office
U. S. Department of Transportation
Federal Aviation Administration
Great Lakes Region
2300 E Devon Avenue
Des Plaines, IL 60018

Dear Barry

Thanks very much for your February 27 transmission of the CD containing the two documents from the City of Chicago.

We very much appreciate such information, for it is only through the free and easy access of such studies, reports, maps, analyses, etc. that the process will be able to be moved with any speed. We sincerely hope to discuss sometime soon the long list of ideas to facilitate the NEPA review which we submitted in our Scoping Comments six months ago. An open dialogue on this and other subjects will be critical to establishing the public input which NEPA mandates. Let me know when it would be convenient to initiate such a discussion. 1

Sincerely,

Sandy

J. E. Murdock III

cc: Carl Schellenberg
Joseph Karaganis

Document #: 1309512 v.1

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| Comment | Response |
|---|---|
| 1 | Throughout the EIS process, the FAA has made the appropriate documents available through posting on the FAA's O'Hare Modernization web site (http://www.agl.faa.gov/OMP/) and through direct mailing of electronic and paper copies to various requesters. This information was made available as soon as practical starting at least six months in advance of the public release of the Draft EIS. |

030319_03

# VILLAGE OF FRANKLIN PARK

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Treasurer
Special Events Coordinator
EUGENE C. PILTAVER

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Chief
RANDALL PETERSEN

Fire Chief
DAVID J. TRAIFOROS

Health & Human Resources Director
LISA ANTHONY

Utilities Superintendent
JOSEPH THOMAS

Building Commissioner
WILLIAM ESPOSITO

Zoning Administrator
DON STUMBRIS

Director of Economic Development
JEFFERY A. EDER

Consulting Engineer
JOHN MICK III, PE

March 19, 2003

Mr. Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Chicago Airports District One
2300 East Devon Avenue
Des Plaines, IL 60018

Re: O'Hare Modernization Program
Environmental Impact Statement/Airport Layout Plan
March 2003, Information Meeting-Franklin Park Comments

Dear Mr. MacMullen:

I, as Mayor of Franklin Park, along with my administration, support the O'Hare Modernization Program. Franklin Park, as one of Illinois's largest communities by employment, and an O'Hare neighbor, stands to be directly affected by whatever happens at the airport. We are a community of almost 20,000, but, during the day we swell to over 100,000 due to our industrial employers. While we recognize the program's numerous benefits, we are concerned about specific impacts due to the modernization. 1

Franklin Park's key concerns include:

- Silver Creek's and Crystal Creek's role as area watersheds. Specific issues relative to these watersheds include increased runoff from additional runways and the potential for additional water pollution. There is specific concern for the potential of increased downstream flooding. 2
- Lake O'Hare's role in the area watershed. Specific issues relative to Lake O'Hare include prevention of additional water pollution from entering Crystal Creek. 3
- Mannheim Road's role as a Strategic Regional Arterial moving local, O'Hare and regional traffic through Franklin Park. Specific issues relative to the expansion include - increased traffic (trucks, cars and buses) resulting in more congestion, noise, air pollution and delay to area and regional motorists. 4

MEMBER ILLINOIS MUNICIPAL LEAGUE

| Comment | Response |
|---|---|
| 1 | The comment regarding support of the OMP is noted. |
| 2 | As stated on discussed in **Section 5.13** of the EIS, no increases in floodplain areas would occur as a result of the preferred alternative (Alternative C). The proposed detention basins would actually reduce the size of the floodplain in the vicinity of the Airport (including the floodplains associated with Silver Creek and Crystal Creek) and the flows would be similar to or less than those that currently occur.<br><br>In addition, the preferred alternative includes the continued adherence to the NPDES stormwater discharge permit. This would not increase the amount of pollution in the creeks in the Airport vicinity. |
| 3 | The detention basins planned for the Airport would contain the increase in runoff that would occur as a result of the preferred alternative. Lake O'Hare would be modified and would be part of the overall plan to ensure that runoff is detained at the Airport and that the flows into adjacent creeks is not increased compared to existing conditions. |
| 4 | As stated in **Section 5.3** of the Final EIS, all intersections along Mannheim Road except the intersection with Zemke Road would experience additional traffic as a result of the Preferred Alternative. The impacts of this additional traffic with respect to roadway congestion are analyzed in **Section 5.3** of the EIS. For a discussion of the noise and air quality impacts associated with the additional traffic, see **Sections 5.1** and **5.6** of the EIS, respectively. |

Mr. Michael W. MacMullen
March 19, 2003
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- Chicago & Northwestern Railroad system north/south along the southwest side of the airport's envelope. Specific issues about this railroad include its potential relocation, replacement of its existing bridge over Franklin Avenue, increased rail traffic – producing additional noise, air pollution and potential increases in area railroad congestion and delays. 5
- Airplane operations and their noise impacts on Franklin Park. While many properties have received soundproofing improvements, we would request an increase in this initiative. 6
- Franklin Avenue (Green Street in Bensenville) and its role as an important roadway link supporting the program. The program's construction of a new Irving Park Road will severely impact Franklin Avenue in its role as a parallel, reliever route. The programs build-out will bring more traffic, of all types, to Franklin Avenue – involving maintenance and cost implications. 7
- Western Bypass, especially at its south end as its location in our western industrial area. Specific issues include property needs, industry vitality, increased traffic and related issues. 8

I request, as a local leader who understands the importance of the program, and its potential impact on Franklin Park, that the City of Chicago and their development team allow me and my staff to be partners in your process. I appreciate the City's response to these requests:

- Ongoing review and opportunities for input as the program's various elements are studies, designed and constructed. I recommend a quarterly meeting, at a minimum, to allow me to be aware of where the program's going.
- Notice/invitation, in advance, to regional press conferences or related gatherings of my peers. I, as a program supporter, would be willing to attend as schedule permits.
- Existing traffic studies of Franklin Avenue and Mannheim Road to allow my staff to understand forecast changes and impacts. This data sharing will allow me to better understand and plan for Franklin Park's future.

| Comment | Response |
|---|---|
| 5 | The FAA depicted the relocation of the railroad line in **Chapter 3** of the EIS, see **Exhibit 3-4.** See **Section 5.1.4.3** of the EIS for the rail noise assessment.<br><br>In view of the fact that relocation of the railbed is all that would be accomplished, FAA believes no material increases in rail traffic, rail congestion, or air pollution would occur as a result of the O'Hare Modernization. |
| 6 | As shown in **Section 5.1** of the EIS, properties within the Village of Franklin Park would experience a decrease in noise as a result of the preferred alternative. |
| 7 | The surface transportation assessment is included in **Section 5.3** of the EIS. |
| 8 | Information related to the West O'Hare Bypass, which is not a part of the proposed action, is included in **Section 5.3** of the EIS and topical response F-1, on page U.5-28 of this appendix. |

Mr. Michael W. MacMullen
March 19, 2003
Page 3

- Existing studies of the railroad relocation especially related to its north-south alignment as it crosses over Franklin Avenue. These analyses will be similarly helpful.
- Existing drainage/hydraulic studies of stormwater flows to/from Silver Creek and Crystal Creek. These analyses will be similarly helpful. 9

I, my administration and my staff are available to work with the City of Chicago, FAA, and others as necessary, to move the modernization program forward while recognizing and dealing with the listed issues. I may be reached at my office at 847-671-8235. 10

Sincerely,

Village of Franklin Park

Daniel B. Pritchett
President

Cc: Village Board
U S Senator Dick Durbin
US Representative Rahm Emmanuel
Ill Senator Don Harmon
ILL Representative Angelo Saviano

| Comment | Response |
|---|---|
| 9 | The comments requesting continued input into the OMP are noted. |
| 10 | The FAA appreciates the interest of the Village of Franklin Park and its identification of staff to assist the FAA on this project. |

030421_01

**COMMENTS OF THE VILLAGE OF BENSENVILLE,**
**THE VILLAGE OF ELK GROVE, AND THE CITY OF PARK RIDGE**

**ON**

**THE FAA'S PRELIMINARY DRAFT PURPOSE AND NEED**
**STATEMENT FOR THE O'HARE MODERNIZATION PROGRAM**
**ENVIRONMENTAL IMPACT STATEMENT**

**Communications with regard to this document should be addressed to:**

**J. E. Murdock III**
**Robert E. Cohn**
**Alexander Van der Bellen**
**SHAW PITTMAN LLP**
**2300 N Street, NW**
**Washington, DC 20037**
**202-663-8342**

**April 21, 2003**

**COMMENTS OF THE VILLAGE OF BENSENVILLE,**
**THE VILLAGE OF ELK GROVE, AND THE CITY OF PARK RIDGE**
**ON**
**THE FAA'S PRELIMINARY DRAFT PURPOSE AND NEED**
**STATEMENT FOR THE O'HARE MODERNIZATION PROGRAM**
**ENVIRONMENTAL IMPACT STATEMENT**

**I. Introduction.**

The Village of Bensenville, the Village of Elk Grove and the City of Park Ridge (the "Concerned Communities") -- whose citizens will be among those most "significantly affected" in terms of "the quality of human environment" -- hereby offer these comments pursuant to the FAA's Federal Register Notice. 68 Fed. Reg. 7646 (February 14, 2003). 1

Chicago's proposed "O'Hare Modernization Program" (OMP) is unprecedented in size and ambition. It has been presented by the City as the solution for the future aviation capacity needs of the entire Chicago region -- and even the nation.

However, the FAA's Preliminary Draft Purpose and Need Statement ("PDPN"), as distributed at the public meeting on March 19, 2003,[1] is narrowly focused on capacity and infrastructure requirements *at O'Hare*. Such a purpose and need statement, couched in terms of a *single airport*, fails to satisfy the requirements of the National Environmental Policy Act (NEPA). The FAA's draft

[1] That document, distributed as a hand-out at the March 19, 2003 public meeting, appears to be the agency's preliminary articulation of a purpose and need statement.

| Comment | Response |
|---|---|
| 1 | The FAA appreciated the comments of the "Concerned Communities" and carefully reviewed the comments as the preliminary draft purpose and need statement (PDPN) was revised to become the Agency's DEIS purpose and need statement.<br><br>The FAA notes that the DEIS and FEIS purpose and need statement is:<br>• Address the projected needs of the Chicago region by reducing delays at O'Hare and thereby enhancing the capacity of the NAS.<br>• Ensure that existing and future terminal facilities and supporting infrastructure (access, landside, and related ancillary facilities) can efficiently accommodate airport users. |
| 2 | The FAA agrees with the commenter that the purpose and need cannot be "couched in terms of a single airport". While the final purpose and need articulates "reducing delays at O'Hare", the FAA does not believe that this foreordained the conclusion that capacity and infrastructure improvements must be made *at O'Hare.*<br><br>Because the focus of the final purpose and need statement is on delay reduction, it allowed the FAA to study other regional airports – Gary/Chicago International Airport, Greater Rockford Airport, Milwaukee General Mitchell International Airport, Chicago Midway International Airport, as well as the proposed South Suburban Airport.— to determine whether greater use of those facilities might alleviate O'Hare congestion. The purpose and need also allowed for the evaluation of congestion management as an alternative to the sponsor's proposal. Finally, the final purpose and need statement enabled the FAA to take a hard look at a "blended" alternative comprised of limited runway expansion, new technologies, use of other regional airports, and congestion management.<br><br>The FAA's detailed examination of the aforementioned alternatives is contained in **Chapter 3, Appendix C,** and **Appendix E** of the EIS. Both the use of other airports and congestion management alternatives were eliminated because they failed to meet the purpose and need. While these alternatives did not include capacity or infrastructure improvements at O'Hare, the FAA's rationale for their elimination was not based on this fact. As mentioned previously, the conclusions reached on each of these alternatives involved a detailed evaluation and the FAA refers the commenter to those sections of the EIS which describe the FAA's rationale in full context.<br><br>Continued on the following page. |

statement must be revised to eliminate the preconceived focus of reconstructing O'Hare, and instead more broadly examine Chicago's regional airport capacity options, as well as national transportation considerations affecting air traffic.[2] 2

**II. The FAA's Preliminary Draft Purpose and Need Statement Narrowly and Erroneously Presupposes the Expansion of O'Hare.**

The Concerned Communities share the views expressed by the Environmental Protection Agency ("EPA") representative at the August 19, 2002 scoping meeting. Namely, that the very title of the FAA's Environmental Impact Statement: "O'Hare Modernization Program" reflects a preconceived notion that expanding O'Hare is *the* solution to the "problems" identified by Chicago. A narrow focus on O'Hare would violate law and policy by precluding consideration of reasonable alternatives that may achieve the same goals at less cost and with fewer adverse consequences for the quality of the human environment.

The FAA indicated that the O'Hare Modernization Program was only a "working title" for the agency's EIS efforts and that the title was not "meant to be reflective of a narrow scope of analysis necessarily." (Statement of Mr. MacMullen, August 19, 2002). Yet, eight months later, the FAA has retained the same "working title" and the preliminary draft statement indicates the same

[2] The Concerned Communities note that they previously filed detailed comments on September 13, 2002 in response to the FAA's Scoping Document on the OMP. There has been no response to date from the FAA concerning those comments, nor does the PDPN reflect an adequate appreciation of the complex and interrelated environmental issues raised by the Concerned Communities in their prior comments. It is imperative that the FAA incorporate this vital public input in formulating its purpose and need statement.

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| Comment | Response |
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| 2 | Continued from the previous page.<br><br>Additionally, the FAA notes that the blended alternative was not eliminated in the initial screening process (a test of the alternatives ability to meet the purpose and need). Rather the blended alternative was eliminated in secondary screening and therefore the purpose and need statement did not limit the FAA from considering the necessary reasonable range of alternatives as required by NEPA.<br><br>Finally, the FAA believes that the final purpose and need statement did not "focus [on] reconstructing O'Hare" and did in fact allow for an examination of regional airports as well as a host of other non-O'Hare alternatives. In addition, the FAA believes that the EIS makes a strong case for the disruptive effect of current and future delays on those passengers originating and connecting in Chicago and that those effects compromise the overall efficiency of the NAS. |
| 3 | The FAA recognizes that the EIS is titled the "O'Hare Modernization Final Environmental Impact Statement". This title reflects the fact that the City of Chicago, in this case the sponsor, brought a project to the FAA for the Agency's required review. The FAA respectfully disagrees with the commenter that the purpose and need was too narrow and precluded a consideration of reasonable alternatives. Please see response to comment 2.<br><br>The FAA also notes that the USEPA in their comments on the DEIS stated, "We believe the FAA has made a credible case for the need for action to alleviate the problems at O'Hare." USEPA also concurred with the FAA analysis of the alternatives stating further, "We have had discussions with FAA regarding FAA's approach to the alternatives analysis, including how the use of other airports would be evaluated. We agree with FAA's approach and decision for retaining the three O'Hare build alternatives…".<br><br>Finally, the FAA reiterates that the DEIS and FEIS does include the consideration of "other reasonable solutions" as requested by the commenter. |

narrow focus on O'Hare. For instance, the FAA's preliminary draft intends to examine purpose and need relating to :

- "Increase capacity and reduce delay . . . **at O'Hare**"
- "Improve passenger travel times **through O'Hare**"
- "Improve ground access **to O'Hare**"

(FAA PDPN dated March 19, 2003).

The FAA's preliminary draft statement needs to be re-written to look not only at O'Hare itself, but also to consider other reasonable solutions that will provide adequate airport capacity for Chicago. As noted by the Concerned Communities in their prior comments on the FAA scoping process, a more appropriate name and scope for the agency's inquiry would be the "Chicago Regional Air Transportation Review." 3

While the PDPN pays lip service to the "use of other existing or proposed airports" the importance and consideration of regional alternatives is clearly not a significant focus of the purpose and need statement. Absent the necessary revisions to the PDPN, those issues will not receive the thorough consideration that is required by NEPA. 4

The PDPN must be reframed with a regional and national focus to ensure that the following key questions and alternatives will be adequately considered in the EIS process:

- How can airport capacity in the Chicago region be most effectively increased, through the development of existing and proposed airports, to meet the region's future transportation needs and eliminate existing delays? 5

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| Comment | Response |
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| 3 | Please see the response to this comment on the previous page. |
| 4 | The FAA respectfully disagrees with the comment. The FAA gave careful consideration to the "use of other existing or proposed airports". The FAA also notes that the "PDPN" was revised and the final purpose and need statement did not preclude the consideration of the necessary range reasonable alternatives. |
| 5 | The FAA believes that the EIS does examine carefully the use of other airports both existing and proposed as an alternative to the sponsor's proposal.<br><br>Also, as discussed in **Section 3.2.2.2** of the EIS, the FAA continues to respond to sponsor requests and support the development of other airports in the region, including Gary/Chicago International Airport, Greater Rockford Airport, Milwaukee General Mitchell International Airport, Chicago Midway International Airport, as well as the proposed South Suburban Airport. However, the Agency lacks authority to determine for airport sponsors what the nature of their proposals should be. As a conceptual matter, the FAA evaluates each application presented to it by sponsors, in terms of the specific needs of that airport, reasonable alternatives thereto, (including alternatives not within the FAA's control) and makes decisions on those applications with reference to the Agency's overall statutory objectives. Here, the FAA has remained faithful to that approach. Given the unique role of O'Hare in the NAS, it is appropriate to focus on the specific needs of that airport while also considering alternatives such as the use of other airports.<br><br>Furthermore, while Rockford and Gary/Chicago each have capacity that could be available to support future commercial activity, these facilities presently have available capacity and to date have had little to no impact on commercial activities at O'Hare. In addition, the FAA is currently undertaking the Tier 2 EIS for the South Suburban Airport. |

- What is total regional traffic and how will it be allocated among the several existing and proposed airports in Chicago's multi-airport system? 6
- Which existing or proposed airports in the Chicago region can most efficiently accommodate increased air traffic with the fewest adverse consequences affecting the quality of the human environment? 7
- Will the development of a South Suburban Airport reduce or eliminate the need to expand O'Hare? 8
- Will the development of a new South Suburban Airport, with uncongested freeway access, reduce or eliminate the need to build new groundside access at O'Hare? 9
- Will the quality of the human environment be less affected by constructing a new airport with an environmental buffer, rather than reconstructing and expanding O'Hare to double the number of flights overflying existing communities? 10
- Will the quality of the human environment be less affected if a new airport is constructed on greenspace, or by condemning and removing existing homes, business and schools to expand a geographically constrained airport? 11
- To what extent do other Midwestern airports relieve pressure at O'Hare; how does the acquisition of a nearby hub at St. Louis by O'Hare's second largest carrier affect the need for new regional capacity? 12

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| Comment | Response |
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| 6 | **Appendix C** of the EIS does present the forecasts for the each of the regional airports considered, including the proposed South Suburban Airport.<br><br>FAA believes it is not reasonable to expect that the Agency would obtain statutory authorization to mandate such an allocation of regional traffic to the region's airports under the current deregulated airline environment. |
| 7 | As stated in response to comment 6, the FAA does not believe allocation of regional air traffic to the region's airports is within the Agency's authority. |
| 8 | As stated in response to comment 5, the FAA is currently undertaking the Tier 2 EIS for the South Suburban Airport. It is the State of Illinois' intent that this airport serve the forecast needs of air carrier passengers, cargo, and general aviation within the south suburban area while continuing to preserve the site for future forecast needs. The Inaugural Airport Program (IAP) as proposed by the State of Illinois would include a single runway and terminal with a small number of gates. The State of Illinois base case forecast projects 16,200 operations and 709,000 enplanements 5 years after the airport opens. As a point of reference, the 2002 Terminal Area Forecast for O'Hare projects over 1.1 million operations and over 50 million enplanements in 2018.<br><br>The FAA notes that the State of Illinois forecast documentation states, "The forecasts assume that the IAP will serve a primary passenger market consisting of passengers originating within 45-minute travel time from the airport site, with no overlap of the Midway 45-minute travel time passenger market. IDOT believes that these forecasts represent a reasonable expectation of the level of air passenger activity that could develop at SSA during the IAP. As stated previously, the IAP is expected to primarily serve the domestic low-cost carrier market, with relatively little connecting, commuter or international activity."<br><br>The FAA has determined through the conducting of this EIS process, that there is a need for improvements at O'Hare. This is evident in the consideration of the three Build Alternatives considered throughout Chapter 5, Environmental Consequences. Therefore, the FAA does not believe that the SSA, as proposed, will "reduce or eliminate the need to expand O'Hare". |
| 9 | Please see the response to this comment on the following page. |
| 10 | Please see the response to this comment on the following page. |
| 11 | Please see the response to this comment on the following page. |
| 12 | Please see the response to this comment on the following page. |

| Comment | Response |
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| 9 | The FAA believes that the development the proposed SSA, with congested or uncongested freeway access, would not reduce or eliminate the need for efficient ground access at O'Hare. The FAA evaluates the effects on the surface transportation within the study area in EIS **Section 5.3.** |
| 10 | As noted above, the FAA is currently in the early stages of the Tier 2 EIS for the proposed SSA. The FAA believes it would be premature to answer this question. However, the FAA notes that the O'Hare EIS does evaluate the potential environmental impacts associated with the three Build Alternatives considered fully in the EIS. The potential environmental impacts associated with the Build Alternatives considered can be found in **Chapter 5.**<br><br>In addition, the FAA notes that the forecasts used within the EIS do not project a doubling of flights. In 2004, O'Hare served approximately 990,000 operations. In the year 2018 (the end of the planning horizon within the EIS purview), the forecast projects approximately 1,200,000 operations, or an increase of approximately 21%. |
| 11 | See response to comment 10. |
| 12 | The FAA notes that since the commenter has made this comment, American Airlines has discontinued its hubbing operations at St. Louis.<br><br>In **Chapter 3** of the EIS, the FAA has acknowledged that other mid-continent hub airports could potentially be used to accommodate connecting passengers forecast for O'Hare. FAA believes it is not reasonable to expect (1) one or both hubbing carriers to voluntarily shift enough connecting traffic to avoid the need for improvements at O'Hare, or (2) that the FAA would obtain statutory authorization to mandate such a shift. Similar legislative authority would be necessary to undo the current deregulated airline environment and authorize the FAA to exercise direct control over the aircraft fleet mix or routes serving O'Hare. |

- How does the decline of hub-and-spoke operations and the expansion of point-to-point services affect regional and national demand for airport capacity? 13

Unless the PDPN is revised, these questions and important reasonable alternatives will not be considered during the NEPA review, and, accordingly the FAA will not have fulfilled its environmental obligations. 14

**III. The City of Chicago and Illinois' Elected Federal Representatives Have Already Defined the Purpose and Need of the O'Hare Modernization Program in Terms of Regional and National Significance.**

The PDPN statement defines the FAA's NEPA inquiry in terms of how to remedy certain identified capacity problems and inefficiencies *at O'Hare*. But, the City of Chicago has already defined the OMP in terms of a much broader regional and national significance. It is incongruent and inconsistent with the FAA's obligations as the lead agency under NEPA to define purpose and need in the narrow context of O'Hare, when the project sponsor itself claims otherwise. If, as stated by the project sponsor, capacity and congestion at O'Hare are regional and national concerns, then the alternatives to be evaluated must also be regional and national. 15

Last year, Chicago sought unprecedented federal legislation to declare that the national air transportation is "dependent" on O'Hare and that "the reliability and efficiency of interstate air transportation for the residents and businesses in many States depend on the efficient processing of air traffic operations at O'Hare." (H.R. 3479/S.1786). Among other things, the legislation would have made federal findings as to the prioritization of O'Hare and the

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| 13 | The FAA does not believe that a potential "decline of hub-and-spoke operations" would alter the conclusions reached in the EIS. The FAA also believes that forecast of aircraft operations (which include significant connecting traffic at O'Hare) was reasonable to use as the basis of the EIS analysis. |
| 14 | The FAA did revise the PDPN, in part, due to public input as a result of the public outreach meeting conducted in March 2003. The FAA also believes that the relevant questions have been considered within the EIS. Finally, FAA notes that the consideration of the use of other airports and other alternatives deemed worthy by the commenter were given a hard look within the EIS. |
| 15 | The FAA has addressed the commenter's claim that the PDPN was too narrow to allow for fair consideration of the reasonable alternatives as required be NEPA in the previous response to comments, 1-4.<br><br>The remainder of the comments within commenter *Section III* articulate the comment's belief that the City of Chicago and the State of Illinois have trumpeted the national importance of improving O'Hare. While the FAA is aware of these political happenings, the EIS was developed based on the FAA's own analysis of the City's proposal and reasonable alternatives to said proposal regardless of the City of Chicago and State of Illinois statements and policies.<br><br>The FAA does, nonetheless, show the national and regional significance of the problems posed by O'Hare congestion and delay in **Chapter 2** of the EIS. The FAA believes that while the problems at O'Hare have regional and national significance, they are still problems that require the Agency to conduct the evaluation of the alternatives considered in the EIS. |

proposed South Suburban Airport (SSA) at Peotone, and making the construction of O'Hare "a federal project" by the year 2004.

According to Mayor Daley, "O'Hare truly serves the nation." And, the Mayor declared that federal legislation was necessary to accomplish a number of interrelated national and regional transportation objectives including "the modernization of O'Hare, facilitate the construction of an airport in Peotone, keep Meigs Field open [which has been overtaken by the Mayor's unilateral action to destroy that important reliever airport],[3] create a western airport entrance to O'Hare, and provide noise mitigation in communities neighboring O'Hare." Testimony of Mayor Daley before the House Aviation Subcommittee on H.R. 3470 (March 6, 2002).

Illinois Governor Ryan also emphasized the national scope of the Chicago's air traffic congestion problems, and the need for a regional, multi-airport solution:

> The problems at O'Hare were of national concern. . . . So important is our role as an aviation center that I heard again and again about the need to build additional capacity with a new airport in South Suburban Peotone. In fact, business, labor and community leaders told me we needed both an airport at Peotone and improvements at O'Hare in order to secure our economic and transportation future.

[3] Under cover of darkness, in the early morning hours of March 31, 2003, Mayor Daley ordered backhoes to carve up the runway at Meigs Field. Those actions, taken without notice or consultation with the FAA, have caused serious and ongoing aviation safety and capacity concerns. General aviation aircraft that once used Meigs have now been forced to Chicago's other, already busy airports. Indeed, the O'Hare Tower President of the National Air Traffic Controllers Association has publicly expressed his concerns about the precipitous closure of Meigs Field and its impact on air traffic at O'Hare. Destroying an active, fully operational airport is inconsistent with Chicago's claimed "purpose and need" to reduce excess traffic demands placed on O'Hare and underscores the need for the FAA to consider Chicago's air traffic problems on a regional basis.

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> Our plan will ensure that you can fly from Chicago to virtually every market across the country and around the globe. An expanded O'Hare, a new airport in Peotone and a renewed Midway Airport will provide ample capacity for growth in air service.

Testimony of Governor Ryan before the Senate Commerce Committee (March 21, 2002).

At that hearing, the FAA's own Associate Administrator for Airports, Woodie Woodard, acknowledged the importance of an integrated regional plan involving O'Hare, "maintaining Meigs Field as an open and viable facility, and the longer-term . . . plan for additional capacity through the construction of a new south suburban airport." The Mayor has already reneged on his promises concerning Meigs Field, and similarly, Chicago's commitment to the SSA, a stepchild to the Mayor's favored OMP solution, is in doubt.

**IV. FAA's Purpose and Need Statement Must Adequately Reflect Regional and National Air Capacity Alternatives.**

Against the well charted history of the OMP and the undeniable claims of Mayor Daley that this project is intended to serve a regional and national "purpose and need," the FAA's PDPN must be revised to remove the singe-airport O'Hare focus, and to permit consideration of reasonable alternatives.

The present statement is unduly narrow and fails to meet the threshold requirements of NEPA. As the Court stated in *Vermont Yankee v. NRDC*, 435 U.S. 519 (1978), NEPA requires "a detailed statement by the responsible official on . . . alternatives to the proposed action." 42 U.S.C. 4332(C). The alternatives required to be discussed in the EIS depend on the breadth of the "purpose" statement. In *Simmons v. USACE*, 120 F.3d 664 (7th Cir. 1997), the court squarely addressed the "purpose" issue: "The first thing an agency must define is

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| 16 | As noted previously, the FAA disagrees with the commenter regarding the statement of purpose and need. See response to comments 1-15.<br><br>The only comment within commenter's *Section IV* that is not repetitive with the previously made comments within this document is made at the end of the section regarding the "financial drain" that would occur if the OMP was adopted. The FAA disagrees with the comment. In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.**<br><br>Also, please see the response to *Campbell-Hill's* comments on the DEIS, specifically response to comments 102-119, beginning on page U.4-566. |

| Comment | Response |
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| 16 | Please see the response on the previous page. |

the project's purpose . . . . The broader the purpose, the wider the range of alternatives and vice versa."

It is clear, here, that the project sponsor, the City of Chicago, has publicly and consistently defined purpose of the OMP in terms of regional and national air transportation significance. The FAA's purpose and need statement must reflect that regional and national purpose, and cannot, as in the PDPN, narrowly define the "purpose" as being limited to O'Hare. The FAA must not abet Chicago's efforts to slip past the strictures of NEPA by stating a purpose so slender as define competing "reasonable alternatives" out of consideration (and even out of existence). The federal courts are compelled to overturn such frustration of Congressional will. "If the agency constricts the definition of the project's purpose and thereby excludes what truly are reasonable alternatives, the EIS cannot fulfill its role." *Id.* at 667. Absent the revisions proposed by the Concerned Communities, the PDPN is too narrowly drawn and would fail to satisfy FAA's legal obligations under NEPA.

Unless the PDPN is revised, the FAA's analysis will not provide a meaningful evaluation of the reasonable environmental alternatives, but will only serve to confirm the manifest wishes of Mayor Daley that the particular OMP project should be adopted. As stated, the PDPN will serve to exclude the consideration of alternatives, other than projects at O'Hare. Furthermore, the OMP, if adopted, will absorb billions of dollars of FAA AIP and other public funds. The enormous financial drain created by the OMP will, as a practical matter, limit alternatives at other airports. Accordingly, the FAA has must redefine the PDPN to ensure that reasonable alternatives are not excluded from consideration as a result of a statement that is too narrowly defined. 16

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**V. Comprehensive Consideration of Regional Alternatives is Required in the Context of Chicago's Interrelated Multi-Airport System.**

Given the multiple, interrelated airport development projects for the Chicago region that are under environmental consideration and pending before the FAA, the agency is obligated to perform a comprehensive environmental review for the Chicago region, rather than a limited environmental review focused on the "purpose and need" of expanding a single airport, namely O'Hare. 17

The City of Chicago's statements and actions leave no doubt that the OMP is the centerpiece of regional airport development for the Chicago area. NEPA § 102(2)(C) requires that agencies develop an environmental impact statement "in every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment." Here, where there is an interrelated system of regional airport development projects before the agency, a regional environmental review is required, because the need for airport capacity at each of the Chicago-area airports is intrinsically and inexorably related. 18

The Supreme Court has stated its agreement with this fundamental premise. Specifically that:

> A comprehensive impact statement may be necessary in some cases for an agency to meet [its] duty [under NEPA § 102(2)(C)]. Thus, when several proposals . . . will have cumulative or synergistic environmental impact upon a region are pending concurrently before an agency, their environmental consequences must be considered together. Only through comprehensive consideration of pending proposals can the agency evaluate different courses of action.

*Kleppe, Sectary of the Interior, et al. v. Sierra Club, et al.*, 427 U.S. 390, 409 (1976)(emphasis added, footnotes omitted).

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| 17 | The FAA disagrees with the commenter suggestion that the FAA must "perform a comprehensive environmental review for the Chicago region".<br><br>As noted in **Chapter 3** of the EIS, in a deregulated domestic aviation industry, the Federal government does not control where, when, and how airlines provide their services; nor is the Federal government the driving force in airport capacity development or airport utilization. Rather, the aviation industry, in partnership with local and regional government, in response to market demand, drives where and how air travel is accommodated.<br><br>In view of this fact, the FAA believes that its approach in responding to the proposals of the various sponsors throughout the region adequately addresses the concern raised by the commenter. |
| 18 | The FAA has deliberately proceeded with the ORD EIS, SSA Tier 2 EIS, and GYY EIS in response to each of these sponsor's requests. The FAA is not required to develop a "comprehensive impact statement" or a regional EIS in this case. While the areas of potential effect of these particular airports may fall within the same "region", they are unique and do not overlap in terms of geographic location.<br><br>Regarding the relationship of the capacities at the regional airports, the FAA notes that while Rockford and Gary/Chicago each have capacity that could be available to support future commercial activity, these facilities presently have available capacity and to date have had little to no impact on commercial activities at O'Hare.<br><br>Also, please see response to comment 17 of this document and topical response B-2, beginning on page U.5-7, for further clarification. |

That is precisely the situation faced here by the FAA. Only through comprehensive consideration of Chicago regional airport planning efforts can the agency conduct a meaningful evaluation of the alternatives. The pending development projects for SSA and the OMP are each large-scale airport capacity projects targeted to serve the Chicago region, and which will have a cumulative or synergistic impact on the region. It is possible that one or the other, or both, will be necessary to meet the future transportation needs of the region. No matter which is chosen, there is no question that it will "significantly affect the quality of the human environment." The FAA can only meet its NEPA obligations to consider the environmental consequences of its actions through comprehensive consideration of the regional transportation alternatives before it. 19

**VI. The South Suburban Airport is a Related Regional Project that Must Be Considered.**

The runway capacity needs of Chicago's multi-airport system must be considered interdependently, and not independently of one another. There is compelling evidence available to the FAA demonstrating that the development of a third Chicago airport -- the SSA at Peotone -- would provide more effective capacity expansion for the region, and could be constructed with fewer adverse consequences "significantly affecting the quality of the human environment." NEPA compels the consideration of this alternative together with, and not separate from, the OMP. 20

Indeed, the FAA's own purpose and need statement in the Record of Decision approving site selection for the SSA recognizes the SSA to be a key regional aviation capacity alternative, and, moreover, that there is significant debate as to what is the best way to meet future regional demand:

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| 19 | Please see response to comments 17 and 18. |
| 20 | Please see response to comments 17 an 18 regarding the comment that the OMP and the South Suburban Airport (SSA) must be evaluated "interdependently".<br><br>The FAA has considered the use of other regional airports, including the proposed SSA, as an alternative within the EIS. See **Chapter 3** and **Appendix E** of the EIS.<br><br>The FAA believes that it is premature to draw a conclusion on the environmental consequences of the SSA on the region. As stated previously in response to comment 10, the FAA is currently in the early stages of the Tier 2 EIS for the proposed SSA. However, the FAA notes that the O'Hare EIS does evaluate the potential environmental impacts associated with the three Build Alternatives considered fully in the EIS. The potential environmental impacts associated with the Build Alternatives considered can be found in **Chapter 5.** |
| 21 | Please see the response to this comment on the following page. |

| Comment | Response |
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| 21 | Please see response to comments 17 and 18. |
| 22 | Please see the response to this comment on the following page. |

> The proposed Federal action is FAA site approval for a potential, future air carrier airport in the south suburban area of Chicago. The purpose of the FAA's site approval is to preserve the option of developing a potential, future air carrier airport to serve the greater Chicago region as determined necessary and appropriate to meet future aviation capacity needs in the region.
>
> ***
>
> While there is continuing debate regarding the options for providing additional aviation capacity in the region, resolution has not been reached on the means to meet the forecast demand.
>
> FAA Record of Decision on the SSA (July, 2002)

Thus, it is clear that there are two contemporaneous projects before the agency, each with the professed "purpose and need" to address Chicago's regional airport capacity issues, and both of which will have cumulative or synergistic effects on air traffic and the environment. Under the controlling Supreme Court precedent articulated in *Kleppe*, the cumulative and interrelated effects of these projects "must be considered together" to provide a meaningful evaluation of alternatives, as required by NEPA. The FAA cannot proceed with evaluating the "purpose and need" of the OMP with blinders on, when the agency knows full well that there is a highly significant regional alternative – with far fewer environmental consequences -- pending at the same time. The FAA's SSA determination recognizes the important, outstanding regional airport development questions to be resolved. The FAA has the obligation as the lead agency to consider these vital regional issues and cannot limit its environmental review to the OMP. 21

Adoption of a broader regional perspective is consistent with recent FAA action – *e.g.*, the NEPA review of the Logan Airport development project. The ROD issued by the New England Region on August 2, 2002 did not just examine

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delays at Logan Airport. It incorporated multi-modal options and examined the capacity of other regional airports to solve Boston's delay problems. The capacity of Manchester Airport, Worcester Airport and Providence-TF Green Airport, high-speed rail services, and increased use of video-conferencing were factored into the FAA's analysis of the Logan Airport project. Such a regional approach to airport system planning is required with regard to the analysis of the proposed OMP and its transportation alternatives in the Chicago region. 22

**VII. The FAA's Own Orders and CEQ Regulations Require a Regional Approach Backed by Sound Planning and Statistical Evidence.**

The FAA Environmental Handbook, Order 5050.4A, and the CEQ regulations referred to therein require a more comprehensive regional focus than is contained in the PDPN statement. The FAA's Environmental Order specifies that purpose and need shall "identify the problem, the requested federal action, and the timeframe for such action. Relevant statistical information supporting the fact that a problem exists shall either be included here or appended. Current and projected statistics shall be provided." Order 5050.4A par. 47.

It is clear that the PDPN falls well short of these requirements. Aviation demand forecasts for Chicago – which are predicated on regional and national considerations – lie at the heart of the "purpose and need" to expand O'Hare and/or to add other new runways in the greater Chicago area. The FAA's Order emphasizes the critical importance of accurate, statistical information, yet, PDPN would proceed with evaluating the environmental consequences of the proposed OMP development without a clear picture of future aviation demand and demand allocation among the multiple Chicago regional airports. 23

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| 22 | The FAA evaluated the types of alternatives suggested by the commenter. The FAA evaluated a wide range of alternatives including: the use of other airports, the use of other modes of transportation and communication, among other alternatives. Please see **Chapter 3** of the EIS. |
| 23 | The FAA believes that **Chapter 2** of the EIS adequately addresses the cited responsibilities of FAA under *FAA Order 5050.4A*.<br><br>With regard to allocation of demand among multiple airports, see response to comments 6 and 17. |

The FAA is putting the cart before the horse. Nowhere in the PDPN does FAA provide or discuss relevant statistical information supporting the fact that a problem exists, as required by Order 5050.4A par. 47. Without that information, it is impossible to know whether the PDPN is based on a "problem," and the if so, the nature and scope of the "problem." Indeed, despite repeated attempts by the Concerned Communities to gain access to the studies, data and analysis that may have been performed by the City regarding the OMP, that information has remained hidden from public scrutiny and comment. The FAA cannot frame, nor reasonably expect the public to comment, on the purpose and need statement in the absence of this critical information. 24

Moreover, the O'Hare Master Plan has not been reconciled with a sound state system or metropolitan area airport system plan for the Chicago region. Individual Airport Master Plans must be performed within the framework established by a Statewide or Metropolitan Integrated Airport Systems Plan. *See*, AC150/5070 at 9: "Airport Master Plans are prepared by the operators of individual airports, usually with the assistance of consultants. They detail the specific long-range plans of the individual airport within the framework of statewide and regional/metropolitan system plans. ...Airport master planning must be responsive to area wide comprehensive transportation planning. This can be achieved by building into the master planning process appropriate review, coordinative and participatory mechanisms." (emphasis added) Indeed, FAA regulations prohibit the award of a master plan grant without specific findings by the FAA Administrator as to the status of system planning for the entire metropolitan area. *See*, 14 C.F.R. §152.09. 25

The regional planning defects area are exemplified by the recent aviation forecast projections submitted jointly by the State of Illinois and the City of

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| Comment | Response |
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| 24 | The FAA provided the "relevant statistical information" as noted by the commenter in **Chapter 2** of the EIS. Throughout the EIS process, the FAA has made the appropriate documents available through posting on the FAA's O'Hare Modernization web site (http://www.agl.faa.gov/OMP/) and through direct mailing of electronic and paper copies to various requesters. This information was made available as soon as practical starting at least six months in advance of the public release of the Draft EIS. |
| 25 | This comment was also raised by *ShawPittman's June 27, 2003 letter.* Please see the responses to *ShawPittman's* comments 12-15, 21, and 24, beginning on pages U.4-59, U.4-66 and U.4-70, respectively. |
| 26 | Please see the response to this comment on the following page. |

Chicago for the Chicago Metropolitan Area. Chicago and the State of Illinois have apparently reached an agreed forecast of demand for commercial airport service of 112 million enplanements for the year 2030. The State and Chicago have also apparently allocated this future forecast demand as follows: 12 million enplanements to Midway, 25 million enplanements to the proposed South Suburban Airport and 75 million enplanements to O'Hare. There has been no public disclosure or hearings by Chicago or the FAA as to the data and analysis relating to either: (1) the 112 million regional enplanements forecast, or (2) the allocation of that 112 million enplanements forecast among O'Hare, Midway, and the South Suburban Airport. Yet, the overall forecast and its allocation have profound effects on the consequences of and alternatives to the OMP.

If the forecast is accurate, the region must develop airport facilities to accommodate 112 million boarding passengers in 2030 (and the incremental growth in the intervening years). If the South Suburban Airport is not built, how will O'Hare and Midway accommodate 112 million boarding passengers? Does the proposed "O'Hare Modernization Program" accommodate 100 million boarding passengers? If the South Suburban Airport is constructed what is the economic, environmental, and financial justification for allocating only 25 million boarding passengers to SSA and 75 million boarding passengers to O'Hare? These questions illustrate the significant regional issues facing FAA and are central to evaluating the environmental consequences of the OMP and its alternatives.

Before it can conduct a meaningful evaluation of the purpose and need for the OMP, the FAA needs to adopt a single area wide commercial aviation forecast for the Chicago Metropolitan region and to develop — as part of metropolitan system planning for the metro Chicago area — a public planning

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| Comment | Response |
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| 26 | The commenter is referring to a joint IDOT-City of Chicago letter to the Northeastern Illinois Planning Commission cited in **Section 1.5.2.1** of the EIS. **Section 1.5.2.1** states, "In November 2002, the IDOT and the City of Chicago, Department of Aviation agreed upon an allotment of enplanements among airports for northeastern Illinois in the year 2030. IDOT provided the enplanement breakdown for O'Hare, Midway, and the proposed South Suburban Airport to the Northeastern Illinois Planning Commission (NIPC) to enable the NIPC to develop the 2030 Regional Transportation Plan (surface traffic plan). This forecast enplanements information is presented in **Table 1-4** [of **Chapter 1** of the EIS]. At the time, both IDOT and the City of Chicago stated that the enplanement numbers were to be used for surface transportation planning only, and that both the City and the State reserved the right to use different forecasts for airport planning purposes. The FAA has concluded that the projected enplanements described in **Table 1-4** for surface transportation planning purposes do not present a realistic projection of aviation demand in the Chicago region. For example, although the projections in **Table 1-4** may be appropriate for long-term surface transportation needs attendant to these airports, the information contained in **Table 1-6** [of **Chapter 1** of the EIS] presents what the FAA and the State of Illinois believe to be more realistic projections for aviation demand at the South Suburban Airport."<br><br>The FAA notes that the EIS did not utilize the enplanement estimates referenced for the EIS analysis, rather the Agency utilized the FAA's 2002 Terminal Area Forecast.<br><br>As noted previously in response to comment 20, the FAA believes that it is premature to draw a conclusion on the environmental consequences of the SSA on the region. |

process for allocating that regional area wide forecast to the region's commercial airports. It is critical that environmental evaluation of the OMP consider the facilities that will be needed to accommodate the regional forecast traffic at O'Hare if the South Suburban Airport is not built, as well as whether it would be environmentally less harmful to accommodate a greater share of the regional demand at SSA than at O'Hare. 26

**VIII. The Environmental Consequences of the OMP are Enormous and the FAA Regulations Require Consideration of a Wide Range of Alternatives.**

Even in its current pre-expansion condition, O'Hare is the largest source of toxic emissions and hazardous air pollutants in the State of Illinois. Monitoring data shows that O'Hare impacts large numbers of Chicago area residents with significant and undesirable noise exposure. Increasing flights from the current 900,000 to 1.6 million, as proposed by Chicago, will make matters much worse. Consideration of the OMP on a single-airport basis and out of its full regional context, will foreclose the consideration of important alternatives, and curtail thorough evaluation of the public health and environmental considerations NEPA requires. 27

The FAA's Environmental Handbook expressly recognizes that "the greater the degree of impacts, the wider the ranges of alternatives which should be considered to avoid and minimize these impacts." Order 5050.4A par. 47. O'Hare is an airport surrounded by homes, schools, and businesses and its expansion will have enormous negative impacts affecting the quality of the human environment. There is no room for growth without significant land acquisition and condemnation. As a consequence, the human impacts of the OMP include, *inter alia*, the devastation of existing communities, the elimination

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| 26 | Please see the response to this comment on the previous page. |
| 27 | As mentioned previously in response to comment 20, the FAA notes that the O'Hare EIS does evaluate the potential environmental impacts associated with the three Build Alternatives considered fully in the EIS. The potential environmental impacts associated with the Build Alternatives considered can be found in **Chapter 5** of the EIS.<br><br>As mentioned previously in response to comment 10, the FAA notes that the forecasts used within the EIS project approximately 1,200,000 operations, or an increase of approximately 21% relative to the number of operations served by O'Hare in 2004.<br><br>The FAA has addressed the commenter's suggestion that the EIS will "foreclose the consideration of important alternatives" throughout the earlier responses to this document. See response to comments 1-22. |
| 28 | As mentioned previously in response to comment 20, the FAA notes that the O'Hare EIS does evaluate the potential environmental impacts associated with the three Build Alternatives considered fully in the EIS. The potential environmental impacts associated with the Build Alternatives considered can be found in **Chapter 5** of the EIS.<br><br>The FAA provides mitigation for the significant impacts associated with the Build Alternatives within **Chapter 7** of the EIS. These include impacts related to potential land acquisition of homes, businesses, and parks. In addition, the FAA notes that while the EIS found no significant air quality impacts, **Chapter 7** does provide for Emission Reduction Measures as well.<br><br>With respect to the footnote 4, the FAA has provided the commenter an opportunity to comment on both the Draft General Conformity Determination and the DEIS air quality assessment. The commenters concerns regarding air quality are addressed in responses to their comments regarding these two documents. |

of existing business, the destruction of public parklands, and increased public exposure to toxic substances and hazardous pollutants.[4] 28

None of these consequences would stem from the other regional alternative -- construction of the SSA. The CEQ regulations, incorporated in the FAA's environmental Order, require the agency to—

- "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decisionmaker and the public." CEQ § 1502.14.
- "Rigorously explore and objectively evaluate all reasonable alternatives . . ." CEQ § 1502.14(a). 29

A purpose and need statement on the OMP, which defines the Chicago's airport capacity problems in terms of a single-airport solution at O'Hare, would utterly fail to achieve these essential environmental review requirements. The FAA's own prior decision approving site selection for the SSA recognize this to be a "clear choice" under consideration as a regional transportation solution by

[4] It is a foregone conclusion that the OMP would violate the Illinois State Implementation Plan (SIP), representing the State's plan to comply with federal air quality standards under the Clean Air Act. The O'Hare area is classified as a severe nonattainment area for ozone, and parts of the Chicago region are designated as moderate nonattainment for particulate matter. This is why Chicago sought such an unprecedented amendment of the Clean Air Act in its efforts to secure federal legislation last year that would have compelled construction of the OMP. Air pollution from O'Hare consists of burned and unburned jet fuel aerosols containing dozens of carcinogenic organic compounds -- including Benzene and Formaldehyde. If flights at O'Hare are massively expanded, the airport's immediately surrounding communities will experience an inevitable and unacceptably high concentration of Ozone and a host of toxic pollutants. By contrast, the SSA, which is a reasonable regional alternative, would have a significant land buffer to assist in the dispersal of these toxic pollutants and to keep them away from residential areas.

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| Comment | Response |
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| 28 | Please see the response to this comment on the previous page. |
| 29 | As noted previously in response to comment 20, the FAA believes that it is premature to draw a conclusion on the environmental consequences of the SSA on the region.<br><br>In addition, the FAA believes that the CEQ regulations cited by the commenter are met by this EIS analysis. |
| 30 | The FAA has addressed this comment throughout the earlier responses to this document. See response to comments 1-22. |

| Comment | Response |
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| 30 | Please see the response to this comment on the previous page. |

the aviation authorities and the public. And, an environmental review that does not consider this important, highly viable option can hardly be claimed to include an evaluation of "all reasonable alternatives." 30

**IX. Significant Changes in the National Air Transportation System Must Be Considered in this Review.**

The City of Chicago has consistently advocated the OMP as being of primary importance to the national air transportation system. If, as claimed by the sponsor, the OMP is of such national importance, then the range of alternatives must include not only regional, but national capacity considerations.

The FAA's Environmental Handbook recognizes, as the starting point for purpose and need evaluation, the need for "relevant statistical information supporting the fact that a problem exists." Order 5050.4A par 47. However, since the time the OMP was conceived by the City of Chicago, a sea change has swept the industry, calling into question, at least for the foreseeable future, the need for the OMP.

Delays at O'Hare have evaporated as carriers have slashed schedules in the wake of the most serious financial crisis to ever grip the industry. Large network carriers have been particularly hard-hit, including, specifically United and American, which are the anchor carriers at Chicago. Hub and spoke carriers are "depeaking" and realigning their networks. Some are taking planes out of hubs and using them instead for point-to-point service. Airline business models are changing rapidly, but the primary purpose of the OMP is to facilitate traditional hub and spoke connecting traffic through Chicago. To the extent hubs do survive, there are a number of alternatives in the Midwest region, including Detroit, Minneapolis/St. Paul, and, significantly, St. Louis, where American acquired TWA's hub and can now flow traffic around Chicago.

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The FAA admits that it has little idea of what future aviation demand will be in the Chicago region, or for the nation as a whole. The FAA took the unprecedented step of disclaiming reliance on its 2002 ACE Plan and in a post-publication errata, declaring the forecasts contained therein unreliable:

> Since the FAA issued its national level forecasts in March 2002, the underlying economic assumptions have changed and the anticipated recovery in the economy and the aviation industry has stalled. Major developments in the airline industry itself have increased the level of uncertainty for both the short- and long-term. These include the bankruptcy of US Airways, the redeployment of flights at American Airlines hubs, and the serious financial difficulties at other carriers. For these reasons, APO is re-examining its forecasts at a number of cities most directly affected by these developments.
>
> Errata to 2002 ACE Plan.

Since Chicago's claimed need for the OMP is predicated upon O'Hare's importance as a national connecting hub, and since the FAA's Environmental Handbook requires hard statistical evidence as the starting point for the purpose and need inquiry, it is clear that national traffic flows must be considered. The FAA simply cannot assume the need for new capacity at O'Hare in the absence of reliable evidence to substantiate the sponsor's claims. Given the cost, degree and significance of the environmental consequences stemming from the OMP, national, as well as regional solutions should be included in the FAA's environmental evaluation. 31

**X. The OMP is the *Least Reasonable* Regional Alternative**

For a host of reasons, the OMP is the least desirable alternative to meet Chicago's future transportation needs. As a study commissioned by the

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| 31 | The FAA has addressed the comments in the first two paragraphs of commenter *Section IX* throughout the earlier responses to this document. Please see response to comments 23 and 24.<br><br>With regard to "[delays} at O'Hare have evaporated," the FAA respectfully disagrees. The FAA also notes that this comment was made in April 2003. See **Chapter 2** of the EIS for a summary of the delay and congestion problems currently at O'Hare.<br><br>The FAA also notes that the flight schedules at O'Hare have been increased since April 2003. Delays have caused the FAA to issues orders limiting the number of scheduled operations at O'Hare. See **Chapter 2** for a discussion of the orders and the issuance of the related Notice of Proposed Rulemaking.<br><br>As noted in response to comment 12, in **Chapter 3** of the EIS, the FAA has acknowledged that other mid-continent hub airports could potentially be used to accommodate connecting passengers forecast for O'Hare. FAA believes it is not reasonable to expect (1) one or both hubbing carriers to voluntarily shift enough connecting traffic to avoid the need for improvements at O'Hare, or (2) that the FAA would obtain statutory authorization to mandate such a shift. Similar legislative authority would be necessary to undo the current deregulated airline environment and authorize the FAA to exercise direct control over the aircraft fleet mix or routes serving O'Hare.<br><br>With regard to the "future aviation demand…in the Chicago region", the FAA notes that the Agency has utilized the 2002 Terminal Area Forecast in the development of the EIS. As noted in the EIS, sensitivity analysis was performed to evaluate more recent forecasts (such as the 2003 TAF) and potential alternate conditions. New forecasts will continue to be developed, and each needs to be evaluated in relation to the 2002 TAF used for the EIS. As noted by the commenter, the 2003 TAF was issued since the initiation of analyses using the 2002 TAF for the EIS. The 2003 TAF includes activity levels higher than the 2002 TAF, and these higher activity levels have been considered in the sensitivity analysis reported in **Appendix R** of the EIS. More recently, FAA has published a 2004 TAF, which has activity levels lower than the 2003 TAF and substantially similar to the 2002 TAF used for the EIS modeling. Thus, the most recent FAA forecast (the 2004 TAF) serves to validate the 2002 TAF that has been used for the EIS. FAA continues to evaluate all of these more recently developed forecasts, and has concluded that the 2002 TAF used as the basis for EIS modeling is a reasonable forecast for purposes of the EIS. |
| 32 | Please see the response to this comment on the following page. |

Concerned Communities illustrates, contrary to the stated "purpose and need" the OMP will increase, not decrease delays at O'Hare.

O'Hare is a mature airport with a fully functional six-runway complex that is constrained by urban development on all sides. Chicago wants to completely rebuild O'Hare and rearrange the runways into a six-parallel configuration. Not only is this an extremely costly and inefficient way to build an airport, but the OMP would fail to achieve the efficiencies of today's modern parallel layout airports. This is because O'Hare is geographically constrained and the City's plan is attempting to shoehorn a massive six-runway parallel layout into a footprint that is much too small to accommodate such a design safely and efficiently.

The PDPN states the purpose of improving delays at O'Hare "in all weather conditions." But, FAA safety standards prohibit the operations of closely spaced parallel runways during low weather conditions, guaranteeing that the OMP will produce massive delays in periods of bad weather. Moreover, the OMP will be subject to a myriad of other construction, environmental and safety problems. The Concerned Communities herby incorporate by reference their expert study on the OMP, which is appended to these comments and which requires careful consideration as part of the record. 32

**XI. The OMP and the Gateway Project are Connected Actions that Cannot Be Segmented and Must Be Considered Together in the EIS.**

The PDPN provides among the Purposes and Needs to "provide terminal, landside, and support facilities to efficiently accommodate existing and future passenger and cargo demand and sufficient land for such facilities . . . ." Thus, the PDPN statement implicitly acknowledges that the two major projects at

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| 32 | The FAA disagrees with the comments made throughout commenter *Section X.* The FAA believes that the EIS has proven that the Build Alternatives considered by the FAA are the best alternatives to meet the purpose and need as stated in the EIS.<br><br>The results of the simulation modeling conducted for the EIS, documented in **Appendix D** of the EIS, show that the OMP will dramatically reduce delays at O'Hare.<br><br>The FAA also believes that each of the Build Alternatives would result in a safe operation of the airfield, if any were implemented. The FAA has separately responded to the safety concerns raised by the commenter in the responses to *Karaganis-Cohn's April 6, 2005* comments on the DEIS, specifically comments 90-93, which can be found beginning on page U.4-431 of this appendix.<br><br>Finally, the FAA notes that the study referred to by the commenter has been placed in the record and was carefully reviewed by the FAA. |
| 33 | In the EIS, the FAA did consider both the "OMP" and the elements of the "World Gateway Program" still being proposed by the sponsor. The FAA believes the EIS adequately addresses this point, see **Chapter 1, Section 1.2.4.2,** of the EIS for further information. |

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| 33 | Please see the response to this comment on the previous page. |
| 34 | Please see the response to this comment on the following page. |

O'Hare (the OMP and the World Gateway Project, which is a "landside" project) are not truly separate projects but rather are one project that must be considered in the same EIS.

In *Thomas v. Peterson*, 753 F.3d 754 (9th Cir. 1985), the court addressed the issue of "connected actions." CEQ regulations require "connected actions" to be considered together in a single EIS. 40 C.F.R. section 1508.25(a)(1). "Connected actions" are defined as actions that: "(i) automatically trigger other actions which may require environmental impact statements, (ii) cannot or will not proceed unless other actions are taken previously or simultaneously, (iii) are interdependent parts of a large action and depend on the large action for their justification." In *Thomas*, the court found that the construction of a road and the sale of the timber met the second and third factors, as well as perhaps the first. Timber sales could not go forward without the road, and, but for the contemplated timber sales, the road would not be built. Accordingly, the court found that road construction and timber sales were inextricably linked and were "connected actions" within the meaning of the CEQ regulations. *Id.* at 758-59.

Here, at O'Hare, by defining the "purposes" of the two projects narrowly, the City is attempting to avoid addressing both projects in one EIS, even though they are "connected." This runs afoul of the "connected actions" regulation because as stated in the PDPN, the purpose and need for the OMP includes the landside and terminal modifications, which are World Gateway projects. 33

**XII. Conclusion.**

The Concerned Communities urge the FAA to weigh carefully the full range of options available to solve Chicago's air transportation needs. The OMP is an extraordinarily ambitious project that is fraught with serious consequences

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affecting the quality of the human environment. NEPA, the caselaw interpreting it, as well as the FAA's own orders, require the FAA not to consider the OMP in a single-airport microcosm at O'Hare. Instead, the purpose and need statement must address the OMP in its full regional and national context and ensure the consideration of reasonable airport development alternative with fewer adverse environmental impacts. 34

Respectfully submitted,

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Counsel for the Concerned Communities

Document #: 1318860 v.4

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| Comment | Response |
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| 34 | The FAA heeded the commenter's request to "weigh carefully the full range of options" within the development of the EIS. The FAA evaluated the alternatives supported by the commenter within the EIS. The FAA notes that the commenter may not agree with the FAA's conclusions, however, this is clearly not the same as the FAA not considering a reasonable range of alternative as required.<br><br>The FAA sincerely appreciates the comments and believes that the comments assisted the FAA in a fair and thoroughly conducted EIS. |

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April 21, 2003

**VIA FAX AND E-MAIL**
Mr. Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Airports District Office
2300 East Devon Avenue
Des Plaines, Illinois 60018

**Re: Comments of St. John's United Church of Christ on FAA's Preliminary Draft Purpose and Need Statement re O'Hare Airport**

Dear Mr. MacMullen:

This letter is in response to FAA's February 14, 2003 Federal Register Notice and FAA's subsequent public meeting held on March 19, 2003 relating to the "purpose and need" of the facilities proposed as a group of facilities encompassed within the so-called "O'Hare Modernization Program" (OMP).

As you know St. John's United Church of Christ (St. John's) is the owner of St. Johannes Cemetery. St. Johannes Cemetery has great religious and historical significance and is located directly in the path of one or more runways proposed by Chicago as part of the OMP. As proposed, the OMP would destroy St. Johannes Cemetery causing great and irreparable injury to St. John's and to the family members who tend the graves of those souls interred at St. Johannes.

The FAA has not actually produced a preliminary draft "purpose and need" statement. St. John's comments, therefore, are based on the color "word charts" as to purpose and need distributed at the March 19, 2003 meeting.

Preliminarily, our ability to intelligently comment on even the preliminary "purpose and need" charts has been — and continues to be — severely hampered by the FAA's and Chicago's failure and refusal to make available to the public the data and documents which relate to the justification and basis for the purpose and need statements as well as the other elements of the Master Plan and EIS process. We join in the still outstanding and as yet unmet request of the Suburban O'Hare Commission (SOC) and

| Comment | Response |
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| 1 | Throughout the EIS process, the FAA has made the appropriate documents available through posting on the FAA's O'Hare Modernization web site (http://www.agl.faa.gov/OMP/) and through direct mailing of electronic and paper copies to various requesters. This information was made available as soon as practical starting at least six months in advance of the public release of the Draft EIS. |

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others for full disclosure and public access to all the documents relating to the Master Plan and EIS. 1

Turning to the announced proposed statements of "purpose and need" contained in the March 19, 2003 FAA word charts, it is readily apparent that FAA and Chicago are trying to foreclose serious consideration of another new airport (*e.g.*, the South Suburban Airport) as an alternative to expansion of O'Hare. By narrowly describing and circumscribing the declared "purpose and need" to problems that can only be addressed by adding facilities to O'Hare (as contrasted to a new airport) FAA and Chicago are trying to prevent consideration of a South Suburban Airport as serious alternative.

However, the crabbed and narrow description of purpose and need put forward in the March 19, 2003 FAA "word charts" fails to consider both regulatory and FAA planning requirements as well as the facts impacting aviation planning and decisionmaking in the Chicago region. An examination of those requirements and facts mandates that FAA broaden its inquiry to reflect the aviation needs of the Chicago region. 2

**1. FAA continues to keep separate and ignore the EIS process from the Master Planning Process and the related requirements for FAA planning. This failure affects FAA's narrow definition of "purpose and need".**

Contrary to the requests of SOC and other commentators in the September 2002 scoping comments, FAA continues to keep separate and distinct from public scrutiny the EIS process and the ongoing O'Hare Master Plan. Yet FAA grant regulations and indeed the very framework for FAA decisionmaking require that the FAA place the proposed O'Hare modifications within the framework created by FAA to address the aviation needs of the region, the state and the Nation.

FAA has four major planning levels — all of which are to be integrated with one another.

- At the Federal level is the National Airport System Plan (now called the National Plan Of Integrated Airport Systems (or NPIAS) — which is the culmination of FAA planning with the respect to the aviation needs of the 50 states. The National Plan uses individual state plans as the basis for determining and prioritizing national airport needs.
- At the State level (*e.g.*, Illinois) is the State Plan (State Airport System Planning) "which results in the documentation of the airport…and airport related facilities needed to meet the current and future air transportation needs of the state" *Planning the State Aviation System*, FAA Advisory Circular 150/5050-3B, at p.2
- Within the State Plan is the "Metropolitan Airport System Plan" which FAA uses to identify and define the "aviation facilities required to meet the immediate and future air transportation needs of the metropolitan area." *Planning the Metropolitan Airport System.*, FAA Advisory Circular 150/5070-5, at p. 3

| Comment | Response |
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| 1 | See response to this comment on the previous page. |
| 2 | The response to the issues raised by the commenter are thoroughly addressed in response to comments 2-4 within *Bensenville-Elk Grove-Park Ridge's Comments on the Preliminary Draft Purpose and Need April 21, 2003,* document number 030421_01, beginning on page U.4-12 of this appendix. |
| 3 | This comment was also raised by *ShawPittman's June 27, 2003 letter.* Please see the responses to *ShawPittman's* comments 12-15, 21, and 24, beginning on pages U.4-59, U.4-66 and U.4-70, respectively. |

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- State and Metropolitan system planning in turn serves as the predicate and basis for then incorporating the decisions made in the state and metropolitan system plans into individual airport "master plans". Indeed, according to FAA State and Metropolitan system planning "should provide information control/direction, and policy guidance for airport master planning." Guidance for individual airport master planning is in turn contained in *Airport Master Plans*, FAA Advisory Circular 150/5070-6A.

The FAA guidance and planning manuals cited above repeatedly emphasize the need to carefully coordinate and integrate the federal plan with the state and metropolitan system plans and in turn have the state and metropolitan system plans serve as the predicate for the individual airport master plans. Indeed, nowhere is this emphasis more important than in the Chicago metropolitan area and the need to develop an integrated state and/or metropolitan system plan that coordinates the scope of the O'Hare master plan with the needs of the state and the region.

The requirements for state and metropolitan system plans that serve as the predicate for individual master plans such as O'Hare are not simply precatory. Chicago is preparing its "master plan" for the "O'Hare Modernization Program" under a multi-million dollar grant from the FAA. Further FAA has authorized Chicago to impose and use Passenger Facility Charge (PFC) Revenues the additional sum of more than $100 million to conduct EIS activities under the master planning authority of the FAA grant program under the terms of 14 CFR §158.15[1].

Thus both the original 4.5 million dollar FAA master planning grant and the subsequent several hundred million dollar FAA impose and use authorization (which FAA says is for the EIS) are purported to be authorized under the terms of 14 CFR Part 152[2]. Yet it is clear that either: 1) FAA and Chicago have violated the express terms of §152.109 or 2) that there is no viable state airport system plan or state approved metropolitan airport system plan for the Chicago metropolitan region. It not only illegal, but it is the height of irresponsible aviation planning for FAA to allow Chicago to spend federal dollars on a purported "master plan" for the "O'Hare Modernization Program" that has not been integrated with a state or metropolitan airport system plan that integrates the State of Illinois' proposed plan for meeting airport needs in the Chicago metropolitan region. Not only do FAA regulations and State and Metropolitan System planning manuals demonstrate the necessity of looking beyond the physical facilities at O'Hare in defining purpose and need, but the FAA Master Plan guidance expressly

[1] In order to be eligible for impose and use authority for the November 2002 Chicago application for authorization for PFC impose and use authority for more than $200 million dollars, Chicago was required to demonstrate that the OMP EIS project was eligible for a planning grant under the Airport Improvement Program (AIP), *see* 14 CFR §158.15. In a letter to FAA dated January 29, 2003, Chicago told FAA that its PFC application for the $200 plus million was based on the Master Planning grant under the FAA grant regulations in order to meet the requirements of §158.15.

[2] In light of this claimed "master plan" grant authority as the source of FAA funding authorization for the EIS process, it is arbitrary and dialngenuous for FAA to continue to separate and hide the O'Hare OMP Master Plan process for the OMP from the OMP EIS process.

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| 3 | Please see the response to this comment on the previous page. |

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| 3 | Please see the response to this comment on page U.4-36. |

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identifies a new airport as an alternative which must be examined in the individual master plan process[3]. 3

Beyond the regulatory and guidance requirements, the State of Illinois — without benefit of public hearings or notice to the general public or impacted communities — has developed at least some of the elements of a state or metropolitan airport system plan for metro Chicago. The State of Illinois and Chicago have jointly agreed on an areawide forecast of aviation (enplanement) demand for a three airport system for the Chicago area (Midway, O'Hare, and the South Suburban Airport (SSA)) — *i.e.*, 112 million enplanements for the year 2030[4]. The State and Chicago — again without public explanation or opportunity for public input — have allocated that 112 million enplanement forecast as follows: 12 million for Midway, 25 million for SSA, and 75 million for O'Hare.

There is no system plan in place to answer a whole raft of systemic questions that will severely impact the O'Hare Master Plan and EIS analysis as well as FAA's purpose and need statement for the O'Hare EIS. For example, is the 112 million regional State/Chicago forecast reasonable and appropriate for planning purposes? If not, why not and what other regional forecast should be used?

Using the 112 million forecast, what basis is there for assuming that Midway — already stressed at current operational levels — can handle 12 million enplanements (or the even higher number of enplanements contained in the FAA's Terminal Area Forecast for Midway[5]. If Midway runs out of capacity, where will the excess demand that cannot be met at Midway go? Out of the region? To O'Hare? But the purpose and need statement proposed for the O'Hare EIS does not address O'Hare's role in meeting that need. If Midway is not expanded or a new SSA is not available to meet the excess and unsatisfied Midway projected growth, certainly an O'Hare expansion sufficient to meet that unsatisfied Midway projected growth should be one of the purposes and needs for O'Hare[6].

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[3] From an historical perspective, the FAA and Chicago conducted what was in effect a regional planning process in the 1975-1985 period in the joint O'Hare-Midway Master Plan and publicly coordinated that Master Plan with the O'Hare EIS. And that effort identified a new Chicago area airport as an alternative that must be examined as an alternative to adding more runways at O'Hare.

[4] The incremental growth of these enplanements from current levels at O'Hare and Midway to the year 2030 must also take into account the demand levels in the years between 2003 and 2030 and the capacity needs in those times.

[5] The FAA Midway TAF suggests forecast demand levels far above any rational quantification of Midway's current capacity — absent the construction of new runways at Midway.

[6] Chicago wants FAA to ignore the Midway demand/capacity shortfall — and the resultant potential need to accommodate that excess traffic at O'Hare — because to acknowledge the potential need for O'Hare to accommodate that excess traffic would cause Chicago's carefully crafted house of cards to fall. Chicago has tried to artfully match its demand numbers with its capacity analysis. If either its demand or capacity assumptions fail, its entire purpose and need approach also fails because other airports must necessarily become an alternative requiring rigorous exploration.

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Similarly the O'Hare purpose and need statement proposed by FAA does not address the unmet regional need explicit in the remainder of the State/Chicago 112 million forecast. That forecast says that the region will generate 112 million enplanements, of which 25 million is allocated (without explanation) to SSA. What will happen if SSA is not built? Will the 25 million enplanements allocated to SSA go out of the Region? Will it go to O'Hare? If SSA is not built, an O'Hare expansion sufficient to meet that unsatisfied SSA projected growth should be one of the purposes and needs for O'Hare[7].

In sum, it is clear that — absent the expansion and construction of other regional airport facilities (*e.g.*, an expanded Midway and construction of the SSA) — one of the purposes and needs of O'Hare will be to meet unsatisfied growth in regional demand. In the absence of expansion and/or construction of these other facilities, the Chicago region faces the inevitable choice of either sending this traffic (and the economic benefits associated with this traffic) to other regions or expanding O'Hare to meet this traffic demand. Yet the deliberately narrow focus of FAA's proposed purpose and need statement intentionally and wrongfully ignores such growth in regional demand at O'Hare — and the assessment of alternatives (both at O'Hare and elsewhere) needed to meet these needs.

Finally, the purpose and need should address the total absence of justification for the respective allocation of the 112 million enplanements by Chicago and the State. Why 75 million enplanements to O'Hare and only 25 million to the SSA? If economic costs and benefits are relevant considerations — as well as avoidance of delays and relative environmental impacts — why shouldn't the relative costs, benefits, and relative environmental impacts of other allocation alternatives between area airports (*e.g.*, O'Hare, SSA and Midway) be considered and compared? If a large portion of the growth or enplanements used in the O'Hare master plan (be it 66 million or 75 million) is allocated to the SSA, such an allocation would have a major impact on capacity and delay reduction needs at O'Hare — and on the alternatives 4

**2. FAA's Failure to Disclose Data and Relevant Materials and Address Fundamental Questions on Demand and Capacity And Other Relevant Issues Continues To Infect and Taint The Integrity of the FAA process and the scope of the Purpose and Need Statement**

As discussed above and raised repeatedly with FAA and Chicago, Chicago and the FAA have continued to refuse to make documents, data, and other material available to the public and impacted parties. FAA and Chicago continue to obstruct and impede FOIA requests for materials related to the O'Hare OMP Master Plan and EIS. Without these materials, it is impossible for impacted parties such as St. John's to effectively 5

[7] Even after these regional questions are addressed with the State/Chicago proposed allocation of the 112 million enplanements, there remains the discrepancy between the State/Chicago allocation of 75 million enplanements to O'Hare. Should the demand number for O'Hare be 75 million enplanements or 66 million enplanements, the TAF number being used by Chicago for the EIS? Where did the 9 million enplanements go?

| Comment | Response |
|---|---|
| 4 | The "112 million enplanement forecast" has been taken out of context. The response to the issues raised by the commenter are thoroughly addressed in response to comment 26 within *Bensenville-Elk Grove-Park Ridge's Comments on the Preliminary Draft Purpose and Need April 21, 2003,* document number 030421_01, see page U.4-27 of this appendix.<br><br>As noted, in the aforementioned response, the EIS did not utilize the enplanement estimates referenced for the EIS analysis, rather the Agency utilized the FAA's 2002 Terminal Area Forecast. |
| 5 | Please see response to comment 1, on page U.4-35. |

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comment on FAA's proposed purpose and need statements[8] or to otherwise participate in the Master Plan/EIS process.

Despite this absence of disclosure, several preliminary questions arise which may have a profound impact on both the purpose and need statement, alternative analysis, and the entire Master Plan/EIS process.

**Demand:**

How can FAA reconcile the use of the O'Hare TAF as the basis of the demand when: 1) Chicago and the State have agreed on a regional forecast and allocation which is far different than the demand assumed by Chicago and the FAA for the O'Hare Master Plan/EIS or 2) when the combined O'Hare and Midway TAFs show growth that in total is greater than that assumed for O'Hare? Whether one takes the Chicago/State forecast of 112 million enplanements or the combined O'Hare and Midway TAFs — one thing is certain. O'Hare will face substantially greater demand (absent Midway expansion) than assumed for the O'Hare purpose and need statement. 6

Further, FAA cannot defend the use of the 66 million enplanements O'Hare demand in the face of an agreed regional enplanement forecast of 112 million by Chicago and the State. Simply saying that the regional agreed 112 million enplanement forecast is not relevant because it was used only for surface transportation is no argument at all. First, the different forecasts — and the alternative allocations of that forecast — will have a major impact on the purpose and need for surface transportation facilities for access to O'Hare. Second, the need for a rational integration and use of uniform and consistent forecasts (here a consistent enplanement forecast) is central to the integrated planning requirements of FAA's state system and metropolitan regional system planning programs. 7

Beyond the enplanement forecast lies the development of the operations forecast. Implicit in the FAA TAF and Chicago O'Hare forecast is an assumption that the average number of enplanements per aircraft will be getting significantly larger. Yet forecasts by others in the aviation industry (*e.g.*, Boeing) suggest that, on average, planes will be getting smaller not larger — implying a reduced (or at best a constant) number of enplanements per operation. The significance of the number used for enplanements per operation is enormous. Chicago seems to have deliberately shaped its enplanements per operation number to fit its pre-conceived notion of the capacity of its proposed facilities. At a minimum, purpose and need should consider sensitivity analyses using different levels of enplanements per operation. Such alternative sensitivity analyses would have a major impact on purpose and need, capacity and delay conclusions. 8

**Capacity and Delay:**

FAA fails to spell out in quantitative detail exactly what the "delay" and capacity needs of O'Hare are. As FAA well knows, the capacity of an airport and the level of

[8] Entities that have made FOIA requests to FAA and Chicago have agreed to share such information with St. John's and other impacted parties.

| Comment | Response |
|---|---|
| 6 | Many forecasts have been prepared for O'Hare and other regional airports over the years, for many different purposes. For purposes of this EIS, FAA determined that it was appropriate to use the most recent FAA Terminal Area Forecast (TAF) that was available when the EIS analyses were conducted. While this FAA TAF may differ from prior forecasts, it was determined to be the most appropriate view of long-term aviation activity for purposes of the EIS. The FAA recognizes that there is uncertainty in preparing forecasts, and has therefore included in the EIS an **Appendix R** which explicitly addresses sensitivity analysis of alternative forecast outcomes. |
| 7 | Please see response to comment 4 on the previous page. |
| 8 | The comment questions the forecast of aircraft operations in relation to the forecast of passenger enplanements. FAA believes that the forecast of aircraft operations used for the EIS is a reasonable forecast in relation to the forecast passenger enplanements. However, FAA also acknowledges that there is uncertainty regarding the potential future aircraft size that will be utilized at O'Hare, and therefore there is uncertainty regarding the level of aircraft operations that will be associated with the forecast level of passenger enplanements. For this reason, the sensitivity analysis included in **Appendix R** explicitly contains discussion and analysis of potential alternative aircraft fleet mixes. |

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acceptable delay are closely interrelated. Given this relationship, the FAA needs to address several questions with regard to delay and capacity that impact purpose and need. 9

First, what is considered an acceptable level of delay — beyond which additional facilities (to increase capacity and reduce delay) should be built. These questions are important because is FAA and Chicago have not quantified what is currently wrong with O'Hare in terms of "delay" and capacity. What is that acceptable level of delay in average annual all weather delay per operation? What is that acceptable level of delay in IMC (Instrument Meteorological Conditions)?

For example, FAA has historically defined annual capacity as "is the level of annual activity at which the average delay per operation is 4 minutes" See *e.g.*, FAA Order 5090.3C *Field Formulation Of The National Plan Of Integrated Airport Systems (NPIAS)*, p. 20. Based on this definition of capacity, O'Hare is currently operating beyond its capacity; but the proposed Chicago OMP would also result in a set of facilities which will not provide adequate capacity under this standard. If an annual average delay of 4 minutes is the design goal for acceptable capacity and delay, then the analyses and conclusions are much different than if the definition of acceptable delay is an average annual delay per operation of 10 minutes[9]. 10

Similarly, the goal of providing balanced arrival and departure capabilities is already addressed by O'Hare's dual parallel runway configuration. The discrepancy between in processing rates between VFR and IMC conditions is due to the fact that FAA allows "triple converging" in VFR conditions and reverts to O'Hare's design configuration of dual parallels in IMC conditions. The Master Plan and the EIS should examine the capacity (however capacity is quantitatively defined) under different operating scenarios of the existing airfield (*e.g.*, dual vs. triple) and compare these capacities with various additional runway alternatives — all in conjunction with alternatives that carried some or all of the forecast growth at other airports such as the SSA. 11

**Terminal and Landside Facilities**

Chicago and the FAA continue to hide the ball on terminal needs. What are the quantitative standards (*e.g.*, square foot per passenger; number of operations per gate) which FAA and Chicago use to evaluate the adequacy and capacity of existing terminal and landside facilities and to design adequate new terminal and landside facilities to meet the projected demand? There has been no quantitative disclosure of the terminal and landside facilities needed to meet project demand and no disclosure of the quantitative standards to assess the adequacy of terminal and landside facilities to meet that demand. 12

This failure has at least three immediate impacts. First, the failure prevents objective analysis of other airport alternatives because one cannot determine the capacity

[9] Similar questions arise as to what levels of delay are acceptable or should be a design goal as to IMC (bad weather conditions). Further, speaking in terms of "average" delays — either average all weather delays, average VFR delays, or average IMC delays — may be somewhat misleading. What are the likely "peak" or most severe delays under these various conditions?

| Comment | Response |
|---|---|
| 9 | **Chapter 2** of the EIS identifies the purpose and need for the proposed action. The background information in **Chapter 2** provides delay statistics from airports across the country, making it clear that O'Hare is among the most delayed airports in the country. **Section 2.2.1** describes FAA's many previous studies of the relationship between capacity and delay at O'Hare Airport. **Exhibit 2-3** of **Chapter 2** indicates that reported average delays at O'Hare have for many years, including the years since September 11, 2001, exceeded several common delay thresholds suggested by FAA.<br><br>Continued on the following page. |
| 10 | **Section 2.1.2** describes how there are several commonly accepted methods for describing airfield delay. **Chapter 2** also includes delay statistics from airports across the country, making it clear that O'Hare is among the most delayed airports in the country, regardless of which method is used to quantify delay.<br><br>Continued on the following page. |
| 11 | **Section 2.2** describes FAA's historical and ongoing efforts to provide delay reduction and capacity enhancement at O'Hare. The conclusions of the FAA's many years of work on this subject is that with current and reasonably foreseeable technology, physical expansion remains the only way to meaningfully improve capacity and reduce delay.<br><br>Continued on the following page. |
| 12 | Subsequent to the commenter's letter, a terminal facility alternative analysis was presented in the City of Chicago's *February 2004 O'Hare International Airport Master Plan (Master Plan)*. Information on the terminal facility evaluation is contained in the *Master Plan, Section 5.2 Terminal Facilities Alternatives Analysis*. Also contained in the *Master Plan* is an evaluation of ground access facilities in *Section 5.4 Ground Access Facilities Alternatives Analysis.*<br><br>In addition to the information contained in the *Master Plan,* the FAA provided direction to the City of Chicago during the Total Airspace & Airport Modeller (TAAM) simulation modeling limiting the number of turns per gate to 13 per day. This number of turns per gate is comparable to other major US airports.<br><br>The FAA further notes that the FAA modeled the landside facilities within the context of the surface transportation modeling, the results of which can be found in **Section 5.3** of the EIS. |

| Comment | Response |
|---|---|
| 9 continued | Moreover, **Chapter 2** documents that in late 2003 reported delays at O'Hare reached such high levels that the FAA decided to issue the *Order Limiting Scheduled Operations at O'Hare*. In addition, the FAA includes in **Chapter 2** the results of computer simulations of the Airport that indicate that delays will continue to increase with future increases in air traffic. Therefore, the FAA has clearly quantified the current and recent delay problems at O'Hare and the need for increased capacity at the Airport. |
| 10 continued | **Section 2.3** describes the essential aspects necessary to satisfy the purpose and need for the proposed action. An arbitrary delay standard was not established for this project because this could capriciously exclude alternatives that substantially reduce delays but fail to meet an arbitrary standard. While no arbitrary criterion was established in terms of an acceptable level of delay, the FAA does include in **Appendix E, Section E.1.1** a comprehensive description of all the major delay criteria that have been defined in previous NEPA studies and available FAA documents and recent decisions. Thus, in the EIS the FAA includes a comparative analysis among all the alternatives in secondary screening, even if they do not quite achieve a specific delay level. This approach ensures all reasonable alternatives are considered in detail. |
| 11 continued | Numerous alternatives were evaluated during planning studies prior to this EIS to identify those runway alignments that could provide meaningful delay reduction. Alternatives which showed promise were considered in greater detail in this EIS.<br><br>Therefore, the issues regarding the operating procedures at O'Hare in VFR and IFR conditions that are raised in this comment have been thoroughly addressed and documented in these previous planning studies, and in the *Master Plan* and EIS. In particular, the FAA has examined the capacities of the existing airfield under different operating scenarios and has compared those capacities with the various additional runway alternatives under various forecasts of future traffic growth. |

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shortfall or adequacy of either O'Hare facilities or proposed O'Hare facilities. This problem is compounded when one attempts to examine alternative demand scenarios.

Second, this failure precludes effective cost benefit and financial feasibility analysis of the proposal. Without objective design capacity standards for terminals and landside, there is no way of determining whether FAA and the public have a supportable basis for assessing the true likely cost of the O'Hare expansion project and all the components necessary to make it work. Neither FAA or Chicago have explained in quantitative terms how one set of terminal facilities (*i.e.*, existing and World Gateway Terminals 4 and 6) are needed to handle existing passenger loads (the rationale for a Finding of No Significant Impact on the World Gateway EA) while a single western terminal is going to handle more than doubling of the passenger load to 66 million enplanements.

Finally this failure prevents analysis as to whether the overall project will meet demand and capacity requirements — or instead, will simply shift delay and congestion (and inadequate capacity) to another part of the airport. 13

**New Airlines and Access to O'Hare.**

Neither Chicago nor the FAA have disclosed or provided any information as to what FAA's goals are as to accommodating new airlines or accommodating existing airline expansion at O'Hare. The existing World Gateway Program had a central core terminal design that was specifically designed to expand United and American's historic duopoly hegemony at O'Hare. FAA has not stated in any quantitative terms what its purpose need is as to either accommodating new entrants (*e.g.*, what market or traffic share) or supporting the expansion of United and American. How FAA articulates that purpose and need will have a major economic and competitive effect on the long term viability of United and American and on the opportunity for meaningful significant new competitors to enter O'Hare and/or the region. 14

**Safety:**

The FAA has refused repeated requests to see documents relating to the safety of the proposed OMP. This refusal is particularly galling since the air traffic controllers have recently publicly reiterated their concerns that the OMP design would create a safety "nightmare" at O'Hare. How the public intelligently comment on the purpose and need as to safety when FAA has not disclosed the status of current safety concerns at O'Hare and when FAA refuses to disclose comments by safety professionals as to the lack of safety of the proposed design[10]. 15

**Planning For An Efficient Surface Access Transportation System:**

FAA's brief discussion of the need to provide efficient ground access surface transportation — "taking into consideration ongoing metropolitan planning organization" (FAA purpose and need statement) — vividly illustrates why FAA must

[10] Note again that the narrow definition of purpose and need as limited to O'Hare — without fully exploring alternatives beyond O'Hare — afflicts every purpose and need category — including safety and security.

| Comment | Response |
|---|---|
| 13 | With regard to the forecast, please see response to comment 4, on page U.4-39. With regard to terminals, please see response to comment 12, on page U.4-41. |
| 14 | The FAA notes that the DEIS and FEIS purpose and need statement is comprised of two components:<br>• Address the projected needs of the Chicago region by reducing delays at O'Hare and thereby enhancing the capacity of the NAS.<br>• Ensure that existing and future terminal facilities and supporting infrastructure (access, landside, and related ancillary facilities) can efficiently accommodate airport users.<br><br>The existing terminal configuration contributes to a constraint when attempting to accommodate new entrants. Terminal 5 houses the only gates at the Airport that are the only nonexclusive gates at O'Hare. Today, these gates are underutilized. However, over the long term, growth in the international markets which outpaces forecast growth in the domestic markets will make gate space less available for new entrants. The construction of new a new Terminal 4, Terminal 6, Concourse K extension, and Terminal 7 will foster the growth of new entrants into O'Hare thereby increasing the quality of service afforded to the traveling public. |
| 15 | Throughout the process, the FAA has made documents publicly available concerning the ongoing Airport Layout Plan review. This has included all Airport Layout Plan drawings and all correspondence between the City of Chicago and the Federal Aviation Administration. |
| 16 | The FAA conducted a detailed surface transportation analysis for various phases of the Build Alternatives. The results of this analysis indicate that traffic congestion is already present within the surface transportation study area. This situation is expected to become worse with the No Action Alternative for each of the four future years of analysis.<br><br>For more information on the surface transportation analysis, please see **Section 5.3** of the EIS. |

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redirect the entire O'Hare Master Planning/EIS process into the framework of FAA state system and metropolitan system planning requirements. According to the State and Chicago, the surface road facilities for meeting airport demand growth needs are based on a metropolitan demand forecast of 112 million enplanements with a 12/25/75 allocation between Midway, SSA and O'Hare. Again, without a state and/or metropolitan system plan to serve as the foundation of an O'Hare Master Plan, it is impossible to determine what the aviation demand will be at O'Hare and therefore whether the proposed surface (and terminal and airside as well) transportation facilities will be adequate to meet demand, what those surface (and terminal and airside as well) transportation facilities should be, and what those facilities should cost. 16

**Cost, Financial Feasibility, and Funding Sources:**

Completely missing from FAA's statement of purpose and need is any purpose and need as to financial feasibility and funding sources. FAA has a solemn statutory responsibility to refrain from approving federal taxpayer investments in projects where the costs exceed the benefits and where other more cost-effective alternatives may exist. Again, from a Master Planning and AIP grant decisionmaking perspective, the purpose and need for a project should be to meet the quantitatively identified project objectives in a manner that meets FAA's economic justification requirements and in a manner that can be realistically financed. Here again, the need for a metropolitan system planning approach is essential. 17

**Selecting the Least Destructive Alternative:**

Also missing from FAA's statement of purpose and need is any purpose and need as to identifying and selecting that alternative which meets the other purpose and need objectives but which does so with the least destruction to environmental and other social, religious, and historical resources. Clearly there are alternatives that meet the purpose and need objectives set forth by FAA that do not cause the irretrievable destruction of St. Johannes Cemetery. 18

Sincerely

Joe Karaganis
Counsel for St. John's United Church of Christ

TOTAL P.10

| Comment | Response |
|---|---|
| 17 | The response to the issues raised by the commenter are thoroughly addressed in response to comments 39-45 within *Karaganis-Cohn's April 6, 2004* comments on the DEIS, document number 050406_36, beginning on page U.4-408 of this appendix. |
| 18 | The response to the issues raised by the commenter are thoroughly addressed in response to comments 106-143 within *Karaganis-Cohn's April 6, 2004* comments on the DEIS, document number 050406_36, beginning on page U.4-439 of this appendix. |

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ARECO

ALLIANCE OF RESIDENTS CONCERNING O'HARE

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April 21, 2003

Mr. Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, IL 60018

Comments to the Federal Aviation Administration and the city of Chicago regarding the Preliminary Draft Purpose and Need and the Airport Layout Plan by Jack Saporito.

The following comments by AReCO are in addition to those submitted April 19, 2003 on our behalf by Mr. Ross Ruthenberg, an independent researcher.

The city of Chicago's plan for the expansion of O'Hare Airport regarding its Airport Layout Plan (full expansion plan) are flawed and segmented and a full Environmental Impact Statement is needed because of the devastating impacts that this unwise plan will have on the public and communities located even many miles from the airport. All effects (impacts) need to be fully and adequately eradicated to protect the health, safety and welfare of millions of people that live and work in these affected communities, as well as the passenger: 0

1. Commercial jet aviation is the least sustainable form of transportation.
2. The plan does not provide a sufficient evironmental buffer from both noise and air pollution (including trigger effects) to adequately protect the health and welfare of millions of people and especially, children and seniors. An environmental buffer of a minimum of 25 miles is therefore needed.
3. The project does not provide the terminal, landside and support facilities needed. While many of those projects have been segmented and/or are in the construction phase or completed, many are still not feasible (e.g., World Gateway Program).
4. The plan will also increase safety problems by the planned layout, as recently indicated by Craig Burzych, President of the National Air Traffic Controllers Association at O'Hare[1]. Safety is also compromised by the significant saturation of airspace.
5. The plan will not produced the planned outcome regarding Chicago's forecasts of at least 1.6 million landings and take-offs. Even the City's own contractor's studies (Ricondo and Associates assessment) show that the airport would have considerable delays and safety problems at around 1.1 million landings and take-offs. Bad weather delays and safety problems will be drastically exacerbated above 1.1 million landings and take-offs.
6. The modeling that was done to arrive at the projections of efficiency, capacity and delay reduction are likely not representative of actual conditions. The infusion of an additional 700,000 operations at O'Hare would overwhelm the Air Traffic Control system. Also where do the flights come from and where are they going to go? 1-6

[1] Daily Herald, *Not quite cleared for takeoff*, Feb. 16, 2003. See also, Mr. Burzych's letter to the editor.

| Comment | Response |
|---|---|
| 0 | The FAA agrees that an EIS was warranted. Additionally, FAA is reviewing the Airport Layout Plan (ALP) of the preferred alternative for safety, efficiency, and utility in accordance with 49 USC 47106(a)(16), but will not take action to approve or disapprove the ALP until after the environmental impact statement is completed and the FAA issues a Record of Decision concerning the ALP and other federal actions necessary to support the proposed project<br><br>The FAA has disclosed the impacts required by NEPA in the EIS. The EIS has carefully considered the impact on both the physical and social environment of the communities surrounding the airport. The analysis in the EIS examines 21 separate impact categories and also considers potential cumulative impacts from off-airport projects. Additionally, the FAA is carefully reviewing all comments made by the public as well as other agencies, including the USEPA and IEPA. The mitigation for significant impacts is summarized in **Chapter 7** of the EIS. |
| 1 | The commenter's opinion is noted. |
| 2 | The FAA notes the commenters notion that an "environmental buffer of 25 miles" is warranted. However, there is no requirement for such a "buffer." See **Section 5.1** of the EIS for the disclosure of noise assessment of the alternatives considered and **Section 5.6** for the air quality assessment. |
| 3 | The commenter is incorrect. Each of the Build Alternatives includes terminal improvements, including the addition of terminal buildings and gates. See **Chapter 3, Section 3.4** of the EIS for the definition of each of the alternatives. |
| 4 | Please see topical responses K-1 and K-2 relating to safety concerns which can be found beginning on page U.5-42 of this appendix. |
| 5 | The FAA utilized the 2002 Terminal Area Forecast (2002 TAF) in the assessment of the proposed action. The 2002 TAF projects approximately 1.2 million operations in 2018. **Appendix B** of the EIS contains details regarding the forecast used.<br><br>In addition, the FAA notes that **Appendix R** of the EIS addressed an alternate range of activity including a discussion of the operational impacts associated with this alternate range of activity.<br><br>Finally, the FAA notes that the delay results of the simulation modeling of each of the alternatives considered can be found in **Appendix D** of the EIS. |
| 6 | Please see the response to this comment on the following page. |

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7. The taxi patterns that are mentioned for ground traffic are lengthy and will add to ground delays. When ground delays are factored in, the average delay will increase. We are doubtful that the modeling for O'Hare expansion provided a credible assessment of ground delay.
8. We do not believe that Runways 14/32 will be closed in the future configurations. We believe that there will always be a demand for those runways and that there will be a significant reduction in capacity and efficiency if they were closed.
   - San Francisco originally said that they would close Runway 28L when they got their runways in the Bay approved, however; they now say that they may use it for departures. If they can use it for departures, they can use it for arrivals; hence, no change. We would expect the same to occur at O'Hare.
9. We believe that the close of two fully operational runways, which will be kept in satisfactory condition throughout the project time frame is a waste of resources. The closure would result in lost capacity and efficiency. We would expect the plan to change as the closure date nears.
10. The additional runways aligned as suggested may provide the ability to launch an untold number of aircraft, however; the rest of the air traffic control system will not be able to accept them. Also the system cannot provide the steady stream of arrivals to reach the maximum capacity of the airport. In other words, the claims are not representative of what the system can accommodate.
11. While this plan is touted to reduce bad weather delays by 95%. We have a hard time seeing any runway improvements that can make that type of improvement. Did you model capacity? If so, did you model the terminal airspace? Did you terminate the test flight as soon as airborne? Did you factor in the delays encountered in entering the national airspace system? Did you use SIMMOD? What is the baseline used? Has it been validated? Has the real time air traffic data been "played" against those baseline parameters? Please provide all data mentioned above.
12. Where are the arrival traffic patterns located in a total east-west configuration? Address where the departure traffic will fly and the number and types of aircraft.
13. What is the multiplier that is used to determine the contribution of O'Hare to the local economy? Many of the dollars generated by the airport remain at the airport or never reach the Chicago economy and are transferred immediately out of state. An actual dollar figure might be quite a bit lower.
14. The use of Gary Airport for large amounts of activity may not be efficient.
15. The plan and expansion is a huge waste of precious resources and the taxpayer and passenger's money. The economic situation that the airlines find them selves in, caused in part because of over-capacity (too many flights), is causing them to rethink their whole business strategy. United's proposals for their bankruptcy restructure should give some food for thought.
16. The projections of efficiency and capacity and delay reduction are in our opinion, grossly overstated and demand is overly optimistic.
17. Expansion of O'Hare and Chicago's plan is a waste of time, money and, a significant liability to the health, safety and welfare of millions of people who are directly affected by the airport and aircraft operations and, a hazard to the safety of the passengers. There are better options.
18. **Government reports show "Not to expand O'Hare"**. It will not provide for transportation needs and nor the decrease in delays needed or claimed (including peak periods and all weather delays that is also indicated in Chicago's own contractor findings, Ricondo and Associates).

7-18

| Comment | Response |
|---|---|
| 6 | The FAA disagrees with the statement regarding the simulation modeling which is made without basis and in advance of the EIS simulation modeling having been completed. See **Appendix D** of the EIS for more regarding the EIS simulation modeling.<br><br>The FAA notes that the forecasts used within the EIS do not project an increase of 700,000 operations. In 2004, O'Hare served approximately 990,000 operations. In the year 2018 (the end of the planning horizon within the EIS purview), the forecast projects approximately 1,200,000 operations, or an increase of approximately 21%.<br><br>The flight schedules used in the simulation modeling included assumptions based on current activity regarding the markets served by O'Hare. |
| 7 | The FAA disagrees with the statement regarding the simulation modeling which is made without basis and in advance of the EIS simulation modeling having been completed. See **Appendix D** of the EIS for more regarding the EIS simulation modeling.<br><br>**Appendix D** of the EIS documents that the annual average delays for each of the Build Alternatives was less than the No Action alternative. The annual average delays include ground delays related to taxiing. |
| 8 | Each of the Build Alternatives includes the decommissioning of Runways 14R-32L and 14L-32R. The current planning indicates these runways will be decommissioned; the FAA anticipates that these runways would close as planned, if a Build Alternative is approved. |
| 9 | Please see response to comment 8. |
| 10 | The FAA disagrees with this comment. The airspace modeling conducted demonstrates that the airspace can safely handle the number of operations projected. The FAA assessed airspace changes related to the operational capability of each of the Build Alternatives, and includes these airspace changes as part of their definition. See **Appendix E, Section E.5** of the EIS. |
| 11 | **Appendix D** of the EIS includes the details regarding the EIS simulation modeling and provides information on these questions raised. |
| 12-18 | Please see the response to these comments on the following page. |

| Comment | Response |
|---|---|
| 12 | The FAA has added **Exhibits 1** through **29** to **Appendix F, Attachment F-2** depicting the location of the flight tracks for the No Action and Build Alternatives considered. For detail on the fleet mix of aircaft and number of operations, see **Appendices B** and **F** of the EIS. |
| 13 | Comment noted. The economic impact of potential O'Hare improvements was not a consideration in development of the purpose and need for this EIS. However, **Section 5.5** of the EIS identifies the potential socioeconomic impacts associated with the evaluated Alternatives. |
| 14 | Comment noted. The proposed action does not anticipate the use of Gary/Chicago International Airport (GYY) to meet the needs of the project. However, the FAA notes that the use of other airports, including GYY was closely examined and found to not meet the purpose and need. See **Chapter 3** and **Appendices C** and **E** of the EIS for more information. |
| 15 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** In addition, the FAA notes that **Appendix R** of the EIS includes an evaluation of the potential loss of a hubbing carrier at O'Hare. |
| 16 | The commenter is likely referring to public relations literature authored by the City of Chicago; the FAA notes that this information was not used by the FAA. The commenter is directed to **Appendix D** of the EIS containing the results of the EIS simulation modeling which was not complete at the time the comment was made. |
| 17 | The FAA notes the opinion of the commenter. |
| 18 | The commenter does not note the government reports that show "Not to expand O'Hare". Also, please see topical response C-2, on page U.5-15. |

030612_01

ShawPittman LLP

June 12, 2003

**Via Federal Express and Email**

Mr. Barry D. Cooper
Manager, Chicago Area Modernization
Program Office
Great Lakes Region
Federal Aviation Administration
2300 E Devon Avenue
Des Plaines, IL 60018

Re: Land Acquisition by the City of Chicago
in Advance of FAA EIS Approval for the OMP

Dear Mr. Cooper:

The Village of Bensenville, the Village of Elk Grove Village, St. John's United Church of Christ and Rest Haven Cemetery (the "Impacted Parties") appreciate your letter of May 28, 2003, placing the City of Chicago on notice that its efforts to acquire land in furtherance of the O'Hare Modernization Plan ("OMP"), in advance of the required EIS process, will not be allowed to influence or prejudice FAA's decision to approve or disapprove the OMP. 1

While the Impacted Parties strongly support your admonition to Chicago against premature and unlawful land acquisitions, we are writing to express our continued concerns about Chicago's aggressive land acquisition activities, which have recently been emboldened by the Illinois Legislature's passage of the O'Hare Modernization Act (OMA).

First, your letter invites Chicago to "consult with FAA prior to any acquisition activities . . . ." The Impacted Parties *must* be included in any such consultations because they are the most directly affected parties. Chicago's proposed acquisition and demolition of homes, businesses, parklands and cemeteries will have an immediate and devastating effect on the Impacted Parties -- effects which the FAA has already stated must be reviewed in connection with the Environmental Impact Statement ("EIS") now

| Comment | Response |
|---|---|
| 1 | The FAA has sent three letters to the City of Chicago regarding land acquisition activities prior to approval of the OMP. The letters are dated December 5, 2001, August 19, 2002, and May 28, 2003.<br><br>The letters note the FAA's commitment to an objective EIS process. The letters also state that any pre-EIS property acquisition undertaken by the City will not influence the FAA's objective evaluation of impacts and alternatives in the execution of our EIS responsibilities, nor will it be allowed to prejudice any future FAA decisions.<br><br>The FAA also emphasized that the City's acquisition and relocation program must be in accordance with the Uniform Relocation and Real Property Acquisition Policies Act and the FAA's implementing regulation thereto (49 CFR 24).<br><br>At present, a lawsuit is pending against the City and the FAA in which the communities and others are seeking to prevent the City's acquisition of property in Bensenville and Elk Grove Village. On July 10, 2003, the City of Chicago entered into an Agreed Order that limits property acquisition that can occur prior to completion of the EIS process within Bensenville and Elk Grove Village.<br><br>For the discussion of impacts with regard to potential land acquisition, see **Chapter 5** of the EIS. |

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underway. 67 FR 47029 (July 17, 2002). The FAA has already said that it will prepare an EIS covering all aspects of the proposed OMP, including "the *potential* acquisition of approximately 539 housing units, 109 businesses, and 433 acres of property outside of the Airport's present boundaries." The Impacted Parties have a right to participate in any pre-EIS acquisition consultations, just as they have a right to participate in the EIS process.

Second, regardless of whether or not such consultations are held, NEPA, CEQ Regulations and the FAA's own Orders and regulations expressly prohibit land acquisition and destruction by Chicago of the homes, businesses, parklands and cemeteries – unless and until the FAA completes the EIS process and issues a record of decision. Thus, section 1506.1 of the CEQ regulations states:

> "(a) Until an agency issues a record of decision as provided in § 1505.2 (except as provided in paragraph (c) of this section), no action concerning the proposal shall be taken which would:
> (1) Have an adverse environmental impact; or
> (2) Limit the choice of reasonable alternatives."
>
> 40 C.F.R. §1506.1 (emphasis added)

Chicago has clearly and unequivocally stated to Bensenville officials that Chicago intends to engage in "voluntary" acquisitions of homes (under threat of condemnation) and that Chicago will immediately bulldoze the homes leaving a checkerboard pattern of desolation and reducing the targeted OMP land acquisition area to an urban wasteland.[1] NEPA and the CEQ regulation would be violated because the acquisition and destruction of land before FAA issues its record of decision would undeniably (i) have serious adverse impacts on the physical and social environments,

[1] Those efforts have been restrained by a state court injunction, prohibiting voluntary and involuntary land acquisitions until Chicago obtains an IDOT permit. Chicago has attempted to legislatively override the state court injunction through passage of the OMA.

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and (ii) make it impossible for the FAA to consider reasonable alternatives that might alleviate the need for such destruction -- because the harmful effects will have already occurred.

Chicago's land acquisition activities violate FAA Order 5050.4A, Airport Environmental Handbook Par. 73, which parallels the CEQ regulations and also governs FAA compliance with §4(f) of the 1966 DOT Act, 49 U.S.C. §303(c). The FAA regulation expressly prohibits Chicago from taking any action in furtherance of the OMP through the proposed acquisition and demolition of the parklands and historically significant cemeteries – until FAA completes its §4(f) analysis in the EIS:

> CEQ 1506.1 deals with limitations on actions during the NEPA process. Key provisions of CEQ 1506.1 which relate to proposals for airport actions include the following:
> a. '(a) Until an agency issues a record of decision [described in paragraph 98 of this order] [FAA Order 5050.4A, Airport Environmental Handbook]...no action concerning the proposal shall be taken which would:
> (1) '(1) Have an adverse environmental impact; or
> (2) '(2) Limit the choice of reasonable alternatives.'
>
> FAA Order 5050.4A, Airport Environmental Handbook Par. 73 (emphasis added)

The FAA has an affirmative legal obligation to prevent Chicago's harmful land acquisition activities from occurring. Section 1506.1(b) of the CEQ Regulations, also adopted and incorporated into the FAA's Airport Environmental Handbook (Par. 73), imposes an affirmative obligation on the FAA to insure that the environmental damage and limitation of alternatives does not occur before the EIS decision is made: "the agency *will take appropriate action* to insure that the objectives and procedures of NEPA are achieved." This mandate calls for enforcement action before the injurious action takes place – not after the fact through the denial of reimbursement costs or future funding.

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There is no debating the fact that once the homes, businesses, parklands and cemeteries are acquired and destroyed, the FAA's ability to complete the EIS and make a meaningful decision to require a less harmful alternative will be lost. Therefore, under no circumstances can Chicago be allowed to proceed with acquisition and demolition on the basis of mere "consultations" that would effectively obviate full and complete consideration under the required EIS.

Finally, it bears special emphasis that Chicago is a major grant recipient under the FAA's Airport Improvement Program, and that prior to acquiring land that is not currently part of the Airport Layout Plan for O'Hare, the FAA must "approve the plan and any revision or modification *before the plan, revision or modification takes effect.*" 49 U.S.C. §47107(a)(16)(B). The required ALP approval for Chicago's proposed OMP land acquisition can only be made upon completion of the full EIS process and cannot be shortcut by mere consultations.

To reiterate, it is our expectation that, if and when the City of Chicago invokes the "consultation" process described in your letter, the FAA must give notice of such a request to the general public with a copy of such a notice specifically addressed to the undersigned. Such a consultation process must provide all of the procedural and substantive protections of NEPA, including, *inter alia*, public input prior to action and appropriate notices/opportunities to comment on any formal or informal federal action/approval/acceptance.

Sincerely,

J. E. Murdock III
Robert E. Cohn
Alexander Van der Bellen
Counsel for the Impacted Parties

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Page 5

cc: Charles Prock, Esq.
Ruth Leverenz
Woodie Woodward
Cecelia Hunziker
Nancy LoBue, Esq.
Daphne Fuller, Esq.
Andrew Steinberg, Esq.

Document #1329902

030613_01

June 13, 2003

Mr. Barry Cooper
Federal Aviation Administration
Manager
Chicago Area Modernization Program Office
2300 East Devon Avenue
Des Plaines, IL 60018

Dear Barry,

Thanks for taking the time to meet with us on June 9. I know it was not easy to coordinate the schedules of so many people. We appreciate the frank exchange of views.

I would like to recapture some of the thoughts we presented at the meeting.

First, as we explained, the OMP is fundamentally flawed and will not work to meet the aviation safety and efficiency needs for the Chicago region. Indeed, it will harm both long term and short term aviation interests.

- OMP will not have sufficient capacity to accommodate either 75 million or 66 million operations/year. The NPIAS Handbook establishes a design capacity delay benchmark of 3-5 minutes average delay. At either 75 or 66 million, O'Hare delays will be three times higher than the NPIAS capacity benchmark. In fact, OMP will produce total delays greater than historically experienced. 1
- OMP will not solve O'Hare's delay problems, nor will it solve the looming Midway demand/capacity crunch. The only solution is a regional system approach that addresses all of the Chicago regional airports, including the South Suburban Airport as well as O'Hare and Midway in a coordinated fashion. 2
- The $6 billion cost estimate for OMP is not realistic. It does not include the total cost of runway, surface transportation, and terminal components needed to accommodate the 66 million TAF forecast. We estimate that the true cost will be closer to $15-20 billion. Full disclosure and cost analysis is critical to an overall evaluation of OMP. 3
- The OMP cannot be financed. As the FAA observed, AIP funds will be limited. The airlines cannot afford the enormous costs. Even at the unduly low $6 billion level, the incremental cost per passenger will be about $30. This compares to $9 per passenger at Pittsburgh which is unacceptable to US Airways. The two major hub carriers at O'Hare are in financial distress. In short, Chicago cannot show how they can pay for the project at $6 billion, much less the $15-20 billion we anticipate the OMP would cost. 4

| Comment | Response |
|---|---|
| 1 | The FAA response can be found within the *Campbell-Hill's April 6, 2005* comments on the DEIS, specifically *Campbell-Hill Section 2.2,* Comment 45 on page U.4-529. |
| 2 | The FAA response related to Midway can be found within the *Campbell-Hill's April 6, 2005* comments on the DEIS, specifically *Campbell-Hill Section 4.2,* comment 122 beginning on page U.4-582.<br><br>Additional information related to use of regional airports can be found in FAA's response to *Karaganis-Cohn's April 6, 2005* comments on the DEIS, specifically *Karaganis-Cohn Section V,* comments 106-143, beginning on page U.4-439. |
| 3 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.**<br><br>Additional information related to use of regional airports can be found in FAA's response to *Campbell-Hill's April 6, 2005* comments on the DEIS, specifically *Campbell-Hill comments* 88-119, beginning on page U.4-558. |
| 4 | See response to comment 3. |

Although not mentioned during the meeting, we have several additional concerns. Two of the more significant ones are related to the number of runway crossings required to get to/from the terminal, and the issue of airspace congestion.

- The OMP design proposes two sets of three parallel runways on either side of the terminal buildings. All but two outermost OMP parallel runways will be over 10,000 feet long. Because of the length and location of the parallels, aircraft would be required to taxi across one or two runways to access the terminal. As observed by NATCA "This creates a runway incursion problem, which is a very serious safety concern". 5

- Today, the total annual operations within O'Hare Class B Airspace exceed 1.6 million. The plan to increase ORD alone to 1.3-1.6 million and the continuing increase at Midway, Du Page County and Palwaukee would make it the most congested Class B Airspace in the nation. The impact of this level of airspace congestion on safety, controller workload, frequency congestion, airspace redesign and space/equipment requirements of the TRACON must be carefully evaluated. 6

Second, we pointed out the need for FAA to conduct an alternative analysis against a **regional** "Purpose and Need Statement". This alternative analysis must be done with public participation and be started sooner in the process rather than later. The alternatives that must be reviewed should include as a minimum (i) different runway configurations and alignments, (ii) fewer runways (iii) the South Suburban Airport as a component to the regional system. Any sound alternatives analysis must take a regional approach to the Chicago metropolitan area aviation needs. A regional approach not only makes sound policy, in our view it is required under FAA's own orders and circulars.

It makes no sense for the FAA to expend resources examining solely the OMP design in a vacuum without looking at that design in the context of viable alternatives. Evaluating alternatives now, rather than later will limit the FAA's investment in pursuing unworkable or ineffective solutions. Therefore, we suggest that the alternatives analysis be given priority both from the perspective of schedule as well as from the perspective of public outreach. Such an approach will enhance the credibility of the FAA process and provide public confidence in the decision making process and public support for the final decision. 7

Third, it is vitally important for FAA to take control of the public perception of the OMP. The City has distorted, for its own parochial purposes, the status of the project and the various actions that the FAA has taken in order to give the appearance that the OMP is a "done deal". By doing so the City is better able to eliminate opposing views and erode public participation. However, we and the FAA know full well that this project has only just begun and that substantial additional analysis and work will be required on whether or not the ALP proposal should be approved. In our meeting, you made it clear that the

| Comment | Response |
|---|---|
| 5 | The FAA Air Traffic Division (including representatives of both management and the National Air Traffic Controllers Association (NATCA) participated in the development of taxi routes for all Build Alternatives. Procedures were developed to taxi aircraft safely behind departure aircraft to minimize the number of crossing of active runways.<br><br>Additionally, Land and Hold Short Operations (LAHSO) procedures allow taxiing aircraft to safely cross the runway beyond the hold short point. Operational procedures for the Build Alternatives were based on *FAA Orders 7110.65 – Air Traffic Controller Handbook*, and *7110.118 – Land and Hold Short Operating Procedures.* The FAA evaluated runway crossings through an analysis comparing two alternative airfields with the existing airfield and with other major air carrier multi-parallel runway airports. The results of this analysis indicate that over time, the risk of runway incursions of the preferred airfield would be approximately equivalent to the existing airfield and less than other existing major air carrier multi-parallel runway airports.<br><br>Also, see response to comment 92 on page U.4-433. |
| 6 | Through the modeling process, the FAA evaluated the performance of proposed airspace modifications using existing separation standards maintaining the existing level of safety. Through a separate process, the FAA is evaluating the airspace modifications and their potential impact on controller workload, frequency congestion, and space/equipment requirements of the TRACON. |
| 7 | The FAA response to this comment can be found within the *Karaganis-Cohn's April 6, 2005* comments on the DEIS, specifically *Karagnis-Cohn,* comment 39 on page U.4-408. |
| 8 | Comment noted. The FAA has been and will continue to utilize multiple avenues to inform the public as to the progress of the process. Please see **Appendix T** of the EIS for the public outreach and agency coordination programs that the FAA utilized throughout the process. |

FAA values and encourages meaningful public participation because only through such participation can the FAA make the best decision for the traveling and shipping public. For this reason, FAA must set the record straight and make it clear to the public what the true status of the review process is to date. 8

Fourth, in order for public participation to be of real value, the public must have full disclosure of all relevant information, data and studies. Only through such disclosure will the public be able to make knowledgeable comments on the proposal. Unfortunately, that simply has not happened. Just one example: We learned for the first time that the FAA has apparently "approved" the City's forecast based on the 2001 TAF. We respectfully submit that forecast no longer has any validity to the OMP based on changed industry circumstances. The 2001 TAF does not take into consideration (1) the impact of the events of September 11, (2) the airline industries financial condition, particularly with respect to the two hub carriers at ORD (United which is now in bankruptcy and American which is on the verge of bankruptcy), (3) the dramatically and permanently changed industry structure including (i) revisions to the hub and spoke model, (ii) greater reliance on smaller aircraft (regional jets), (iii) greater reliance on point to point services, (iv) the need for airlines to permanently reduce costs. 9

The following are the specific steps we recommend:

1) Announce that the FAA will immediately commence a thorough examination of alternatives, including but not limited to OMP, to meet the commercial aviation needs of the metropolitan Chicago area. 10

2) Issue a notice now, advising the public as to the status of the FAA's evaluation and the need for FAA to review all reasonable alternatives and to prepare an EIS before the ALP can be approved. The Notice should invite the public to comment on the OMP and alternatives to the OMP to assist the FAA in its alternative analysis:
Issue invitations to:
A. The Sponsor
B. State and local governments
C. Planning agencies
D. Airport/Airspace users
E. The Public at Large 11

4) Solicit information and dialogue on the following questions:
a. What should the purpose and need of the ALP and associated development projects be?
b. What sort of analysis should be conducted to evaluate the alternatives?
c. Which alternatives should be considered?
d. What is the result of combining alternatives?
e. What are the impacts of the various alternatives?
f. What are the benefits of the various alternatives?

| Comment | Response |
|---|---|
| 8 | Please see the response to this comment on the previous page. |
| 9 | The FAA has and continues to make relevant information available to the public. For example the FAA has posted over 7.5 million pages of EIS related documentation on its public web site, www.agl.faa.gov/OMP/.<br><br>More information on public involvement regarding the EIS process can be found in topical response A-3, on page U.5-4 of this appendix.<br><br>The FAA response related to the Terminal Area Forecast can be found within the *Campbell-Hill's April 6, 2005* comments on the DEIS, specifically *Campbell-Hill Section2.4.1,* comments 53 and 54, beginning on page U.4-549. |
| 10 | The FAA has conducted a thorough examination of reasonable alternatives that could potentially meet the purpose and need. The alternatives considered included different runway configurations and alignments, fewer runways, the use of other regional airports, and the use of other mid-continent airports, and others. A detailed description of the alternatives evaluated is presented in **Chapter 3** of the EIS.<br><br>The FAA conducted a large-scale meeting with local officials on October 17, 2003 to discuss the alternative screening process. |
| 11 | The FAA conducted a public working session with invited members of local government to discuss the alternatives for consideration during the EIS process. Additional involvement relating to the development of the EIS can be found in **Appendix T** and topical response A-3, on page U.5-4. |
| 12 | The FAA has identified and evaluated reasonable alternatives that could potentially meet the purpose and need. The identification of alternatives includes different runway configurations and alignments, fewer runways, the use of other regional airports, and the use of other mid-continent airports. A detailed description of the alternatives evaluated is presented in **Chapter 3** of the EIS. A public outreach session was conducted on the alternatives to be evaluated during the EIS process. Please see **Appendix T** of the EIS for the public outreach and agency coordination programs that the FAA utilized throughout the process. |

g. How should the FAA select the best alternative? What decisional factors should the FAA use? 12

5) Release all information and studies in FAA's custody to the public and direct the City to release to the public all information, studies and analyses concerning the OMP, including traffic forecasts, alternative runway alignments. 13

6) Issue a notice to the City that it cannot take action in furtherance of the OMP (including land acquisitions) before the FAA has issued an ROD and EIS. 14

Thank you for the opportunity to meet with us on this important aviation issue. This may be the most important airport development application in the coming decades. The FAA's credibility is on the line. It is incumbent on the FAA to take control of both the project and the public perception of the project. We urge you to adopt the recommendations set forth above. Let's keep the dialogue going. 15

Sincerely,

Joseph M. Del Balzo
President

| Comment | Response |
|---|---|
| 12 | Please see the response to this comment on the previous page. |
| 13 | The FAA has and continues to make relevant information available to the public. For example the FAA has posted over 7.5 million pages of EIS related documentation on its public web site, www.agl.faa.gov/OMP/.<br><br>More information on public involvement regarding the EIS process can be found in topical response A-3, on page U.5-4. |
| 14 | Please see topical responses G-4 and M-9, beginning on pages U.5-34 and U.5-50, respectively. |
| 15 | Comment noted. The FAA has been and will continue to utilize multiple avenues to inform the public as to the progress of the process. Please see **Appendix T** of the EIS for the public outreach and agency coordination programs that the FAA utilized throughout the process. |

030627_01

ShawPittman LLP

A Limited Liability Partnership Including Professional Corporations

June 27, 2003

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Ladies and Gentlemen:

This letter follows-up on our June 9 meeting and Joe Del Balzo's letter of June 13. Joe's June 13 letter described in some detail our affirmative proposal for moving forward in the FAA's analytic and decisionmaking process relating to commercial aviation facilities needed to meet commercial aviation demand in the metropolitan Chicago area.

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June 27, 2003
Page 2

The purpose of this letter is to preliminarily address several additional important issues regarding the FAA's OMP review. Our comments must of necessity be "preliminary" since we are still examining the multiple "advisory sessions" materials and the "Concept Development/Refinement Draft" which the FAA recently placed on the Great Lakes Region web page. 1

I. **The Need to Identify the FAA Actions and Decisions Involved.** Much of our discussion on June 9 centered on the FAA's "airspace review" of the Chicago proposed ALP as to "the safe and efficient use of airspace." This review is apparently directed at Chicago's request for ALP approval as related to "the safe and efficient use of airspace by aircraft" under the requirements of FAA Order 7400.2E, *Procedures for Handling Airspace Matters*. Indeed, this appears to be the focus of the 77 page document issued by the FAA on May 13, 2003 captioned *O'Hare Modernization Program Aeronautical Study*, 2003-AGL-0848-NRA. We have several significant concerns with the narrow scope of the review, limited only to "airspace safety and efficiency," and with the procedures employed by FAA in that review: 2

A. The procedure followed to date has failed to include notice to interested parties — including our clients (*e.g.*, Bensenville, Elk Grove Village, St. John's United Church of Christ and the Rest Haven Cemetery Association) — who would endure the greatest impacts of the OMP proposal, that they had (and have) a right to participate in and comment on Chicago's request for airspace approval. See *e.g.*, Paragraphs 2-6-3 and 2-6-4 of FAA Order 7400.2E. In fact, we have not even seen Chicago's filed request for airspace approval. 3

B. The procedure followed to date for airspace analysis of Chicago's proposed ALP has included a large number of "informal airspace meetings" where information has been shared and communications made among FAA, Chicago, and the airlines. However, under FAA Order 7400.2E, our clients are entitled to notice of, and an opportunity to participate in, those meetings. We respectfully request that FAA ensure that we receive advance notice of all informal meetings relating to 2003-AGL-0848-NRA (and any other informal meetings relating to the FAA consideration of the proposed OMP project); that we are given an opportunity to participate in those meetings; and that we receive all materials distributed before, during, or after such meetings. 4

C. The "advisory session" materials published on the web page reflect and reference a series of other communications between Chicago, FAA, and third parties as to which we have not been provided access. We respectfully request

| Comment | Response |
|---|---|
| 1 | Comment noted. |
| 2 | The specific concerns raised by the commenter relating to the review of the ALP are addressed in the specific items following this introduction. (See responses numbered 3-20). |
| 3 | Through the circularization of the Sponsor's proposal, interested parties were afforded notice and had an opportunity to comment on the request for airspace determination. See response to comment 4. |
| 4 | The FAA is conducting the airspace analysis under *Part 3. – Airport Airspace Analysis of FAA Order 7400.2E Procedures for Handling Airspace Matters*. Although the FAA's Order states that the FAA may conduct informal airspace meetings with interested parties there is no formal requirement. *FAA Order 7400.2E Chapter 11 – Evaluating Aeronautical Effect, Section 2 – Processing of Airport Proposals by Regional Airports Office, Subsection 6 - Circularization* states that, "The Airports Office should circularize airport proposals in accordance with nonrulemaking procedures as necessary to obtain comments from aeronautical interests, municipal, county and state groups, civic groups, military representatives, and FAA facilities and offices on proposals located within their areas of responsibility."<br><br>As with the informal meetings, publicly circulating the Sponsor's proposal is not required, however the FAA elected to circulate it for comments. Although we did not conduct informal meetings, representatives of this commenter did have numerous telephone conversations with FAA staff regarding the airspace evaluation. On October 15, 2003, the FAA publicly circulated *Airspace Case Number 2003-AGL-878-NRA* for the City of Chicago's proposed O'Hare Modernization Program. This distribution included approximately 200 representatives of organizations potentially impacted by this proposal, including but not limited to: National Business Aircraft Association (NBAA), Aircraft Owners & Pilots Association (AOPA), Chicago Air Route Traffic Control Center (ARTCC), Palwaukee Airport Pilots Association, Aviation Safety Institute, Wisconsin Division of Aeronautics. A 60-day comment period was initiated and then extended an additional 30 days for a total of a 90-day comment period. The FAA considered matters such as the effect the proposal would have on existing or planned traffic patterns at neighboring airports, the effects it would have on the existing airspace structure and projected programs of the FAA, the effects it would have on the safety of persons or property on the ground, the effects that existing or proposed man-made objects (on-file with the FAA) and known natural objects within the affected area would have on the airport proposal.<br><br>Continued on the following page. |

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Page 3

access to all such materials and correspondence referenced in the various documents posted by the FAA on its web page. 5

D. It is clear from a brief perusal of the documents posted on the FAA web page that the current "airspace" review under FAA Order 7400.2E has been limited only to a narrow range of "on-airfield" alternatives to the proposed ALP for the proposed OMP project — *i.e.*, presumably alternatives that relate to physical changes at O'Hare. The airspace review does not appear to include consideration of other viable alternatives that might address the purpose and need of meeting the regional growth in aviation demand at delay levels considered acceptable under FAA NPIAS requirements — *i.e.*, a metropolitan/regional system planning approach that would allocate demand amongst area commercial airports. There should be no conditional approval of the City's specific ALP request. Such approval would necessarily prejudice and quite possible preclude meaningful examination of broader capacity issues. 6

Though nominally titled an "airspace" review focusing on "the safe and efficient use of airspace by aircraft," none of the materials posted by FAA on its web page deal with the ability of the airspace in the metro Chicago region to "safely and efficiently" handle the projected O'Hare traffic growth with the traffic growth projected for other air traffic on the Chicago airspace. As Joe Del Balzo stated in his letter, "the plan to increase ORD alone to 1.3-1.6 million and the continuing increase as Midway, DuPage County and Palwaukee would make it the most congested Class B Airspace in the nation." There is no analysis of the interaction of the proposed OMP project with air traffic growth at Midway, Palwaukee, the proposed South Suburban Airport and other airports within the Chicago Class B airspace. Our clients must be given a meaningful opportunity to participate in the issue of whether the traffic growth projected for O'Hare can "safely and efficiently" interact with the traffic growth projected for all the airports served by the Chicago Class B airspace. Further, we ask that FAA identify what quantitative standards FAA uses in deciding whether the proposed OMP project is satisfactory as it relates to "the safe and efficient use of airspace by aircraft" under the requirements of FAA Order 7400.2E 7

E. The narrowness of the "airspace" alternatives approach has significance for several reasons.

First, FAA has committed hundreds of millions of dollars to this effort under the proclaimed statutory and regulatory authorization of master planning.

| Comment | Response |
|---|---|
| 4 continued | Through the circularization process the FAA received a total of 6 letters; several of the respondents commented on the safe and efficient use of airspace. All comments relating to the safe and efficient use of airspace were reviewed by the FAA. Based on this comprehensive review of the ALP and a review of the comments received through the circularization process, the FAA has no objection from an airspace utilization standpoint. As indicated in the Airspace Determination dated July 22, 2004, airspace will be provided as specified in *FAR Part 77 Subpart C, Section 77.21(c)(1).* |
| 5 | Throughout the EIS process, the FAA has made the appropriate documents available through posting on the FAA's O'Hare Modernization web site (http://www.agl.faa.gov/OMP/) and through direct mailing of electronic and paper copies to various requesters. This information was made available as soon as practical starting at least six months in advance of the public release of the Draft EIS; see **Appendix T** of the EIS for more information. |
| 6 | In conducting the airspace review, the FAA considered matters such as the effect the proposal would have on existing or planned traffic patterns at neighboring airports, the effects it would have on the existing airspace structure and projected programs of the FAA, the effects it would have on the safety of persons or property on the ground, the effects that existing or proposed man-made objects (on-file with the FAA) and known natural objects within the affected area would have on the airport proposal.<br><br>Through the circularization process the FAA received a total of 6 letters; several of the respondents commented on the safe and efficient use of airspace. All comments relating to the safe and efficient use of airspace were reviewed by the FAA. Based on this comprehensive review of the ALP and a review of the comments received through the circularization process, the FAA has no objection from an airspace utilization standpoint. Airspace will be afforded as specified in *FAR Part 77 Subpart C, Section 77.21(c)(1).*<br><br>The FAA will not approve, conditionally or unconditionally, any Airport Layout Plan prior to the associated record of decision or finding of no significant impact has been issued. This is based on FAA policy documented in a November 18, 2003 FAA memo specifically addressing Airport Layout Plan Approvals. |
| 7 | Please see the response to this comment on the following page. |

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Clearly, both master planning and NEPA requirements call for a much broader — and much more public — alternatives approach than has been undertaken in the FAA Order 7400.2E "airspace" proceeding. FAA can hardly justify the expenditure of hundreds of millions of dollars of "master planning" money as an "airspace" analysis. 8

Second, the process puts the "cart before the horse." The documents posted on the web page suggest that millions of (master planning) dollars have been spent doing "airspace" analysis on a specific proposed ALP when FAA has yet to determine *inter alia*: 1) whether the proposed OMP project meets the capacity and delay reduction needs and standards of the region and associated FAA requirements under both FAA's system and master planning frameworks and the NPIAS; 2) whether there are other alternatives which can actually accomplish the capacity and delay reduction needs of the region and O'Hare at less cost and less environmental impact; 3) what are the costs of the proposed OMP project and whether the OMP project is financially feasible, *i.e.*, can Chicago pay for the project, and 4) whether the proposed OMP project is eligible for AIP and PFC funding. Clearly, the "airspace" approval of a specific alternative should await the broader exploration of regional system alternatives. 9

F. Our clients intend to fully participate in the ALP application process under FAA Order 7400.2E and to seek to obtain full access to all relevant information to do so. Furthermore, as discussed below and in Joe Del Balzo's letter, the FAA's review of ALP issues is too narrowly focused and needs to be expanded to incorporate regional capacity, traffic and airspace issues. For that reason, we respectfully request that FAA refrain from issuing any "conditional approval" decision under FAA Order 7400.2E until the broader regional issues are fully examined in an open process which affords all interested parties, including our clients, a full opportunity to participate in FAA's decisionmaking process (which we believe is an adjudicatory proceeding) under Order 7400.2E, and until we have had a full opportunity to examine all documents relating to the ALP proceeding. 10

G. The ALP review process cannot be divorced from the critical purpose and need evaluation required by NEPA. A narrow definition of the purpose and need will inevitably bias the FAA's evaluation of reasonable alternatives. We object to adoption of a purpose and need focused solely on O'Hare. The purpose and need must, under applicable FAA policy and requirements be evaluated within the context of the NPIAS-State System Plan-Master Plan decisional framework, (which is discussed in further detail below and in the attachment accompanying this letter) and must also be consistent with the FAA's NPIAS requirements set

| Comment | Response |
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| 7 | In the Chicago area, air traffic is segregated in the airspace by origin and destination airport. Traffic that is destined for Chicago Midway is routed along different routes at different altitudes in the Chicago terminal area. Although the Total Airspace & Airport Modeller (TAAM) analysis that was conducted for this EIS only included aircraft originating or destined for Chicago, it used today's air traffic control procedures and utilized the existing horizontal and vertical separation standards. No aircraft routings were developed that would hinder the efficient traffic flow to and from other regional airports. The FAA's Airspace Determination was made consistent with the requirements of *FAA Order 7400.2E.* |
| 8 | The process employed for this project includes concurrent planning and environmental analysis. This process, identified as a component of streamlining, is quickly becoming the standard for Airport projects across the US. In all cases FAA complied with the requirements imposed by NEPA and its implementing orders thereto. |
| 9 | As the FAA has stated on a number of occasions throughout the EIS, the benefits of the OMP cannot be achieved without improvements to the nearby airspace. Thus the FAA is studying associated airspace improvements, beyond those contained in the OMP, in separate process that will enhance the ability of the Chicago, Cleveland, and Indianapolis Centers to operate more efficiently. |
| 10 | Through the FAA's O'Hare Modernization Document Library, the FAA has made planning documents available to the public including various draft Airport Layout Plans, FAA comments, and City of Chicago correspondence. In addition, the FAA publicly circulated the Airport Layout Plan and allowed a 60-day comment period which was extended 30-days.<br><br>FAA's Policy concerning Airport Layout Plan (ALP) approvals outlined in a November 18, 2003 memo is that, "once an environmental impact statement or an environmental assessment has been initiated for an item of development…..the ALP should not be approved either "conditionally" or "unconditionally". The ALP for this project will not be approved or disapproved until the Record of Decision. |

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forth in FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)* which provides that the acceptable level of delays which the project should achieve is 4 minutes, not the 10 minutes delay that the OMP would produce. 11

H. Much more is involved here from the standpoint of FAA decisionmaking than a narrowly focused airspace review under FAA Order 7400.2E. The FAA decisional actions involved in this matter include the following:

(1) **Whether the proposed OMP project and the Master Planning project now underway conform to the 1984 FAA Record of Decision on O'Hare.** The FAA's 1984 Record of Decision (ROD) expressly stated that the location of airport facilities to handle projected O'Hare and regional commercial aviation growth beyond the capacity of O'Hare's existing runway configuration would be the subject of an FAA funded State System Plan. The 1984 ROD stated:

> "Development of another air carrier airport to serve the Chicago Metropolitan Area will be studied as part of a State System Plan to be prepared by the Illinois Department of Transportation under a series of grants to be funded by the FAA's Airport Improvement Program. The initial grant was issued in September 1984."

1984 FAA ROD at 4.

We believe the "State System Plan" referred to in the 1984 ROD was completed and that State System Plan concluded that O'Hare's runways should not be expanded and new aviation capacity for the Region should instead be constructed at a new south suburban airport.

If the State System Plan referred to in the 1984 FAA O'Hare ROD was completed — and if that State System Plan concluded that O'Hare's runways should not be expanded and that new aviation capacity for the Region should instead be constructed at a new south suburban airport — then the OMP is wholly inconsistent with the State Plan and, further, the March 2002 award of an FAA Master Planning grant of $4.5 million dollars was improper under 14 CFR §152.109.

| Comment | Response |
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| 11 | Please see the response to comments 2-4 within *Bensenville-Elk Grove-Park Ridge's Comments on the Preliminary Draft Purpose and Need April 21, 2003,* document number 030421_01, beginning on page U.4-13 of this appendix. |
| 12 | Subsequent to, and in accordance with, the FAA's 1984 Record of Decision (ROD), several FAA grants were issued for state system planning which studied Chicago regional aviation capacity issues and the needs for a supplemental air carrier airport. This satisfied all FAA's 1984 ROD requirements. While the State System Plan did not conclude "that O'Hare's runways should not be expanded….", it did recommend a new south suburban airport. In any event, previous state system plan coverage on the topic of O'Hare has been superseded by the State's 2003 passage of the O'Hare Modernization Act, which provided statewide special emphasis for development of the O'Hare Modernization Program.<br><br>In response to this comment and others, the FAA has added discussion of the 1984 ROD and the "State System Plan" in **Chapter 1, Section 1.2.4.1** of the EIS.<br><br>With regard to the footnote regarding the "112 million enplanements", please see the response to comment 26 within *Bensenville-Elk Grove-Park Ridge's Comments on the Preliminary Draft Purpose and Need April 21, 2003,* document number 030421_01, see page U.4-27 of this appendix. As noted, in the aforementioned response, the EIS did not utilize the enplanement estimates referenced for the EIS analysis, rather the Agency utilized the FAA's 2002 Terminal Area Forecast. |

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Conversely, if a different State System Plan has been adopted which calls for the expansion of O'Hare runways and allocates the shares of commercial traffic in a different manner than the State System Plan referenced in the 1984 ROD, our clients have not had an opportunity to participate in the development of that plan.

The status of the State System Plan gains even more relevance when one considers the recent submission by the State of Illinois and Chicago of a 2030 metropolitan commercial aviation forecast of 112 million enplanements for the combined facilities of O'Hare, Midway, and the South Suburban Airport (SSA). Such a forecast — and the subsequent allocation of that forecast between O'Hare (75 million enplanements), Midway (12 million) and SSA (25 million) — is exactly the kind of State System Planning activity which is relevant and is an essential precursor to the shaping of individual "master planning" efforts at the individual airports. Our clients have been given no opportunity to participate either in the process that reached the 112 million enplanement forecast or in the subsequent allocation of that forecast between O'Hare, Midway, and SSA[1].

We ask that you confirm the status and disposition of the "State System Plan" referred to in the 1984 ROD. We further ask that FAA make available all documents relating to State System Planning for commercial aviation facilities in the metro Chicago area. 12

We wish to participate in any FAA proceeding considering the contents or approval of the State System Plan as that plan relates to commercial airport facilities in the metropolitan Chicago area. Please advise us of the status of such

[1] The rationale that the 112 million enplanement forecast is simply for "surface" transportation planning, and does not apply to planning for airport facilities, does not withstand critical scrutiny. First, the 112 million enplanement forecast is, by definition, a forecast of enplanements (*i.e.*, persons boarding aircraft); and therefore necessarily impacts the planning of airport facilities. Second, even if the 112 million enplanement forecast is not the state system forecast for commercial aviation facilities in the metro Chicago region, there must of necessity be a regional system forecast — and an allocation of that forecast between the metro region's commercial airports. Otherwise the regulatory and logical relationship between state system planning, master planning, and NPIAS analysis and decisionmaking would fall apart. Finally, FAA requirements call for the integration of airport planning with surface transportation planning. It is illogical and arbitrary to have one 2030 metropolitan system enplanement forecast (and allocation of that forecast among commercial airports) for surface transportation planning and another 2030 metropolitan system enplanement forecast for airport facilities.

| Comment | Response |
|---|---|
| 12 | Please see the response to this comment on the previous page. |
| 13 | Please see the response to this comment on the following page. |

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State System Plan activities and our opportunity to participate in FAA decisionmaking as to such State System Plan. 13

**(2) What is the "Regional Airport Plan" for Chicago and how does the "Regional Airport Plan" fit within the FAA's System Planning-Master Planning Hierarchy?** During the course of our June 9 meeting, references were made to the FAA's "Regional Airport Plan" (RAP). The descriptions of the RAP included references to a variety of historical FAA, regional and city studies. The description appeared to rely on planning related to ORD, MDW, MKE, SSA and other airports. There were several references to planning involving flexibility and options. The implication was these oral comments were based on some FAA, city or consultant written report. Those planning efforts appear to be disparate and unrelated to the OMP project. However, FAA must explore how the "Regional Airport Plan" fits within the FAA planning hierarchy of NPIAS, State System Plan, and individual Airport Master Plans consistent with FAA planning requirements. In particular, how does the Regional Airport Plan address or incorporate the conclusions of the 1984 O'Hare ROD and the State System Plan produced pursuant to that ROD? How does the RAP relate to the State of Illinois-Chicago recent 112 million regional enplanement forecast and allocation of those enplanements among Midway, O'Hare and SSA?

The NEPA process, in particular the Alternatives Analysis and the purpose and need evaluation, would be very well served by the immediate release of such a RAP. If the "report" has not been written or is a draft, it will still be appropriate to release on an expedited basis all writings which include, *e.g.*, the assumptions, analyses, technical assessments, models/simulations, forecasts, AT/AF procedures/equipment, *etc.* We ask you to provide access to all documents and materials relating to this "Regional Airport Plan." 14

**(3) Whether the requirements for System Planning and Master Planning have been met.** The FAA and Chicago are apparently spending tens of millions of dollars in analyzing the proposed OMP project under the auspices of FAA planning grant statutes and regulations. The only planning grant authorizations that exist under the Federal Transportation Code are grants for either "system planning" or "master planning." We respectfully suggest that neither the requirements for "system planning" nor "master planning" as set forth in the federal statutes or the FAA regulations have been met in this case, and that the "system planning" and "master planning" requirements as set forth in the federal statutes or the FAA regulations are currently being violated. These requirements are set forth in 14 CFR Part 152 and *FAA Order 5100.38B. AIP Handbook*, as

| Comment | Response |
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| 13 | Comment noted. |
| 14 | The FAA does not have a "Regional Airport Plan." Moreover, the FAA recognizes that planning initiatives are properly undertaken at the local or state level. With respect to O'Hare, the FAA is responding, in part, to the determination made by the State of Illinois in the O'Hare Modernization Act, which, as noted elsewhere, has superseded earlier state planning initiatives. The FAA concludes that any potential approval of the OMP would be consistent with its planning guidance. |
| 15 | Please see response to comment 14. |

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well as in FAA Advisory Circulars on State System and Master Planning. We ask FAA to examine and enforce its "system planning" and "master planning" requirements in this case. 15

**(4) Whether the Forecast Used By Chicago is the Proper Forecast.** We were surprised to learn that FAA has "approved" Chicago's use of a 66 million enplanement forecast and a corresponding 1.3 million operations forecast without any opportunity for the public or affected parties to participate in or comment on the proposed forecast prior to FAA's decision.

As Joe Del Balzo's letter discussed, we believe that the forecast used by Chicago is flawed both as to the number of enplanements and the number of forecast operations[2]. Just one example can be found in the contradiction between the 66 million enplanement forecast and the Illinois-Chicago 112 million enplanement forecast (and subsequent allocation of those 112 million enplanements between O'Hare, Midway and SSA.) The State-Chicago allocation gives O'Hare 75 million enplanements in 2030 — not 66 million. Further, O'Hare needs increase if SSA is not constructed and if Midway cannot handle the 12 million allocated to it. These forecast issues affect every stage of FAA decisionmaking from its "airspace" review under FAA Order 7400.2E to the purpose and need and alternatives analysis in the EIS process, to System Planning, NPIAS formulation, AIP and PFC decisionmaking, and all NEPA and related analysis and decisionmaking.

We wish an opportunity to challenge the use of that forecast before FAA approves the use of that forecast for any of the analyses or FAA decisions relating to Chicago's proposed OMP project. Further, we ask that all documents and correspondence relating to the forecast issue — including all documents relating to the Illinois-Chicago 112 million enplanement and allocation — be made available for examination. 16

**(5) Whether the Capacity Standard used by Chicago is the Proper Standard.** Based on our preliminary review of the documents posted on the FAA Great Lakes web page, it appears that Chicago is using a *de facto* capacity definition of approximately 10 minutes average annual all weather delay per operation. Yet FAA Order 5090.3C, *Field Formulation of the National Plan of*

[2] We dispute both the use of the 66 million enplanement forecast and the related but separate issue of whether 66 million enplanements will likely be carried on only 1.3 million operations.

| Comment | Response |
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| 15 | See response to comment 14 on the previous page. |
| 16 | The FAA believes that the Terminal Area Forecast (TAF) used for the EIS is an appropriate forecast for this purpose. As noted in the comment, the TAF used for the EIS differs from previous forecasts that have been prepared for a variety of purposes. This points out the fact that conditions change over time, and forecasts change over time. The key question is: is the forecast that is used in the EIS a reasonable representation of potential future activity? The FAA believes that the answer is yes. The TAF is prepared by the FAA using industry-standard analytical techniques, and has been reviewed by independent industry experts.<br><br>The comment further expresses a desire to "challenge" the FAA forecast. The FAA forecast has been prepared using industry-standard analysis and methodology. Any forecast is subject to challenge and uncertainty. For that reason, sensitivity analysis of forecast results was included in **Appendix R** of the EIS.<br><br>The comment further requests documentation of the FAA TAF. This documentation is available on the FAA website, http://api.hq.faa.gov/pubs.asp?Lev2=1/. |

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*Integrated Airport Systems (NPIAS)* clearly states that capacity is defined as an average annual delay of 4 minutes per operation:

> "Annual Capacity or Annual Service Volume, as reported in the NPIAS, is the level of annual activity at which the average delay per operation is 4 minutes."
>
> FAA Order 5090.3C, p. 20.
> (emphasis added)

Further, the FAA's most recent NPIAS Report to Congress emphasizes that an airport which experiences more than 5 minutes average delay is considered congested:

> "Experience shows that delay increases gradually with rising levels of traffic until the practical capacity of an airport is reached, at which point the average delay per aircraft operation is in the range of 3 to 5 minutes. *Delays increase rapidly once traffic demand increases beyond this level.* An airport is considered to be congested when average delay exceeds 5 minutes per operation. Beyond this point delays are extremely volatile, and a small increase in traffic, adverse weather conditions, or other disruptions can result in lengthy delays that upset flight schedules and impose a heavy workload on the air traffic control system."
>
> FAA NPIAS Report to Congress at 12.
> (emphasis added)

Based on Chicago's simulation delay capacity analysis, it is clear that the proposed OMP project does not have the capacity to carry even the 66 million enplanements and 1.3 million operations used as a forecast by Chicago, let alone the higher traffic load involved in a higher forecast demand. The capacity of the proposed OMP project — when measured at the 4 minute level of FAA Order 5090.3C — is far less than 66 million enplanements and 1.3 million operations.[3]

[3] A related capacity shortfall appears in the terminal facilities described in the *Concept Development/Refinement* (February 2002) document recently posted on the FAA web page. This document at p. III-10 states that the terminal design shown on the draft ALP or contained in Chicago's current proposal will only accommodate 52.9 million passengers — far less than the 66 million in the forecast used

| Comment | Response |
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| 17 | With respect to the comments regarding the "capacity standard", please the response to comments 44-47 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-529 of this appendix.<br><br>With respect to the commenter's request to participate in FAA's "administrative process", there is no formal administrative process that pertains to the inclusion of any particular airport improvement project. Moreover, changes to the NPIAS are not substantive agency decision-making affecting the rights of third parties. |

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This dramatic shortfall between even Chicago's understated demand and the capacity of the proposed OMP project affects every stage of the FAA's analysis and decisionmaking — from "purpose and need"[4] to consideration of alternatives, to economic benefits and costs, to environmental impacts.

The foregoing issues raise the further question of whether the proposed OMP project even qualifies for inclusion in the NPIAS. Under FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)*, the FAA must identify the "airfield improvements necessary to meet the purpose of establishing and maintaining a safe and efficient national system of airports." From the materials posted on the FAA Great Lakes web page, it is evident that the proposed OMP project does not meet FAA's requirements for inclusion in the NPIAS. We wish to fully participate in the FAA administrative process — not just as to the EIS — but also in the FAA substantive decision as to whether to include the proposed OMP project in the NPIAS. 17

**(6) Whether the City can demonstrate a financial plan to provide sufficient financial resources to pay the true cost of the OMP.** Chicago claims the OMP will cost $6 billion. Our experts believe that the true cost will range between $15-$20 billion. Chicago has not demonstrated, indeed it cannot demonstrate, a viable financial plan which can provide sufficient financial resources to pay the true cost of the proposed OMP project. Failure to demonstrate the financial feasibility and financial viability of the proposed OMP project renders the OMP an unacceptable solution and negates the OMP's ability to meet any rational "purpose and need" standard. There are two interrelated components of the lack of financial viability of the OMP that must also be evaluated: 18

**(a) Whether the requirements for discretionary AIP funding have been met by Chicago.** A component of the purpose and need for the OMP and ALP review includes the financial efficacy of the proposed OMP. We believe that the record will show that the OMP flunks the cost-benefit test and further that there is no viable plan to finance the OMP. It is clear that Chicago is already spending federal monies awarded

by Chicago. Similarly, nowhere in the surface transportation discussion in this document is there any analysis as to whether the surface transportation facilities leading to the western access and western terminals outside the airport (e.g., York Road) have adequate capacity to accommodate the combined surface traffic of non-airport and airport users.

[4] The use of the proper capacity definition also impacts the consideration of "delay reduction" as a purpose and need for the project. Clearly a project that by definition does not reduce delays to acceptable levels does not meet any purpose and need requirement based on delay reduction.

| Comment | Response |
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| 17 | Please see the response to this comment on the previous page. |
| 18 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |

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under the pretext of "master planning" to calculate and claim economic "benefits" for the proposed OMP project. We are entitled to examine and have access to the data and calculations as to how these "benefits" were calculated as well as to data and information as to the costs of the project. Such information is inextricably linked to the current EIS and ALP review process and must by fully disclosed in this proceeding. It is also clear that Chicago will need and intends to fund a large portion of the cost of the proposed OMP project by means of discretionary AIP grants from the FAA through the mechanism of a "Letter of Intent" ("LOI"). Our clients intend to challenge any claim by Chicago that the proposed OMP project qualifies for an award of discretionary AIP funding and wish to participate in any FAA proceeding whereby Chicago seeks such an award. As you know, the EIS process is part of the overall procedural framework by which the AIP discretionary decision is made. 19

**(b) Whether the requirements for PFC "impose and use" authorization will be met?** It is also clear that Chicago intends to fund much of the cost of the proposed OMP project through "impose and use" authority of the Passenger Facility Charge (PFC) program. Our clients intend to challenge any claim by Chicago that the proposed OMP project qualifies for any "impose and use" authorization under FAA's PFC regulations and wish to participate in any FAA proceeding whereby Chicago seeks "impose and use" authority for PFC funding for the proposed OMP project. As you know the EIS process is part of the overall procedural framework by which the FAA's PFC "impose and use" decision is made. We wish to fully participate in the FAA adjudicatory process — not just as to the EIS — but also in the FAA substantive decision as to whether to authorize Chicago to "impose and use" PFC funds for the proposed OMP project.

These issues go to the heart of the financial viability of the OMP and must be examined by FAA *now* since they are fundamental to the purpose and need and alternatives analysis and the "efficiency" evaluation currently underway. The Sponsor already has massive debt which it must repay in the future. Much of its PFC capacity is already committed and thus its access to entitlement dollars restricted. AIP discretionary dollars would be a critical source of dollars. The airlines' ability to finance these development costs are already severely taxed. The competitive pressures to lower their operating costs would make the likely cost-per-passenger

| Comment | Response |
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| 19 | With respect to discretionary funding, the commenters are currently being provided an opportunity to present their views concerning the LOI application outside the NEPA process. |
| 20 | With respect to the first paragraph, the PFC approval of impose and use is a separate process with its own consultation and comment process pursuant to 14 CFR Part 158.<br><br>Also, please see response to comment 18 on the previous page. |

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which will be needed to support the proposed OMP project economically infeasible.

In light of these factors, deferring the financial analysis of the OMP would be ill advised (and likely in violation of FAA regulations as to Master Plans). 20

**II. Master Plan/ALP/EIS Integration and Relationships.** During the June 9 meeting, FAA representatives indicated that the ALP and Master Plan reviews were separate and independent of each other. We were told that FAA is the lead on the ALP and this process is subject to the requirements of NEPA. We were told that the Master Plan is being managed by the Sponsor and is not subject to NEPA.

This approach is not consistent with applicable requirements or sound policy. First, all of the AIP and PFC monies currently being expended in analysis of the proposed OMP project and the proposed ALP have their regulatory justification as "master planning" dollars. Second, under the FAA master planning framework, the end product of the Master Plan is the Airport Layout Plan. The ALP is not some isolated independent element divorced from the Master Planning process. Indeed, the ALP is the culmination of the Master Plan process and the very shape and content of the ALP is defined by the decisions made during the course of the Master Plan process. Finally, the current EIS funding is based on providing EIS support as an integral component of the Master Plan. In sum, FAA's stated claim that the EIS and the Master Plan are separate and independent administrative proceedings is not supported either by the FAA regulatory framework or common sense.

The Master Plan includes in its normal review procedures analysis of many elements that will be subjects within the ALP decisionmaking process. A Master Plan, *inter alia*, analyzes existing capacity, projects future traffic levels, assesses alternatives and develops data that will be relevant to, if not directly incorporated into, the ALP analysis. There has been absolutely no public participation in the Master Planning process—despite the expenditure of $4.5 million by FAA in AIP grants for this purpose. Indeed, despite our repeated requests, there has been no disclosure of the documents relating to the Master Plan. Nor has there been a single public meeting describing the Master Plan effort and how the public and affected parties will have an opportunity to participate in and comment on the elements in the Master Plan process.

How can data derived in the Master Plan process be integrated into the ALP decisionmaking process without subjecting the Master Plan elements and process to full

| Comment | Response |
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| 20 | Please see the response to this comment on the previous page. |
| 21 | The Master Plan is a product that is developed by the airport sponsor. FAA policy is to "accept" the Master Plan document with approval involving only 3 components of the document. The FAA approves the critical aircraft utilized in the study, the forecast, and the Airport Layout Plan (ALP).<br><br>The ALP is a product of the airport sponsor for which the FAA reviews and ensures that all applicable standards are met or exceeded. For standards that cannot be met, FAA works with the sponsor to ensure that modifications to standards meet the appropriate level of safety.<br><br>Concurrently developing the ALP with the other Master Plan documents is normal industry practice, as with other airport development projects including the South Suburban Airport. |

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public review? This process undermines the public credibility of the entire FAA review of the OMP. We urge the FAA to require that all elements of the Master Plan which may or will have relevance to the ALP review to be subjected immediately to the exact same public protections as required by NEPA. The cross utilization of Master Plan data and elements into the ALP approval process must, at a minimum, subject the Master Planning to full disclosure under NEPA.

We strongly disagree that FAA can divorce the Master Plan process from the ALP process under its own policies. However, even if FAA continues to treat the Master Plan as a separate process from the ALP approval we wish to participate in the FAA review and decisionmaking process on the Master Plan. We wish to participate in FAA analysis and decisionmaking on each element of the Master Plan, including but not limited to, the demand forecast, capacity analysis, alternatives analysis, cost estimation, and financial feasibility analysis. 21

**III. Access to Data, Documents and Materials.** We thank the FAA for its initiative in setting up a web site as a document repository. However, we wish to point out several concerns about the adequacy of the web site.

First, as stated above, our clients wish to participate in the process leading to all of the FAA decisions outlined above (as well as any other FAA decisions relating to the proposed OMP project). Since our clients are severely impacted by the proposed OMP project, we are not seeking to participate solely as members of the general public but as adversary parties in the FAA decisionmaking proceedings on these matters, including *e.g.*, (by way of illustration only) the "airspace" decision under FAA Order 7400.2E, the AIP and PFC decisions for funding the proposed OMP project, the "benefit-cost" analysis and decisionmaking, the forecast, capacity and delay analysis, and the issue of inclusion of the proposed OMP project in the NPIAS.

As interested parties in administrative adjudications, we are entitled to access to all of the data and material relating to the claims made by Chicago (*e.g.*, delay/capacity computer simulations) as well as all communications made between Chicago and the FAA and FAA and third parties relating to such issues and internal FAA staff analysis of such issues. Simply belatedly placing a few isolated documents on a web page — without providing our clients with full and timely access to all the information and data relating to these documents — does not meet administrative and constitutional requirements for fair adjudicatory proceedings.

| Comment | Response |
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| 21 | Please see the response to this comment on the previous page. |

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By way of example, much of the capacity delay analysis to date is based on Chicago and FAA computer simulations. Despite our repeated requests, we have not been given access to the data input, program adjustments and data output for these computer simulations.

We have the following suggestions relating to either an expansion of the FAA web page into an adequate docket or, alternatively, non-web access to relevant materials and documents:

A. Access to all documents, data and materials. As shown by the "advisory session" and "development refinement" documents posted on the web page, these documents refer to and are based upon many additional documents and communications. At a minimum, a docket record of all related materials, data, and communications should be maintained on-line and the documents and data themselves should be either on-line or available at FAA offices.

B. Clear description of documents. The FAA web site appears to be an official repository of information to learn about some FAA decisionmaking process, but it is not clear as to what FAA decisionmaking process the web site — or the individual documents listed on the web site — is referring. For example, the "Administrative Sessions" link or the Project Definition Report are not introduced as to their relevance or status within any particular FAA decisionmaking process — *e.g.*, "airspace" under FAA Order 7400.2E., NEPA, Master Plan or other FAA decision. Nor is the purpose of any individual document as that document relates to any individual FAA decisionmaking process described.

It is not self evident (i) whether the author of these outlines is employed by the FAA or the sponsor, (ii) whether the text reflects content that has been adopted by the FAA or that these were merely discussion topics or what action (if any) was taken in response to these meetings, (iii) who was in attendance for the FAA and the sponsor, (iv) what (if anything) was resolved in these meetings, (v) what data sources were used for the information contained in these outlines, or even (vi) what the scope of authority for these "sessions" was (NEPA, ALP review, Master Plan process, safety and efficiency, etc.), and (vii) what other related documents and communications exist. 22

| Comment | Response |
|---|---|
| 22 | With respect to data, documents, and materials as well as claims of entitlements to formal agency process, the commenters are being provided the full measure of participation authorized by law. In addition, they have been given unprecedented, early access to countless documents generated by the FAA, the City, and others. The FAA's consideration of the proposed OMP is not a formal, administrative adjudication entitling any interested party to more process than that which is currently being provided.<br><br>Throughout the EIS process, the FAA has made the appropriate documents available through posting on the FAA's O'Hare Modernization web site (http://www.agl.faa.gov/OMP/) and through direct mailing of electronic and paper copies to various requesters. This information was made available as soon as practical starting at least six months in advance of the public release of the Draft EIS. |

ShawPittman LLP

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**CONCLUSION**

We have serious concerns about the scope of the FAA's review of the OMP and the processes employed for that review. We urge you to consider and adopt the recommendations set forth in this letter. It is critically important for the FAA to ensure that the affected communities be given a fair and meaningful opportunity to participate in these proceedings as required under applicable federal law. We also believe that the processes suggested above will facilitate and expedite the review of this complex airport development project. We welcome further discussions and dialogue on these important issues. 23

Sincerely,

J. E. Murdock III
Robert E. Cohn

Enclosure

cc: Carl Schellenberg
Joe Del Balzo

#1334608

| Comment | Response |
|---|---|
| 23 | Since this letter was written to the FAA, the Agency has provided the commenters and others with a number of opportunities to present their views, engage in discussions with Agency officials, and opportunities to submit additional views beyond the expiration of multiple comment periods. |

| Comment | Response |
|---|---|
| 24 | If and when the FAA approves the OMP in a Record of Decision, it will have done so only after complying with all applicable statutes, regulations, and other internal Agency obligations. |

**The FAA Cannot Approve the OMP**
**Because it Fails to Meet the Threshold System Planning Requirements**
**Under the Transportation Code and FAA's Rules and Regulation**

The FAA cannot consider approving the OMP in light Chicago's failure to meet the key planning prerequisites established by the Transportation Code and FAA regulations. These requirements ensure that major airport development projects – such as the OMP – are justified and consistent with regional, state and national transportation system needs. The FAA's own guidelines establish that the ALP is the end point of a hierarchical process that begins with state system and regional planning.

The Transportation Code and the FAA's regulations and Orders provide that airport development planning cannot be carried out in isolation, but must be considered within the context of a national/state/regional planning hierarchy. The highest level of the FAA's hierarchy is the National Plan of Integrated Airport Systems (NPIAS). Components of the NPIAS are determined by Statewide Integrated Airport Systems Planning, which, in turn, takes into consideration Regional/Metropolitan Integrated Airports Systems Planning. At the very bottom of the hierarchy, after the national, state and regional plans have been developed, are the individual Airport Master Plans (and the Airport Layout Plans developed under each master planning effort). The Airport Master Plan is developed by the airport operator to detail the long-range plans for an existing or proposed airport consistent with the objectives of the State and regional plans. 24

1. **The Statutory Requirements of the NPIAS and the FAA's Own Rules and Regulations Require a Careful and Deliberate Planning Process.**

To qualify as an eligible federal airport development project, the project sponsor must not only have an approved ALP for the airport, the "airport involved in a project for airport development must be included in the current NASP." 14 C.F.R. 152.107 (c) and (d). The NASP (now "NPIAS"), requires that the Secretary of Transportation and the Administrator **"shall maintain"** a national plan of integrated airport systems. 49 U.S.C. § 47103. Under the statute, the Secretary can "only" consider an airport development project that will involve federal grant monies if the project is consistent with "the current national plan of integrated airport systems" 49 U.S.C. § 47105(b)(2). The statute further provides that as part of the NPIAS plan, the Secretary and the Administrator **"shall consider** the needs of each segment of civil aviation and the relationship of each airport to – (1) **the rest of the transportation system in the particular area."** 49 U.S.C. § 47103.

Thus, system planning is a mandatory imperative requiring FAA to ensure examination of how the project fits into the state, regional and national air transportation network:

> "integrated airport system planning" means developing for planning purposes information and guidance to decide the **extent, kind, location, and timing of airport development needed in a specific area** to establish a viable, balanced, and integrated system of public-use airports, including –
> (A) **identifying system needs;**
> (B) developing an estimate of systemwide development costs;
> (C) **conducting studies, surveys, and other planning actions**, including those related to airport access, needed to decide which aeronautical needs should be met by a system of airports; and
> (D) standards prescribed by a State, except standards for safety of approaches, for airport development at nonprimary public-use airports

49 U.S.C.§ 47102 (8).



The FAA states that individual airport master planning should be undertaken "*within the framework of statewide and regional/metropolitan system plans.*"[1] Thus, the FAA has determined that regional and state planning should not be pieced together based on a patchwork of plans prepared by individual airport operators. Rather, an Airport Master Plan must be reflective of metropolitan, regional and statewide aviation needs.

It is clear from the FAA's airport planning guidance that the success and validity of individual airport planning depends on the context of, and must be closely coordinated with, the regional, state, and national processes. FAA Order 5090.3C, Field Formulation of the National Plan of Integrated Airport Systems (NPIAS), requires that airport capacity enhancement be evaluated not only as part of a Master Plan, but also "in the field office file and in the NPIAS database for the current, 5-year, and 10-year time periods." Order 5090.3C, p. 23.[2]

The need for the OMP has not been justified with the rest of the airport transportation system in the Chicago area as required by 49 U.S.C. § 47102. Indeed, the OMP is wholly inconsistent with what appears to be the System Plan ordered by the FAA in its 1984 O'Hare Record of Decision – the Chicago Airport Capacity Study prepared by Peat Marwick for the Illinois, Indiana and Wisconsin Departments of Transportation (Aug. 1988). That study does not contemplate adding runways or redeveloping O'Hare, but rather keeping O'Hare as is, and developing alternate capacity at a new regional airport.

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[1] See Airport Planning Hierarchy descriptions in FAA Advisory Circular No. 150/5070-6A, Airport Master Plans, June 1, 1985; and FAA Advisory Circular No. 150/5050-3B, Planning the State Aviation System, January 6, 1989.

[2] "Significant development (such as a new runway, terminal, people mover, etc.) beyond the 10-year period should also be entered in the database." *Id.*, p. 5.

Simply put, there is no State System Plan (or certainly no plan that has been made available to the public) that considers and supports Chicago's ill-conceived airport development project as it relates to the system and regional planning requirements of the NPIAS. Before the FAA can evaluate the OMP that requires billions of dollars of investment, including tens if not hundreds of millions of dollars of FAA funding, the FAA must have an approved State System Plan in place that defines a regional plan for Chicago.

The State System Plan lies at the center of the national airport planning hierarchy. FAA Advisory Circular No. 150/5050-3B, Planning the State Aviation System, characterizes State Airport System Planning as follows:

> Airport system planning at the state level lies between FAA's national planning as documented in the National Plan of Integrated Airport Systems (NPIAS) and individual airport master planning. **It feeds information 'up' to the NPIAS and 'down' to the individual airports.** AC 150/5050-3B, p. 2 (emphasis added).

A current state system that fully and adequately addresses the proposed construction at O'Hare and the regional alternatives under consideration is especially critical here because of: (1) the prominent role of O'Hare in the national air transportation system and its impact on the NPIAS, (2) the existence of compelling alternative airport development options under active consideration in the region that would eliminate the need for the OMP, and (3) the enormous project costs of the OMP that will inevitably impact federal funding decisions for other airports throughout the nation.

The FAA's planning requirements further describe the "special relationships" between state planning and planning at other levels of the hierarchy:

> The NPIAS must be based on well-coordinated system planning at the state level of government. Planning for the larger metropolitan/regional areas and state planning



> outside these areas should complement each other. How well this is achieved is an indication of the effectiveness of the state airport system planning process on the one hand and the metropolitan/regional system planning process, on the other. It is a function of state planning to assure adequate planning coverage and integration of efforts. AC 150/5050-3B, p. 2 (emphasis added).

The AC emphasizes the vital function state planning plays in overall airport planning, and the importance of having an organization that closely coordinates hierarchical efforts:

> In order to achieve a statewide system plan which is balanced and which reflects the benefit of local planning in the large urban areas, workable mechanisms for achieving state/regional and local cooperation must be developed .... the state should function as an 'umbrella' agency in bringing together its efforts and those of the larger urban areas. All state plans should be coordinated with ongoing and recently completed regional plans in the state, as well as plans of adjacent states.
>
> If individual regional or local efforts proceed on their own without clear and continuing coordination with the state effort, the final products are likely to be inconsistent, redundant, ill-timed, and overly costly. Thus, it is highly important that the states organize for a statewide planning process by seeking the cooperation of regional planning bodies. *Id.*, p. 8 (emphasis added).

The few operational details that have been disclosed on the OMP demonstrate that it would fail to meet the NPIAS objectives. The FAA's Order setting forth the requirements to meet the objectives of the NPIAS states "Annual Capacity or Annual Service Volume, as reported in the NPIAS, is the level of annual activity at which the average delay per operation is 4 minutes." FAA Order 5090.3C, p. 20. Yet, Chicago's own study, prepared by Chicago's consultant Ricondo and Associates, shows that the OMP would fail to meet the FAA's capacity definition of the NPIAS. Chicago's study shows that the OMP would produce delays in excess of 10 minutes at the TAF projected level of 66 million enplanements – more than double the level the FAA defines as acceptable. Moreover, with delays exceeding 10 minutes with 66

million enplanements, delays would be even higher at the 75 million enplanements projected jointly by the State and the City

This takes on added significance when one considers the Secretary's most recent Report to Congress on the NPIAS:

> Experience shows that delay increases gradually with rising levels of traffic until the practical capacity of an airport is reached, at which point the average delay per aircraft operation is in the range o 3 to 5 minutes. Delays increase rapidly once traffic demand increases beyond this level. **An airport is considered to be congested when average delay exceeds 5 minutes per operation. Beyond this point delays are extremely volatile, and a small increase in traffic, adverse weather conditions, or other disruptions can result in lengthy delays that upset flight schedules and impose a heavy workload on the air traffic control system.**
>
> NPIAS Report, p. 12 (emphasis added).

The OMP will have an inimical impact on the national integrated airport system plan because it will produce delays far beyond what FAA has established for airport development projects under the NPIAS. For this reason, it is not surprising that the Peat Marwick Airport Capacity Study – the only study available which addresses Chicago's needs on a regional basis – concluded that the appropriate solution was ***not*** to expand or add runways at O'Hare, but instead to develop an additional regional airport. This approach is also supported by the Secretary's Report to Congress:

> When a city becomes so large that it generates more than 10 to 12 million originating passengers per year, a second commercial service airport may be warranted. There are few cities this large: London, Paris, and Tokyo fit the example, as well as New York, Los Angeles, San Francisco, **Chicago**, Miami, Houston, Dallas-Ft. Worth, Boston, and Washington in the United States.
>
> *Id.* (emphasis added).

***



> New airports are recommended in the NPIAS for communities that generate a substantial demand for air transportation and either do not have an airport or have an airport that **cannot be improved to meet minimum standards of safety and efficiency**. In addition, **new commercial service and reliever airports are recommended for communities where existing airports are congested and cannot be expanded to meet the forecast demand for air transportation**.
>
> *Id.*, p. 43 (emphasis added).

The OMP is inconsistent with the only currently available State plan and is inconsistent with DOT's NPIAS policy and requirements. Moreover, O'Hare is already congested and Chicago's own consultant's analysis shows that the airport cannot be improved to meet forecast demand at acceptable levels of safety and efficiency. The Ricondo study and the Concerned Communities' expert study demonstrate this emphatically. On the other hand, there are no studies demonstrating conformity with the FAA's planning objectives. In light of the FAA's guidelines and the express conclusions of the Secretary's Report, it would be arbitrary and capricious and an abuse of discretion to proceed without a State System Plan and substantial evidence justifying the OMP and demonstrating its conformity with the NPIAS.

Further down the hierarchy, regional airport planning provides the framework under which individual airport plans should be developed. FAA Advisory Circular No. 150/5070-5, Planning the Metropolitan Airport System, states:

> The metropolitan airport system plan is a representation of the aviation facilities required to meet the immediate and future needs of the metropolitan area .... It provides the basis for definitive and detailed individual airport planning. AC 150/5070-5, p. 2

This again underscores the importance of coordination within the airport planning hierarchy. Moreover, the FAA correctly recognizes the complexity of airport planning with respect to metropolitan areas, like Chicago, that extend to more than one state, or overlap with

other metropolitan areas. Each of these considerations makes adherence to the "top-down" hierarchical structure of airport planning more critical:

> The metropolitan airport system plan should be properly interfaced with the *state airport system plan*, with particular emphasis given to dove-tailing the two plans in geographic areas which lie immediately beyond the limits of the metropolitan area. It is in these areas that many units of the metropolitan airport system will probably be located ....
>
> Also, where a metropolitan area spans several states, its airports may serve states other than those in which they are physically located. The relationships to these various state airport plans are, therefore, significant ....
>
> *Regional airport system plans* for geographically extensive areas should be reviewed to ascertain what will be happening beyond the metropolitan area. A need may be indicated for bringing together several metropolitan areas in one planning effort. This may result in recommendations which conserve resources by avoiding duplication of facilities and which improve overall quality of service to the public.
>
> The metropolitan airport system plan should contain sufficient information to render applicable portions acceptable for inclusion in the FAA *National Airport System Plan (NASP)*. In formulating a NASP, the FAA will include recommendations contained in the metropolitan plan, when the recommendations are in the national interest.
>
> *Id.*, pp. 3-4.

FAA Advisory Circular No. 150/5070-6A, Airport Master Plans, further describes the role of and interaction between each level of the airport planning hierarchy elements: NPIAS ← Statewide → Regional/Metropolitan → Airport Master Plans. This AC reinforces the overriding concept that the source of airport planning is not the individual desires of an airport



sponsor at the local level, but rather the transportation needs of the entire region.[3] In this regard, the AC states as follows:

> Airport master planning must be responsive to areawide comprehensive transportation planning. This can be achieved by building into the master planning process appropriate review, coordinative and participatory mechanisms.
>
> AC 150/5070-6A, Chapter 2, Section 2, "The Hierarchy of Planning," p. 9 (emphasis added).

The importance of these intertwined and hierarchical relationships is stated as follows:

> Airport and related planning processes have changed. The integration of airport planning with the other planning processes at state and regional governmental levels has introduced broader policy and planning considerations. The direct involvement in airport planning by state transportation authorities and regional transportation planning organizations has reinforced this change. *Id.*, pp. 1-2.

Thus, under the FAA's own planning provisions, the OMP cannot be approved on the basis of isolated airport master planning that considers only O'Hare and the particular Airport Layout Plan advocated by the City of Chicago. Rather, the proposed OMP – as well as the SSA and other regional alternatives – must be considered in the context of current and comprehensive regional planning within the framework of a state system plan – which the FAA has committed to fund and complete prior to further development of O'Hare.

[3] Advisory Circular, No. 150/5050-5, The Continuous Airport System Planning Process, dated November 28, 1975, identifies yet another regional subdivision in the hierarchical airport planning process upon which individual master planning should be based:

> The airport system plan, which is a representation of the aviation facilities needed to meet the short, intermediate, and long-range air transportation requirements of the area, establishes the role, generalized developmental requirements, and timing of development for individual airports within the system. This in turn provides the framework for detailed airport master planning. AC 150/5050-5, p. 1.

**2. The FAA has Already Determined that a State System Plan Must be Completed before any New Runway Construction at O'Hare Can be Approved.**

The last time the FAA evaluated a proposal for a major change to runways on the Airport Layout Plan at O'Hare, the FAA recognized the important alternative of developing a new major air carrier airport for Chicago and committed to funding studies of a new airport option as part of a State System Plan:

> Development of New Airport. Development of a new major air carrier airport was considered several times in the past, as well as in the recently completed Master Plan Study. This alternative was not selected because of difficulties in finding a suitable site, the extremely high costs of acquisition and development of a new site, and the long lead time to make it operational. Development of another air carrier airport to serve the Chicago Metropolitan Area **will be studied again as part of a State System Plan to be prepared by the Illinois Department of Transportation** under a series of grants to be funded by the FAA's Airport Improvement Program. The initial grant was issued in September 1984.
>
> 1984 ORD ALP ROD at 4 (emphasis added).

The FAA cannot ignore this final, prior determination and proceed to approve the OMP without a current State System Plan. First, as set forth above, the statutory obligations of NPIAS require it. Second, the FAA cannot ignore its own determination that would require the completion of such a plan. "[A]n agency must adhere to its precedents in adjudicating cases before it." *Consolidated Edison Co. of New York v. FERC*, 315 F.3d 316, 323 (D.C. Cir. 2003), citing *Hatch v. FERC*, 654 F.2d 825, 835 (D.C. Cir. 1981).

Moreover, all of the reasons for which the FAA previously determined not to proceed with the alternative of a new airport – namely, (1) problems with site selection, (2) high costs of acquisition and development, and (3) long lead time – have all been overcome and strongly favor



the alternative of a new South Suburban Airport. These issues need to be reconciled in the State System Plan the FAA committed would be completed:

> Site Selection. Peotone has been chosen as the location for a third major airport, the South Suburban Airport, to serve Chicago's future aviation demands. The FAA has already completed the Environmental Impact Statement and issued a Record of Decision approving the site selection for the SSA and protecting it against incompatible uses. The ROD's purpose and need statement recognizes the SSA to be an important regional aviation capacity alternative:
>
> The proposed Federal action is FAA site approval for a potential, future air carrier airport in the south suburban area of Chicago. The purpose of the FAA's site approval is to preserve the option of developing a potential, future air carrier airport to serve the greater Chicago region as determined necessary and appropriate to meet future aviation capacity needs in the region.
>
> FAA Record of Decision on the SSA (July, 2002) (emphasis added).

Furthermore, the ROD states that there is significant debate concerning the best way to meet future regional demand:

> While there is continuing debate regarding the options for providing additional aviation capacity in the region, resolution has not been reached on the means to meet the forecast demand. *Id.* (emphasis added).

Those are precisely the issues the FAA said "**will be studied** again as part of a State System plan" (1984 O'Hare ROD, emphasis added).

The OMP would drastically alter O'Hare and would commit the Chicago area -- and indeed the national plan of integrated airports – to a course of action that has not been vetted beyond the sponsor's desires for expansion at this single airport. For this reason, the FAA cannot leave open the critical issues it identified in the SSA ROD and allow the OMP to move

forward without resolving the "debate regarding the options for providing additional aviation capacity in the region." Before the FAA can evaluate the merits of the OMP, it must first have in place an approved State System Plan which defines the regional aviation needs for the entire Chicago metropolitan region. That prerequisite has not yet occurred.

Cost of Acquisition and Development. The evidence is overwhelming that the SSA will bring far greater incremental capacity to the Chicago Region ***better, fast and cheaper*** than attempting the complete reconstruction of O'Hare. Tearing up existing runways to make way for new ones is not an efficient way to build an airport. Moreover, the proposed land acquisition for expanding O'Hare (which is still inadequate for a safe and efficient six-parallel design) will come at enormous cost because it must be carved out of existing communities and will result in the destruction of homes, businesses and jobs. Building on a new greenfield site at Peotone will be far less expensive.

Lead Time. Similarly, the OMP will take far longer to complete. Trying to effect a massive reconstruction of an active, busy airport will be a logistical nightmare, driving up costs, creating enormous construction delays and seriously compromising security at O'Hare during the massive and lengthy construction program. The SSA is a greenfield development, and consequently new runways can be built at SSA in less time and without disrupting airport operations.

For these reasons, it is more vital than ever that the FAA adhere to the decision it made in the 1984 ROD -- and consider the problems at O'Hare and Chicago's air transportation needs on a regional basis, as part of a State System Plan.



**3. The FAA Cannot Approve or Fund the OMP if it is Not Consistent with the Required State System Plan.**

The FAA's regulations under 14 C.F.R. Part 151 bar approval of an ALP for a federal airport project if the project is not consistent with both the NPIAS and the existing area plan.

> § 151.39 Project eligibility.
>
> (a) A project for construction or land acquisition may not be approved under subparts B and C unless--
> (1) It is an item of airport development described in Sec. 151.35(a);
> (2) The airport development is within the scope of the current National Airport Plan;
> (3) The airport development is, in the opinion of the Administrator, reasonably necessary to provide a needed civil airport facility;
> (4) The Administrator is satisfied that the project is reasonably consistent with existing plans of public agencies for the development of the area in which the airport is located and will contribute to the accomplishment of the purposes of the Federal-aid Airport Program;
> (5) The Administrator is satisfied, after considering the pertinent
> information including the sponsor's statements required by Sec. 151.26(b), that--
> (i) Fair consideration has been given to the interest of all communities in or near which the project is located; .....

There is no existing area plan by the responsible public agency – the Illinois Department of Transportation – that is remotely consistent with the City of Chicago's six-runway expansion plan at O'Hare. To the contrary, the only area study that has been released – the 1988 Chicago Airport Capacity Study by Peat Marwick Report – does not recommend expanding O'Hare. The report concludes that the layout of O'Hare will remain fixed, that marginal increases in capacity at O'Hare will be achieved through operational measures, and that options for a third airport should be explored. The FAA cannot act inconsistently with its regulations and approve a six-runway OMP that is not consistent with the existing area plan.

**4. The FAA's Multi-Tiered Planning Regulations.**

In examining the options for regional and airport specific projects, the FAA requires examination of issues of consequence to aviation users, the affected communities, governmental entities and the like. Effective Airport Master Planning *and* Airport System Planning are both critical to achieving the statutory objectives of NPIAS and related regulatory and legislative programs. The capital required for the proposed developments are included in the FAA's fiscal planning. And, Congress relies on the data developed in the FAA-sanctioned exercises to estimate the AIP dollars to be authorized and appropriated. The planning requirements are not reports or regulations that can be discarded by the FAA or ignored by the Sponsors. There is substantial reliance on these plans throughout federal, state and local governments and legislature.

FAA's regulations recognize "airport system planning" and "airport master planning" as two distinct and separate requirements that are part of the intertwined hierarchical planning process discussed above. Each type of planning has different substantive and procedural requirements.

> *Airport System Planning* "means the development for planning purposes of information and guidance to determine the extent, type, nature, location, and timing of airport development needed in a specific area to establish a viable and balanced system of public airports."
> 14 C.F.R. § 152.3, Definitions.
>
> *Airport Master Planning* "means the development for planning purposes of information and guidance to determine the extent, type, and nature of development needed at a specific airport." *Id.*



The FAA's regulations expressly define two types of planning for a reason. These requirements ensure not only that the development needs will be met "at a specific airport" but also that the best choices are made for the "specific area," in this case, the Chicago region, to ensure a "viable and balanced" public airport system. Both of these considerations are highly relevant here. O'Hare is part of a multi-airport system, and when examined in the appropriate regional context, it is clear that the large scale overhaul of O'Hare as contemplated by the OMP will not maximize benefits to the regional airport system.

The development of the system planning needs of a large metropolitan area such as Chicago can be performed either by a regional metropolitan planning agency or by the state through its state system plan. As noted above in its 1984 Record of Decision on the 1980's proposed O'Hare expansion, FAA expressly stated that a state system plan for the Chicago area would be performed.

**5. FAA Funding Requirements for Planning Studies.**

Before the FAA can award a master planning grant 14 C.F.R. § 152.109 requires the FAA to determine one of the following:

> "(a) Airport master planning. A proposed project for airport master planning is not approved unless—
>
> ***
>
> "(5) In the case of a proposed project for airport master planning in a large or medium air traffic hub, in the opinion of the Administrator–
>
> (i) There is an appropriate system plan identifying the need for the airport;
>
> (ii) The absence of a system plan is due to the failure of the responsible planning agency to proceed with its preparation; or
>
> (iii) An existing system plan is not acceptable."

Chicago has already receive a $4.5 million master planning grant, and the FAA recently approved a further $222 million in PFC funding for studies and planning work on the OMP. Yet, the FAA has failed to make any of the determinations required under 14 C.F.R. § 152.109 — particularly §152.109(a)(5).

The Concerned Communities believe that there is such a State System Plan that has been prepared by the State of Illinois pursuant to the 1984 FAA Record of Decision -- and that the State System Plan expressly concludes that future traffic growth in the region should take place with a metropolitan airport system that consists of Midway airport, O'Hare Airport without any additional runways, and a new South Suburban Airport. A vastly expanded O'Hare as contemplated by the proposed "O'Hare Modernization Program" would be contrary to such a State System Plan.

**6. The FAA Cannot Proceed without "fair consideration" to the interests of the communities affected by the OMP.**

The FAA cannot fulfill its obligation that "fair consideration has been given to the interest of all communities in or near which the project is located" (14 C.F.R. § 151.39) without requiring the completion and public disclosure of a current State System Plan identifying the need for the OMP – including substantial evidence supporting a conclusion that the OMP is superior to other regional alternatives.

Moreover, FAA recognizes that at the heart of its multi-stage planning process is the requirement for full disclosure to the public — a requirement that FAA and Chicago have disregarded in the Airport System Planning and Airport Master Planning process.

> Public acceptance is dependent upon whether the potentially affected public understands and accepts the need for the development; receives complete, truthful, and unbiased information about the impacts; and recognizes that public concerns have been considered adequately and fairly. The only way to achieve these conditions is by designing and



> accomplishing a program to achieve them. One cannot gloss over unfavorable impacts or attempt to hide the true purpose of a development without arousing suspicion and opposition. It follows that the program for public involvement must be designed with careful consideration for not only providing accurate and unbiased information, but also for the perception of openness and completeness, along with a demonstrated commitment to the development of mitigation measures appropriate to the situation.
>
> AC 150/5070-6A, p. 52.

> Information about alternatives, and their financial, social, and environmental costs and benefits should be made available to the public as it is developed. The objective is to identify and air all of the problems before the decision is imminent. The probability of political acceptance is much enhanced if the public, and its representatives, elected or otherwise, understand the process and the results by participation rather than by having the results and recommendations presented as decisions already made.
>
> *Id.*

Despite the Concerned Communities' numerous requests for this mandatory information, the FAA and Chicago have kept it to themselves. FAA Order 5100.38B, the AIP Handbook, sets forth a number of very specific requirements for Master Plans — many of which do not appear to have been met by Chicago. There is no record of the following required master plan elements: 1) demand/capacity analysis for terminals, airway facilities or surface access facilities or a determination of capacity values for the airfield (Paragraph 406d); 2) facility requirements determination for runways, taxiways, terminal buildings and airport surface access (Paragraph 406e); schedules of plan implementation (Paragraph 406j); estimates of development cost of the project (Paragraph 406k) and financial plans for paying for the cost of the "O'Hare Modernization Program" (Paragraph 406l). *See* AIP Handbook at pp. 42-44.[4] Paragraphs 412 and 413 of the AIP Handbook provide additional explicit requirements as to the contents of a master plan grant application and the elements of review by the FAA of the application (including a project evaluation report by the FAA of the proposal for a master planning grant).

[4] This is only a partial listing of the normal components of a master plan. Repeated requests for access to this information have been rejected by the FAA and stonewalled by Chicago.

**CONCLUSION**

The FAA can only approve an airport development project that is consistent with the NPIAS, and with the existing plans of the area public development authority (the Illinois Department of Transportation). Chicago's studies show that the OMP cannot accommodate forecast traffic Chicago at delay levels proscribed by the FAA for NPIAS airports. Further, the FAA has previously determined that a State System Plan must be performed prior to allowing further capacity development at O'Hare. The OMP is not consistent with any available State or regional system plan and cannot be approved in accordance with the regulations.

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July 15, 2003

Woodie Woodward
Associate Administrator for Airports
ARP-1; Room 600E

Ruth Leverenz
Assistant Administrator for Regional
and Center Operations
ARC-1; Room 911

Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D.C. 20591

Re: City of Chicago O'Hare International Airport Modernization Program ("OMP")

Dear Ms. Woodward and Ms. Leverenz:

The City of Chicago recently announced a plan to fund the first phase of the O'Hare International Airport Modernization Plan ("OMP"). The City's proposed plan contemplates a substantial amount of federal AIP grants, in excess of $362 million, as well as a substantial amount of PFC authorizations, in excess of $500 million.

Elk Grove Village, the Village of Bensenville, and the City of Park Ridge, Illinois ("Concerned Communities") have grave concerns about the OMP project, including whether the proposed funding of the project meets applicable legal and regulatory requirements for AIP grants and PFC funding authorization.

The purpose of this letter is to advise the FAA that the Concerned Communities wish fully to participate in all FAA proceedings in opposition to the City's requests for AIP funds and PFC authorization for the OMP.

In order to have a meaningful opportunity to participate in these proceedings, the Concerned Communities respectfully request that the FAA

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| Comment | Response |
|---|---|
| 1 | The FAA responded via an Agency letter dated September 5, 2003 from Cecilia L. Hunziker to Robert E. Cohn, Esq. and J.E. Murdock III, Esq.<br><br>The FAA response letter noted that as of that time the FAA had received and approved three such funding applications from the airport sponsor, the first being a $4.5 million AIP grant to be used for master planning, the second being an approval for collection and use of $221 million in PFC funds for "concept development" work necessary for completion of FAA's Environmental Impact Statement (EIS) for OMP, and the third being an additional $10.3 million AIP grant for continuation of master planning work. This last AIP grant was issued in August 2003, and its scope generally encompasses EIS preparation, technical environmental consulting services, airfield/airspace simulation, and surface transportation planning.<br><br>The FAA response letter also noted the use of the OMP Document Library web site to provide information related to FAA's work on the OMP initiative. A heading on the website was added including Federally-approved funding request documentation (AIP and PFC), and a commitment was made to add applicable AIP/PFC-related documentation to the site as such documents were generated.<br><br>In addition, the FAA response letter noted that the action on the PFC application previously approved by FAA was the subject of pending litigation at that time. Therefore, further dissemination of information on that action was forgone until the legal issues were resolved. The FAA notes that the aforementioned litigation was decided by the US Court of Appeals, D.C. on July 27, 2004. The FAA refers the commenter to the court's decision on these matters.<br><br>Finally, the FAA response letter noted the public comment process inherent in the PFC application/approval process, and that the your clients are afforded an opportunity to participate in the PFC process via the public comment process. Further, the letter noted that the AIP program does not include direct public input during the AIP grant application process. Consequently, direct public input in the AIP grant application review/approval is not available. However, the FAA made a commitment that key documents associated with the AIP process would nonetheless, be posted to the OMP Document Library website. |

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ShawPittman LLP

Woodie Woodward
Ruth Leverenz
July 15, 2003
Page 2

provide the Concerned Communities copies of all applications (including all supporting documentation, information and data related to such requests) submitted to or issued by the FAA concerning Chicago's requests for FAA AIP funds and/or PFC authorization, and further request such documentation on an ongoing basis throughout the course of these proceedings.

The Concerned Communities look forward to working with the FAA to develop a full and accurate record with respect to the City's AIP and PFC funding requests. 1

Sincerely yours,

Robert E. Cohn
J.E. Murdock III
Counsel for the Concerned Communities

cc: Jeri Alles
Barry Cooper
Andrew Steinberg
Barry Molar
Joseph Karaganis

Document #: 1338046 v.1

| Comment | Response |
|---|---|
| 1 | Please see the response to this comment on the previous page. |

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ShawPittman LLP

A Limited Liability Partnership Including Professional Corporations

J. E. Murdock III
202-663-8342
sandy.murdock@shawpittman.com

September 30, 2003

Via Email and Federal Express

Michael W. MacMullen
Environmental Protection Specialist
Federal Aviation Administration
Great Lakes Region
2300 Devon Avenue
Des Plaines, IL 60018

Re: O'Hare Modernization - Environmental Impact Study (EIS), Public Outreach Session

Dear Mr. MacMullen:

Thank you for your letter of invitation to the Public Outreach Session scheduled for Friday, October 17, 2003. The Villages of Bensenville and Elk Grove welcome all meaningful opportunities for impact on the O'Hare Modernization Plan (OMP) Environmental Impact Study.

On behalf of the two communities, I write to confirm the participation of the below designated representatives: 1

Mayor Craig Johnson
Deputy Mayor James Johnson
Joseph Karaganis, Esq.
J. E. Murdock III, Esq.
Mr. Joseph Del Balzo
Mr. Carl Schellenberg

Sincerely,

J. E. Murdock III

#1952470

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| Comment | Response |
|---|---|
| 1 | This letter was included for informational purposes only. |

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ShawPittman LLP

MEMORANDUM

TO: Andrew Steinberg, Chief Counsel
FROM: Robert E. Cohn
Sandy Murdock
DATE: November 3, 2003

RE: FAA's Review of Chicago's O'Hare ALP

On behalf of the Village of Bensenville and Elk Grove Village (the "Villages"), we submit this presentation to explain why the FAA must defer consideration of the City of Chicago's application for approval of the proposed 6-runway Airport Layout Plan ("ALP") until the FAA has thoroughly evaluated (i) the viability and merits/deficiencies of the O'Hare Modernization Plan ("OMP), and (ii) other more viable regional alternatives to the capacity needs of the Chicago region. 1

**Introduction**

The OMP contemplates tearing up the existing runways at O'Hare and reconstructing an entirely new airport with a completely new layout with six parallel runways. City projects the cost of the project will be $6 billion, but aviation experts have determined that the ultimate costs of the OMP will more likely approach $20 billion. Moreover, the City has made it clear that over a billion dollars in federal funding authorizations will be required to finance this project. For Phase 1 alone the City stated that almost $400 million in AIP and almost $650 million in PFC funds will be required. Indeed, Chicago has already received over $14.5 million in AIP master planning grants and over $220 million in PFC funds for OMP master planning. 2

The OMP if allowed to proceed will unnecessarily destroy surrounding communities and tear up religious cemeteries that have existed for 150 years. The City has stated that once the ALP is approved it intends to proceed with the acquisition and demolition (through new quick-take condemnation authority it recently obtained from the State of Illinois) of the homes and businesses located in the Villages and of 150-year old religious cemeteries adjacent to the airport. This action will literally destroy the economic foundation of the Villages. 3

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| Comment | Response |
|---|---|
| 1 | In response to the City of Chicago's submission of draft proposed Airport Layout Plans submitted in both December 2002 and October 2003 the FAA has been conducting a comprehensive review of the submittals. FAA is also completing its NEPA process by preparing this EIS. Alternatives to the City's proposal are identified and presented in detail in **Chapter 3** of the EIS.<br><br>No decision on approval of the proposed ALP will be made until the NEPA process is complete. All FAA lines of business as well as the Transportation Security Administration have participated in the review of both the December 2002 and October 2003 ALP submittals by the City of Chicago. . |
| 2 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** For more on PFC and AIP issues related to the OMP, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |
| 3 | Please see topical responses G-4 and I-1, on pages U.5-34 and U.5-38, respectively.<br><br>In addition, in response to this comment and others, please see **Chapter 5, Section 5.22** for the FAA's discussion of legal issues involving potential destruction of St. Johannes and Rest Haven Cemeteries. |

FAA has announced that its ALP review of the City's proposed 6-runway will examine only the narrow issue of "airspace" compatibility. FAA is proceeding on this narrowly focused track **before** completion of the City's Master Plan (a process which has only just begun and as to which there has been no public participation) and **before** FAA evaluates the viability of the OMP, and **before** it evaluates less destructive options to address the need for increased aviation capacity in the Chicago region. Those critical issues will be deferred for later action in response to AIP/PFC requests.

The Statute and circumstances of this case require the FAA to consider the broader issues of the viability of the OMP and less destructive alternatives of the OMP before action on the ALP. 4

First, the statute requires FAA to conduct a broader inquiry. Thus, Section 47107 requires FAA to approve any change in a airport layout plan. That provision is a component of the statutory AIP and grant assurance scheme. Section 47107(a)(16) requires the FAA to examine at a minimum whether a revision to an airport's ALP will "affect adversely safety, utility and efficiency of the airport". By its terms, this is broader than mere airspace compatibility. Moreover, that provision must be read in the context of other related statutory provisions such as, for example, §47103 (g), §47106 (a) and §47101. The statutory scheme requires an FAA determination of whether the 6 runway plan's impact on the overall airport's efficiency and utility, including whether or not it achieves the goals professed by the City, and whether it is consistent with national, state and regional plans, before it approves the ALP. 5

Second, under the circumstances of this project, the FAA is required to make a broader inquiry of the OMP issues because (1) the City has announced and the FAA is on notice that the City will acquire and demolish property in the Villages once ALP approval is obtained (and this has been affirmed by the City in its hand-out in the recent public outreach session), and (2) the City has stated that it cannot proceed with OMP without hundreds of millions of dollars of AIP grants and PFC authorizations. 6

Mayor Daley's July 9, 2003 press release stated that at least $363 million in AIP grants and $657 million in PFC funds will be required.

Thus, FAA funding decisions are inextricably linked to the OMP and to the ALP. AIP funding applications require evaluation of the cost-benefits of the proposal. Approval the ALP as a first step without examining the merits of the OMP will unnecessarily "destroy" the Villages and prejudge FAA decisions on the funding requests. Once the homes, businesses, parklands and cemeteries are destroyed the FAA's ability to make a meaningful decision on the merits of the OMP that would avoid such destruction will be

- 2 -

| Comment | Response |
|---|---|
| 4 | In response to the City of Chicago's submission of draft proposed Airport Layout Plans submitted in both December 2002 and October 2003 the FAA has been conducting a comprehensive review of the submittals. FAA is also completing its NEPA process by preparing this EIS. No decision on approval of the proposed ALP will be made until the NEPA process is complete. All FAA lines of business as well as the Transportation Security Administration have participated in the review of both the December 2002 and October 2003 submittal by the City of Chicago. Airspace issues are only one aspect of this review. |
| 5 | Please see response to comment 4 above. |
| 6 | See response to comments 2 (cost) and 4 (ALP review) above.<br><br>No decision on approval of the proposed ALP will be made until the NEPA process is complete.<br><br>With respect to discretionary funding, the commenters are currently being provided an opportunity to present their views concerning the LOI application outside the NEPA process.<br><br>With respect to the first paragraph, the PFC approval of impose and use is a separate process with its own consultation and comment process pursuant to 14 CFR Part 158. |
| 7 | This comment was written prior to the completion of the DEIS and prior to the City's O'Hare Master Plan. The commenter's issues related to funding, land acquisition, public outreach , and access to information have been address in the response to the comments above and in topical responses G-4 and I-1, on pages U.5-34 and U.5-38, respectively.<br><br>In response to this comment and others, the FAA has added **Section 5.23** to **Chapter 5** of the EIS related to due process rights of the commenter. |

permanently lost! See La Raza Unida v. Volpe, 337 F. Supp. 221, 231 (N.D. Ca 1971), cert denied, 409 U.S. 890 (1972):

> "It does little good to shut the barn doors after all the horses have run away. If the federal statutes and regulations are to supply any protection at all it must be prior to the time the residents have left and the deleterious effects to the environment have taken place. All the protections that Congress sought to establish would be futile gestures were a state able to ignore the spirit (and letter) of the various acts and regulations until it actually receives federal funds. Given the realities of actual highway displacement and construction, the statutes and regulations must apply immediately or their purpose will be frustrated."

The City has turned the process on its head and the FAA must not allow that to continue. The City wants to use a piecemeal approach to isolate the ALP from critical analysis in order to move forward with its land acquisition/destruction program prior to evaluation of the substantial deficiencies of the OMP. The OMP involves decisions of historic proportions and should have the benefit of a full, open public process. The City's approach is to pay lip service to "public outreach" while in fact minimizing public access to critical reports and data that would allow interested parties to meaningfully comment on the OMP. The FAA, as the federal actor, must ensure that the process is transparent and open.

In light of the foreseeable and substantial adverse impacts on the Villages, the Villages have a right under traditional tenets of administrative law and due process to meaningfully participate in the process and to provide the FAA with countervailing information and comments on the flaws of the OMP. That has not occurred. The City has hidden all of the key data and information. Most of the Villages requests to FAA for information for a meaningful and objective administrative process have either been unanswered or rejected. Without access to objective decisionmaking and without access to information and data, the process is a sham. 7

**Discussion**

1. **FAA has turned the approval process on its head.**

In December 2002 Chicago asked FAA to approve the proposed Airport Layout Plan, before completion of the Master Plan for the OMP and before FAA evaluates the merits and deficiencies of the City's six-runway plan. The FAA has already spent almost $15 million in AIP grants. Under the FAA's own guidelines, the ALP is the **end product** of the National, State and Master Planning processes not the beginning. The Master Plan has only just begun. Moreover, contrary to FAA requirement, the Master Plan process has

- 3 -

| Comment | Response |
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| 7 | Please see the response to this comment on the previous page. |

been shrouded in secrecy. The City has failed to disclose critical facts and data necessary to evaluate the OMP.

The Appendix hereto sets forth a description of the FAA's planning requirements and process by which system, regional, state, airport master plans and ALPs are to be accomplished. The FAA's airport planning Orders and Advisory Circulars make it clear that isolated airport layout development without coordination with a current and comprehensive state, regional and master plan is flawed and inconsistent with FAA's objectives and policies.

Under the statutory scheme the ALP process requires a broader evaluation of efficiency and utility of the project and its compatibility with national, state and region plans. Thus, the ALP approval provision set forth in Section 47107 which requires FAA to evaluate at a minimum whether the proposed ALP will "affect adversely safety, utility and efficiency of the airport" must be read in the context of other related statutory sections. For example, § 47103 requires the FAA to "provide a safe, efficient and integrated system of public-use airports"; § 47104 (a) requires the FAA to provide grants for the purpose of "maintaining a safe and efficient nation-wide system of public-use airports that meets the present and future needs of civil aeronautics"; and § 47101 (g) which requires that the FAA to coordinate with state and local officials "in developing airport plans, that the "process of developing airport plans and programs shall be continuing, cooperative and comprehensive..."[1] 8

**2. ALP review must follow the Master Planning process, not precede it.**

As discussed in the Appendix, Master Planning under FAA manuals requires a thorough and public evaluation of regional requirements, and rigorous cost and financial feasibility analyses of all alternative options. Because the traffic forecasting and consideration of capacity options elsewhere in the region is essential to evaluating the economic viability, cost-benefit, federal funding issues relating to OMP, it is imperative

[1] § 47010 (g) further directs the FAA to encourage sponsors "to develop airport master plans and airport system plans" that "are integrated with metropolitan plans to ensure that airport development proposal include adequate consideration of land use and ground transportation access" and that "foster effective coordination between aviation planning and metropolitan planning."

- 4 -

| Comment | Response |
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| 8 | There is no FAA requirement for the order of the Master Plan in relationship to the Airport Layout Plan (ALP). A Master Plan is a voluntary document developed by the airport sponsor and is only accepted by the FAA, but is not approved. An ALP, however, is a document that is submitted to the FAA for FAA approval, and this approval is necessary for the sponsor to receive federal funds. Many sponsors submit the Airport Layout Plan for FAA review and approval without ever submitting a Master Plan.<br><br>There are no FAA requirements for development of a state system plan or metropolitan regional plan to be followed by a master plan as a precursor to the development of an airport layout plan. With respect to system planning guidance, FAA's Advisory Circular for System Planning does not specifically state that a Master Plan should be developed in conjunction with an ALP. However, the City of Chicago has developed a Master Plan and the FAA is thoroughly reviewing the Plan concurrently with its review of the City's Airport Layout Plan.<br><br>Also, please see responses to comments 12, 14, 21, and 24 within *ShawPittman's June 27, 2003 letter,* on pages U.4-59, U.4-61, U.4-66, and U.4-70, respectively. |
| 9 | Please see response to comments 1-8 above. |

for FAA and the City to complete the master planning process (which must incorporate system and regional planning) before the ALP can be approved. That has not been done.

As recently as October 6, 2003, FAA sent the City substantial and detailed comments on draft reports submitted by City in connection with the City's master plan and ALP. none of those draft reports were disclosed to the public. This is contrary to FAA requirements that the master planning process maximize public participation:

- "Public acceptance is dependent upon whether the potentially affected public understands and accepts the need for the development; receives complete, truthful, and unbiased information about the impacts; and recognizes that public concerns have been considered adequately and fairly. The only way to achieve these conditions is by designing and accomplishing a program to achieve them. **One cannot gloss over unfavorable impacts or attempt to hide the true purpose of a development without arousing suspicion and opposition. It follows that the program for public involvement must be designed with careful consideration for not only providing accurate and unbiased information, but also for the perception of openness and completeness, along with a demonstrated commitment to the development of mitigation measures appropriate to the situation.**" Airport Master Plans FAA Advisory Circular AC No. 150/5070-6A at 52 (emphasis added)
- "**Information about alternatives, and their financial, social, and environmental costs and benefits should be made available to the public as it is developed. The objective is to identify and air all of the problems before the decision is imminent.** The probability of political acceptance is much enhanced if the public, and its representatives, elected or otherwise, understand the process and the results by participation rather than by having the results and recommendations presented as decisions already made." Id. (emphasis added)

Thus, the FAA did not have the benefit of critical public input on those reports. Nevertheless, and despite the lack of public input, the FAA's October 6 letter attaches 19 pages of comments on the City's reports.

The FAA's October 6th letter acknowledges that the ALP is intrinsically related to and a part of the master plan review process. In the October 6th letter, the FAA directed the City to provide a host of additional material, including (1) "an OMP financial plan...funding sources (AIP, PFC, entitlements, discretionary, bond, others), and

- 5 -

| Comment | Response |
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| 9 | Please see the response to this comment on the previous page. |

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amounts"; (2) "a cost benefit analysis for OMP"; (3) "documentation on the economic impact of OMP on the City of Chicago **and the region**"; (4) "a discussion of the City's public outreach program"; and (5) a "discussion of airport capacity and delay..[including] constrained and unconstrained airfield capacity, delay numbers that compare a build and no build scenario, and other capacity and delay issues, such as runway versus airfield delay numbers..."

It is clear the City wants FAA to use a piecemeal approach and isolate the ALP approval from the broader considerations in order to avoid the critical analysis of the deficiencies (which are legion) of the OMP in order to allow it to move forward with its land acquisition/community destruction program. 9

**3. The FAA should evaluate the merits of the OMP and of AIP/PFC funding issues prior to considering the City's flawed ALP.**

Knowing that the destruction of the communities is the inevitable outcome of ALP approval, the FAA has the legal obligation to evaluate the merits of the OMP including viable alternatives that would be less destructive to the surrounding communities and to the religious cemeteries, prior to approving the ALP application. This broader evaluation is especially required in light of the fact that the City has made it clear that the OMP cannot be funded without AIP grants and PFC funds.

Therefore, FAA must consider the full panoply of AIP/PFC and regional planning funding issues prior to its ALP decision, including: the availability of other more effective regional alternatives; whether the benefits of the OMP exceed its enormous costs; whether the OMP can actually meet the projected demand; whether capacity will in fact be increased; whether delays will increase rather than decrease; whether the City has a viable financial plan to fund the OMP; whether the FAA should authorize hundreds of millions of AIP and PFC dollars?

FAA has told the Villages that the FAA will examine only airspace compatibility issues. Such an approach is inconsistent with the statute, which by its terms requires examination of whether the ALP change will adversely impact the "safety, utility or efficiency of the airport." Our experts will demonstrate that the ALP will produce such adverse impacts. Furthermore, nothing in the statute prescribes FAA from conducting a full evaluation of the OMP issues as part of the ALP. Indeed, because the FAA has been advise of the consequences to the communities of any ALP approval, FAA is on notice and therefore is required to examine alternatives to the 6 runway plan. 10

- 6 -

| Comment | Response |
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| 9 | Please see the response to this comment on page, U.4-86. |
| 10 | As discussed in response to comment 6 above, the PFC and AIP processes are separate and distinct from the NEPA process. The FAA does not agree that all PFC and AIP related funding approvals must be made prior to the issuance of the Record of Decision. Therefore, FAA will process any PFC and AIP requests through the normal course of business.<br><br>In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |

4. **Access to Information and Data-** In order to meaningfully participate in the master planning and ALP processes, the Villages have asked for access to all of the key information and date which the City and FAA have exchanged on the OMP. The City has failed to provide the public with the data, reports, and analyses of the proposed expansion plan that could either support or rebut the City's exaggerated claims about the project. In addition, the City has yet to disclose a financial plan for the project that will enable it to obtain the financial resources to fund the massive project. The FAA website is insufficient. For example, we need to be able to have access to FAA computer simulations and capacity models and all of the reports and underlying material that were submitted to FAA and we the subject of the FAA's October 6th letter. 11

5. **There are serious questions about whether the OMP will meet its claimed benefits.**

Highlights:

- OMP will increase, not reduce delays and will not add capacity to justify its huge costs.
  - City (Ricondo) forecasts 66 million annual enplanements producing 10 minutes of average annual delay per operation. However, FAA's own manuals state that an airport is considered **congested** with delays exceeding **3-5 minutes**. In short, the OMP will not have the capacity to carry even the 66 million enplanements the City itself project. The capacity when measured by the FAA's 3-5 minute standard would be substantially less than 66 million. Meaning the benefits of the OMP are illusory.
  - In fact the capacity short-fall would be even greater. The State and the City prepared a joint forecast showing 75 million enplanements for O'Hare (total regional enplanements of 112 million). The OMP will not have enough effective capacity serve 66 million much less the higher 75 million forecast by the City and the State. Again, a waste of money for no improvement (indeed for an increase) in delays.
- The shortfall between the City's demand/capacity claims and reality affects (and undermines) every facet of the FAA's analysis from alternatives, to cost-benefit, to environmental impacts, to purpose and need!
- The OMP design proposes two sets of three parallel runways on either side of the terminal buildings. All but two outermost OMP parallel runways will

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| Comment | Response |
|---|---|
| 11 | The FAA has and continues to make relevant information available to the public. For example the FAA has posted over 7.5 million pages of EIS related documentation on its public web site, www.agl.faa.gov/OMP/.<br><br>Subsequent to the date of this letter, FAA completed its EIS related modeling and posted this information on its web site. The simulation modeling files (including assumptions, input files, and output files) have been made publicly available in the draft final format beginning approximately 7 months prior to the release of the Draft EIS.<br><br>More information on public involvement regarding the EIS process can be found in topical response A-3, on page U.5-4. |
| 12 | The OMP (Alternative C) significantly reduces delays in comparison to the No Action Alternative while accommodating approximately 200,000 additional annual operations. Please see **Appendix D** of the EIS for a description of the modeling process and results. |

be over 10,000 feet long. Because of the length and location of the parallels, aircraft would be required to taxi across one or two runways to access the terminal. As observed by NATCA "This creates a runway incursion problem, which is a very serious safety concern".

- Today, the total annual operations within O'Hare Class B Airspace exceed 1.6 million. The plan to increase ORD alone to 1.3-1.6 million and the continuing increase at Midway, Du Page County and Palwaukee would make it the most congested airspace in the nation. The impact of this level of airspace congestion on safety, controller workload, frequency congestion, airspace redesign and space/equipment requirements of the TRACON must be carefully evaluated.
- The loss of the existing crosswind runway capability, which is particularly important during winter months when there are strong northwest winds, adversely impacts safety under crosswind conditions.
- Construction of the OMP will be a logistical nightmare and will disrupt operations throughout the system for more than a decade.
- Security- O'Hare has been recently criticized for security failures today with respect to truck access. One can only imagine what will happen with hundreds/thousands of truck movements in and out of the airport on a weekly basis for major construction.
- The additional airport debt service required to fund the OMP increases the operating deficit to be funded by airline charges. This increase in charges results in a higher cost per enplaned passenger ("CPEP") The marginal CPEP in constant dollars for ORD due solely to increased debt service load peaks at $160 and levels off to a minimum of $30 in 2022...the highest of any airport in the U.S.
- OMP will drain AIP resources for the rest of the nation. OMP will require many hundreds of millions of AIP dollars.
- Other more viable alternatives. Some combination of modernization of O'Hare and expansion of capacity at South Suburban Airport. NATCA has proposed that a single new southern runway will achieve most of the predicted congestion/delay benefits. 12

- 8 -

| Comment | Response |
|---|---|
| 12 | Please see the response to this comment on the previous page. |

ShawPittman LLP

MEMORANDUM

Appendix

**Description of FAA's Planning Process Requirements.** 13

The Statute and the FAA's Orders underscore FAA's "hierarchical" approach to airport planning. These reflect FAA policy and objectives.

Section 47101 (g) of the Transportation Code states as Congress' policy that the FAA "shall take each of the following actions":

"Goals for Airport Master and System Plans.- Encourage airport sponsors and State and local officials to develop airport master plans and airport system plans that-

(A) foster effective coordination between aviation planning and metropolitan planning;

(B) include an evaluation of aviation needs within the context of multimodal planning;

(C) are integrated with metropolitan plans to ensure that airport development proposals include adequate consideration of land use and ground transportation access."

Section 47103 of the Act relating to the National Plan of Integrated Airport Systems (NIPIAS) states:

> "The Secretary of Transportation shall maintain the plan for developing public-use airports in the United States, named "the national plan of integrated airport systems". The plan **shall** include the kind and estimated costs of eligible airport development the Secretary of Transportation considers necessary to provide safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics."

Section 47106 requires the FAA to ensure that project grants be made only if the Secretary is satisfied that "the project is consistent with plans (existing at the time the project is approved) of public agencies authorized by the State in which the airport is located..." and that "enough money is available to pay the project costs that will not be paid by the United States Government..." Note: Our experts can demonstrate that the financial plan for the OMP is unachievable and that there will not be enough money to pay for the OMP. It makes no sense and would be inconsistent with the statute for the FAA to

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| Comment | Response |
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| 13 | Please see response to comment 8, on page U.4-86. |

approve the ALP knowing that the City intends to begin demolition of the communities prior to examining the viability of the OMP.

At the highest level of the planning hierarchy is the FAA's NIPIAS. Components of the NIPIAS are determined by the Statewide Integrated Airport Systems Planning, which, in turn takes into consideration Regional/Metropolitan Integrated Airport System Planning. At the very bottom and the end product of this planning is the ALP for a particular airport.

In the FAA's 1984 Record of Decision on O'Hare's expansion, the FAA expressly stated that a state system plan would be performed and indeed granted the State AIP funds for that purpose.

The relationship between FAA's responsibility to develop the NPIAS under 49 U.S.C. §47103 and the state "system plans" and individual airport "master plans" are spelled in FAA Orders and Advisory Circulars which explain the regulatory policies requirements for system planning and master planning. See *Airport Master Plans* FAA Advisory Circular AC No. 150/5070-6A; *Planning The State Aviation System*, FAA AC No. 150/5050-3B. As stated in *Airport Master Plans* FAA Advisory Circular AC No. 150/5070-6:

"The Hierarchy of Planning

a. Airport Plans at the national, state, regional/metropolitan area and individual airport levels of government are formulated on the basis of overall transportation demands and coordinated with other transportation planning and comprehensive land use planning.

b. Airport Planning in the United States is performed at several levels as follows:

(1) The National Plan of Integrated Airport Systems, a 10 year plan continually updated and published biennially by the FAA, lists the public use airports and their development which are to be considered in the national interest and thus eligible for financial assistance for airport planning and development under the Airport and Airway Development Act of 1982.

(2) Statewide Integrated Airport Systems Planning identifies the general location and characteristics of new airports and the general expansion needs of existing airports to meet statewide air transportation goals. This planning is performed by state transportation or aviation planning agencies.

(3) Regional/Metropolitan Integrated Airport System Planning identifies airport needs for large regional metropolitan areas. Needs are stated in general terms and

- 10 -

incorporated into statewide system plans. This planning is done by regional/metropolitan planning agencies.

(4) Airport Master Plans are prepared by the operators of individual airports with the assistance of consultants. They detail the long-range plans of the individual airport within the framework of statewide and regional system plans.

c. Airport Master Planning must be responsive to areawide comprehensive transportation planning. This can be achieved by building into the master planning process appropriate review, coordinative and participatory mechanisms."
*Airport Master Plans* at 9.

The relationship between the State System Plan and the NPIAS above and the individual airport master plans is spelled out in *Planning The State Aviation System*, FAA AC No. 150/5050-3B.

"State airport system planning (SASP) is the process which results in the determination of the airport (including heliport and float plane facilities) and airport related facilities needed to meet the current and future air transportation needs of the state.

It [State Airport System Planning] incorporates metropolitan/regional airport planning and provides direction for airport master planning

The purpose of state airport system planning, described in its broadest sense, is to determine the extent, type, nature, location, and timing of airport development needed in the state to establish a viable, balanced, and integrated system of airports."

FAA AC No. 150/5050-3B at 2 (emphasis added)

"Airport system planning at the state level lies between FAA's national planning as documented in the National Plan For Integrated Airport Systems (NPIAS) and individual airport master planning. It [State Airport System Planning] feeds information 'up" to the NPIAS and "down" to individual airports."

Id at 2

"State system planning should provide information, control/direction, and policy guidance for airport master planning."

Id at 7 (emphasis added)

FAA Order 5090.3C requires that airport capacity enhancements be evaluated not only as part of a Master Plan, but also "...in the NPIAS database for the current, 5-year, and 10-year time periods." AC 150/5090-3C, December 4, 2000, p.23.

The policy importance of coordination of local plans with state plans is underscored by the following statement in AC 150/5050-3B:

> If individual regional or local efforts proceed on their own without clear and continuing coordination with the state effort, **the final products are likely to be inconsistent, redundant, ill-timed, and overly costly.**
>
> AC 150/5050-3B, p. 8.

Moreover, at the heart of this multi-stage planning process is the FAA requirement for full disclosure to the public — a requirement that Chicago has made a mockery of.

"Public Participation

Public acceptance is dependent upon whether the potentially affected public understands and accepts the need for the development; receives complete, truthful, and unbiased information about the impacts; and recognizes that public concerns have been considered adequately and fairly. The only way to achieve these conditions is by designing and accomplishing a program to achieve them. One cannot gloss over unfavorable impacts or attempt to hide the true purpose of a development without arousing suspicion and opposition. It follows that the program for public involvement must be designed with careful consideration for not only providing accurate and unbiased information, but also for the perception of openness and completeness, along with a demonstrated commitment to the development of mitigation measures appropriate to the situation."

Airport Master Plans FAA Advisory Circular AC No. 150/5070-6A at 52

"Information about alternatives, and their financial, social, and environmental costs and benefits should be made available to the public as it is developed. The objective is to identify and air all of the problems before the decision is imminent. The probability of political acceptance is much enhanced if the public, and its representatives, elected or otherwise, understand the process and the results by participation rather than by having the results and recommendations presented as decisions already made."

Id. at 52

- 12 -

*FAA Order 5100.38B*. sets forth a number of very specific requirements for Master Plans: 1) demand/capacity analysis for terminals, airway facilities or surface access facilities or a determination of capacity values for the airfield (Paragraph 406d); 2) facility requirements determination for runways, taxiways, terminal buildings and airport surface access (Paragraph 406e); schedules of plan implementation (Paragraph 406j); estimates of development cost of the project (Paragraph 406k) and financial plans for paying for the cost of the "O'Hare Modernization Program" (Paragraph 406l). Paragraphs 412 and 413 of the *FAA Order 5100.38B. AIP Handbook* provide additional explicit requirements as to the contents of a master plan grant application and the elements of review by the FAA of the application (including a project evaluation report by the FAA of the proposal for a master planning grant. 13

Document #: 1360328 v.1

- 13 -

| Comment | Response |
|---|---|
| 13 | Please see the response to this comment on page, U.4-91. |

031104_01

**Comments of**
**Bensenville and Elk Grove Village**
**On Purpose and Need**
**and Screening Alternatives**

**I. Introduction**

The purpose of these comments is to address three interrelated subjects: 1) the purpose and need to which the proposed O'Hare Modernization Project (OMP) is addressed; 2) the scope of alternatives analysis necessary to identify and evaluate the alternatives which meet the purpose and need; and 3) objective screening criteria to be used in evaluating proposed alternatives.

Preliminarily, we reiterate our continuing objections to several ongoing actions by the FAA Regional officials and the City of Chicago. 1

**Improper Exclusion of System Planning and Master Planning Framework**

First, we do not believe it is proper or legal to continue to exclude from the FAA decisional process the analytical framework embodied in the FAA's System Planning and Master Planning requirements. The FAA's 1984 Record of Decision declared emphatically that any decisions regarding additional airport capacity for O'Hare and/or the Chicago metropolitan area would be made within the framework of a state system plan to be funded by the FAA and attended by appropriate public input and participation. Just such a State System Plan was prepared (after extensive public input) and that System Plan concluded that the existing and future commercial aviation needs of the Chicago metropolitan Region could best be met by a commercial airport system that included Midway, an O'Hare without any changes in its existing runways, and a South Suburban Airport.

Further, the Chicago OMP project is totally inconsistent with the State System Plan developed as an essential element of the 1984 FAA ROD on O'Hare. Moreover, we are unaware of any subsequent State System Plan that calls for a combination of O'Hare, Midway and South Suburban Airport development different than the State System Plan and ask that we be given an opportunity to participate in the development of any new state system plan before any further consideration of the proposed OMP project. The OMP can only be considered within the framework of a state system plan that addresses the aviation needs of the Chicago metropolitan region.

The logical elements of system planning and master planning are necessarily embodied as well in FAA's performance of its statutory duties to develop a national plan (NPIAS) for airport development that insures a "safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics." 49 U.S.C. §47103. Under the requirements established by FAA for identifying those airport development projects needed to meet the needs for civil aviation in the Chicago metropolitan area (See, *e.g.*, FAA NPIAS Handbook), the OMP project does not fit within a metropolitan program to meet those needs, nor does the OMP project meet the

| Comment | Response |
|---|---|
| 1 | Comment noted. As a general matter, it may be helpful to note that this document was a very early submission in the EIS process. The issues that it raises were later revisited in greater detail by these commenters and others. Accordingly, the fact that many of the responses immediately below refer the reader to other documents and other responses is simply a reflection of the fact that all of these issues are discussed and commented upon in greater detail elsewhere. |
| 2 | Please see the responses to comments within *ShawPittman's June 27, 2003 letter,* beginning on page U.4-55. |

requirements for inclusion in the approved NPIAS database that are set forth in the FAA order.

Finally, the October 6, 2003 letter from Mr. Barry Cooper of the FAA to the City of Chicago makes clear that the FAA plans on considering some (but apparently not all) components of the FAA Master Planning process in the FAA's decision process on the OMP project. Yet, the FAA has yet to provide an explanation of how it will use or consider the elements of the master planning process as "relevant factors" in reaching its decision on the OMP project. Clearly the state system planning, master planning, and NPIAS formulation requirements are "relevant factors" to be considered and addressed by the FAA in evaluating and deciding upon the OMP project. 2

**Improper Withholding of Access to Data and Documents for Both the Master Planning Activities and the EIS.**

As we have repeatedly emphasized, the FAA and the City of Chicago have wrongfully denied our communities access to the data and documents being used or submitted to the FAA relating to both the Master Plan and the EIS process. This withholding of critical data and documents has made a sham of any public participation process since the impacted communities cannot provide meaningful comments on purpose and need, alternatives, or any other aspect of the FAA decisional process without prior access to these data and documents. 3

**Improper and Overly Narrow Draft Purpose and Need Statement**

We again state our position that it is not appropriate, or legally justified, to solicit comments on alternatives screening criteria: 1) in the absence of a defined purpose and need, 2) in response to a draft/preliminary purpose and need which, by its own terms, excludes consideration of alternatives off of the ORD land mass, 3) without any of the information relevant to the ALP contained in the non-public Airport Master Plan (AMP); and 4) without examination of the purpose and need in the context of the FAA's System Planning and Master Planning framework as well as the FAA's responsibilities under the NPIAS. 4

**What is the legal basis of the FAA decision and what are the "relevant factors" the FAA uses in making its decision?**

At the October 17 FAA meeting, we asked the following questions: What is the specific legal basis for FAA's approval or disapproval authority of the proposed OMP and OMP Airport Layout Plan? Further, what are the "relevant factors" (*e.g.*, the elements of system plans and/or master plans, cost, financial feasibility, ability to meet forecast demand, capacity limitations, criteria for inclusion in FAA AIP and PFC funding approvals, *etc.*) that the FAA considers in making its decision? For example, will the FAA consider cost-benefit and/or financial feasibility in deciding on whether to approve the ALP? To date we have not received an answer to these questions and these answers are needed in order for us to provide intelligible and meaningful comments on purpose and need, alternatives and alternative screening requirements. 5

2

| Comment | Response |
|---|---|
| 2 | Please see the response to this comment on the previous page. |
| 3 | Throughout the EIS process, the FAA has made the appropriate documents available through posting on the FAA's O'Hare Modernization web site (http://www.agl.faa.gov/OMP/) and through direct mailing of electronic and paper copies to various requesters. This information was made available as soon as practical starting at least six months in advance of the public release of the Draft EIS. |
| 4 | Please see the response to the issues raised by the commenter, in greater detail, within *Bensenville-Elk Grove-Park Ridge's Comments on the Preliminary Draft Purpose and Need April 21, 2003,* document number 030421_01, beginning on page U.4-12 of this appendix. |
| 5 | Please see response to comment 4. |

**II. Concerns Over Purpose and Need**

The FAA has set forth a Preliminary Draft Purpose and Need for the OMP EIS as follows:

1. Increase capacity and reduce delay (including peak periods and in all weather conditions) at O'Hare.
2. Provide terminal, landside, and support facilities to efficiently accommodate existing and future passenger and cargo demand and sufficient land for such facilities.
3. Provide an efficient surface access system for existing and future airport users.

The problem(s) associated with this draft statement of purpose and need are that it fails to reflect the NPIAS, system planning, master planning and AIP/PFC framework for FAA decisions on the elements of a Chicago metropolitan airport system which provides "a safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics." 49 U.S.C. §47103. See also, *e.g.*, 49 U.S.C. §47104 ("maintain a safe and efficient nationwide system of public-use airports that meets the present and future needs of civil aeronautics"); §47101 ("Coordination in development of airport plans and programs.--Cooperate with State and local officials in developing airport plans and programs that are based on overall transportation needs. The airport plans and programs shall be developed in coordination with other transportation planning and considering comprehensive long-range land-use plans and overall social, economic, environmental, system performance, and energy conservation objectives."); §47106(a)(3) ("enough money is available to pay the project costs that will not be paid by the United States Government under this subchapter"). 6

Consistent with these statutory requirements, the FAA is required to define a metropolitan system of airports which will meet the current and anticipated needs of commercial aviation in the Chicago metropolitan region and to demonstrate how the proposed OMP project (or alternatives to that project) fit within the metropolitan system plan and meet the other statutory and regulatory requirements for FAA project approval and related funding approval. 7

The purpose and need as currently defined by the FAA does not set any parameters to quantify the requirements for improvements to O'Hare specifically or to set forth the role that an improved O'Hare would have in the regional airport system that would provide "a safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics" in the Chicago metropolitan area. The purpose and need should outline the specific parameters (*e.g.*, passenger and aircraft activity levels, acceptable levels of delay) that must be met in the region to provide a system of airports to meet the anticipated needs of civil aeronautics in the region and how development at O'Hare (as compared with other alternatives) is needed to meet these quantitative aviation requirements. 8

3

| Comment | Response |
|---|---|
| 6 | Please see the response to comments 2-4 within *Bensenville-Elk Grove-Park Ridge's Comments on the Preliminary Draft Purpose and Need April 21, 2003,* document number 030421_01, beginning on page U.4-13 of this appendix.<br><br>Also, please see responses to comments 12, 14, 21, and 24 within *ShawPittman's June 27, 2003 letter,* on pages U.4-59, U.4-61, U.4-66, and U.4-70, respectively. |
| 7 | Please see response to comment 6. |
| 8 | Please see response to comment 6. |

This failure to articulate quantitative standards is contrary to published FAA requirements and publications. For example, the current NPIAS report to Congress defines as "congested" an airport with more than 3-5 minutes of annual average delay per aircraft. Further, the NPIAS Handbook defines the capacity of an airport as that level of operations where average annual delay exceeds 4 minutes per operation.

What is the acceptable delay standard for airport planning and design? The OMP project documents say that the OMP project will produce delays greater than 10 minutes per operation – 250% greater than the capacity definition used by the FAA in determining the projects eligible for inclusion in the NPIAS and as great if not greater than historical delays at O'Hare. Is the regional FAA going to articulate a definition of acceptable delay at a major hubbing airport such as O'Hare (where delays create greater disruption than at a point-to-point airport) far greater than the 4 minute standard set forth in the NPIAS Handbook and the NPIAS report to Congress? 9

Similarly, what are the capacity requirements for the OMP — especially in light of potential regional demand and surface transportation and terminal limitations in the OMP plan? A regional commercial enplanement forecast for the Chicago metro region calls for 2030 demand to reach 112 million enplanements with 75 million enplanements forecast for O'Hare (and up to 25 million more if the SSA is not constructed). Yet according to Chicago, the runway capacity for the OMP is only 66 million enplanements (and even that capacity is grossly overstated if the NPIAS capacity standard of 4 minutes of delay is used). Further, Chicago states that the terminal capacity of the OMP is only 54 million enplanements. If the State/Chicago forecast of 112 million enplanements is correct for surface transportation planning and design, the proposed runways and terminals at O'Hare in the OMP appear to be grossly under-designed and create a serious capacity shortfall for the region— driving jobs and economic development out of the region. Indeed, even using only the 66 million enplanement figure used by Chicago, the runways and terminals appear to have a serious capacity shortfall. This capacity shortfall in turn affects every element of the analysis — including benefit-cost and financial feasibility. 10

The purpose and need statement should be modified to incorporate specific quantitative standards as to capacity and delay and a technical explanation and justification of the basis for such quantitative standards. Further, these quantitative standards should reflect a planning approach which considers the capacity needs of the region and impact of the availability (or lack thereof) of such airports as Midway and SSA to accommodate the anticipated future growth of regional demand, including the demand that cannot be handled at O'Hare, SSA (if it is not built), or Midway. 11

This need for quantitative standards is also present in the second and third elements of the FAA's draft purpose and need statement. Chicago and the State (and perhaps the FAA) appear to be using different demand numbers for surface transportation and terminal facilities than are being used for the runway system. Further, the FAA needs to define quantitative standards for terminals, gates, and surface road access elements. 12

4

| Comment | Response |
|---|---|
| 9 | With respect to the comments regarding the "capacity standard", please the response to comments 44-47 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-528 of this appendix. |
| 10 | The "112 million enplanement forecast" has been taken out of context. The response to the issues raised by the commenter are thoroughly addressed in response to comment 26 within *Bensenville-Elk Grove-Park Ridge's Comments on the Preliminary Draft Purpose and Need April 21, 2003,* document number 030421_01, see page U.4-27 of this appendix.<br><br>As noted, in the aforementioned response, the EIS did not utilize the enplanement estimates referenced for the EIS analysis, rather the Agency utilized the FAA's 2002 Terminal Area Forecast. |
| 11 | In the EIS, quantitative standards are used to evaluate the alternatives that are built into screening criteria derived from the purpose and need statement. |
| 12 | The "different demand" numbers referred to by the commenter are the State of Illinois and Chicago estimates for "surface transportation planning" and project enplanements for the year 2030. This is beyond the reasonably foreseeable future as well as for surface transportation and therefore the consideration of the 2030 demand numbers is irrelevant. See **Chapter 1, Section 1.5.2.1.**<br><br>Also, please see response to comment 10. |

By way of example, the purpose and need statement should be modified to include such objectives as:

1. Meet the forecast demand for the Chicago metropolitan region by including O'Hare in a metropolitan airport system that in combination with Midway and the South Suburban Airport (or other metro area commercial airports) provides sufficient capacity to meet the forecast commercial aviation demand for the region.

2. Meet the forecast demand for O'Hare with sufficient capacity for terminal, surface road access, and runway capacity.

3. Provide sufficient capacity at O'Hare to maintain a level of delay no greater than 4 minutes average annual delay at forecast levels of traffic. 13

**III. Screening Criteria**

Once quantitative standards are established in the purpose and need statement, certain preliminary and final screening criteria should be employed to screen out those alternatives that do not meet the quantitative standards. For example, alternatives should meet quantitative standards as to such elements as:

1) provide sufficient capacity to meet demand.

2) will achieve acceptable levels of delay.

3) are financially feasible and affordable.

4) have benefits which exceed the costs.

5) which will meet FAA requirements under the AIP and PFC programs, and

6) which are environmentally and socially acceptable. 14

Those alternatives that do not meet these criteria should be rejected.

Further, the screening criteria should be applied on the time related elements of the project as well as the overall project. For example, while the long-term forecast demand will not occur for some years into the future, the same is true of all the proposed runways. Therefore, time related analyses should be performed as to each of the screening elements for each time-related phase of the project. 15

Finally, please note that these comments can only be considered preliminary in nature. Without a definitive purpose and need — developed only after providing the impacted public access to the underlying data and documents — our comments can only be considered a first order of approximation. When the FAA issues a final purpose and need statement and/or provides access to the underlying data and documents, we reserve the right to resubmit our thoughts on screening criteria. 16

Attached are items of information and data which would provide some of the information that would allow the kind of screening analysis that should be performed. 17

5

| Comment | Response |
|---|---|
| 13 | The FAA considered the commenter's suggestions on the purpose and need. |
| 14 | The FAA notes the suggestions for the screening criteria within the commenters text. The concepts in items 1,2 and 6 are included within the FAA's screening criteria contained in **Chapter 3** of the EIS. Item 3 is not a part of the screening criteria, but FAA reviewed financial planning for O'Hare Modernization and concluded that the OMP would be financially feasible. Item 4 is also not a part of the screening criteria. With regard to item 4, the FAA is reviewing the City of Chicago's BCA for the OMP in a separate process. The FAA also notes that there is no requirement for a BCA within the NEPA process. With regard to Item 5, the FAA notes that should a Build Alternative be approved, AIP and PFC decisions would be made when appropriate and not within the EIS process, and therefore, should not be included in the screening criteria. |
| 15 | **Chapter 5** of the EIS addresses each of the alternative retained for detailed consideration in terms of four "years" of analysis. It would be premature in the alternative screening process to evaluate each of the alternative considered at this level of detail. |
| 16 | Comment noted. |
| 17 | Please see the response to this comment on page U.4-103. |

## Operational Capability

1. Safety
    a) Number of Runway Crossings per day
    b) Average number of Runway Crossings per operation
    c) Number of TCAS alerts
    d) Number of Near Misses

2. Efficiency
    a) delay data should include Average Taxi Time per operation
    b) block to block time

3. Complexity
    a) Estimated additional Air Traffic sectors required
    b) Controller workload
    c) Communications workload

4. Flexibility
    a) Number of Denial of Direct Routing requests

5. Predictability
    a) Estimated Intervention Required
        i.) Flow control restrictions
        ii.) Ground Stops etc

6. Delay
    a) Total Annual Minutes of Delay
        i) Chicago O'Hare
        ii) Peotone
        iii) All Other Regional Airports
        iv) Total Regional Airports
        v) National
    b) Average Minutes of Delay per Operation
        i) Chicago O'Hare
        ii) Peotone
        iii) All Other Regional Airports
        iv) Total Regional Airports
        v) National

6

## Capacity Potential

1. Enplanements
    a. Chicago O'Hare
    b. Peotone
    c. All other Regional Airports
    d. Total Regional Enplanements
    e. Hub and non-hub requirements

2. Operations
    a. Chicago O'Hare
    b. Peotone
    c. All other Regional Airports
    d. Total Regional Operations

3. Terminal and Gate requirements

## Ground Access

1. Access to Airport
    a) Average travel time to and from Airport
    b) Public Transportation as a percent of Airport Access
    c) design capacity requirements based on level of passenger load

2. Access to Aircraft
    a) Operations per gate
    b) Passengers per gate

## Development Costs

1. Development Costs (Including all additional Development; i.e., World Gateway)
    a) Total Sponsor Cost
    b) Total FAA Cost (AF/AT)
    c) Additional User Cost
    d) Mitigation Costs
        i) Land Acquisition
        ii) Avigation Easements
        iii) Relocation of Residences
        iv) Relocation of Businesses
        v) Other project specific mitigation due to environmental impacts

7

2. Construction Induced Delay Costs
   a) Total Construction Delay Costs for Life of Development Project
   b) Total Air Carrier Construction Delay Cost
   c) Total Passenger Construction Delay Cost

3. Continuing Project Costs (Including Debt Service)
   a) Total Annual Recurring Cost
   b) Average Project Cost per Operation
   c) Average Project Cost per Passenger including delay costs
   d) Projected Airport Fee per Operation
   e) Projected Airport Fee per Passenger
   f) Impact on Air Carrier costs per seat mile

4. Ability to finance all aspects of the project

**Environmental Consequences**

1. Aircraft Noise
   a) Cumulative Noise Exposure Population (55, 60, 70 and 75 DNL noise contours)
   b. Ground Taxi Noise

2. Flora and Fauna and Biotic Communities

3. Air Quality and Ground Surface

4. Change in Land Use & Socioeconomics
   a) Number of People Displaced
   b) Number of Businesses Displaced
   c) Amount of Land Acquisition Required and Category of Land Type
   d) Listing of Impacts on Specific Land Uses
      i) Schools
      ii) Parks
      iii) Cemeteries
      iv) Section 4f Lands (Historic/Cultural)
      v) Low income areas

5. Construction Impacts

6. Cumulative Impacts

17

8

| Comment | Response |
|---|---|
| 17 | The FAA appreciates the commenter suggestions on screening criteria. The screening criteria can be found in **Chapter 3** of the EIS. In addition, the FAA notes that many of the items listed are evaluated in **Chapter 5** of the EIS. |

11/04/2003 13:57 FAX 847 294 7046 CHI-ADO 001

To: Bruce Jacobson (Wm) Corporation 312/855-2540 (Voice) 312/855-2543 (Fax)

From: MacMullen FAA 847/294-7322

**O'HARE ENVIRONMENTAL IMPACT STATEMENT**

Please mail your comments on or before Monday, November 3, 2000 to:

**Federal Aviation Administration**
**2300 East Devon, Suite 320**
**Des Plaines, Illinois 60018**
**Attn: Michael MacMullen**

**FAA Public Outreach Session – October 17 2003**

**Name:**
BERNARDI (Last) JUDITH (First) DUNNE (MI)

**Organization** *(if applicable)*:
VILLAGE OF NORRIDGE

**Address:**
4000 N. OLCOTT AVENUE (Street Address) (Apt.) NORRIDGE (City/Town) IL (State) 60706-1199 (Zip)

**Comments:**
There is, first and foremost, the initial concern for safety: It does not seem possible that the proposed spacing of the parallel runways can be safe. Planes that now should be approaching the airport over Agatite Avenue are approaching over Lawrence Avenue. How will two more runways fit to the south? 1

On a parochial basis, our concerns are twofold: The change in the use of the airspace and its resulting impact on the quality of life for those residents both east and west of the airport. 2

The Village of Norridge, the area of which is only two square miles, is located due east of the airport. There will be no part of town which will not be directly impacted by the reconfiguration of the airport runways. And, while the City of Chicago can say that these are not "new" runways, while neighborhoods of people

[continued on back]

64

| Comment | Response |
|---|---|
| 1 | Safety is the FAA's highest priority, and the agency will ensure that the design of any approved alternative properly protects the public safety. As part of the *February 2004 O'Hare International Airport Master Plan*, the City conducted a detailed evaluation of potential airfield configurations.<br><br>The commenter refers to the spacing between runways 10L-28R (existing 9R-27L), 10C-28C, and 10R-28L of Alternative C, or the City's proposal. The Airport Layout Plan and supporting documentation within the *February 2004 O'Hare International Airport Master Plan* document that the proposed runway longitudinal separation distances comply with applicable FAA design criteria to ensure safe operations.<br><br>Additionally, the FAA is conducting a thorough review of the City's proposed Airport Layout Plan (ALP). This review is designed to ensure that the proposal complies with applicable FAA airport design standards and safety regulations, including wind coverage, runway separation distances, and runway/taxiway crossings. This ALP review involves multiple lines of business at FAA, including FAA Air Traffic, Airports, Airways Facilities, and Flight Standards. The Transportation Security Administration (TSA) also participates in the ALP review providing insight on security issues.<br><br>For further information, see topical responses K-1 and K-2 beginning on page U.5-42 of this appendix. |
| 2 | The airspace changes associated with the build alternatives are defined in **Appendix E, Section E.5** of the EIS. In addition, the FAA has added **Exhibits 1** through **29** to **Appendix F, Noise, Attachment F-2** depicting the location of the flight tracks for the No Action and Build Alternatives considered.<br><br>In addition, the environmental impacts associated with the airspace changes are assessed throughout **Chapter 5** of the EIS.<br><br>For further information, see topical response M-1 on page U.5-46 of this appendix. |

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11/03/2003 13:08 VILLAGE OF NORRIDGE → 918472947046 NO.698 P03

who now experience only intermittent air traffic will have no relief from what is expected to be ever-increasing numbers of flights. 3

In relation to all of these concerns, we feel that special consideration should be taken of the southernmost runway. The slight adjustment suggested by the Air Traffic Controllers, whose sole focus is safety, should guide the EIS screening process. (The hybrid plan for this runway does not answer our concerns.) 4

65

| Comment | Response |
|---|---|
| 3 | Regarding the comment, "ever increasing number of flights", The FAA notes that in 2004, O'Hare served approximately 990,000 operations. In the year 2018 (the end of the planning horizon within the EIS purview), the forecast projects approximately 1,200,000 operations, or an increase of approximately 21%.<br><br>Also, please see response to comment 2 on the previous page. |
| 4 | The "adjustment" to the southernmost runway the commenter referred to was given comprehensive consideration by the FAA, including the Air Traffic division. This alternative is entitled Alternative G within the EIS and includes a runway in the 12/30 orientation.<br><br>Alternative G was evaluated in the screening process and, like Alternative C (the City's proposal) and Alternative D (the City's proposal without the southernmost runway), was retained for detailed consideration throughout the EIS. For more information on Alternative G, see **Chapter 3** of the EIS. A complete and comprehensive environmental evaluation of Alternative G can be found throughout **Chapter 5** of the EIS.<br><br>The FAA notes that the Alternative C was selected as the preferred alternative in the Final EIS, after detailed consideration of all comments received on the Draft EIS. Also, see topical response A-1 on page U.5-2 of this appendix. |

ShawPittman LLP

A Limited Liability Partnership Including Professional Corporations

031205_01

December 5, 2003

Mr. Philip Smithmeyer
Manager
Chicago Airports District Office
Federal Aviation Administration
2300 East Devon Avenue, Suite 320
Des Plaines, IL 60018

Re: Airspace Case No: 2003-AGL-878-NRA
Aeronautical Study – Airport Airspace Analysis
O'Hare Modernization Program

Dear Mr. Smithmeyer:

The City of Bensenville and the Village of Elk Grove Village (the "Concerned Communities") respectfully request a postponement of the December 17, 2003 comment date established by the FAA in its letter dated October 15, 2003, with respect to the above-referenced aeronautical study. 1

This case relates to a major modification of the O'Hare Airport Layout Plan ("ALP") under the City of Chicago's so-called O'Hare Modernization Program ("OMP"). The scope of the OMP project – and its impact on air navigation - are unprecedented. Due to the massive increase in flight operations through the affected airspace, OMP will directly affect the safety, noise exposure, and the environment of the Concerned Communities -- which are adjacent to O'Hare and immediately underlie the aeronautical study area. 2

The Concerned Communities have been unfairly hampered in their ability to offer thorough and detailed comments at this time, because they have not had access to the critical data, studies, and other documents that have been prepared by the City of Chicago and made available to FAA – but consciously and conspicuously withheld from the Concerned Communities. As the FAA is aware, the Concerned Communities, through their representative organization, the Suburban O'Hare Commission, filed a Freedom of Information Act request almost one year ago, in January, 2003. *See,* Attachment A. That request is still pending and the Concerned Communities have not received access to the

2300 N Street, NW Washington, DC 20037-1128 | 202.663.8000 Fax: 202.663.8007 | www.shawpittman.com | Washington, DC, Northern Virginia, New York, Los Angeles, London

| Comment | Response |
|---|---|
| 1 | Although the FAA denied an extension based on the claim that access to sufficient information was not available to submit your input, the FAA felt that even though the scope and intent of the process was clear, there was a misunderstanding of the process and granted a 30-day extension to the original due date. Overall, interested parties had approximately 90 days to comment on the proposed project. |
| 2 | The potential impacts related to the proposed OMP (Alternative C) and other reasonable alternatives are included in **Chapter 5** of the EIS. |
| 3 | Please see the response to this comment on the following page. |

ShawPittman LLP

Mr. Philip Smithmeyer
December 5, 2003
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requested documents. The Concerned Communities appreciate the FAA's current efforts to resolve this matter and provide them access to this essential information. The Concerned Communities expect to receive the necessary data and documents from the FAA within the next few weeks, and, accordingly, request that the comment period be extended until 90 days after the Freedom of Information Act materials are produced.[1] 3

Without this essential information, it is impossible for the Concerned Communities to offer thorough and meaningful comment on this important matter. Moreover, it is axiomatic that an agency may not rely on such critical undisclosed facts and evidence. *See, e.g., Conn. Light & Power v. NRC*, 673 F.2d 525 (D.C. Cir. 1982):

> To allow an agency to play hunt the peanut with technical information, hiding or disguising the information that it employs, is to condone a practice in which the agency treats what should be a genuine interchange as mere bureaucratic sport. An agency commits serious procedural error when it fails to reveal portions of the technical basis for a proposed rule in time to allow for meaningful commentary.

*Id.* at 530-531.

Therefore, in order to provide the Concerned Communities with the opportunity to offer meaningful commentary – and to fulfill the FAA's

[1] Furthermore, as recently as October 6, 2003, the FAA issued a lengthy set of questions with regard to the City's proposed ALP. The Concerned communities are not aware of any response to the FAA's airspace and other technical questions. It is an inefficient use of the administrative process to require the public to submit comments on the ALP when the City has not responded to the agency's own requests.

| Comment | Response |
|---|---|
| 3 | The FAA has and continues to make relevant information available to the public. For example the FAA has posted over 7.5 million pages of EIS related documentation on its public web site, www.agl.faa.gov/OMP/.<br><br>More information on public involvement regarding the EIS process can be found in topical response A-3, on page U.5-4.<br><br>Subsequent to the date of this letter, the FAA responded to the commenter's FOIA request. |
| 4 | Please see response to comment 3. |

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Mr. Philip Smithmeyer
December 5, 2003
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procedural obligations under the Administrative Procedure Act, it is essential that the comment period on the above-referenced be extended from December 17, 2003 until at least 90 days after the Concerned Communities have received the relevant Freedom of Information Act documents from the FAA. 4

Sincerely,

Robert E. Cohn
J. E. Murdock III
Alexander Van der Bellen

cc: Senator Peter G. Fitzgerald
Congressman Henry J. Hyde
Andrew Steinberg, FAA Chief Counsel
Associate Administrator Woodie Woodward
Cecilia Hunziker, Regional Administrator
Ruth Leverenz, Assistant Administrator for Regional and Center Operations
Thomas R. Walker
Barry Molar, FAA Airports Financial Assistance Division Manager
Thomas E. Salaman, FAA Chicago Metropolitan Program Manager
Jeri Alles, FAA Airports Division Manager
Sheryl Scarborough
John F. Harris
Daphne Fuller
Nancy LoBue
Barry Cooper
Joseph Karaganis

Document #: 1366318 v.2

| Comment | Response |
|---|---|
| 4 | Please see the response to this comment on the previous page. |

031213_01

Illinois Pilots Association. P.O. Box 481, Savoy, Illinois, 61874

December 13, 2003

Chicago Airports District Office
2300 East Devon Avenue, Suite 320
Des Plaines, Illinois 60018

Re: Airspace Case No: 2003-AGL-878-NRA
Aeronautical Study - Airport Airspace Analysis
Chicago O'Hare International Airport

The Illinois Pilots Association (IPA) was pleased to receive your communication of October 15, 2003, which contained an invitation to submit comments referred to as - "Your review of this proposal on the basis of its effects on your use of the airspace...."

To date, IPA has not been able to ascertain in what ways - if any - the O'Hare Modernization Program (OMP) would alter the existing air space structure. 1

However, a large number of private and corporate air space users from Illinois, and states beyond, have legitimate reasons for flying into Chicago and the Chicago area for personal, charitable, and business purposes. Airplane owners and pilots make significant investments in airplanes and training in order to use the national navigable airspace for expedited transportation. Access to destination airports and air fields at various Chicago venues is critical to General Aviation air space users.

The IPA represents large numbers of General Aviation pilots through out the State of Illinois, and by association with the United States Pilots Association (USPA), through out the nation. IPA member pilots and General Aviation pilots are very concerned with the rate of closure of General Aviation airports and are especially aggravated by the irrational closing and loss of the Meigs Field facility and access to down town Chicago; which gives rise to the perception that the commerce associated with General Aviation is not understood - or even spurned - by powerful forces antithetical to general aviation - the City of Chicago being an outstanding example. Therefore, the IPA regards the City of Chicago and its Aviation Department with some considerable suspicion and finds it difficult to accept any significant further restrictions and strictures of the air space and access to legitimate business and personal destinations in that area; or transitions through the area.
IPA will be available for any further or more specific discussions pertaining to this airspace and the OMP, and would designate a representative to a citizens advisory group. 2

Sincerely,

A.O.Griffiths DVM
President IPA

| Comment | Response |
|---|---|
| 1 | The airspace changes associated with the OMP (Alternative C) are defined in **Appendix E, Section E.5** of the EIS. |
| 2 | The comments related to the closure of Meigs Field by the City of Chicago are noted. Please see topical responses A-1 and M-6, on pages U.5-2 and U.5-49, respectively. |

040116_01

ShawPittman LLP

A Limited Liability Partnership Including Professional Corporations

J. E. Murdock III
202-663-8342
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January 16, 2004

*Via Email*

Mr. Barry D. Cooper
Manager, Chicago Area Modernization Program Office
Mr. Philip Smithmeyer
Manager Chicago Airports District Office
Federal Aviation Administration
2300 East Devon Avenue, Suite 320
Des Plaines, IL 60018

Mr. Andrew Steinberg
Chief Counsel
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

Re: Airspace Case No: 2003-AGL-878-NRA
Aeronautical Study - Airport Airspace Analysis
O'Hare Modernization Program

Dear Messrs. Cooper, Smithmeyer and Steinberg:

On behalf of the Village of Bensenville and the Village of Elk Grove Village (the "Concerned Communities"), I would like to express my concerns about two significant legal and process issues affecting the FAA's consideration of the above-referenced study and the O'Hare Modernization Program (OMP). I offer you these comments from the perspective of having served as Chief Counsel of the FAA, and from having been involved in the review and approval of many significant airport development projects while at the agency. 1

First, FAA has continued to deny the Concerned Communities access to the critical data, studies, and other documents that have been prepared by the City of Chicago and made available to FAA. Without this essential information, it is

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| Comment | Response |
|---|---|
| 1 | Comment noted. |
| 2 | Subsequent to the date of this letter, the FAA made information publicly available as soon as it was completed in advance of the release of the Draft Environmental Impact Statement (DEIS). The release of information included assumptions, results, and modeling data files for the Surface Transportation, Air Quality, Noise Analysis, and Delay/Capacity modeling as well as correspondence between the City of Chicago and FAA.<br><br>Additionally, planning documents including comments from the FAA and responses from the City of Chicago have been made publicly available throughout the process. Please see **Section T.2.6** of **Appendix T** for further information. |

ShawPittman LLP

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Mr. Philip Smithmeyer
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impossible for the Concerned Communities to offer thorough and meaningful comment on this important matter. The FAA has an obligation to disclose this critical information early in the comment process. *See, Connecticut Light & Power Co. v. NRC*, 673 F.2d 525, 530-31 (D.C. Cir. 1982). 2

Second, in response to Mr. Cooper's December 5, 2003, letter clarifying the scope of the comments sought by FAA, I strongly disagree that the scope of FAA's inquiry should be narrowly limited to "issues of *airspace utilization only*" (emphasis original). The statute requires a much broader inquiry:

Section 47107 requires the FAA to approve any change in an airport layout plan. At a minimum, section 47107(a)(16) requires the FAA to examine whether a revision to an airport's ALP will "affect adversely safety, utility and efficiency of the airport." By its plain terms, the statute is not confined to mere airspace issues. Moreover, that provision must be read in the context of other related statutory provisions including, §47103 (g), §47106 (a) and §47101. For example, section 47103 requires the FAA to "provide a safe, efficient and integrated system of public-use airports." Section 47104 (a) requires the FAA to provide grants for the purpose of "maintaining a safe and efficient nation-wide system of public-use airports that meets the present and future needs of civil aeronautics." And, section 47101 (g) requires that the FAA coordinate with state and local officials "in developing airport plans, that the "process of developing airport plans and programs shall be continuing, cooperative and comprehensive . . . ."[1]

[1] Section 47010 (g) further directs the FAA to encourage sponsors "to develop airport master plans and airport system plans" that "are integrated with metropolitan plans to ensure that airport development proposals include adequate consideration of land use and ground transportation access" and that "foster effective coordination between aviation planning and metropolitan planning."

| Comment | Response |
|---|---|
| 2 | Please see the response to this comment on the previous page. |
| 3 | Please see the response to this comment on the following page. |

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January 16, 2004
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Under the statutory scheme, the FAA must make a determination of whether the six runway plan will impact the airport's overall efficiency and utility -- including whether or not it achieves the goals professed by the City, and whether it is consistent with national, state and regional plans – before the FAA approves the ALP. FAA Order 7400.2E states that the "Purpose of an aeronautical study is to determine what effect the proposal may have *on compliance with Airport Programs*, the safe and efficient utilization of the navigable airspace by aircraft, and the safety of persons and property on the ground." Again, this is broader that mere "airspace issues." Paragraph 10-2-1. Furthermore, FAA funding decisions are inextricably linked to the OMP and to the ALP. The City has stated that it cannot proceed with OMP without hundreds of millions of dollars of AIP grants and PFC authorizations. Mayor Daley's July 9, 2003 press release stated that at least $363 million in AIP grants and $657 million in PFC funds will be required. AIP funding applications require evaluation of the cost-benefits of the proposal. That evaluation should be made in the context of the ALP review process.

I appreciate your consideration of these comments, and trust that you will take steps to remedy these deficiencies in the OMP review Process. 3

Sincerely,

J. E. Murdock III

Counsel for the Village of Bensenville and
the Village of Elk Grove Village

| Comment | Response |
|---|---|
| 3 | The FAA publicly circulated the Airport Layout Plan (ALP) in accordance with *FAA Order 7400.2E* soliciting input from nearby users of airspace in regard to airspace utilization only. The public circularization process is just one component of the overall airspace review process that the FAA uses to evaluate the draft ALP. A detailed comprehensive FAA review of the Airport Layout Plan has been ongoing since December 2002 and continues to this day. All FAA divisions in addition to the Transportation Security Administration are participating in this review.<br><br>Although the FAA denied an extension to the ALP circularization based on the claim that access to sufficient information was not available to submit your input, the FAA felt that even though the scope and intent of the process was clear, there was a misunderstanding of the process and granted a 30-day extension to the original due date. Overall, interested parties had approximately 90 days to comment on the proposed project.<br><br>The PFC and AIP processes are separate and distinct from the NEPA process. The FAA does not agree that all PFC and AIP related funding approvals must be made prior to the issuance of the Record of Decision. Therefore, FAA will process any PFC and AIP requests through the normal course of business.<br><br>Finally, in response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |

040116_02

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January 16, 2004

**By Email and U.S. Mail**

Mr. Barry D. Cooper
Manager, Chicago Area
Modernization Program Office
Federal Aviation Administration
2300 East Devon Avenue
Des Plaines, IL 60018

Mr. Philip Smithmeyer
Manager
Chicago Airports District Office
Federal Aviation Administration
2300 East Devon Avenue
Des Plaines, IL 60018

**Re: Airspace Case No: 2003-AGL-878-NRA**
**Aeronautical Study - Airport Airspace Analysis**
**O'Hare Modernization Program**

Dear Messrs. Cooper and Smithmeyer:

The following represent the comments of the religious organizations and individuals who have both religious and property interests in St. Johannes Cemetery and Rest Haven Cemetery – two religious cemeteries which Chicago proposes to destroy as part of Chicago's proposed O'Hare Modernization Program (OMP). These organizations and individuals, are as to St. Johannes Cemetery: St. John's United Church of Christ, Helen Runge and Shirley Steele. As to Rest Haven Cemetery, these organizations and individuals are: Rest Haven Cemetery Association, Robert Placek and Leroy Heinrich. They are collectively referred to in this letter as the Religious Objectors.

As we have previously informed you, the proposed destruction and demolition of St. Johannes Cemetery and Rest Haven Cemetery constitutes a serious, permanent, and substantial injury and burden to the rights of these religious institutions and individual worshippers under the Free Exercise Clause of the First Amendment. Specifically, the proposed OMP will destroy graves which the religious organizations, and their members who own and maintain the cemeteries, believe to be sacred and inviolate as part of their fundamental religious faith. The sanctity of these cemeteries from invasion and destruction is an essential element of the Salvation and Judgment Day beliefs of these religious organizations and their members.

The factual background of these injuries to the Religious Objector's rights to the free exercise of religion is set forth in detail in the Amended Complaint in *St. John's*

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*United Church of Christ, et al. v. Daley, et al.* (Case No. 03 C 3726 in the United States District Court for the Northern District of Illinois), and in the affidavits of Helen Runge, Shirley Steele, Robert Sell, Michael Kirchoff, Randall Putman, Robert Placek and Leroy Heinrich, filed therein. The Amended Complaint and the affidavits are being sent to you under separate cover as record support for these comments.

We are aware of the fact that Chicago cannot acquire and destroy these religious cemeteries without approval by the FAA of the OMP, and of the ALP (Airport Layout Plan) for the OMP. We are therefore calling on FAA to disapprove Chicago's proposed ALP for the OMP on two separate but related constitutional and statutory grounds. 1

1. **Constitutional grounds**. The destruction of these religious cemeteries constitutes both a discriminatory denial of equal protection of laws (all other religious institutions in Illinois, including all other religious cemeteries, are given constitutional and statutory protections which are denied to these two religious cemeteries), and a denial of their rights under the Free Exercise Clause in the First Amendment of the U.S. Constitution. As such, FAA cannot approve Chicago's proposal to destroy these cemeteries without conducting a two-pronged First Amendment demonstration, *i.e.*: (1) that there is a compelling governmental need to destroy these two religious cemeteries; and (2) that there is no alternative meeting this compelling governmental need which would not destroy the cemeteries. For the reasons stated below, FAA cannot make the required constitutional demonstration. There is no compelling governmental need to destroy these religious cemeteries and there are alternatives meeting any asserted governmental need which would not destroy these cemeteries.

2. **Statutory grounds.** Before FAA can approve the destruction of these two religious cemeteries, FAA must also comply with the federal Religious Freedom Restoration Act, 42 U.S.C. §2000bb, *et seq*, (federal "RFRA"). That statute provides in pertinent part:

> Government shall not substantially burden a person's exercise of religion even if the burden results from a rule of general applicability, except as provided in subsection (b) of this section.
>
> * * *
>
> (b) Exception
>
> Government may substantially burden a person's exercise of religion <u>only if it demonstrates</u> that application of the burden to the person –
>
> (1) is in furtherance of a compelling governmental interest; and
>
> (2) is the least restrictive means of furthering that compelling governmental interest.
>
> 42 U.S.C. §2000bb-1 (emphasis added).

| Comment | Response |
|---|---|
| 1 | The FAA refers the commenter to *Karaganis-White letter dated July 22, 2004* for a response to this comment, beginning on page U.4-197.<br><br>In addition, in response to this comment and others, please see **Chapter 5, Section 5.22** for the FAA's discussion of legal issues involving potential relocation of St. Johannes and Rest Haven Cemeteries. |

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Neither FAA nor Chicago has made the required demonstration – under either the First Amendment or the federal RFRA – that there is a compelling governmental need to destroy these two religious cemeteries, or that there is no other alternative to achieve a compelling governmental need. We emphasize that these two required demonstrations are substantive obligations – not simply procedural – and require substantive proof by the FAA that these two requirements (a compelling governmental need and the absence of a less destructive alternative) have been demonstrated. Unlike obligations under the National Environmental Policy Act (NEPA) which the courts have held to merely create procedural obligations and not to compel a substantive result, the First Amendment Free Exercise Clause and the federal RFRA create substantive obligations which prohibit the destruction of these two religious cemeteries unless these substantive obligations have been met.

Chicago appears to contend that the only substantive approval that Chicago must receive from FAA is the "airspace" approval that is involved in the so-called "airspace" proceeding, which FAA has given the docket designation "Airspace Case No: 2003-AGL-878-NRA". According to Chicago, once FAA provides an essentially technical review of such mundane issues as runway lighting requirements and other physical airport design requirements, Chicago and FAA need only finish the procedural obligations of NEPA (essentially describing the injury in detail without any substantive obligation to avoid the injury). Chicago contends that once that procedural NEPA exercise is finished, Chicago can then destroy these two religious cemeteries.

Under both the First Amendment and the federal RFRA, FAA cannot give airspace approval of the proposed OMP ALP unless and until FAA has made the requisite demonstrations of compelling need and no less destructive alternative to the destruction of these religious cemeteries. The mandatory First Amendment and federal RFRA demonstrations are an essential element of the FAA's substantive decision as to whether to approve or disapprove the ALP. 2

**The Bases of the FAA Substantive Decisions on Approving or Disapproving the OMP and the ALP.**

Chicago and the FAA have proceeded thus far as if the only substantive decision (as opposed to a procedural NEPA decision) that FAA had to make to approve the ALP was an "airspace" decision in "Airspace Case No: 2003-AGL-878-NRA". In a December 5, 2003, letter to Mr. J. E. Murdock, Mr. Barry Cooper made reference to the requirements of FAA Order 7400.2E *Procedures for Handling Airspace Matters*. But FAA airspace review under FAA Order 7400.2E is not a formal approval or disapproval structure. Indeed, the FAA "airspace" case here appears to be under the "advisory" framework of 14 CFR Part 157. Under 14 CFR §157.7, the FAA determination in an "airspace" review is only "advisory." 3

| Comment | Response |
|---|---|
| 2 | Please see response to comment 1 on the previous page. |
| 3 | The FAA respectfully disagrees with the commenter's characterization of the FAA's process. |

Messrs. Cooper and Smithmeyer
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There are a number of other FAA statutory and regulatory requirements which provide a more direct basis for substantive FAA approval or disapproval authority over the OMP and the ALP:

- Section 47107(a)(16) of Title 49 expressly requires the FAA to approve any changes in an airport layout plan at an airport which has been the recipient of past federal financial assistance – before the airport operator or owner can make any changes in the prior approved Airport Layout Plan. O'Hare is a recipient of past federal aid. Please advise the Religious Objectors as to: (1) the current procedural status of any FAA decision-making proceeding under Section 47107(a)(16) as to the OMP ALP; (2) what are the "relevant factors" FAA considers in making its decision under Section 47107(a)(16); and (3) what materials (*e.g.*, communications, documents, data, *etc.*) have been exchanged between Chicago and the FAA relating to a request for FAA approval under Section 47107(a)(16). At a minimum, an FAA proceeding under Section 47107(a)(16) would have to include the constitutional First Amendment and federal RFRA statutory demonstrations by FAA of a compelling governmental need and the absence of a less destructive alternative. We wish to become parties opposing any application by Chicago for approval of the OMP under Section 47107(a)(16) or any other FAA statute or regulation, or any FAA administrative decision-making process which would approve or render eligible any component of the OMP for federal funding authority (such as inclusion in the NPIAS-ACIP database – see below).
- Section 47103 of Title 49 provides:

> The Secretary of Transportation shall maintain the plan for developing public-use airports in the United States, named 'the national plan of integrated airport systems'. <u>The plan shall include the kind and estimated cost of eligible airport development</u> the Secretary of Transportation considers <u>necessary to provide a safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics....</u>

The procedures that FAA uses to identify and approve which "airport development" is "necessary to provide a safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics" are set forth in two FAA Orders: FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)*, and FAA Order 5100.39A, *Airport Capital Improvement Program*. As stated in FAA Order 5090.3C: "The basic support and justification for airport grants authorized by Congress are that such grants are required to develop the airport system described by Congress" (id. at 3). The source of information for making the determination as to which "airfield improvements are necessary to meet the purpose of establishing, maintaining and improving a safe and efficient national system of airports" comes from the planning hierarchy of state and metropolitan system plans, as well as additional information

| Comment | Response |
|---|---|
| 2 | Please see response to comment 1 on page, U.4-114. |
| 5 | Comment noted. |

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developed in accordance with the requirements and procedures of FAA Order 5090.3C (id. at 19-26, 4-6, 7-9) and FAA Order 5100.39A. 4

Under these Orders and related FAA procedures, airport development projects which FAA does not decide to place in the FAA NPIAS-ACIP database are not eligible for federal AIP grants. 5

In response to the controversy over the 1984 decision to expand O'Hare, FAA promised that the aviation needs of the metropolitan Chicago region would be delineated in a State "System Plan"[1]. The FAA's 1984 Record of Decision (ROD) expressly stated that the location of airport facilities to handle projected O'Hare and regional commercial aviation growth beyond the capacity of O'Hare's existing runway configuration would be the subject of an FAA funded State System Plan. The 1984 ROD stated:

> Development of another air carrier airport to serve the Chicago Metropolitan Area will be studied as part of a State System Plan to be prepared by the Illinois Department of Transportation under a series of grants to be funded by the FAA's Airport Improvement Program. The initial grant was issued in September 1984.
>
> 1984 FAA ROD at 4 (emphasis added).

The State System Plan developed by the State of Illinois under FAA planning grants referred to in the 1984 ROD was completed, and that State System Plan concluded that O'Hare's runways should not be expanded, and that new aviation capacity for the Region should instead be constructed at a new south suburban airport.

The State System Plan developed by the State of Illinois pursuant to the FAA 1984 ROD demonstrated at least several critical facts.

**First**, consistent with FAA's obligations under Section 47103, FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)*, and FAA Order 5100.39A, *Airport Capital Improvement Program*, the State System Plan provided for a safe and efficient system of metropolitan airports which identified the airport developments in metropolitan Chicago "necessary to provide a safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics." In the case of the current proposal by Chicago for the OMP, neither Chicago nor FAA has identified a metropolitan system of airports and airport development projects for metro Chicago that provides "a safe, efficient, and integrated system" of airports to anticipate and meet the needs of civil aeronautics.

[1] *See Planning The State Aviation System*, FAA AC No. 150/5050-3B, and the related *Airport Master Plans* FAA Advisory Circular, AC No. 150/5070-6.

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**Second,** the State System Plan demonstrated two critical facts related to the issues in this controversy as to the Free Exercise of Religion protection of the First Amendment and the federal RFRA. That State System Plan demonstrated that there is no compelling governmental need to destroy the two religious cemeteries that the OMP will destroy, and that the aeronautics needs of the region could be met without destroying these two religious cemeteries. Similarly, that State System Plan demonstrated that there were alternatives that met metro Chicago's needs of civil aeronautics without destroying the cemeteries. 6

Our counsel has previously requested that we be given an opportunity to participate in any FAA administrative proceeding – either in FAA NPIAS or ACIP decision-making, or in any other FAA decision-making process – which addresses the aviation needs of the metro Chicago region and the role of O'Hare in meeting those needs. We wish to participate in any FAA administrative decision-making process which attempts to place any of the components of the OMP – especially those components which would destroy our religious cemeteries – in the approved NPIAS-ACIP database. Our concern is heightened by the fact that the OMP does not appear to be a reasoned or factually supported component of a metro system plan that would meet the aviation needs of the metro Chicago region. Indeed, OMP (and related exhaustion of capacity at Midway) would appear to leave metro Chicago with a huge deficit of aviation capacity. 7

- **FAA Funding Decisions.** Even if there were no statutory requirements relating to FAA approval of the OMP independent of funding, the fact that Chicago is seeking billions of dollars of federal funding approval – either in the form of AIP or PFC funds – means that Chicago is not allowed to proceed with the OMP construction until FAA has made the substantive decisions as to whether to provide federal funding approval. Chicago cannot decide to proceed on the initial destructive steps of the OMP – which include the destruction of our religious cemeteries – if FAA has yet to decide on whether to approve federal funding. The only way Chicago can avoid waiting on the federal funding decision is if Chicago makes an unequivocal and irrevocable commitment to reject any federal funding for the project. 8

**Procedural Errors.**

There are a number of procedural errors which infect the FAA decision-making process on the OMP – including the "Airspace Case No: 2003-AGL-878-NRA."

- **Violations of FAA Order 7400.2E *Procedures for Handling Airspace Matters*.** It is clear that FAA has conducted a number of informal meetings with Chicago and others pursuant to Section 7 Informal Airspace Meetings of FAA Order 7400.2E. Section 2-7-4 expressly requires that advance notice of "informal airspace meetings" be provided to all persons who may be affected by the planned action. Despite explicit request by our counsel that we receive notification and an opportunity to participate in any informal airspace meetings, we were not given any notice nor have

| Comment | Response |
|---|---|
| 6 | The State System Plan is not relevant to the RFRA claims of the commenter for the reasons explained in response to the comment 12 of *ShawPittman's letter dated June 27, 2003,* document number 050623_01, on page U.4-59. |
| 7 | Please see response to the comments 38 and 39 of *Karaganis-ShawPittman's letter dated August 23, 2004,* document number 040823_01, beginning on page U.4-244. |
| 8 | As a matter of law the FAA disagrees with the assertion that because the City is seeking federal funding approval, it cannot take any steps to implement the OMP in any interval between the issuance of a favorable Record of Decision and a subsequent determination with respect to the pending LOI. |
| 9 | For the reasons given in responses to earlier comments presented in this letter, the FAA believes that it has provided more than adequate opportunity to the commenters in all aspects of the OMP process identified in this document and elsewhere.<br><br>Also, please see response to the comment 4 of *ShawPittman's letter dated June 27, 2003,* document number 050623_01, on page U.4-56. |

| Comment | Response |
|---|---|
| 9 | Please see the response on the previous page. |

Messrs. Cooper and Smithmeyer
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we been provided with the materials that were distributed in advance of or at such meetings.

- **Violations of Due Process and Basic Principles of Administrative Procedure.** Despite the fact that an FAA decision to approve the ALP may destroy our religious cemeteries and thus injure our rights, under both the Free Exercise Clause of the First Amendment, and our property rights under the Fifth Amendment, FAA refuses to give us access to the documents, data and communications exchanged between the FAA and Chicago relating to "Airspace Case No: 2003-AGL-878-NRA" and other FAA decision-making on the OMP. We are entitled to access to the documents and communications between Chicago and the FAA in a "meaningful time and in a meaningful manner." Hiding the documents relating to "Airspace Case No: 2003-AGL-878-NRA" from the Religious Objectors and other opponents of the Chicago proposal until after the comment period for the "Airspace Case No: 2003-AGL-878-NRA" is over is a gross violation of basic due process.
- **Violations of the Administrative Procedure Act.** An FAA decision to approve the ALP will allow Chicago to destroy our constitutional rights under the First Amendment and the Fifth Amendment Due Process Clause. As such, the Due Process Clause compels the FAA to give us a hearing to contest Chicago's claims and evidence before FAA allows the destruction of our cemeteries. Under the controlling authority of *Wong Yang Sung v. McGrath*, 339 U.S. 33 (1950), the due process requirement for a hearing triggers the contested case procedural requirements of 5 U.S.C. §§556-557. We are entitled to §§556-557 procedures before FAA allows the destruction of our religious cemeteries.
- **The right to Article III adjudication of our constitutional rights.** Before the federal government (here the FAA) can destroy our First Amendment rights and our property rights, we are entitled to have the contested facts in the dispute related to our constitutional rights adjudicated in an Article III court. Therefore, the contested facts as to our First Amendment rights (*i.e.*, the fact issues as to compelling need and the absence of an alternative) must be tried and determined by an Article III court.
- **FAA's refusal to comply with FOIA.** Despite assurances that FAA would produce documents pursuant to a FOIA request by the Suburban O'Hare Commission, FAA continues to withhold vast numbers of documents and communications between Chicago and FAA – documents and communications on all aspects of the OMP, including documents and communications relating to the issues in "Airspace Case No: 2003-AGL-878-NRA." FAA's latest excuse for refusing to produce these documents and communications – that communications and data exchanged between FAA and Chicago is somehow exempt under FOIA as internal FAA documents – is totally specious.

On December 16, 2003, Mr. Barry Cooper asserted that the FAA's failure to produce the FOIA requested materials – a request that had been pending since January, 2003 – was due to the failure of the requestor's inaction, rather than FAA's

| Comment | Response |
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| 10 | Please see the response to comment 9, on page U.4-121. |

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obstinance. On the contrary, the record shows that FAA has not honored its commitments and obligations in FOIA. FAA first refused to provide any documents under FOIA unless the impacted communities paid FAA an advance payment of **over $100,000**. Then, when the impacted communities made clear that the communities themselves would copy the documents and were not asking FAA to copy documents, FAA "reduced" its demand to an up front payment of roughly $50,000 before the communities could look at the documents.

FAA claimed that the communities were not entitled to a waiver of these onerous access fees because: (1) the documents the communities sought were already in the public arena; and (2) because the communities had no experts who could inform the public. The communities pointed out that the they were not seeking the limited number of documents that had been made public, but were seeking the still secret documents exchanged between Chicago and the FAA. Further, the communities pointed out that their experts included the former FAA Acting Administrator and the former FAA General Counsel.

FAA told Congressman Hyde that FAA was negotiating with the communities as to FOIA production. FAA then promised Senator Fitzgerald that it would resolve the problem. Indeed, FAA General Counsel Andrew Steinberg agreed to produce the requested documents if the communities would modify their request and pay a nominal fee. The communities accepted Mr. Steinberg's generous and practical compromise offer.

However, once we accepted the offer, the Regional Office of the FAA made the claim that all communication between FAA and Chicago – including all communications relating to "Airspace Case No: 2003-AGL-878-NRA" – were being withheld from disclosure pending a still unannounced decision as to whether these documents to and from Chicago were somehow exempt as FAA's "internal" documents. Apparently someone in FAA is making the preposterous and wholly improper claim that Chicago – a contested applicant for an FAA approval decision – is an internal arm of the FAA!

FAA cannot use the sorry history of its FOIA resistance to justify shutting off comment on the "Airspace Case No: 2003-AGL-878-NRA" while large numbers of documents and communications relating to the "airspace" case remain hidden by FAA. 10

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**Conclusion.**

FAA should defer any decision on the "Airspace Case No: 2003-AGL-878-NRA" until FAA addresses the issues raised by this letter. FAA should correct the procedural deficiencies set forth above and release to the impacted parties all documents and communications relating to the OMP. 11

Sincerely yours,

Joseph Karaganis
Counsel for the Religious Objectors

cc: Senator Peter Fitzgerald
Congressman Henry Hyde
Mr. Andrew Steinberg
Mr. Robert Cohn

| Comment | Response |
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| 10 | The FAA notes the request. |

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January 16, 2004

Mr. Barry D. Cooper
Manager, Chicago Area Modernization Program Office

Mr. Philip Smithmeyer
Manager Chicago Airports District Office

Federal Aviation Administration
2300 East Devon Avenue, Suite 320
Des Plaines, IL 60018

Re: Airspace Case No: 2003-AGL-878-NRA
Aeronautical Study - Airport Airspace Analysis
O'Hare Modernization Program

Dear Mr. Cooper and Mr. Smithmeyer:

On behalf of the Village of Bensenville and Elk Grove Village (the "Concerned Communities"), JDA Associates hereby submits these preliminary comments on the above-referenced aeronautical study.

This case relates to the massive proposed modification of the O'Hare Airport Layout Plan ("ALP") under the City of Chicago's so-called O'Hare Modernization Program ("OMP"). The scope of the OMP project and its impacts are unprecedented. Due to the massive changes to the configuration of the airport, and the increase in flight operations through the affected airspace, the proposed ALP will adversely affect safety, utility and efficiency of the airport, and the OMP will directly affect the safety, noise exposure, and the environment of the Concerned Communities -- which are adjacent to O'Hare and immediately underlie the aeronautical study area. 1

Although we have not yet had access to the critical information developed by the City and provided to the FAA, the work we have done to date, nevertheless, demonstrates that the OMP concept is ill conceived and fundamentally flawed. 2

The Concerned Communities submit that these deficiencies must be thoroughly evaluated by the FAA *before* FAA takes any action on the ALP. The project description documents and planning studies that have been released by

| Comment | Response |
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| 1 | Through an ongoing process, the FAA is conducting a comprehensive review of the City of Chicago's proposed Airport Layout Plan. All FAA lines of business and the Transportation Security Administration are participating in the process. The City's proposal, as well as other Build Alternatives, are being thoroughly evaluated and documented in this EIS. |
| 2 | Throughout the O'Hare Modernization Environmental Impact Statement process the FAA has publicly made information available through the FAA's O'Hare Modernization Document Library. As information has become available, the FAA has posted this information to the Document Library web site (http://www.agl.faa.gov/OMP/). This information was posted beginning in July 2004 which is a full six months prior to the public release of the Draft EIS. To date, over 7.5 million pages of O'Hare related information is available online. |

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the City are, at best, erroneous and incomplete, and, at worst, misleading and intellectually dishonest. Even taking the City's planning documents and studies at face value, the inescapable conclusion is that OMP does not work and will fail to achieve the congestion and delay reduction benefits proclaimed by the City for O'Hare. The reasons are straightforward and are summarized as follows:

1. The ultimate limiting factor is not runways but the airspace surrounding O'Hare, which is and will remain highly congested. The OMP will make the delay and congestion problem worse by trying to cram even more airplanes into too little airspace. The proposed OMP solution to the twin issues of capacity and delay reduction focuses on new runways. But, the narrowly spaced six-parallel OMP runway configuration will not provide adequate capacity to meet projected demand. The capacity shortfall and delay problems associated with the runway design is only one of the major problems afflicting the proposed OMP. Chicago has ignored other area traffic in the airspace congestion component and failed adequately to consider airspace as a critical limiting factor at O'Hare. 3

2. The OMP will increase, not reduce, congestion and delays. Chicago claims that the OMP will handle 1.6 million flights, but the Ricondo study prepared by Chicago's own experts shows that delays at O'Hare will be much worse than they are today at a level of just 1.3 million flights. Given the huge cost of the project — between $15-$20 billion — the OMP cannot be justified on any sound economic basis. 4

3. OMP will fail to achieve even the inadequate levels of capacity claimed by the Ricondo study. In particular, the ability to run "quad" approaches is seriously overestimated. On the one hand, the Ricondo study acknowledges that quad approaches would be possible only in *excellent* VFR weather conditions – ceiling greater than 5,500 feet and visibility greater than 10 statute miles. But, on the other hand, the simulation analysis errs in assuming the availability of quad approaches in *minimum* VFR weather conditions (1,000 foot ceiling and 3 mile visibility) which Ricondo claims exist 90% of the time. Real world weather data show that the O'Hare airport is below the 5,500 and 10 approach criteria more than 40% of the time. Thus, much of the VFR capacity assumed by Ricondo is illusory. Chicago already has the ability to run triple approaches in VFR weather, and OMP is not justified for a nominal increase in capacity that would be available only in the best VFR conditions. 6

| Comment | Response |
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| 3 | With regard to the commenter's summary comments 3-7, the FAA has provided cross-reference to the FAA responses to the commenter's more detailed comments in the subsections of this letter.<br><br>The FAA disagrees with this comment, please see response to comments 10-19 beginning on page U.4-125. |
| 4 | The FAA disagrees with this comment, please see response to comments 20-23 beginning on page U.4-131. |
| 5 | The FAA disagrees with this comment, please see response to comments 20-23 beginning on page U.4-131. |

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4. The OMP has inadequate safety margins. It will require an unprecedented number of active runway crossings, and make extensive use of "land and hold short" procedures which are strongly criticized by pilots, controllers, and safety experts. Critical crosswind runway capabilities will be eliminated. And, OMP will barely meet minimum, or require exceptions to, countless FAA safety standards. Simply put, OMP is designed to operate at the outer edge of safety limits in an effort to wring capacity out of a flawed design. As if this were not enough, pilots and controllers will have to cope with constant changes in the airport operating environment during the decade-long construction period. The FAA knows that standard procedures and routines are critical elements to airline safety – which will be in a constant state of disruption at O'Hare. 6

5. The OMP will cost too much. The $6.6 billion figure claimed by Chicago does not include terminal, roadway, and other infrastructure costs that will add at least another $10 billion to the project. For example, the $6.6 billion dollar estimate does not include the full cost of the terminals for the World Gateway Program (WGP) and additional terminals which Chicago says are necessary to achieve the proposed capacity gains and other claimed benefits of the OMP. Airlines cannot afford the $15 to $20 billion price tag of the OMP. Such exorbitant and uncompetitive costs will drive passengers and carriers away from O'Hare. 7

We will continue to refine our analysis as further project details become available. At present, our evaluation includes the reports that have been released by Chicago and its consultants, Ricondo & Associates, including the studies containing the following draft documents: (1) The O'Hare Modernization Program Project Definition (draft) dated January 2003; (2) The O'Hare Modernization Program Concept Development/Refinement (Draft) dated February 2003; and (3) Airport Layout Plan Update, Airside Simulation Analysis, O'Hare Modernization Program (Draft), Prepared by Ricondo & Associates, Inc., dated January 2003. 8

**I. THE RICONDO SIMULATION AND MODELING STUDIES ARE SERIOUSLY FLAWED AND IGNORE REAL-WORLD CAPACITY CONSTRAINTS.**

JDA Associates and Dr. Ken Fleming of Embry Riddle Aeronautical University have conducted an analysis of the Ricondo report. Dr. Fleming has

| Comment | Response |
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| 6 | The FAA disagrees with this comment, please see response to comments 24-27 beginning on page U.4-133. |
| 7 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |
| 8 | Comment noted. |

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extensive experience in analyzing airspace, air traffic control and aviation operations/management systems. He is a recognized expert in the areas of air traffic control and air traffic management. On the basis of Dr. Fleming's analysis, JDA has the following observations concerning Ricondo's Draft "Airside Simulation Analysis of the O'Hare Modernization Plan (OMP)" and the FAA's subsequent evaluation of that document. 9

**A. The OMP Will Result in Too Many Flights in Too Little Airspace.**

Capacity limitations at O'Hare go well beyond simply the number of runways at the airport. When the surrounding traffic from O'Hare and other area airports is taken into account, the ultimate limiting factor will not be the number of runways at O'Hare – but rather the airspace saturation surrounding O'Hare. The authors of the Ricondo Report seriously erred by focusing only on the OMP traffic and completely ignoring all of the surrounding area traffic that will be present in either the baseline schedules or the future projections. The narrow focus of the Ricondo study is inconsistent with FAA Order 7400.2E, which states: "in large metropolitan areas where there is an extremely heavy mix of en route and terminal traffic, reasonable operational efficiency may not result even though the airspace areas do not overlap. Such situations require a thorough review of the procedural potential of the area, as well as alternate site considerations." Paragraph 10-3-2C.2.

The Report's failure to take into account the surrounding area traffic is a glaring deficiency. The sectors above and surrounding O'Hare are among the busiest in the country. Aircraft are climbing and descending into a number of airports in the region, including Midway, Milwaukee, DuPage County and numerous other busy general aviation reliever airports. There are also many aircraft over-flying the Chicago area to the West and East Coast. Obviously, these flights interact in numerous ways with the traffic arriving and departing O'Hare. And, although not explicitly bound for O'Hare, many other aircraft will be on the same jet routes as O'Hare traffic; this traffic will impact O'Hare traffic particularly during peak arrival and departure times. Moreover, all of this surrounding traffic will grow at a rate that is at least comparable to that of O'Hare. By not including the surrounding traffic in the simulation analysis, the resulting delay figures will be unreasonably low for the two future demand levels analyzed in the simulation.

O'Hare is a worst case example. But, there is no excuse for the Ricondo Report overlooking the problem of overall airspace saturation, because the

| Comment | Response |
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| 9 | Comment noted. |
| 10 | Both proposed airfield and proposed airspace improvements must be implemented to achieve the benefits calculated through this analysis. The FAA is pursuing airspace improvements both as part of this analysis and separate from this EIS which will provide operational benefits to the existing airfield as well as the preferred alternative. Modeling of the airspace has included the proposed airspace modifications utilizing existing well established air traffic rules. The modeling has demonstrated the benefit to operational efficiency of implementing the proposed airspace modifications. Please see **Appendix D** of the EIS for a detailed description of the assumptions and results of this effort. |

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problem is not unique to Chicago. FAA central flow control routinely institutes ground hold programs to alleviate airspace saturation in critical ATC sector choke points across the country. Such ground holds illustrate that airspace saturation is at least as critical a problem in busy sectors, like Chicago, as is limited runway capacity.

Additional runways will not solve O'Hare's capacity problems due to the sheer volume of traffic that exists in the sectors immediately surrounding the airport. The Ricondo study cannot reconcile these serious airspace constraints with the publication of a few token SIDS and STARS for the new runways.

The FAA's own comments on the Ricondo study support these defects in the City's study:

> The City's OMP proposal, however, does not address the ability of the terminal and en route air traffic control environments to deliver or accept these capacities...in order to achieve projected efficiency gains, enhancement to both the physical airfield and the surrounding terminal/en route air traffic control environments need to occur. It must be noted that the City of Chicago and the Federal Aviation Administration (FAA) bear a shared responsibility to effect changes necessary to realize projected efficiency gains at O'Hare.

FAA Comments on OMP Draft ALP (August 5, 2003) at 1.

Therefore, the ultimate limiting factor for O'Hare is not runways -- but airspace. As shown by the Ricondo study for Chicago, the narrowly spaced runway configuration of the OMP creates its own set of capacity and delay problems. Even without a full evaluation of the critical congested airspace issue, Ricondo concludes that delays at O'Hare will be worse than they are today at a level of 1.3 million flights -- to say nothing of the 1.6 million flights Chicago claims the OMP is intended to handle. Thus, while the Ricondo study fails even to scratch the surface of the airspace problem, it is clear that a six-runway O'Hare super-hub (even if it had a wider-spaced runway configuration than the OMP) will be of no use if there is not sufficient airspace to handle the traffic.

In these circumstances, the FAA's review of the ALP cannot move forward until the critical issues are thoroughly evaluated and resolved. The question of the interaction of the OMP with the tower, TRACON and ARTCC is a fundamental issue which may, at the outset, result in a determination that the OMP does not work. The FAA's parallel processing of the OMP, ALP and AMP is premised on a false optimism that all questions are likely to be resolvable later

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on. The current known defects are so fundamental that it becomes clear that the six-runway plan is not workable. 10

**B. The Ricondo Study Simulation Analysis is Defective.**

The simulation results presented in Section 6 of the Ricondo analysis purportedly indicate that the OMP would result in higher throughput rates, reduce delays, and lower travel times when compared to the existing O'Hare airport layout. This erroneous conclusion is the result of arbitrary gerrymandering of assumptions, and discounting of real-world operational impediments, to enhance the apparent benefits of OMP:

1. The comparison of capacity benefits between OMP and the existing configuration is flawed by unrealistic and inconsistently applied assumptions contrived to stack the deck in favor of OMP. For example, the analysis of OMP passenger enplanement capacity assumed an average of 88 passengers per operation, but only 75 passengers per operation for the current configuration. The FAA and Chicago know very well that average aircraft size is decreasing, not increasing, as carriers migrate increasingly to regional jets and smaller aircraft to provide more economical, high-frequency service. Aircraft like the B-777 and A-330 have displaced the larger B-747 on many long-haul international routes. Millions of the additional passengers claimed by Chicago for the OMP are attributable solely to the City's arbitrary, unsupported, and unilateral increase in passengers per aircraft operation for the OMP. Any benefits claimed by the City in the ALP and AMP proceedings must exclude these fictitious incremental passengers which result solely from making more favorable assumptions for the OMP than the existing configuration.

   The reality that average aircraft size is decreasing, not increasing, has other significant implications for the OMP proposal. The decrease in aircraft size means that Chicago cannot realistically assume that airlines will operate fewer but larger aircraft to handle future projected passengers. Thus, even at the 1.3 million operations that the Ricondo study claims can be processed annually under OMP (a claim that itself is unwarranted), the smaller plane size (than assumed by Ricondo) means that OMP cannot carry the 66 million passengers claimed by Ricondo. 11

2. The simulation only deals with traffic operating into and out of O'Hare and ignores the continuing increase of traffic at Midway, DuPage County and Palwaukee – which all contribute to making the O'Hare Class B airspace

| Comment | Response |
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| 10 | Please see response to this comment on page U.4-125. |
| 11 | The comments listed in this correspondence are based on outdated work performed by Ricondo & Associates as part of the Master Plan effort. Subsequent to the modeling conducted for the Master Plan and in support of the EIS, Ricondo & Associates performed simulation modeling analysis at the direction, oversight and with the review of the FAA. For the EIS, the FAA technical experts directed and reviewed this simulation analysis.. The process included representatives from Air Traffic management and the National Air Traffic Control Association (NATCA) from O'Hare Tower, Chicago TRACON and Chicago Center. See **Appendix D** of the EIS for a detailed description of the modeling effort.<br><br>In addition, the FAA utilized the 2002 Terminal Area Forecast (TAF) for the EIS, whereas the City of Chicago used the 2001 TAF for the Master Planning effort. Please see **Appendix B** of the EIS for a detailed description of the assumptions used in developing the fleet mix and passenger loading assumptions. |
| 12 | Flight procedures and changes in the structure of the Chicago O'Hare Terminal Radar Approach Control (TRACON) have been proposed as part of the OMP to facilitate operation of the new and reconfigured runways proposed as part of the preferred alternative (Alternative C). These changes include the definition of new arrival and departure routes and resectorized airspace. Air traffic representatives from the Chicago O'Hare TRACON have confirmed that these changes could be implemented without substantive impacts to airspace procedures serving Midway, DuPage, Palwaukee, and other airports in the region. The FAA Air Traffic Organization is currently working to ensure necessary air traffic equipment, facilities, and staff are provided to support proposed OMP airspace improvements. |

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the busiest in the nation. The simulation ignores this level of airspace congestion on safety, controller workload, frequency congestion, airspace redesign, and space/equipment requirements of the TRACON. 12

3. The conclusion that OMP can handle 66 million annual enplanements at an annual average delay of 10 minutes (compared to an annual average delay of about 8 minutes per operation at O'Hare today) is both unrealistic and misleading. Unrealistic for the reasons explained above. Misleading, because it *does not take into account increased taxi time for each arrival and departure*. For example, even at today's level of traffic, OMP would add an average of an additional 3 minutes of taxi time for each arrival and departure. While this is not counted as "delay" time because the aircraft is moving, the fact is that airlines and their passengers will spend significantly more time on the ground navigating the complex system of OMP taxiways and runway crossings. At upwards of $5,000 an hour to operate a large airliner, the taxi delays to the hundreds of flights forecast to operate at OMP will add up to hundreds of millions of wasted dollars a year. 13

4. The simulation is silent on the impact of runway crossings on throughput, delays and safety. All but the two outermost OMP parallel runways are over 10,000 feet long. Because of the length and location of the parallels, aircraft must taxi across one or two runways to access the terminal. As observed by NATCA, "This creates a runway incursion problem, which is a very serious safety concern." FAA pointed out that aircraft would taxi across the 13,000 foot runway near the new western terminal 1,000 times a day. Ricondo agreed with the FAA assessment that this runway "becomes an impediment to airplanes on the ground taxiing" between the terminals and other runways. Yet, at a recent meeting sponsored by the City, Ricondo concludes that OMP will have less runway crossings than the current configuration. This makes no sense, because, in contrast to the OMP, the current runway configuration leaves room for most planes to taxi around runways. If the OMP has been reconfigured to solve this problem, new simulations are required. 14

5. The simulation does not take into consideration operations during crosswind conditions when pilots will refuse to accept a clearance to land on an East/West parallel runway. 15

6. The authors have arbitrarily and artificially altered the future demand schedules by increasing the average trip length for the future schedules.

| Comment | Response |
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| 12 | Please see response to this comment on the previous page. |
| 13 | The demand capacity modeling conducted by the FAA demonstrated that the Airport can accommodate all forecast aviation and passenger activity through the planning horizon with significantly lower delays than experienced by the existing airfield. Please see **Appendix D** for a detailed description of the process and results of the modeling effort used in support of this EIS. |
| 14 | See response to comment number 25 on page U.4-134. |
| 15 | See response to comment number 25 on page U.4-134. |
| 16 | For the EIS, the FAA developed the assumptions and results for all activity level forecasts including operations and passenger projections. Individual airline and city pairs were developed based on the best available assumptions when the forecast was developed. Please see **Appendix B** of the EIS. |

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This appears to be mainly due to assumed increased international travel. In order to correct for this in the calculation of the benefits that may accrue from the different options that are analyzed, the authors construct an average trip length that is equal to the baseline and the baseline plus 10%. They then add airborne delay to this "corrected" trip length to make comparisons between the different options. Wholly apart from whether this "correction" is valid (which we submit it is not), this methodology fails to take into account the surrounding airspace delays that will occur as a result of the growth of other traffic that is not destined for O'Hare. There could be interactions with other aircraft in specific sectors that handle international traffic that might change the ordering of the options, so that traffic to O'Hare is delayed to accommodate earlier non-O'Hare traffic. This is another manifestation of the problem mentioned above. Moreover, in actuality, average trip length -- like aircraft size -- is decreasing with the changing dynamics of the industry, the focus on smaller shorter-haul operations (*i.e.* RJs) and point to point services. 16

7. The simulation models only the end state of OMP. It does not take into account the loss of capacity and increase in delays that will occur during the highly disruptive 10-year construction period. The simulation also ignores the ripple effect throughout the nation of increased delays at O'Hare that will necessarily occur during the long and massive construction period. 17

8. The simulation does not take into account the negative operational impacts that will result from compliance with FAA's *"Airport Obstructions Standards Committee (AOSC) Decision Document #01, POFA and Runway/Parallel Taxiway Separation Standards, Approved December 18, 2003."* The new standard requires a 600 foot separation between runways and taxiways and a clear Precision Object Free Area (POFA) when aircraft are on a vertically guided final approach within 2 nautical miles of the runway threshold and reported ceiling is below 250 feet and/or visibility less then ¾ statute mile (or runway visual range below 4,000 feet). Only three (3) of the eight (8) runway/taxiway configurations proposed in the draft ALP will meet the FAA requirement for a 600 foot taxiway/runway separation. Quoting from Attachment B of the FAA Decision Document, "In their July 25, 2003 memo to AGL-1, Flight Standards concurred with the initial December, 2002 O'Hare Airport Layout Plan and associated concept of operations. Although there are runway/taxiway pairs closer than 600', *the Airport agreed with the operational restrictions associated with their design, including the need for*

| Comment | Response |
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| 16 | Please see response to this comment on the previous page. |
| 17 | The FAA modeled the end state of various phases of the proposed action. This included modeling proposed runway development in the years 2007, 2009, and 2013. Construction of the propose airfield would occur in a manner that is least disruptive to the operation. This could occur by performing construction at night or during other off-peak periods that could minimize any operational impact. See **Appendix D** of the EIS for a detailed description of the modeling.<br><br>As the commenter notes, delays at O'Hare can cause a ripple effect throughout the NAS. While the FAA does not agree that the simulation ignored the effects of O'Hare on the NAS, OMP when fully implemented would alleviate some of these negative effects. |
| 18 | The FAA has worked with the Airport Obstructions Standards Committee (AOSC) specifically relating to *Decision Document #1,* and rejects the commenter's assertion that the proposed runway/taxiway configuration would create operational concerns during Category II/III conditions. The FAA has provided guidance to the City of Chicago, in a letter dated April 9, 2004, regarding applicable FAA standards on the planned design of various taxiway/runway separation issues.<br><br>The runway configuration contemplated by the preferred alternative offers significantly more flexibility and less operational impacts than the present situation. These conditions could only occur when a new large aircraft (NLA) arrives or departs during the weather conditions described above. These infrequent occurrences will require minor adjustments in taxiway assignments and will not affect airport safety. |

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*ATC management by aircraft group.* Through ongoing discussions, the FAA and Airport Management will continue to address any concerns or changes." (emphasis added).

The FAA must address what those "operational restrictions" will be and their impact on Ricondo's conclusions regarding capacity benefits. To suggest that evaluation of these impacts can wait until some future date is unacceptable. Additional simulations with the "operational restrictions" evaluated must be accomplished to insure that decisions regarding OMP are not made based on an erroneous analysis of purported capacity. 18

**C. The Ricondo Study Fails to Consider the Enormous Delays at Chicago and Throughout the Nation Air Transportation System During the 10-Year Construction Period.**

The simulation and modeling studies conducted by Ricondo only concern themselves with a description of the end state after completion of the OMP. The only analysis provided is a comparison of the current airport with a number of fully completed alternatives. There is no modeling of the delay that will be caused during the ten years it takes to reach the end state. Surely, any evaluation of safety, efficiency and utility of the airport and any cost/benefit analysis must take into consideration the additional impacts and costs that long-term construction will cause. A systematic analysis must be conducted to determine those impacts and costs.

The City's own project description confirms that the construction will take practically ten years, and will involve long-term major disruptions. The report details full closures of runways and taxiways. It details night time closure of runways and taxiways. It includes limitations on the ability to conduct IFR operations. At various times, runways will limit the availability of Category I, II and III approaches. At other times, thresholds will be displaced, thereby limiting the category and weight of aircraft able either to land or depart existing and planned runways. Runways will be decommissioned before their replacements are operational. Taxiways will be closed.

The net effect of the construction impacts detailed above is that the capacity of the airport and its individual runways will decrease and delays will increase during the extended construction cycle. There will be massive delays and attendant costs associated with these construction impacts. Nowhere in the City's reports is the magnitude of these delays and their costs even estimated or mentioned. 19

| Comment | Response |
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| 18 | Please see the response to this comment on the previous page. |
| 19 | The simulation modeling conducted by the FAA for the EIS evaluates end states of various phases of the proposed plan including the years 2007, 2009, 2013 and 2018. Although it is unlikely that all construction impacts will have zero consequences on the airport operation, long term construction will be phased in a manner to minimize impact on airfield movement. It is anticipated that construction will be phased so that construction periods that could impact operations will be conducted at night or during off-peak periods to minimize any disruption. Please see **Appendix D** of the EIS for a detailed description of the modeling conducted for this effort. |

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**II. THE OMP WILL FAIL TO ACHIEVE CLAIMED CAPACITY BENEFITS.**

The Ricondo study claims that the OMP will enable O'Hare to accommodate "quad approaches" during VFR conditions -- and is premised on the assumption that VFR weather exists 90.97% of the time at the airport. (Simulation Analysis II-16). This analysis is flawed and seriously overstates OMP capacity benefits.

According to Ricondo's own Project Definition Table 2 (Configuration Minima), OMP quad approaches would be possible only in *excellent* VFR weather conditions – ceiling greater than 5,500 feet and visibility greater than 10 miles. Yet, the Ricondo simulation study inexplicably erred in assuming the availability of quad approaches in *minimum* VFR weather conditions (1,000 foot

| Comment | Response |
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| 20 | As stated previously, the commenter has stated these concerns based on outdated simulation modeling conducted in support of the City of Chicago's Master Plan. Based on the operational analysis of the proposed airfield layout in conjunction with the wind and weather analysis for the EIS, it has been determined that independent quad approaches can be utilized when wind and weather conditions are above a 5,500 foot ceiling and a visibility of at least 7 nautical miles. Therefore, quad arrival approaches are available for use approximately 54% of the year including both east and west flow operations. Please see **Appendix D** of the EIS for a detailed description of the modeling for the EIS. |

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ceiling and 3 mile visibility).[1] Thus, contrary to the Ricondo simulation, quad approaches would be available far less than the 90.97% of the time that O'Hare meets VFR minimums. The Ricondo Study is silent as to how often the much-better 5,500 and 10 conditions exist.

An analysis of one year of weather data at the O'Hare airport (from Embry Riddle Aeronautical University weather data files (2002)) shows that O'Hare airport is below the 5,500 ft. and 10 statute mile criteria a whopping 41.5% of the time rather than the 9% weather restriction assumed by Ricondo.

Thus, the simulation analysis and capacity findings of the report are based on illusory VFR operating capabilities that do not, in fact, exist. Chicago already has the ability to run triple approaches in VFR weather, and OMP is not justified for a nominal increase in capacity that would be available only in the best VFR conditions. 20

References by Chicago and Ricondo to the quad approach capabilities of airports like Dallas/Ft. Worth are inapplicable to the OMP. Because of the much-larger footprint of DFW, that airport is not as constrained in terms of runway spacing and separation minima and *can* operate quad approaches in minimum VFR conditions (1,000 and 3), as opposed to 5,500 and 10. Moreover, prevailing weather conditions in the Southwest region where DFW is located are more favorable than at Chicago. 21

To the extent OMP creates any new capacity, the sporadic nature of capacity availability – only in ideal weather conditions – will exacerbate delays at O'Hare. At congested airports, airlines build their schedules based on good-weather optimism and accept the inevitable delays when weather is poor. Approximately 80% of airline delays are weather related. The illusion of capacity created by OMP will encourage carriers to schedule more flights at the airport based on ideal weather. Consequently, O'Hare will be over-tasked and chronically delayed every time the weather goes below 5,500 and 10 -- which will be far more often than the backups that occur today under IFR. 22

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[1] The Ricondo Study notes that should the FAA be willing to entertain a relaxation of existing safety standards, VFR minimums for some of the quad approach configurations could be reduced to 1,500 ft. and 5 miles, and 1,000 ft. and 3 miles, respectively. For the reasons explained herein, an erosion of safety standards to accommodate a fundamentally flawed design is not justified.

| Comment | Response |
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| 20 | Please see the response to this comment on the previous page. |
| 21 | Based on the operational analysis of the proposed airfield layout in conjunction with the wind and weather analysis for the EIS, it has been determined that independent quad approaches can be utilized when wind and weather conditions are above a 5,500 foot ceiling and a visibility of at least 10 nautical miles. Therefore, quad arrival approaches are available for use approximately 54% of the year including both east and west flow operations. Please see **Appendix D** of the EIS for a detailed description of the modeling for the EIS.<br><br>The weather conditions in Chicago, do not negate the benefits of adding arrival capabilities, as OMP does, to the existing airfield. In fact, the weather conditions, being what they are, are further reason to add capacity safely through parallel runways. |
| 22 | FAA disagrees with the commenter that the benefits of the OMP will be achieved only in good weather. As shown in **Appendix D** of the EIS, the preferred alternative operates in a dramatically improved manner when compared to the current airfield.<br><br>The FAA notes that the modeling conducted was based on flight schedules derived from the FAA's Terminal Area Forecast, which are based on unconstrained demand. In addition, the modeling did take into account the estimated percentage of time that the airfield operates under poor weather conditions. |

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The Ricondo study forecasts 1.3 million annual flights at an average of *10 minutes* of delay per operation. However, FAA's own manuals state that an airport is considered *congested* when delays exceed *3-5 minutes*, and that airport capacity is measured based on a 4 minute delay standard. *See, e.g.* FAA Order 5090.3C at 20. Thus, the Ricondo simulation analysis shows that delays become unacceptable at far less than the 1.6 million flights Chicago originally claimed the OMP could handle. Indeed, even at the 1.3 million level evaluated by the study, delays are more than twice the FAA standard. And, owing to Chicago's erroneous assumptions concerning aircraft size, the 66 million forecast passenger enplanements cannot be accommodated at the lesser number of flights.

In fact, the capacity shortfall will likely be much greater. The State of Illinois and the City prepared a joint forecast showing 75 million enplanements for O'Hare (total regional enplanements of 112 million). The OMP will not have enough effective capacity to serve 66 million much less the higher 75 million forecast by the City and the State. Again, a waste of money which will not effectively address the delay/congestion problem. To the contrary, the OMP will result in an increase in delays and congestion.

The shortfall between the City's demand/capacity claims and disconnect with reality has significant implications for every facet of the FAA review process – from alternatives analysis, to cost-benefit, to environmental impacts, to purpose and need. 23

**III. THE OMP WILL HAVE INADEQUATE SAFETY MARGINS.**

JDA previously issued a White Paper that identified several preliminary safety concerns with the OMP, including excessive traffic volume, inadequate runway separation, loss of critical crosswind runway capability in periods of high northwest winds, and increased potential for runway incursions. These initial concerns were shared by the National Air Traffic Controllers Association (NATCA), which concluded that the OMP, "if built as publicized, will do little for capacity and/or will create serious safety issues."

As the OMP project is reviewed in more detail, it has become increasingly apparent that safety margins have been routinely reduced to the bare minimum – both in terms of design and operating procedure – in order to wring additional capacity out of a fundamentally flawed airport development plan. Some of the elements within the OMP that are at minimum, or require exceptions to, FAA standards are:

| Comment | Response |
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| 23 | The commenter references an outdated study performed by the City of Chicago in development of the O'Hare Master Plan. Based on the work performed by the FAA for the EIS, the preferred alternative accommodates all forecast operations and enplanements through the planning horizon (Forecast 2018) with an average annual delay of 5.8 minutes per operation. Please see **Appendix D** of the EIS for a detailed description of the simulation modeling conducted for the EIS. |
| 24 | The FAA disagrees with the commenter's assertion that the potential approval of the OMP in any way compromises safety. The FAA's safety standards prescribe generally applicable conditions governing safe and efficient use of the airport. In addition, the FAA has a process whereby a particular airport can obtain a "modification" to the requirements of a particular safety standard. To obtain a "modification" the airport must show and the FAA must find that the particular modification is justified by unique circumstances and that the modification will not result in any material degradation of safety. For example, the FAA's standard would require any ILS localizer to be located beyond 1000 feet from the end of the runway. With the proposed ALP, a modification to standard is being considered to allow the relocation of the ILS localizer serving Runway 22R to be 967 feet from the end of the runway of Runway 4L. This modification to standard would be approximately 33 feet as it is the only feasible and prudent siting alternative available. |

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- Runway slopes
- United States Standard for Terminal Instrument Procedures (FAA TERPs)
- Objects Affecting Navigable Airspace (14 C.F.R. Part 77)
- Aircraft size and fleet mix
- Closeness of interstate highway to runways
- Closeness of airport service roads
- Closeness of towns
- Crosswind conditions
- Operations on contaminated runways
- Height of control towers
- POFA and Runway/ Parallel Taxiway Separation Standards

In short, the OMP as proposed will decrease the margin of safety and thereby increase the level of risk. The OMP as proposed will make a complex airport even more complex. The increased complexity of the airport particularly during ten years of construction disruption will dramatically decrease the level of safety. A further discussion of the particular safety concerns associated with various design elements is provided at Appendix A. 24

**A. The OMP Will Require Controversial Operating Procedures of Questionable Safety.**

The O'Hare Modernization Program definition (page 16, table 2) shows an extensive use of Land and Hold Short Operations ("LAHSO"). These procedures are currently extremely controversial in the pilot community. Reluctance to accept LAHSO clearances may further adversely undermine the OMP capacity claims.

The information provided by Chicago also indicates that in order to accommodate the New Large Aircraft (NLA), the NLA would have to cross Runway 28R behind other aircraft departing further down the runway from an intersection. The use of shortened intersection departure procedures and the possibility of jet blast to the NLA crossing behind, raise serious safety questions. Moreover, it should be noted that following a major accident at LAX, where a B-737 landed on top of a commuter plane holding for an intersection departure, the FAA no longer permits intersection takeoffs at night. 25

**B. The 10-Year Construction Phase Will be Highly Problematic, Keeping Pilots and Controllers in a Constant State of Confusion and Operational Disruption.**

| Comment | Response |
|---|---|
| 24 | Please see the response to this comment on the previous page. |
| 25 | All the alternatives considered in the EIS, and the procedures for operating them, meet or exceed FAA safety and design standards. The FAA would not operate the OMP in such a way that safety would be impaired. Safety has been a key consideration in the development of all the alternatives and in defining how they would be operated. Runway-crossing and land-and-hold-short operations (LAHSO) procedures are conducted safely today with the existing O'Hare airfield. For example, these LAHSO procedures are in use today on 22R interacting with 27R, 9R interacting with 4R, as part of the most efficient operating configuration in use today. For operating the OMP, time-tested, safe runway-crossing procedures have been developed and will result in fewer crossings of the center portions of active runways than occur today with the existing O'Hare airfield. These procedures were developed in close coordination with experienced FAA controllers from the O'Hare tower to ensure their safety and viability. As noted in the EIS, there will be less reliance on land-and-hold-short operations (LAHSO) procedures than there is today with the existing airfield. Therefore, aviation safety will not be impaired with the OMP and will more likely be enhanced by the proposed improvements.<br><br>An analysis of historical wind and runway use conditions was undertaken in support of the TAAM simulation modeling effort conducted for the EIS. This analysis, which was independently verified by the FAA and their contractor, indicated that high crosswinds would prevent the use of the proposed east-west runway system less than 1% of the time.<br><br>It is the FAA's policy and practice to conduct construction safety phasing plan reviews and will work with the Sponsor to minimize operational impacts. Many air carrier airports throughout the country are undergoing construction and improvements. At none of these airports is safety being compromised. Over the recent past, new runways and reconfigured runways have been constructed at such major airports as Dallas, Detroit, Louisville, Houston, among others without any compromise in safety. The FAA would use the full measure of its powers and procedures to ensure that during the implementation of the OMP there will be no denigration of safety standards.<br><br>Continued on the following page. |

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OMP construction will be highly complex and therefore highly disruptive to airport operation over a ten-year period. Construction phasing presents serious concern for the level of safety during the construction period. When viewed in conjunction with the complex phasing of the ten-year construction period, the OMP plan raises significant safety concerns.

Construction on a major airport operations area is always of major concern to users of the National Airspace System. The FAA recognizes this in numerous Advisory Circulars to airport users during construction in the operations area of an airport. Regardless of this, major airport accidents have occurred as a result of extensive and prolonged construction while attempting to maintain high levels of flight operations.

There are a variety of areas where safety issues come to bear during construction: loss of navigational aids and field lighting during inclement weather and/or nighttime operations; the changing of airport taxi routings to/from the arrival/departure runways and areas adjacent to construction, where the marking and lighting is no longer routine for pilots. Pilots' lack of familiarization with changing operations environments causes a lack of routine, which is detrimental to flight safety.

The dangers posed by runway construction are very real, as underscored by the tragic loss of Singapore Airlines flight SQ006, which crashed at Taipei on October 31, 2000. The 747-400 had attempted to take off at night, in bad weather conditions, from a runway supposedly "closed" for repair. As it was leaving the ground, the plane struck a concrete barrier and construction equipment, split into three pieces, crashed and burned. While ICAO regulations generally require a runway under repair to be cordoned off, the accident runway at Taipei had not been completely blocked because it was frequently used for taxiing aircraft.

The negative safety implications of OMP construction are obvious: (1) construction is scheduled to take place at night, when construction hazards are least visible and most confusing to pilots; (2) like Taipei, O'Hare will rely on "closed" runways for taxiing aircraft and it is difficult to see how construction crews would be able to completely cordon off construction areas during the brief work periods allotted; (3) O'Hare is used by long-haul foreign air crews that may visit the airport only a few times a month, and who are arriving fatigued; and (4) O'Hare is and will be one of the most complex and confusing airports in the

| Comment | Response |
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| 25 continued | FAA also disagrees with the commenter's assertion that OMP will create new safety issues, if for example, an aircraft, including NLA, crosses 28R during intersection takeoffs further down that runway. At O'Hare today, intersection takeoffs (for example, 32L at T-10, with other aircraft crossing that runway behind the intersection takeoff point) are common procedures that allow the airport to operate a maximum efficiency. Adopting a similar practice with the proposed airfield including for example on the proposed 28C and 28R presents no safety concerns and involves no new procedures. |
| 26 | The FAA is aware that on rare occasions, aviation accidents related to airport construction have occurred. In addition, to the case cited by the commenter, for example, there was also an event in the 1970s when a Western Airlines aircraft landed in the pre-dawn hours on a Mexico City Runway closed for construction. Worldwide, the airline industry along with aviation authorities and third party entities, have taken many steps to prevent such occurrences. As a result, in the United States alone, major airport improvement projects have been completed safely and without incident at many airports, including among others DFW, PHX, MIA, ATL, DTW, and SDF. All but Louisville, have significant international service. In addition major construction is underway or about to begin, at both PHL and BOS, also international airports. The FAA believes the OMP can be accomplished safely and it will use the full measure of its authority to ensure that this is so.<br><br>There are well defined construction procedures for the coordination of construction work on the airfield as outlined in **Chapter 5, Section 5.20.4.7** of the EIS. As part of these requirements, contractors will submit construction phasing plans to establish guidelines and constraints that contractors must follow during construction on the airport, and within the Aircraft Operations Area (AOA). Additionally, numerous Federal and state regulations govern construction activity as outlined in **Chapter 5, Section 5.20.1.1** including *FAA AC 150/5370-10A, Standards for Specifying Construction of Airports,* to which the phasing plans will adhere. In addition, all construction-safety phasing plans are coordinated within all lines of business within the FAA. |

| Comment | Response |
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| 26 | Please see the response to this comment on the previous page. |

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world, where routine and familiarity are especially beneficial to flight safety. Simply put, the enormous reconstruction of O'Hare is an accident waiting to happen. 26

**C. The OMP Will Struggle to Safely Accommodate Future Large Aircraft.**

Mixing different types of traffic -- and attempting to juggle the multiple in-trail and offset separation requirements for aircraft on the approaches --- make for a very complex air traffic control arrival situation. OMP is Chicago's design for the future and must, accordingly, be able to accommodate the so-called New Large Aircraft (NLA) and/or Airplane Design Group (ADG VI). This raises the complexity of simultaneous ILS approaches to an even greater degree because NLA's will be limited to using only Runways 9C-27C and 10C-28C.

As described in greater detail in Appendix A, it is apparent that there is not enough land area to accommodate Airplane Design Group V and VI without adding restrictions and complexity to a system which is unforgiving of error. OMP is designed to "just" meet safety standards and in many instances requires waivers or exceptions. The use of non-standard runway, taxiway, and Navaid designs add to areas of potential conflict. Complex systems, such as an airport which has a variety of standard deviations, lead to operator errors which could

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well precipitate accidents.[2] It is apparent that there is a need for a new airport to accommodate all FAA standards without exceptions. This will safely increase capacity and provide a better cost benefit than the redesigning of ORD with all of its deviations from standards.

The numerous restrictions that would be imposed on NLA operations are clearly detrimental to the efficient handling of these important future aircraft. Should either one of the NLA runways be out of service, there will be an adverse impact on airport capacity and NLA operators.

The information provided by Chicago also indicates that NLA's would cross Runway 28R behind other aircraft departing further down the runway from an intersection. This shortened, intersection departure, and the possibility of jet blast to the NLA crossing behind, raises serious safety questions.

The OMP is not the airport of the future in terms of safety. Rather than focusing solely on expanding O'Hare to fulfill a role for which it was never intended, the FAA needs to look at other regional alternatives. Failure to do so will only repeat past mistakes. For example, Midway is landlocked, with insufficient runways and nowhere to expand. JFK was originally constructed with six runways, but, due to poor planning, has endured several costly makeovers, and now has just four runways with more appropriate lengths and adequate spacing. 27

**IV. THE OMP WILL COST TOO MUCH.**

The City's claim that the OMP will cost $6.6 billion is seriously understated. In the White Paper, JDA previously estimated the total cost to be between $15 and $20 billion. A more detailed cost analysis prepared by JDA's consultants confirmed that costs would exceed $15 billion.

The City has made it clear that over a billion dollars in federal funding authorizations will be required to finance this project. For Phase 1 alone the City stated that almost $400 million in AIP and almost $650 million in PFC funds will be required. Indeed, Chicago has already received over $14.5 million in AIP master planning grants and over $220 million in PFC funds for OMP master

[2] Barry Strauch, *Investigating Human Error: Incidents, Accidents, and Complex Systems*, Chapter Two (1997).

| Comment | Response |
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| 27 | Again, FAA disagrees with the commenter's assertion that safety will be compromised. Assuring safe intervals between different types of arriving and departing aircraft has always been a primary responsibility of air traffic controllers. Accommodating today's fleet mix with different landing speeds, separation distances, and other factors is, if anything, less challenging than the controller's obligations of 40 years ago. Then, O'Hare was served by the first generation of fast-moving, jet-powered aircraft as well as a collection of lumbering propeller aircraft ranging from international service by Lockheed Constellations and DC-3s serving the Chicago region. Simply put, the proposed ALP would provide the air traffic controllers with greater flexibility than the present configuration to separate aircraft by performance characteristics.<br><br>The FAA has worked with the Airport Sponsor and has refined the taxiways and taxi routings of the New Large Aircraft (NLA). Well defined routings have been developed to maneuver NLA aircraft between the runways and the gate areas and vice versa. These taxi procedures have been developed by experienced Air Traffic staff (management and NATCA) in conjunction with *FAA Order 7110.65 - Air Traffic Handbook*. |
| 28 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |

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planning. Thus, FAA funding decisions are inextricably linked to the OMP, and more particularly to the ALP. AIP funding applications require evaluation of the cost-benefits of the proposal. The OMP flunks the cost-benefit test. 28

The OMP will make O'Hare too expensive for the airlines. The industry has changed dramatically in the aftermath of the recession, the terrorist attacks of September 11, the Iraq War and SARS. The larger network airlines have been forced to substantially reduce costs in order to survive. At the same time traffic has declined, low fare airlines are proliferating and passengers are demanding lower prices. Average fares have significantly declined. Airline profit margins are thin in the best of times and airport charges represent a significant component of airline cost structure. The OMP will dramatically increase the cost of serving O'Hare.

Airlines and their passengers cannot afford the excessive costs that would be imposed by OMP. Airport charges at O'Hare are already high relative to other major airline hubs. If OMP is built, O'Hare will not be cost-competitive with other major connecting hubs. Airlines will divert traffic and services (particularly connecting traffic which makes up a significant proportion of the O'Hare traffic base) to other more cost-effective hubs. The loss of service and traffic will further increase the cost burdens on O'Hare carriers and, of course, will jeopardize the City's ability to pay the enormous amount of bonds necessary to support the OMP development. 29

The City's projected costs are too low. When one reviews the City's published information it is apparent that a large amount of cost has been left out of the City's figures. For example, Chicago's $6.6 billion dollar estimate leaves out the full costs of the "World Gateway" Terminal Project which Chicago now says is essential to achieve the benefits and passenger loadings claimed for the OMP. Similarly, Chicago's $6.6 billion dollar estimate leaves out the cost of additional terminal facilities which will be necessary to carry the 66 million

| Comment | Response |
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| 28 | Please see the response to this comment on the previous page. |
| 29 | The FAA disagrees with this comment. Please see the response to comments 100-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-565 of this appendix. |

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enplanements claimed by Chicago for the OMP.[3] Nor does the $6.6 billion dollar estimate include the necessary surface road investments (*e.g.*, the so-called "western access" and "ring road"). 30

The OMP would also require a large number of existing facilities on the airport to be relocated and rebuilt. The City's Concept Development Refinement states:

> While estimated future facility requirements have been defined for support/ancillary facilities, the ultimate need and configuration for most of these facilities is dictated by airport tenant decisions on how to accommodate demand, and are not necessarily in the control of the Airport operator. As such, the facilities depicted on the draft ALP are those necessary to replace in-kind facilities impacted by OMP development. (Page IV-1)

This tells us two things. First, that the City's analysis only goes as far as replicating existing facilities serving the current airport someplace else on the field and does not consider any modernization or change to those facilities necessary to serve an airport as expanded. Common sense indicates that this is an oversimplified assumption.

More importantly, however, is the indication that these are someone else's facilities and therefore someone else's costs. While the City has failed to disclose how it arrived at the $6.6 billion cost figure, many necessary facilities costs have not been included in the City's estimate. These costs will not be inconsequential. They include major expense items. The City has detailed the general nature of the areas of cost to be incurred for the relocation of:

1. Cargo facilities
2. Airline/GSE maintenance facilities
3. Flight Kitchens
4. Airport Maintenance/DOA
5. GA/FBO facilities

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[3] Unless a comprehensive regional aviation capacity solution is developed, metro Chicago will lose massive amounts of commercial passenger traffic — and the jobs and economic benefits associated with that traffic to other regions.

| Comment | Response |
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| 30 | The City of Chicago has estimated the cost of the O'Hare Modernization Program (which includes the airfield improvements, western terminal development, and other on-airport circularization projects to be $6.6 billion in 2001 dollars. This estimate does not include the capital costs associated with the World Gateway Program and Capital Improvement Program. See **Section 1.7** in **Chapter 1** for additional discussion on the cost estimate. |
| 31 | The commenter provides statements on pre-planning documents submitted to the FAA by the City of Chicago. Since the submittal of this letter, the City of Chicago submitted the *February 2004 O'Hare International Airport Master Plan (Master Plan)* for FAA review. Through an on-going process, the FAA is reviewing the City of Chicago's *Master Plan* document. |

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While the City does not list FAA facilities as Support/Ancillary Facilities, the remainder of the plan indicates that major expensive changes to FAA facilities will be required. The plan indicates the construction of two new Airport Traffic Control Towers, the relocation/replacement and construction of Radars, Navigational Aids and Air Ground Communications facilities at the airport. Again, the analysis assumes that the cost for these facilities will be borne by the FAA and therefore the taxpayer. The costs for these FAA facilities will be extensive. 31

Even JDA's $15 to $20 billion cost estimate does not include the additional, but very real indirect costs that will be exported by Chicago and forced onto others. The OMP will result in significant adverse economic consequences to surrounding communities including: loss of jobs, erosion of real estate values, disruption of tax base, weakening of schools, and neighborhood dislocation. 32

Ultimately, the City will be required to pass a cost/benefit analysis. If the City is to consider benefits to others from the project, as it surely will, the City must also consider the costs OMP will export onto others. 33

**V. CONCERNS IDENTIFIED BY FAA REVIEW OF THE OMP DOCUMENTS.**

JDA notes that the FAA itself has prepared extensive comments concerning problematic issues associated with the OMP project. While we will not duplicate that review, we have highlighted in Appendix B certain FAA comments that have particular significance, and with which we concur. 34

**VI. FAA HAS TURNED THE APPROVAL PROCESS ON ITS HEAD.**

**A. ALP Review Must Follow The Master Planning Process, Not Precede It.**

In December, 2002, Chicago asked FAA to approve the proposed Airport Layout Plan, before completion of the Master Plan for the OMP and before FAA evaluates the merits and deficiencies of the City's six-runway plan. The FAA has already spent almost $15 million in AIP grants. Under the FAA's own guidelines, the ALP is the end product of the National, State and Master Planning processes – not the beginning. Yet, here, the Master Plan has only just begun. And, contrary to FAA requirement, the Master Plan process has been shrouded in secrecy, with the City refusing to disclose the critical facts and data necessary to evaluate the OMP.

| Comment | Response |
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| 31 | Please see the response to this comment on the previous page. |
| 32 | The FAA has evaluated the environmental consequences of the preferred alternative. Specifically the commenter notes loss of jobs, erosion of real estate values, disruption of tax base, weakening of schools, and neighborhood dislocation. The FAA addresses these types of issues in **Section 5.4** and **Section 5.5** in **Chapter 5** of the EIS. |
| 33 | Outside of the NEPA process, the FAA is evaluating the City of Chicago's benefit cost analysis through the ongoing review of the City of Chicago's Letter of Intent Application, submitted to the FAA in February 2005. A decision to fund the proposed action and at what level will be determined through this separate process. |
| 34 | The commenters statements are based on FAA comments provided to the City of Chicago on their December 2002 draft Airport Layout Plan. The City of Chicago revised their draft ALP based on FAA comments resubmitting a complete ALP package in October 2003. The FAA review is on-going. |
| 35 | There is no FAA requirement for the order of the Master Plan in relationship to the Airport Layout Plan. A Master Plan is a voluntary document developed by the Airport Sponsor and is only accepted by the FAA, but is not approved. An Airport Layout Plan, however, is a document that is submitted to the FAA for FAA approval, and this approval is necessary for the Sponsor to receive federal funds. Many Sponsors submit the Airport Layout Plan for FAA review and approval without ever submitting a Master Plan.<br><br>There are no FAA requirements for development of a state system plan or metropolitan regional plan to be followed by a master plan as a precursor to the development of an airport layout plan. With respect to system planning guidance, FAA's Advisory Circular for System Planning does not specifically state that a Master Plan should be developed in conjunction with an Airport Layout Plan. However, the City of Chicago has developed a Master Plan and the FAA is thoroughly reviewing the Plan concurrently with its review of the City's Airport Layout Plan. |

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| 35 | Please see the response to this comment on the previous page. |

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Appendix C sets forth a description of the FAA's planning requirements and process by which system, regional, state, airport master plans and ALPs are to be accomplished. The FAA's airport planning Orders and Advisory Circulars make it clear that isolated airport layout development without coordination with a current and comprehensive state, regional and master plan would be flawed and inconsistent with FAA's objectives and policies.

Master Planning under FAA Orders and manuals requires a thorough and ***public evaluation*** of regional requirements, and rigorous cost and financial feasibility analyses of all alternative options. Because the traffic forecasting and consideration of capacity options elsewhere in the region are essential to evaluating the economic viability, cost-benefit and federal funding issues relating to OMP, it is imperative for FAA and the City to complete the master planning process (which must incorporate system and regional planning) before the ALP can be approved. That has not been done.

As recently as October 6, 2003, FAA sent the City substantial and detailed comments on draft reports submitted by the City in connection with the City's master plan and ALP. None of those draft reports were disclosed to the public. This is contrary to FAA requirements that the master planning process maximize public participation:

- "Public acceptance is dependent upon whether the potentially affected public understands and accepts the need for the development; receives complete, truthful, and unbiased information about the impacts; and recognizes that public concerns have been considered adequately and fairly. The only way to achieve these conditions is by designing and accomplishing a program to achieve them. *One cannot gloss over unfavorable impacts or attempt to hide the true purpose of a development without arousing suspicion and opposition. It follows that the program for public involvement must be designed with careful consideration for not only providing accurate and unbiased information, but also for the perception of openness and completeness, along with a demonstrated commitment to the development of mitigation measures appropriate to the situation.*" Airport Master Plans FAA Advisory Circular AC No. 150/5070-6A at 52 (emphasis added).
- "*Information about alternatives, and their financial, social, and environmental costs and benefits should be made available to the public as it is developed. The objective is to identify and air all of the problems before the decision is imminent.* The probability of

| Comment | Response |
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| 35 | Please see the response to this comment on page U.4-140. |

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> political acceptance is much enhanced if the public, and its representatives, elected or otherwise, understand the process and the results by participation rather than by having the results and recommendations presented as decisions already made." *Id.* (emphasis added).

Thus, the FAA did not have the benefit of critical public input on those reports. Nevertheless, and despite the lack of public input, the FAA's October 6 letter attached 19 pages of comments on the City's reports.

The FAA's October 6th letter acknowledges that the ALP is intrinsically related to and a part of the master plan review process. In the October 6th letter, the FAA directed the City to provide a host of additional material, including (1) "an OMP financial plan...funding sources (AIP, PFC, entitlements, discretionary, bond, others), and amounts;" (2) "a cost benefit analysis for OMP;" (3) "documentation on the economic impact of OMP on the City of Chicago and the region;" (4) "a discussion of the City's public outreach program;" and (5) a "discussion of airport capacity and delay . . . [including] constrained and unconstrained airfield capacity, delay numbers that compare a build and no build scenario, and other capacity and delay issues, such as runway versus airfield delay numbers . . ."

The FAA must reject the City's piecemeal approach. The City wants to isolate the ALP approval from the broader and inextricably inter-related considerations of the OMP in order to avoid the critical analysis of the deficiencies of the OMP. 35

**B. The Scope Of FAA's ALP Airspace Review Is Too Narrow.**

On December 5, 2003, Barry Cooper sent the Concerned Communities a letter clarifying that the scope of the comments sought by FAA in this matter should be narrowly limited to "issues of *airspace utilization only*" (emphasis original). The Concerned Communities strongly disagree that the scope of FAA's review should be so constricted. The Concerned Communities submit that the statute and policy require a much broader inquiry.

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Section 47107 requires the FAA to approve any change in an airport layout plan. At a minimum, section 47107(a)(16) requires the FAA to examine whether a revision to an airport's ALP will "affect adversely safety, utility and efficiency of the airport." By its plain terms, the statute is not confined to mere airspace issues. Moreover, that provision must be read in the context of other related statutory provisions including, §47103 (g), §47106 (a) and §47101. For example, section 47103 requires the FAA to "provide a safe, efficient and integrated system of public-use airports." Section 47104 (a) requires the FAA to provide grants for the purpose of "maintaining a safe and efficient nation-wide system of public-use airports that meets the present and future needs of civil aeronautics." And, Section 47101 (g) requires the FAA to coordinate with state and local officials in developing airport plans and that the "process of developing airport plans and programs shall be continuing, cooperative and comprehensive . . . "[4]

Under the statutory scheme, the FAA must make a determination of whether the six runway plan will impact the airport's overall efficiency and utility -- including whether or not it achieves the goals professed by the City, and whether it is consistent with national, state and regional plans -- before the FAA approves the ALP. FAA Order 7400.2E states that the "Purpose of an aeronautical study is to determine what effect the proposal may have *on compliance with Airport Programs*, the safe and efficient utilization of the navigable airspace by aircraft, and the safety of persons and property on the ground." Again, this is broader than mere "airspace issues." Paragraph 10-2-1. Furthermore, FAA funding decisions are inextricably linked to the OMP and to the ALP. The City has stated that it cannot proceed with OMP without hundreds of millions of dollars of AIP grants and PFC authorizations. Mayor Daley's July 9, 2003 press release stated that at least $363 million in AIP grants and $657 million in PFC funds will be required. AIP funding applications require evaluation of the cost-benefits of the proposal. That evaluation should be made in the context of the ALP review process. 36

[4] Section 47010 (g) further directs the FAA to encourage sponsors "to develop airport master plans and airport system plans" that "are integrated with metropolitan plans to ensure that airport development proposal include adequate consideration of land use and ground transportation access" and that "foster effective coordination between aviation planning and metropolitan planning."

| Comment | Response |
|---|---|
| 36 | The FAA publicly circulated the Airport Layout Plan in accordance with FAA Order 7400.2E soliciting input from nearby users of airspace in regard to airspace utilization only. The public circularization process is just one component of the overall airspace review process that the FAA uses to evaluate the draft ALP. A detailed comprehensive FAA review of the Airport Layout Plan has been ongoing since December 2002 and continues to this day. All FAA divisions are participating in this review.<br><br>As demonstrated by our responses to comments throughout this section of the EIS, the FAA has considered the entire range of issues faced by the Agency with regard to the possible approval of the OMP. At the same time, the Agency believes that it is inappropriate to link airspace evaluation and ALP approval with the separate processes involving consideration of AIP grants and PFC funding. |

| Comment | Response |
|---|---|
| 37 | Comment noted. |

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**VII. CONCLUSION.**

For the reasons discussed above, the OMP is a fundamentally flawed design and should be rejected. At a minimum, the Administrator must place holds on the parallel consideration of the OMP ALP and AMP (and the hundreds of millions of dollars that are being spent on this project) until the deficiencies of the OMP are examined and resolved. 37

Respectfully submitted,

/ s /

Joseph M. Del Balzo
JDA Aviation Technology Solutions

cc: Associate Administrator Woodie Woodward
Andrew Steinberg, FAA Chief Counsel
Cecilia Hunziker, Regional Administrator
Ruth Leverenz, Assistant Administrator for Regional and Center Operations
Barry Molar, FAA Airports Financial Assistance Division Manager
Thomas E. Salaman, FAA Chicago Metropolitan Program Manager
Jeri Alles, FAA Airports Division Manager
John F. Harris
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Nancy LoBue
Joseph Karaganis
Robert E. Cohn
J. E. Murdock III
Alexander Van der Bellen
Senator Peter G. Fitzgerald
Congressman Henry J. Hyde

APPENDIX A
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SAFETY VARIATIONS AND CONCERNS*

2.1.1.1 **Wind Analysis**
During some periods of time, aircraft will still be accepting ten to fifteen knot crosswinds on contaminated runways. While this may seem to be a small percentage, if it occurs during the peak periods, it increases the likelihood to adversely affect airport capacity and safety. 38

2.1.2 **NLA (New Large Aircraft)**

- They are restricted to designated taxiways, adding to ATC and pilot complexity and airport congestion. The required taxi routes will adversely affect out to off times due to the need to restrict these aircraft to two runways and special taxi routes.
- Adds additional costs to airport operations and accommodations. For example, existing taxiways may need to be strengthened for NLA.
- NLA operation on the airport will require additional spacing and will impact other aircraft in ways not stated in OMP documents, such as potential increase in wake turbulence separation. Airport operations will be required to always have one of the NLA runways available to accommodate aircraft dispatched for arrival or departure.
- WEST VFR: Potential congestion between Runway 27C & 27L for NLA crossing runways for both arrivals & departures.
- WEST IFR: Arriving NLA on Runway 28C would need to use the south parallel taxiway in an easterly direction to bypass Runway 28R before reaching the terminal area. The travel time would be higher for these aircraft compared to aircraft arriving on Runway 27C. Runway 28R NLA crossings increase as both arrivals & departures need to cross. Departing aircraft on Runway 28R would use intersection departures allowing for arriving aircraft to taxi beyond the departing aircraft. Note the original report described this condition as EAST IFR. It is clear

* Numbering corresponds to Ricondo OMP Concept Development/Refinement (February, 2003).

| Comment | Response |
|---|---|
| 38 | With respect to the commenter's concern about landing on runways that are either wet or dry, the FAA refers the commenter to response to comment 25 on page U.4-134. |
| 39 | The FAA has used simulation modeling to evaluate all movements and interactions with the NLA. Furthermore, the FAA has evaluated the air traffic routings of the NLA aircraft into the Chicagoland area and out of the Chicagoland area with the proposed Group VI runways. These routings and interaction with other aircraft is also included in the detailed simulation modeling. Please see **Appendix D** for a detailed description of the modeling conducted for the EIS.<br><br>With respect to the anticipated arrival of NLA, the FAA notes that many of the country's larger airports are working diligently to adjust their facilities and accommodate the performance requirements of this new aircraft. The preferred alternative would give O'Hare both flexibility in runway use for NLA and would eliminate the need for operational restrictions that would otherwise be required if the NLA were to use O'Hare in its current configuration. |

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from close examination that this condition should rather be referred to as WEST IFR. These comments reflect that change

- Extensive taxiing required which will increase out to off times
- EAST VFR: potential congestion 10L-28R & 10C-28C for NLA crossings.
- Radar vectoring and spacing to the final approach course will require special air traffic control (ATC) routing to the landing NLA runway. This type of additional coordination and complexity adds to an already intricate ATC system. Routings after departure will require additional ATC attention to insure wake turbulence separation. 39

**2.3.1 Dual Terminal Area Taxiways**

- Pilots question the use of "Land and Hold Short Operations" (LAHSO).
- LAHSO may not be an accepted ATC procedure in the future.
- -Needs to be simulated to see if it affects capacity.
- Some pilots/airlines will not accept LAHSO. 40

**2.3.2 Perimeter Taxiways**

- Chicago O'Hare had the same number of runway incursions in 1999 as in 2002, a year in which events were showing a decline nationally.
- Claims that the OMP will reduce runway incursions are unsubstantiated and do not make sense because more runway crossings will be required. 41

**2.4.3 ADG VI Refinements**

*This part of the plan suggests reducing size of operational space.*

- They are not refinements. They are deviations from a standard.
- Use of intersection takeoffs is not in the best interest of safety. Pilots should be taking the entire runway for departure and are entitled to do so. 42

**2.4.4 Runways 9L-27R and 10R-28L Refinements**

- ADG V (i.e., B747, MD-11) Runway 27R Cat II/III arrivals must taxi south at Runway 9L end or use parallel taxiway to Taxiway P before turning south. Runway 9L arrivals must taxi south at 27R end (TERPS requires 500 foot taxiway to runway centerline separation for Cat II/III for ADG V aircraft).

| Comment | Response |
|---|---|
| 39 | Please see the response to this comment on the previous page. |
| 40 | Please see the response to comment 25 on page U.4-134. |
| 41 | Please see the response to comment 2 of *Suburban O'Hare Commission's January 16, 2004* letter on page U.4-155. |
| 42 | The FAA continues to review the City of Chicago's draft Airport Layout Plan. Refinements to the proposed layout have been made throughout the process including the definition of taxiways designed to meet Group VI standards to allow for safe and efficient flow to and from the gate area.<br><br>The use of intersection departures is a safe, existing and well defined procedure that is used around the United States. *FAA Order 7110.65 Air Traffic Control* outlines the procedures to be utilized by Air Traffic Control personnel.<br><br>Also, please see response to comment 1 on page U.4-122. |
| 43 | The commenters statements are based on the draft December 2002 Airport Layout Plan (ALP). The Air Traffic review team refined the ALP and defined all taxi routes from the runway to the gate and from the gate to the runway. |

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- Taxiway S falls within Runway 28L Runway Safety Area (RSA) and must be restricted during Runway 10R-28L operations. [43]

**2.5.1 Runway Safety Area Enhancement Runway 27L**

- Relocating 300 feet to the west to provide a 1000-foot RSA reduces runway length. They are not enhancements. They are deviations from a standard.
- During Cat II/III Runway 9R-27L arrivals, Taxiway H is restricted to ADG IV aircraft (wingspan less than 171' & tail height less than 55').
- This is another example that creates a complex system, therefore increasing risk. [44]

**2.5.3 RSA Enhancement Approach End Runway 28R**

- This enhancement uses a declared distance to provide for an RSA. This is another example of using a deviation from standards to accommodate a plan other than safety.
- During Cat II/III Runway 10L-28R arrivals, ADG V may be restricted from a portion of the parallel taxiway east of exit taxiway M5.
- Taxiway Q (Runway 22L exit) is within Runway 10L Runway Safety Area (RSA) and use is prohibited when landing Runway 10L with Runway 22L operations. Taxiway Q restricted during Runway 10L & 28R departures and during Runway 28R arrivals. [45]

**2.5.4 Protection of Runway 10C Localizer (LOC) Signal**

- Another example of a safety deviation by shortening a runway to preclude a taxiway restriction. This raises safety issues when aircraft land over a taxiing aircraft. [46]

**2.5.5 Accommodation of Service Roads**

- Possible security issue tunneling under runways and taxiways. [47]

**2.5.7 CAT II/III on Existing 27R and 27L**

- The proposed item for the missed approach procedure is another example of deviations from safety standards. [48]

| Comment | Response |
|---|---|
| 43 | Please see the response to this comment on the previous page. |
| 44 | Relocating the runway threshold 300 feet west to provide a 1,000 foot runway safety area is allowed. *FAA AC 150/5300-13* specifically states in *Appendix 2 – Threshold Siting Requirements* that "…[t]hresholds may also be displaced for environmental considerations, such as noise abatement, or to provide the standard RSA and ROFA lengths."<br><br>Taxiway H and its relationship to existing Runway 9L/27R are not being modified. Furthermore, the City of Chicago has preserved the land envelope to allow for the relocation of existing Runway 9L/27R in the future. |
| 45 | Aircraft using Runway 28R have the full runway length (13,000 feet) available for arrivals and departures. Runway 10L uses a declared distance effectively shortening the runway 754 feet to provide for a full runway safety area, thus allowing independent operations on Taxiway Q.<br><br>During CAT II/III conditions, Aircraft Design Group (ADG) V would be restricted on a portion of the parallel taxiway east of exit Taxiway M5. However, aircraft would be taxied on the parallel taxiway to north (Taxiway D) achieving the same goal of aircraft movement. |
| 46 | Aircraft using Runway 28C have the full runway length (10,800 feet) available for arrivals and departures. Runway 10C uses a declared distance effectively shortening the runway 260 feet to provide for a full runway safety area, thus allowing independent operations on Taxiway S. Use of declared distance is for safety in that aircraft movement on Taxiway S is not within the RSA. |
| 47 | There are currently procedures that are developed and in place to address tunneling of service roads under runways and taxiways. The FAA and the Transportation Security Administration continue to work together to maintain the existing level of security. |
| 48 | Subsequent to the date of this letter, FAA approved flight procedures for Cat II/III missed approach. FAA would not approve any procedure which would compromise safety. |

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2.5.8 **Grades and Elevations Runway 10C-28C**
- To accommodate cargo buildings and light poles, OMP suggests using a non-standard missed approach procedure. 49

2.5.9 **Approach End Elevation Runway 10R**
- This paragraph requires the FAA to approve a deviation from standards. 50

2.6 **Airport Traffic Control Tower**
- There is no cost data regarding FAA expenses for equipping and maintaining the two, new towers.
- There is no cost data related to new radio frequencies, ASR 9 radar, and other new/relocated Navaids.
- FAA staffing of the new towers and the need for additional TRACON and Air Route Traffic Control Center sectors will require extensive FAA funding for training and equipment 51

A. **Appendix B.6 General Aviation Fixed Base Operator**
- The report states "Low level of these types of activities." This item needs to be reviewed based on the City's closing of Meigs Airport.
- The recent move of the general aviation fixed base operator required new airport rules and ATC procedures to prevent runway incursions by aircraft using this facility. This is a good example of how complex and confusing even the existing airport can be to transient pilots. 52

| Comment | Response |
|---|---|
| 49 | Through the ongoing Airport Layout Plan review, it is currently believed that some lights and buildings penetrate the Part 77 transitional surface. However, through further analysis, the lights and buildings do not penetrate the CAT I or CAT II/III TERPS surfaces. Therefore, the approaches to these runways are standard missed approaches. |
| 50 | Through the ongoing Airport Layout Plan review, it is currently believed that there are some Part 77 penetrations, however, none are CAT I and CAT II/III TERPS penetrations. Therefore, the missed approach procedure for this runway would be standard. |
| 51 | This issue is not related to the EIS . FAA has a process to evaluate and determine the necessary personnel and equipment for any air traffic facility. |
| 52 | The general aviation location and size has been calculated based on the FAA's Terminal Area Forecast which includes general aviation activity for the planning horizon. FAA has worked with the sponsor and the general aviation community to reduce the probability of runway incursions as a result of the recent move. FAA will continue to work with the sponsor and the aviation community to disseminate information relating to various construction phasing of the proposed project. |

APPENDIX B

**General Safety & Security**

- Many Navaids and communication facilities are missing from ALP
- Infrastructure improvements are not shown in construction phases
- Plans are inadequate to minimize airport impacts during construction and facility installations/relocations
- Many lighted Navaids require phasing plans for reconfiguration
- Glide slope facility composition and distance from runways require corrections
- Some proposed Runway Safety Areas (RSA) do not meet FAA standards
- Some proposed Runway Protection Zones (RPZ) appear to be inadequately planned and protected
- Large pavement areas need elimination where several taxiways and/or runways intersect
- The number and location of future Aircraft Rescue & Firefighting stations appears insufficient 53

**Frequency Analysis & Communications**

- Communication and Navaid radio frequency allocation engineering will be very extensive to provide additional frequencies and changes to many other area facilities
- All existing O'Hare remote transmitter/receivers require relocation at significant added cost for OMP
- Detailed integrated scheduling for construction of new communication facilities must be developed 54

**Construction Phasing**

- Some lighting Navaids are incompatible with proposed roadway and railroad modifications 55

| Comment | Response |
|---|---|
| 53 | The commenter states concerns with the December 2002 draft Airport Layout Plan. Through an ongoing process the FAA continues to review the draft Airport Layout Plan. Some of the commenter's statements have been addressed in the ongoing process. |
| 54 | Communication and NAVAID radio frequency allocation will be accomplished based on a set of well established FAA procedures.<br><br>All existing O'Hare Remote Transmitter/Receivers will require relocation. This project will include the replacement of existing equipment that is in some cases between 30 and 40 years old thus improving the reliability of the equipment. The City of Chicago has included the cost of this effort in their overall estimate.<br><br>Detailed integrated scheduling for construction of new communication facilities will be developed using well established FAA procedures. |
| 55 | FAA is participating in a review of the City of Chicago's Engineering Design drawing process including the exact placement of lighting NAVAIDS. Although it is believed at this time that NCP waivers will be required for various placements of equipment during the process, there are no issues that have been identified for which a waiver cannot be obtained. |

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**Description of FAA's Planning Process Requirements**

The Statute and the FAA's Orders underscore FAA's "hierarchical" approach to airport planning. These reflect FAA policy and objectives.

Section 47101 (g) of the Transportation Code states as Congress' policy that the FAA *shall take* each of the following actions:

> Goals for Airport Master and System Plans - Encourage airport sponsors and State and local officials to develop airport master plans and airport system plans that-
>
> (A) foster effective coordination between aviation planning and metropolitan planning;
>
> (B) include an evaluation of aviation needs within the context of multimodal planning;
>
> (C) are integrated with metropolitan plans to ensure that airport development proposals include adequate consideration of land use and ground transportation access.

Section 47103 of the Act relating to the National Plan of Integrated Airport Systems (NPIAS) states:

> The Secretary of Transportation shall maintain the plan for developing public-use airports in the United States, named 'the national plan of integrated airport systems.' The plan shall include the kind and estimated costs of eligible airport development the Secretary of Transportation considers necessary to provide safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics.

Section 47106 requires the FAA to ensure that project grants be made only if the Secretary is satisfied that "the project is consistent with plans (existing at the time the project is approved) of public agencies authorized by the State in which the airport is located . . ." and that "enough money is available to pay the project costs that will not be paid by the United States Government . . ." Note: Our experts can demonstrate that the financial plan for the OMP is unachievable and that there will not be enough money to pay for the OMP. It makes no sense and would be inconsistent with the statute for the FAA to

| Comment | Response |
|---|---|
| 56 | There is no FAA requirement for the order of the Master Plan in relationship to the Airport Layout Plan. A Master Plan is a voluntary document developed by the Airport Sponsor and is only accepted by the FAA, but is not approved. An Airport Layout Plan, however, is a document that is submitted to the FAA for FAA approval, and this approval is necessary for the Sponsor to receive federal funds. Many Sponsors submit the Airport Layout Plan for FAA review and approval without ever submitting a Master Plan.<br><br>There are no FAA requirements for development of a state system plan or metropolitan regional plan to be followed by a master plan as a precursor to the development of an airport layout plan. With respect to system planning guidance, FAA's Advisory Circular for System Planning does not specifically state that a Master Plan should be developed in conjunction with an Airport Layout Plan. However, the City of Chicago has developed a Master Plan and the FAA is thoroughly reviewing the Plan concurrently with its review of the City's Airport Layout Plan. |

| Comment | Response |
|---|---|
| 56 | Please see the response to this comment on page U.4-150. |

**APPENDIX C**
**Page 2 of 5**

approve the ALP knowing that the City intends to begin demolition of the communities prior to examining the viability of the OMP.

At the highest level of the planning hierarchy is the FAA's NPIAS. Components of the NPIAS are determined by the Statewide Integrated Airport Systems Planning, which, in turn takes into consideration Regional/Metropolitan Integrated Airport System Planning. At the very bottom and the end product of this planning is the ALP for a particular airport.

In the FAA's 1984 Record of Decision on O'Hare's expansion, the FAA expressly stated that a state system plan would be performed and indeed granted the State AIP funds for that purpose.

The relationship between FAA's responsibility to develop the NPIAS under 49 U.S.C. §47103 and the state "system plans" and individual airport "master plans" are spelled in FAA Orders and Advisory Circulars which explain the regulatory policy requirements for system planning and master planning. See *Airport Master Plans*, FAA Advisory Circular AC No. 150/5070-6A; *Planning The State Aviation System*, FAA AC No. 150/5050-3B. As stated in *Airport Master Plans* FAA Advisory Circular AC No. 150/5070-6:

The Hierarchy of Planning

a. Airport Plans at the national, state, regional/metropolitan area and individual airport levels of government are formulated on the basis of overall transportation demands and coordinated with other transportation planning and comprehensive land use planning.

b. Airport Planning in the United States is performed at several levels as follows:

(1) The National Plan of Integrated Airport Systems, a 10 year plan continually updated and published biennially by the FAA, lists the public use airports and their development which are to be considered in the national interest *and thus eligible for financial assistance* for airport planning and development under the Airport and Airway Development Act of 1982.

(2) *Statewide Integrated Airport Systems Planning* identifies the general location and characteristics of new airports and the general *expansion needs of existing airports to meet statewide air transportation goals.* This planning is performed by state transportation or aviation planning agencies.

(3) Regional/Metropolitan Integrated Airport System Planning identifies *airport needs for large regional metropolitan areas.* Needs are stated in general terms and incorporated into statewide system plans. This planning is done by regional/metropolitan planning agencies.

| Comment | Response |
|---|---|
| 56 | Please see the response to this comment on page U.4-150. |

APPENDIX C
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(4) *Airport Master Plans* are prepared by the operators of individual airports with the assistance of consultants. They detail the long-range plans of the individual airport *within the framework of statewide and regional system plans.*

c. Airport Master Planning must be responsive to areawide comprehensive transportation planning. This can be achieved by building into the master planning process appropriate review, coordinative and participatory mechanisms.

*Airport Master Plans* at 9.

The relationship between the State System Plan and the NPIAS above and the individual airport master plans is spelled out in *Planning The State Aviation System*, FAA AC No. 150/5050-3B:

> State airport system planning (SASP) is the process which results in the determination of the airport (including heliport and float plane facilities) and airport related facilities needed to meet the current and future air transportation needs of the state.
>
> It [State Airport System Planning] incorporates metropolitan/regional airport planning and *provides direction for airport master planning*
>
> The purpose of state airport system planning, described in its broadest sense, is to determine the extent, type, nature, location, and timing of *airport development needed in the state to establish a viable, balanced, and integrated system of airports.*
>
> FAA AC No. 150/5050-3B at 2 (emphasis added)
>
> Airport system planning at the state level lies between FAA's national planning as documented in the National Plan For Integrated Airport Systems (NPIAS) and individual airport master planning. It [State Airport System Planning] feeds information "up" to the NPIAS and "down" to individual airports.
>
> *Id.* at 2
>
> State system planning should provide information, *control/direction*, and policy guidance for airport master planning.

| Comment | Response |
|---|---|
| 56 | Please see the response to this comment on page U.4-150. |

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*Id.* at 7 (emphasis added)

FAA Order 5090.3C requires that airport capacity enhancements be evaluated not only as part of a Master Plan, but also "...in the NPIAS database for the current, 5-year, and 10-year time periods." AC 150/5090-3C, December 4, 2000, p.23.

The policy importance of coordination of local plans with state plans is underscored by the following statement in AC 150/5050-3B:

> If individual regional or local efforts proceed on their own without clear and continuing coordination with the state effort, *the final products are likely to be inconsistent, redundant, ill-timed, and overly costly.*
>
> AC 150/5050-3B, p. 8.

Moreover, at the heart of this multi-stage planning process is the FAA requirement for full disclosure to the public — a requirement that Chicago has made a mockery of:

> Public Participation
>
> Public acceptance is dependent upon whether the potentially affected public understands and accepts the need for the development; receives complete, truthful, and unbiased information about the impacts; and recognizes that public concerns have been considered adequately and fairly. The only way to achieve these conditions is by designing and accomplishing a program to achieve them. One cannot gloss over unfavorable impacts or attempt to hide the true purpose of a development without arousing suspicion and opposition. It follows that the program for public involvement must be designed with careful consideration for not only providing accurate and unbiased information, but also for the perception of openness and completeness, along with a demonstrated commitment to the development of mitigation measures appropriate to the situation.
>
> Airport Master Plans FAA Advisory Circular AC No. 150/5070-6A at 52.
>
> Information about alternatives, and their financial, social, and environmental costs and benefits should be made available to the public as it is developed. The objective is to identify and air all of the problems before the decision is imminent. The

| Comment | Response |
|---|---|
| 56 | Please see the response to this comment on page U.4-150. |



probability of political acceptance is much enhanced if the public, and its representatives, elected or otherwise, understand the process and the results by participation rather than by having the results and recommendations presented as decisions already made.

*Id.* at 52.

*FAA Order 5100.38B* sets forth a number of very specific requirements for Master Plans: 1) demand/capacity analysis for terminals, airway facilities or surface access facilities or a determination of capacity values for the airfield (Paragraph 406d); 2) facility requirements determination for runways, taxiways, terminal buildings and airport surface access (Paragraph 406e); schedules of plan implementation (Paragraph 406j); estimates of development cost of the project (Paragraph 406k) and financial plans for paying for the cost of the "O'Hare Modernization Program" (Paragraph 406l). Paragraphs 412 and 413 of the *FAA Order 5100.38B. AIP Handbook* provide additional explicit requirements as to the contents of a master plan grant application and the elements of review by the FAA of the application (including a project evaluation report by the FAA of the proposal for a master planning grant). 56

1374138

SUBURBAN O'HARE COMMISSION
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040116_04

January 16, 2004

**By Email and U.S. Mail**

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Mr. Philip Smithmeyer
Manager
Chicago Airports District Office
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**Re: Airspace Case No: 2003-AGL-878-NRA**
**Aeronautical Study - Airport Airspace Analysis**
**O'Hare Modernization Program**

Dear Messrs. Cooper and Smithmeyer:

The Suburban O'Hare Commission (SOC) hereby adopts the detailed comments of the communities of Bensenville and Elk Grove Village as well as the comments of the religious cemeteries (St. Johannes Cemetery and Rest Haven) submitted in this matter. The proposed OMP will not produce a safe or efficient aviation system for O'Hare alone, or meet the aviation needs of the Chicago metropolitan area. In summary, SOC makes the following points: 1

- The OMP is neither safe nor efficient. Indeed, OMP will actually increase delays far beyond current delay conditions, and will fall far short of the aviation demand growth for O'Hare and the region. Further, the OMP substantially increases the safety risk in O'Hare operations. 2
- Chicago has failed to identify the route and location of the surface road access to the airport (e.g., the "ring road"). Without disclosing the location, capabilities and financial feasibility of the access road system (particularly the ring road), there is no showing that the OMP can produce the traffic loads which are the claimed justification for the OMP. 3
- Chicago has failed to produce a terminal capacity analysis demonstrating that the terminal system of the OMP can handle the capacity claimed by the OMP. 4
- Chicago has failed to produce evidence of the relationships between demand and capacity during the incremental runway construction period. 5

A JOINT AND COOPERATIVE COUNCIL OF GOVERNMENTS TO REPRESENT THE INTERESTS OF CITIZENS AFFECTED BY O'HARE INTERNATIONAL AIRPORT

| Comment | Response |
|---|---|
| 1 | Comment noted. |
| 2 | With regard to the delay comment, please see the response to comments 43 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-524 of this appendix.<br><br>With regard to the safety comment, the FAA Air Traffic Division (including representatives of both management and the National Air Traffic Controllers Association (NATCA) participated in the development of taxi routes for all Build Alternatives. Procedures were developed to taxi aircraft safely behind departure aircraft to minimize the number of crossing of active runways. Additionally, Land and Hold Short Operations (LAHSO) procedures allow taxiing aircraft to safely cross the runway beyond the hold short point. Operational procedures for the Build Alternatives were based on *FAA Orders 7110.65 – Air Traffic Controller Handbook*, and *7110.118 – Land and Hold Short Operating Procedures.* The FAA evaluated runway crossings through an analysis comparing two alternative airfields with the existing airfield and with other major air carrier multi-parallel runway airports. The results of this analysis indicate that over time, the risk of runway incursions of the preferred airfield would be approximately equivalent to the existing airfield and less than other existing major air carrier multi-parallel runway airports.<br><br>Also, see response to comment 92 on page U.4-432. |
| 3 | Please see topical response F-1 on page U.5-28. |
| 4 | For all Build Alternatives, the FAA developed and modeled airspace improvements for all future years. To achieve the benefits documented in the EIS, both airspace and airfield modernization must occur. The FAA is pursuing airspace modifications concurrent with the airfield improvements. |
| 5 | The FAA has modeled various stages of the proposed phasing of construction. **Appendix D** of the EIS presents the results of the simulation analysis conducted for this study. Incremental benefits are presented in relationship to the proposed phased construction and with the forecast demand for that time frame. |

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Federal Aviation Administration
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Page 2

- Chicago and the FAA have refused to make available for public inspection the data, communications, and documents which relate to the OMP, including the documents and communications relating to the "Airspace Case No: 2003-AGL-878-NRA." Both Chicago and FAA have failed to make these documents, data and communication available for examination by opponents of the project, and FAA has set a deadline for comments on the "airspace" case before these critical documents have been made available. This refusal violates the Due Process Clause, basic principles of administrative law, and federal and state FOIA statutes. 6
- The cost of the OMP, and the lack of ability to finance OMP's huge cost, will lead to severe harm to the FAA statutory goal of a safe and efficient system of civil airports. Chicago and the FAA have refused to disclose the detailed cost estimates for the full OMP and related components (*e.g.*, the terminals such as the World Gateway Program), and have refused to disclose the plan for obtaining the financial resources for the OMP. Nor has FAA considered the impact of a project where Chicago runs out of funds in mid-project. 7
- The FAA has failed to follow the requirements of the First Amendment and the federal Religious Freedom Restoration Act in deciding whether to allow the destruction of two religious cemeteries: St. Johannes Cemetery and Rest Haven Cemetery. FAA cannot allow such destruction without demonstrating that: (1) there is a compelling governmental need to destroy these religious cemeteries; and (2) there is no other alternative to meet the governmental need without destroying these religious cemeteries. The State System Plan which was the study ordered by the FAA as part of the 1984 Record of Decision on O'Hare found that the aviation needs of the region can be met without the new runways at O'Hare and without destroying the religious cemeteries. 8

Sincerely yours,

John Geils

John Geils
Chairman
Suburban O'Hare Commission

| Comment | Response |
|---|---|
| 6 | The FAA has and continues to make relevant information available to the public. For example the FAA has posted over 7.5 million pages of EIS related documentation on its public web site, www.agl.faa.gov/OMP/. Subsequent to the date of this letter, the FAA has posted additional information to the web.<br><br>More information on public involvement regarding the EIS process can be found in topical response A-3, on page U.5-4.<br><br>In addition, the FAA has added **Section 5.23** to **Chapter 5** of the EIS related to due process rights of the commenter. |
| 7 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |
| 8 | With regard to the religious claims, in response to this comment and others, the FAA has added **Section 5.22** to **Chapter 5** of the EIS for the FAA's discussion of legal issues involving potential destruction of St. Johannes and Rest Haven Cemeteries.<br><br>In regard to the comment on development of the State System Plan, please see responses to comments 12, 14, 21, and 24 within *ShawPittman's June 27, 2003 letter,* on pages U.4-59, U.4-61, U.4-66, and U.4-70, respectively.<br><br>Subsequent to, and in accordance with, the FAA's 1984 Record of Decision (ROD), several FAA grants were issued for state system planning which studied Chicago regional aviation capacity issues and the needs for a supplemental air carrier airport. This satisfied all FAA's 1984 ROD requirements. While the State System Plan did not conclude "that O'Hare's runways should not be expanded….", it did recommend a new south suburban airport. In any event, previous state system plan coverage on the topic of O'Hare has been superseded by the State's 2003 passage of the O'Hare Modernization Act, which provided statewide special emphasis for development of the O'Hare Modernization Program.<br><br>In response to this comment and others, the FAA has added discussion of the 1984 ROD and the "State System Plan" in **Chapter 1, Section 1.2.4.1** of the EIS. |

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AReCO

THE ALLIANCE OF RESIDENTS CONCERNING O'HARE, Inc. A Not-for-Profit Corporation

PO Box 1702 ○ Arlington Heights, IL 60006-1702 ○ Fax: 847/506-0202 ○ Tel: 847/506-0670 ○ www.areco.org

*"To achieve a balance between public health and the economy"*

RECEIVED MAY 10 2004 By

April 29, 2004

Mr. Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, IL 60018
michael.w.macmullen@faa.gov

Dear Mr. MacMullen: Mike

Attached are AReCO's comments regarding the O'Hare Modernization Program's Airport Layout Plan.

Please contact me if you have any questions.

Thank You.

1

Sincerely,

Jack Saporito
Executive Director

Proud Recipient: *1995 Environmental Merit Award, Arlington Heights – 1996, '99 Illinois State Senate Recognition*
*Protecting the Health and Safety of Millions of O'Hare Affected Citizens*

| Comment | Response |
|---|---|
| 1 | The FAA notes that this letter is directed toward the Airport Layout Plan (ALP) which is subject to a separate review from the EIS. While the EIS focuses on environmental issues, the ALP review process focuses on the technical airspace and airfield issues associated with the plan. Nonetheless, the FAA, in the interest of public awareness, has responded to the comments within this letter in this Final EIS.<br><br>The FAA is currently reviewing the Airport Layout Plan (ALP) of the sponsor's preferred alternative for safety, efficiency, and utility in accordance with 49 USC 47106(a)(16), but will not take action to approve or disapprove the ALP until after the EIS is completed and the FAA issues a record of decision concerning the ALP and other federal actions necessary to support the proposed action. Economic financial viability has no bearing on the review of the ALP for safety, efficiency, and utility.<br><br>This ALP review is designed to ensure that the proposal complies with applicable FAA airport design standards and safety regulations, including wind coverage, runway separation distances, and runway/taxiway crossings. This ALP review involves multiple lines of business at FAA, including FAA Air Traffic, Airports, Airways Facilities, and Flight Standards. The Transportation Security Administration (TSA) also participates in the ALP review providing insight on security issues. |

## O'Hare Airport Expansion Project
### Costs: Errors or Lies

R. E. Ruthenberg 4/20/2004

Executive Summary

Chicago's cost projections for its O'Hare Expansion project have most recently been presented as being approximately $13.4B. Other examiners have pointed out that even these exorbitant costs are understated by several billions of dollars[1].

The primary reasons for why these costs continue to grow, each time they are examined, is largely because the project principals and protagonists lie, as is abundantly documented in the study "Underestimating Costs in Public Works Projects, Error or Lie?" by Flyvbjerg, Holm, and Buhl. Continuing Chicago O'Hare fiscal chicanery is what leads most such projects to experience so-called huge cost "overruns" and is what will also lead to the same end for the O'Hare project, if it is allowed to go forward[2].

But continuing to exclude the associated costs of financing further minimalizes the probable end-result costs of this huge project. Unlike astute citizens who consider finance charges on their home mortgages or credit card bills to represent real costs to their budgets, the O'Hare project seems to again purposely deceive by never mentioning these extremely high expenses in the context of "costs".

Once such finance expenses are brought out and included as costs, and a 30% low-end cost overrun factor is included, it is seen that the O'Hare Expansion costs will most likely be in the range of **$40-67 billion dollars** (including the probable future Terminal 2 and associated road infrastructure costs of at least $7B, with financing). 2

Introduction

Chicago's proposed O'Hare Expansion project is without question a huge and extremely complex project. The overall project includes major rebuilding of existing facilities, additions, removals, relocations and infrastructure interface changes (e.g., between airport and mass-transit), in four major categories: airside, landside, terminals and support facilities. These sometimes simultaneous, parallel renovations are ALL required in order to stand a chance of achieving the supposed ultimate objective of increased capacity.

The project is made even more complex due to the fact that it is basically a "rehab" job within a highly populated and built-out area, in contrast to building a brand new reliever airport in a low population area. This means that a myriad of unknowns enter the costing equations, unknowns that would not be seen or at least be very minimal in a new project. These unknowns all tend to increase risks and costs beyond projections, as history continues to demonstrate.

[1] Aug. 12, 2003, Daily Herald. By Robert McCoppin Daily Herald Staff Writer (ref. Appendix C here).
[2] While some of the cost overruns are from honest miscalculations, the costs of public works are virtually always well underestimated, not overestimated. If it were honest and balanced reporting by government there would be as many projects underestimated, as there are overestimated. This is not the case.

| Comment | Response |
|---|---|
| 2 | With regard to the project costs and financial feasibility, in response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix.<br><br>The commenter also cites a study presented in the Journal of the American Planning Association, regarding public works cost estimates. FAA has reviewed the citation, and found that the survey of projects reported is based on three types of projects, rail, roads/highways, and bridges/tunnels. Accordingly, the FAA does not believe that reliance on this study is preferable to the use of its Benefit-Cost Analysis (BCA) guidance.<br><br>The commenter notes that the financing costs should be included in the City's cost estimates. The cost estimate reported in the Draft EIS is the estimate of the capital cost—also referred to as project cost or construction cost. This cost estimate does not include financing costs. Capitalized interest has been considered by the City in the financing plan for capital development—but as one of several financing costs, and not as part of the capital cost estimate.<br><br>Capitalized interest is a financing term that is used to represent interest paid by bond proceeds during a period in which revenues are not available (or determined not appropriate) to pay debt service on the project—e.g., during the project construction period. In airport bond issues and financing analyses, capitalized interest is presented as a financing cost and not a capital cost. The financing plans and bond issuance documents for airport projects make a clear distinction between capital costs (i.e., project costs or construction costs) and financing costs. The interest on bonds issued to finance capital costs (including capitalized interest) is an important consideration in a financing plan, but is not a part of the capital cost.<br><br>In preparing the financial plan for OMP, and confirming financial feasibility, the City considered capitalized interest and other financing costs. The City's financial plan reported in the O'Hare Master Plan, and referenced in the Draft EIS, includes assumed capitalized interest for OMP. The City's recent bond issuances related to OMP capital costs included capitalized interest for future projects. The fact that this financing cost was not included as a capital cost (because it is not a capital cost) does not mean that either (a) it was ignored, or (b) it should be added to the estimated capital cost. It simply means that capitalized interest is a financing cost and not a capital cost. |
| 3 | Please see the response to this comment on the following page. |

Most often, admission of such undefined future risks and costs is not forthcoming from the responsible officials and politicians, beyond bland statements alluding to contingency inclusions and "conservative estimates". Additionally, most of the major costs are estimated by contract consultants who, in order to please their paying clients, tend to suppress pessimism. It is typical for government agencies to use the same consultants over an over again because they "understand" how to present the view of their client to help them get the political project started. Once the projected is started they all seem to be completed no matter how much the cost overruns end up being.

Furthermore, huge projects are projected over many decades, which make many of the "assumptions" used in analysis more like fortune telling than factual science. Finally, the project protagonists and backers are already biased towards achieving project approval and putting on "good faces" toward funding sources e.g., bond sales in order to ensure a successful launch.

These issues and many more were brought forth in an earlier report, "Vicious Cycle"[3], which was written before the "final" cost estimates by O'Hare's project managers were placed in public view as part of their final Airport Layout Plan (ALP) submission to the Federal Aviation Administration (FAA). This report examines these final costs and rationales in detail in an attempt to assess what the probable minimum real costs will turn out to be, before any final FAA decisions are made. *[The FAA and other federal agencies e.g., Environmental Protection Agency (EPA), Department of Transportation (DOT), etc. must by law consider project alternatives, which by definition includes cost comparisons between proposed projects and alternatives. Building a new major reliever airport south of the city has been estimated to cost, at full build out, approximately $5B, which would probably be around $10B, including financing costs. A startup reliever airport in its first phase would be approximately $500 million.]* 3

Errors or Lies?

An excellent study[4] by Flyvberg, Holm and Buhl was done to address the serious questions surrounding the chronic costing errors in public works projects, including identifying how much deviation from projections was typical and the specifics of the major causes for these deviations. The study concluded that lies were the predominant reason! Quoting:

"The main findings from the study reported in this article—all highly significant and most likely conservative—are as follows:

- In 9 out of 10 transportation infrastructure projects, costs are underestimated.
- For rail projects, actual costs are on average 45% higher than estimated costs (sd=38).
- For fixed-link projects (tunnels and bridges), actual costs are on average 34% higher than estimated costs (sd=62).
- For road projects, actual costs are on average 20% higher than estimated costs (sd=30).
- For all project types, actual costs are on average 28% higher than estimated costs (sd=39).
- Cost underestimation exists across 20 nations and 5 continents; it appears to be a global phenomenon.

[3] "A Vicious Cycle: How Can the Government Justify Expanding Airport Capacity to Solve an Overcapacity Problem?" Peter Martin and Alan Martin, Oct. 30, 2003. Cost of O'Hare Expansion estimated at $16B principal plus $16B financing, for a total of $32B.

[4] Underestimating Costs in Public Works Projects Error or Lie? Bent Flyvbjerg, Mette Skamris Holm, and Søren Buhl Journal of the American Planning Association, Chicago, IL., Vol. 68, No. 3, Summer 2002. http://www.planning.org/japa/publicworks.htm or http://www.planning.org/japa/pdf/JAPAFlyvbjerg.pdf

2

| Comment | Response |
|---|---|
| 3 | The FAA has carefully considered the comments within this section regarding the politics of the presentation of cost estimates for large public works projects.<br><br>Also, see response to comment 1 on the previous page. |
| 4 | As noted in response to comment 1, the commenter cites a study presented in the Journal of the American Planning Association, regarding public works cost estimates. FAA has reviewed the citation, and found that the survey of projects reported is based on three types of projects, rail, roads/highways, and bridges/tunnels. Accordingly, the FAA does not believe that reliance on this study is preferable to the use of the Agency's Benefit-Cost Analysis (BCA) guidance. |

| Comment | Response |
|---|---|
| 4 | Please see the response to this comment on the previous page. |

• Cost underestimation appears to be more pronounced in developing nations than in North America and Europe (data for rail projects only).
• Cost underestimation has not decreased over the past 70 years. No learning that would improve cost estimate accuracy seems to take place.
**• Cost underestimation cannot be explained by error and seems to be best explained by strategic misrepresentation, i.e., lying.**
• Transportation infrastructure projects do not appear to be more prone to cost underestimation than are other types of large projects.

We conclude that the cost estimates used in public debates, media coverage, and decision making for transportation infrastructure development are highly, systematically, and significantly deceptive. So are the cost-benefit analyses into which cost estimates are routinely fed to calculate the viability and ranking of projects. The misrepresentation of costs is likely to lead to the misallocation of scarce resources, which, in turn, will produce losers among those financing and using infrastructure, be they taxpayers or private investors." [Emphasis added.]

These statistical results are seen in Figure 1 and Table 1 below from the study. It is critical to note that this is a relatively large sample of projects (258; Rail (58), Fixed-Link (33), Road (167)).

Figure 1

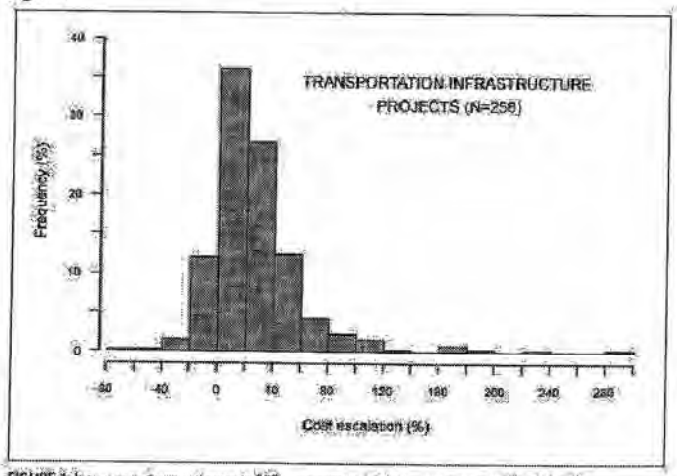


FIGURE 1. Inaccuracy of cost estimates in 258 transportation infrastructure projects (fixed prices).

3

| Comment | Response |
|---|---|
| 4 | Please see the response to this comment on page U.4-159. |

| Project type | [illegible] cases (N) | [illegible] escalation (%) | [illegible] deviation | [illegible] significance (p) |
|---|---|---|---|---|
| Rail | 58 | 44.7 | 38.4 | <0.001 |
| Fixed-link | 33 | 33.8 | 82.4 | <0.004 |
| Road | 167 | 20.4 | 29.9 | <0.001 |
| All projects | 258 | 27.6 | 38.7 | <0.001 |

The study (Underestimating Costs in Public Works Projects: Error or Lie?) examines for best fit the possible explanations of the chronic underestimations in four different categories: technical, economic, psychological, and political. The definition of lying is important, as it can occur in any of the categories:

> "If we now define a lie in the conventional fashion as making a statement intended to deceive others (Bok, 1979, p. 14; Cliffe et al., 2000, p. 3), we see that deliberate cost underestimation is lying, and we arrive at one of the most basic explanations of lying, and of cost underestimation, that exists: Lying pays off, or at least economic agents believe it does."

Most deception is based on some degree of self-interest, both on a personal and organizational level.

> "Economic self-interest also exists at the level of cities and states. Here, too, it may explain cost underestimation. Pickrell (1990, 1992) pointed out that transit capital investment projects in the U.S. compete for discretionary grants from a limited federal budget each year. This creates an incentive for cities to make their projects look better, or else some other city may get the money."

This grant situation, along with the inherent need to achieve FAA approval, applies directly to U.S. airports and specifically to the O'Hare Expansion project:

> "The use of deception and lying as tactics in power struggles aimed at getting projects started and at making a profit appear to best explain why costs are highly and systematically underestimated in transportation infrastructure projects."

Additionally:

> "Flyvbjerg, Bruzelius, and Rothengatter (in press) document for a large number of projects that the Everything-Goes-According-to-Plan type of deception used for the Channel tunnel is common. Such deception is, in fact, so widespread that in a report on infrastructure and development, the World Bank (1994, pp. ii, 22) found reason to coin a special term for it: the "EGAP-principle." Cost estimation following the EGAP-principle simply disregards the risk of cost escalation resulting from delays, accidents, project changes, etc. This is a major problem in project development and appraisal, according to the World Bank."

Finally:

> "The key policy implication for this consequential and highly expensive field of public policy is that those legislators, administrators, bankers, media representatives, and members of the public who value honest numbers should not trust the cost estimates presented by

4

infrastructure promoters and forecasters. Another important implication is that institutional checks and balances— including financial, professional, or even criminal penalties for consistent or foreseeable estimation errors—should be developed to ensure the production of less deceptive cost estimates."

Thus, we conclude, to a high probability, that the public is being lied to by the promoters and forecasters of the O'Hare Expansion project (a conclusion generally reached already by many others). This is not an unknown phenomenon in Chicago, as exemplified by past projects such as Milleunium Park (which has expanded to near $400M from the original $150M estimate). This conclusion generally applies as well to supportive organizations such as the Chamber of Commerce (especially local chapters e.g., Chicago), FAA, DOT and to Illinois state government (which in the recent past transferred all state O'Hare airport regulatory authority to Chicago), often due to the much greater political pressures to "expand" existing facilities than to make hard decisions in favor of better long-term capacity alternatives e.g., new airports, new rail services, etc. [See related U.S. Government Accounting Office report, "Long-Term Capacity Planning Needed Despite Recent Reduction in Flight Delays."][5] 4

O'Hare Expansion Project Costs and Assumptions

[See Appendix A for relevant detailed cost/assumption excerpts from the O'Hare plan.]

Examination of the O'Hare Expansion "prospectus" seems to clearly indicate that, amongst other factors, the "Everything-Goes-According-to-Plan" deception is active. This "plan" turns on a schedule that basically starts in 2004 and completes everything by 2013. This seems deceptively optimistic to begin with. "Going according to plan" seems to become very suspect in ephemeral areas such as:

*Reconstruction of the Irving Park/York Rd./RR crossing, including tunneling Irving under the RR crossing. Chicago admits that this sub-project "…is not under the jurisdiction of the City of Chicago."[6]

*Relocating St. Johannes and Resthaven cemeteries (to unstated locations).

*Relocating Irving Park Rd., south of the airport.

*Major acquisition of Bensenville properties.

*Realignment of Mt. Prospect Rd., Willow Creek and a 90" Joint Action Water Agency water main (all on the airport's north end).

Additionally, areas of missing or suspect costs and delays include:

*Western Terminal and access, including (taxpayer funded) major road facilities to the west of the airport e.g., Thorndale Rd. and the I-90 to I-294 bypass, which in itself then involves additional Bensenville property acquisitions. [Illinois Department of Transportation (IDOT) earlier estimate of $2.3B.]

*Future Terminal 2 "reconfiguration" costs (originally an approximate $1.1B part of the Gateway Project).

*Terminal costs associated with handling of the future giant French Airbus A-380 (500+ passengers, double-decker terminal interface, 80,000 gallons of fuel) and other even more massive future aircraft.

*Additional land/property acquisitions necessitated by FAA mandated safety issues (e.g.,

[5] Dec. 2001, GAO-02-185

[6] Page VII-13 of the plan.

5

| Comment | Response |
|---|---|
| 4 | Please see the response to this comment on page U.4-159. |
| 5 | Comment 5 of the commenter's letter appears to be material from *Section VII* of the *February 2004 O'Hare International Airport Master Plan*. The FAA notes its inclusion in the commenter letter. |

approach/departure "buffer zones", etc.).

*Rapid transit improvement (taxpayer) costs.
*Increased real estate tax costs. Increased personnel costs.
*Costs and delays of lawsuits.
*Environment cleanup and protection costs.
*Public health costs.
*Other "unforeseen" costs and delays.

Summarizing the overall cost estimates for the Expansion Project, from the O'Hare Plan:

| | | SOURCES OF FUNDING | | |
|---|---|---|---|---|
| SEGMENT* | TOTAL COST ($B) | PAY-AS-YOU-GO % | AIP GRANTS % | BONDS and FINANCING % |
| OMP | 6.6 (1) | 2 | 9 | 89 |
| CIP | 4.13 (2) | 11 | 6 | 83 |
| WGP | 2.64 (3) | 0 | 0 | 100 |
| TOTAL | 13.37 (4) | $586M | $842M | $11.94B |

*OMP= O'Hare Modernization Program CIP=Capital Improvement Program WGP= World Gateway Project
(1) In 2001 dollars (2) In "escalated" dollars (3) In 1999 dollars (4) In mixed dollars
Note: O'Hare has $879M of existing PFC backed and $3.2B of 1st/2nd/3rd lien bonds outstanding. 5

The most critical point to observe is that O'Hare project "cost" statements consistently leave out financing costs![7] This is akin to a homeowner considering his mortgage interest to not be a cost to him, even though he pays it every month out of his pocket. This would also imply that folks don't have to worry about credit card interest charges, as they are not "cost"! Obviously ridiculous and therefore any characterization of O'Hare project costs must include any bond interest costs and financing charges. The following analysis includes such costs. 6

Another cost calculation factor that becomes important once long term bonding/financing interest costs are accounted for is the assumed costing period. O'Hare's "plan" shows only a 20 year period of analysis, even though it states that all bonds are assumed to be 30 year duration. This analysis extends basically to 30 years beyond assumed bond issuances. [Exact information on amount and issue date were not found in the O'Hare plan; this analysis makes logical assumptions in this regard.] 7

Total (undiscounted) costs provide an "out-of-pocket" perspective i.e., it's what needs to be paid. However, economics analysis often is served by taking inflation i.e., dollar devaluation into consideration to provide a "present value" cost that reflects future costs and revenues based on devalued dollars. In other words, the present value or discounted value of a cost stream is reduced from the undiscounted stream or stream total. Here, total costs are stated both undiscounted and in "2004 dollars". 8

[7] This approach of not repaying bond principal for 30 years (and even the it will probably be "rolled over") is quite imperative for the O'Hare project because the airline "repayers" comprise an industry that has shown a net loss in operations since in began in the 1940's and has lost close to $30 billion dollars over the last several years. Therefore, there is no chance the airlines would be able to repay the loans from excess cashflow that does not exist!

6

| Comment | Response |
|---|---|
| 5 | See the response to this comment on the previous page. |
| 6 | Please see response the response to comment 2 on page U.4-158. |
| 7 | Please see response the response to comment 2 on page U.4-158. |
| 8 | Please see response the response to comment 2 on page U.4-158. |

Another factor in the cost issue is that, as noted above, the various sub-project costs are stated in different year-dollars i.e., OMP in 2001 dollars, WGP in 1999 dollars and CIP in "escalated" dollars. Thus, given O'Hare's assumed 3%/year average inflation rate, these costs need to be inflated appropriate to the date of assumed bond issuance ($7.65B in 2006 and $3.55B in 2009 for the OMP and WGP, respectively). Though it is unclear, it is assumed that stated "escalated" dollars for the CIP means that they already have inflation factored into planned future CIP yearly costs. 9

Finally, as previously discussed and documented, the probability of cost overrun due to deception/lies is very high and must be factored in to cost projections. The analysis[8] here allows for an average 30% overrun[9]. Many projects of this scope have experienced cost overruns substantially greater than 30%, such as Boston's infamous "Big Dig" project (at least 100% overrun, ref. Appendix B). O'Hare's official project costs include only a 4% contingency! 10

Table 2 summarizes the results of analysis of all[10] these costs and assumptions, with relevant key points below the table.

Table 2 O'Hare Expansion Project Cost Analysis Summary
[Discounting "brings back" all costs to year 2004 present value.]

| | |
|---|---|
| **WITHOUT OVERRUN** | **$B** |
| BOND ISSUANCE COST+FINANCING | $26.06 |
| TOTAL GRANT+PAY-AS-YOU-GO | $2.18 |
| BOND FACE VALUE REPAYMENT | $16.87 |
| TOTAL COST | $45.11 |
| DISCOUNTED ISSUE+FINANCE COST | $14.98 |
| DISCOUNTED GRANT/PAG | $1.49 |
| DISCOUNTED BOND REPAYMENT | $10.30 |
| TOTAL DISCOUNTED.COST | $25.29 |
| **WITH 30% OVERRUN** | |
| BOND ISSUANCE COST+FINANCING | $34.56 |
| TOTAL GRANT+PAY-AS-YOU-GO | $2.18 |
| BOND FACE VALUE REPAYMENT | $22.46 |
| TOTAL COST | $59.20 |
| DISCOUNTED ISSUE+FINANCE COST | $19.63 |
| DISCOUNTED GRANT/PAG | $1.49 |
| DISCOUNTED BOND REPAYMENT | $13.41 |
| TOTAL DISCOUNTED.COST | $33.04 |

Key Assumptions
Interest cost rate = 6%. Discount rate = inflation rate =3%. IPO cost=1%.

[8] Excel spreadsheet analysis available by request.
[9] The statistics from "Underestimating Costs in Public Works Projects Error or Lie?" place the mean cost overrun for all projects at +27.6%. There is a 47.5% probability that overruns will exceed 30%.
[10] O'Hare may claim that the CIP costs would be required even if Expansion did not occur, but a cost comparison of with vs. without expansion does not exist to validate this view. Massively expanded facilities would logically seem to require similarly massively expanded CIP costs.

7

| Comment | Response |
|---|---|
| 9 | Please see response the response to comment 2 on page U.4-158. |
| 10 | Please see response the response to comment 2 on page U.4-158. |
| 11 | Commenter "Table 2" appears to be the commenter's take on the escalated costs for the City's proposal including both capital costs and financing costs. The FAA notes its inclusion and refers the commenter to **Section 1.7** of the EIS for the FAA's presentation of the Agency's review of the City's cost estimate and financing plan. |

2% reserve deposit rate not included in costs (i.e., assumes never spent).
All bonds 30 years. Project costed from 2004-2044 (to cover bond repayments).
OMP bonded 2006 @89% of cost (9% AIP grants and 2% "pay-as-you-go").
WGP bonded in 2009 @ 100% of cost.
CIP bonds issued yearly from 2007 on @ $4.13B/20 per year cost, bonded @83% (6% AIP and 11% "pay-as-you-go").
Cost overrun applied to all base costs 2 years after issue.
O'Hare OMP $6.6B in 2001 dollars cost inflated @3%/yr to assumed date of bond issuance (2006).
O'Hare WGP $2.64B in 1999 dollars cost inflated @3%/yr to assumed date of bond issuance (2009).
O'Hare CIP $4.13B (20 year period) in "escalated" dollars applied yearly at $0.2065B/yr beginning 2007.
Discounted values represent project present values at 2004, discounted at assumed 3% (inflation) rate. 11

Conclusions

From Table 2, it is seen that the $13.37B oft-stated "cost" of the O'Hare Expansion project, as adjusted to $16.87B in year 2004 costs, is actually $45.1B in "out-of-pocket" costs over a 30-year project period and, even when discounted to 2004 dollars, is still $25.3B! With an assumed 30% nominal cost overrun, the costs will rise to $59.2B and $33.1B discounted!

Including the probable future Terminal 2 and necessary road infrastructure costs would add at least another $7B in costs, including financing, bringing the total to $40B-$67B! Thus, the O'Hare Expansion project should be evaluated on the basis of costing $40-67 billion dollars rather than about $14B dollars. 12

It is also seen that the amount of funds from federal grants is a relatively small part of the total (part of the "Grant + pay-as-you-go" total), which highlights the fact that the airline users of the airport will basically be the ones "on the hook" for bond repayments. This is in itself a highly speculative area of consideration, as the major airlines are all in great on-going financial difficulties and "low cost" airlines that may be interested in stepping up to take their place will not be able to shoulder such financial burdens and still remain competitively "low cost". 13

Finally, this kind of exorbitant airport expansion is underway to one degree or another at most of the 2000-3000 U.S. airports (450 major ones), generally driven by similar kinds of lies and abetted by the air industry's government representatives e.g., FAA, DOT, etc. The net fiscal effect on the citizenry will be painful, but equally important, the impact of these deceptions will result in long-term denial of vital alternate transportation modes, improved aviation mode implementations and a near total neglect of investment in new transportation technology and job opportunities (while other countries continue toward domination of these technologies). [It is also highly probable that the last U.S. commercial aircraft manufacturer, Boeing, will cease to manufacture such aircraft, in defeat to the European Airbus interests.] 14

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8

| Comment | Response |
|---|---|
| 11 | See response on the previous page. |
| 12 | The FAA has reviewed the comments and refers the commenter to **Section 1.7** of the EIS for the FAA's presentation of the Agency's review of the City's cost estimate and financing plan. |
| 13 | The FAA has reviewed the comments and refers the commenter to **Section 1.7** of the EIS for the FAA's presentation of the Agency's review of the City's cost estimate and financing plan. The FAA also notes that **Appendix R** of the EIS contains a discussion of the potential impact of the loss of a hubbing airline at O'Hare. |
| 14 | Comment noted. |

| Comment | Response |
|---|---|
| 15 | *AReCO Appendix A* appears to be material from *Section VII* of the *February 2004 O'Hare International Airport Master Plan*. The FAA notes its inclusion in the commenter letter. |

**APPENDIX A**

*From the O'Hare Plan (Appendix D – Section VII: Implementation Plan Assumptions):*

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Assumptions included in Section VII: Implementation Plan include the following:

Original Project Cost Estimates

· OMP Source: TOK, LLC and AOR, 2002 dollars discounted to 2001 dollars.
· CIP Source: City of Chicago Department of Aviation, escalated dollars.
· WGP Source: Landrum & Brown, 1999 dollars. Current estimates vary from original cost estimate due to the deletion of Terminal 2 projects by Ricondo & Associates, Inc. for purposes of this analysis only.

Funding Sources

· Discretionary grants: $600 million discretionary grant paid $60 million annually, except for $100 million in 2012 and $20 million in 2013.
· Noise discretionary grants: $5 million annually from 2004 through 2012.
· Passenger facility charges: $4.50 per eligible enplaned passenger from 2003-2010 with forfeiture of 75% of passenger entitlement grants.
· Passenger facility charges: $6.00 per eligible enplaned passenger from 2011-2022 with forfeiture of 100% of passenger entitlement grants.
· Passenger facility charges: 85.1% of enplaned passengers are PFC-eligible enplaned passengers.
· Bond assumptions:
--GARB {General Airport revenue Bonds, ed.} rate: 6.00% (except for 2003, which was 5.50%)
--Debt Service Reserve Fund investment rate: 2.0%
–Construction Fund investment rate: 1.00%
–Capitalized Interest Fund investment rate: 1.00%
--Costs of issuance: 1.00%
--Debt service coverage ratio (Third Lien): 1.10

Forecast

· Source (2003-2015): FAA, 2001 Terminal Area Forecast, converted by Ricondo & Associates, Inc. from enplanements in a Federal Fiscal Year (ending September 30) to enplanements in an Airport Fiscal Year (ending December 31).
· Source (2016-2022): Ricondo & Associates, Inc., as extrapolated from the FAA 2001 Terminal Area Forecast through 2015.

Non-Airline Revenue (Existing)

· Annual inflation rate: 3.0%
· Net parking revenues increase 5% per year.
· Automobile rental revenues increase at the inflation rate plus the increase in O&D passengers.
· Restaurant revenues increase at the inflation rate plus the increase in enplanements.
· News & gifts increase at the inflation rate plus the increase in enplanements.
· Other increases at the inflation rate plus the increase in enplanements.

O&M Expenses (Existing)

· All compounded annual growth rates (CAGRs) are for the 20-year period 2003-2022.
· Personnel expenses increase at the annual rate of 5.5% and CAGR of 6.6%.
· Repairs & Maintenance increase at the annual rate of 5.5% and CAGR of 7.0%.
· Energy increases at the annual rate of 4.5% and CAGR of 6.0%.
· Engineering & Professional Services increase at the annual rate of 5.5% and CAGR of 5.9%.
· Other Operating Expenses increase at the annual rate of 5.0% and CAGR of 6.3%. Non-Airline Revenue (Incremental)
· Non-airline revenues increase at the inflation rate and the number of O&D passengers or enplanements, whichever is applicable.

9

O&M Expenses (Incremental)
· Terminal Area incremental O&M Expenses are assumed to be 35% of the total unit cost of existing Terminal Area O&M Expenses.
· Airfield Area incremental O&M Expenses are assumed to be 75% of the total unit cost of existing Airfield Area O&M Expenses.

Table VII-2
*OMP Project Cost Estimates (2001 Dollars, $000s)*
Program Wide Requirements:
Program Wide Requirements $58,277
Preliminary Engineering 43,689
Wetlands Mitigation 24,272
Noise Mitigation (OMP-Phase 1) 220,000
Land Acquisition 339,296
Land/Environmental Contingency 223,301
Subtotal – Program Wide Requirements Costs $908,835
Other Program Costs:
Miscellaneous Operations Budget $19,418
Program Contingency 301,660
Subtotal – Other Program Costs $321,078
Airfield (Design and Construction/Decommission):
Runway 9L-27R $548,543
Runway 10L Extension 494,175
Runway 10C-28C 908,739
Runway 18-36 Decommission 2,322
Runway 9R Extension 138,032
Runway 9C-27C 642,789
Runway 14L-32R Decommission 1,422
Runway 10R-28L 365,166
Runway 14R-32L Decommission/Taxiway Conversion 110,157
Subtotal – Airfield Costs $3,211,345
West Terminal Complex (Design and Construction):
Western Airside Concourse $579,832
Energy Plant 59,307
Fuel Storage and Distribution Improvements 61,168
Western Terminal 918,297
Parking Facilities 108,115
Subtotal – West Terminal Complex Costs $1,726,719
On-Airport Circulation (Design and Construction):
People Mover $418,903
Maintenance Facility 13,120
Subtotal – On-Airport Circulation Costs $432,023
**Total OMP Costs (2001 dollars) $6,600,000**

Table VII-3
*[20-year] CIP Project Cost Estimates (Escalated Dollars, $000s)*
Five-Year CIP (2003-2007)



Terminal Support Improvements $200,264
Terminal Improvements 425,622
Airfield Improvements 372,198
Heating and Refrigeration 102,761
Noise Mitigation Projects 37,305
Fueling System 98,934
Safety and Security 145,734
Planning and Other Projects 3,333
Subtotal – Five-Year CIP $1,386,151
Subtotal – Subsequent Years (2008-2022) $2,742,121
**Total 20-Year CIP Cost (escalated dollars) $4,128,274**

Table VII-4
WGP Project Cost Estimates (1999 Dollars, $000s)
Airport-wide, Airfield, and Airside Projects $243,830
Terminal 2 FIS Facilities $78,680
Terminal 4:
Enabling Projects $99,130
Apron and Fueling 88,680
Roadway/Access/ATS 79,030
Terminal 639,490
Utilities 62,050
Subtotal – Terminal 4 $968,380
Terminal 6
Enabling Projects $70,560
Apron and Fueling 48,340
Northern Extension 108,980
Parking Structure 114,220
Roadway/Access/ATS 244,450
Tenant Relocations 35,510
Terminal 546,550
Utilities 184,300
Subtotal – Terminal 6 $1,352,910
**Total WGP Cost (1999 dollars) $2,643,800**

Financing Plan (section 7.4.2)
Funding sources for the Master Plan include the following:
•Federal grants-in-aid under the Airport Improvement Program (AIP)
•Passenger facility charges (PFCs)
•General airport revenue bonds (GARBs)
•Third-party financing
The actual amount of funding available from certain of these sources will depend primarily on future levels of aviation activity at the Airport, future federal reauthorizations, and future airline approvals.
Table VII-5 shows the estimated amount of Master Plan funding sources. [As of January 1, 2004, the Airport has outstanding approximately $3.2 billion of First Lien, Second Lien, and Third Lien GARBs.]

Debt Service (section 7.4.3)

Table VII-6 presents total projected Net Debt Service Requirements, including existing debt service and estimated future debt service, less savings from future refundings and restructurings. All amounts reflect certain adjustments required to be made under the Airport Use Agreements for the purpose of calculating airline fees, rentals, and charges.

**Table VII-6**

Projected Annual Net Debt Service Requirements ($000s)

| | Short Term | | | | | Intermediate Term | Long Term |
|---|---|---|---|---|---|---|---|
| | 2003 | 2004 | 2005 | 2006 | 2007 | 2012 | 2022 |
| Existing Debt Service | $132,889 | $179,800 | $198,386 | $198,102 | $201,611 | $217,513 | $43,865 |
| Future Debt Service Less Savings from Future Refundings and Restructurings | 0 | (4,775) | 13,340 | 23,152 | 45,523 | 469,790 | 974,029 |
| Total Projected Net Debt Service Requirements[1] | $132,889 | $175,025 | $211,726 | $221,255 | $247,134 | $680,303 | $1,017,894 |

1/ Totals may not add due to rounding.

Estimated future debt service is based on the following allowances and assumptions:

- 30-year maturities 6.0 percent interest rate
- Capitalized interest for the OMP and WGP No capitalized interest for the CIP
- Funding of the Debt Service Reserve Fund Debt service coverage of 1.10 times debt service
- Allowances for costs of issuance (underwriters' discount, bond insurance, and other costs)

Estimated savings from future refundings and restructurings are based on the following allowances and assumptions:

- 30-year maturities with amortization beginning January 1, 2019 6.0 percent interest rate
- No capitalized interest Surety for the Debt Service Reserve Fund
- Allowances for the costs of issuance (underwriters' discount, bond insurance, and other costs)



**Table VII-9**

Projected Airline Cost Per Enplaned Passenger ($000s) for Fiscal Years Ending December 31

| | Short Term | | | | | Intermediate Term | Long Term |
|---|---|---|---|---|---|---|---|
| | Estimated 2003 | Estimated 2004 | Projected 2005 | Projected 2006 | Projected 2007 | Projected 2012 | Projected 2022 |
| Net Signatory Airline Requirement | $292,669 | $325,501 | $367,775 | $383,302 | $421,201 | $914,764 | $1,519,556 |
| Non-Signatory Airline Requirement | 8,931 | 8,944 | 9,764 | 10,376 | 12,045 | 23,241 | 42,014 |
| Total Airline Requirement | $301,600 | $335,345 | $377,539 | $393,680 | $433,246 | $938,005 | $1,561,570 |
| Total Projected Enplaned Passengers | 32,628 | 37,785 | 38,825 | 39,914 | 41,063 | 48,150 | 57,356 |
| Total Airline Cost Per Enplaned Passenger | $9.24 | $8.89 | $9.72 | $9.86 | $10.57 | $20.19 | $27.23 |
| 2003 Constant Dollars[1] | $9.24 | $8.63 | $9.17 | $9.03 | $9.39 | $15.46 | $15.53 |

1/ Inflation rate assumed at 3.0 percent.

Source: 2003 Total Projected Enplaned Passengers – Ricondo & Associates, Inc.; 2004-2015 Total Projected Enplaned Passengers – FAA, 2001 Terminal Area Forecast; and 2016-2022 Total Projected Enplaned Passengers – Ricondo & Associates, Inc., as extrapolated from the FAA, 2001 Terminal Area Forecast. All FAA TAF enplaned passengers stated in CY (ending September 30) but been converted to enplaned passengers stated in Airport Fiscal Years (ending December 31).

Prepared by: Ricondo & Associates, Inc.



15

| Comment | Response |
|---|---|
| 16 | The FAA has reviewed the Boston Globe article attached as *AReCO Appendix B.* |

16

**APPENDIX B** [Boston's "Big Dig" Cost Overruns and Management/Officials Lies]
State sues 2 Big Dig companies for $146m By Sean P. Murphy, Globe Staff, 3/18/2004

Calling management of the Big Dig a financial "shell game," state lawyers filed a $146 million lawsuit against Bechtel Corp. and Parsons Brinckerhoff Inc., saying the project's private-sector managers concealed true cost estimates from state officials to keep the project moving forward.

Lawyers for the state and the Massachusetts Turnpike Authority, who first publicly disclosed their intention to file suit in December, accuse Bechtel/Parsons Brinckerhoff of repeatedly making inaccurate cost estimates in public, while privately being well aware of the escalating costs of the highway and tunnel project.

The 29-page complaint filed Tuesday in Suffolk Superior Court seeks as much as $146 million in dam ages, the estimated profits and incentive fees for Bechtel/Parsons Brinckerhoff on the $14.6 billion project, which is overseen by the Turnpike Authority.

"The defendants utilized their superior knowledge and expertise to conceal project cost overruns in order to continue, for their own improper benefit and by improper means, the highly lucrative contracts with the Commonwealth," the suit says.

Had accurate estimates been made public in 1994, the suit says, state officials might have reassessed whether to go ahead with the project, which is now largely completed. Bechtel/Parsons Brickerhoff was hired in 1985. Yesterday, Bechtel/Parsons Brinckerhoff officials declined to be interviewed and issued a written response: "This lawsuit is without merit. It has no basis in fact, in our contract, or in the law. It ignores years of exhaustive disclosures that B/PB made to state agencies about project costs. We are confident that a fair and open legal process will decisively repudiate these baseless allegations."

Edward M. Ginsburg, a retired state judge who heads a team of lawyers and engineers seeking refunds for overruns on the project, declined yesterday to address Bechtel/Parsons Brinckerhoff's assertion that state officials were informed about project costs.

Ginsburg's team was appointed last year by Matthew J. Amorello, chairman of the Turnpike Authority, to review the work of design and management consultants who worked on the Big Dig and decide whether and how to pursue refunds in light of the project's large cost overruns. The team's lawsuit was approved by state Attorney General Thomas F. Reilly before it was filed.

Ginsburg's team says in the suit that Bechtel/Parsons Brinckerhoff in 1994 estimated the eventual cost of the project to be almost double the $7.7 billion then approved for the project by the state. The federal government paid up to 80 percent of the cost of portions of the project.

The suit says the project managers told the state about the revised estimates in 1994 but "upon further review [Bechtel/Parsons Brinckerhoff] reassessed their prior estimates and advised and recommended to the Commonwealth that the project could be completed for $7.998 billion."

The suit says that subsequently, "contrary to the assurances and advice provided, however, [Bechtel/Parsons Brinckerhoff] became aware . . . that the construction of the project could not be completed within the approved budget as to which they had given recommendations and assurances.

14

| Comment | Response |
|---|---|
| 16 | Please see response the response to this comment on the previous page. |

"In breach of trust reposed in [Bechtel/Parsons Brinckerhoff] and in breach of their duty to make full disclosure, Bechtel/Parsons Brinckerhoff continued to employ what they had previously described as a 'shell game' to obscure anticipated costs."

In reports filed with state and federal agencies from 1994 to 2000, the project managers repeatedly provided inaccurate cost estimates, even after the management team "prepared internal estimates confirming that the total cost of the project had risen substantially," the suit says.

However, a state inspector general's report in 2001 said Bechtel/Parsons Brinckerhoff informed at least one state official. According to that report, Bechtel/Parsons Brinckerhoff told then-governor William F. Weld in 1994 that the Big Dig's cost would be $14 billion. C. Matthew Wiley, Bechtel's top project official, testified in April before a legislative committee that Bechtel officials met with Weld in 1994 with the sole purpose of informing him of the firm's potentially disastrous cost estimate. He said it was his understanding that Weld refused to accept a document detailing the financial picture. Weld has said he does not recall any figure Bechtel/Parsons officials cited. 16

15

| Comment | Response |
|---|---|
| 17 | The FAA has reviewed the Daily Herald article attached as *AReCO Appendix C.* |

**APPENDIX C**

O'Hare costs: $16 billion or $6 billion? written by Various
Tue Aug 12, 2003 Daily Herald
By Robert McCoppin Daily Herald Staff Writer

17

The true cost of expanding O'Hare International Airport may be billions of dollars more than Chicago has estimated, according to an analysis done for suburban opponents of expansion.

Expanding the O'Hare airfield alone would cost almost $16 billion, not the $6.6 billion city officials estimated, according to opponents.

The additional expense means the cost per passenger would more than double to about $20, making it far more expensive than other airports, the consultants concluded.

The analysis was done by the Infrastructure Management Group Inc., technical and financial consultants for Bensenville and Elk Grove Village, which are fighting the expansion in favor a new airport at Peotone, south of Chicago.

"The mayor's numbers have undergone very little scrutiny," Infrastructure President Steve Steckler said. "They're based on a relatively brief press release with no supporting information. The city's numbers were neither credible nor inclusive of the total costs."

The difference between cost estimates lays primarily with related costs that Chicago officials did not include.

In the airfield costs alone, Infrastructure added $500 million for relocation of utilities such as electrical lines, water, sewer and fuel lines.

It was in other areas that the cost ballooned significantly.

The consultants added $3.8 billion for the World Gateway program, Chicago's plan to add two new terminals and expand existing terminals, which the city suspended last year after the airlines said they couldn't afford it.

The cost of World Gateway itself was originally estimated at $1 billion, but the city's own estimates grew to $3.7 billion.

World Gateway should not be included in the costs of expansion, O'Hare spokeswoman Monique Bond said, because it was meant to improve efficiencies at the airfield as it is, and is not part of the expansion plan.

"Those are two separate projects," Bond said.

The expansion plan calls for one other new terminal, on the west end of the airfield, with 60 gates.

But Steckler maintained more terminals will be needed to handle Chicago's forecasted 78 percent increase in flight capacity, to 1.6 million flights a year.

16

Also included in the group's cost calculations were $2.1 billion for O'Hare's existing capital improvement program, which Chicago officials say should be counted separately because it would be needed with or without the expansion.

The final extra cost the consultants added was $2.7 billion for additional work, including extra expenses for nighttime pay, which would be necessary to minimize conflicts with flights.

That also includes extra costs for security to supervise hundreds of workers on an operating airfield, and unknown contingency costs typically added to construction projects.

The study's authors, Infrastructure Management, based in Washington, D.C., does financial feasibility studies for airports and transportation departments, and does an annual survey of airport expenses for the American Association of Airport Executives.

In addition, the Illinois Department of Transportation has estimated airport users would need $2.3 billion in related roadway improvements, such as a new western access to the airport, a new bypass expressway around the west side of the airport, and more lanes on existing expressways to the airport.

Chicago Mayor Richard Daley called western access "vital" to the project, but has never included its cost in his project, arguing that it's the state's responsibility.

Daley has promised that no local or state taxpayer money would go to the expansion. It is to be paid by passenger and airline fees and federal grants.

There will also be additional uncalculated federal costs, for the 30 percent more personnel and four new radar sites air traffic controllers say will be needed.

Bond, O'Hare's spokeswoman, could not comment specifically on the rival cost estimates because she had not seen them. But she said O'Hare planners stand by their cost estimates. "We're sticking with our figures," she said.

Those who've studied such large-scale projects have found a pattern of cost overruns.

In his book, "Megaprojects and Risk," Brent Flyvbjerg studied multibillion-dollar construction projects worldwide and found about nine out of 10 went over budget, with many running 40 percent over original estimates.

Flyvbjerg, a professor of development and planning at Aalborg University in Denmark, concluded that sponsors of such projects systematically underestimate costs and environmental impacts, and overestimate revenues to win approval of their projects.

A classic recent example of a megaproject that ran far over budget is the Big Dig tunnel that opened this year under Boston Harbor.

The cost more than quadrupled from when Congress approved it to almost $15 billion.

17

Denver International Airport more than doubled in cost from when it received voter approval to when it opened six years later.

Closer to home, recent Chicago projects such as Millenium Park and the renovation of Soldier Field have reportedly gone significantly over original estimates.

Alan Altshuler, a professor in the Kennedy School of Government at Harvard University, and co-author of his own book called "Megaprojects," said multibillion-dollar projects are so big and complex that supporters may simply choose the more optimistic of a range of cost estimates.

Once under way, backed by powerful coalitions of business, labor, activists and government, the projects reach a "point of no return," Altshuler said, when it's too late to stop them despite rising costs.

"There is a tendency for big projects to cost more than originally estimated," Altshuler said. "There are such powerful political incentives to underestimate costs when you're trying to sell projects, that people just come in low."

Altshuler urged "fiscal sobriety" and close public oversight. 17

18

| Comment | Response |
|---|---|
| 17 | Please see response the response to this comment on page U.4-171. |

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May 4, 2004

Ms. Amy B. Hanson
Environmental Protection Specialist
Chicago Airport District Office
Federal Aviation Administration
2300 East Devon Avenue
Des Plaines, Illinois 60018

**Re: Information and issues Relating to Religious Cemeteries and Proposed O'Hare Expansion**

Dear Ms. Hanson:

I have been told recently that FAA has attempted to contact representatives of St. John's United Church of Christ and of Rest Haven Cemetery Association ("Religious Objectors) to ask them questions about St. Johannes Cemetery and Rest Haven Cemetery. I have heard that you, as an FAA representative, may be under the impression that our representatives do not wish to meet with you, as an FAA representative, and provide you information. On the contrary, as counsel for both St. John's United Church of Christ and of Rest Haven Cemetery Association, I am reiterating our willingness to have our representative meet with you and other FAA representatives and to provide you further information, on the condition that this law firm be present to represent and assist our clients. I have previously communicated our position orally to Mr. Patrick Johnson of the United States Attorney's Office and to Ms. Daphne Fuller in the office of FAA Chief Counsel. By this letter I am stating our position in writing. 1

Further, by this letter I am reiterating and providing further information on the positions asserted by the Religious Objectors in our letter to FAA of January 16, 2004 in which we raised serious substantive and procedural legal problems with Chicago's proposed O'Hare expansion. The FAA has yet to respond to our January 16, 2004 letter.

**I. Reiteration of the positions of St. John's United Church of Christ and Rest Haven Cemetery Association and the Individuals Representing the Cemeteries**

We represent both St. John's United Church of Christ and Rest Haven Cemetery Association for the purpose of asserting and protecting the rights of the cemeteries and the cemetery families and representatives under the Free Exercise Clause of the First Amendment, the Equal Protection Clause of the Fourteenth Amendment (as applied to the City of Chicago and the State of Illinois and as applied to the FAA under the Fifth

| Comment | Response |
|---|---|
| 1 | In response to this comment and others, the FAA has added **Section 5.22** to **Chapter 5** of the EIS for the FAA's discussion of legal issues involving potential relocation of St. Johannes and Rest Haven Cemeteries. |

Ms. Amy B. Hanson
May 4, 2004
Page 2

Amendment) and under the federal Religious Freedom Restoration Act, 42 U.S.C. §2000bb *et seq*. (federal "RFRA").

Our letter of January 16, 2004 (copy enclosed) summarized our position that FAA cannot lawfully approve the City of Chicago's proposal to destroy St. Johannes Cemetery and Rest Haven Cemetery because such approval would violate both substantive and procedural constitutional and statutory obligations of the FAA. We have also provided FAA with copies of the Amended Complaint and supporting affidavits filed in *St. John's United Church of Christ, et al. v. Daley et al* (Case # 3C 3726, United States District Court for the Northern District of Illinois) Additional copies enclosed with this letter.

**2. Intervention by Religious Objectors in FAA Adjudicative Proceedings**

FAA is required to make a number of substantive adjudicative decisions to allow Chicago's proposed "O'Hare Modernization Plan" to go forward and destroy our cemeteries. These are "adjudicative" decisions because the FAA must apply rules and requirements of general application to the specific facts of the Chicago O'Hare expansion proposal. These decisions include the following:

- **First Amendment Free Exercise Determination.** FAA must determine if the destruction of these two religious cemeteries violates the Free Exercise Clause of the First Amendment. It is our position that the singling out of these two religious cemeteries — and stripping them of the protections of the Illinois Religious Freedom Restoration Act, 775 ILCS 35/1 *et seq*. (IL-RFRA) while preserving those specific religious protections for all other religious institutions in the State of Illinois (including all other religious cemeteries) — violates the Free Exercise Clause of the First Amendment for two independent reasons. First, the action intentionally singles out two religious institutions for disparate destructive treatment while protecting all other religious institutions in the State. Such disparate targeting of these two religious institutions — while providing the Illinois RFRA protection to all other religious institutions in the State (including all other religious cemeteries) — violates the Free Exercise Clause regardless of whether the disparate treatment results in a "substantial burden" under the First Amendment. Second, the affidavits of the plaintiffs in the federal litigation referenced above clearly establish that the destruction of the two cemeteries will impose a "substantial burden" on the religious practices and beliefs of the families and church members whose relatives are buried in these two cemeteries. Because the proposed destruction of these two religious cemeteries triggers the protection of the First Amendment Free Exercise Clause, FAA cannot approve Chicago's proposal to destroy these cemeteries without conducting a two-pronged First Amendment demonstration: *i.e.*, 1) that there is a compelling governmental need to destroy these two religious cemeteries, and 2) that there is no

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May 4, 2004
Page 3

alternative to meet this compelling governmental need which would not destroy the cemeteries[1].

- **Equal Protection Determination.** FAA must determine if the destruction of these two religious cemeteries violates the Equal Protection Clause of the Fourteenth Amendment and (as applied to the FAA, the protections of the Equal Protection Clause incorporated in the Fifth Amendment Due Process Clause when applied to the actions of federal agencies, *Bolling v. Sharpe*, 347 U.S. 497 (1954)). Independent of the First Amendment Free Exercise Clause, the intentional discrimination against these two religious institutions — while continuing religious protection for all other religious institutions in Illinois — violates the equal protection guarantees of the Fourteenth Amendment as applied to Chicago and the equal protection guarantees of the Fifth Amendment as applied to FAA[2].

- **Federal RFRA.** FAA must demonstrate that the requirements of the federal Religious Freedom Restoration Act have been met. That statute provides in pertinent part:

> "Government shall not substantially burden a person's exercise of religion even if the burden results from a rule of general applicability, except as provided in subsection (b) of this section."
>
> ***
>
> "(b) Exception
>
> Government may substantially burden a person's exercise of religion only if it demonstrates that application of the burden to the person--
>
> (1) is in furtherance of a compelling governmental interest; and
>
> (2) is the least restrictive means of furthering that compelling governmental interest."
>
> 42 U.S.C. §2000bb-1(emphasis added)

Neither FAA nor Chicago has made the required demonstration — under either the First Amendment or the federal RFRA — that there is a compelling governmental need to destroy these two religious cemeteries or that there is no other alternative to achieve a compelling governmental need. We emphasize

[1] By emphasizing that FAA must make adjudicative determinations (*i.e.*, applying general rules to specific facts) we are not waiving our position that the legal and factual issues relating to these constitutional disputes must be made by an Article III Court. To permit the FAA to serve in the adjudicative capacity of an Article II legislative court to make binding determinations as to disputed facts underlying these constitutional issues violates Article III of the Constitution. Should the courts rule that FAA can make these factual adjudicatory decisions as to constitutional issues without independent determination of these factual issues by an Article III Court, the religious objectors assert the alternative Due Process protections that must be observed by the FAA in adjudicating the factual issues at the agency level, including, but not limited to, the procedures required by 5 U.S.C. §§556-557.

[2] The Religious Objectors assert the same Article III position on the Equal Protection dispute as they raised on the First Amendment issue.

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May 4, 2004
Page 4

that these two required demonstrations are substantive obligations — not simply procedural — and require substantive proof by the FAA that these two requirements (a compelling governmental need and the absence of a less destructive alternative) have been demonstrated. Unlike obligations under the National Environmental Policy Act (NEPA) which the courts have held to merely create procedural obligations and do not compel a substantive result, the First Amendment Free Exercise Clause and the federal RFRA create substantive obligations which prohibit the destruction of these two religious cemeteries unless these substantive obligations have been met[3]. 1

➢ **FAA Determination under 49 U.S.C. §47107(a) (16).** Chicago must receive approval for its OMP proposal under Section 47107(a) (16) of Title 49. That section expressly requires the FAA to approve any changes in an airport layout plan at an airport which has been the recipient of past federal financial assistance — before the airport operator or owner can make any changes in the prior approved Airport Layout Plan. O'Hare is a recipient of past federal aid. 2

The City has stated publicly that upon approval of the Airport Layout Plan by the FAA, the City intends to acquire and demolish our clients' cemeteries. At a minimum, an FAA proceeding under Section 47107(a) (16) would have to include the constitutional First Amendment and federal RFRA statutory demonstrations by FAA of a compelling governmental need and the absence of a less destructive alternative.

We have previously asked the FAA to advise the Religious Objectors as to the following:

1) The current procedural status of any FAA decision-making proceeding under Section 47107(a) (16) as to the OMP ALP;
2) What are the "relevant factors" FAA considers in making its decision under Section 47107(a) (16); and
3) What material (*e.g.*, communications, documents, data, *etc.*) has been exchanged between Chicago and the FAA relating to a request for FAA approval under Section 47107(a) (16)?

To this date our clients have not received answers to these questions — and despite our repeated requests we have not received the material (*e.g.*, communications, documents, data, *etc.*) has been exchanged between Chicago and the FAA relating to a request for FAA approval under Section 47107(a)(16). The FAA's continuing refusal to provide the Religious Objectors access to this material in a meaningful time and in a meaningful manner so that the Religious Objectors can submit rebuttal material clearly violates the Due Process Clause. **For emphasis,** we repeat that the FAA's Due Process

[3] To the extent that Congress has created in the federal RFRA a liberty interest protected by the procedural and substantive provisions of the Due Process Clause, the requirement that the determination of factual issues relating to RFRA compliance be made in an Article III court applies to federal RFRA as well.

| Comment | Response |
|---|---|
| 1 | Please see the response to this comment on page U.4-174. |
| 2 | As noted in response to other comments, the FAA believes that this EIS is not the appropriate forum to resolve issues related to AIP or PFC funding. With respect to allegations of right to participate in Agency decision-making, the commenter is referred to the **Section 5.23** of the EIS. The FAA has added **Section 5.23** to **Chapter 5** of the EIS related to due process rights of the commenter. |

Ms. Amy B. Hanson
May 4, 2004
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obligation to provide the Religious Objectors access to these evidentiary materials in these contested proceedings is independent of and separate and apart from the FAA's obligations (as well as any statutory exemptions) that may exist with relation to the Religious Objectors' FOIA requests.

- **FAA Decisionmaking as to the approved components of the NPIAS-ACIP for the Chicago Metropolitan Area.** Our January 16, 2004 letter outlined the requirements of 49 U.S.C. §47103. That statutory provision requires FAA to develop a National Plan of Integrated Airport Systems (NPIAS) which identifies those components of eligible airport development which FAA considers necessary to "provide a safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics...". A corollary to this requirement (that FAA identify the necessary airport components in the NPIAS plan) is the requirement that airport development projects which are not in the NPIAS-ACIP database are not eligible for AIP grants (and by necessary implication are not eligible for authorization for the collection and use of Passenger Facility Charge (PFC) funds.

We pointed out that the sources of evidentiary information for the determination of what airport improvements are required in a given metropolitan area to meet the needs of civil aeronautics include state system plans and master plans that have been coordinated with state system plans. The only extant state system plan for the Chicago Metropolitan Area of which we are aware is the 1988 *Final Report Chicago Airport Capacity Study* which concludes that the aviation needs of the Chicago metropolitan area can best be met by Midway and O'Hare retaining their existing runway configurations combined with the construction of a new airport in the south suburbs.

We know of no plan or other information which justifies the inclusion of the runway and terminal plans which comprise the proposal for the OMP in the NPIAS. There has been no showing that the OMP in combination with Midway will satisfy the "needs of civil aeronautics" in the Chicago metropolitan region. Indeed, there is substantial evidence to the contrary demonstrating that the O'Hare OMP — in combination with Midway — will <u>not</u> meet the "needs of civil aeronautics" in the Chicago metropolitan region.

In our letter of January 16, 2004 we asked to participate in "in any FAA administrative proceeding — either in FAA NPIAS or ACIP decision-making or in any other FAA decision-making process — which addresses the aviation needs of the metro Chicago region and the role of O'Hare in meeting those needs. We wish to participate in any FAA administrative decision-making process which attempts to place any of the components of the OMP — especially those components which would destroy our religious cemeteries — in the approved NPIAS-ACIP database."

We stated in the January 16, 2004 letter: "Our concern is heightened by the fact that the OMP does not appear to be a reasoned or factually supported

| Comment | Response |
|---|---|
| 2 | Please see the response to this comment on page U.4-177. |

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Page 6

component of a metro system plan that would meet the aviation needs of the metro Chicago region. Indeed, OMP (and related exhaustion of capacity at Midway) would appear to leave metro Chicago with a huge deficit of aviation capacity."

To date the FAA has failed to respond to our request to participate in any FAA NPIAS-NCIP decisionmaking process for the Chicago Metropolitan area which attempts to include the O'Hare OMP in the NPIAS-NCIP database or take any other action with respect to inclusion of the OMP in the NPIAS so as to make OMP eligible for federal funding assistance.

- **FAA Funding Decisions As to AIP or PFC funding for the OMP and related project components.** Chicago has acknowledged that the OMP and its related components cannot be constructed without major federal funding assistance — in the form of AIP funds (allocated and discretionary) and substantial amounts of PFC funds for which FAA approvals are required. We know of at least two pending requests for federal AIP grant and LOI approvals and anticipate several future requests by Chicago for additional PFC authorizations and additional AIP approvals to fund the OMP and related projects.

  By way of example, we know of a March 1, 2004 submittal by Chicago of a "Request for Letter of Intent AIP Funding" for "Phase 1" of the OMP. We are also aware that Chicago now acknowledges that the virtually all of the terminal components of the "World Gateway Program" (WGP) are required to be constructed to achieve the claimed capacity increase benefits of the OMP runway configuration. Chicago has submitted a "Request for Federal Funding Commitment Letter of Intent" for the World Gateway Program dated February 28, 2002 (The current status of this request is unclear but it apparently has not been withdrawn.) We also know (based on statements made in Chicago's February 2004 Master Plan) that Chicago intends to seek substantial funds through PFC authorizations.

  We stated in our January 13, 2004 letter that we wished to "become parties opposing any application by Chicago for approval of the OMP under … any FAA administrative decisionmaking process which would approve or render eligible … any component of the OMP for federal funding authority. As reemphasized below our request to "become parties" to these proceedings means we wish to participate in these adjudicatory administrative proceedings as parties opposing Chicago's applications for FAA decisions which would approve construction or funding of the OMP and related projects. 2

As discussed above, the Religious Objectors wish to participate as opposing parties in the adjudicative FAA decisionmaking process on each and all of these FAA adjudicative decisions. As one basis for such status, the Religious Objectors invoke the rights of party participation set forth in 5 U.S.C. §555(b). In addition, it is clear that each of the FAA approval and financial assistance decisions — each of which would allow

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Chicago to proceed with destruction of the two religious cemeteries here —necessarily trigger the FAA's decisionmaking responsibilities under the First Amendment Free Exercise Clause and under RFRA. Given the clear purpose of the Free Exercise Clause and federal RFRA in protecting the rights of the Religious Objectors, the Religious Objectors clearly are entitled to intervene as parties in the FAA adjudicatory decisions which could result in harm to our religious rights. By this letter we are requesting that FAA provide Religious Objectors with timely notice of any FAA present or future decisionmaking process (*e.g.*, AIP, PFC, or NPIAS-NCIP decisions) which involves FAA approval of any aspect of the proposed O'Hare OMP and related projects, including, but not limited to, the kinds of FAA decisions outlined in this letter. We are further asking FAA to respond in writing to our request that Religious Objectors be recognized as opposing parties to Chicago in the above-described FAA adjudicatory decisionmaking proceedings.

**3. Reassertion of Religious Objectors' Procedural Rights.**

In our letter of January 16, 2004 we described a number of procedural errors and deficiencies which are impairing Religious Objectors' procedural rights. To date we have not had a response from the FAA. 3

**Conclusion**

The Religious Objectors stand ready to meet with you to discuss your questions as long as the Religious Objectors are represented at such a meeting by our law firm. In addition, we suggest that Chicago be invited to such a meeting just as we believe that we — as parties opposing Chicago's application for FAA approvals of the O'Hare expansion proposal — are entitled to be present at meetings and exchanges of information between Chicago and the FAA. 4

Sincerely yours,

Joe Karaganis

Joseph Karaganis

Enclosures
cc: Mr. Andrew Steinberg
Ms. Daphne Fuller
Mr. Perry Kupietz
Mr. Barry Cooper
Mr. Randall Putman
Mr. Leroy Heinrich
Mr. Robert Placek
Mr. Robert Cohn
Mr. Anthony Picarello

| Comment | Response |
|---|---|
| 3 | As noted in the previous 2 comments, please see **Sections 5.22** and **5.23** of **Chapter 5** of the EIS in response to the comments contained herein. |
| 4 | Comment noted. |

JDA Aviation Technology Solutions

040610_01

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June 10, 2004

Ms. Woodie Woodward
Associate Administrator for Airports, ARP-1
Federal Aviation Administration
800 Independence Avenue SW
Washington DC 20591

Dear Woodie,

I continue to be concerned about the proposed O'Hare Modernization Plan. As you know, the recent study by MITRE CAASD for FAA concludes that even with the NAS improvements promised by FAA's Operational Evolution Plan over the next ten years, airports like O'Hare will still have serious delays in both good and bad weather. Much of the delay will continue to be due to airspace limitations – the effect of traffic to and from other airports (Midway) and over flights, not the airport itself. 1

One of many major questions in the rush to create the major OMP upheaval at O'Hare is the fate of the 2001 O'Hare Delay Task Force report published in June 2002. **That report postulated achievement of 1.24 million annual operations, nearly the same (actually slightly greater) as the OMP without major upheaval, by application of practical and sensible measures.** 2

The O'Hare Delay Task Force Report was created in an effort chaired by the City of Chicago and the FAA Great Lakes Region. Unlike the OMP's secretive, closely-held development, the Task Force Report had participants from virtually all interested parties-airlines; pilot and controller unions; general and business aviation; FAA Headquarters, Regional experts and controllers; NASA; State associations; several consultant firms. They were able to reach valuable consensus, based on massive amounts of data, analysis and simulation conducted by Landrum & Brown and by the FAA William J. Hughes Technical Center. All findings were made available to the Task Force. Working Groups identified 82 delay reduction alternatives divided into short, mid and long-term options.

[The Task Force agreed to support a series of initiatives relating to "Plan B" use of LAHSO (land and hold short operations) procedures, IFR Delay Reduction initiatives, Revised ATC Procedures initiatives, for which delay reductions, reduction in flight cancellations and cost savings were developed. They identified a series of equipment and technology initiatives, none of them technical challenges, but all reasonable and readily doable. The Task Force supported a

| Comment | Response |
|---|---|
| 1 | Throughout the development of the OMP, FAA air traffic specialists have worked closely with the OMP development team and have proposed terminal airspace expansions and procedures specifically designed to serve the OMP runways. Several potential airspace bottlenecks have been identified and resolved. For example, real-time simulations have been used to test the feasibility of adding two new departure routes to the east through the Cleveland Center, which would alleviate one of the most significant identified airspace bottlenecks. Specific plans have been developed for expanding the terminal airspace and adding new arrival and departure routes into and out of the Chicago TRACON airspace and the adjacent ARTCC airspace areas. |
| 2 | The 2001 O'Hare Delay Task Force Study (the 2001 DTF) indeed identified a number of promising delay reduction initiatives, many of which are currently being implemented by the FAA and others of which are undergoing additional study. However, the commenter's statement that the 2001 DTF "postulated achievement of 1.24 million annual operations [at O'Hare International Airport], nearly the same (actually slightly greater) as the OMP without major upheaval, by application of practical and sensible measures" inaccurately characterizes the 2001 DTF's results. In the 2001 DTF, the ability of ORD to accommodate the level of annual operations specified by the commenter ***was not*** evaluated. Rather, the DTF Study focused on the ability of individual targeted operational, technological, and procedural improvements to reduce delay relative to baseline levels in lieu of major capital improvements.<br>Moreover, the improvements considered in the 2001 DTF only provided incremental reductions in aircraft delays. For example, the alternative that produced the largest delay reduction benefit in the 2001 DTF—Alternative 60 with land-and-hold-short operations—was estimated to reduce delays by up to 78,000 hours at a daily demand level of 3,400 operations (or annual demand level of approximately 1.2 million operations). Assuming annual demand profiles similar to those assumed in the DEIS, this delay reduction translates to an average annual delay reduction of approximately 2 minutes per operation while accommodating approximately 10,000 additional operations per year (i.e., avoided cancellations). In contrast, at a similar annual demand level annual operations the preferred airfield alternative in the OMP was determined to produce an average annual delay reduction of over 11 minutes per operation while simultaneously accommodating over 200,000 additional operations per year.<br>In contrast, the operational evaluations conducted as part of the EIS focused specifically on the ability of various airfield configurations to accommodate existing and forecast future levels of annual demand. These OMP evaluations—which were conducted using current and validated model inputs--indicated that (1) substantial delays would result if the existing airfield configuration is preserved and (2) of multiple airfield development alternatives considered, the preferred alternative (Alternative C) would reduce delays more substantially than other alternatives, including those that rely exclusively on technological, procedural, and operational improvements. Consequently, the FAA feels that the selection of the Alternative C as the preferred alternative is well justified on operational grounds. |
| 3 | Please see response to comment 5. |

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long list of system-wide initiatives, including wake vortex technologies, data link, reduced vertical separation minima, Free-Flight Phases I and II, etc. – many of them efforts that have been around for years but not implemented. The Task Force did not quantify the prospectively great benefits from these initiatives.]

The Task Force chose *not* to pursue a series of other initiatives, and, importantly, **it did not consider a whole series of physical airfield improvements**, leaving those to future master planning efforts. 3

**In the rush to gain approval of the O'Hare OMP, the valuable Task Force Report seems to have taken a back seat. I believe that the Task Force recommendations, not the dubious OMP should serve as the baseline for judging improvements to O'Hare.**

The Task Force effort identified a series of improvements which are achievable with important but conservative measures, without the major dismantling of O'Hare airport now being proposed. Its conservative estimates of achievable gains not only essentially equal those of the more radical rebuilding of O'Hare but can also be achieved in less time at much less cost. **These proposals surely deserve consideration equal to that given the far more drastic OMP – *before* embarking on a far more expensive and disruptive course.** 4

**Recommendations**

In considering major and expensive rebuilding of O'Hare airport, I believe that **the sensible first step for FAA must be a serious assessment of the O'Hare Task Force report, and a down-to-earth estimate of what may realistically be expected from it.** That must be done before commitment of billions of dollars to the O'Hare OMP. 5

At the same time, good sense dictates that FAA should encourage the leaders and the many Chicago stakeholders to think seriously about whether a multi-billion dollar expenditure at ORD still makes sense, or whether the time is now **to make the rational improvements to O'Hare and at the same time build a separate airport** not encumbered by serious airspace problems and the multiplicity of other problems that excessive size and congested traffic bring.

I'd like to discuss this issue with you in more detail. I'll call next week for an appointment. 6

Sincerely,

Joseph M. Del Balzo
President

| Comment | Response |
|---|---|
| | The FAA also believes that technological, procedural, and operational improvements should be pursued simultaneously with the airfield improvements proposed as part of the OMP. Accordingly, as mentioned above, the FAA has been aggressively pursuing implementation of DTF Study recommendations that show greatest promise. See **Appendix A** of the FEIS for a current list of the status of each of the delay reduction alternatives identified in the 2001 DTF. |
| 3 | Please see the response to comment 5. |
| 4 | Please see the response to comment 5. |
| 5 | The FAA has and continues to evaluate, study, and implement procedures and delay reduction alternatives identified in the O'Hare Delay Task Force studies. This is an on-going effort attempting to implement delay reduction alternatives that produce operational benefits. The FAA has made significant progress in implementing a number of delay reduction alternatives from both studies.<br>The 1991 O'Hare Delay Task Force culminated with 11 recommendations that were specific to O'Hare and 4 recommendations that were System Improvements. Theses options were reviewed and studied further after completion. Of the 11 recommendations specific to O'Hare, 2 were implemented, 3 are on-going efforts, and 6 were not implemented. The majority of the items that were recommended in this study that were not implemented were not done because either the operational and capital costs associated with the project outweighed the benefits expected or procedures have changed reducing the benefit of the option. As a result of implementation of delay reduction initiatives, delays decreased throughout the 1990's as operations continued to increase.<br>In the late 1990's and into 2000, delays at the Airport once again began to escalate. The FAA took action and teamed with the City of Chicago and formed a new task force to evaluate delay reduction alternatives once again. This culminated with the release of the 2001/2002 O'Hare Delay Task Force. This effort identified 47 potential alternatives to improve the operating efficiency of O'Hare and reduce delays. Included were 22 alternatives with specific application at O'Hare and 25 alternatives that consist of national programs with application throughout the system. This study evaluated delay reduction alternatives that could be implemented in the short, mid, and long-term time frame. Overall, of the 47 potential delay reduction alternatives, 22 have been implemented, 20 are on-going and 5 were not implemented. More specifically, of the 22 alternatives that were identified at O'Hare, 6 have been implemented, 13 are on-going, and 3 were not implemented. Two of the three that have not been implemented are due to a current Air Traffic waiver that has been implemented that may perform as well as, if not better than the delay reduction alternative itself. See **Attachment A-18 – Status of Potential Delay Reduction Alternatives from O'Hare Delay Reduction Task Forces** in **Appendix A** of the EIS. |
| 6 | Subsequent to the date of this letter, FAA issued the DEIS for public comment. The FAA received a large number of comments on the DEIS. This FEIS contains the public comments and FAA responses thereto. |

040706_01

AReCO

THE ALLIANCE OF RESIDENTS CONCERNING O'HARE, Inc. A Not-for-Profit Corporation

PO Box 1702 ○ Arlington Heights, IL 60006-1702 ○ Fax: 847/506-0202 ○ Tel: 847/506-0870 ○ www.areco.org

*"To achieve a balance between public health and the economy"*

July 6, 2004

Sent via email and regular mail
Mr. Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, IL 60018
michael.w.macmullen@faa.gov

Dear Mr. MacMullen:

The Alliance of Residents Concerning O'Hare (AReCO) submits to the O'Hare Modernization Program Environmental Impact Statement record, the attached American Heart Association (AHA) study and public statement of April 5, 2004, regarding the substantial negative cardiovascular heath impacts of particulate matter, especially fine PM (i.e., PM2.5). 1

AReCO believes that this study and official statement by the AHA is importantly supportive of AReCO's previously stated positions regarding the need to include full and expansive investigation of the PM impact of such proposed O'Hare expansion on the public heath and well-being, especially in consideration of the fact that the United States Environmental Protection Agency (USEPA) has recently confirmed and officially implemented it's new PM2.5 standards and has just published it's rulings on U.S. counties currently in non-attainment status of the new standards, the multiple-county Chicago area being one of them.

AReCO has been consistent in its positions in these regards, that O'Hare airport operations are a huge source of local PM as well as regional impacts due to the extreme mobility of airborne fine PM. We have also been outspoken on the issue of continued foot-dragging by the authorities to (1) officially determine, define and set standard limits for jet aircraft PM emissions (both primarily emitted and secondarily formed) and (2) that O'Hare airport (and Midway, DuPage, Palwaukee airports) should be treated as pollution emission "bubbles" for the purpose of pollution regulation (i.e., like a single source) due to their close proximity.

The public, including citizens in the areas surrounding Chicago's O'Hare airport, remain largely uninformed on the fact that there are no PM emission standards in existence for the hugely polluting jet aircraft flying over their heads each day, nor are they informed as to the fact that such PM emissions can and do travel great distances (tens-to-hundreds of miles) due to their very small size, nor are they substantially stimulated to action because of the invisible nature of such PM emissions. Yet, as the AHA study and statement says:

> "Epidemiological studies have demonstrated a consistent increased risk for cardiovascular events in relation to both short-and long-term exposure to present-

Proud Recipient: *1995 Environmental Merit Award, Arlington Heights - 1996, '99 Illinois State Senate Recognition*
*Protecting the Health and Safety of Millions of O'Hare Affected Citizens*

| Comment | Response |
|---|---|
| 1 | For the purpose of disclosing potential affects of the improvements to O'Hare on levels of this pollutant, the Final EIS includes as thorough an evaluation of particulate matter (10 microns or less in size and 2.5 microns or less in size) and its dispersion as is possible at this point in time, see **Section 5.6** of the Final EIS. The FAA believes that the EIS presents the most accurate quantification and characterization of particulate matter mass emission rates from aircraft engines based on the data available at present with respect to particulate matter emissions from this source.<br><br>FAA received Draft EIS comments from both USEPA and IEPA regarding the air quality analysis conducted. The responses to the comments raised may further inform the reader of FAA's detailed consideration of these issues. The USEPA letter, document number 050406_01, and its responses can be found beginning on page U.2-11 of this appendix; the IEPA letter, document number 050406_04, and its responses can be found beginning on page U.3-5 of this appendix.<br><br>Also, please see topical response E-1 on page U.5-25 of this appendix. |

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p.2

day concentrations of ambient particulate matter. Several plausible mechanistic pathways have been described, including enhanced coagulation/thrombosis, a propensity for arrhythmias, acute arterial vasoconstriction, systemic inflammatory responses, and the chronic promotion of atherosclerosis."

The FAA and the USEPA will be derelict in their duties to protect the public health without a full and complete vetting of the PM impact issues associated with O'Hare proposed expansion, and claims that such PM characterizations are not possible or are not within current legal mandates because measurements and standards do not exist for jet aircraft should be considered unjust and spurious to the matter.

The FAA and EPA are well aware, and have been so for years, that the existing aircraft "smoke number" standard is totally inadequate and does not at all characterize aircraft PM emissions, except as to their visible "smokiness". They are also aware that the International Civil Aviation Organization (ICAO), which drives world-wide standards, is dominated by aviation interests; said interests precluding an aggressive pursuit of adequate PM emissions characterization and standard-setting.

The FAA and the EPA should be embarrassed that they continue to allow airports and their massive associated operations to be considered as numbers of separate polluting elements rather than one, integrated "bubble" of pollution, as they in-fact consider most major industrial polluters, for which "new-source" emission rules pertain within any non-attainment area, as the Chicago area is for PM. This has the effect that each of the parts might be meeting the related pollution requirement but the whole (the "bubble") is still badly unacceptable. The FAA and the EPA should correct this in the subject EIS and treat the O'Hare operations as a single polluting bubble source, including any expected increases in associated vehicular traffic to/from the airport, as well as the other local airports mentioned above.

AReCO recommends that if the FAA cannot, in due time, accomplish proper and complete characterization of the expanded O'Hare airport PM emissions and the associated health impacts, based on up-to-date aircraft emission data, then they should delay any airport expansion approvals until such characterizations and representations to the public are possible. At a very minimum, PM calculations based on approximate formulations should be absolutely required. Such approximate formulas have been presented and used to varying degrees in pollution analyses over the years (see recent Oakland airport expansion documents for instance).

The EPA should be required to hold hearings on and approve such formulations for use in the O'Hare expansion EIS, including the ability to estimate PM2.5 levels out of any total PM emission content, both primary and secondary in nature (for all operations below 1000 meters altitude) and the application of expected negative health and mortality impact factors to any PM2.5 atmospheric concentration increases due to expanded operations.

AReCO believes the AHA has done a great service to the public by providing their informative and compelling study and official statement and we believe that the FAA and the EPA should act in-kind to similarly protect the public by incorporating strong PM considerations into the O'Hare expansion EIS proceedings and decisions. AReCO continues to believe that any such expanded air operations should be removed to the maximum extent possible from highly populated areas, such as those surrounding O'Hare, to lower populated areas, such as to a new (proposed) "third airport" south of Chicago, in order to minimize negative public health impacts.

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p.3

Additionally, AReCO believes that the federal government should follow its own findings not to expand O'Hare airport, to effectively relieve delays and for long-term transportation capacity needs (GAO-02-185 and later publications).

Please contact me if you have any questions. 1

Thank you.

Sincerely,

Jack Saporito
Executive director

c: U.S. Senator Peter Fitzgerald
U.S. Congressman Henry Hyde
Secretary Norman Y. Mineta
Bryan Manning
Ken Westlake
Eric Whitaker
M. Cass Wheeler

| Comment | Response |
|---|---|
| 1 | Please see the response to this comment on page U.4-183. |

| Comment | Response |
|---|---|
| 2 | The FAA notes that the Agency has reviewed this study and considered it in the development of the EIS. |

AHA Scientific Statement

# Air Pollution and Cardiovascular Disease

## A Statement for Healthcare Professionals From the Expert Panel on Population and Prevention Science of the American Heart Association

Robert D. Brook, MD; Barry Franklin, PhD, Chair; Wayne Cascio, MD; Yuling Hong, MD, PhD; George Howard, PhD; Michael Lipsett, MD; Russell Luepker, MD; Murray Mittleman, MD, ScD; Jonathan Samet, MD; Sidney C. Smith, Jr, MD; Ira Tager, MD

2

*Abstract*—Air pollution is a heterogeneous, complex mixture of gases, liquids, and particulate matter. Epidemiological studies have demonstrated a consistent increased risk for cardiovascular events in relation to both short- and long-term exposure to present-day concentrations of ambient particulate matter. Several plausible mechanistic pathways have been described, including enhanced coagulation/thrombosis, a propensity for arrhythmias, acute arterial vasoconstriction, systemic inflammatory responses, and the chronic promotion of atherosclerosis. The purpose of this statement is to provide healthcare professionals and regulatory agencies with a comprehensive review of the literature on air pollution and cardiovascular disease. In addition, the implications of these findings in relation to public health and regulatory policies are addressed. Practical recommendations for healthcare providers and their patients are outlined. In the final section, suggestions for future research are made to address a number of remaining scientific questions. (*Circulation*. 2004;109:2655-2671.)

**Key Words:** AHA Scientific Statements ■ air pollution ■ cardiovascular diseases ■ respiration

Recently, the American Heart Association (AHA) published "Guidelines for Primary Prevention of Cardiovascular Disease and Stroke" as an aid to healthcare professionals and their patients without established coronary artery disease or other atherosclerotic diseases.[1] The statement was intended to complement the AHA/American College of Cardiology (ACC) "Guidelines for Preventing Heart Attack and Death in Patients with Atherosclerotic Cardiovascular Disease."[2] Both sets of recommendations emphasized multifactorial interventions, especially more intensive measures/goals to modify individual cardiovascular risk factors with diet, drugs, exercise, weight management, complete smoking cessation, and avoidance of secondhand smoke (SHS), or combinations thereof.

Over the last decade, however, a growing body of epidemiological and clinical evidence has led to a heightened concern about the potential deleterious effects of ambient air pollution on health and its relation to heart disease and stroke. Of special interest are several environmental air pollutants that include carbon monoxide, oxides of nitrogen, sulfur dioxide, ozone, lead, and particulate matter ("thoracic particles" [$PM_{10}$] <10 $\mu$m in aerodynamic diameter, "fine particles" [$PM_{2.5}$] <2.5 $\mu$m, and "coarse particles" [$PM_{10\ to\ 2.5}$]). These pollutants are associated with increased hospitalization[3] and mortality due to cardiovascular disease,[4–6] especially in persons with congestive heart failure, frequent arrhythmias, or both.[7] The well-established causal associations between active and passive smoking with heart disease and stroke support the plausibility of an adverse effect of PM on the cardiovascular system.

The most recent analysis of the National Mortality and Morbidity Air Pollution Study (NMMAPS), based on data from 90 of the largest cities in the United States, estimated that daily total and cardiopulmonary mortality increased in the short term by 0.21% (±0.06 standard error [SE]) and 0.31% (±0.09 SE), respectively, for each 10-$\mu g/m^3$ increase in $PM_{10}$ (measured over a 24-hour period).[8] To give some context to a 24-hour $PM_{10}$ increment of 10 $\mu g/m^3$, the US Environmental Protection Agency (EPA) reported a range of maximum city-specific 24-hour $PM_{10}$ concentrations from 26 to 534 $\mu g/m^3$.[9] Data from the American Cancer Society (ACS) cohort[5] estimated that for each 10-$\mu g/m^3$ increase in annual average exposure to $PM_{2.5}$, long-term all-cause, cardiopulmonary, and lung cancer mortality were increased by

The American Heart Association makes every effort to avoid any actual or potential conflicts of interest that may arise as a result of an outside relationship or a personal, professional, or business interest of a member of the writing panel. Specifically, all members of the writing group are required to complete and submit a Disclosure Questionnaire showing all such relationships that might be perceived as real or potential conflicts of interest.

This statement was approved by the American Heart Association Science Advisory and Coordinating Committee on April 5, 2004. A single reprint is available by calling 800-242-8721 (US only) or by writing the American Heart Association, Public Information, 7272 Greenville Ave, Dallas, TX 75231-4596. Ask for reprint No. 71-0289. To purchase additional reprints: up to 999 copies, call 800-611-6083 (US only) or fax 413-665-2671; 1000 or more copies, call 410-528-4121, fax 410-528-4264, or e-mail kgray@lww.com. To make photocopies for personal or educational use, call the Copyright Clearance Center, 978 750-8400.

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approximately 4%, 6%, and 8%, respectively. On the basis of a job exposure matrix, Gustavsson et al[10] reported increasing risks of myocardial infarction among ≈3000 Swedish workers with increasing cumulative exposure to products from nonvehicular combustion processes.

To evaluate whether high concentrations of ambient particles can trigger the onset of acute myocardial infarction (AMI), Peters and associates,[11] using a case-crossover approach, interviewed 772 patients with AMI as part of the Determinants of Myocardial Infarction Onset Study. Elevated concentrations of $PM_{2.5}$ were associated with a transient risk of AMI onset during 2 separate time periods (within 2 hours and 1 day after exposure). On the other hand, investigators in Seattle, Wash, did not find an association between high levels of $PM_{10}$ and the occurrence of primary cardiac arrest that occurred outside of the hospital in presumably healthy adults[12] or in subjects with known underlying heart disease.[13] A recent report by Suwa et al[14] provides experimental evidence to support the hypothesis that these epidemiological data truly reflect the deleterious effects of particulate pollution on the cardiovascular system. Compared with their control counterparts, hyperlipidemic rabbits exposed to $PM_{10}$ showed more advanced coronary lesions, increased plaque size, more extensive atherosclerosis in the aorta, and an increase in the volume fraction of lesions composed of lipids (ie, plaques more likely to rupture).[15] Other contemporary studies suggest that possible links between acute and/or chronic exposure to PM and cardiovascular events may be related to increases in heart rate and blood pressure, fibrinogen, and blood coagulation factors; arterial vasoconstriction; inflammatory mediators (eg, C-reactive protein [CRP]); endothelial injury/dysfunction; and decreases in heart rate variability (HRV).[16] Consequences of these effects may include myocardial ischemia (manifested as significant ST-segment depression during exercise testing,[17] angina pectoris, or both), malignant ventricular arrhythmias,[18] increased plaque vulnerability, and enhanced potential for acute thrombosis triggering acute coronary syndromes. Further support that these changes can be attributed to air pollution comes from studies of the effects of SHS, which is the single largest contributor to indoor PM[19] when a smoker is present. Exposure to SHS increases platelet activation,[20] causes rapid deterioration in endothelial function,[21,22] promotes atherosclerotic plaque development,[23] and abets infarct expansion in experimental animals.[24] Because exposure to the SHS of just 1 cigarette per day accelerates the progression of atherosclerosis,[25] it is plausible that even low doses of air pollution could have negative effects on coronary morphology and circulation.

Collectively, these and other studies (described herein) suggest that air pollution may accelerate the development of coronary atherosclerosis and worsen its sequelae. Some of these effects may occur over time, as with acceleration of the progression of atherosclerosis, or rather abruptly, as with the triggering of an arrhythmia or myocardial infarction by acute inflammatory responses, altered platelet adhesiveness, or perhaps vascular endothelial dysfunction. This AHA scientific statement provides healthcare professionals and regulatory agencies with a comprehensive review of the relationship between air pollution and cardiovascular disease. A brief description of the different types of air pollutants is provided first for background. In the remaining sections, the focus of this statement is on PM, with occasional references to the health effects of other pollutants, alone or in combination. The link between SHS and heart disease is outlined next, which provides a relevant model for the cardiovascular effects of air pollution. In the following sections, many of the pertinent epidemiological studies and the potential pathophysiological mechanisms underlying the increased risk of cardiovascular events due to PM are discussed. In the summary and conclusion sections, the implications of these data regarding public health policy and unanswered (future) research questions are addressed.

## Ambient Air Pollutants

A brief description of several individual air pollutants is provided first for background. A complete discussion is beyond the scope of this statement, and interested readers may find a more comprehensive review on this subject elsewhere.[26]

### Particulate Matter

Airborne PM consists of a heterogeneous mixture of solid and liquid particles suspended in air, continually varying in size and chemical composition in space and time (Figure 1). Primary particles are emitted directly into the atmosphere, such as diesel soot, whereas secondary particles are created through physicochemical transformation of gases, such as nitrate and sulfate formation from gaseous nitric acid and sulfur dioxide ($SO_2$), respectively. The numerous natural and anthropogenic sources of PM include motor vehicle emissions, tire fragmentation and resuspension of road dust, power generation and other industrial combustion, smelting and other metal processing, agriculture, construction and demolition activities, residential wood burning, windblown soil, pollens and molds, forest fires and combustion of agricultural debris, volcanic emissions, and sea spray. Although there are thousands of chemicals that have been detected in PM in different locations, some of the more common constituents include nitrates, sulfates, elemental and organic carbon, organic compounds (eg, polycyclic aromatic hydrocarbons), biological compounds (eg, endotoxin, cell fragments), and a variety of metals (eg, iron, copper, nickel, zinc, and vanadium).

Largely because of the complex nature of PM, it has been measured and regulated based primarily on mass within defined size ranges. In 1987, the regulatory focus shifted from total suspended particles to particles that could readily penetrate and deposit in the tracheobronchial tree, or $PM_{10}$ (PM with a median aerodynamic diameter of <10 μm). In 1997, the US EPA promulgated 24-hour and annual average standards for $PM_{2.5}$ (PM with median aerodynamic diameter <2.5 μm), comprising the size fraction that can reach the small airways and alveoli. The existing federal $PM_{10}$ standards were retained, however, to address health effects that could be related to the "coarse fraction" ($PM_{10-2.5}$). Currently, a separate $PM_{10-2.5}$ standard is under consideration. In general, $PM_{2.5}$ originates mostly from combustion sources and



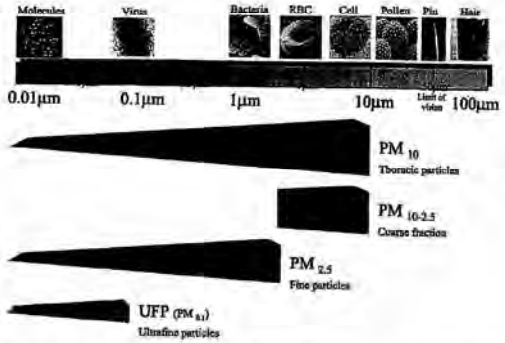


**Figure 1.** Particulate matter air pollution size distribution.

includes primary and secondary particles, whereas the coarse fraction derives predominantly from natural sources, especially crustal material (including windblown soil) and grinding processes. Important bioaerosols (eg, endotoxin, pollen grains, and fungal spores) are found mostly in the coarse fraction (and larger particles), although both endotoxin (an essential component of the cell wall of Gram-negative bacteria) and the antigenic protein content of pollen grains can also adsorb onto the surface of fine PM. Generally, larger particles demonstrate a greater fractional deposition in the extrathoracic and upper tracheobronchial regions, whereas smaller particles (eg, $PM_{2.5}$) show greater deposition in the deep lung. Although $PM_{2.5}$ generally behaves as a regional pollutant, there can be considerable small-scale spatial variability due to point source emissions (eg, a smelter) or features such as street canyons in large cities. In addition, prevailing wind patterns can affect human exposures.

More recently, considerable research attention has been devoted to ultrafine particles (UFPs) <100 nm (0.1 μm) in diameter, which result from combustion processes. UFPs tend to be short-lived, because they agglomerate and coalesce into larger particles. However, they demonstrate very high deposition in human alveoli,[27] account for a major portion of the actual numbers of particles within PM, and have a high surface area-to-mass ratio, potentially leading to enhanced biological toxicity. UFPs may even be able to pass directly into the circulatory system, which could allow them to be disseminated systemically.[28–30]

### Nitrogen Oxides

Nitrogen oxides are reactive substances commonly understood to encompass nitric oxide (NO), nitrogen dioxide ($NO_2$), nitrogen trioxide, nitrogen tetroxide ($N_2O_4$), and dinitrogen pentoxide ($N_2O_5$). These compounds are referred to collectively as "$NO_x$." Gaseous nitric acid ($HNO_3$), a major source of particulate nitrate, is formed when $NO_2$ reacts with hydroxyl radicals during the day and when $N_2O_5$ reacts with water vapor at night.[31] Other members of the larger family of nitrogen oxides include nitrous acid, nitrous oxide, peroxyacetyl nitrate (responsible for some of the irritant effects of photochemical smog), nitrites, nitroso compounds, and other nitrogen-containing acids. Most toxicological and epidemiological research has focused on $NO_2$, because of the fact that (1) $NO_2$ is one of the regulated air pollutants for which standards are available worldwide; (2) NO from vehicular exhaust and power plants is largely converted to $NO_2$; and (3) $NO_2$ plays a primary role in the formation of tropospheric ozone ($O_3$).

The main anthropogenic source of $NO_x$ in ambient air is fossil fuel combustion in motor vehicles and industrial processes, particularly in power generation. High-temperature combustion results in the oxidation of atmospheric $N_2$, first to NO and then to $NO_2$. Motor vehicle emissions near busy streets can result in high local $NO_x$ concentrations. The typical diurnal $NO_x$ pattern consists of a low background concentration, with morning and late afternoon peaks resulting from rush-hour traffic. Nitrogen in fossil fuels such as coal can be oxidized to $NO_x$ under oxygen-rich combustion conditions. $NO_2$ and NO are both formed naturally as a result of bacterial metabolism of nitrogenous compounds and, to a lesser extent, from fires, volcanoes, and fixation by lightning. The generation of tropospheric ozone and other photochemical oxidants is initiated with photolysis of $NO_2$, whereas NO acts as an ozone scavenger.[32]

Significant human exposure can occur in nonoccupational indoor settings.[33,34] Gas-burning appliances, such as unvented furnaces and stoves, are the principal sources of indoor $NO_x$, although kerosene space heaters and tobacco smoke may also play a role.[35,36] In urban areas, infiltration of ambient $NO_2$ from vehicular emissions may also influence indoor exposures.[33] Several reports have also documented toxic concentrations of $NO_2$ in ice-skating rinks.[37,38]

### Carbon Monoxide

Carbon monoxide (CO) is a nearly ubiquitous product of incomplete combustion of carbon-containing fuels. Outdoor

sources include motor vehicles; engines on motorboats, lawnmowers, chain saws, and other devices that require fossil fuel combustion; residential wood burning; improperly adjusted gas-burning and oil appliances; coal combustion; and tobacco smoking.[39,40] In urban areas, the contributions of diesel and stationary source combustion are relatively small in relation to gasoline-powered engines.[41]

CO is an odorless, colorless, and tasteless gas that binds to hemoglobin with an affinity 250 times that of oxygen, thereby interfering with the systemic delivery of oxygen to tissues. In addition, binding of CO to hemoglobin causes an allosteric change in the conformation of the oxyhemoglobin complex that increases the oxygen affinity of the remaining binding sites and interferes with the release of $O_2$ at the tissue level. In addition, CO binds to cytochrome oxidase, exacerbates cellular hypoxia, and binds to other extravascular proteins that include myoglobin, cytochrome P-450, catalase, and peroxidases.[42] Given current ambient CO concentrations in the United States, it is likely that in most circumstances, this pollutant serves more as an indicator of combustion-related pollution than as a direct toxicant. However, in some situations (eg, insufficiently ventilated parking structures), CO could attain concentrations sufficient to lead to physiologically meaningful increases in carboxyhemoglobin in persons with significant atherosclerotic disease or other cardiac conditions.

### Sulfur Dioxide

Sulfur dioxide ($SO_2$) is a highly irritating, colorless, soluble gas with a pungent odor and taste. In contact with water, it forms sulfurous acid, which accounts for its strong irritant effects on eyes, mucous membranes, and skin.[43] $SO_2$ is efficiently scrubbed from inhaled air in the upper airway.

In the absence of human activities, background concentrations of ambient $SO_2$ are very low, in the range of 1 ppb. In ambient air, the principal sources of $SO_2$ include combustion of sulfur-containing fuels, especially in power plants and diesel engines (prior to the reformulation of diesel fuels), and roasting of metal sulfide ores. Sulfur dioxide is oxidized to sulfur trioxide, which, because of its strong affinity for water, can be rapidly hydrated to form sulfuric acid.[44] Elevated levels of $SO_2$ have been associated with widespread illness in several 20th century air pollution catastrophes; however, much of the morbidity and mortality in these episodes may have been due to its role in the formation of particulate sulfates. In nonoccupational settings, $SO_2$ is generally found at substantially lower concentrations indoors than outside; however, the use of kerosene space heaters can generate significant indoor concentrations.[25]

### Ozone

Ozone ($O_3$) is a highly reactive, colorless-to-bluish gas with a characteristic odor associated with electrical discharges.[43] Low-level exposure is ubiquitous, because $O_3$ is formed by natural processes and by human activities. Ozone is formed in the stratosphere by the action of solar radiation on molecular oxygen ($O_2$). Because stratospheric $O_3$ prevents high-energy UV radiation from penetrating the atmosphere, many terrestrial life forms would be unable to survive without this $O_3$ "shield."

$O_3$ has been recognized since the 1950s as the principal component of photochemical smog. In the troposphere, it is formed by the action of solar UV radiation on nitrogen oxides and reactive hydrocarbons, both of which are emitted by motor vehicles and many industrial sources. The reaction sequence involves photolysis of $NO_2$ into NO and oxygen atoms. The latter react with molecular oxygen to form $O_3$. NO, however, rapidly scavenges $O_3$, regenerating $NO_2$ and $O_2$, as summarized below:

$$NO_2 + h\nu\ (295<\nu<430\ \text{nm}) \rightarrow NO + O$$

$$O + O_2 + M \rightarrow O_3 + M$$

$$NO + O_3 \rightarrow NO_2 + O_2,$$

where M represents any nearby molecule that can absorb the energy of the reaction. Under steady-state conditions, there is little accumulation of $O_3$. However, many reactive organic compounds can facilitate the oxidation of NO to $NO_2$ by alternative mechanisms. These reactions reduce NO scavenging, which allows $O_3$ concentrations to increase.[45]

Photochemical $O_3$ formation tends to be greatest on warm, sunny days. The typical profile of tropospheric $O_3$ formation in populated areas is characterized by a broad peak that lasts from the late morning until the late afternoon or early evening. However, large-scale transport may result in elevated $O_3$ concentrations that extend over thousands of square miles to include rural areas far removed from the precursor sources. Thermal inversion height, wind speed and direction, addition of other $O_3$ precursors along an air mass trajectory, and other factors affect the temporal $O_3$ patterns downwind, so that peak concentrations may occur anytime from noon until late in the evening.[46] Human activities are major sources of $O_3$ precursors, although the latter are also generated by nonanthropogenic processes that include the intrusion of stratospheric $O_3$, the action of lightning on molecular oxygen, and chemical reactions involving naturally occurring nitrogen oxides and organic compounds, such as biogenic methane and other volatile organic compounds.[45]

### Secondhand Smoke

The national awareness of SHS as a major risk factor for chronic disease was substantially heightened with the 1986 Report of the Surgeon General, "The Health Consequences of Involuntary Smoking,"[47] and the 1992 EPA report on the respiratory health effects of SHS.[48] The primary focus of the Surgeon General's report was on lung cancer and other respiratory diseases,[47] although evidence linking passive smoking to heart disease was just beginning to emerge.[49] Similarly, the EPA report focused primarily on the impact of SHS on lung cancer and asthma[50] by reporting that an estimated annual 3000 lung cancer deaths could be attributed to SHS.[48]

There is also clear evidence of an association of SHS and cardiovascular diseases. Several reports, including 2 recent separate meta-analyses of 17 and 18 individual studies, assessed the association of SHS with heart disease.[20,51–53]



Both estimated that nonsmoking spouses of smoking partners experience an approximately 25% (95% confidence interval [CI] 17% to 32%) increased risk of heart disease.[52,53] A review of 6 studies examining the association between SHS in the workplace and cardiovascular disease noted that although none of the studies individually reached the level of a significant association ($P<0.05$), there was a positive association in 5 of the 6 studies and a significant exposure-response relation between the intensity of SHS (measured by the number of cigarettes smoked by coworkers) and coronary risk in 2 of 3 studies that examined the trend.[54]

It is likely that SHS acts to increase cardiac risk through both chronic (atherogenic) and acute pathways. A review of the association of SHS and subclinical measures of atherosclerosis reported a consistent association of significantly increased intima-medial thickness of the carotid artery in 8 reports.[55] In addition, exposure to SHS has been shown experimentally to have effects on endothelium-dependent arterial dilatation[21,22] and coronary flow reserve in humans.[56]

Initial reports on an association between SHS and stroke support the observed association with heart disease. Two case-control studies have shown significantly increased odds ratios of clinical stroke with exposure to SHS: 1.72 (95% CI 1.07 to 2.77) and 2.59 (95% CI 1.51 to 4.47) for exposure to a spouse smoking 1 to 20 cigarettes a day and ≥21 cigarettes per day,[57] respectively, and 1.82 (95% CI 1.34 to 2.49) for SHS exposure at home or work for at least 1 year during the decade preceding the event.[58] There was a 6% (95% CI 0.64 to 1.75) increased odds of silent cerebral infarction in a population-based cohort study of nonsmokers exposed to SHS in relation to those not exposed; however, this difference did not reach statistical significance.[59]

The impact of SHS on heart disease and stroke is also supported by the remarkable "natural experiment" observed when Helena, Mont, banned public smoking beginning June 5, 2002. During the 6-month period of the ban, admissions to the local hospital for acute myocardial infarction dropped by 40%, a decline that was not observed in any of the other hospitals from surrounding communities.[60] The study investigators hypothesized that the reduction in hospital admissions was due to acute coagulation changes associated with reduced SHS exposure.

A recent review of the studies concluded that it is unlikely that experimental biases can invalidate the general conclusions of the epidemiological studies.[61] Moreover, the review cites the strong experimental evidence that provides a biological basis for the observed associations between SHS exposure and increased risk of cardiovascular disease.[61]

The importance of SHS as a public health issue comes from the high prevalence of SHS exposure in the general population. On the basis of the most recent data from the National Health Interview Survey, the prevalence of active cigarette smoking was 21.4% (95% CI 20.2% to 22.5%) in 2003.[62] NHANES III (1988–1991) found that ≈90% of tobacco nonusers have detectable levels of serum cotinine,[63] which suggests that as much as 65% of the entire population are nonsmokers exposed to SHS. This arises primarily from exposures at home or at the workplace. Between 1988 and 1991, among adult nonsmokers, 37% reported living in a home with at least 1 smoker or being exposed to SHS at work.[63] Forty-three percent of children lived in a home with at least 1 smoker, higher than the percentage observed among adults, which is due in part to children's opportunity to be exposed to SHS by either a smoking mother or father.[63] More recent reports available at the CDC website suggest that there may be substantial decreased exposure to SHS over the interval from 1991–1994 to 1999–2000, with decreased levels of cotinine in children (−58%), adolescents (−55%), and adults (−75%).[63a]

Exposure to SHS in workplace settings is also surprisingly high. Nineteen states participating in the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System included questions related to working in a smoke-free workplace during 1999. The survey reports a prevalence range of exposure to cigarette smoke at work from 18% (District of Columbia) to 38% (Mississippi).[64] Some other studies reported even higher rates.[65,66]

SHS exposure is associated with well-established increases in relative risks for circulatory diseases. It directly affects, at some level, perhaps as much as two thirds of the population, with some suggestion that the proportion exposed may be decreasing. Although the increased risk for cardiovascular diseases associated with SHS exposure (relative risk [RR] 1.25) has not drawn attention to it as a "major" cardiovascular risk factor, the high prevalence of exposure does make it a major public health issue. Given past patterns of exposure, it has been estimated that between 35 000 and 65 000 ischemic heart disease deaths result from SHS annually.[67,68] This is an order of magnitude greater than the estimated 3000 annual deaths from lung cancer. As such, SHS "pollution" represents a substantial public health burden, ranking it as one of the most important preventable causes of cardiovascular death.

## Epidemiology of Ambient Air Pollution and Cardiovascular Disease

An association between high levels of anthropogenic air pollutants and human illnesses has been known for more than half a century. A few episodes of markedly increased mortality rates during extreme elevations in urban pollution, such as in the Meuse Valley, Belgium, in December 1930[69] and during the London fog incident of 1952,[70] sparked the initial epidemiological research. As a result, a several-decades-long effort to reduce air pollution ensued and culminated in the Clean Air Act legislation of 1970. Despite improvements in air quality over the past few decades, associations between current ambient pollution levels and excess morbidity and mortality have been consistently detected.[71–76]

There are several hundred published epidemiological studies linking air pollution with human illnesses. A number of extensive reviews on this topic are available.[77–79] Although many pollutants may cause disease individually or in combination (eg, $O_3$, $SO_2$, and $NO_2$),[80] over the past decade, PM has become a major focus of research. During the past 15 years, the magnitude of evidence and number of studies linking air pollution to cardiovascular diseases has grown substantially.[77,78]

In broad terms, studies can be separated into those that have investigated the health effects of acute or chronic air

pollution exposure. Observations related to the adverse health effects of short-term exposure are more numerous. In these studies, population-wide changes in acute outcomes (mortality, symptomatology, hospitalizations, and healthcare visits) are linked to short-term variations in ambient pollutant concentrations, most frequently through the use of population-based time-series analysis. More recently, case-crossover designs have been added to the analytical repertoire. Publications on the health effects of long-term exposure are few. These studies have involved analysis of data (eg, total mortality and in some circumstances cardiovascular events) from a few large cohorts from multiple geographic locations that differ in the average chronic ambient concentrations and mixtures of air pollutants.

### Long-Term Health Effects Studies

The first large, prospective cohort study that demonstrated an adverse health impact of long-term air pollution exposure was the Harvard Six Cities study by Dockery et al.[61] This study demonstrated that chronic exposure to air pollutants is independently related to cardiovascular mortality. In a cohort of 8111 adults with 14 to 16 years of follow-up, the adjusted overall mortality rate ratio for the most-polluted city versus the least-polluted city was 1.26 (95% CI 1.08 to 1.47). Further adjustment for a variety of individual-level risk factors that included tobacco smoking, gender, body mass index, educational attainment, occupational exposures, hypertension, and diabetes did not significantly alter the relationship. Cardiovascular deaths accounted for the largest single category of the increased mortality. Of the 1401 validated deaths, 646 were due to cardiovascular causes (International Classification of Diseases, 9th Revision [ICD-9] codes 400 to 440). The risk ratios for lung cancer and overall cardiopulmonary mortality were increased by similar magnitudes. Among air pollutants, elevations of $PM_{2.5}$ and sulfates showed the strongest associations with disease.

These findings were complemented by similar observations from the first analysis of air pollution in relation to mortality in the ACS Cancer Prevention II study population.[62] Recently, a follow-up of the original ACS cohort by Pope et al,[5] based on additional subject mortality and ambient pollutant data, has provided the largest study of the long-term health effects of air pollution. In approximately 500 000 adults who resided in all 50 states, chronic exposure to multiple air pollutants was linked to mortality statistics for a 16-year period. The ACS follow-up study increased the degree of control for confounding variables, such as diet and gaseous copollutants. The primary results showed that each 10-$\mu g/m^3$ increase in annual $PM_{2.5}$ mean concentration, based on a number of different averaging periods, was associated with increases in all-cause, cardiopulmonary, and lung cancer mortality of 4%, 6%, and 8%, respectively. The relationship between $PM_{2.5}$ and adverse health effects was linear and without a discernible lower "safe" threshold. Mortality was most strongly associated with $PM_{2.5}$, sulfate particles, and $SO_2$. There also appeared to be an association between cardiopulmonary mortality and summertime $O_3$, when based on mean summer $O_3$ levels from 1982 to 1998. Educational level was a modifier of the risks estimated for PM-associated mortality. The increased risks were limited to those with no more than a high school education. This suggests that 1 or more unaccounted-for factors, such as intraurban geographic location or socioeconomic status, may be important determinants of health risk.

Hoek et al[63] confirmed the importance of within-city residential variations as a risk factor for mortality due to air pollution. In a cohort of 5000 adults followed up for 8 years, exposure to traffic-related air pollutants was more highly related to mortality than were citywide background levels. Of the various pollutant metrics, an indicator variable for living near a major road was most strongly associated with cardiopulmonary mortality in this cohort (RR 1.95, 95% CI 1.09 to 3.52). This study suggests that an individual's exposure to the "toxic" components of air pollution may vary as much within a single city as across different cities. Furthermore, it demonstrates that emissions from motor vehicles, a common source of urban air pollution, may be associated with an increased risk of mortality.

Until recently, the specific causes of the increased cardiovascular mortality due to long-term air pollution exposure have remained unclear. In an analysis of the ACS study published this year, the investigators reported PM-mortality associations with the specific cause of death.[5] A statistically robust association between $PM_{2.5}$ and overall cardiovascular mortality was confirmed for a 10-$\mu g/m^3$ increase in long-term exposure (RR 1.12, 95% CI 1.08 to 1.15). The single largest increase in risk was for ischemic heart disease (RR 1.18, 95% CI 1.14 to 1.23), which also accounted for the largest proportion of deaths. In addition, the risk for arrhythmia, heart failure, or cardiac arrest mortality was also increased (RR 1.13, 95% CI 1.05 to 1.21). There was no evidence for excess mortality in the entire cohort due to other reasons (eg, aortic aneurysms, stroke, diabetes, hypertensive disease, or any respiratory illness). These findings suggest that air pollution promotes both ischemic and nonischemic cardiovascular events.

### Short-Term Health Effects Studies

The Six Cities[61] and ACS[4,5,62] studies provide strong evidence for the occurrence of adverse cardiovascular effects due to long-term air pollution exposure. However, many more studies have focused on short-term relationships between pollution exposure and adverse outcomes. The acute effects of air pollution are generally investigated by time-series analyses of changes in health outcomes (eg, mortality) in relation to day-to-day variations in ambient air pollution concentrations. The 2 largest studies to date are the NMMAPS in the United States[6,8] and the Air Pollution and Health: a European Approach (APHEA-2) project.[64] These studies produced remarkably consistent results.

The NMMAPS observed outcomes in 50 million people in the 20 largest cities in the United States. Average mortality rates were independently associated with particle concentrations the day before death. Each 10-$\mu g/m^3$ elevation in $PM_{10}$ was associated with an increase of 0.21% (±0.06 SE) and 0.31% (±0.09 SE) for daily all-cause and cardiopulmonary mortality, respectively.[8]



The APHEA-2 study demonstrated slightly more robust associations between adverse health outcomes and air pollution.[64] For 43 million people in 29 European cities, the estimated increase in daily mortality was 0.6% (95% CI 0.4% to 0.8%) for each 10-$\mu g/m^3$ increase in $PM_{10}$. Cardiovascular deaths were increased by 0.69% (95% CI 0.31% to 1.08%).[65] APHEA-2 based calculations on average particle concentrations the day of and 1 day before observed health outcomes (a 2-day exposure time window). The NMMAPS investigators reported no differences among various lag time periods from 0 to 2 days and therefore based their estimates solely on the prior 24-hour period (1-day lag). The size of the observed health effect in a study is known to vary slightly depending on exposure metric and lag periods used in analyses. This may have contributed to the stronger associations found in the European study. Additional analyses of the APHEA-2 mortality data, based on lag periods up to 40 days, found that the risk of adverse health effects associated with air pollution more than doubled (eg, 1.97% increase in cardiovascular mortality [95% CI 1.38% to 2.55%] per 10-$\mu g/m^3$ elevation in $PM_{10}$).[65] This finding indicated that the increase in cardiopulmonary mortality was not simply the result of "harvesting" (also called mortality displacement, which refers to the advancement of death by no more than a few days for severely ill individuals). Analyses of data from other locations also have indicated that the increased risks cannot be explained solely by harvesting and that longer lags are associated with higher relative risks of cardiopulmonary mortality.[66–68] The higher relative risks demonstrated by using this statistical modeling may reflect the accumulation of both acute and subacute health effects over the longer lag periods.

APHEA-2 found that cities with higher levels of the copollutant $NO_2$ exhibited larger associations between changes in PM concentrations and mortality. In the United States, this modifying effect of $NO_2$ was not demonstrated. The APHEA-2 investigators speculated that this might reflect a higher proportion of $NO_2$ that is derived from diesel exhaust in Europe. Outcome differences by geographical region were also noted in both studies. In Europe, cities with warmer climates demonstrated stronger mortality associations with air pollutants. The NMMAPS study in the United States reported stronger relationships in the Northeast than the Southeast. It is plausible that differences in the underlying susceptibility of the populations, time spent outdoors, commute times, and ambient meteorology, as well as differences in the overall ambient pollutant mixtures, underlie the observed regional variability in risk estimates for both studies.

Hundreds of smaller, short-term studies have been published over the last few decades on the effects of acute air pollution exposure, as reviewed by Brunekreef and Holgate[77] and Pope.[78] Typically, short-term mortality rates[73,88] hospital admissions,[89–91] emergency room visits,[92,93] and symptom exacerbations[94,95] have been shown to increase in relation to variations in air pollution levels (time-series studies). Observations from across North America[96,97] and Europe[5,98] have demonstrated higher rates of hospitalizations for all cardiovascular causes. Direct associations have also been identified with respect to incidence of ischemic heart disease, arrhythmias, and heart failure.[96] A pooled analysis of hospital admissions studies showed significant increases in admission rates of 0.8% and 0.7% for heart failure and ischemic heart disease, respectively, for each 10-$\mu g/m^3$ elevation in $PM_{10}$.[98] More focused investigations have demonstrated elevated risks for AMI,[11] implantable cardioverter defibrillator discharges,[18] and myocardial ischemia during stress testing.[17] Extreme elevations in air pollution have also been associated with increased blood pressure during a prolonged air stagnation episode in Europe.[100] Finally, recent studies from Seoul, South Korea[101] and Taiwan[102] have reported higher incidences of ischemic strokes in direct relation to changes in ambient particle concentrations. In summary, these findings imply that short-term elevations in ambient particle levels are capable of evoking cardiac arrhythmias, worsening heart failure, and triggering acute atherosclerotic/ischemic cardiovascular complications.

### Populations at Elevated Risk

It is now reasonably well established that both short-term and chronic air pollution exposures are related to cardiovascular diseases. Whether there are specific individuals or subsets of patients at increased relative risk is less well documented. A few observations have suggested that the elderly[5,61,84,103] and those with less than a high school education (low socioeconomic status) may be particularly susceptible populations.[5] Whether increased age per se or the high prevalence of underlying cardiovascular disease and other risk factors explains the enhanced risk observed in elderly populations is unclear. The presence of preexisting chronic lung disease, coronary heart disease, and heart failure may also elevate short-term cardiovascular mortality risk.[103] Most recently, publications from 2 separate groups provide evidence that the acute risk for cardiovascular events in patients with diabetes mellitus may be 2-fold higher than for nondiabetics.[104,105] It is plausible that both diabetes itself and the high incidence of concomitant cardiovascular disease may explain this relationship. There is no convincing evidence that gender, race, and other preexisting coronary risk factors (eg, obesity, dyslipidemia, and hypertension) increase the risk of cardiovascular events due to air pollution.

The effect of tobacco smoking on the cardiovascular risk due to long-term air pollution exposure was recently investigated in the large ACS study.[5] The risks for specific cardiovascular causes of death for each 10-$\mu g/m^3$ increase in the long-term exposure to $PM_{2.5}$ were stratified by smoking status. Ischemic heart disease mortality was consistently elevated, with RRs of 1.22 (95% CI 1.14 to 1.29), 1.15 (95% CI 1.07 to 1.23), and 1.16 (95% CI 1.07 to 1.27) for never-smokers, former smokers, and current smokers, respectively. Interestingly, smoking status clearly affected the risk associated with several other causes of death. The risk due to arrhythmias, heart failure, and cardiac arrest was not significantly elevated for those who never smoked (RR 1.04 [95% CI 0.95 to 1.15]). However, among former and current smokers, the risk increased substantially, with RRs of 1.14 (95% CI 1.00 to 1.29) and 1.31 (95% CI 1.12 to 2.19), respectively. Mortality risk due to hypertensive disease was also only increased in patients who actively smoked (RR

1.57, 95% CI 1.12 to 2.19). These findings show that smoking, while not affecting the PM-associated risk from ischemic heart disease, appeared to interact with air pollution to increase the risk of death from other circulatory diseases.

### Environmental Pollution and Congenital Heart Disease

Malformations of the cardiovascular system are among the more frequently occurring congenital defects. The incidence of congenital heart disease is estimated at 8.1 per 1000 births.[105] The actual rate may be underestimated, because some cases may be lethal in utero and result in spontaneous abortion and stillbirths. Congenital heart disease is associated with genetic defects, infections (eg, rubella), radiation, medications, and environmental exposures.[106–111] Recent data from Eastern Europe in areas with high levels of industrial pollution suggest the possibility of increased heart defects.[112–114] More recently, a study of birth records in Los Angeles, Calif, found that odds ratios (ORs) for cardiac ventricular septal defects increased in a dose-response fashion with increasing carbon monoxide exposure (OR for second quartile 1.62 [95% CI 1.05 to 2.48], OR for third quartile 2.09 [95% CI 1.19 to 3.67], and OR for fourth quartile 2.95 [95% CI 1.44 to 6.05]).[115] Also observed were valvular, aortic, and truncal defects associated with $O_3$ levels. PM and other measured air pollutants showed no association. Although some animal data also suggest a relationship between air pollutants and congenital cardiac defects, these epidemiological data can only be considered suggestive at this time.

### Significance of Epidemiological Findings

Epidemiological research has served to drive major governmental regulations and thus has been the subject of intense scrutiny. Two of the largest studies of the health effects of long-term air pollution exposure[81,82] that have served as the basis for the setting of annual average $PM_{2.5}$ standards have undergone complete reanalyses by independent investigators to ensure reproducibility.[116] The reanalyses validated the quality of the data and replicated the original results without any substantial alteration in findings. Although exposure to ambient air pollution poses smaller relative risks for incident cardiovascular disease than obesity or tobacco smoking, because it is ubiquitous, the absolute number of people affected is enormous, and exposure occurs over an entire lifetime. The adverse effects on the public health are clearly not limited to a harvesting effect as described earlier. Rather, Pope[78] has estimated an average loss of life expectancy directly related to chronic air pollution exposure from between 1.8 and 3.1 years for those living in the most polluted cities in the United States. Cardiovascular causes account for the majority (69%) of the overall excess in morbidity and mortality.[78]

### Present Controversies

Given the continuous spatial and temporal variability of air pollution, combined with individuals' movements through numerous microenvironments every day, it is not surprising that exposure assessment in air pollution studies has always been subject to varying degrees of measurement error. Generally, in the epidemiological studies, an individual subject's exposure level has been estimated from citywide pollution measurement averages obtained from at most a few central locations. Past studies have also been limited by the fact that the numerous gaseous and particulate pollutants tend to covary in time and space. This has limited the ability to confidently link health outcomes with any given pollutant, although this may be an unrealistic goal given the complexity of the ambient pollutant mixture and the potential for combined toxic effects from many different combinations of constituents. Use of new tools such as geographic information systems and personal monitoring devices and better measures of the full toxic air pollution mix (eg, individual chemical and physical constituents or measurements of total oxidant capacity) may provide more refined estimates of the adverse health effects that can be related to specific (mixtures of) components.

Despite many past limitations, there has been a strong consistency in the findings among the array of assorted studies. A reasonable argument can now be made that the "real" effects are likely to be even stronger than previously estimated. Indeed, a recent study suggests a more robust linkage. In a recent "natural experiment," Clancy et al[117] were able to demonstrate a decrease in health effects after the intentional lowering of air pollutant levels. These investigators compared 72 months of mortality data before and after a ban on burning coal within the city of Dublin, Ireland, went into effect. Nontraumatic deaths decreased by 5.7% (95% CI 4.0% to 7.0%) and cardiovascular mortality by 10.3% (95% CI 8.0% to 13.0%). The authors estimated that the ban resulted in 243 fewer cardiovascular deaths per year. The decrease in the mortality rate in this "natural experiment" is more than twice what would be predicted by the short-term time-series analyses.

## Potential Biological Mechanisms

The putative biological mechanisms linking air pollution to heart disease involve direct effects of pollutants on the cardiovascular system, blood, and lung receptors, and/or indirect effects mediated through pulmonary oxidative stress and inflammatory responses. Direct effects may occur via agents that readily cross the pulmonary epithelium into the circulation, such as gases, and possibly UFPs[28–30] along with soluble constituents of $PM_{2.5}$ (eg, transition metals). In addition, activation of pulmonary neural reflexes secondary to PM interactions with lung receptors may play a role. Ensuing alterations in autonomic tone, under appropriate circumstances, might contribute to the instability of a vascular plaque or initiate cardiac arrhythmias. These direct effects of air pollution represent a plausible explanation for the occurrence of rapid (within a few hours) cardiovascular responses, such as increased myocardial infarctions.[11] Less acute (several hours to days) and chronic indirect effects may occur via pulmonary oxidative stress/inflammation induced by inhaled pollutants. This subsequently may contribute to a systemic inflammatory state, which may in turn be capable of activating hemostatic pathways, impairing vascular function, and accelerating atherosclerosis. A general scheme illustrating potential mechanisms of the effects of PM on the cardiovascular system is shown in Figure 2.



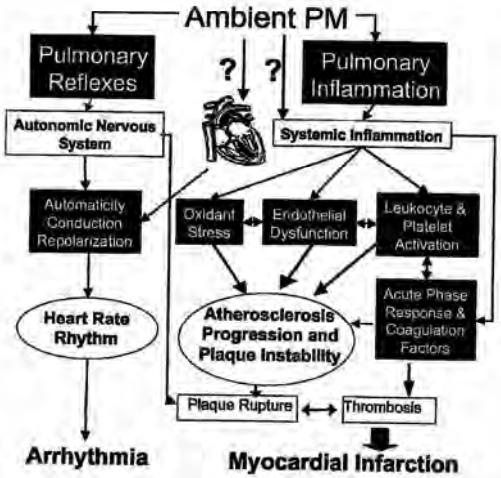


Figure 2. Possible biological mechanisms linking PM with cardiovascular disease.

### Pulmonary and Systemic Oxidative Stress and Inflammation

Inhalation of air pollutants induces pulmonary oxidative stress and inflammation.[118] Exposure of human lungs to concentrated PM[119] and $O_3$[120] produces an inflammatory response consistent with in vivo animal models[121] and in vitro cellular models.[122–125] The presence of soluble transition metals in PM enhances the inflammatory responses[126] via increased oxidative stress.[127,128] However, lung inflammation may also occur via direct UFP effects independent of transition metals or soluble components.[129] Similarly, $O_3$ mediates a pulmonary inflammatory response via oxidative stress[118,130] and an impairment in lung function that can be attenuated by antioxidants.[131]

Oxidative stress occurs after exposure to ultrafine carbon black and diesel exhaust particles (DEPs),[129,132] ambient $PM_{2.5}$,[133] and cigarette smoke. A recent in vivo experiment using in situ chemiluminescence demonstrated the rapid occurrence of oxidative stress even in tissues beyond the lung. After exposure to concentrated ambient $PM_{2.5}$ for 2 hours, there was a doubling in reactive oxygen species generation in the hearts and lungs of rats.[134] This may occur in response to a variety of transition metals[134] or free radical components known to exist within $PM_{2.5}$ as a result of atmospheric chemical reactions.[135] Personal exposure to ambient concentrations of $PM_{2.5}$ is also associated with increased levels of markers of lipid and protein oxidation in human blood.[133] Pulmonary inflammation results at least in part because of the increased production of free radicals.[118] Oxidative stress activates specific transcription factors, including nuclear factor-κB and activator protein-1, which upregulate the expression of genes for cytokines, chemokines, and other proinflammatory mediators.[132] DEPs or organic extracts of DEPs can, through oxidant effects on mitochondria, induce apoptosis or necrosis of macrophages and respiratory epithelial cells, possibly decreasing the host defenses to respiratory infection or increasing airway reactivity.[136]

Endotoxin, usually associated with coarse particles, has also been shown to induce proinflammatory cytokine production[137,138]; increase lung inflammation, airway responsiveness, and systemic immune cell populations; and decrease lung function.[138,140] Endotoxin has been found to account for in vitro cytotoxicity and cytokine production related to $PM_{2.5}$ and coarse PM exposures[141,142]; however, its role in the overall toxicity of ambient PM remains to be clarified.

The intrapulmonary responses elicited by PM may also be due in part to neurogenic inflammation. Sensory neurons in contact with irritant particles (eg, within the conducting airways) can be stimulated to release neuropeptides (eg, substance P, calcitonin gene related peptide, and neurokinin A), which can initiate airway inflammatory events, including release of cytokines, vasodilation, and mucus secretion. Neuropeptides act on a variety of cell types within the lung, including epithelial and smooth muscle cells (resulting in modulation of inflammation and increased airway responsiveness), as well as immune cells (polymorphonuclear leukocytes [PMNs], lymphocytes, eosinophils, and others), thus amplifying the inflammatory response. Recent in vitro experiments indicate that specific irritant (capsaicin or vanilloid)

receptors on neurons mediate PM-related neurogenic inflammation, as evidenced by responses to particles originating from diverse sources.[143]

Several controlled-exposure studies demonstrate that inhalation of particles[119,144,145] and $O_3$[120] evokes both a pulmonary and a systemic inflammatory response in humans. One hour of exposure to very high concentrations of diesel exhaust has been shown to induce an inflammatory reaction in the lungs of healthy adults. This response included increased numbers of PMNs, T- and B-lymphocytes, mast cells, and inflammatory mediators.[144] One of these studies showed an increase in adhesion molecules that facilitate the passage of inflammatory cells from the circulation into the airways. In the blood, platelets and PMNs increased, which suggests that exposure to DEPs stimulated the bone marrow to release these cells into the circulation.

Exposure to DEP has been shown to increase intra-airway transcription of mRNA for interleukin (IL)-8 (a protein that attracts PMNs to sites of injury)[146] and increased production of IL-8 and growth-regulating oncogene-α (GRO)-promoting airway inflammation. Exposure of healthy adults to concentrated ambient particles (CAP) for 2 hours can increase airway inflammation without concomitant lung injury.[119] Nevertheless, plasma fibrinogen was elevated by the CAP exposure relative to filtered air. This controlled exposure study suggests that exposure to ambient particles in healthy humans can result in a mild pulmonary inflammatory response and increased blood factors that effect coagulation, even without lung damage. A similar human study also demonstrated an increase in blood fibrinogen after short-term exposure to CAP.[147] However, no other changes in inflammatory mediators or other coagulation factors were found.

Additional studies support the existence of a systemic inflammatory response beyond the lungs after air pollution exposure. In humans, exposure to forest fire smoke (measured as $PM_{10}$ and $SO_2$) at levels that did not result in changes in lung function nevertheless resulted in stimulation of bone marrow to release immature PMNs into the circulation.[148]

In an animal experiment, rabbits that received 5 mg of $PM_{10}$ intrapharyngeally twice per week for 3 weeks exhibited increased production of PMNs in the bone marrow and accelerated release into the circulation.[149] The $PM_{10}$ exposure resulted in diffuse inflammation of the lungs, with particles present in alveolar macrophages, lung epithelial cells, and airway walls. The effects on PMN production in bone marrow and release of immature cells into the blood were associated with the numbers of particles ingested by alveolar macrophages.

### Effects of Inflammation, Oxidative Stress, and Alterations in Blood-Borne Factors on the Cardiovascular System

Changes in the composition of the blood may result from air pollution exposure, with potentially serious effects on individuals with cardiovascular disease. Nearly a decade ago, Seaton et al[150] proposed a general hypothesis that exposure to inhaled particles induces alveolar inflammation, leading to exacerbation of preexisting lung disease, increased blood coagulability, and an associated increased risk of cardiovascular events. Subsequently, evidence supporting this hypothesis has slowly been accumulating. As described above, several studies of controlled exposures to particles demonstrate increases in both cellular and biochemical markers of pulmonary and systemic inflammation.

Exposure to PM increases fibrinogen,[119,147] a key component in blood coagulation and platelet thrombosis and a major determinant of blood viscosity. Blood viscosity has been associated with severity of cardiovascular disease[151] and has been found to increase in association with increased levels of ambient total suspended particles and $SO_2$.[152] Fibrinogen is also well established as an important independent risk factor for myocardial infarction and stroke. Epidemiological data suggest potential effects of particulate air pollution on blood coagulation.[152–154] Of note is that the strength of plasma level of fibrinogen to predict cardiac events and death in middle-aged men is modified by the presence of other inflammation-sensitive proteins,[155] which suggests that inflammation has a significant role in the determination of cardiovascular risk. In addition, enhanced platelet aggregation may further promote acute thrombosis formation after exposure to diesel exhaust[156] and UFPs.[157] The mechanisms responsible for platelet activation and fibrinogen elevation remain to be fully elucidated. Nevertheless, these findings support the notion that air pollution can acutely increase the risk of thrombosis, thus promoting ischemic events.

Increased concentrations of IL-6 are associated with an increased risk of cardiovascular events[158,159] and mortality.[160] Serum Il-6, IL-1β, and granulocyte macrophage colony-stimulating factor are increased in healthy male subjects after exposures to increased air pollution due to forest fires and are increased in vitro with exposure of human lung macrophages to urban $PM_{10}$.[161] Il-6 is directly involved in regulation of the synthesis of C-reactive protein in the liver. CRP is a sensitive indicator of infection, injury, and inflammation and is linked to increased risk of cardiovascular disease.[162,163] CRP concentration has been shown to be positively associated with exposure to total suspended particles[164] and $PM_{10}$.[153]

The mechanisms by which CRP increases the risk of cardiovascular events is the subject of intense research. One possibility is that CRP impairs endothelial vasoreactivity in individuals with preexisting coronary artery disease.[165] In addition, CRP may contribute directly to the development and progression of atherosclerosis via a number of mechanisms that involve enhanced formation of foam cells, recruitment of monocytes into the arterial wall, stimulation of prothrombotic tissue factors, decreased NO synthase activity, and expression of adhesion molecules.[166] Inflammation (proinflammatory cytokines, CRP, and components of innate immunity) plays a significant role in the genesis of atherosclerosis and in plaque instability.[167] It is possible, therefore, that air pollution–mediated systemic inflammation both promotes atherosclerosis formation over the long term[14] and instigates acute plaque instability and sudden cardiovascular events in the short term. Indeed, in hyperlipidemic rabbits exposed to PM, the progression of coronary atherosclerosis and extracellular lipid pools increased after 4 weeks.[14] The degree of plaque formation correlated with the number of alveolar macrophages that phagocytosed PM. These effects are likely to be superimposed on the effects of age, hypertension, hyperlipidemia, diabetes, and other conditions associated with underlying inflammation.



Alterations in vascular tone due to air pollution exposure have also been demonstrated. The inhalation of high urban levels of CAP and ozone for 2 hours caused conduit arterial vasoconstriction in healthy adults.[168] Similarly, small pulmonary arteries were shown to constrict after short-term exposure to CAP in rats.[169] It is possible that the acute systemic inflammation and oxidative stress[133,134] are responsible for triggering endothelial dysfunction leading to vasoconstriction.[170] In support of this hypothesis, impaired arterial endothelial relaxation and decreased NO formation have been shown to occur in vessels exposed to DEPs owing to excess reactive oxygen species generation.[171] Alternatively, increased production of endothelins may play a role in the acute vasoconstriction.[172]

At present, the precise mechanisms underlying the rapid alterations in vascular tone remain to be resolved. However, a few published reports support the relevance of these findings by demonstrating an effect of air pollution on cardiovascular hemodynamics.[103,172] Ambient air pollution increases blood pressure in cardiac rehabilitation patients[173] and in adults with lung disease.[174] Indeed, arterial vasoconstriction is a likely explanation for the findings of the ULTRA study (The Exposure and Risk Assessment for Fine and Ultrafine Particles in Ambient Air). Ambient levels of PM 2 days before submaximal exercise testing were significantly associated with increased ST-segment depression during the test.[17] This finding suggests that air pollution exposure conveys a greater susceptibility to myocardial ischemia, as demonstrated in an experimental study of dogs exposed to CAP.[175] These results also offer insight regarding the relationship between exposure to PM and the timing of AMI.[11] Significant associations were identified between symptom onset and both acute (levels within 2 hours before symptoms) and subacute (previous-day average concentration) exposures to $PM_{2.5}$. Sudden arterial vasoconstriction (and/or possibly endothelial dysfunction) could conceivably instigate acute coronary syndromes by triggering plaque instability or by decreasing myocardial perfusion in patients with existing atherosclerosis.

### Disturbances of the Cardiac Autonomic Nervous System

Mortality associated with air pollution might be further explained, at least in part, by alterations in the autonomic input to the heart. HRV, resting heart rate, and blood pressure are modulated by a balance between the 2 determinants of autonomic tone (the sympathetic and parasympathetic nervous systems). Decreased HRV predicts an increased risk of cardiovascular morbidity and mortality in the elderly and those with significant heart disease.[176] This is generally determined by analyses of time (eg, standard deviation of normal RR intervals [SDNN]) and frequency domains (eg, low frequency/high frequency ratio by power spectral analysis, reflecting autonomic balance) measured during 24 hours of electrocardiography. Because overall HRV (SDNN) decreases in response to ambient PM exposure,[177–181] decreased parasympathetic input to the heart may provide an important mechanistic link between air pollution and cardiovascular mortality by promoting fatal tachyarrhythmias. A recent study of controlled exposure to CAP provides further support to the notion that PM is capable of reducing HRV.[182] In general, the decrease of HRV occurs rapidly and is inversely proportional to the increase in the concentration of PM. However, in one study,[177] short-term measures of parasympathetic tone (r-MSSD) were increased in a group of individuals with preexisting heart disease. It is conceivable that in certain populations, air pollution–mediated bradyarrhythmias may also contribute to sudden death.

The relevance that these observed short-term changes in HRV have in relation to the worsening of cardiovascular outcomes and the triggering of significant arrhythmias over the long term remains unclear. However, some evidence suggests that PM exposure does promote clinically meaningful changes in cardiac electrophysiology. The incidence of cardiac arrhythmias has been associated with exposure to $PM_{2.5}$ in high-risk individuals (eg, individuals having an implanted cardioverter defibrillator). In 100 patients monitored for ≈3 years, $NO_2$ and CO concentrations were most strongly related to implanted cardioverter defibrillator discharges, whereas particulate black carbon showed a slightly lesser degree of association with such events.[18] Although this study is limited by the small number of high-risk patients and by the lack of individual clinical data beyond implanted cardioverter defibrillator discharges, it does suggest a potential for adverse effects of PM and gaseous pollutants on cardiac autonomic balance. A recent mortality time-series study[98] further supports this observation. The risks of mortality from threatening arrhythmias were shown to increase in relation to 7-day mean levels of black smoke and $PM_{10}$.

These clinical observations are consistent with several studies reporting the induction of cardiac arrhythmias in compromised animals (ie, with pulmonary and systemic hypertension) exposed to PM.[183] Dogs exposed to CAP for 6 hours on 3 consecutive days showed increases in low- and high-frequency HRV, as well as an elevated low frequency/high frequency ratio.[184] In addition, exposure to residual oil fly ash, a component of PM, decreased HRV and increased arrhythmia frequency in a myocardial infarction model of rats.[185] These animal exposure findings support the notion that air pollution is capable of altering autonomic balance in a manner that favors significant tachyarrhythmias. The underlying mechanisms responsible remain unclear but may involve activation of pulmonary neural reflex arcs, direct effects of pollutants on cardiac ion channels, or consequences of the heightened systemic inflammatory state.

## Summary

Air pollution consists of a complex mixture of compounds in gaseous (eg, $NO_2$, $SO_2$, CO, $O_3$), liquid, and solid phases. PM itself is a heterogeneous mixture of suspended particles that vary in chemical composition and size, ranging from clusters of molecules (with diameters of several nanometers) to coarse PM (up to 10 μm and beyond). Among the many natural and anthropogenic sources of air pollution, the combustion of fossil fuels is a major contributor in urban and industrialized societies.

Numerous epidemiological studies conducted worldwide have demonstrated consistent associations between short-term elevations in PM and increases in daily cardiovascular morbidity and mortality. Several studies have also reported adverse cardiovascular outcomes in relation to long-term PM exposure. Elderly patients, those with underlying coronary or pulmonary disease, lower socioeconomic populations, and diabetics may be at particularly increased risk. At present, the constituent PM responsible for mediating these effects, along with the roles of the various gaseous copollutants, remain to be clarified.

Experimental evidence has revealed plausible biological mechanisms whereby PM has the potential to cause and exacerbate cardiovascular disease. One pathway involves the initiation of pulmonary and systemic oxidative stress and inflammation by components within PM. Subsequently, a cascade of physiological responses may follow that are capable of instigating cardiovascular events. These include alterations in blood rheology that favor thrombosis, cardiac dysrhythmias, acute vascular dysfunction, plaque instability, and the long-term development of atherosclerosis. Additional pathways may also be involved, such as changes in autonomic balance via lung neural reflex arcs and/or by PM (or certain components) reaching the circulation and beyond.

## Potential for Prevention/Public Policy

The increase in relative risk for cardiovascular disease due to air pollution for an individual is small compared with the impact of the established cardiovascular risk factors. However, because of the enormous number of people affected, even conservative risk estimates translate into a substantial increase in total mortality within the population. The impact on cardiovascular disease therefore represents a serious public health problem. The latest draft of the US EPA Air Quality Criteria for Particulate Matter has confirmed the presence of an apparent linear dose-response relationship between PM and adverse events.[186] Data from all North American studies demonstrate that this curve is without a discernible threshold below which PM concentrations pose no health risk to the general population.[186] At present-day levels, ≈40 000 deaths per year in Austria, France, and Switzerland combined have been attributed to PM.[187] Estimates based on time-series studies suggest that ≈5000 excess deaths per year in Canada[188] and 6000 cardiovascular events in the United Kingdom[189] can be attributed to poor air quality. Approximately 1 in 30 myocardial infarctions were thought to be triggered by outdoor air pollution in a London, England, study.[3] On a global scale, the World Health Organization has estimated that 800 000 deaths occur per year and 7.9 million disability-adjusted life-years are lost annually due to PM exposure.[189]

Given the burden of epidemiological evidence, the US EPA updated the National Ambient Air Quality Standards in 1997 to specifically include $PM_{2.5}$ (Table).[190] The most current estimates by the EPA suggest that attainment of these standards would reduce total mortality by 23 000 deaths annually and cardiovascular hospital admissions by 42 000 per year in the United States.[191] Nevertheless, 19% of all US counties with air-quality monitoring systems are presently not meeting these standards.[192] This percentage is substantially greater in regions such as the industrial Midwest (41%) and southern California (60%). In light of these data, there is a clear potential to improve the national public health and to substantially reduce cardiovascular morbidity and mortality by reducing PM levels to current EPA standards. The potential cardiovascular health effect of reducing the gaseous copollutants remains less certain.

**Current US EPA National Ambient Air Quality Standards for PM (1997 NAAQS)**

| Time Period | $PM_{10}$, μg/m³ | $PM_{2.5}$, μg/m³ |
|---|---|---|
| Annual | 50 | 15 |
| Daily | 150 | 65 |

The annual standard is satisfied when the 3-year average of the mean PM levels measured in a community is less than or equal to the indicated number. The daily standard is met when the 3-year average of the 98th or 99th percentile of 24-hour PM levels in each community is less than or equal to the indicated number.

## Conclusions and Recommendations

Most[3–9,81] but not all[12,13] studies have found positive associations between several different air pollutants and adverse health outcomes. The results of observational studies are influenced by numerous factors, including characteristics of the air pollution, the population studied, and methodological issues, such as control of relevant confounders. The lack of complete uniformity is not surprising given that numerous variables (atmospheric conditions, geographic locations, cohort characteristics, sample sizes, exposure estimates, and statistical modeling) can affect the results. Our understanding of the relevant biological mechanisms involved also remains incomplete. Nevertheless, the existing body of evidence is adequately consistent, coherent, and plausible enough to draw several conclusions.[193] At the very least, short-term exposure to elevated PM significantly contributes to increased acute cardiovascular mortality, particularly in certain at-risk subsets of the population. Hospital admissions for several cardiovascular and pulmonary diseases acutely increase in response to higher ambient PM concentrations. The evidence further implicates prolonged exposure to elevated levels of PM in reducing overall life expectancy on the order of a few years.

On the basis of these conclusions and the potential to improve the public health, the AHA writing group supports the promulgation and implementation of regulations to expedite the attainment of the existing National Ambient Air Quality Standards. Moreover, because a number of studies have demonstrated associations between particulate air pollution and adverse cardiovascular effects even when levels of ambient $PM_{2.5}$ were within current standards,[3,11] even more stringent standards for $PM_{2.5}$ should be strongly considered by the EPA. Additional approaches to reduce the burden of disease related to air pollution should be highlighted. The levels of $O_3$ and PM in many US cities are published daily by the EPA, along with a health alert system that reflects recommended changes in activity. This information is also available and updated daily on the EPA AIRNow web site (http://www.epa.gov/airnow). The AHA supports these recommendations as guidelines for activity restriction for persons with known heart disease (or with an "at-risk" profile by Framingham or another scoring system), and pulmonary disease, the elderly, and those with diabetes mellitus. A concerted effort should be made to educate healthcare providers and at-risk patients alike about this source of information and about the potential health hazards of elevated air pollution levels. The AHA should also actively work to educate the public and public policy makers about the effects of air pollution on cardiovascular disease by featured presentations at the annual Scientific Sessions, AHA-sponsored public education activities, and advocacy.



In October 2003, the EPA expanded its Air Quality Index program to include information on particle pollution, or fine particles. Next-day forecasts and real-time air quality information about particle pollution are available on the AIRNow Web site for more than 150 cities across the country. Air quality forecasts and reports for particle pollution are available in the local media (newspapers, television, and radio) in these cities and in the national media. The EPA is working to increase the number of state and local air quality agencies that forecast and report real-time particle pollution levels. It is expected that within a few years, this program will mirror the $O_3$ program in terms of geographic coverage and availability to the public. The AIRNow Web site also contains information about the health effects of particle pollution, and the EPA is developing a section with information and tools for healthcare professionals.

Although there is a strong case that air pollution increases the risk of cardiovascular disease, we recognize the need to address a number of remaining scientific questions. Both the US EPA and the National Institutes of Health have increased the priority of research funding in an effort to overcome these shortcomings, and a committee of the National Research Council set out a long-range research agenda in 1998.[194] A workshop sponsored by these and other agencies was convened in August 2002 to foster multidisciplinary research on the cardiovascular effects of PM. The AHA writing group supports these measures and recognizes several important areas for future research[80,192]:

1. Improve our understanding of the underlying biological mechanisms.
   - Better describe the basic mechanisms (mediators, cell signaling, pathways) involved in altering HRV (autonomic tone), vascular function, and atherogenesis.
   - Increased use of relevant animal models of exposure when investigating cardiovascular outcomes (eg, inhalation chambers at meaningful CAP concentrations). Experiments using intrapulmonary installation provide insight into basic mechanisms; however, the ability to extrapolate findings to humans is limited owing to the route of administration of extraordinarily high quantities of PM.
   - Determine the pathophysiological relevance of the many pathways that may contribute to the development of both acute and chronic disease.
   - Demonstrate reproducibility of the relevant potential mechanisms under a variety of pollutant regimens and subject risk profiles.
   - Demonstrate the occurrence of such cardiovascular end points at environmentally relevant concentrations of ambient pollutants.
   - Determine causal pathways, which may become targets for future means of preventive strategies
   - Determine whether long-term exposure to PM at environmentally relevant concentrations promotes the genesis/progression of atherosclerosis in humans.
2. Identification of the differential toxicity of various constituents and sources of air pollution, including:
   - Specific chemical and biological constituents of PM (eg, metals, carbon, polycyclic aromatic hydrocarbons, endotoxin).
   - The role of different PM size fractions, including UFPs (<0.1 μm) and the coarse fraction ($PM_{10\ to\ 2.5}$).
   - The effects of gaseous copollutants alone or in combination with PM.
3. Epidemiological investigations designed to address some of the limitations of prior reports, including studies that involve the following:
   - Better characterization of the populations of individuals at high risk related to short-term elevations in PM (eg, comorbidities).
   - Improvement of exposure estimates and metrics (eg, use of personal monitoring systems).
   - Examination of the relationships between traffic emissions and adverse cardiac effects.
   - Investigation of the roles of copollutants and confounders.
   - Assessment of the effect of medications on the acute cardiovascular effect of air pollution (eg, HMG-CoA reductase inhibitors).
   - Evaluation of the shape of the dose-response curve (identification of any threshold concentrations of various pollutants).
   - Improved estimations of the population-wide health benefits of reducing PM and other pollutants.
   - More thorough examination of the relationships between ambient air pollution concentrations and adverse reproductive outcomes, including those involving congenital cardiac anomalies

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AReCO

THE ALLIANCE OF RESIDENTS CONCERNING O'HARE, Inc. A Not-for-Profit Corporation

PO Box 1702 O Arlington Heights, IL 60006-1702 O Fax: 847/506-0202 O Tel: 847/506-0670 O www.areco.org

*"To achieve a balance between public health and the economy"*

July 9, 2004

Sent via email and regular mail
Mr. Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, IL 60018
michael.w.macmullen@faa.gov

Dear Mr. MacMullen:

It has been reported by Crain's Chicago Business (7/4/04) and Chicago television news stations that U.S. Senator Richard Durbin has sent a request (dated 6/24/04) to weaken our environmental protection process by shortening the time allowed for environmental review of the proposed O'Hare Modernization ("expansion") project, rather than wanting to protect the general and flying public and the American taxpayer by having a full public vetting of the issues.

The Alliance of Residents Concerning O'Hare (AReCO) is petitioning the Department of Transportation, Federal Aviation Administration (FAA) and the U.S. Environmental Protection Agency (EPA) to stay the course and maintain proper environmental procedures.

Our environmental laws and regulations are meant to protect the health of 5-8 million people that are significantly affected by O'Hare airport related toxic and health damaging emissions, as well as the safety, welfare and tax dollars of the American public.

O'Hare related operations burn upwards of a billion gallons of fuel near O'Hare annually, emitting thousands of tons of toxic air pollutants each day, harming the health of millions of people! O'Hare emits a heavy concentration of unusual pollution on the local populace and the Chicago area has unusual wind patterns, together causing major concern. One O'Hare study showed that its operations cost the community about $7 billion annually, just from the cancer it's emissions cause and billions more in other unfunded airport-poisoning costs (asthma, cardiovascular, etc.).

In contrast to Senator Durbin's action, and on behalf of the millions of people whose health, safety and welfare are compromised by O'Hare operations, AReCO is petitioning the FAA and EPA to do the right thing and not bend to political pressure. 1

Proud Recipient: *1995 Environmental Merit Award, Arlington Heights - 1996, '99 Illinois State Senate Recognition*
***Protecting the Health and Safety of Millions of O'Hare Affected Citizens***

| Comment | Response |
|---|---|
| 1 | The FAA notes AReCO's comment regarding the need for a full and fair evaluation of the proposed action within the EIS. The FAA is required to prepare a Final EIS that includes consideration of public comments received on the Draft EIS. Although this Final EIS has identified a preferred alternative, no decisions regarding the approval of any alternative has been made in this Final EIS. The Final EIS preferred alternative was selected after a careful review of alternatives to the city's proposal (Alternative C) including those alternatives submitted in *Karaganis-Cohn*'s *May 6, 2005* supplemental comments on the DEIS, document number 050506_01, beginning on page U.4-854). In addition, the preferred alternative was selected after consideration of comments received on the Draft EIS. No decision on this Final EIS will be made until 30 days after it has been issued. During this time, the FAA will give careful consideration to all comments filed on the Final EIS, prior to making a decision in its ROD.<br><br>In accordance with the NEPA process, the FAA makes its decision in a Record of Decision (ROD). The ROD may not be issued until a minimum of 30 days following the issuance of the Final EIS. FAA will ensure that its decision-maker is fully apprised of all comments pertaining to both the Draft and Final EIS. All comments will be taken into account prior to the issuance of a ROD. Although the FAA has released a schedule indicating a ROD will be issued in September 2005, the FAA will not in fact issue a ROD until the Agency's decision-maker is satisfied that all comments submitted as a result of the Draft and Final EIS or during public review have been thoroughly evaluated and satisfactorily addressed.<br><br>Also, please see topical response A-2 on page U.5-3 of this appendix. |

| Comment | Response |
|---|---|
| 2 | Please see topical response A-4 on page U.5-5 of this appendix. |

AReCO
7/9/04
p.2

Additionally, AReCO is petitioning for a longer public review process, giving the general public time to digest just how this project would harm them and the better long-term transportation choices that are available. Normally, only a 30-day public comment period is given after the FAA releases the draft environmental document. However, because of the length of the document (thousands of pages), the importance and complexity of the proposal, AReCO is hereby officially requesting at least an additional 60 days, (90 days total). This is to let the public and the media have enough time to analyze the volumes of technical and legal data and enlist the needed professional and legal help. 2

Let the environmental process protect us.

Thank you.

Sincerely,

Jack Saporito
Executive director

c: U.S. Senator Peter Fitzgerald
U.S. Congressman Henry Hyde
Secretary Norman Y. Mineta
Administrator Marion C. Blakey
Ken Westlake

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July 22, 2004

Mr. Charles R. Prock, Esq.
Attorney
Federal Aviation Administration
Great Lakes Region
2300 East Devon Avenue
Des Plaines, Illinois 60018

**Re: July 22, 2004 Meeting with FAA re Protection of the Religious Rights of the Deceased Interred in St. Johannes and Rest Haven Cemeteries and Their Families.**

Dear Mr. Prock:

As you know, we represent both St. John's United Church of Christ and Rest Haven Cemetery Association (the owners of St. Johannes and Rest Haven Cemeteries respectively) as well as individual family members whose loved ones are buried in these cemeteries (referred to collectively as the "Religious Objectors").

Pursuant to our prior telephone discussion, I am enclosing with this letter a list of questions which the Religious Objectors respectfully direct to the FAA. With all due respect, the Religious Objectors have been asking FAA these questions about the protection of their religious rights under a variety of federal laws (including the First Amendment Free Exercise Guarantee and the federal Religious Freedom Restoration Act – federal RFRA) for many months (See our letters to the FAA dated January 16, 2004 and May 4, 2004[1]).

[1] FAA has been on notice of the First Amendment and federal RFRA rights of the Religious Objectors since before June of 2003. The Religious Objectors through their counsel advised FAA orally of the prospective violation of their First Amendment and federal RFRA rights by FAA and Chicago as early as May 2003. When the FAA failed to take action to protect these religious rights, the Religious Objectors filed suit in June 2003 federal district court seeking such protection, *St. John's United Church of Christ, et al. v. Daley et al* (Case # 3C 3726, United States District Court for the Northern District of Illinois). The pleadings in that case spell out the requirements of the First Amendment Free exercise Clause and the federal RFRA — and the application of those constitutional and statutory religious protections to the O'Hare expansion controversy. The request of the Religious Objectors for protection of their religious rights under those constitutional and statutory religious protections can hardly come as a surprise to the FAA.

| Comment | Response |
|---|---|
| 1 | To the extent the commenter is criticizing the FAA for not responding to its several communications on this subject, the agency is not aware of any obligation it may have to make the determinations sought by the commenter prior to issuing its record of decision. Since this issue was first raised, it has been carefully studied by the FAA in conjunction with the NEPA review process. By adding the criteria called for in the First Amendment and the Religious Freedom Restoration Act to those already applicable to the OMP, the FAA has been able to address in one comprehensive document all issues associated with the proposed action. **Section 5.22** of the EIS contains the FAA proposed resolution of the religious liberty issues. The FAA has also sent a separate communication to counsel for the religious objectors, and the FAA welcomes any comments on that matter. A final decision on these issues will be made in the ROD. |

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To this date FAA has — for some unexplained reason — refused to tell the Religious Objectors whether (and under what procedures) FAA will protect the Religious Objectors' religious rights under the Constitution and the federal RFRA. Further the FAA continues to refuse to provide us with significant amounts of the evidence (the data and factual material) which FAA will utilize to meet the FAA's constitutional and statutory obligations as to the protection of the religious rights of the Religious Objectors.

In an inexplicable and contradictory fashion, FAA has continued to deny the Religious Objectors clear answers to critical questions as to the protection of their religious rights. On the one hand, the FAA has repeatedly said that "all applicable laws regarding cemeteries will be fulfilled before FAA considers approving or disapproving the federal actions requested to support the proposed OMP." (See FAA Hanson letter of March 4, 2004 and FAA Prock letter of June 24, 2004 emphasis added). On the other hand, FAA refuses to give the Religious Objectors any answers as to the Religious Objectors' repeated written inquiries as to whether (and under what procedures) the FAA will protect the Religious Objectors' religious rights under the Constitution and the federal RFRA.

There is no basis for FAA to assert that somehow, the requirements of the First Amendment free Exercise Clause and federal RFRA do not apply to this case (*i.e.*, are not "applicable" laws) or that the facts of the Religious Objectors situation do not entitle the Religious Objectors to the "compelling need" and "lack of an alternative" protections of the First Amendment Free Exercise and federal RFRA standards.

Your letter of July 15, 2004 makes reference to your willingness to discuss the status of the cemeteries under federal laws protecting potential cultural, historic, and archeological resources. Your then state that FAA is still "reviewing the materials" that the Religious Objectors have submitted regarding their religious rights and that "FAA has not made a determination regarding the potential application of RFRA."

Stated frankly, your assertion — that FAA after more than a year, is not able to determine whether (and under what procedures) FAA will protect the Religious Objectors' religious rights under the Constitution and the federal RFRA — strains common sense believability.

So that there can be no question of the Religious Objectors rights under the Constitution and federal RFRA (and the procedural requirements governing those rights), we are again restating those rights in this letter. 1

**1. The Factual Basis of Religious Objectors Rights to Constitutional and federal RFRA protection and FAA's Obligations Relating Thereto.**

As spelled out in the affidavits of the Religious Objectors previously submitted to you, the proposed destruction and demolition of St. Johannes Cemetery and Rest Haven Cemetery constitutes a serious, permanent, and substantial injury and burden to the rights of these religious institutions and individual worshippers under the Free Exercise Clause of the First Amendment and the federal Religious Freedom Restoration Act. Specifically the proposed OMP will destroy graves which the religious organizations and their members who own and maintain the cemeteries believe to be sacred and inviolate as part

| Comment | Response |
|---|---|
| 1 | Please see the response to this comment on the previous page. |
| 2 | By studying the pleadings filed against the FAA in the federal district court case identified in the commenter's letter, along with the affidavits attached to those pleadings, and the several letters sent to the FAA on this subject, the agency believes it has a full and complete understanding of the factual basis for the claims presented by the religious objectors. |

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of their fundamental religious faith. The sanctity of these cemeteries from invasion and destruction is an essential element of the Salvation and Judgment Day beliefs of these religious organizations and their members. 2

**2. The Severe Injury to the Fundamental Religious Beliefs of the Religious Objectors from the Destruction and Removal of the Graves Constitutes a "Substantial Burden" on Religious Objectors' Exercise of Religion**

A threshold question that applies to both the protection of the Free Exercise Clause and federal RFRA is whether the proposed governmental activity imposes a "substantial burden" on the exercise of religion.

The destruction of the graves and the severe injury to the fundamental religious beliefs of the Religious Objectors by the proposed OMP project (including the so-called Phase I) clearly constitutes a "substantial burden" on the Religious Objectors' exercise of religion. The United States Court of Appeals for the Seventh Circuit stated the relevant inquiry as to what constitutes a "substantial burden". In *Mack v. O'Leary*, 80 F.3d 1175 (7th Cir. 1996), *vacated on other grounds*, 522 U.S. 801 (1997), the Seventh Circuit emphasized that the test of "substantial burden" is to be interpreted broadly to be protective of religious exercise:

> But we do think that the more generous definition is more faithful both to the statutory language and to the approach that the courts took before *Smith*...
>
> We hold, therefore, that a substantial burden on the free exercise of religion, within the meaning of the Act, is one that [(1)] forces adherents of a religion to refrain from religiously motivated conduct, [(2)] inhibits or constrains conduct or expression that manifests a central tenet of a person's religious beliefs, or [(3)] compels conduct or expression that is contrary to those beliefs.
>
> 80 F.3d at 1178-79 (emphasis added).

Clearly the injury to the fundamental religious beliefs of the Religious Objectors inflicted by the destruction and removal of the graves in the O'Hare expansion controversy meets the substantial burden test set forth by the Seventh Circuit.

We respectfully ask FAA to advise Religious Objectors whether the FAA or the City of Chicago disputes or takes issue with the central assertion of the Religious Objectors that the destruction and removal of the graves by the proposed OMP project will impose a "substantial burden" on the Religious Objectors' exercise of religion.

If FAA or the City of Chicago does take issue with the Religious Objectors' assertion and/or claims that the destruction and removal of the graves by the proposed OMP project will impose a "substantial burden" on the Religious Objectors' exercise of religion, then Religious Objectors ask that FAA or the City of Chicago be required to

| Comment | Response |
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| 2 | Please see the response to this comment on the previous page. |
| 3 | Although the FAA has not agreed that RFRA is applicable in this situation, it has assumed that this statute does apply and that if the Preferred Alternative is approved in the ROD, that decision would cause, in RFRA terms, a "substantial burden" on the religious objectors' free exercise of religion. The FAA does not challenge the good faith or substantiality of these claims. |

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disclose to Religious Objectors the evidence and the arguments that are the basis for either the FAA's or the City of Chicago's opposition.

Similarly, if FAA believes that the extensive affidavits already submitted by the Religious Objectors are in any way insufficient to establish that the destruction and removal of the graves by the proposed OMP project will impose a "substantial burden" on the Religious Objectors' exercise of religion, the Religious Objectors ask FAA to promptly advise Religious Objectors of the asserted insufficiencies so that Religious Objectors may have the opportunity to submit additional evidence in support of their position. 3

**3. The Severe Injury to the Fundamental Religious Beliefs of the Religious Objectors from the Destruction and Removal of the Graves Triggers the Protection of the First Amendment Free Exercise Clause.**

The FAA's extremely limited "response" thus far (indeed, no response at all) to Religious Objectors' assertions of religious rights has focused on federal RFRA. The FAA appears to disregard the constitutional guarantee of the First Amendment Free Exercise Clause. The First Amendment Free Exercise Guarantee clearly establishes that where a proposed government action imposes a substantial burden on the exercise of religious beliefs the government action cannot go forward unless the government affirmatively demonstrates: a) a compelling governmental need and b) the absence of an available less destructive alternative. As the Supreme Court said in *Wisconsin v. Yoder*, 406 U.S. 205 (1972):

> The essence of all that has been said and written on the subject is that only those interests of the highest order and those not otherwise served can overbalance legitimate claims to the free exercise of religion.
>
> 406 U.S. at 215

The Religious Objectors anticipate that the FAA (and for certain the City of Chicago) may argue that the First Amendment Free Exercise constitutional protection does not apply here under the holding in *Employment Division v. Smith*, 494 U.S. 872 (1990) in which the Supreme Court held that a neutral, generally applicable regulatory law that created a substantial burden on religious exercise would not fall within the strict scrutiny protection of the Free Exercise Clause.

However, there is nothing neutral about the way that Chicago (with FAA's apparent concurrence) is treating the religious beliefs of the Religious Objectors. The federal and state legislative response to the *Smith* decision was the passage of federal and state RFRA statures which imposed the strict scrutiny (*i.e.*, compelling need and no alternative) requirements of pre-*Smith* First Amendment case law on the government. The knowing and intentional stripping of the protections of the Illinois RFRA from just these two religious cemeteries — while preserving Illinois RFRA protection for every other religious institution in the State of Illinois, including every other religious cemetery other than St. Johannes and Rest Haven — constitutes the very kind of individualized

| Comment | Response |
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| 3 | Please see the response to this comment on the previous page. |
| 4 | With regard to claims asserted under the First Amendment of the U.S. Constitution, the FAA proposes to conclude that strict scrutiny is not an appropriate test to apply to governmental conduct that is facially neutral and of general application. As discussed in **Section 5.22,** the cemeteries are slated for condemnation not because of what they are but because of where they are. |

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discrimination or individualized assessment that the Supreme Court in *Smith* said triggered the traditional First Amendment strict scrutiny standards that preceded *Smith*.

The Supreme Court in *Smith* expressly stated that its deference to neutral generally applicable regulatory laws did not apply if the government singled out certain religious institutions or practices for individualized treatment. It is our position that the singling out of these two religious cemeteries (St. Johannes and Rest Haven) — and stripping them of the protections of the Illinois Religious Freedom Restoration Act, 775 ILCS 35/1 *et seq.* (IL-RFRA) while preserving those specific religious protections for all other religious institutions in the State of Illinois (including all other religious cemeteries) — constitutes just the sort of individualized treatment that triggers traditional First Amendment strict scrutiny standards that preceded *Smith*.

We respectfully ask FAA whether the FAA or the City of Chicago disputes or takes issue with the assertion of the Religious Objectors that the strict scrutiny of the traditional First Amendment strict scrutiny standards that preceded *Smith* applies in this controversy given the clearly discriminatory treatment given to St. Johannes and Rest Haven as contrasted to the religious law protection (*i.e.*, Illinois RFRA) provided to every other religious institution in the State of Illinois (including all other religious cemeteries).

.If the FAA agrees with the Religious Objectors that First Amendment strict scrutiny applies here, then the Religious Objectors ask the FAA to identify and disclose the evidence and data by which the FAA asserts demonstrates the compelling governmental need to remove the cemeteries and the absence of an alternative means of addressing that governmental need that does not require the removal of the cemeteries.

If the FAA disagrees with Religious Objectors position that First Amendment strict scrutiny applies here, we would ask that FAA promptly provide Religious Objectors with the basis for the FAA's disagreement. 4

**4. The Discriminatory Treatment of these Two Religious Cemeteries As Contrasted With All Other Religious Institutions in the State of Illinois (including all other religious cemeteries) Triggers The Equal Protection Provisions of the Fifth Amendment.**

FAA must determine if the destruction of these two religious cemeteries violates the Equal Protection Clause of the Fourteenth Amendment and (as applied to the FAA, the protections of the Equal Protection Clause are incorporated in the Fifth Amendment Due Process Clause when applied to the actions of federal agencies, *Bolling v. Sharpe*, 347 U.S. 497 (1954)). Independent of the First Amendment Free Exercise Clause, the intentional discrimination against these two religious institutions — while continuing religious protection for all other religious institutions in Illinois — violates the equal protection guarantees of the Fourteenth Amendment as applied to Chicago and the equal protection guarantees of the Fifth Amendment as applied to FAA.

Under applicable precedent, the strict scrutiny requirements of Equal Protection analysis (*i.e.*, government must demonstrate a compelling governmental need and the absence of an alternative) apply here. The Seventh Circuit has held that where the governmental action causes severe interference with important religious tenets or

| Comment | Response |
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| 4 | Please see the response to this comment on the previous page. |
| 5 | The FAA does not agree with the commenter's assertion that St. Johannes or Rest Haven Cemetery has been treated in a discriminatory manner when compared to other religious institutions in the State of Illinois. The approval of any of the alternatives retained for secondary consideration would require the acquisition of between 413-440 acres of commercial, residential, and other land. These two cemeteries make up a very small portion of that exercise of eminent domain. Because the Fifth Amendment protections of just compensation apply to all acquisitions, including the cemeteries, the FAA proposes to find that no additional constitutional protections are warranted. |

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compels church members to perform acts at odds with the fundamental tenets of their religion, the fundamental rights/suspect classification requirement of strict scrutiny is triggered. *Griffin High School v. Illinois High School Assoc.*, 822 F.2d 671, 674 (7th Cir.1987). Here the compulsory removal of the bodies of church members from St. Johannes Cemetery and Rest Haven Cemetery – as spelled out above and in the uncontested affidavits submitted by Plaintiffs – will cause severe interference with the religious beliefs of the Religious Objectors. Consequently, the strict scrutiny standard of Equal Protection analysis applies here. *Sklar v. Byrne*, 727 F.2d 633, 636 (7th Cir.1984).

If the FAA agrees with the Religious Objectors that Equal Protection strict scrutiny applies here, then the Religious Objectors ask the FAA to identify and disclose the evidence and data which the FAA asserts demonstrates the compelling governmental need to remove the cemeteries and the absence of an alternative means of addressing that governmental need that does not require the removal of the cemeteries.

If the FAA disagrees with Religious Objectors position that Equal Protection strict scrutiny applies here, we would ask that FAA promptly provide Religious Objectors with the basis for the FAA's disagreement. 5

**5. Federal RFRA Requires That FAA Demonstrate a Compelling Governmental Need to Destroy the Cemeteries and the Absence of Any Alternative Which Need Not Destroy the Cemeteries**

As we have repeatedly emphasized, before FAA can approve the destruction of St. Johannes and Rest Haven Cemeteries, FAA must demonstrate that the requirements of the federal Religious Freedom Restoration Act have been met. That statute provides in pertinent part:

> "Government shall not substantially burden a person's exercise of religion even if the burden results from a rule of general applicability, except as provided in subsection (b) of this section."
>
> ***
>
> "(b) Exception
>
> Government may substantially burden a person's exercise of religion only if it demonstrates that application of the burden to the person–
>
> (1) is in furtherance of a compelling governmental interest; and
>
> (2) is the least restrictive means of furthering that compelling governmental interest."

42 U.S.C. §2000bb-1(emphasis added)

| Comment | Response |
|---|---|
| 5 | Please see the response to this comment on the previous page. |
| 6 | As described in **Section 5.22,** the FAA believes that the approval of the OMP, as described in the Preferred Alternative, is a compelling governmental need. Further documentation of this compelling governmental need is contained in **Chapter 2, Purpose and Need.** |

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There is no basis for FAA to make the required demonstration — under either the First Amendment or the federal RFRA — that there is a compelling governmental need to destroy these two religious cemeteries or that there is no other alternative to achieve a compelling governmental need. We emphasize that these two required demonstrations are substantive obligations — not simply procedural — and require substantive proof by the FAA that these two requirements (a compelling governmental need and the absence of a less destructive alternative) have been demonstrated. Unlike obligations under the National Environmental Policy Act (NEPA) — which the courts have held to merely create procedural obligations and do not compel a substantive result — the First Amendment Free Exercise Clause and the federal RFRA create substantive obligations which prohibit the destruction of these two religious cemeteries unless these substantive obligations have been met.

If the FAA agrees with the Religious Objectors that federal RFRA applies to the proposed destruction of the cemeteries, then the Religious Objectors ask the FAA to identify and disclose the evidence and data which the FAA asserts demonstrates the compelling governmental need to remove the cemeteries and the absence of an alternative means of addressing that governmental need that does not require the removal of the cemeteries.

If the FAA disagrees with Religious Objectors position that federal RFRA applies to the proposed destruction of the cemeteries, we would ask that FAA promptly provide Religious Objectors with the basis for the FAA's disagreement. 6

**6. Article III Requirements**

Article III of the Constitution requires that the adjudication of contested issues of federal law be determined by an Article III court:

> The judicial Power of the United States, shall be vested in one supreme Court, and in such inferior Courts as the Congress may from time to time ordain and establish. The Judges, both of the supreme and inferior Courts, shall hold their Offices during good Behaviour, and shall, at stated Times, receive for their Services, a Compensation, which shall not be diminished during their Continuance in Office.
>
> United States Const. Art. III § 1

> The judicial Power shall extend to all Cases, in Law and Equity, arising under this Constitution, the Laws of the United States, and Treaties made, or which shall be made, under their Authority;--to all Cases affecting Ambassadors, other public Ministers and Consuls;--to all Cases of admiralty and maritime Jurisdiction;--to Controversies to which the United States shall be a Party;--to Controversies between two or more States;--between a State and Citizens

| Comment | Response |
|---|---|
| 6 | Please see the response to this comment on the previous page. |
| 7 | The FAA understands that its disposition of the religious liberty interests asserted by the commenter on behalf of the religious objectors are appropriate for review by an Article III federal court. At the same time, as the FAA stated in response to the suit filed against it by the commenter and others in federal district court, any consideration of these matters by any court prior to the FAA's issuance of a Record of Decision would be premature. |

| Comment | Response |
|---|---|
| 7 | Please see the response to this comment on the previous page. |

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> of another State;--between Citizens of different States;--between Citizens of the same State claiming Lands under Grants of different States, and between a State, or the Citizens thereof, and foreign States, Citizens or Subjects.
>
> United States Constitution, Art. III § 2, cl. 1

The determination of contested issues of law and fact as to the claims for protection of the Religious Objectors' religious rights — under the First Amendment Free Exercise Clause and under the Equal Protection component of the Fifth Amendment under the doctrine of *Bolling v. Sharpe, supra,* — clearly fall within the mandate of Article III that these fact and law issues be determined by an Article III Court. Under the Article III mandate the constitutionally required demonstration that FAA must make of a compelling need and the absence of an alternative that would not destroy the cemeteries must be made in an Article III court. FAA cannot constitutionally be the adjudicator of disputed issues of fact and law as to whether FAA has either violated the Constitution or whether FAA has complied with the affirmative constitutional duty to demonstrate a compelling governmental need and the absence of a less destructive alternative to destroying the cemeteries.

Similarly the determination of contested issues of law and fact as to the FAA's compliance with federal RFRA clearly falls within the Article III mandate for several reasons. First, the plain language of Article III states that the requirement for an Article III court extends to all controversies "arising under" the Constitution and "Laws of the United States". Second, the FAA's refusal to follow the command of Congress as to federal RFRA — and the FAA's concomitant action to approve the destruction of the cemeteries in contravention of the limits placed by Congress through RFRA on Congress's delegation of power to the FAA — would constitute a constitutional violation of the Separation of Powers framework of the Constitution. FAA (*i.e.,* the executive Branch) has no independent constitutional authority to approve the destruction of the cemeteries in the absence of delegated authority from Congress. And to comport with the constitutional framework of Separation of Powers, FAA's exercise of that delegated authority must be within the limits imposed on that delegated authority by Congress (*i.e.,* the requirements of RFRA). Absent RFRA compliance, FAA's approval would violate the Separation of Powers framework of the Constitution as an unlawful exercise of power not authorized by Congress.

If the FAA agrees with the Religious Objectors — *i.e.,* that the determination of disputed fact and law issues relating to the controversy over First Amendment Free Exercise and Equal Protection requirements as they apply to the proposed destruction of the cemeteries requires determination by an Article III Court — please advise us so that we can confer on appropriate procedures to place these issues before an Article III Court.

Similarly, Religious Objectors ask that FAA advise us whether FAA agrees with the Religious Objectors position as to Article III requirements and RFRA — *i.e.,* that the determination of disputed fact and law issues relating to the controversy over federal

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RFRA requirements as they apply to the proposed destruction of the cemeteries — requires determination by an Article III Court

If FAA disagrees with Religious Objectors position as to Article III requirements as they relate to the proposed destruction of the cemeteries, please promptly provide Religious Objectors with the basis for the FAA's disagreement. 7

**7. Adjudicatory Requirements.**

Your letter of July 15, 2004 states your understanding that Religious Objectors' position that FAA is conducting a "formal" "Adjudicative Proceeding" "regarding the OMP EIS". Your sentence contains several discrete misunderstandings as to the nature of the proposed administrative FAA decisions that Religious Objectors are challenging and several misunderstandings as to the procedural requirements that exist as to FAA decision-making (absent the Article III considerations noted above.)

The first misunderstanding relates to your implied attempt to restrict Religious Objectors' opposition to the narrow limits of FAA's procedural compliance with the National Environmental Policy Act (NEPA). On the contrary, Religious Objectors' letters of January 16, 2004 and May 4, 2004 identified a number of substantive FAA decisions (independent of NEPA) that must be made before the FAA can approve destruction of the cemeteries. These include:

- FAA's decision under 49 U.S.C. §47107(a)(16) as to whether to approve the proposed ALP
- FAA's decision under 49 U.S.C. §47103 as to which components of O'Hare airport development shall be included in the National Plan For Integrated Airport Systems (NPIAS) as those elements are determined to be "necessary to provide a safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics" under 49 U.S.C. § Section 47103, FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)* and FAA Order 5100.39A *Airport Capital Improvement Program*. It is Religious Objectors' position that a States or Metropolitan System Plan can be developed which meet the needs of civil aeronautics in the metropolitan Chicago region which does not requires the destruction and removal of these religious cemeteries.
- FAA's decision as to whether to authorize the collection and use of additional Passenger Facility Funds for the OMP. It is Religious Objectors understanding that Chicago intends to ask for additional PFC collect and use authorization for several stages of the OMP — including Phase I.
- FAA's decision as to whether to approve AIP funds for the OMP – both from allocated funds or on the basis of request for discretionary funds under a Letter of Intent (LOI). It is our understanding that Chicago has applied for a LOI for Phase I.

| Comment | Response |
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| 7 | Please see the response to this comment on the page U.4-203. |
| 8 | For the reasons contained in **Section 5.23** of this EIS, the FAA disagrees with the commenter's asserted entitlement to formal, on-the-record adjudication of these issues. The FAA is aware of no statute or other legal obligation that requires it to go beyond the extensive public outreach already conducted, or to further supplement the numerous other contacts with the commenter that the FAA has already provided. As noted in response to comment 1, above, the commenter will have a further opportunity to present its response to the FAA's proposed disposition of these matters before final action is taken in the ROD. |

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- FAA's decision as to the application of the requirements of federal RFRA to the OMP project.

Clearly, Religious Objectors are challenging far more than limited NEPA procedural requirements and Religious Objectors have asked to participate as opposing parties — opposing City of Chicago and in some instances the State of Illinois request for approval of the OMP — in each of the administrative proceedings noted above. We have waited for several months — without any response from the FAA — for an answer to our requests to participate in these proceedings as opposing parties. 8

The second misunderstanding stems from your failure to distinguish the two separate inquiries related to: 1) whether an agency decision making process is an "adjudication" — without regard to whether it is "formal" or "informal" and 2) if an adjudication, what procedural requirements must be followed in the adjudication.

Turning to the first question, it is clear that the FAA decision-making processes set forth above are "adjudications". There are two reasons for this conclusion. First, each of the FAA decisions set forth above requires the application of general statutory and regulatory standards to the specific facts of the OMP proposal. The FAA decision involves application of FAA's decision-making general criteria to specific facts of the O'Hare expansion proposal and the impact of that proposal, as well as to the facts relating to alternatives to that specific proposal. *See* Koch, *Administrative Law & Practice*, §2.11 ("adjudication is the decision-making process for applying preexisting standards to individual circumstances"). This is the distinction between rulemaking and adjudication noted in *United States v. Florida East Coast Ry. Co.*, 410 U.S. 224, 244-45 (1973), and that distinction has been followed in this circuit. *See People of State of Illinois v. United States*, 666 F.2d 1066, 1073, n.7 (7th Cir. 1981).

Nor does the fact that large numbers of people may be affected by the adjudicatory decision cause the decision not to be non-adjudicatory. Koch, *supra*, at §2.11 ("Although adjudications usually affect only a relatively small number of people, it is dangerous to incorporate [a] number into the definition. Just as class actions or derivative litigation can affect millions so can administrative adjudication.")[2].

The second reason why these FAA decisions are adjudications can be found in the statutory definitions of the Administrative Procedure Act (the "APA"). The APA has three definitional subsections that clearly establish that the various FAA decisions listed above are "adjudications".

The first relevant APA definition is in 5 U.S.C. §551(5) which defines "rulemaking":

[2] Moreover, persons or entities adversely affected by a proposed administrative action can seek party status to challenge the proposed governmental action. Chicago does not dispute that Plaintiffs have asked for participation as opponents to Chicago's application for FAA approval of the project. The law is clear that Plaintiffs have a right to seek intervention in the FAA adjudicatory decision-making proceeding as opponents to Chicago's application. See: *Nichols v. Board of Trustees of the Asbestos Workers Local 24 Pension Plan*, 835 F.2d 881, 896 n. 107 (D.C. Cir.1987); *Koniag, Inc. v. Andrus*, 580 F.2d 601, 613 and n.5 (D.C. Cir.), cert. denied, 439 U.S. 1052 (1978); and 5 U.S.C. § 555. As noted above the Religious Objectors seek opposing party status in each of these administrative adjudications.

| Comment | Response |
|---|---|
| 8 | Please see the response to this comment on the previous page. |
| 9 | Please see the response to comment 8 on page U.4-205. |

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Page 11

> "rule making" means agency process for formulating, amending, or repealing a rule

The next relevant APA definition is in 5 U.S.C. §551(6) which defines an "order":

> "order" means the whole or a part of a final disposition, whether affirmative, negative, injunctive, or declaratory in form, of an agency in a matter other than rule making but including licensing

(emphasis added)

The final APA definition is in 5 U.S.C. §551(7) which defines an "adjudication":

> "adjudication" means agency process for the formulation of an order

Each of the FAA decisions listed above involves the final disposition of a matter (*e.g.*, decision on an AIP or PFC application, decision on the approval of the ALP application, decision on what elements of O'Hare to include in NPIAS-CIP) and clearly such decisions are not the process for the formulation of a "rule", *i.e.*, "rulemaking". Since the APA defines an "order" to be any final disposition of a matter that is not rulemaking; since the FAA decisions listed above are not rulemaking, and since the APA defines an adjudication as the process for the formulation of an "order", it necessarily follows that the FAA decisions listed above are adjudications.

Thus, the FAA decisions list above are adjudications. But finding that a governmental decision is an adjudication does not determine whether the adjudication must follow "formal" or "informal" procedures under the APA. That question is determined under the APA by whether the FAA decisions listed above are — under the terms of 5 U.S.C. §554(a) — "required by statute to be determined on the record after opportunity for an agency hearing." 9

The Religious Objectors are not aware of any FAA statutes that require the adjudicatory FAA decisions listed above to be "determined on the record after opportunity for agency hearing." However, that does not end the inquiry. The Supreme Court has emphatically held that if the objectors to the proposed government action are entitled to procedural Due Process, then the Due Process Clause itself is a "statute" requiring that the dispute be determined on the record after opportunity for an agency hearing within the meaning of §554(a). *See Wong Yang Sung v. McGrath*, 339 U.S. 33 (1950).

If the Religious Objectors are entitled to procedural Due Process protections before the FAA can approve the cemeteries for destruction, then the provisions of §554 of the APA apply. If the provisions of §554 apply, then the procedural requirements of §§556 and 557 also apply by their express terms.

The Due Process Clause of the Fifth Amendment prohibits the FAA from approving the destruction of the cemeteries without providing those who have liberty or

| Comment | Response |
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| 9 | Please see the response to comment 8 on page U.4-205. |
| 10 | The commenter's acknowledgement that there is no applicable FAA statute calling for an issue relating to OMP to be "decided on the record after opportunity for hearing" underscores the FAA's proposed conclusion that the process already provided fully satisfies all constitutional and statutory requirements. |

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property interests in the continued integrity and sanctity of the cemeteries with procedural due process. The question then turns to whether the Religious Objectors here have liberty or property interest in protecting the sanctity of the graves in Rest Haven and St. Johannes.

Clearly the Religious Objectors have liberty and property interests protected by the Due Process Clause. Plaintiffs St. John's and Rest Haven (as well as individual plaintiffs like Helen Runge and Shirley Steele) are owners of real property in the cemeteries whose property interests will be adversely affected by an FAA decision to allow use of the cemeteries for airport expansion. Finally, St. John's, Rest Haven, and the individual religious Plaintiffs have strong religious interests that are "liberty" interests protected by the Due Process Clause of the 5th Amendment.

Since the Religious Objectors are entitled to constitutional procedural due process before the FAA can approve the destruction of the cemeteries, and since the triggering of Due Process protection in turn triggers the application of §554 of the APA under the doctrine of *Wong Yang Sung v. McGrath, supra,* the FAA decisions listed above which relate to the proposed destruction of the cemeteries by the approval or funding of the proposed OMP project are subject to the adjudicatory procedures required by §554 and by §§556 and 557 of the APA. 10

The Religious Objectors respectfully ask FAA to inform Religious Objectors as to FAA's agreement or disagreement with the following propositions:

1. The various FAA decisions listed above for the proposed O'Hare expansion (with the resultant destruction of the cemeteries) — *e.g.,* with regard to the ALP approval, funding approvals under either AIP or PFC authority, the inclusion of the proposed OMP elements in the NPIAS-CIP — are "adjudications" as defined by the APA.
2. Under §555(b) of the APA and/or under the Due Process Clause, the Religious Objectors are entitled to seek opposing party status in those adjudications.
3. The Religious Objectors have liberty and property interests in the St. Johannes and the Rest Haven cemeteries which entitle them to the procedural protections of the Due Process Clause before FAA allows the destruction of the cemeteries.
4. The rights of the Religious Objectors to procedural due process in the FAA adjudicatory processes trigger — under the doctrine of *Wong Yang Sung v. McGrath, supra,*— the application of §554 of the APA to the FAA adjudicatory decisions.
5. The application of §554 of the APA triggers the procedural requirements of §§556 and 557 of the APA.

If the FAA disagrees with any of the propositions set forth above, the Religious Objectors respectfully ask FAA promptly provide Religious Objectors with the basis for the FAA's disagreement. 11

| Comment | Response |
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| 10 | Please see the response to this comment on the previous page. |
| 11 | The commenter identifies a series of propositions and seeks to elicit the FAA's agreement or disagreement with the contentions advanced therein. The FAA declines the invitation, other than to note that formal, on-the-record adjudication and designation of "opposing party" status are inappropriate for the types of determinations called for in this matter. |

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**8. Due Process Requirements that The FAA Disclose the Evidence and Communications Submitted to the FAA or Used By the FAA In Support of Chicago's Requests For FAA Adjudicatory Approvals.**

The discussion above clearly establishes that the Religious Objectors have Due Process rights to object to Chicago's requests for a number of related FAA adjudicatory approvals related to the OMP project and the associated destruction of our religious cemeteries. These Due Process rights are given even greater significance given the overriding requirements of the First Amendment free Exercise Clause, the strict scrutiny requirements of the Fifth Amendment (*Bolling v. Sharpe)* Equal Protection violations, and the rigorous requirements of the federal RFRA.

It is axiomatic that in an administrative adjudication, a party opposing the proposed action is entitled to see the evidence being used by both its opponent and by the agency. *See Goldberg v. Kelly*, 397 U.S. 254, 268 (1970);[3] *Morgan v. United States*, 304 U.S. 1, 18 (1938) ("The right to a hearing embraces not only the right to present evidence, but also a reasonable opportunity to know the claims of the opposing party and to meet them. The right to submit argument implies that opportunity; otherwise the right may be but a barren one."); *Ralpho v. Bell*, 569 F.2d 607, 628 (D.C. Cir. 1977) ("An opportunity to meet and rebut evidence utilized by an administrative agency has long been regarded as a primary requisite of due process."); *Moore-McCormack Lines, Inc. v. United States*, 413 F.2d 568, 585 (Ct. Cl. 1969)("The right to be told your adversary's case is fundamental to a determination of this kind."); *North American Coal Co. v. Miller*, 870 F.2d 948, 950 (3d Cir.1989).

Further, Plaintiffs are entitled to the protection of due process – here access to the documents, data and evidence Chicago has been transmitting to FAA – at a "meaningful time and in a meaningful manner." *Armstrong v. Manzo*, 380 U.S. 545, 552 (1965).

Despite Religious Objectors' repeated requests, the FAA continues to withhold significant materials and communications exchanged between the FAA and the City of Chicago relating to the various FAA adjudicatory proceedings. Nor can FAA's limited and belated transmittal of a small number of documents in response to the Religious Objectors FOIA request satisfy the requirements of Due Process. The Religious Objectors are entitled to opposing party status and are entitled, as opposing parties under the Due Process Clause, to receive any communications exchanged between Chicago and the FAA at the same time as the information is exchanged between Chicago and the FAA.

Religious Objectors ask that FAA advise us whether FAA agrees with the Religious Objectors position that Due Process requires the FAA to provide Religious Objectors with the documents, data and evidence Chicago has been transmitting to FAA

[3] " 'Certain principles have remained relatively immutable in our jurisprudence. One of these is that where governmental action seriously injures an individual, and the reasonableness of the action depends on fact findings, the evidence used to prove the Government's case must be disclosed to the individual so that he has an opportunity to show that it is untrue.' " *Goldberg v. Kelly, supra*, 397 U.S. at 268 (quoting *Greene v. McElroy*, 360 U.S. 474, 496-97 (1959)) (emphasis added).

| Comment | Response |
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| 12 | The commenter asserts an entitlement to disclosure by the FAA of the evidence and communications submitted to the agency and used by it in evaluating the proposed action. The FAA has provided (and is providing on an ongoing basis) the commenter with documents the FAA has received from or provided the City of Chicago pursuant to the commenter's request under the Freedom of Information Act. Moreover, those and any other materials relied upon by the FAA in its forthcoming Record of Decision will be contained in an administrative record compiled for this matter and available to the public should the agency's decision be challenged in court. |

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(and FAA communications to Chicago) at a "meaningful time and in a meaningful manner." If FAA agrees with Religious Objectors' position, we ask that FAA immediately proceed to make this material and information available to us.

If FAA disagrees with Religious Objectors position as to Due Process disclosure requirements as they relate to FAA's adjudicatory processes, please promptly provide Religious Objectors with the basis for the FAA's disagreement. 12

**Conclusion**

We have enclosed a list of questions summarizing the issues raised by this letter and our earlier letters. Virtually all of these questions have been raised with FAA for more than a year — without any response to these questions by FAA. We are respectfully again requesting prompt and detailed answers to these questions. 13

Sincerely yours

Joseph Karaganis
Counsel for the Religious Objectors

| Comment | Response |
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| 12 | Please see the response to this comment on the previous page. |
| 13 | In an attachment to the commenter's letter, the FAA has been requested to respond to some 18 questions that are claimed to summarize the issues the commenter has presented to the agency on this subject. After careful review of these questions, we believe that **Sections 5.22** and **5.23** are responsive to those issues, and we direct the commenter's attention to that portion of the Final EIS. |

| Comment | Response |
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| 14 | Please see response to comment 13 on the previous page. |

Questions by the Religious Objectors to the FAA—
Attachment to letter of July 22, 2004 summarizing issues raised with FAA since May of 2003

1. Does FAA agree that the destruction and removal of the Rest Haven and St. Johannes cemeteries will inflict a "substantial burden" on the religious practices and beliefs of the Religious Objectors within the meaning of the First Amendment Free Exercise Clause and the federal Religious Freedom Restoration Act? If FAA does not agree, what are the reasons for FAA's disagreement?

2. Does FAA agree that the affidavits previously submitted to the FAA by the Religious Objectors are sufficient evidence of the fact that the destruction and removal of the Rest Haven and St. Johannes cemeteries will inflict a "substantial burden" on the religious practices and beliefs of the Religious Objectors within the meaning of the First Amendment Free Exercise Clause and the federal Religious Freedom Restoration Act? If FAA does not agree, what are the reasons for FAA's disagreement?

3. Does FAA agree that Chicago and the State of Illinois have treated the Rest Haven and St. Johannes religious cemeteries differently from all other religious institutions in the State of Illinois (including all other religious cemeteries in Illinois) by stripping the protections of the Illinois Religious Freedom Restoration Act (Illinois RFRA) from the Rest Haven and St. Johannes religious cemeteries while preserving the protections of Illinois RFRA for all other religious institutions in the State of Illinois (including all other religious cemeteries in Illinois)? If FAA does not agree, what are the reasons for FAA's disagreement?

4. Does FAA agree that the differential treatment of the Rest Haven and St. Johannes religious cemeteries from all other religious institutions in the State of Illinois (including all other religious cemeteries in Illinois) — by stripping the protections of the Illinois Religious Freedom Restoration Act (Illinois RFRA) from the Rest Haven and St. Johannes religious cemeteries while preserving the protections of Illinois RFRA for all other religious institutions in the State of Illinois (including all other religious cemeteries in Illinois) — violates the constitutional guarantees of Equal Protection of the law? If FAA does not agree, what are the reasons for FAA's disagreement?

5. Does FAA agree that, pursuant to the requirements of the First Amendment Free Exercise Clause, FAA cannot allow the destruction and removal of St. Johannes and Rest Haven religious cemeteries without first demonstrating: 1) that there is a compelling governmental need to destroy these religious cemeteries and 2) that there are no alternatives to meet that governmental need that would not destroy these religious cemeteries? If FAA does not agree, what are the reasons for FAA's disagreement?

6. Does FAA agree that, pursuant to the requirements of the federal Religious Freedom Restoration Act, FAA cannot allow the destruction and removal of St. Johannes and Rest Haven religious cemeteries without first demonstrating: 1) that there is a compelling governmental need to destroy these religious cemeteries and 2) that there are no alternatives to meet that governmental need that would not destroy these religious cemeteries? If FAA does not agree, what are the reasons for FAA's disagreement?

7. Does FAA contend that there is a compelling governmental need to destroy and remove St. Johannes and Rest Haven religious cemeteries? If so, please set forth the evidence which demonstrates that compelling governmental need

8. Does FAA contend that there are no alternatives to meet the governmental need which FAA says requires the destruction and removal of St. Johannes and Rest Haven religious cemeteries? If so, please set forth the evidence which demonstrates that there are no alternatives to meet the governmental need which would not destroy and remove St. Johannes and Rest Haven religious cemeteries.

9. Does FAA agree that the determination of contested issues of law and fact as to the claims for protection of the Religious Objectors' religious rights — under the First Amendment Free Exercise Clause and under the Equal Protection component of the Fifth Amendment under the doctrine of *Bolling v. Sharpe, supra,* — fall within the mandate of Article III of the Constitution that these issues be determined by an Article III Court. If FAA does not agree, what are the reasons for FAA's disagreement?

10. Does the FAA agree that determination of contested issues of law and fact as to the FAA's compliance with federal RFRA falls within the Article III mandate and that the determination of these disputed legal and factual issues must be made by an Article III Court? If FAA does not agree, what are the reasons for FAA's disagreement?

11. Does the FAA agree that the FAA decisions — as to whether to: 1) approve the Airport Layout Plan for the OMP, 2) approve the elements of the OMP in the NPIAS-CIP, 3) approve PFC and AIP funding for the OMP — are adjudications within the meaning of 5 U. S. C. §551? If FAA does not agree, what are the reasons for FAA's disagreement?

12. Does the FAA agree that Religious Objectors are entitled to participate as opposing parties to Chicago's requests for FAA approval in these various FAA decision-making actions? If FAA does not agree, what are the reasons for FAA's disagreement?

13. Does the FAA agree that in such FAA decision-making proceedings the Religious Objectors have liberty and property rights in the continued sanctity and physical integrity of these two religious cemeteries that are protected by the Due Process Clause? If FAA does not agree, what are the reasons for FAA's disagreement?

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14. Does the FAA agree that the Due Process rights of the Religious Objectors in these FAA adjudicatory proceedings trigger the application of 5 U.S.C. §554 (and §§556 and 557) under the holding of *Wong Yang Sung v. McGrath*, 339 U.S. 33 (1950). If FAA does not agree, what are the reasons for FAA's disagreement?

15. Does the FAA agree that under the Due Process Clause, the Religious Objectors have a right to be provided the data, communications and other material exchanged between Chicago and the FAA as well as the evidentiary material developed internally by FAA (relating to the proposed FAA adjudicatory decisions at issue) at a meaningful time and in a meaningful manner? If FAA does not agree, what are the reasons for FAA's disagreement?

16. When will FAA provide Religious Objectors with the provided the data, communications and other material exchanged between Chicago and the FAA as well as the evidentiary material developed internally by FAA (relating to the proposed FAA adjudicatory decisions at issue?

17. When will FAA provide Religious Objectors with responses to our letters of January 16, 2004 and May 4, 2004 and to the questions contained in this list of questions?

18. What is the schedule for the various FAA decisionmaking processes involved in the OMP — *e.g.*, ALP approval, NEPA EIS process, AIP and PFC funding requests, and inclusion of OMP elements in the NPIAS-CIP?

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| Comment | Response |
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| 14 | Please see response to comment 13 on page U.4-210. |

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**Re: Objections To FAA Approval of and Funding For The "O'Hare Modernization Program" ("OMP"), Including but not limited to City of Chicago Requests for ALP Approval, AIP or PFC Funding for Phase I of the OMP and for any Other Pending or Future Requests for AIP or PFC Funding for the OMP**

Dear Ladies and Gentlemen:

The Village of Bensenville and Elk Grove Village (collectively, the "Community Objectors"), St. John's United Church of Christ, Helen Runge, Shirley Steele, Rest Haven Cemetery Association, Robert Placek and Leroy Heinrich (collectively, the "Religious Objectors") and Roxanne Mitchell

representing the Homeowner Objectors,[1] hereby jointly file these objections to the City of Chicago's proposed "O'Hare Modernization Program" ("OMP"), including the Chicago's requests for (1) approval of revisions to O'Hare's Airport Layout Plan ("ALP"), (2) Airport Improvement Program ("AIP") grants (including issuance of Letters of Intent ("LOI")), and (3) Passenger Facility Charge ("PFC") impose and/or use authority.

The purpose of this letter is:

1) to identify the prospective FAA decisions that relate to the proposed OMP and explain why the Objectors oppose each of the potential FAA adjudicatory decisions relating to the OMP;

2) to describe the Objectors' interests in these matters and the substantial injury that will be inflicted on the Objectors by the proposed OMP and as a result of the FAA decisions relating to the OMP;

3) to set forth the substantive and procedural constitutional and statutory requirements that apply to the FAA decisions regarding the OMP, including all of the protections to which the Objectors are entitled under the Constitution, the federal Religious Freedom Restoration Act, the Administrative Procedure Act, and the FAA's responsibilities under Title 49 U.S.C.; and

4) to explain why these are adjudicatory proceedings and why the Objectors have the right to participate as formal parties in these adjudicatory proceedings.

**I. Summary of Positions of the Objectors.**

Never before in aviation history has an airport sponsor proposed to spend so much to achieve so little. The OMP involves tearing up the existing runways at O'Hare, eliminating two critical cross-wind runways, and reconstructing an entirely new airport with a completely new layout of 6 parallel runways. The costs of the project, including all necessary terminal facilities and roadway access infrastructure, will likely exceed $20 billion.

The OMP will fail to achieve the City's claimed benefits. The OMP will increase, not decrease, congestion and delays and be unsafe.

[1] The Community, Religious and Homeowner Objectors are collectively referred herein to as the "Objectors"

Objections to Proposed FAA Adjudicatory Decisions re OMP
August 23, 2004
Page 3

If the OMP is allowed to proceed, it will unnecessarily destroy homes, businesses and parklands in the adjacent communities and two religious cemeteries that have existed for 150 years.

The City's requests for ALP approval and for AIP and prospective PFC funding are inextricably linked, and the FAA must evaluate the full panoply of issues relating to the OMP before taking any action that will result in the destruction of the communities and the religious cemeteries—including whether the OMP's limited benefits will exceed its enormous costs, whether the OMP will increase rather than decrease delays and congestion, whether the City has a viable financial plan to fund OMP cost impacts and whether there is enough non-federal money to pay for the OMP costs. As discussed below, each of these FAA decisions involves adjudications in which the Objectors are entitled to participate under constitutional and statutory due process protections. 1

The City's OMP requests do not comply with constitutional and statutory legal requirements and FAA policy and cannot be approved.

- Federal law prohibits the FAA from providing AIP and PFC funding unless Chicago can demonstrate that sufficient non-federal funds are available to pay for the non-federal portions of the project. Chicago has not, and cannot, make the required showing that it has sufficient funding sources to pay the non-federal portions of the huge cost of the OMP and the FAA cannot legally approve AIP and PFC funding for the overall OMP. 2
- Federal law prohibits the FAA from approving discretionary AIP funding for projects where the benefits of the project do not exceed the costs. Neither the OMP as a whole, nor Phase I of the OMP, will produce the claimed benefits and both the costs of the full OMP and the costs of Phase I far exceed any benefits from the project. 3
- The OMP will increase, not decrease, congestion and delays. 4
- The OMP will impair aviation safety. 5
- The OMP will have adverse economic consequences, resulting in significant increases in airline costs, service reductions, and the loss of jobs and businesses in the region. 6
- The OMP — and "Phase I" of the OMP — will destroy two religious cemeteries in violation of the free exercise of religion guarantee of the First Amendment, the Equal Protection guarantees of the Constitution, and the federal Religious Freedom Restoration Act. Federal constitutional provisions and the federal Religious Freedom Restoration Act prohibit the FAA from destroying the religious

| Comment | Response |
|---|---|
| 1 | These comments are paraphrases of the comment offered later in the same document. See the responses to the detailed comments made below for a complete response. |
| 2 | See response to comment 25 on page U.4-231. |
| 3 | Benefit cost analysis required for approval of discretionary AIP funding is outside the NEPA process. |
| 4 | **Appendix D** of the EIS provides airfield simulation modeling that quantifies delay in both the preferred alternative and the No-Build alternative. The methods and assumptions used in these simulations, and the results obtained there from, were thoroughly reviewed with FAA air traffic specialists in the Chicago region, including air traffic controllers from the Chicago O'Hare Airport Traffic Control Tower (O'Hare Tower), the O'Hare Terminal Approach Control Facility (O'Hare TRACON), and the Chicago Air Route Traffic Control Center (ARTCC). The modeling clearly demonstrates that the OMP will significantly reduce congestion and delays. |
| 5 | All the alternatives considered in the EIS, and the procedures for operating them, meet or exceed FAA safety and design standards. The FAA would not operate the OMP in such a way that safety would be impaired. Safety has been a key consideration in the development of all the alternatives and in defining how they would be operated. Runway-crossing and land-and-hold-short operations (LAHSO) procedures are conducted safely today with the existing O'Hare airfield. For example, these LAHSO procedures are in use today on 22R interacting with 27R, 9R interacting with 4R, as part of the most efficient operating configuration in use today. For operating the OMP, runway-crossing procedures and supporting taxiway facilities have been developed that will result in fewer crossings of the center portions of active runways than occur today with the existing O'Hare airfield. These procedures were developed in close coordination with experienced FAA controllers from the O'Hare tower to ensure their safety and viability. As noted in the EIS, there will be less reliance on land-and-hold-short operations (LAHSO) procedures than there is today with the existing airfield. Therefore, aviation safety will not be impaired with the OMP and will more likely be enhanced by the proposed improvements. |
| 6 | Please see the response to comments 118-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-574 of this appendix. |
| 7 | In response to this comment and others, the FAA has added **Section 5.22** to **Chapter 5** of the EIS for the FAA's discussion of legal issues involving potential relocation of St. Johannes and Rest Haven Cemeteries. |

Objections to Proposed FAA Adjudicatory Decisions re OMP
August 23, 2004
Page 4

cemeteries and thus prohibit the FAA from approving the full OMP or Phase I of the OMP. 7

The City's claimed benefits for the OMP are pure fiction. At most, the six-runway OMP plan will achieve only about two-hundred thousand additional annual operations before the airport becomes gridlocked, and that does not take into account airspace congestion which will further reduce the airport's practical capacity. That level of increase could be achieved without any new runways at O'Hare and without the enormous destruction that will result from the unworkable mega-billion dollar OMP plan. The joint FAA/Chicago O'Hare Delay Task Force Study developed a list of comprehensive alternatives to reduce delays at O'Hare that would increase the level of O'Hare operations to about the same magnitude as the OMP. 8

The City has played "hide the ball" with critical facts. Both the City and the FAA have failed to provide the Objectors and the public with all of the vital information relating to the OMP. 9

The Objectors call on the FAA to carefully consider these Objections and to evaluate the unsubstantiated claims of the City. In short, the Objectors ask the FAA to "exercise [its] expertise and demonstrate sufficiently that it has done so", as the recent Court of Appeals decision in *Village of Bensenville, et. al. v. FAA*, instructed FAA with respect to the City's request for PFC authorization to fund work for the OMP. (Slip Opinion, July 27, 2004, DC Circuit.) Based on all the available evidence, the City's OMP requests should be denied. 10

**II. The FAA Decision-Making Actions Which Approval of the OMP Would Require and Which the Objectors Challenge.**

There are four inter-related FAA actions involving the OMP, each one of which will inflict substantial injury on the Objectors:

1. **ALP approval.** Under 49 U.S.C. § 47107(a)(16), Chicago cannot proceed with the construction of the OMP unless the FAA first approves the proposed changes in the airport's Airport Layout Plan. For the reasons discussed below, the FAA decision-making process in the ALP proceeding is an adjudication and our clients have sought and are entitled to party status opposing Chicago's application for FAA approval of this adjudicatory decision-making. 11

2. **Chicago's requests for AIP funding.** Chicago has indicated that both the OMP — as an entire project — and Chicago's so-called "Phase I" will require both AIP grant decisions from allocated "entitlement" funds and AIP grant decisions from FAA's "discretionary" authority under 49 U.S.C. § 47110(e) to issue Letters of Intent (LOI) for long-term AIP funding.

| Comment | Response |
|---|---|
| 7 | Please see the response to this comment on the previous page. |
| 8 | Although the ultimate capacity of the proposed OMP project is unknown, delays are significantly reduced from 17.1 minutes per operation for the No Action alternative with approximately 974,000 annual operations to 5.8 minutes of delay per operation for Alternative C with approximately 1,194,000 annual operations. Annual operations could continue to increase beyond the 1,194,000 albeit with higher delays. Therefore, the airfield could handle significantly more than 200,000 annual operations over today's levels.<br><br>The comprehensive computer simulation capacity/delay modeling demonstrated that Alternative C would significantly reduce delays below today's levels and improve the operating efficiency both in the airspace and on the ground.<br><br>The joint FAA/City of Chicago O'Hare Delay Task Force identified numerous concepts that benefit the existing airfield today. However, the benefits of the alternatives contained in that study are not cumulative. They allow for some capacity enhancement and delay reduction benefits in the short term but would not meet the long-term forecast of aviation activity for the airport. |
| 9 | Please see the response to comment 22 within *ShawPittman's June 27, 2003* letter, document number 030627_01, on page U.4-68 of this appendix. |
| 10 | The FAA has considered these objections and all other comments presented to it during the EIS process. |
| 11-16 | Commenter has identified several FAA decisions somehow related to consideration of the OMP and respective funding decisions. The Agency respectfully disagrees that any of these matters would inflict substantial injury. |

Currently pending before the FAA are two Chicago requests for LOI discretionary funding for elements of the overall OMP project as described in Chicago's February 2004 Master Plan ("OMP Master Plan"). The most recent Chicago request for LOI funding is for Phase I of the OMP which was submitted on March 1, 2004 seeking $300 million in discretionary funding and which also indicates that Chicago will seek $55.8 million in FAA approvals of "entitlement" AIP funds for Phase I. The second unresolved LOI request by Chicago is dated February 28, 2002 for the so-called "World Gateway" components which are contained in the OMP Master Plan, and seeks $183 million in discretionary funds. For the reasons discussed below, these AIP proceedings are adjudications and the Objectors have sought and are entitled to party status opposing Chicago's application for FAA approval of the AIP funding requests. 12

3. **Chicago's request for PFC funding authority.** Chicago has stated that Chicago will seek authorization for large amounts of additional PFC funding authorization from the FAA for the overall OMP as well as for Phase I of the OMP. The FAA's decision to authorize $220 million PFCs for the so-called "runway formulation" project for the OMP has been remanded to the FAA by the United States Court of Appeals for the District of Columbia Circuit. In addition, for Phase I alone, Chicago has indicated that it will seek $657.8 million dollars in PFC authorizations. For the reasons discussed below, these PFC proceedings are adjudications and the Objectors have sought and are entitled to party status opposing Chicago's application for FAA approval of the City's PFC funding requests. 13

4. **FAA's decision on whether to include the OMP elements as approved airport development in the NPIAS.** Under 49 U.S.C. § 47103 the Secretary of Transportation must prepare a plan for developing public use airports in the United States entitled "The National Plan of Integrated Airport Systems" ("NPIAS"). Under § 47103, the "plan shall include the kind and estimated cost of eligible airport development the Secretary of Transportation considers necessary to provide a safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics." Indeed, FAA's AIP grant authority is limited by statute to those projects needed "to maintain a safe and efficient nationwide system of public-use airports that meets the present and future needs of civil aeronautics" 49 U.S.C. § 47104(a). Under the FAA NPIAS-CIP program requirements, the FAA does not approve federal grant funds for airport projects under the AIP program unless the specific components of those airport projects are identified on the NPIAS-CIP. As discussed below, a significant element of the FAA's NPIAS-CIP decision-making process involves the FAA determination as to whether the OMP will meet

"the needs of civil aeronautics" in the Chicago metropolitan area. There are several alternatives to the OMP that would provide the Chicago metropolitan area with "eligible airport development" to provide "a safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics" that do not involve the destructive elements of the OMP. Further, as discussed below, neither the full OMP nor Phase I of the OMP qualifies for inclusion in the NPIAS. For the reasons discussed below, the Objectors have sought and are entitled to party status opposing FAA approval of any NPIAS-CIP designation of the OMP in the NPIAS. 14

The Objectors oppose any FAA decision which would allow the OMP to go forward as proposed by Chicago, with the resultant serious injury to the Objectors described below. For the reasons discussed below, these proceedings are deemed by law to be adjudications and the Objectors have constitutional and statutory rights to participate as full parties in those adjudicatory proceedings. 15

We emphasize that the Objectors do not oppose expansion of aviation capacity and reduction of aviation delays and congestion in the metropolitan Chicago area. The Objectors submit that the OMP will not accomplish those goals and that there are lawful, less destructive and more productive alternatives to accomplishing these objectives without the destructive impacts and unlawful consequences of the OMP. 16

**III. Description of the Objectors and the Substantial Injury to the Objectors Resulting from the OMP.**

The Village of Bensenville is located immediately adjacent to and southwest of O'Hare. Chicago has advised Bensenville that it intends to acquire and destroy over 500 homes, 55 businesses, two parks, and property that has been deemed to be of historical significance to accommodate one or more of the proposed new runways for the OMP.

Elk Grove Village is immediately adjacent to and northwest of O'Hare. The City has advised Elk Grove Village that it intends to acquire and destroy at least seven substantial commercial and industrial properties and a wet lands recreation area located in Elk Grove Village.

St. John's United Church of Christ cemetery (St. Johannes Cemetery) and the Rest Haven Cemetery are religious cemeteries that have been in continuous existence since the mid-1800's. The City intends to acquire and destroy the cemeteries for the proposed OMP. Helen Runge, Shirley Steele, Rest Haven Cemetery Association, Robert Placek and Leroy Heinrich are members and religious practitioners of the religious institutions.

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Roxanne Mitchell is a homeowner in the OMP acquisition area who opposes the plan to acquire and destroy her property. She represents the other opposing homeowners (the "Homeowner Objectors").

The interests of all of these Objectors have been spelled out in detail in affidavits presented to federal district and appellate courts in *St. John's United Church of Christ, et al v. The City of Chicago*, Case No. 03 C 2726, United States District Court for the Northern District of Illinois, Eastern Division and in *Village of Bensenville et al. v. Federal Aviation Administration*, No. 03-1068 (United States Court of Appeals for the District of Columbia Circuit, decided July 27, 2004) and are hereby adopted and incorporated by reference in this letter. Several of these affidavits have been previously presented to the FAA in these administrative proceedings[2] and the Objectors will file additional affidavits, as needed, to the extent the FAA or an opposing party challenges the Objectors' standing to participate in these proceedings and to challenge these FAA decisions.

**A. Injury To Village of Bensenville and Elk Grove Village.**

As set forth in the affidavits referenced above, the OMP will have a disastrous effect on the physical environment and on the social and economic fabric of these communities. Included in the so-called "acquisition" area is property owned by Bensenville and Elk Grove. In addition, the "acquisition" area calls for the destruction of hundreds of homes and dozens of businesses with resulting serious deleterious effects on the remainder of the community — let alone the residents and businesses displaced. Finally, the "acquisition" area selected by Chicago proposes to destroy the largest supply of affordable housing for low and moderate income families in DuPage County — a housing supply that will be very difficult to replace within DuPage County.[3] 17

**B. Injury to the Religious Objectors.**

The injury to the Religious Objectors from the OMP (including Phase I of the OMP) centers on the destruction of two religious cemeteries, St. Johannes Cemetery and Rest Haven Cemetery. As described in counsel's prior letters to the FAA dated January 16, 2004, May 4, 2004, and July 22, 2004 (copies enclosed as

[2] The affidavits were provided to the FAA by counsel for the Religious Objectors in letters dated January 16, 2004 and May 4, 2004.

[3] Beyond the "acquisition" area, Chicago and the FAA have refused to address the obvious need for major road construction outside the "acquisition" area to provide land (surface transportation) access for the large increase in passenger enplanements projected for the OMP. The Eastern access to the airport (the only current access) is already stressed with congestion at current levels. There has been no demonstration that the projected surface traffic associated with the projected enplanement growth can be handled without construction of a so-called "by-pass" expressway or "ring road" to enable traffic to use the western side of the airport without causing major traffic congestion on already congested local roads.

| Comment | Response |
|---|---|
| 17 | As described in **Chapter 5** of this EIS where reasonably foreseeable impacts arising as a result of OMP approval are discussed, the FAA disagrees with the commenter's prediction of significant adverse consequences on the physical, social, and economic aspects of Bensenville and Elk Grove Village. Also see response to comment 152 of *Karaganis-Cohn's April 6, 2005* comments on the DEIS, on page U.4-469. |
| 18 | In response to this comment and others, the FAA has added **Section 5.22** to **Chapter 5** of the EIS for the FAA's discussion of legal issues involving potential relocation of St. Johannes and Rest Haven Cemeteries. |

| Comment | Response |
|---|---|
| 18 | Please see the response to this comment on the previous page. |

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Attachments 1-3 of this submission), approval of OMP Phase I by FAA would result in the destruction of these two religious cemeteries.

For the reasons set forth in our earlier correspondence to the FAA (and in the detailed uncontested affidavits accompanying those letters), the proposed destruction of these religious cemeteries would impose a "substantial burden" on the exercise of religion by the Religious Objectors.[4] Approval by the FAA of the destruction of the two religious cemeteries by approving the OMP would blatantly and illegally discriminate against these religious cemeteries, by stripping them of the religious legal protections afforded all other religious institutions (including religious cemeteries) in the State of Illinois. Such destruction and discrimination would violate the substantive constitutional protections of the First Amendment Free Exercise Clause, the Equal Protection component of the Fifth Amendment and the federal Religious Freedom Restoration Act ("RFRA"). 42 U.S.C. § 2000bb *et seq.*[5] In addition, the liberty and property interests of these Religious Objectors are protected by the procedural and substantive guarantees of the Due Process Clause.

Under the Constitution and the federal RFRA, the FAA must demonstrate:

1) a compelling governmental need to destroy the religious cemeteries, and
2) the absence of an alternative means to accomplish the governmental need without destroying the religious cemeteries before:

A. the FAA makes its decision as to whether to approve the proposed changes in the Airport Layout Plan submitted by Chicago for the OMP. That approval, if given, will lead to the destruction of the religious cemeteries.

B. the FAA makes its decisions on Chicago's AIP funding requests — both as to "entitlement" funds and LOI discretionary funds. Without

[4] A summary of how the destruction of the cemeteries and the removal of the graves from these religious cemeteries will cause substantial injury to the religious beliefs and practices of the Religious Objectors is enclosed as Attachment #4 to this letter.

[5] That statute provides in pertinent part:

"Government shall not substantially burden a person's exercise of religion even if the burden results from a rule of general applicability, except as provided in subsection (b) of this section."

***

"(b) Exception
Government may substantially burden a person's exercise of religion only if it demonstrates that application of the burden to the person--
(1) is in furtherance of a compelling governmental interest; and
(2) is the least restrictive means of furthering that compelling governmental interest."
42 U.S.C. § 2000bb-1 (emphasis added).

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FAA AIP funds, Chicago cannot proceed with Phase I and cannot destroy the religious cemeteries.

C. the FAA makes its decisions on Chicago's proposed funding authorization requests for Phase I and the remainder of the OMP. Without FAA authorization of PFC funds, Chicago cannot proceed with Phase I and cannot destroy the religious cemeteries.

D. the FAA makes its decisions as to whether to approve the elements of the OMP — including the elements in Phase I — in the NPIAS-CIP. Without the FAA's inclusion of Phase I or the remainder of the OMP in the NPIAS-CIP, the FAA cannot provide AIP funding; and Chicago cannot build Phase I and cannot destroy the religious cemeteries.

As discussed below, the FAA cannot make such determinations because there is no demonstrated governmental need to destroy these religious cemeteries and there are alternatives to meet any asserted governmental need — alternatives which would not destroy these religious cemeteries. 18

**C. Injury to the Homeowner Objectors.**

Roxanne Mitchell is a homeowner in the acquisition area and represents the homeowners who object to the OMP. She and the other homeowners have property interests protected by the Fifth Amendment constitutional guarantees of procedural and substantive Due Process. 19

**IV. The FAA Must Consolidate the ALP, AIP, PFC and Related FAA Adjudicatory Decisions For Contemporaneous Consideration and Decision.**

Chicago is pursuing a procedural path that would allow the City to destroy Objectors' properties before FAA determines the merits of the OMP. First, the City seeks to have the FAA make a narrow technical decision on the City's ALP approval request. That decision will in turn lead to the immediate acquisition and destruction by the City of Objectors' properties and injury to Objectors' constitutional rights. Finally, then and only then, after the acquisition and destruction of Objectors' properties has become a *fait accompli*, will the FAA address the critical (and unachievable) OMP funding decisions on Chicago's AIP and PFC funding requests.

The Objectors believe that such a piece-meal approach — to permit the destruction of Objectors' properties and constitutional rights before the FAA has decided the merits of the OMP and whether the OMP project (or Phase I) meets the statutory requirements and qualifies for federal AIP and PFC funding

| Comment | Response |
|---|---|
| 18 | Please see the response to this comment on page U.4-220. |
| 19 | The FAA is providing to all those who have expressed interest or concern regarding the OMP with the full measure of administrative process required by law. Also see response to comment 22 of *ShawPittman's June 27, 2003* letter, document number 030627_01, on page U.4-68. |
| 20 | The FAA addresses the commenter's claims of procedural and due process violations in **Section 5.23** of the Final EIS. |

assistance — is contrary to law, to sound FAA policy and to the fundamental rights of the Objectors.

If the FAA ultimately determines that the City is not entitled to the substantial AIP (and PFC) authorizations the OMP requires, as it should for the reasons discussed below, the OMP will not proceed as proposed, and the destruction of the communities and the religious properties will have needlessly occurred with the FAA's full knowledge, concurrence, and assistance.

The statutory framework described above requires the FAA to conduct a comprehensive inquiry before it takes action on the ALP, AIP, PFC and NPIAS decisions relating to the OMP. In the context of the OMP, the statute requires the FAA to examine the entire merits of the OMP (including ALP and AIP funding issues) to determine whether the six-runway preferred plan proposed by the City is viable, whether or not it will achieve its touted objectives and whether its benefits (which are small) will outweigh the costs (which are enormous).

Failure to consider all facets of the OMP will substantially prejudice the Objectors and the FAA's decision-making. If the FAA approves the ALP prior to evaluation of the AIP funding requests, the ALP approval will create a *fait accompli* as to the destruction of the communities and properties of the Objectors, fundamentally and irreversibly changing the impacts on the Objectors which the FAA is required to examine as part of the benefits-cost analysis for an AIP grant award.

By destroying the properties based on the ALP decision, the City, with the FAA's approval, will effectively make it impossible for FAA to take a hard look at the full "costs" of the OMP, which by necessity must include the potential destruction of the properties and the communities, as well as alternatives to such destruction. This will prejudice the FAA's AIP cost-benefit evaluation to the detriment of the Objectors. If the FAA ultimately determines that the City is not entitled to the substantial AIP (and PFC) authorizations it requires, the OMP will not likely proceed as proposed, and the destruction of the communities and the religious properties will have needlessly occurred with the FAA's full knowledge and concurrence.

Such a piecemeal approach has been rejected by the federal Courts. In *Old Town Neighborhood Assoc. v Kauffman*, 333 F.3d 732 (7th Cir. 2003), the Court of Appeals for the Seventh Circuit rejected a "two-step" process under which a proposal by a City to widen a road (Third Street in Goshen, Indiana), without preparation of an environmental evaluation, was determined to have been improperly piecemealed from a potential federally funded project. The Court noted:

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"What concerned the district judge is the possibility that Goshen will seek reimbursement [from the Federal Highway Administration] after the fact—either in cash or in money's worth, such as a swap of Third Street for land now owned by the federal government. Once the historic structures have been razed, the Secretary [of Transportation] could certify that the federal approval or expenditure does not affect any historic site, for none would be standing. That two-step process would subvert federal laws." Id. at 736 (emphasis added).

The Court's remedy was to direct the federal District Court to permanently enjoin the City from accepting directly or indirectly any federal funds, including by reimbursement, for construction and widening of the road.[6] Here, if the FAA approves the ALP before considering the merits of the funding applications, the City should either be prohibited from acquiring and destroying the properties until the FAA has evaluated the AIP and PFC applications or be prohibited from receiving any federal funding authorizations (including AIP and PFCs) for the OMP.

For the foregoing reasons, the Objectors submit that the FAA is required to examine and decide the AIP and PFC funding and ALP approval issues on a concurrent coordinated basis before the FAA allows Chicago to undertake any acquisition and destruction of the communities and the religious cemeteries. 20

**V. FAA Approval of the OMP (or Phase I) Will Violate Constitutional, Statutory, and Regulatory Requirements.**

**A. The Constitutional and Statutory Protections for the Religious Objectors Prohibit the FAA From Approving or Funding the OMP (including OMP Phase I).**

The OMP, including Phase I of the OMP, calls for the destruction of both St. Johannes and Rest Haven Cemeteries and as a result will impose a "substantial burden" on the religious practices and beliefs of the Religious Objectors. Both the First Amendment Free Exercise Clause and the federal Religious Freedom Restoration Act prohibit the FAA from approving or funding the construction of the OMP — or Phase I — without first affirmatively demonstrating that there is:

1) a compelling governmental need to destroy the religious cemeteries for the OMP, and

[6] See District Court Injunction Order in *Old Town Neighborhood Assoc. v Kauffman*, 2003 U.S. District Court LEXIS 14567 (August 12, 2003).

| Comment | Response |
|---|---|
| 20 | Please see the response to this comment on page U.4-222. |
| 21 | As noted in response to comment 7, the FAA has also added **Section 5.22** to **Chapter 5** of the EIS for the FAA's discussion of legal issues involving potential relocation of St. Johannes and Rest Haven Cemeteries.<br><br>With respect to the LOI-related comments, as noted earlier in response to comment 19 of *ShawPittman's June 27, 2003* letter, document 030627_01, on page U.4-65, consideration of Chicago's LOI application is outside the scope of this NEPA process. |

2) that the OMP is the "least restrictive means" (i.e., that there is no available alternative to meet that governmental need that would not destroy the cemeteries).

The FAA cannot meet the burdens of the First Amendment Free Exercise Clause or the federal RFRA.

There is already sufficient evidence in the public arena to demonstrate that the FAA cannot meet those burdens. First, the purported purposes of the OMP — and Phase I — are: 1) to "mitigate existing delays" and, 2) to provide "long-term capacity growth consistent with potential needs" (March 4, 2004 City of Chicago LOI application page 1-1).

As to the "governmental need" to mitigate existing delays, Chicago and the FAA have already acknowledged that there is no compelling need to destroy these religious cemeteries. As this Summer's delay situation at O'Hare amply demonstrates, much of the so-called "delay" problem at O'Hare stems from the airlines' deliberate over-scheduling of flights — a self-inflicted business problem created by the airlines. The self-infliction of delays because of over-scheduling by the airlines hardly demonstrates the compelling governmental need required by the First Amendment and the federal Religious Freedom Restoration Act.

Moreover, as discussed in detail below, neither Phase I nor the entire OMP will alleviate delays and congestion. To the contrary, the OMP will likely increase delays and congestion.

Significantly, there are several alternatives that would accomplish reduction in delays and congestion which would not require the destruction of the religious cemeteries.

First, Chicago itself has acknowledged that several studies performed by the FAA and Chicago (*e.g.*, the 1991 and 2002 "Delay Task Force" studies) have shown that "<u>several options were available to reduce delays</u>" (March 4, 2004 City of Chicago LOI application page 1-1, emphasis added). None of these other options, which Chicago has acknowledged would reduce delays, would destroy the religious cemeteries. In fact, as discussed below, the recommendations of the Delay Task Force have the potential to produce increases in operations equivalent to the maximum level of operations which the OMP would produce, without destroying the cemeteries.

Second, the demand management practices imposed by the FAA this Summer at O'Hare and at other congested airports such as LaGuardia and Reagan National demonstrate that there are non-structural alternatives that can swiftly eliminate the problem. These demand management controls would reduce delays without destroying the religious cemeteries. The DOT and the FAA currently have under consideration market based alternatives to relieve airline flight delays

and congestion at the nation's busiest airports. See DOT Docket OST-2001-9849 and FAA Docket 2001-9852/9854.

Finally, there are off-airport alternatives to relieve delays/congestion and bolster regional capacity, including using excess capacity at other existing airports or building new airport facilities at other locations in the metropolitan Chicago area. The report recently issued by the FAA suggests that when existing airports in metropolitan areas such as Chicago reach capacity, traffic growth should be accommodated at new airport facilities.[7] One of these new facilities would be the proposed South Suburban Airport.

**B. Chicago's Requests for ALP Approval Fail to Meet the Statutory Requirements Under 49 U.S.C. Subtitle VII for FAA Approval of Either the Full OMP or Phase I.**

The Community and Religious Objectors previously filed objections to the City's request for approval of the Airport Layout Plan ("ALP") for the OMP. See, letters dated January 16, 2004 filed by JDA Aviation Technology Solutions on behalf of the Community Objectors ("JDA ALP Objections") and the letter dated January 16, 2004 filed by Karaganis White & Magel on behalf of the Religious Objectors. In addition the Religious Objectors sent the FAA additional correspondence on their objections on May 4, 2004 and July 22, 2004. The Community and Religious Objectors hereby adopt and incorporate by reference herein those previously submitted objections.

**C. Chicago's Requests for AIP Funding for Either the Full OMP or Phase I Fail to Meet the Statutory Requirements Under 49 U.S.C. Subtitle VII.**

Chicago has stated that it will seek large amounts of AIP funding for the full OMP and will seek both discretionary and entitlement AIP funding for Phase I. Neither the full OMP nor Phase I qualify for AIP funding.

**1. Chicago Continues to Refuse to Produce and Disclose Detailed Cost Estimates and a Detailed Financial Plan as to How Chicago Will Pay for the OMP.**

The City of Chicago has refused to disclose: 1) the full costs of the OMP and related capital projects, and 2) Chicago's plan to pay for the OMP and related capital projects. Central to virtually all of the FAA decisions with respect to the

[7] *Capacity Needs In the National Airspace System* (U.S. DOT-FAA-MITRE June 2004). It has been suggested by Chicago that this study concluded that the full OMP could meet capacity needs for O'Hare in the year 2020. That is not what the study found. Moreover, neither the FAA nor Chicago can fund the full OMP and even under the capacity analysis approach used in the 2004 U.S. DOT-FAA-MITRE study, it is likely that Phase I would fail the capacity screening approach used in that report.

OMP is the question of how much the OMP and related projected capital projects proposed at O'Hare will cost. Chicago has refused to produce a complete current quantity and unit cost estimate of the entire cost of constructing the various facilities which Chicago says are necessary to accomplish the asserted benefits of the OMP.

By way of example, Chicago has now acknowledged that most of the terminal components of the so-called "World Gateway Program" ("WGP") are necessary in order for Chicago to handle the projected increase in passenger volume at O'Hare. These terminal costs are not included in the City's oft-repeated claim that the OMP will cost "6.6 billion" dollars. It is also reported that the "majority in interest" airlines have declined to give their approval to the WGP terminal components and have not provided approvals for the issuance of General Airport Revenue Bonds ("GARBs") for these WGP facilities. In addition, Chicago has yet to demonstrate (1) that the surface road access facilities necessary to support the City's projected passenger volume will be constructed, 2) the cost of such construction, and 3) how such construction will be financed.

Without such comprehensive cost estimates, it is impossible for the FAA to make rational and lawful decisions on the City's OMP approval requests.

Similarly, Chicago has refused to disclose its financing plan as to how it will finance (pay for) the OMP. The statute requires the FAA to find that the City has "the financial commitment from non-United States government sources" and enough money available to pay the project costs "from non-federal sources" to finance the OMP. Without disclosure of the detailed financial plan, it is impossible for the Objectors to address and for the FAA to make rational and lawful decisions with respect to whether the OMP meets all statutory requirements.

**2. Chicago's March 1, 2004 Application for an LOI Discretionary Approval for Phase I Does Not Meet Statutory Requirements.**

The FAA cannot award an LOI discretionary AIP grant for Phase I of the OMP. Accordingly, the City's March 1, 2004 application for an LOI grant should be denied.

Section 47110(e) of Title 49 United States Code authorizes the Secretary to issue LOIs with respect to projects that:

- "will comply with all statutory and administrative requirements that would apply to the project if it were carried out with amounts available under this subchapter [49 U.S.C. Chapter 471, Subchapter I]",
- meet the criteria of 49 U.S.C. § 47115(d), and,

- at a commercial service airport having at least 0.25% of the boardings each year at all such airports, the project will enhance system-wide airport capacity significantly.

Section 49 U.S.C. § 47115(d) lists the criteria for granting AIP discretionary funds and requires the Secretary to consider:

i. "the effect the project will have on the overall national air transportation system capacity";

ii. "the project benefit and cost";[8] and

iii. "the financial commitment from non-United States government sources to preserve or enhance airport capacity."

Chicago's March 1, 2004 LOI application for Phase I fails each and every one of these statutory requirements:

1. **Chicago has not provided any showing of the benefits (or costs) of Phase 1**. The City has failed to submit a benefit-cost analysis for Phase 1 and therefore, its LOI request is defective.[9]

2. **The benefits claimed by the City for Phase 1 are the benefits claimed for the <u>entire OMP and the related WGP</u>**. Chicago cannot have it both ways. It cannot limit its initial funding request to only a small segment of the overall project while claiming the economic benefits of the entire project and at the same time ignoring the costs and lack of financial viability of the entire OMP project.

3. The **Phase I runway configuration was actually rejected by the City as a viable alternative because it would result in "excessive delays and gridlocks."** Thus, the City's own Master Plan states at Section 5.1.4, page V-42:

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[8] This requirement means that the project benefits must exceed the project costs. 64 Fed Reg. 70107 (December 15, 1999).

[9] The City's transmittal letter indicates that the benefit cost analysis will be submitted when the simulation modeling for the EIS is completed. Until the benefit cost analysis is submitted and subject to the scrutiny of comments by interested parties, the LOI application is defective and not ripe for consideration. Preparation of an early BCA is required by FAA policy. 62 Fed. Reg. 34110 (June 24, 1997), which sets forth policy and guidance regarding benefit cost analysis, states that the FAA believes -

> "for BCA to be effective it has to be accomplished early in the airport planning process by the airport sponsor. This enables the airport sponsor to use the BCA in the alternative selection process at a time when the BCA still has value. If the BCA is delayed until just before the airport sponsor requests discretionary AIP funds, many alternatives may not be considered because the planning process will have progressed to the point of excluding previously feasible pathways."

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"...Option 1 [which is LOI Phase 1] reaches excessive delays and gridlocks in certain configurations between PAL 1 and PAL 2 demand levels. As a result, Option 1 was eliminated from further consideration." (emphasis added).

Clearly Phase 1 does not meet the statutory requirement that the proposed development "enhance system-wide airport capacity significantly." 21

4. **Phase I violates the FAA's capacity standards for projects to be included in the NPIAS.** The FAA's own Orders and guidelines state that an airport is deemed congested when average delays exceed 5 minutes per operation:

(i) **"Annual Capacity.** Annual Capacity or Annual Service Volume, as reported in the NPIAS, is the level of annual activity at which the average delay per operation is 4 minutes."

FAA Order 5090.3C, Field Formulation of the National Plan of Integrated Airport Systems, p. 20 (emphasis added).

(ii) "Experience shows that delay increases gradually with rising levels of traffic until the practical capacity of an airport is reached, at which point the average delay per aircraft operation is in the range of 3 to 5 minutes. Delays increase rapidly once traffic demand increases beyond this level. An airport is considered to be congested when average delay exceeds 5 minutes per operation. Beyond this point delays are extremely volatile, and a small increase in traffic, adverse weather conditions, or other disruptions can result in lengthy delays that upset flight schedules and impose a heavy workload on the air traffic control system."

FAA National Plan of Integrated Airport Systems (NPIAS) (1998-2002), p. 10 (emphasis added).

The City itself acknowledged in its LOI application that

"According to the *FAA's National Plan of Integrated Airports Systems (NPIAS), March 1999*, and the *BCA Guidance*, an airport is at practical capacity when the average annual delay reaches a range of 4 to 6 minutes per operation"

| Comment | Response |
|---|---|
| 21 | Please see response to this comment on page U.4-224. |
| 22 | Please see the response to comments 43-87 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-525 of this appendix. |

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Chicago March 2004 LOI Application, page II-14 (emphasis added).

According to Chicago's own simulation analysis, Phase I produces delays of 5.2 minutes per operation at current levels of operation and will produce 11.6 minutes of delay at the 2016 projected levels of operation -- 1.12 million operations (and very high bad weather delays). 22

5. **The City's LOI request is premature**. The LOI policy expressly states that "federal environmental findings must be complete and the project work must be imminent." 59 Fed. Reg. 54483. The work on the environmental impact statement has essentially just begun, it clearly is not complete and the project is demonstrably not "imminent." Since the LOI is defective, it cannot be considered during the current fiscal year. Id. 23

6. **Phase I does not meet the "compelling need/absence of an alternative" requirement of the First Amendment Free Exercise Clause and federal RFRA.** For the reasons discussed above, there is no compelling need to destroy the religious cemeteries and there are less destructive alternatives. 24

For all of these reasons, Chicago's March 1, 2004 Phase I application should be denied.

3. **The OMP as a Whole Will Not Meet Statutory AIP/PFC Requirements.**

a. **The FAA Cannot Lawfully Provide AIP and PFC Approvals for the Full OMP Because the City Cannot Demonstrate that There is Sufficient Funding for the OMP from Non-Federal Sources.**

A central requirement of AIP funding approvals under that statute is that "enough money is available to pay the project costs that will not be paid by the United States Government under this subchapter." 49 U.S.C. § 47106. Enough is known now to establish that Chicago cannot pay for the OMP and that, therefore, the FAA cannot provide either AIP or PFC funding for the full OMP. Without a demonstration that there is sufficient funding from non-AIP sources to fund the full OMP, the FAA cannot approve the OMP for either AIP or PFC funds.[10]

[10] In order for a project to receive PFC authorization, a threshold question is whether the proposed project for PFC authorization is eligible under the AIP program. If the project is not eligible for an AIP grant, it is not eligible for a PFC authorization.

| Comment | Response |
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| 22 | Please see the response to this comment on the previous page. |
| 23 | Please see response to comment 21 on page U.4-224. |
| 24 | In response to this comment and others, the FAA has added **Section 5.22** to **Chapter 5** of the EIS for the FAA's discussion of legal issues involving potential relocation of St. Johannes and Rest Haven Cemeteries. |

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There are several reasons why Chicago cannot generate sufficient funds for the full OMP. First, Chicago's OMP financing plan requires an increase in the maximum PFC charge authorized by statute from $4.50 to $6.00. This will require a change in law; one that the airlines would resist. Second, Chicago's plan calls for use of "special facility" bonds — a financing device that is problematical in light of United Airlines default on the special facility bonds at the existing United Terminal at O'Hare. Third, there have been reports that American Airlines has refused to give "majority in interest" approval for the WGP terminal component of the OMP.[11] These are but a few of the reasons why Chicago has, as a threshold matter, failed to demonstrate that the OMP can be financed as required by §47016. (See also discussion in sections 3 b. and c., 4, and 5 below for additional reasons why the full OMP cannot and should not be approved.) 25

**b. The Public Relations Claims of Chicago Have No Substantiation.**

Chicago continues to repeat a public relations mantra that: 1) the OMP will provide capacity for 1.6 million operations and 76 million passengers; 2) the OMP will reduce bad weather delays by 95% and all weather average delays by 79%; 3) the cost of the OMP is only $6.6 billion dollars; 4) the OMP will create 179,000 jobs and 5) the OMP will generate 15-18 billion dollars of additional economic development for Chicago.

The City persists in its benefits incantation despite the fact that its claims have no factual support and have been completely repudiated. Indeed, the record demonstrates that the OMP project will have the opposite effect and will actually increase delays and congestion, will significantly reduce safety margins, will result in costs far exceeding the few (if any) benefits, and is economically infeasible.

Chicago has failed to submit any evidence in support of any of these claims. The Objectors have asked the FAA to produce any evidence that Chicago has submitted to support these unfounded claims and any evidence in the FAA's possession that supports these claims. To the Objectors' knowledge, these claims are little more than unsubstantiated hot air — repeated *ad nauseam* to deflect the lack of justification for the project and the severe problems faced by the project. 26

**c. The OMP Fails the Benefit-Cost Requirements for Discretionary AIP Funding.**

The statutory cost-benefit test requires credible and substantial evidence that the benefits exceed the costs. Despite Chicago's continued withholding of

[11] The legal status of Chicago's February 28, 2002 Request for Federal Funding Letter of Intent for the World Gateway Project is unclear. To the extent the request is still pending, the Objectors assert that the Request should be denied for a variety of reasons, including the failure to demonstrate that sufficient non-federal funds will be available to pay for the project.

| Comment | Response |
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| 25 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |
| 26 | The FAA independently prepared its EIS outside of any public relations claims stated by the City. |

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critical data, it is clear that the costs of the OMP will far exceed the limited benefits. 27

**(i) The Costs of the OMP are Too High.** The City claims that the cost of the OMP is only $6.6 billion. However, the City of Chicago has failed to produce a current comprehensive estimate of the total costs of the OMP and related projects.

News media reports issued when the Master Plan was released indicated that Chicago acknowledged the current cost estimate to be $14.8 billion. However, there is no way to construct or replicate that figure from the February 2004 Master Plan or any other public document.

Moreover, the cost figures for the OMP in the Master Plan are inconsistent and out-of-date – mixing outdated figures with one estimate (e.g., 1999 dollars for WGP) with outdated figures from another estimate (OMP year 2001 dollars). Chicago should be compelled to provide the FAA and the public — and the Objectors as opposing parties — with a current, detailed quantity and unit cost estimate for the entire OMP project, including all ancillary elements and future costs which Chicago will face. This cost estimate should include the cost for any related road construction including the cost of the "ring road" and its route to connect to I-294. Also missing are the calculations showing the airline financial burden under a variety of alternative financing scenarios — including the unavailability of some or all of the AIP and PFC funds Chicago says are needed for the project.

The $6.6 billion figure used by the City is a contrived number that has no basis in fact. The Community Objectors commissioned Global Aviation Associates to prepare a preliminary study of the cost and economic impacts of the OMP (the "GAA Study"), a copy of which is attached as Attachment #5 and incorporated by reference herein. The GAA Study conservatively estimates that the cost of the OMP will be at least $14.7 billion. In fact, GAA's analysis is highly favorable to the City because it accepts the City's costs at face value and simply adjusts those costs to year 2004 dollars. In addition, GAA applied a very conservative component for likely cost overruns of only 25%.[12]

Moreover, as stated in the ALP objections filed by JDA, the City's asserted cost projections exclude a number of critical cost components that must be built to accommodate the projected increased traffic such as, for example, the full costs of the World Gateway terminal Project, surface road improvements, including the so-

[12] 25% is an extremely low amount for capital cost overruns. Major airport construction projects generally experience much higher cost overruns. For example, Denver International Airport went over-budget by over 180%.

| Comment | Response |
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| 27 | The BCA is part of the LOI, which as noted in response to comment 21, is outside the NEPA process. |
| 28 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix.<br><br>Also, in response to comment 47 on page U.4-235 below, the FAA has responded further to the comments regarding the study prepared by Global Aviation. |

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called western access and ring road. JDA estimates that the total cost of the OMP will exceed $25 billion.[13] 28

**(ii) The OMP will produce few benefits: it will not increase capacity and will not reduce delays.** The City asserts that OMP will accommodate 1.6 million operations per year. This claim is not only unsubstantiated, it has been completely repudiated by the City's own consultants.

The City acknowledges in its LOI application that:

> "According to the *FAA's National Plan of Integrated Airport Systems (NPIAS), March 1999*, and the *BCA Guidance*, an airport is at practical capacity when the average annual delay reaches a range of 4 to 6 minutes per operation"
>
> Chicago March 2004 LOI Application, page II-14 (emphasis added).

The FAA NPIAS handbook states that an airport reaches its practical capacity when delays reach 4 minutes per operation and that an airport is considered congested when the airport reaches 5 minutes per operation. According to Chicago's own forecast, demand will reach 1.12 million operations — and the O'Hare OMP will reach its practical capacity — in the year 2016 – ***less than three years after the OMP opens***.

Comparing the City's forecast operations level with the delays shown in the Ricondo analyses demonstrates the following. The delay simulation study prepared and published by the City's consultant, Ricondo & Associates, in January 2003, as updated in September 2003, and the City's Master Plan, indicate that the OMP will reach its practical capacity (with an average of 4.5 minutes of delay per operation) with the OMP at only 1.12 million operations per year. At 1.33 million operations per year, the OMP delays reach 10.9 minutes per operation.[14] See, Executive Summary of the Delay Task Force Study, page 2, Table 1, which shows that the so-called Option 5A (which is the City's preferred 6-runway OMP design)

[13] Objectors emphasize that the GAA and JDA cost estimates are preliminary in nature because Chicago has failed to release detailed quantity and unit cost information on Chicago's likely capital costs. Objectors believe that the GAA and JDA estimates will be confirmed when Chicago is required to provide FAA and the Objectors with detailed quantity and unit cost information.

[14] September 11, 2003, *Runway 12/30 Proof-of-Concept Evaluation* prepared by Ricondo & Associates, updated Ricondo's January 2003 study, which showed 4.1 minutes of average delay. (See Ricondo & Associates Study, January 2003, Table VI-2, page VI-5. This shows that at Passenger Activity Level (PAL) 1 (i.e., 1.12 million annual operations), the OMP will experience 4.1 minutes of average daily aircraft delay.) The September study changed 4.1 minutes of delay to 4.5 minutes of average delay per operation.

| Comment | Response |
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| 28 | Please see the response to this comment on the previous page. |
| 29 | Many of the modeling results cited by the commenter have since been supplanted by more recent modeling using refined inputs. The modeling methodology and results are contained in **Appendix D** of the EIS.<br><br>While the modeling results cited by the commenter are no longer current, the general contexts of the commenter's assertions are addressed below. The commenter generally asserts that: 1) the delay reduction is inadequate, 2) that in the decade after the EIS study period, geometric growth in activity will cause unacceptable delays, and 3) there is inadequate airspace to effectively utilize the proposed improvements.<br><br>The delays at O'Hare exceed that for any airport in the U.S. The proposed OMP would significantly reduce the average annual delay per aircraft operation. While the commenter indicates they would prefer a more ambitious project, this EIS only considered alternatives deemed prudent and feasible.<br>The forecast used in the EIS does not predict the activity level reaching 1.3 million operations in any year of the study period; the period deemed reasonably foreseeable. The source cited by the commenter identifies such an activity level (PAL2) occurring in 2030 – following 12 years of geometric growth in activity after the EIS study period. It is likely that any facility accommodating geometric growth in demand will eventually reach capacity; however, as indicated in the study cited by the commenter, this is expected to occur well beyond the study period.<br><br>This comment is based on the FAA's NPIAS guidelines practical capacity at 4 minutes of delay per operation and congestion at 5 minutes per operation. While these guidelines are reasonable planning goals for airports in general, such limits are generally exceeded at major air carrier hub airports such as O'Hare. **Appendix E** of the DEIS presents a comprehensive description of all the major delay criteria that have been defined in previous NEPA studies and available FAA documents and recent decisions. Those criteria range from the two cited by the commenter to much higher delay criteria that apply to major hub airports. Current delay levels at O'Hare have exceeded the NPIAS criteria for many years. Previous NEPA studies have used average delay criteria of 6, 8, and 10 minutes per operation. The other more meaningful criteria are in the range of 10 to 20 minutes of delay per operation. In recent years, average delays at O'Hare have been on the range of 10 to 15 minutes per operation. The FAA Airport Benefit-Cost Analysis Guidance suggests a maximum delay of 15 to 20 minutes per operation be used in benefit-cost studies. In late 2003, monthly average delays in excess of 20 minutes per operation were reported for O'Hare, and such levels triggered the FAA Actions in early 2004 to limit operations at the Airport. Therefore, the criteria used in the commenter's comments are inappropriate for airports like O'Hare. |

| Comment | Response |
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| 29 | Please see the response to this comment on the previous page. |
| 30 | Please see the response to this comment on the following page. |

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will produce 4.5 minutes of average aircraft delay per operation at PAL 1 (1.12 million operations per year). At 1.3 million operations per year (PAL 2) the amount of delay increases to 10.9 minutes per operation.

The full OMP just meets the definition of capacity limits (4.5 minutes per operation) in the year 2016, with delays increasing significantly over the next decade. In short, using the FAA's definition of practical airport capacity, the full OMP only provides 1.12 million operations capacity and reaches that capacity limit within three years of completion.

After 2016, even with slow traffic growth, the OMP reaches very high and increasing levels of delay. While only predicting a growth of overall operations to 1.3 million in 2030, delays at that point will be almost 11 minutes (10.9 minutes) on average (more than 250% higher than FAA's definition of practical airport capacity). Bad weather delays with the full OMP will reach levels exceeding 30 minutes on average (Ricondo Simulation analysis at Appendix C) (meaning that peak bad weather delays will far exceed that amount).

The bottom line, from the City's own analysis, is that the OMP will allow for, at most, only about 200,000 more flights before O'Hare reaches its effective capacity. At 1.12 million operations, O'Hare will produce almost 5 minutes average delay, and at 1.3 million annual operations, O'Hare will produce almost 11 minutes average delay.

Moreover, the City's studies assumed no airspace congestion limitations. See, Master Plan, page IV-2, footnote 4 which completely ignores airspace limitations: "The discussion and analysis presented here assumes that limitations imposed by airspace constraints will be addressed in the National Airspace Redesign effort underway by FAA."

Thus, without even considering airspace limitations, the proposed OMP will produce delays equal to or greater than the current O'Hare configuration. Moreover, with more flights and passengers at O'Hare, the impact of delays on consumers and airlines will be even greater than today. It makes no sense for the FAA to authorize funding for a mega-billion dollar project that produces little if any effective additional capacity and increases the likelihood of flight delays. 29

**(iii) Airspace is the Constraining Factor.** According to JDA and Mitre, airspace, not runways, is ***the*** constraining factor at O'Hare. *See*, JDCALP Objections.

O'Hare airspace is among the most congested in the country. This conclusion was confirmed by a recent FAA/Mitre study issued on January 30, 2004 entitled "The O'Hare Effect on the System." (Copy attached as Attachment # 6). That study shows that Chicago airspace is highly congested ("with the airspace consistently full of ORD traffic, there are more frequent opportunities for

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airborne holding to occur initiated by unexpected events"; Id., Chart 11), that adding flights at ORD will further increase Chicago airspace congestion, and that Chicago congestion "due to full overhead ORD arrival streams" impacts other airports throughout the country.

Adding and/or reconfiguring runways will not ameliorate O'Hare's airspace limitations. The City's Master Plan acknowledges that airspace imposes limitations on O'Hare operations, but blithely dismisses the critical airspace constraint by simply punting the issue to the FAA: "The discussion and analysis presented here assumes that limitations imposed by airspace constraints will be addressed in the National Airspace Redesign effort underway by FAA." Master Plan, Page IV-2, footnote 4. However, the FAA's Airspace Redesign effort is a national program not specifically focused on O'Hare and has been underway for years. The FAA will not be able to wave a magic wand over O'Hare to remedy O'Hare's airspace limitations.

Even if airspace was not a limitation, the discussion in the immediately preceding subsection shows that the OMP will not reduce delays or increase capacity. The constricted runway configuration proposed for the OMP leaves a significant discrepancy between good weather and inclement weather throughput — leading to large delays and severely limited increase in overall capacity. But when one adds in the problem of congested airspace, even the most optimal runway configuration at O'Hare could not handle the traffic projected because of the controlling airspace limitation. 30

**4. The OMP Will Produce Adverse Economic Consequences: Massively Increasing Airline Costs, Resulting in Reduced Airline Service and Loss of Businesses and Jobs to the Region.**

The Global Aviation Associates ("GAA") study commissioned by the Community Objectors demonstrates that OMP will increase airline costs of serving O'Hare from $9.00 per enplaned passenger to almost $27 per enplaned passenger, an increase of nearly 200%. This would make O'Hare among the most expensive airports in the nation, if not the world.

Airlines in the post-September 11 timeframe are struggling financially and committed to reducing operating costs at all levels. The OMP would increase the carriers' airport cost/revenue ratio from 5.4% to an "unacceptable" 13.4%. GAA Study at ES-3 and p. 33. The airlines simply will not bear cost increases of the magnitude that will result from the OMP. To cover these costs, they will have to raise fares. However, the ability of O'Hare carriers to raise fares is problematic in the current and future highly competitive environment, especially when there are many nearby low fare options available.

| Comment | Response |
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| 30 | Throughout the development of the OMP, FAA air traffic specialists have worked closely with the OMP development team and have proposed terminal airspace expansions and procedures specifically designed to serve the OMP runways. Several potential airspace bottlenecks have been identified and resolved. For example, real-time simulations have been used to test the feasibility of adding two new departure routes to the east through the Cleveland Center, which would alleviate one of the most significant identified airspace bottlenecks. Specific plans have been developed for expanding the terminal airspace and adding new arrival and departure routes into and out of the Chicago TRACON airspace and the adjacent ARTCC airspace areas. |
| 31 | The comment refers to a study prepared by Global Aviation Associates (GAA). The GAA study reports that the cost of the proposed OMP will result in increased costs to the airlines serving O'Hare. It is certainly expected that this will be the case, but it is also expected that implementation of the proposed OMP will result in reduced aircraft delays (in comparison to a "no action" scenario), and therefore reductions in airline operating costs associated with such delays. Major airlines serving O'Hare have indicated their support for the OMP, citing the benefits of (a) ability to serve growing demand and (b) opportunity to avoid delay costs.<br><br>The comment also suggests that the cost of the OMP will result in reduced airline service at O'Hare. FAA believes that it is unlikely that investment in capacity expansion at O'Hare would result in reduced airline service. O'Hare is one of the world's largest hubs, and airlines have indicated their willingness to participate financially in capacity expansion at O'Hare due to the significant revenue opportunities in one of the world's largest aviation markets.<br><br>Continued on the following page. |

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Higher fares will drive away airline services and passengers from O'Hare. Airlines and consumers have options. Airlines will funnel connecting passengers over other less costly hubs. Connecting passengers that now use O'Hare for transit to/from other points will not be willing to pay for these increased costs and have many other hub choices. As a result, there will be a dramatic migration of connecting passengers to other hubs. This will place the burden of the OMP cost increases primarily on local O&D passengers. Local passengers also have choices and many will utilize other airports such as Midway, the new South Suburban Airport, Gary, Rockford, Milwaukee, etc.

The high cost of the OMP will curb aviation growth at O'Hare and might even result in a decline in airline and passenger activity due to the elasticity of demand and other lower cost alternatives. This will have a spiraling adverse economic impact on the airlines and the Chicago region, by making it difficult to attract new business and investment and retain businesses, with a resultant loss of jobs. 31

**5. The OMP Will Impair Aviation Safety.**

**(i) Loss of crosswind runways**. The loss of crosswind runways is an unacceptable fatal flaw in the OMP. Without the crosswind runways, ORD would be the only major airport in the northern tier of the U.S. without crosswind capability. Further, in-depth focus group discussions, with both veteran commercial pilots and air traffic controllers, conducted by JDA show that the elimination of all crosswind runways is the least desirable option. 32

In the absence of crosswind runways, the safety and efficiency of the airport will be significantly and adversely impacted.

First, the OMP configuration will significantly expand the number of runway crossings and the potential for runway incursions at O'Hare. According to Craig Burzych, representative of the National Air Traffic Controllers Association at the O'Hare tower, "The City's runway plan creates 485 more runway crossings on the south side of the airport and 1,000 total runway crossings airportwide" each day. Chicago Tribune, September 13, 2003. In that same report, a veteran controller at Dallas, Mark Mulder, stated "One of the neat things about O'Hare is that you don't currently have many runway crossings... Everybody knows they are dangerous." Id. 33

Second, loss of crosswind runways will denigrate safety and curtail operations at O'Hare during certain conditions. The conditions that impact safety include wind magnitude, contamination of the runways (i.e. rain, snow, ice), the slant range visibility, and the cloud ceilings. All of these conditions can and do act to compound the difficulty of crosswind landings and must be accounted for by both pilots and controllers. When these conditions combine, as they often do, the

| Comment | Response |
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| 31 continued | The main question raised by this comment is: would the airlines serving O'Hare prefer to (1) pay higher airport costs in order to benefit from expanded capacity and growth opportunities, or (2) incur increasing delay costs and forego potential market growth? FAA believes that the airlines serving O'Hare have indicated their preference by supporting the OMP. Thus, FAA believes that expansion of OMP would result in greater airline service than a "no action" alternative.<br><br>A secondary question raised by this comment is: what is the impact on the regional economy of airline service decisions? Obviously, airline decisions to increase air service would benefit the economy, and airline decisions to reduce air service would hurt the economy. Thus, this question is entirely answered above—what is the impact of OMP on airline service? As noted above, FAA believes that airline service would be greater with expansion of airport capacity than with a "no action" alternative. |
| 32 | An analysis of historical wind and runway use conditions was undertaken in support of the TAAM simulation modeling effort conducted for the EIS. This analysis, which was independently verified by the FAA and their contractor, indicated that high crosswinds would prevent the use of the proposed east-west runway system less than 1% of the time.<br><br>Moreover, the preferred alternative retains two crosswind runways; 4R-22L and 4L-22R. The planning studies that identified potential alternatives considered prevailing winds in evaluating overall performance of the alternatives. The modeling results were predicated upon the implementation of operational practices satisfying all FAA safety criteria. In wind conditions where FAA safety standards do not allow the use of the 6 proposed parallel runways, this was reflected in the modeling. The modeling for each of the alternatives is described in **Appendix D** of the EIS.<br><br>Based on the FAA review of the analysis contained within the O'Hare Master Plan, an airfield configuration that combines an east-west orientation with crosswind runways in a northeast-southwest configuration meets and exceeds FAA wind coverage criteria. The resulting airfield would resemble those existing at Hartsfield-Jackson Atlanta International (Atlanta) and Dallas/Fort Worth International airports, where recent advances in air traffic control technology for parallel runway operations have been incorporated. **Exhibit A-7** of **Appendix A** of the EIS shows the runway layouts of Atlanta and Dallas/Fort Worth. |
| 33 | Please see response to comment 92, in *Karaganis-Cohn's April 6, 2005* comments on the DEIS, document number 050406_36, on page U.4-433.<br><br>Continued on the following page. |

| Comment | Response |
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| 33 continued | The commenter accurately notes that it is desirable to avoid runway crossings whenever possible. However, it is inappropriate to describe runway crossings as "dangerous". FAA safety procedures in place throughout the country allow tens of thousands of safe runway crossings to be made every day. In addition, innovative runway-crossing procedures and supporting taxiway facilities have been developed for the OMP, which will result in fewer crossings of the center portions of active runways than occur today with the existing O'Hare airfield. |

| Comment | Response |
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| 34 | Please see response to comment 32 on page U.4-236. |

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lack of a crosswind runway can actually shut down the airport for extended periods of time. This is a catastrophic result that will dramatically increase overall delay figures, not to mention airline expense and passenger inconvenience. At a minimum, the absence of crosswind runways will frequently and significantly reduce the acceptable level of operations.

Headwinds mean better control, slower landing speeds and quicker deceleration for aircraft after landing, a critical factor when landing on wet, icy, slippery runways. Landing on a slippery runway can be dangerous in itself, requiring a higher level of attention and piloting skills, combined with a strong crosswind which also requires an enhanced level of piloting skill and technique and adds even more risk to the operation. The lack of crosswind runways in the OMP seriously reduces the desired margin of flight safety at that airport.

The O'Hare air traffic controllers commented that the absence of the crosswind runways creates a potential safety hazard:

> ***National Air Traffic Controllers Association*** O'Hare Tower Facility Representative Craig Burzych, November 30, 2001:
>
> "...during winter it is common to have strong winds out of the northwest with snow, cold temperatures and icy conditions. During these times, it is critical to have runways that point as closely as possible into the wind. Headwinds mean slower landing speeds for aircraft, and they allow for the airplane to decelerate quicker after landing which is important when landing on an icy runway. Landing into headwinds makes it much easier for the pilot to control the aircraft as well. Without these runways, pilots would have to land on icy conditions during strong crosswind conditions. This a possible safety issue."

34

**(ii) Ten Years Of Construction Uncertainty Will Create Massive Safety Risks**. The dangers posed by runway construction are very real, as underscored by the tragic loss of Singapore Airlines flight SQ006, which crashed at Taipei on October 31, 2000. The 747-400 had attempted to take off at night, in bad weather conditions, from a runway supposedly "closed" for repair. As it was leaving the ground, the plane struck a concrete barrier and construction equipment, split into three pieces, crashed and burned. While ICAO regulations generally require a runway under repair to be cordoned off, the accident runway at Taipei had not been completely blocked because it was frequently used for taxiing aircraft.

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The negative safety implications of OMP construction are clear:

- Construction is scheduled to take place at night, when construction hazards are least visible and most confusing to pilots.
- Like Taipei, O'Hare will rely on "closed" runways for taxiing aircraft and it is difficult to see how construction crews would be able to completely cordon off construction areas during the brief work periods allotted.
- O'Hare is used by long-haul foreign air crews that may visit the airport only a few times a month, and who may be arriving fatigued.
- From FAA Runway Safety Report, FY 1999-2002: Four runway collisions occurred from FY 1999 through FY 2002. One of them, at Ft. Lauderdale, FL on May 5, 2000: A jet transport making an emergency landing on a closed runway hit a "closed runway" sign on the approach end of the runway.
- O'Hare is already one of the most complex and confusing airports in the world – what is today routine and familiar (factors which are essential to flight safety) will be subject to constant change during the long construction cycle.

The OMP calls for an extended and massive construction period of approximately 10 years and with a magnitude of disruption, construction and general disarray unprecedented for any major operational airport in the United States and probably the world. This tumultuous disruption will have a significant negative safety effect on all flight and ground operations during this period and will extend well into the future even after proposed construction is completed. The airport is likely to become and remain a high-risk environment if this plan is approved.

The major safety concerns are:

- Runway incursions. The greatest safety hazard during the extended construction process will be the immediate and dramatic increase in the potential for runway incursions.
- High volume vehicular traffic operating on and around runways and taxiways; i.e. trucks of all sizes, earth moving equipment, workers transportation, official vehicles (contractors, airport employees, etc.).
- Runway Closings. Construction on or near runways will require frequent changes to flight operations affecting normal taxiing, takeoff, approach and departure routines.

| Comment | Response |
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| 35 | The commenter correctly notes that construction in an area of active aircraft operations is challenging and requires careful planning. **Section 5.20.4.7** describes how airfield construction will take precautions to maximize safety and attempt to minimize operational disruptions. The specific examples cited by the commenter are duly noted and will be incorporated into work plans.<br><br>Under FAA standards, construction safety-phasing plans are required for all airfield development projects. These plans are subject to a thorough review by the FAA.<br><br>Also, please see response to comment 91, in *Karaganis-Cohn's April 6, 2005* comments on the DEIS, document number 050406_36, on page U.4-432. |

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- Taxiway Closings. Construction will require frequent closing of taxiways and aircraft/vehicular traffic routings to and from runways, hangars, terminals, crash, fire and rescue, facilities etc. This will require constantly changing on-airport traffic patterns and temporary routings and ad-hoc taxiways.
- Runway/taxiway signage changes. The construction disruption of runways and taxiways will require that the designations for taxiways be changed continuously, causing significant nomenclature problems and confusion. Equally problematic, signage and airport lighting will be continually changed to keep pace with the constantly changing airport ground traffic patterns.

These factors combine to produce a very complex, confusing and dangerous situation for pilots, controllers and drivers of ground vehicles. During periods of restricted visibility and night operations, the situation becomes even more volatile and a "nightmare" for pilots and controllers to keep track of and follow ever-changing traffic patterns.

The NTSB has cited all of these factors in numerous serious runway collisions and as prime contributors in their Special Investigation Report on Runway Incursions.

With an expected airport reconstruction period extending approximately 10 years and with the magnitude of disruption to the airport throughout this time it can be reliably predicted that the potential for runway incursions will rise dramatically and, unfortunately, the possibility of a serious runway collision becomes a probability. 35

**C. The FAA's Required Decision's Under the FAA's Statutory NPIAS Requirements Prohibit Approval of Either the OMP as a Whole or Phase I.**

49 U.S.C. § 47103 requires the FAA to develop a "national plan of integrated airport systems" which identifies "the kind and estimated cost of eligible airport development the Secretary of Transportation considers necessary to provide a safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics." The FAA cannot award AIP funding unless the project for which funding is sought is identified and listed in the FAA's NPIAS-CIP reports. 14 C.F.R. § 151.39(a)(2).

The FAA's integrated system planning requirements (as reflected in the NPIAS) are interspersed throughout the AIP provisions of Title 49. 49 U.S.C. § 47102(8) defines the process of "integrated airport system planning" as:

| Comment | Response |
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| 35 | Please see the response to this comment on the previous page. |
| 36 | The FAA disagrees with the commenter's assertion that there is a statutory prohibition regarding NPIAS that could preclude OMP approval in an appropriate Record of Decision. |

| Comment | Response |
|---|---|
| 36 | Please see the response to this comment on page U.4-240. |

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> "integrated airport system planning" means developing for planning purposes information and guidance to decide the extent, kind, location, and timing of airport development needed in a specific area to establish a viable, balanced, and integrated system of public-use airports, including –
>
> (A) identifying system needs;
>
> (B) developing an estimate of systemwide development costs;
>
> (C) conducting studies, surveys, and other planning actions, including those related to airport access, needed to decide which aeronautical needs should be met by a system of airports…"
>
> (emphasis added).

A primary source of information for the FAA's NPIAS decisions comes from the FAA planning framework of State and Metropolitan System Planning. The State System Plan lies at the center of the national airport planning hierarchy. The FAA characterizes State Airport System Planning as follows:

> "Airport system planning at the state level lies between FAA's national planning as documented in the National Plan of Integrated Airport Systems (NPIAS) and individual airport master planning. **It feeds information 'up' to the NPIAS and 'down' to the individual airports**."
>
> FAA Advisory Circular No. 150/5050-3B, *Planning the State Aviation System*, p. 2 (emphasis added).

The FAA's planning requirements further describe the "special relationships" between state system planning and planning at other levels of the hierarchy:

> "The NPIAS must be based on well-coordinated system planning at the state level of government. Planning for the larger metropolitan/regional areas and state planning outside these areas should complement each other. How well this is achieved is an indication of the effectiveness of the state airport system planning process on the one hand and the metropolitan/regional system planning process, on the other. It is a function

| Comment | Response |
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| 36 | Please see the response to this comment on page U.4-240. |

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> of state planning to assure adequate planning coverage and integration of efforts."
>
> AC 150/5050-3B, p. 2 (emphasis added).
>
> "The airport system plan, which is a representation of the aviation facilities needed to meet the short, intermediate, and long-range air transportation requirements of the area, establishes the role, generalized developmental requirements, and timing of development for individual airports within the system. This in turn provides the framework for detailed airport master planning."
>
> FAA Advisory Circular, No. 150/5050-5, *The Continuous Airport System Planning Process*, p. 1 (emphasis added).

The FAA further identifies the key role of the state/metropolitan system plan in the development of the airport development elements in a given metropolitan area to include in the NPIAS:

> "The metropolitan airport system plan is a representation of the aviation facilities required to meet the immediate and future needs of the metropolitan area .... It provides the basis for definitive and detailed individual airport planning."
>
> FAA Advisory Circular No. 150/5070-5, *Planning the Metropolitan Airport System*, p. 2 (emphasis added).
>
> "The metropolitan airport system plan should contain sufficient information to render applicable portions acceptable for inclusion in the FAA *National Airport System Plan (NASP)*. In formulating a NASP, the FAA will include recommendations contained in the metropolitan plan, when the recommendations are in the national interest."
>
> Id., pp. 3-4 (emphasis added).

The current approved NPIAS does not include any of the elements of the OMP (including Phase I). Moreover, with regard to the issue of O'Hare expansion beyond the current runway configuration, the FAA has already decided that the need for additional airport capacity (and the issue of where to build that capacity) in the Chicago metropolitan region shall be determined by a State System Plan. Thus, the last time the FAA evaluated a proposal for a major change

| Comment | Response |
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| 36 | Please see the response to this comment on page U.4-240. |
| 37 | Please see response to comment 7 on page U.4-216. |

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to runways on the Airport Layout Plan at O'Hare, FAA recognized, in its 1984 Record of Decision, the important alternative of developing a new major air carrier airport for Chicago, and committed to funding those studies as part of a State System Plan:

> Development of another air carrier airport to serve the Chicago Metropolitan Area will be studied again as part of a State System Plan to be prepared by the Illinois Department of Transportation under a series of grants to be funded by the FAA's Airport Improvement Program. The initial grant was issued in September 1984.
>
> 1984 ORD ALP ROD at 4 (emphasis added).

The FAA cannot ignore this prior determination and proceed to approve the OMP without adhering to the State System Plan. First, as set forth above, the statutory obligations of the NPIAS require it. Second, the FAA cannot ignore its own determination that would require the completion of such a plan. "[A]n agency must adhere to its precedents in adjudicating cases before it." *Consolidated Edison Co. of New York v. FERC*, 315 F.3d 316, 323 (D.C. Cir. 2003).

The need for the OMP has not been justified with the rest of the airport transportation system in the Chicago area as required by 49 U.S.C. §§ 47102 and 47103. Indeed, the OMP is wholly inconsistent with what appears to be the System Plan ordered by the FAA in its 1984 O'Hare Record of Decision -- the Chicago Airport Capacity Study prepared by Peat Marwick for the Illinois, Indiana and Wisconsin Departments of Transportation (Aug. 1988). That study does not contemplate adding runways or redeveloping O'Hare, but rather keeping O'Hare as is, and developing alternate capacity at a new regional airport.

Chicago is asking the FAA to ignore the State System Study performed with FAA funds and performed as part of the FAA's decision in its 1984 ROD.

For the reasons discussed above, the Objectors believe it is improper and arbitrary for the FAA to ignore the very State system study the FAA in 1984 declared should be the framework for future expansion decisions on airports in the Chicago metropolitan area. 36

Finally, in the NPIAS determination, the FAA is required by both the First Amendment Free Exercise Guarantee as well as federal RFRA to demonstrate: 1) that the elements of the OMP (including Phase I) that propose to destroy the two religious cemeteries are needed to meet a compelling governmental need, and 2) that there is no alternative to meet the governmental need that will not destroy the religious cemeteries. For the reasons discussed above, the FAA cannot meet those criteria. 37

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**VI. The Objectors are Entitled to Procedural and Substantive Protections Under the Constitution and the Administrative Procedure Act to Participate as Parties in the FAA Adjudicatory Decisions.**

**A. The FAA Decisions at Issue Here Are Adjudications.**

The FAA proceedings to which this letter relates are deemed by law to be "adjudications." Under the Administrative Procedure Act, an "adjudication" is defined as "an agency process for the formulation of an order." 5 U.S.C. § 551(7). An "order" is defined in § 551(6) to be "the whole or part of a final disposition, whether affirmative, negative, injunctive, or declaratory in form, of an agency in a matter *other than rulemaking*..." (emphasis added). The FAA decisions described in this letter relating to the proposed OMP are clearly not rulemaking and are therefore "orders" within the meaning of the APA. Since these FAA decisions are "orders," the APA defines the FAA decision-making processes leading to these FAA decisions ("orders") as "adjudications."

Moreover, the outcome of the City's AIP/LOI, ALP, and PFC requests will be an "order" in the form of a Record of Decision or Final Agency Decision. Indeed, the Record of Decision or Final Agency Decision is deemed to be an "order" subject to judicial review under 49 U.S.C § 46110.

Moreover, these proceedings are adjudications, as distinguished from rulemaking, because in determining the merits of the City's requests the FAA must apply rules and requirements of general application to the specific facts of the OMP proposal and its impacts, as well as to the facts relating to alternatives to that specific proposal. *See* Koch, *Administrative Law & Practice*, §2.11 ("adjudication is the decision-making process for applying preexisting standards to individual circumstances"). This is the distinction between rulemaking and adjudication noted in *United States v. Florida East Coast Ry. Co.*, 410 U.S. 224, 244-45 (1973), *See also, People of State of Illinois v. United States*, 666 F.2d 1066, 1073, n.7 (7th Cir. 1981).

Nor does the fact that large numbers of people may be affected by the adjudicatory decision cause the decision not to be non-adjudicatory. Koch, *supra*, at §2.11 ("Although adjudications usually affect only a relatively small number of people, it is dangerous to incorporate [a] number into the definition. Just as class actions or derivative litigation can affect millions so can administrative adjudication.").[15]

[15] Moreover, persons or entities adversely affected by a proposed administrative action can seek party status to challenge the proposed governmental action. Chicago does not dispute that the Objectors have asked for participation as opponents to Chicago's application for FAA approval of the project. The law is clear that the Objectors have a right to seek intervention in the FAA adjudicatory decision-making proceeding as

*Footnote continued on next page*

| Comment | Response |
|---|---|
| 38 | As a matter of law, the FAA believes that it has provided these commenters and others with more than the full measure of participation to which they are entitled in this informal Agency decision-making process. We note that in this very document, this commenter has acknowledged that there is no provision in the Federal Aviation Act or the Administrative Procedure Act which entitles them to more than what has been provided here. |

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Each of the FAA decisions listed above involves the final disposition of a matter (e.g., decision on an AIP or PFC application, decision on the approval of the ALP application, decision on what elements of O'Hare to include in NPIAS-CIP) and such decisions are not the process for the formulation of a "rule", *i.e.*, "rulemaking."

Since the APA defines an "order" to be any final disposition of a matter that is not rulemaking, since the FAA decisions listed above are not rulemaking, and since the APA defines an adjudication as the process for the formulation of an "order," it necessarily follows that the FAA decisions listed above are adjudications. 38

**B. The FAA Adjudications at Issue Here are Required under the Doctrine of *Wong Yang Sung v. McGrath* to be Conducted Pursuant to the Requirements of 5 U.S.C. §§ 554, 556 and 557.**

As demonstrated, these proceedings are "adjudications." But finding that a governmental decision is an adjudication does not determine whether the adjudication must follow "formal" or "informal" procedures under the APA. That question is partially determined under the APA by whether the FAA proceedings listed above are — under the terms of 5 U.S.C. § 554(a) — "required by statute to be determined on the record after opportunity for an agency hearing."

The Objectors are not aware of any FAA statutes that require the adjudicatory FAA decisions listed above to be "determined on the record after opportunity for agency hearing." However, that does not end the inquiry. The Supreme Court has emphatically held that if the objectors to a proposed government action are entitled to procedural Due Process protections, then the Due Process Clause itself is a "statute" requiring that the dispute be determined on the record after opportunity for an agency hearing within the meaning of § 554(a). *See Wong Yang Sung v. McGrath*, 339 U.S. 33 (1950).

If the Religious Objectors and the Community and Homeowners Objectors are entitled to procedural Due Process protections before the FAA can approve the cemeteries for destruction, and the Communities' and Homeowners' properties for destruction, then the provisions of § 554 of the APA apply. If the provisions of § 554 apply, then the procedural requirements of §§ 556 and 557 also apply by their express terms.

*Footnote continued from previous page*
opponents to Chicago's application. See: *Nichols v. Board of Trustees of the Asbestos Workers Local 24 Pension Plan*, 835 F.2d 881, 896 n. 107 (D.C. Cir.1987); *Kaniag, Inc. v. Andrus*, 580 F.2d 601, 613 and n.5 (D.C. Cir.), cert. denied, 439 U.S. 1052 (1978); and 5 U.S.C. § 555. As noted above, the Objectors seek opposing party status in each of these administrative adjudications.

| Comment | Response |
|---|---|
| 38 | Please see the response to this comment on the previous page. |
| 39 | Having acknowledged in the comment immediately above that there is no statutory entitlement to the type of "due process" sought by this commenter, the FAA finds the Constitutional argument presented by the commenter at U.4-245, in support of such a claim, to be unpersuasive as a matter of law. |

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The Due Process Clause of the Fifth Amendment prohibits the FAA from approving the destruction of the religious cemeteries or the property of the Community Objectors and the Homeowner Objectors without providing those who have liberty or property interests in the continued integrity and sanctity of the cemeteries and the other properties with procedural due process.

The question then turns to whether the Religious Objectors here have liberty or property interest in protecting the sanctity of the graves in Rest Haven and St. Johannes and whether the Community and Homeowner Objectors have property interests in the property Chicago proposes to demolish with the OMP.

The Religious Objectors have liberty and property interests protected by the Due Process Clause. St. John's and Rest Haven (as well as individual Religious Objectors like Helen Runge and Shirley Steele) are owners of real property in the cemeteries whose property interests will be adversely affected by any FAA decision (whether it is ALP approval or AIP or PFC funding) to allow destruction of the cemeteries for airport expansion. Finally, St. John's, Rest Haven, and the individual Religious Objectors have strong religious interests that are "liberty" interests protected by the Due Process Clause of the 5th Amendment.

Similarly, the Community Objectors and the Homeowner Objectors own property that is within the so-called "acquisition" zone. These properties are properties within the meaning of the Due Process Clause. The Community Objectors have the right to assert Due Process rights against the federal government. *In re Real Estate Title & Settlement Services Antitrust Litigation*, 869 F.2d 760, 765 n. 3 (3d Cir.), *cert. denied*, 493 U.S. 821 (1989); *Board of Natural Resources of State of Wash. v. Brown*, 992 F.2d 937, 943 (9th Cir. 1993); *River Vale Tp. v. Town of Orangetown*, 403 F.2d 684, 686 (2d Cir. 1968); *Aguayo v. Richardson*, 473 F.2d 1090, 1100 (2d Cir. 1973), *cert. denied*, 414 U.S. 1146 (1974); *cf. McMahan v. International Association of Bridge, Structural & Ornamental Iron Workers*, 858 F. Supp. 529, 536 (D. S.C. 1994) (recognizing municipality as corporate "person" entitled to Fifth Amendment Due Process protection).

Since all of the Objectors are entitled to constitutional procedural due process before the FAA can approve the destruction of their property, and since the triggering of Due Process protection in turn triggers the application of §554 of the APA under the doctrine of *Wong Yang Sung v. McGrath, supra*, the FAA decisions listed above which relate to the proposed destruction of the Objectors' properties by the approval or funding of the proposed OMP project are subject to the adjudicatory procedures required by §§ 554, 556 and 557 of the APA. 39

| Comment | Response |
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| 39 | Please see the response to this comment on the previous page. |

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**C. Due Process Requires that the FAA Disclose the Evidence and Communications Submitted to the FAA or Used by the FAA in Support of Chicago's Requests for FAA Adjudicatory Approvals.**

The discussion above clearly establishes that the Objectors have Due Process rights to object to Chicago's requests for a number of related FAA adjudicatory approvals related to the OMP project and the associated destruction of the religious cemeteries. These Due Process rights are given even greater significance given the overriding requirements (for the Religious Objectors) of the First Amendment free Exercise Clause, the strict scrutiny requirements of the Fifth Amendment (*Bolling v. Sharpe)* Equal Protection violations, and the rigorous requirements of the federal RFRA.

It is axiomatic that in an administrative adjudication, a party opposing the proposed action is entitled to see the evidence being used by both its opponent and by the agency. *See Goldberg v. Kelly*, 397 U.S. 254, 268 (1970);[16] *Morgan v. United States*, 304 U.S. 1, 18 (1938) ("The right to a hearing embraces not only the right to present evidence, but also a reasonable opportunity to know the claims of the opposing party and to meet them. The right to submit argument implies that opportunity; otherwise the right may be but a barren one."); *Ralpho v. Bell*, 569 F.2d 607, 628 (D.C. Cir. 1977) ("An opportunity to meet and rebut evidence utilized by an administrative agency has long been regarded as a primary requisite of due process."); *Moore-McCormack Lines, Inc. v. United States*, 413 F.2d 568, 585 (Ct. Cl. 1969) ("The right to be told your adversary's case is fundamental to a determination of this kind."); *North American Coal Co. v. Miller*, 870 F.2d 948, 950 (3d Cir.1989).

Further, Objectors are entitled to the protection of due process – here access to the documents, data and evidence Chicago has been transmitting to FAA – at a "meaningful time and in a meaningful manner." *Armstrong v. Manzo*, 380 U.S. 545, 552 (1965).

Wholly apart from the Freedom of Information Act, the Objectors are entitled under the Due Process Clause as opposing parties to receive any communications exchanged between Chicago and the FAA at the same time as the information is exchanged between Chicago and the FAA. The FAA must immediately proceed to make this material and information available to the Objectors. 40

[16] " 'Certain principles have remained relatively immutable in our jurisprudence. One of these is that where governmental action seriously injures an individual, and the reasonableness of the action depends on fact findings, the evidence used to prove the Government's case must be disclosed to the individual so that he has an opportunity to show that it is untrue.' " *Goldberg v. Kelly, supra*, 397 U.S. at 268 (quoting *Greene v. McElroy*, 360 U.S. 474, 496-97 (1959)) (emphasis added).

| Comment | Response |
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| 40 | Despite suggestions to the contrary, the FAA has endeavored to provide the commenters with the full measure of communications, data, and records that are available and suitable for disclosure. Thus for example, the FAA has provided the commenters with all correspondence between the City of Chicago and the Agency. For additional information regarding the materials provided to the commenters, please see response to comment 2 on page U.4-166. |

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**D. Article III Requirements.**

Article III of the Constitution requires that the adjudication of contested issues of fact and law relating to charges of violation of federal law be determined by an Article III court:

> The judicial Power of the United States, shall be vested in one supreme Court, and in such inferior Courts as the Congress may from time to time ordain and establish. The Judges, both of the supreme and inferior Courts, shall hold their Offices during good Behaviour, and shall, at stated Times, receive for their Services, a Compensation, which shall not be diminished during their Continuance in Office.
>
> United States Const. Art. III § 1.
>
> The judicial Power shall extend to all Cases, in Law and Equity, arising under this Constitution, the Laws of the United States, and Treaties made, or which shall be made, under their Authority;--to all Cases affecting Ambassadors, other public Ministers and Consuls;--to all Cases of admiralty and maritime Jurisdiction;--to Controversies to which the United States shall be a Party;--to Controversies between two or more States;--between a State and Citizens of another State;--between Citizens of different States;--between Citizens of the same State claiming Lands under Grants of different States, and between a State, or the Citizens thereof, and foreign States, Citizens or Subjects.
>
> United States Constitution, Art. III § 2, cl. 1.

The determination of contested issues of law and fact as to the claims for the Objectors' constitutional rights falls within the mandate of Article III that these fact and law issues be determined by an Article III Court. Under the Article III mandate, the constitutionally required demonstration that the FAA must make of a compelling need and the absence of an alternative that would not destroy the cemeteries must be made in an Article III court. The FAA cannot constitutionally be the adjudicator of disputed issues of fact and law as to whether the FAA has either violated the Constitution or whether the FAA has complied with the affirmative constitutional duty to demonstrate a compelling governmental need and the absence of a less destructive alternative to destroying the cemeteries.

Similarly, the determination of contested issues of law and fact as to the FAA's compliance with federal RFRA falls within the Article III mandate for

| Comment | Response |
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| 41 | If the commenters find themselves aggrieved at the conclusion of this process, the Federal Aviation Act clearly provides them with access to an Article III Court where their claims will be fully and carefully considered. |

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several reasons. First, the plain language of Article III states that the requirement for an Article III court extends to all controversies "arising under" the Constitution and "Laws of the United States." Second, the FAA's refusal to follow the command of Congress as to federal RFRA — and the FAA's concomitant action to approve the destruction of the cemeteries in contravention of the limits placed by Congress through RFRA on Congress's delegation of power to the FAA — would constitute a constitutional violation of the Separation of Powers framework of the Constitution. The FAA (*i.e.*, the executive Branch) has no independent constitutional authority to approve the destruction of the cemeteries in the absence of delegated authority from Congress. And to comport with the constitutional framework of Separation of Powers, the FAA's exercise of that delegated authority must be within the limits imposed on that delegated authority by Congress (*i.e.*, the requirements of RFRA). Absent RFRA compliance, the FAA's approval would violate the Separation of Powers framework of the Constitution as an unlawful exercise of power not authorized by Congress. 41

**E. The Objectors' Right to Status as Opposing Parties.**

Section 555(b) of the APA (5 U.S.C. § 555(b)) gives the Objectors the right to participate as parties in these FAA proceedings:

> "A party is **entitled** to appear in person or by or with counsel or other duly qualified representative in an agency proceeding."
>
> 5 U.S.C. § 555(b) (emphasis added).

An "agency proceeding" means either an "adjudication", "rulemaking" or "licensing." 5 U.S.C. § 551 (12). As discussed above, these proceedings are "adjudications" as that term is defined in the APA. Under the APA, a "party" includes a person named or admitted as a party in an agency proceeding (as noted, this is an agency proceeding), or a person "properly seeking and entitled as of right to be admitted as a party in an agency proceeding." 5 U.S.C. § 551 (3). By dint of the due process protections and the constitutional deprivations and injuries that will result from the OMP, the Objectors are entitled as a matter of right to be admitted as a party to these proceedings.

The law is clear that the Objectors have a right to seek intervention in the FAA adjudicatory decision-making proceeding as opponents to Chicago's applications and to the other FAA adjudicatory decisions which are needed to approve the OMP or Phase I. See: *Nichols v. Board of Trustees of the Asbestos Workers Local 24 Pension Plan*, 835 F.2d 881, 896 n. 107 (D.C. Cir. 1987); *Koniag, Inc. v. Andrus*, 580 F.2d 601, 613 and n.5 (D.C. Cir.), cert. denied, 439 U.S. 1052 (1978); and 5 U.S.C. § 555. 42

| Comment | Response |
|---|---|
| 41 | Please see the response to this comment on the previous page. |
| 42 | As described above in response to comment 39, the FAA finds that this is not the type of matter warranting formal adjudication. Therefore, the commenters are treated as interested rather than opposing parties. |

| Comment | Response |
|---|---|
| 43 | The FAA respectfully disagrees with the conclusions provided in this comment. |

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**VII. Conclusion.**

For the reasons stated above, the Objectors request that the FAA deny Chicago's applications for ALP approval and for AIP approval of Phase I. The Objectors also request that the FAA not include the OMP (or Phase I) in the NPIAS and that FAA deny any future Chicago requests for AIP or PFC funds for any elements of the OMP.

To the extent that the FAA will continue to consider any elements of the OMP for either ALP, NPIAS, or AIP or PFC funding, the Objectors respectfully reassert the procedural and substantive rights set forth above (and in prior correspondence) and ask the FAA to promptly respond to the Objectors' request for opposing party status and to the Objectors' request for FAA recognition of their procedural and substantive rights under the Constitution and federal statutes such as federal RFRA. 43

Respectfully submitted,

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**Re: Proposed O'Hare OMP Preliminary Observations on Ricondo Simulation-Delay Claims made by Chicago on August 27, 2004**

Dear Ladies and Gentlemen:

This letter is a follow-up to our letter of August 23, 2004 relating to our objections to proposed FAA approvals and funding of the City of Chicago's OMP project. Our letter to you today provides our preliminary observations on claims made by the City of Chicago (and also attributed by the press to the FAA) as to the results of delay simulation studies performed by Chicago's consultant (Ramon Ricondo) and released by the FAA on August 27, 2004.

The newest analysis contains a number of critical flaws which are discussed below. However, even as flawed, the latest analysis confirms our

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previous statements that neither Phase I nor the full OMP will provide adequate additional capacity to redress the delay and capacity needs in the region or at O'Hare. 1

Indeed, the latest FAA-Ricondo simulation analysis show that delays will be worse than the two previous studies released by Ricondo in January 2003 and September 2003. Thus, where the August 27 FAA-Ricondo results can be compared directly with the two prior studies (*i.e.*, at similar demand levels) for example at 1,120,000 annual operations (the maximum level of operations the airport can effectively handle), the August 2004 FAA-Ricondo results show an increase in the delays from 4.5 minutes average annual delays (in the September 2003 study) to 5.2 minutes in the most recent study. IFR delays are substantially higher. Based on this comparison, it appears that if the FAA-Ricondo simulations had run the TAAMS model at similar inputs (*i.e.*, at similar PMAD demand levels) as were used in the two earlier analyses, the results would have shown higher delay levels for the August 2004 simulations at every demand level than were shown on the earlier January and September 2003 Ricondo simulations.

We must point out that there are other serious deficiencies in the August 27 FAA-Ricondo analysis that undermines the validity of its results (and of the City's public relations claims). The most glaring error is the FAA's continued use of the outdated 2001 Terminal Area Forecast (TAF), when the FAA recently issued in March 2004 a 2003 TAF which shows dramatically different demand forecasts. If the FAA-Ricondo simulation used the 2003 TAF instead of the outdated 2001 TAF, it is clear that both Phase I and the full OMP will experience unacceptable levels of delays much sooner and at much higher delay levels than publicized by Chicago and the FAA in the public relations discussion of the August 2004 simulation release. 2

Our preliminary analysis is reflected in the attached Excel workbook and raises the following issues:

1. Sheet 1 is a summary sheet showing the comparable enplanements, OPS, and PMAD used by Chicago and the FAA as well as the current 2003 TAF (March 2004) issued by FAA. The key things to note are: 1) the PMAD (this is the key driver for the TAAMS model or any capacity delay model); and 2) using the 2003 TAF shows that there will be far greater levels of OPS and that the demand comes much sooner than the 2001 TAF used by Chicago and the FAA. 3
2. Sheet 2 lists the delay figures 1) shown in the January 2003 Ricondo study (orange); 2) shown in the September 2003 Ricondo 12-30 proof of concept study (pink); 3) shown in the August 27 FAA-Ricondo study

| Comment | Response |
|---|---|
| 1 | The simulation results prepared for the DEIS clearly indicate that the proposed OMP would substantially reduce aircraft delays at O'Hare while simultaneously enabling the airport to accommodate increased numbers of operations. Using 2018 as a nominal point of comparison, the proposed action would reduce average annual aircraft delays from 17.1 minutes per operation to 5.8 minutes per operation while simultaneously accommodating over 200,000 additional annual operations.<br><br>The simulation modeling is provided in **Appendix D** of the EIS. |
| 2 | Please note that FAA utilized the 2002 TAF, not the 2001 TAF indicated by the commenter.<br><br>The activity forecast in the EIS has been carefully selected, but it is recognized that there are inherent uncertainties in forecasting. These uncertainties are exemplified by the reduced activity forecast in the most recent TAF. As such, **Appendix R** discloses the potential variability in activity levels in the out years, as well as the associated environmental consequences. The commensurate levels of airfield delay for different forecast levels are modeled in **Appendix D**. It is clear that throughout the range of forecast activity levels, the preferred alternative is best able to satisfy the purpose and need for the OMP. |
| 3 | The 2003 TAF referenced by the commenter has since been supplanted by the 2004 TAF. While the forecasts at the extreme limit of the TAF do change from year to year, **Appendix R** contemplates variability in the activity forecast. The range of activity levels considered in **Appendix R** exceeds the range of activity levels forecasted by both the 2003 and recent 2004 TAFs. |

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(turquoise); 4) using the more recent the 2003 TAF (issued in March 2004) demand levels (green), and (5) using the 2002 FAA-Chicago Delay Task Force report (blue). Also shown in the spread sheet are the years used by Chicago and FAA (using the 2001 TAF extended) compared to the years that the demand will be reached under the new 2003 TAF. 4

3. Sheet 3 is much the same info as Sheet 2 but is organized by the reported values for the three airport scenarios (Existing, Phase 1 and full OMP). 5

Also enclosed is the delay capacity curve illustration used by FAA – a curve which governs the way delay and capacity work under any demand or configuration scenario. What this curve demonstrates is that at any airport delays rise relatively gradually at gradual increases in OPS until they reach a point where even small increases in OPS produce very large increases in overall delay. At this point the delay curve starts to rise almost vertically with even a small increase in OPS. When the data generated in the Ricondo 2003 and now 2004 simulations is examined in light of this curve several points become apparent:

1. At approx 2750 daily OPS, the existing O'Hare (at its current operating configuration) produces significant IFR delays – primarily due to a dramatically different processing capability between VFR and IFR conditions. At approx 2750, adding even a few more flights produces very significant increases in delays. (Note: the Delay Task Force Report says that various non-structural techniques could produce significant reductions in existing delays with the existing airport – a matter for related discussion). (Note further that both Phase I and the full OMP demonstrate a similar serious discrepancy between good weather and bad weather capacity and delay performance at various levels of PMAD.) 6

2. The existing delays (Existing airport, "No Action") shown in the August FAA/Ricondo study are unsubstantiated and inconsistent with delays shown in the prior Ricondo and Delay Task Force reports. To the extent the "existing delays" are artificially increased, then the so-called claimed benefits would be exaggerated. 7

   a. Both the 2002 Delay Task Force report and January 2003 Ricondo study reported substantially smaller delays for the existing airport than does recent FAA/Ricondo analysis . For example, the January 2003 Ricondo showed annual average delays of 8.9 minutes for the existing airport (at approximately the same PMAD as the August 2004 study—2745 in the January 2003 study and 2750 in the August 2004 study). Inexplicably, the new FAA-Ricondo study shows average existing delays of 16.9 minutes, a 90% increase in existing

| Comment | Response |
|---|---|
| 4 | Please see response to comment 3 on page U.4-252. |
| 5 | Please see response to comment 3 on page U.4-252. |
| 6 | The FAA's *Airport Capacity Benchmark Report 2004*, identifies a current IFR capacity at Chicago O'Hare of 136 to 144 operations per hour. Thus, the commenter accurately notes that significant delays are likely to result from attempting to operate the current airfield at 2,750 daily operations during IFR conditions.<br>The 2001 O'Hare Delay Task Force Study (the 2001 DTF) did determine that there were a number of procedural, technological, and operational improvements that could be undertaken to mitigate delays associated with the existing airfield configuration at O'Hare. However, the improvements considered in the 2001 DTF only provided incremental reductions in aircraft delays.<br>For example, the alternative that produced the largest delay reduction benefit in the 2001 DTF—Alternative 60 with land-and-hold-short operations—was estimated to reduce delays by up to 78,000 hours at a daily demand level of 3,400 operations (or annual demand level of approximately 1.2 million operations). Assuming annual demand profiles similar to those assumed in the DEIS, this delay reduction translates to an average annual delay reduction of approximately 2 minutes per operation while accommodating approximately 10,000 additional operations per year (i.e., avoided cancellations). In contrast, at a similar annual demand level annual operations the preferred airfield alternative in the OMP was determined to produce an average annual delay reduction of over 11 minutes per operation while simultaneously accommodating over 200,000 additional operations per year.<br>For these reasons, the FAA concluded in the DEIS that "based on the data and analysis, potential technology improvements appear capable of providing only incremental improvements to airfield and airspace capacity at O'Hare. Furthermore, the benefits of many of these potential improvements are speculative, relying on technologies and flight procedures that have not yet been fully developed and tested. Consequently, it is concluded that these technology improvements would not be capable of increasing O'Hare's capacity to a level sufficient to accommodate the forecast unconstrained demand levels through the planning period considered in this EIS, and therefore would not meet the stated purpose and need." (DEIS, p. 3-21 to 3-22). See Appendix A of the FEIS for a current list of the status of each of the delay reduction alternatives identified in the 2001 DTF.<br>With regard to the delay task force , please see response to comments 2 and 5 of *JDA's June 10, 2004* letter, document number 040610_01, on pages U.4-181 and U.4-182, respectively. |
| 7 | Please see the response to this comment on the following page. |

Letter to FAA
September 8, 2004
Page 4

delays. We have not been able to find any basis for this significant difference in reported delays for the existing airport. 8

b. The massive delays shown in the August 2004 FAA/Ricondo analysis for the existing airport (60-80 minutes IFR delays) are fictitious. 9

i. First as noted in paragraph (a) above, the existing delays reported in the January 2003 Ricondo study and the 2002 Delay Task Force report are far lower than the delays reported in the August 2004. This discrepancy is unexplained. 10

ii. Second, the DTF and the 1995 USDOT High Density Rule study both recognized that delays at such high levels are fictitious artifacts of the model. In the real world, the flights would cancel (i.e. a recognition that the airport did not have the capacity) before delays would rise to the levels reported for the existing airport by Ricondo August 2004. 11

iii. Third, the existing delays reported in the FAA/Ricondo report utterly fail to take into consideration the cut-backs ordered by FAA to which the airlines agreed in August. 12

iv. Fourth, neither FAA nor Ricondo have reported in their current release the delay effects of implementing the Delay Task Force recommendations – recommendations which according to the Delay Task Force would result in substantial reductions in delays. 13

3. There would be substantial reductions in delays for the Phase I configuration or the full OMP configuration but only if one assumes that there is **no increase in OPS**. Once increased OPS demand is plugged into the model as it must, the delay/capacity curve quickly manifests itself. Both Phase I and the full OMP will experience massive delays – equal to or greater than the worst experienced under the existing airport. In simple terms, the Phase I project will result in delays on the vertical slope of the delay curve at year 2006 levels of demand and delays will rise exponentially thereafter (Chicago and the FAA do not report the delays for Phase I at 2007-2015 levels of demand). The full OMP will produce delays beginning on the vertical slope of the delay curve starting in the 2010-2016 time frame (with IFR delays in the 30-40 minute range) with delays rising exponentially thereafter in subsequent years. 14

4. At 1,123,000 annual OPS (note this is the **2006** demand under 2003 TAF) the Phase I delays (both AAAW and IFR) are greater than the delays

| Comment | Response |
|---|---|
| 7 | Operating procedures at the Airport are continuously refined and modified. For the EIS the FAA utilized the most current set of operating assumptions for the existing airfield. Some procedural differences between the Delay Task Force and the modeling conducted for the EIS include a refinement of Land and Hold Short Operations (LAHSO), wake turbulence separation modifications, and an intersecting runway operation waiver. Specifics on these procedural changed can be located in **Appendix A, Section A.4.2.2** of the **EIS**. |
| 8 | Please see response to comment 7 on the previous page. |
| 9 | The FAA modeled IFR conditions with the ultimate goal of producing annualized delay estimates that could be used by decision makers in the alternatives evaluation process. In these IFR model runs it was assumed that 1) IFR conditions would persist for the full simulation day and 2) that no flights would be cancelled. These assumptions are consistent with typical modeling practice and were necessary to produce a manageable simulation experimental design. While these assumptions do preclude direct comparison of TAAM-generated IFR delay statistics to historical IFR delay statistics, the effects of these assumptions were accounted for in the annualization process.<br><br>It should also be noted that the commenter appears to assume in this comment that flight cancellations can take place with no adverse operational consequences to the airlines or the traveling public. This assumption is incorrect. Cancellations do have substantial adverse operational consequences, especially at a major hub airport like ORD. In order to address the operational consequences associated with cancelled flights, FAA chose to model each of the airfield development alternatives without canceling flights. This facilitated capture of operational impacts of flights that would otherwise be cancelled in the form of delays. |
| 10 | The FAA incorporated the most current operating assumptions into the modeling conducted for the EIS. |
| 11 | Please see response to comment 9. |
| 12 | Although the simulation modeling does not limit the number of hourly arrivals to the exact levels the airlines and FAA recently agreed to, the FAA has limited the number of daily operations to a level that is relatively consistent to the daily total of operations observed as a result of the Order. |
| 13 | The EIS contains the analysis requested by the commenter for each of the proposed alternatives. This is provided in **Exhibits D-7** through **D-11** of **Appendix D** of the EIS. |
| 14 | Please see the response to this comment on the following page. |

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September 8, 2004
Page 5

reported for the exiting airport by the Delay Task Force and the Jan 2003 Ricondo; and somewhere between 2006 and 2016 Phase I reaches "gridlock") Chicago's term – most likely far earlier than 2016 (so says the Chicago Master Plan). 15

5. Using the 2003 TAF, in the year 2016, three years after the full OMP is completed (at 3864 OPS), delays will exceed the delays experienced by the existing airport at 2750 annual OPS. (Note: You will observe that the August 2004 Ricondo-FAA simulation did not model the PAL 2 demand (3864 PMAD). Based on what we know from the comparable reported values between Ricondo 2003 (Jan and September) and FAA/Ricondo 2004, had Ricondo run the PAL 2 demand, the reported AAAW and IFR delays would have likely been greater than reported in the Ricondo 2003 simulations. 16

6. In short – within three years after the mega-billion dollar OMP is completed the full OMP would experience massive delays (increasing exponentially every year thereafter) greater even than today's delays. In the end, after spending $20-25 billion (assuming OMP can be financed, which it cannot), there will be no meaningful congestion/delay relief. 17

7. This of course assumes that the full OMP will be built. For the reasons preciously discussed (which are set forth in the Objections we filed with FAA on August 23, 2004, neither Phase 1 nor the full OMP can be built. (Phase 1 alone cannot be justified and will not alleviate delays—it was rejected by the City in its Master Plan as resulting in "gridlock".) 18

Please enter these preliminary objections to the August 27, 2004 delay simulation claims into the administrative record(s) of the various FAA decision-making proceedings referenced in our August 23, 2004 letter. 19

Respectfully submitted,

Robert E. Cohn
Robert E. Cohn

J. E. Murdock III
**Shaw Pittman LLP**
Counsel for the Community Objectors

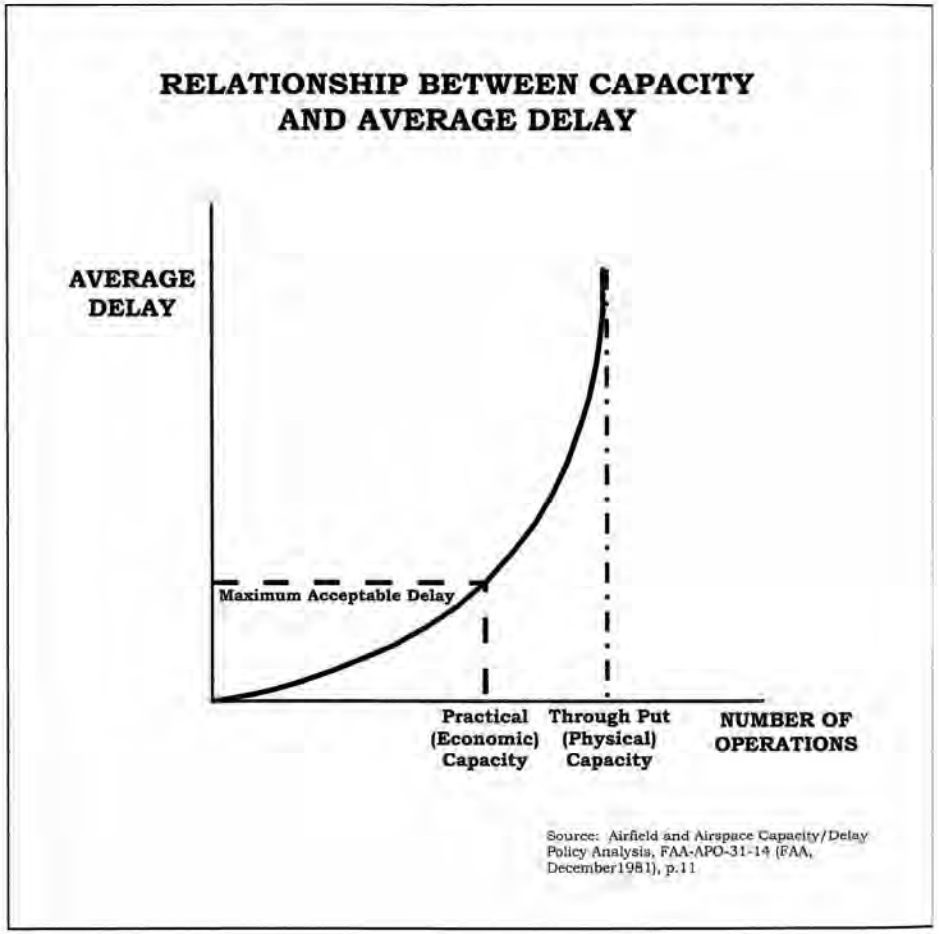
Joseph V. Karaganis
Joseph V. Karaganis
**Karaganis White & Magel Ltd.**
Counsel for the Religious and Homeowner Objectors

| Comment | Response |
|---|---|
| 14 | The commenter is correct to note that the full delay reduction benefit will not be realized until the entire OMP is constructed. As noted, airfield delays are expected to increase beyond current delay levels during some of the interim construction years. The commenter's assertion that the "… the full OMP will experience massive delays – equal to or greater than the worst experienced under the existing airport." is inconsistent with the airfield simulation modeling contained in **Appendix D** of the EIS. |
| 15 | The commenter is correct to note that the full delay reduction benefit will not be realized until the entire OMP is constructed. However, the commenter fails to note that overall airfield delay is reduced at milestone points in the construction process when compared to the No-Build alternative (Alternative A). |
| 16 | The airfield simulation modeling contained in **Appendix D** demonstrates that the average delay per aircraft operation is significantly reduced by implementation of the OMP, including when compared to existing average airfield delays. |
| 17 | The airfield simulation modeling contained in **Appendix D** demonstrates that the OMP will provide meaningful congestion/delay relief. |
| 18 | The comments submitted on August 23, 2004 have been considered and detailed responses are provided. |
| 19 | This letter has been entered into the document record for the EIS. |

Letter to FAA
September 8, 2004
Page 6

Enclosures
cc: Catherine Lang
Dennis Roberts
Barry Molar
Daphne Fuller
Perry Kupietz
Charles Prock

Document #: 1429557 v.1




**FULL OMP AT 1.12 MILLION ANNUAL OPS (PAL 1)**

| Ricondo Jan 03 | Ricondo Sept 03 | Ricondo-FAA (August 04) |
|---|---|---|
| 1,123, 000 OPS (PAL 1)<br>3243 PMAD | 1,123, 000 OPS (PAL 1)<br>3243 PMAD | 1,120,600 OPS<br>3169 PMAD |
| **AAAW Delay**<br>4.1 | **AAAW Delay**<br>4.5 | **AAAW Delay**<br>5.2 |
| **IFR Delay**<br>13 | **IFR Delay**<br>11.3 | **IFR Delay**<br>16.6 |

NOTE: USING THE MORE RECENT 2003 TAF, O'HARE REACHES 1.12 MILLION OPS IN 2006 (BEFORE OMP)

**FULL OMP AT 1.31 MILLION ANNUAL OPS (PAL 2)**

| Ricondo Jan 03 | Ricondo Sept 03 | Ricondo-FAA (August 04) |
|---|---|---|
| 1,314, 482 OPS (PAL 2)<br>3864PMAD | 1,314, 482 OPS (PAL 2)<br>3864PMAD | 1,314, 482 OPS (PAL 2)<br>3864PMAD |
| **AAAW Delay**<br>10.2 | **AAAW Delay**<br>10.9 | **AAAW Delay**<br>(not reported) but likely higher than 10.9 |
| **IFR Delay**<br>32.5-34.4 | **IFR Delay**<br>39-43.7 | **IFR Delay**<br>(not reported) but likely higher than 39-43.7 |

NOTE: USING THE MORE RECENT 2003 TAF, O'HARE REACHES 1.3 MILLION OPS IN 2016 (3 YEARS AFTER OMP COMPLETED). IN SHORT OMP IS OBSOLETE BY THE TIME IT OPENS.

| | | | | FAA TAAMS | | |
|---|---|---|---|---|---|---|
| 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
| 973,890 | 987,673 | 1,001,456 | 1,015,238 | 1,029,020 | 1,042,803 | 1,056,586 |
| | | | | | | |
| 1,097,593 | 1,129,584 | 1,151,961 | 1,169,193 | 1,187,832 | 1,207,471 | 1,225,552 |
| | | | | | | |
| 2,751 | 2,790 | 2,829 | 2,868 | 2,907 | 2,946 | 2,985 |
| 3,101 | 3,191 | 3,254 | 3,303 | 3,355 | 3,411 | 3,462 |
| 3,145 | 3,246 | 3,310 | 3,360 | 3,413 | 3,480 | 3,532 |
| 2,794 | 2,836 | 2,878 | 2,919 | 2,961 | 3,003 | 3,045 |
| 349 | 348 | 348 | 348 | 348 | 347 | 347 |
| | | | | | | |
| | | | | | | |
| 38,824,771 | 39,914,118 | 41,003,466 | 42,092,814 | 43,182,162 | 44,271,510 | 45,360,858 |
| 36,299,801 | 38,553,984 | 40,016,916 | 41,176,513 | 42,365,388 | 43,574,089 | 44,809,921 |

| | PAL 0 | | | |
|---|---|---|---|---|
| | 2001 | 2002 | 2003 | 2004 |
| Chicago Master Plan OPS | 911,917 | 932,542 | 946,324 | 960,107 |
| OPS used in Chicago Simulation | 912,000 | | | |
| 2003 O'Hare TAF OPS | 927,896 | 901,703 | 923,578 | 1,039,927 |
| | | | | |
| Chicago MP PMAD using FAA 354 | 2,576 | 2,634 | 2,673 | 2,712 |
| PMAD using 2003 TAF and 354 | 2,621 | 2,547 | 2,609 | 2,938 |
| PMAD using 2003 TAF and Chicago days | | | | 2,980 |
| PMAD used in Chicago Unconstrained demand | 2,732 | 2,669 | 2,710 | 2,752 |
| Days used for PMAD in Master Pln | 334 | 349 | 349 | 349 |
| | | | | |
| PMAD used by Chicago in Simulations | 2,745 | | | |
| PMAD Days used by Chicago in Sim | 332 | | | |
| | | | | |
| Chicago Master Plan Enplanements | 33,310,203 | 35,556,730 | 36,646,076 | 37,735,423 |
| 2003 O'Hare TAF Enplanements | 34,386,718 | 32,861,353 | 31,036,583 | 32,717,166 |

| 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|
| *1,165,105* | *1,178,685* | *1,192,265* | *1,205,844* | *1,219,424* | *1,233,004* | *1,246,583* | *1,260,163* |
| 1,390,503 | 1,414,021 | | | | | | |
| 3,291 | 3,330 | 3,368 | 3,406 | 3,445 | 3,483 | 3,521 | 3,560 |
| 3,928 | 3,994 | | | | | | |
| 4,019 | 4,087 | | | | | | |
| 3,369 | 3,410 | 3,450 | 3,491 | | | | |
| 346 | 346 | 346 | 345 | | | | |
| *54,084,620* | *55,175,014* | *56,265,408* | *57,355,802* | *58,446,197* | *59,536,591* | *60,626,985* | *61,717,379* |
| 55,503,487 | 56,948,834 | 58,395,018 | | | | | |

| 2012 | FAA TAAMS 2013 | PAL 1 2014 | 2015 | 2016 | 2017 | FAA TAAMS 2018 |
|---|---|---|---|---|---|---|
| 1,070,369 | 1,084,152 | 1,097,935 | *1,111,447* | *1,124,366* | *1,137,946* | *1,151,525* |
| | | 1,123,000 | | | | |
| 1,244,857 | 1,262,988 | 1,281,384 | 1,301,782 | 1,324,051 | 1,345,930 | 1,367,640 |
| 3,024 | 3,063 | 3,102 | 3,140 | 3,176 | 3,215 | 3,253 |
| 3,517 | 3,568 | 3,620 | 3,677 | 3,740 | 3,802 | 3,863 |
| 3,587 | 3,640 | 3,703 | 3,762 | 3,827 | 3,959 | 3,953 |
| 3,087 | 3,128 | 3,169 | 3,209 | 3,248 | 3,288 | 3,329 |
| 347 | 347 | 346 | 346 | 346 | 346 | 346 |
| | | 3,243 | | | | |
| | | 337 | | | | |
| *46,450,205* | *47,539,553* | *48,628,901* | *49,719,645* | *50,813,438* | *51,903,832* | *52,994,226* |
| 46,014,868 | 47,302,742 | 48,596,213 | 49,932,756 | 51,284,709 | 52,701,547 | 54,090,880 |

| 2027 | 2028 | 2029 | PAL 2<br>2030 |
|---|---|---|---|
| *1,273,743* | *1,287,322* | *1,300,902* | *1,314,482* |
| | | | *1,332,000* |
| 3,598 | 3,637 | 3,675 | 3,713 |
| | | | |
| | | | 3,864 |
| | | | 340 |
| *62,807,773* | *63,898,167* | *64,988,561* | *66,078,955* |

| | OPS | PMAD | | Facility | AAAW delay | IFR Delay | year under 2003 TAF | year under 2001 TAF used by FAA Chicago |
|---|---|---|---|---|---|---|---|---|
| | 912,000 | 2,745 | | Existing Airfield Jan 2003 Ricondo | 8.9 | 38.2 | 2001 | 2001 |
| | 912,000 | 2,745 | | Phase 1 | 5.2 | 10.0 | | |
| | | 2,745 | | full OMP | 2.6 | 7.2-9.4 | | |
| | | 2,772 | | DTF Base Case Existing Airfield | 9.9 | 29.9 | | |
| | 1,000,030 | 2,882 | | Existing airfield plus 5% | 10.7 | 43.8 | | |
| | | | | | | | 2004 | 2007 |
| | 1,048,000 | 3,020 | | Existing Airfield plus 10% | 13.8 | 55.3 | | |
| | 1,048,000 | 3,020 | | Phase 1 2001 plus 10% | 6.5 | 16.9 | | |
| | | | | | | | 2005 | 2009 |
| | | | | | | | | 2009 |
| | 1,094,000 | 3,157 | | Existing Airfield plus 15% | 20.8 | 66.2 | | |
| PAL 1 | 1,123,000 | 3,243 | | Phase 1 | 11.6 | 35.8 | | |
| PAL 1 | 1,123,000 | 3,243 | | full OMP | 4.1 | | | |
| PAL 1 | | | | | | | | |
| | 1,207,471 | 3,411 | 3,480 | | | | 2010 | |
| | 1,225,552 | 3,462 | 3,532 | | | | 2011 | |
| | 1,244,857 | 3,517 | 3,587 | | | | 2012 | |
| | 1,262,988 | 3,568 | 3,640 | | | | 2013 | |
| | 1,281,384 | 3,620 | 3,703 | | | | 2014 | |
| | 1,301,782 | 3,677 | 3,762 | | | | 2015 | |
| PAL 2 | 1,314,482 | 3,864 | | full OMP Jan 2003 Ricondo | | | 2016 | 2030 |
| | 1,324,051 | 3,740 | 3,827 | | | | 2016 | |
| | 1,345,930 | 3,802 | 3,959 | | | | 2017 | |
| | 1,367,640 | 3,863 | 3,953 | | | | 2018 | |
| | 1,390,503 | 3,928 | 4,019 | | | | 2019 | |
| | 1,414,021 | 3,994 | 4,087 | | | | 2020 | |

| | | | | AAAW | | IFR | | |
|---|---|---|---|---|---|---|---|---|
| | 912,000 | 2,745 | Existing Airfield Jan 2003 Ricondo | 8.9 | | 38.2 | | |
| | | 2,772 | DTF Base Case Existing Airfield | 9.9 | | 29.9 | | |
| | 1,000,030 | 2,882 | Existing airfield plus 5% Jan 2003 Ricondo | 10.7 | | 43.8 | | |
| | 1,048,000 | 3,020 | Existing Airfieldplus 10% Jan 2003 Ricondo | 13.8 | | 55.3 | | |
| | 1,094,000 | 3,157 | Existing Airfield plus 15% Jan 2003 Ricondo | 20.8 | | 66.2 | | |
| | | 2,772 | DTF Base Case Existing Airfield | 9.9 | | 29.9 | | |
| | 1,048,000 | 3,020 | Existing Airfield plus 10% Jan 2003 Ricondo | 13.8 | | 55.3 | | |
| | 1,094,000 | 3,157 | Existing Airfield plus 15% Jan 2003 Ricondo | 20.8 | | 66.2 | | |
| | | 3400 | DTF Case 1 Existing Airfield | 18.5 | | 32.88 | | |
| | | | | | IFR-1 | IFR-2 | 2003 TAF | 2001 TAF |
| | 912,000 | 2,745 | Phase 1 Ricondo Jan 2003 | 5.2 | | 10.0 | | |
| | | | | | | | | 2009 |
| | 1,048,000 | 3,020 | Phase 1 2001 plus 10% Jan 2003 Ricondo | 6.5 | | 16.9 | | |
| PAL 1 | 1,123,000 | 3,243 | Phase 1 PAL 1 Jan 2003 Ricondo | 11.6 | | 35.8 | 2006 | 2013 |
| | 912,000 | 2,745 | full OMP Jan 2003 Ricondo | 2.6 | 7.2 | 9.4 | | |
| PAL 1 | 1,123,000 | 3,243 | full OMP Jan 2003 Ricondo | 4.1 | 10.9 | 13 | 2006 | |
| | | | | | | | | 2018 |
| | 1,207,471 | 3,411 | 3,480 | ? | ? | ? | 2010 | |
| | 1,225,552 | 3,462 | 3,532 | ? | ? | ? | 2011 | |
| | 1,244,857 | 3,517 | 3,587 | ? | ? | ? | 2012 | |
| | 1,262,988 | 3,568 | 3,640 | ? | ? | ? | 2013 | |
| | 1,281,384 | 3,620 | 3,703 | ? | ? | ? | 2014 | |
| | 1,301,782 | 3,677 | 3,762 | ? | ? | ? | 2015 | |
| PAL 2 | 1,314,482 | 3,864 | full OMP Jan 2003 Ricondo | 10.2 | 32.5 | 34.4 | 2016 | 2030 |
| | 1,324,051 | 3,740 | 3,827 | ? | ? | ? | 2016 | |
| | 1,345,930 | 3,802 | 3,959 | ? | ? | ? | 2017 | |
| | 1,367,640 | 3,863 | 3,953 | ? | ? | ? | 2018 | |
| | 1,390,503 | 3,928 | 4,019 | ? | ? | ? | 2019 | |
| | 1,414,021 | 3,994 | 4,087 | ? | ? | ? | 2020 | |

SEP-17-2004 18:23 NO. 3595 P. 202 P.02

SEP 17 2004

JDA Aviation Technology Solutions

040914_01

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September 14, 2004

Mr. William Burkhauer
Morristown Municipal Airport
Manager
DM Airport Developers-8 Airport Rd.
Morristown, NJ 07960

Dear Mr. Burkhauer,

The City of Chicago's mega-billion dollar O'Hare Modernization Plan will have a profound negative effect on the finances of your airport and its ability to obtain discretionary funds under the FAA Airport Improvement Program.

O'Hare Modernization Plan (OMP) involves essentially building a new airport on top of the world's busiest aviation operation. It will require the construction of four new runways at O'Hare, the destruction of the two crosswind runways and completely reconstructing the airport into a six-parallel-runway configuration. The scope of the $15-$20 billion project will be the largest in US history and the City of Chicago is aggressively pursuing a campaign to accelerate the FAA environmental approval process. The City asserts that it will not rely heavily on AIP funding, but given its existing debt load, the financial status of its two largest tenants, it is clear that OMP will consume unparalleled levels of FAA Discretionary AIP funding.

You need to know that if the OMP project is allowed to go forward, your airports, indeed all other U.S. airports, ability to garner adequate AIP discretionary funds will be seriously impacted.

Studies by highly competent aviation experts have demonstrated that Chicago's plan is flawed. It is not worthy of the substantial AIP grants the City requests. It cannot pass the required benefits-cost analysis. Due to airspace and other constraints unrelated to runways, the gigantic, ten year-plus reconstruction of O'Hare is will produce little additional capacity and in fact will likely increase delays and congestion while dramatically increasing airline and consumer costs of service at O'Hare. We would welcome sharing the studies with you on request.

Federal funding is a crucial part of the Chicago project. The City's plan will require hundreds of millions of dollars of discretionary FAA Airport Improvement Program (AIP) grants from the rapidly shrinking Aviation Trust fund. The City has already filed an application for over $360 million in discretionary funds just for the initial "Phase 1" of the OMP. But that request obscures the fact that the entire six-runway project will require many hundreds of millions more in AIP discretionary dollars. Without full FAA funding the O'Hare project cannot be financed.

08/17/2004 FRI 16:04 [TX/RX NO 5432]

| Comment | Response |
|---|---|
| 1 | This is an example of a letter that was distributed by JDA Aviation Technology Solutions to air carrier airports in the United States. A similar letter was sent from JDA Aviation Technology Solutions to Woodie Woodward, FAA Airports Division. Please see page U.4-264 for the FAA's response to that letter. |

09/2 SEP. 23. 2004 10:44AM 820 AIRPORT OFFICE ARP-1 NO. 3595 P. 3
SEP-17-2004 18:23 P.03

If Chicago gets the AIP funds, there will be substantially less money available for other airports projects, forcing delays in important capital programs throughout the country. Due to the limited availability of AIP discretionary funds (only about $500 million per year, and not likely to go up much), Chicago's greatly increased demand for AIP discretionary grants will have a significant adverse impact on other airports throughout the nation draining away funds necessary to support other important aviation infrastructure projects. Large airports will suffer. However, smaller airports will suffer the greatest impact because they depend heavily on the receipt of AIP discretionary funds for their capital improvements.

Serious questions have been raised about the O'Hare Modernization Plan which impact on funding your airports' vital capital programs. We urge you to express your concerns to the FAA and your Congressional representatives, especially on the all-important financing issues that will affect all of the nation's airports – for virtually no real benefit to the US aviation system.

1

Sincerely,

Joseph M. Del Balzo
President

TOTAL P.03
09/17/2004 FRI 18:04 [TX/RX NO 5432]

| Comment | Response |
|---|---|
| 1 | Please see the response to this comment on the previous page. |

SEP. 23. 2004 11:32AM AIRPORT OFFICE ARP-1 NO. 3597 P. 2

U.S. Department of Transportation
Federal Aviation Administration

Office of the Associate Administrator for Airports

600 Independence Ave., SW.
Washington, DC 20591

SEP 23 2004

Mr. Joseph Del Balzo
President
JDA Aviation Technology Solutions
1201 Connecticut Avenue, NW
Washington, DC 20036-2635

Dear Mr. Del Balzo:

I recently saw a copy of a letter you sent to some airports expressing your views of the impact of the Chicago O'Hare Modernization Plan (OMP) on the Airport Improvement Program (AIP). Your letter displays a serious misunderstanding of the AIP program and I feel compelled to set the record straight.

As you know, two-thirds of AIP is allocated by law to individual airports and states. The remaining one-third of AIP is broken down into a number of protected set-aside categories, most of which cannot be used for development programs such as the OMP. These include set-asides for relievers, Military Airport Program (MAP) locations, and funding for noise planning and implementation under the noise set-aside.

In addition to the set-asides described above, there is another set-aside commonly referred to as CSSN (capacity, safety, security, and noise). CSSN discretionary funds can only be used by primary and reliever airports. CSSN represents 12 percent of the total AIP or approximately $398 million. All airports can compete for "pure discretionary" funds that remain after the set-asides have been satisfied. In FY 04, pure discretionary was calculated at $133 million.

For financing major runway projects at large and medium hub airports, FAA generally issues letters of intent (LOI) using a portion of the CSSN funds. Under direction from Congress, total LOI obligations in any given year cannot exceed 50 percent of available discretionary funds. In FY 05, the $204 million already pledged to existing LOIs will almost exhaust our LOI ceiling. With the remaining LOI ceiling available in FY 05 and beyond, FAA takes into consideration all potential runway projects that will be competing in this timeframe. Further, by law, every project seeking a LOI must undergo a benefit-cost analysis. This legal obligation applies to the OMP.

09/23/2004 THU 11:22 [TX/RX NO 5924]

SEP. 23. 2004 11:32AM AIRPORT OFFICE ARP-1 NO. 3597 P. 3

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You mentioned that, "smaller airports will suffer the greater impact because they depend heavily on the receipt of AIP discretionary funds for their capital improvements." The facts do not support this statement. The AIP formulas recognize the dependence of smaller airports on AIP and protect the funds made available to them. This is accomplished through passenger and cargo entitlements, as well as nonprimary entitlements and state apportionments, including the Alaska Supplemental. Further, small airports receive funding from the Small Airport Fund. By law, these funds can only be made available to small airports. Even LOIs' at smaller airports are funded through both the Small Airport Fund and the airports' entitlements and are thus unaffected by runway projects at larger airports.

As you know the FAA is still in the process of preparing the Environmental Impact Statement (EIS) for the OMP. So, it is premature for us to comment specifically on any potential funding for the OMP. However, the city of Chicago and the airport community in general are well educated on the AIP formulas and investment criteria used by the FAA. Airports around the country understand how the statutes and standards that govern AIP investments work. They know that the laws, regulations, and manner in which the FAA manages the program ensure that all airports and viable projects can expect sufficient funding from the AIP.

Sincerely,

Woodie Woodward
Associate Administrator
for Airports

09/23/2004 THU 11:22 [TX/RX NO 5924]

040924_01

**KARAGANIS WHITE & MAGEL Ltd.**
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**SHAW PITTMAN LLP**
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September 24, 2004

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Federal Aviation Administration
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Mr. Barry Cooper
Manager, Chicago Area Modernization Program Office
Federal Aviation Administration
2300 East Devon Avenue
Des Plaines, Illinois 60018

Re: Objection to Any Pre-Approval Land Acquisition Activity by the City of Chicago in Advance of FAA ROD and Completion of EIS Approval for the OMP

Dear Ladies and Gentlemen:

The Village of Bensenville, Elk Grove Village, St. John's United Church of Christ and Rest Haven Cemetery object in the strongest possible terms to the FAA's gratuitous, unnecessary and unlawful letter dated September 22, 2004 discussing the issue of land acquisition activities by the City of Chicago prior to issuance of the Record of Decision and completion of the EIS on the O'Hare Modernization Plan. On the basis of that letter, the City has announced, once again, that it will solicit over 500

| Comment | Response |
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| 1-8 | On October 22, 2004, the FAA provided this commenter and the City of Chicago with information about appropriate Federal criteria for hardship land acquisitions in an effort to clarify an ambiguity in an order that the commenter and the City had negotiated in federal court. The FAA remains perplexed as to why its effort to provide guidance provoked this letter of September 24, 2004. The Agency further notes that the entities represented by the commenter and the City of Chicago have not requested further judicial action with respect to the interim order regarding land acquisition that they negotiated and agreed to. |

Objection to FAA letter on pre-approval land acquisition activity
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home owners and businesses within the impacted communities on the alleged basis of "hardship situations"; i.e. virtually all of the properties within the alleged proposed acquisition zone. 1

The City's pre-approval land activity scheme serves no legitimate purpose other than to sow panic and fear within the impacted communities in order to undermine the community and religious objectors' opposition to the OMP. The FAA's letter is either by design or inadvertence complicit in this effort and has emboldened the City to pursue activities that will undermine community confidence in the integrity of the FAA decision-making process. The City sought the FAA's concurrence as another in a series of efforts to make the OMP a *fait accompli* and intimidate opposition to the project. Oddly, the September 22 letter did not, as is normal FAA practice, identify the source or timing of the request for FAA action. 2

The FAA's letter flies in the face of the Federal District Court's Order prohibiting the City of Chicago from acquiring property in the villages or in the cemeteries unless and until the FAA has issued a ROD following completion of the EIS for OMP. Furthermore, the Court Order prohibits acquisition in so-called hardship situations without the "advance consent" of the communities, which consent has not been issued. The FAA's letter also flies in the face of the FAA's own repeated warnings to the City that "any land acquisition activity" could prejudice and adversely impact the FAA's decision on the OMP. See, FAA letters dated May 28, 2003, December 5, 2001, and August 19, 2002. 3

The City's pre-approval land acquisition solicitation efforts under the guise of "hardship" will in fact adversely impact and prejudice the interests of the Villages in these administrative proceedings as well as the FAA's decision to approve or disapprove the OMP. The City's transparent goal (repeatedly acknowledged and admitted by the City) is to acquire many of the houses in the impact area — demolish those homes on a piecemeal basis thus creating a desolate wasteland of checkerboard destruction in these communities — and then claim that there is no relevant environmental impact because the damage has already been done. 4

The FAA's letter also flies in the face of the FAA's own policies. As the letter clearly admits, the FAA has no established policy on "hardship" acquisition. Yet the FAA letter, de facto, attempts to create new policy – without public comment. If there is no FAA policy, there should have been no FAA letter.

| Comment | Response |
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| 1-4 | Please see the response to these comments on the previous page. |

Objection to FAA letter on pre-approval land acquisition activity
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The City's illegal pre-approval land acquisition activities relies on a false pretense that there are "hardship" situations warranting solicitation. In fact, in large part due to the villages hard work to correct the record concerning the status and deficiencies of the OMP, there remains an effective marketplace for real estate transactions in the villages despite the City's efforts to convince the surrounding populace that FAA approval of the OMP is a "done deal". The fact that the City is planning to solicit virtually every property owner within the proposed acquisition zone belies the alleged narrow "hardship" basis of the land acquisition effort. 5

Although the FAA proclaims that the OMP process is open and objective, the FAA's September 22 letter was issued without any prior notice to or consultation with the impacted communities and the religious institutions. (The FAA's letter was delivered to the City and to the press BEFORE it was received by us. In fact, the first we heard about the letter was from the press.) If we had the opportunity to discuss this matter with FAA, we would have objected to any pre-approval land acquisition activity. The community and religious objectors have a right to participate in any pre-EIS acquisition consultations, just as they have a right to participate in the OMP and EIS processes. 6

We submit that any activities in furtherance of land acquisition prior to issuance of an ROD after completion of the EIS is illegal. NEPA, CEQ Regulations and the FAA's own Orders and regulations expressly prohibit land acquisition and destruction by Chicago of the homes, businesses, parklands and cemeteries -- unless and until the FAA completes the EIS process and issues a record of decision. Thus, section 1506.1 of the CEQ regulations states:

> "(a) Until an agency issues a record of decision as provided in § 1505.2 (except as provided in paragraph (c) of this section), no action concerning the proposal shall be taken which would:
> (1) Have an adverse environmental impact; or
> (2) Limit the choice of reasonable alternatives."
> 40 C.F.R. §1506.1 (emphasis added)

Chicago's land acquisition activities violate FAA Order 5050.4A, Airport Environmental Handbook Par. 73, which parallels the CEQ regulations and also governs FAA compliance with §4(f) of the 1966 DOT Act, 49 U.S.C. §303(c). The

| Comment | Response |
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| 5-6 | Please see the response to these comments on page U.4-265. |

Objection to FAA letter on pre-approval land acquisition activity
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FAA regulation expressly prohibits Chicago from taking any action in furtherance of the OMP through the proposed acquisition and demolition of the parklands and historically significant cemeteries -- until FAA completes its §4(f) analysis in the EIS:

> CEQ 1506.1 deals with limitations on actions during the NEPA process. Key provisions of CEQ 1506.1 which relate to proposals for airport actions include the following:
> a. '(a) Until an agency issues a record of decision [described in paragraph 98 of this order] [FAA Order 5050.4A, Airport Environmental Handbook]...no action concerning the proposal shall be taken which would:
> (1) '(1) Have an adverse environmental impact; or
> (2) '(2) Limit the choice of reasonable alternatives.'
>
> FAA Order 5050.4A, Airport Environmental Handbook Par. 73 (emphasis added)

The City's pre-approval land activities violate these legal prohibitions because such actions would undermine the FAA's review process, create fear and panic in the community, create phony "hardship" situations leading to efforts to acquire property under the so-called "hardship" label, and in the end prejudice FAA's decision and make it impossible for the FAA to consider reasonable alternatives that might alleviate the need for such destruction -- because the harmful effects will have already occurred.

The FAA has an affirmative legal obligation to prevent, not foster as the September 22 letter does, Chicago's harmful and unlawful land acquisition activities from occurring. Section 1506.1(b) of the CEQ Regulations, also adopted and incorporated into the FAA's Airport Environmental Handbook (Par. 73), imposes an affirmative obligation on the FAA to insure that the environmental damage and limitation of alternatives does not occur before the EIS decision is made: "the agency *will take appropriate action* to insure that the objectives and procedures of NEPA are achieved." The FAA's letter is inconsistent with, indeed runs directly contrary to, this requirement. 7

Accordingly, the community and religious objectors urge the FAA either to rescind its September 22 letter or to issue a clarification admonishing the City not to

| Comment | Response |
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| 7 | Please see the response to this comment on page U.4-265. |

Objection to FAA letter on pre-approval land acquisition activity
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proceed with ***any*** solicitation of property owners in furtherance of land acquisition without the Villages and Religious Objectors' express written consent. 8

Finally, the community and religious objectors reiterate the following objections and concerns which FAA has continued to ignore:

1. Chicago has yet to produce a detailed and current quantity and unit cost estimate for either the full OMP and related projects — purportedly designed to meet the 2003 Terminal Area Forecast (TAF through the year 2020 — or for Phase I. This failure continues despite FAA's request in October 2003 that these cost estimates be produced. The reason why this cost estimate is so critical is that we know that Chicago has dramatically understated the costs of the full OMP and likely Phase I as well. Disclosure of these true costs will likely doom both the full OMP and Phase I eliminating the need and justification for Chicago to acquire and destroy homes and businesses in our clients' communities. 9
2. Chicago has failed to provide to the FAA, the public and the Objectors the detailed financing plan showing how Chicago is going to pay for OMP — or indeed Phase I. If Chicago cannot pay for OMP then Chicago cannot claim that OMP is the solution for the delay and capacity needs which form the purported justification for the project and for the destruction of our clients' properties. 10
3. FAA must first fully evaluate all available alternatives to OMP and Phase I that do not require the acquisition and destruction of homes, businesses and religious cemeteries in our communities before allowing the City to engage in land acquisition activities. One of the alternatives the FAA must examine is maintaining O'Hare in its current configuration (with appropriate efficiency improvements such as the Delay Task Force recommendations and demand management techniques) while meeting the capacity growth needs of the region at other airports — alternatives which would avoid the destruction of homes, businesses and religious cemeteries in our clients' communities. 11
4. FAA has failed to respond to the substantive prohibition and procedural obligations relating to FAA decision-making on both the full OMP and Phase I discussed in our letters of January 16, 2004, July 22, 2004 and August 27, 2004 demonstrating why both the full OMP and Phase I cannot be approved because they are prohibited by law. These prohibitions demonstrate that Chicago has no justification to engage in activity in furtherance of the

| Comment | Response |
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| 8 | Please see the response to this comment on page U.4-265. |
| 9 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |
| 10 | Please see response to comment 9. |
| 11 | The FAA identified and evaluated reasonable alternatives that meet the defined purpose and need of the project. See **Chapter 3** of the EIS for a detailed description of all alternatives identified.<br><br>Pursuant to the commenter's suggestion, the FAA has added additional analysis in **Section 3.6** of **Chapter 3** of the EIS to specifically address the proposal embodied in this comment. Here, the Agency simply notes that this "alternative" is comprised of the No Action Alternative, demand management, efficiencies adopted from the DTF, and additional use of other airports. The FAA notes that, at present, O'Hare is operating as if the No Action Alternative had been adopted, demand management temporarily in place, and efficiencies that could be realized have already been implemented. In addition, the FAA continues to encourage development at other regional airports. The EIS alternatives analysis, including the aforementioned **Section 3.6**, demonstrates that this "alternative" is inadequate. |
| 12 | In response to this comment and others, the FAA has added **Section 5.22** to **Chapter 5** of the EIS for the FAA's discussion of legal issues involving potential relocation of St. Johannes and Rest Haven Cemeteries.<br><br>In addition, the FAA has added **Section 5.23** to **Chapter 5** of the EIS related to due process rights of the commenter. |

Objection to FAA letter on pre-approval land acquisition activity
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acquisition and destruction of homes and businesses in our clients' communities. 12

5. FAA has yet to fully comply with our longstanding requests for critical documents and information. The community and religious objectors have two independent bases for access to the documents and data FAA has before it in its decision-making process: 1) the now almost two year old FOIA request by the Objectors; and 2) the independent constitutional and statutory rights the Objectors have to his material in the FAA's administrative adjudicatory decision-making process on OMP. If FAA followed the law and released these documents and materials to the Objectors in timely fashion as required by law, there would be substantial additional evidence of the fatal flaws in OMP and Phase I and there would be no justification for Chicago to take these actions in furtherance of the acquisition and destruction of the homes and businesses in our clients' communities. 13

Had FAA responded to and addressed the concerns and objections raised by the Community and Religious Objectors, there would be no need for Chicago to seek to acquire any homes in our clients' communities, and any pressure and uncertainty (an any claimed "hardship") which FAA and Chicago have placed on our communities would not exist. There is no factual or legal justification for the FAA to permit Chicago to take any action in furtherance of the acquisition of our client's homes, businesses, religious institutions, and the destruction of the very fabric of our clients' communities. 14

Therefore the September 22 letter should be rescinded. At the very least, the FAA should publicly clarify that the City cannot proceed with any solicitation of property owners in furtherance of later land acquisition without the Community and Religious Objectors' express written consent. 15

Sincerely yours,

Robert E. Cohn
J. E. Murdock III
**Shaw Pittman LLP**
Counsel for the Community Objectors

Joseph V. Karaganis
**Karaganis White & Magel Ltd.**
Counsel for the Religious and Homeowner Objectors

| Comment | Response |
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| 12 | Please see the response to this comment on the previous page. |
| 13 | The FAA has provided unprecedented access to documents and materials relating to this project. The FAA published draft final materials on the FAA O'Hare Modernization website beginning 7 months in advance of the release of the DEIS. To date, the FAA has released over 7.5 million pages relating to O'Hare. |
| 14 | The FAA is aware of no activity undertaken by the City of Chicago in furtherance of the OMP that violates any orders, statutes, or other prohibitions. |
| 15 | Comment noted. |

cc: Perry Kupietz, Esq.
Charles Prock, Esq.
Daphne Fuller, Esq.

Document #1493202

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October 15, 2004

Amy B. Hansen
Environmental Protection Specialist
Chicago Airports District Office
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Charles Prock
Office of Regional Counsel
Federal Aviation Administration
2300 East Devon Avenue
Des Plains, Illinois 60018

**Re: O'Hare Modernization Program: Eligibility of St. Johannes and Rest Haven Cemeteries for listing in the National Register of Historic Places**

Dear Ms. Hansen and Mr. Prock:

On behalf of the Village of Bensenville and the Bensenville Historical Society I am submitting to the Federal Aviation Administration a letter from my Shaw Pittman colleague Anne H. Adams. Ms. Adams is a respected and experienced architectural historian and has been an expert in historic preservation matters for almost 30 years. She has appeared before and been qualified as an expert by numerous governmental review boards and commissions. Ms Adam's letter contains detailed, albeit preliminary, information demonstrating that the St. Johannes Cemetery and the Rest Haven Cemetery are eligible for listing in the National Register for Historic Places.

Both cemeteries are located in Bensenville and both would be destroyed as a result of the proposed O'Hare Modernization Program. Both cemeteries are religious institutions, and the OMP would cause both institutions to suffer serious, permanent and substantial injury and would burden the rights of these religious institutions and the individual members of these institutions under the Free Exercise Clause of the First Amendment of the United States Constitution and the federal Religious Freedom Restoration Act.

2300 N Street, NW Washington, DC 20037-1128 | 202.663.8000 Fax: 202.663.8007 | www.shawpittman.com | Washington, DC Northern Virginia New York Los Angeles London

| Comment | Response |
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| 1 | This material within this letter regarding the cemeteries was considered by the FAA. At the request of the Illinois Historical Preservation Agency (IHPA), a formal Determination of Eligibility (DOE) for both St. Johannes and Rest Haven cemeteries were prepared and submitted to the IHPA for review.<br><br>FAA presented a series of historical questions to the cemetery representatives in a meeting on July 22, 2004 and the cemetery representatives responded on October 15, 2004. The cemetery representatives' response, which holds that both St. Johannes and Rest Haven Cemetery are eligible to the NRHP, was submitted by the cemetery representatives to IHPA and FAA. The cemetery representatives' response concurred with the FAA's recommendation, that both cemeteries are eligible to the NHRP. The historical information provided by the cemetery representatives was incorporated into and attached to the Determination of Eligibility prepared for both cemeteries.<br><br>On June 9, 2005, the Department of Interior determined that the St. Johannes cemetery is eligible for the National Register of Historic Places under National Register Criteria A, B and C and the cemetery meets National Register Consideration D. |

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Ms. Adam's letter is submitted to assist the FAA in fulfilling its legal obligations under Section 106 of the National Historic Preservation Act of 1966, as amended ("NHPA"), and the National Environmental Policy Act ("NEPA"), by describing the historical significance of St. Johannes and Rest Haven Cemeteries. Ms. Adam's letter does not address objections as to religious injury. The objections of these cemeteries/religious institutions and the family members of the deceased interred in these cemeteries (collectively referred to in other correspondence as the "Religious Objectors") to the proposed Chicago OMP as to the substantial burden and injury that will be imposed on their religious beliefs and practices under the First Amendment Free Exercise Clause and the federal Religious Freedom Restoration Act are addressed in other correspondence to the FAA. *See*, letters of Religious Objectors dated January 16, 2004, May 4, 2004, July 22, 2004, and August 23, 2004.

Having conclusively established that the cemeteries are historic properties eligible for listing on the National Register of Historic Places and having established that OMP will have an adverse effect on the cemeteries, the FAA is by law obligated, in consultation with the SHPO and other parties, to develop, evaluate and document alternatives and modifications to the OMP that could avoid, minimize or mitigate the adverse effects on historic properties. 36 CFR §800.6. Such alternatives, which must be thoroughly evaluated and documented would include, *inter alia*, implementation of the FAA Joint Delay Task Force recommendations, no change to the configuration of the airport (i.e. in the number and location of runways), alternative runway configurations to avoid the need to acquire the cemeteries' property, reliance on other regional airports to address regional demand/capacity requirements, and continuation of flight controls at O'Hare to manage delays and congestion. The obligations under Section 106 are separate and apart from the obligations under NEPA to evaluate alternatives.

Moreover, in addition to the Section 106 and NEPA requirements, the First Amendment Free Exercise Clause and the federal Religious Freedom Restoration Act impose an even higher standard with respect to destruction of religious institutions. The destruction of the cemeteries would impose a substantial burden on the exercise of religion by the religious institutions and its members. The Constitution and the federal Religious Freedom Restoration Act require FAA to determine that there is a compelling governmental need for the destruction of the cemeteries and that there are no alternative means to accomplish the



governmental objective without destroying the cemeteries. We respectfully submit that the FAA can make no such determinations.

Sincerely yours,

Robert E. Cohn

Enclosure
cc: Andrew Steinberg
Perry Kupletz
Barry Cooper
Daphne Fuller

Document #: 1437639 v.1

041015_02

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October 15, 2004

BY FACSIMILE

Amy B. Hansen
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Federal Aviation Administration
2300 East Devon Avenue
Des Plains, Illinois 60018

Re: St. Johannes Cemetery and Rest Haven Cemetery, Bensenville, Illinois

Dear Ms. Hansen:

On behalf of the Village of Bensenville and the Bensenville Historical Society, I am hereby providing to you preliminary information demonstrating the eligibility of St. Johannes Cemetery and Rest Haven Cemetery for listing in the National Register of Historic Places ("National Register" or "NRHP").

St. Johannes and Rest Haven Cemeteries are both locally significant. They were established by the pioneer and founding families of Bensenville and Addison Township. As the final resting place for many of the community's most prominent early settlers, landowners, and civic leaders, St. Johannes and Rest Haven provide visual and physical documentation of Bensenville's early history. Although numerous buildings important to Bensenville's twentieth century history remain, these cemeteries are the Village's most significant remaining nineteenth century artifacts.

Both cemeteries are eligible for listing in the NRHP under Criteria A and B, and they meet Criteria Consideration D: Cemeteries. Additionally, both properties retain integrity sufficient to convey their significance and sufficient time has passed to allow for professional evaluation of the properties. The conclusions of this letter are based on a preliminary assessment of the history of these two locally-significant properties. Further research may establish that they are also eligible for listing in the NRHP under additional criteria and/or for additional areas of significance.

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| Comment | Response |
|---|---|
| 1 | Please see response to comment 1 of *ShawPittman's October 15, 2004 to Chuck Prock/Amy Hanson* letter, document number 041015_01, on page U.4-272. |

ShawPittman LLP

Amy B. Hansen
October 15, 2004
Page 2

Background

The proposed expansion of O'Hare International Airport ("Airport") by the Federal Aviation Administration ("FAA") is an undertaking ("Undertaking") pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended ("Act" or "NHPA") and 36 C.F.R. Part 800. Accordingly, as part of its planning efforts and consideration of alternatives to the proposed Undertaking, FAA is required by law to consider the effects of that Undertaking on historic resources. The FAA must consult with the Illinois State Historic Preservation Officer regarding the identification of an Area of Potential Effect ("APE") and properties within the APE that are either listed or eligible for listing in the National Register. Both St. Johannes and Rest Haven Cemeteries, given their proximity to the airport, would be located within any reasonably-defined APE. Additionally, St. Johannes and Rest Haven Cemeteries must be included in the list of properties within the APE that are eligible for listing in the National Register. The cemeteries are among the few remaining physical representations of the town's early settlement and history.

St. Johannes and Rest Haven Cemeteries are physical representations of the mid-nineteenth and early-twentieth century settlement, development, and heritage of Bensenville and the surrounding areas of Addison Township. As important surviving examples of German Protestant cemeteries, each established and consecrated in the mid nineteenth century, they are closely associated with the area's German pioneers and their descendents, whose traditions and influence lived on for generations. The individuals and families buried in these cemeteries and the types of grave markers found at St. Johannes and Rest Haven Cemeteries are closely associated with the area's early history and cultural heritage. Among them were community leaders whose commitment to Bensenville's early civic and social institutions was lifelong. Without them Bensenville's early history in general and its distinctive Germanic cultural history in particular would have little by which to be remembered.

Clearly, the FAA's proposed Undertaking would have an adverse effect on these National Register-eligible properties. This Undertaking may well also have adverse effects on other, later buildings and developments, such as the Center Street Commercial Block, with its theater and stores, the Green Street School, and later residential developments that are important to Bensenville's twentieth century history, that are also eligible for listing in the National Register. However, those effects and properties will not be the subject of this letter.

For religious properties and cemeteries to be eligible for listing in the National Register they must meet at least one of the four basic criteria for listing and retain their integrity and be of sufficient age to allow for professional evaluation. In addition, cemeteries must meet the Criteria Consideration for cemeteries. St. Johannes and Rest Haven Cemeteries meet all of these tests. These historic cemeteries are eligible for listing in the National Register under two of the three criteria related to buildings and structures (the fourth criterion being related to archaeological

ShawPittman LLP

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resources) and they meet the Criteria Consideration D required for cemeteries. St. Johannes and Rest Haven Cemeteries meet Criterion A (for their associations with the broad patterns and significant events of Bensenville's early history and development) and Criterion B (for their associations with the lives of many individuals and families of major importance to the early settlement of Addison Township and the founding and early development of the Village of Bensenville). St. Johannes and Rest Haven Cemeteries also meet Special Consideration D: Cemeteries because: they are the final resting places for numerous individuals and families who were of transcendent importance to the founding and early history and development of the Village of Bensenville; they date from the period of settlement and incorporation of the Village; and they are important reflections of the broad patterns of Bensenville's early history and culture, of which very few remain.

Both cemeteries possess sufficient integrity to qualify for listing in the NRHP. Their integrity of location, design, materials, workmanship, feeling, and association remains clearly discernable. Although the surrounding settings of the two cemeteries have been affected by the passage of time and the construction and expansion of O'Hare International Airport, and they have thus lost the pastoral settings within which they were originally located, the two cemeteries remain otherwise intact, save for the normal effects on grave markers associated with the passage of time. Significantly, they continue to hold religious and spiritual significance for their respective institutions, which are associated with and significant to the area's mid-nineteenth and early-twentieth century settlement and development, and to the descendents of those buried there. Given the absence of other buildings associated with Bensenville's early history, these cemeteries are particularly significant.

St. Johannes Cemetery and Rest Haven Cemetery are eligible for listing in the National Register under Criterion A for their association with and reflection of the German settlement patterns, cultural history, and development of the surrounding area and the churches with which they were associated. These two cemeteries date from the early years of German immigration and have long been associated with the nineteenth and early-twentieth century historical development and cultural and religious character of the area as it was established and defined by German settlers. These cemeteries reflect the broad spectrum of Bensenville's history and culture. St. Johannes Cemetery and Rest Haven Cemetery are physical embodiments of the culture and religious history of the area's German heritage. They are the embodiment of significant historical associations that reflect the pioneering efforts of several waves of German immigrants in the area. They also reflect the social history and German Protestant heritage that so clearly shaped the counties and towns northwest of Chicago. Ultimately, these two cemeteries are physical expressions of the collective religious and cultural identity of the German Protestants who lived, died, and were buried at St. Johannes and Rest Haven Cemeteries.

ShawPittman LLP

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Page 4

The cemeteries are also eligible for listing in the National Register under Criterion B for their association with the individuals and families responsible for the early settlement of the area and the founding of the Village of Bensenville and its significant early institutions. These exceptional individuals, such as Herman Korthauer, William Kolze, and George Cogswell, and families, such as the Franzens, Landmeiers, and Elfrings, were community leaders who established and built, both figuratively and, sometimes, literally, the town's early civic and religious institutions and the buildings they occupied; they made Bensenville's early history. The two cemeteries contain the remains and grave markers of many of these remarkable individuals and families.

St. Johannes and Rest Haven Cemeteries are expressions of the collective religious and cultural identity of Bensenville from its founding in 1884 through the early decades of the twentieth century. As places and institutions they embody a prevailing cultural identity and by individual markers they identify specific individuals and families of outstanding local significance for whom no other associated building or place remains. The two cemeteries are remaining physical manifestations of Bensenville's early culture and history and they have been and continue to be regarded as sacred and inviolate. Some of the grave markers are significant examples of their type and/or possess notable artistic merit. However, that aspect of St. Johannes and Rest Haven Cemeteries warrants separate discussion.

St. Johannes Cemetery

St. Johannes Cemetery is the final resting place for many of the earliest and most significant settlers in the area. The cemetery is and has historically been associated with St. John's United Church of Christ and its antecedents which, both as an institution and for its cemetery, is significant in the history of Village of Bensenville. The history of the Church reflects the settlement patterns and growth of the area. St. Johannes Cemetery is a vital physical link to that history. It is the physical expression of the spiritual and religious beliefs and teachings of St. John's Church as it evolved over the last century and a half.

St. Johannes Cemetery has been and it continues to be the site of religious services and the administration of Religious Rites of the Church, including the Rite of Burial. It is holy ground, where members of the Church are committed to God's care, to rest until the Day of Resurrection. The desecration of the Cemetery would be an assault on the church and on its beliefs as well as on the souls buried in this hallowed ground.

The origins of St. John's Church begin in around 1840, when German immigrants from Dunklee's Grove and the surrounding area met about the formation and construction of a church known as the United German Evangelical Church of Saint John. Among this group of Germans were believers in Evangelical, Reformed, and Lutheran teachings; their church became known as

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The United German Evangelical Reformed Lutheran Church of Addison. Differences among those teachings lead to a period of unrest among the factions of the church and, ultimately, to the formation of what is now known as St. John's United Church of Christ. In 1848 the United Evangelical St. John's Church of Addison was built on five acres of land for a cost of $741.98. In 1849 the Church established its cemetery, laid out in a formal plan with walkways to allow for visitation and care of graves, in the churchyard. By 1853 the congregation was incorporated as the United German Church of St. John. In 1919 it joined the Evangelical Synod of North America, which in 1958 merged with the United Church of Christ.

As the congregation grew it continued to reflect the strong German heritage of the area. As the Church prospered it acquired more land and built a parsonage with a schoolroom. By the early 1870s the congregation, swelled by the latest wave of German immigrants, had outgrown its original church. By the fall of 1873 the original church was replaced by a much larger frame structure with a projecting tower topped by a tall steeple centered on its front façade. Other construction included a new schoolhouse and the relocation and expansion of the old schoolhouse for use as the parsonage. Much of the work was done by members of the congregation.

In the fall of 1893 thirteen pastors of the North Illinois District of the German Evangelical Synod met to discuss the establishment of a Christian home for the care of neglected and orphaned children and the aged, at a location within twenty-five miles of Chicago to be determined. The Pastor of St. John's Church was one of those thirteen pastors. Through one of his parishioners, a member of the Bensenville Village Board of Trustees, Bensenville became aware of the proposal to establish this home. In 1894 the Board of Trustees offered a gift of $1,200.00 for the new home to be located in Bensenville. In August of 1895 the German Evangelical Orphan and Old People's Home was dedicated, in Bensenville. This remarkable Victorian pile of a building, known as the Castle, was home to both the young and the old until 1928, when the Bensenville Children's Home was completed. The functions and form of this important building evolved until 1978, when the Castle was demolished, having been replaced several years earlier by a new facility. Ultimately, the institution itself evolved into Lifelink, a not-for-profit, charitable and human service organization related to the United Church of Christ; even in its current iteration it has links to St. John's Church.

The Germanic aspect of the Church remained strong well into the twentieth century. It was not until 1929 that English was first introduced in the Sunday School and, once a month, in Church services. Not surprisingly, by 1942, as the anti-German sentiments of the years leading up to World War II spread across the country, Sunday services were held in English, with a second, German service following twice a month. By 1952, German services were only held three times a year. Since 1965 the Church has been known as St. John's United Church of Christ.

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The centennial anniversary of the Church was celebrated in 1949. By that time the Church occupied 14 acres of land in the farming community of Orchard Place. Throughout its history St. John's churchyard served as the burial ground and final resting place for many of its members.

In 1949 the City of Chicago acquired the land surrounding nearby Orchard Place Airport, which was also known as Douglas Field. The airport was renamed O'Hare Airport, after World War II naval aviator Lieutenant Commander Edward H. O'Hare. The City of Chicago wanted to buy and demolish buildings in the area, including St. John's Church and Cemetery, to allow for the expansion of O'Hare Field. Negotiations between the Church and the City over the land and the possible demolition of the church and cemetery resulted in the 1952 relocation of the church (but not the cemetery) to a new site in Addison Township, five miles west of its original location. Although the other church buildings were demolished at that time, the Church was adamant that it could not and would not allow disturbance of its cemetery, because it is consecrated holy ground.

St. Johannes Cemetery is the resting place for over a thousand members of the Church. Among the most prominent in Bensenville history is Herman Korthauer, who was largely responsible for the official founding of Bensenville. He was a member of one of Addison Township's most important pioneer families, which immigrated from Germany in the mid-nineteenth century. He owned the local hardware store, in which the first local telephone switchboard was installed in 1902. Other members of his family were landowners, farmers, nurserymen, and carpenters. Herman Korthauer and his extended family were pivotal in the official founding of Bensenville. It was Herman Korthauer who began the process by which the requirements and procedures for the incorporation of Bensenville were explored and, ultimately, executed. He was, as Martha Jones notes in her history of Bensenville:

> … to spend the rest of this long life devising ways and means
> for the Village of Bensenville. As the oldest son of an early settler,
> he was one of a generation of Addison Township men who would
> lay the foundation of civic organization and government in this area.

Upon the incorporation of the town, Herman Korthauer was elected Clerk of the Village Board of Trustees, a position he held from 1884 until 1892. Herman Korthauer was: President of the Board of Trustees from 1892-1897 and from 1922-1929; a Village Trustee from 1900-1913; a member of the Bensenville School Directors and the first clerk of School District 2 Board (he served on that board from 1885-1893); and a charter member of the Bensenville Volunteer Fire Department, which was organized in 1894 and of which he was the first elected chief. He remained an active member until 1930. He was also active in civic organizations such as the

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Mannerchor. In short, Herman Korthauer is a person of substantial historical significance and was involved in a significant way in all aspects of the first fifty years of Bensenville's history.

William Kolze, another prominent and historically significant early Addison Township resident, is also buried at St. Johannes Cemetery. Kolze arrived in the area in 1880. By 1890 he had built a large white house in a community near Bensenville bearing his name. The house was a local landmark for almost a century and Kolze subsequently became known as Schiller Park. William Kolze, a prominent landowner and official in the Township and DuPage County government, was involved in a number of prominent early Illinois legal cases. He is buried at St. Johannes Cemetery. As with the Korthauer family, members of the Kolze family were active in local institutions, both in Schiller Park and Bensenville. William Kolze's daughter-in-law, who became mayor of Schiller Park in 1932, was the first woman mayor in the state. Harry Kolze was a long-time Chief of Police in Bensenville.

Among other prominent early settlers and residents buried at St. Johannes is William Franzen, Village President in 1901 and Vice-President from 1898-1913 and 1919-1921. The Franzen family, like the Korthauer family, played an important role in the early development of Bensenville. B. H. Franzen was the first member of the family to arrive in Addison Township, in 1833 or 1834. John Franzen arrived in 1836 and by 1847 had established a brick factory and flax mill in the area. C.A. Franzen was the Clerk of the original committee organized by Herman Korthauer to study the incorporation of Bensenville and was Village President from 1888-1891. He operated the local coal and lumber yards and the feed and grain store. Barney Franzen was Village President from 1885-1886. The Bank of Franzen Brothers, C.A., William, and A.W. Franzen (Village Treasurer from 1923-1925, 1926-1927, and in 1936) Proprietors, founded in Bensenville in 1900, became the First State Bank of Bensenville in 1911.

The German heritage of the Church and the surrounding area is visually apparent in the cemetery. German family names abound, as do German inscriptions on grave markers and markers in forms preferred by and associated with the early German settlers. Christian Duntemann and his wife, Millizena Erdmann Duntemann, were among an early wave of German immigrants to arrive in this area in 1847. They and their sons Heinrich, Hermann, and Louis, are buried at St. Johannes Cemetery. The Duntemanns farmed land that was later acquired by O'Hare Field. Family names such as Landmeier, Boerner, Scholle, Eickelmann, and Schultz bear witness to the German settlement and development of the area. The group of seven horizontal cylinders sharing a common base, which commemorate the Kolze children, are examples of a monument type particularly favored by German Protestants. Obelisks of a variety of sizes and detailing stand throughout the cemetery. The 1926 obelisk marking Henry Kolze's grave is the tallest monument in the cemetery. Another features carved cloth drapery and yet another is chamfered and notched in an unusual manner. Open books are a common theme

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among the monuments, perhaps the best example of which is a group of four lecterns, each with an open book, dating from the 1890s.

A cross within the cemetery marks the location of the original and the 1873 Church buildings. St. John's nineteenth-century building was relocated and refaced with brick veneer in 1952. St. Johannes Cemetery is the only remaining historical artifact associated with that significant institution. The cemetery documents and represents the important first century of St. John's Church, whose members were the German immigrants who farmed the land northwest of Chicago, defined the historical and cultural development of Bensenville and the surrounding area, and who otherwise have no structures by which they can be recognized and remembered.

St. Johannes continues to be an active burial ground. Its religious and spiritual ties to St. John's Church remain strong. The cemetery represents a vital and significant element of the teachings and beliefs of St. John's Church. It is the sacred resting place for those who are waiting to go to their final resting place. It represents the Church's history and is a significant physical representation of the sacred and spiritual beliefs of the Church and its congregation, both past and present.

The necessity of retaining this sacred place in its original location is no less compelling and important now than it was in the early 1950s, when the first wave of expansion occurred at O'Hare Field. At that time the City of Chicago recognized and accepted the religious and historical significance of the cemetery and that to move it would constitute desecration of sacred ground. Consequently, it remains to this day an important and well-preserved example of an old German Protestant cemetery.

Rest Haven Cemetery

Rest Haven Cemetery is located not far from St. Johannes Cemetery. The first burial at Rest Haven was that of William F. Cogswell in 1864. As with St. Johannes, Rest Haven has remained an active cemetery and it was rededicated in 1986. Although smaller than St. Johannes it is no less significant. It too reflects the dominant Germanic cultural and religious traditions of Bensenville and Addison Township. This cemetery has been in continuous use for the burial of members of the United Methodist Church of Itasca and the United Methodist Church of Bensenville and their predecessor institutions. Those earlier churches established The Trustees of the Evangelical Cemetery Association which, in 1919, became the Rest Haven Cemetery Association, which had as its sole purpose the operation, protection, and preservation of the Rest Haven Cemetery. This Association has maintained and preserved the consecrated ground and graves at the Rest Haven Cemetery since that time. Its members take very seriously their religious responsibilities for the protection and preservation of the sanctity of the final resting place of the souls buried at Rest Haven Cemetery.

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As at St. Johannes Cemetery, grave markers at Rest Haven identify the final resting places of individuals and families, mostly German, significant to the early settlement of the area and the founding of Bensenville. Individuals such as George Cogswell, who worked with Herman Korthauer toward the incorporation of the Village of Bensenville, are buried at Rest Haven Cemetery. Cogswell was elected the first President of the newly incorporated Village of Bensenville in 1884. He served in that position until 1885 and then again in 1887-1889. He was also a Bensenville School Director and was elected as the first president of the School District 2 Board, of which he was a member from 1885 to 1891. Cogswell's parents (William and Annie, nee Franzen) and several of his siblings are also buried at Rest Haven.

Luehring, Kolze, Franzen, Muller, Biesterfeld, and Elfring grave markers also reflect the dominant German settlement patterns and development in Bensenville and Addison Township. Examples of the horizontal cylindrical grave markers preferred by German Protestants are also found at Rest Haven.

Perhaps originally the most beautiful and now one of the most moving monuments in either cemetery is that of Laura Elfring, who died in 1898 at the age of three. Her grave is marked by a statue of a young girl holding a dove. This grave marker is one that has been affected by the passage of time; the head of the statue is missing. Laura's father Fred was Village President from 1913-1914 and 1921-1922, a member of the Village Board of Trustees from 1894-1899, and the Secretary of the Volunteer Fire Department during its early years. He operated the general store in Bensenville that also served as the town post office for many years. His wife Mary, son Walter, and several other members of the extended Elfring family are also buried at Rest Haven.

Conclusion

St. Johannes Cemetery and Rest Haven Cemetery are physical and spiritual links to Addison County's and Bensenville's earliest settlers. They contain the remains of many of Bensenville's most important early founders. Established and laid out in accordance with Church doctrine, they were and are considered to be sacred ground to those who were buried there and the descendents of those individuals. The grave markers are physical reflections of those same beliefs. They include intact examples of forms of grave markers favored by the German Protestants who settled in this area. Individually and together they reflect in a tangible form the early settlement patterns and religious and cultural values the defined the character of Addison Township and Bensenville for nearly a century.

Cemeteries, perhaps especially those that remain in active use like St. Johannes and Rest Haven, are powerful spiritual and religious symbols. In the case of these two cemeteries they not

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only reflect the history of their associated institutions but they also reflect the history and development of the town and township that grew up around those institutions. Clearly the two properties are eligible for listing in the National Register under Criteria A and B and Criteria Consideration D: Cemeteries. The are places and symbols associated with individuals and families significant to the history of Bensenville and Addison Township and who have no other extant associated structure by which to be remembered. Given the obvious adverse effects the proposed expansion of O'Hare International Airport would have on these historic resources, the FAA must explore real and viable alternatives to this Undertaking that would avoid or at least mitigate these adverse effects. Given the historical, religious, and cultural significance of these properties, and that the two cemeteries are sacred ground, the only legitimate solution before the FAA is to leave the cemeteries intact as active burial grounds.

As we identify and clarify additional areas of significance associated with St. Johannes Cemetery and Rest Haven Cemetery we will share that information with you. Should you have any questions about any of the above, please feel free to contact me.

Sincerely,

Anne H. Adams

Anne H. Adams
Architectural Historian

cc: Barry Cooper
Charles Prock
Andrew Steinberg
Daphne Fuller
Perry Kupietz
William Wheeler

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AReCO

ALLIANCE OF RESIDENTS CONCERNING O'HARE, Inc. "a grass roots organization"

P.O. Box 1702 ❍ Arlington Heights, IL 60006-1702 ❍ Fax: 847/506-0202 ❍ Tel: 847/506-0670 ❍ www.areco.org

**February 22, 2005**

**Oral comments submitted to the Federal Aviation Administration on the O'Hare "Modernization" (Expansion) Draft Environmental Impact Statement under the 5-minute time limit by Jack Saporito for The Alliance of Residents Concerning O'Hare and Mothers Against Airport Pollution**

**WE ARE NOT BEING PROTECTED**

The Draft Environment Impact Statement is fatally flawed and the public is being deceived and left unprotected. 1

- The federal government is systematically trying to deceive the American public by fabrication, manipulation, incomplete or incorrect data and cover-ups regarding the severe environmental and public health airport related problems, both here and nationwide. 2
- The DEIS is deficient in that none of the 1000+ Scoping Comments are specifically addressed. The public will not see specific responses until the EIS is finalized, when it is too late! 3
- Noise, pollution and public health impacts are not modeled and simulated at maximum "expanded" airport capacity, but rather at low "projected" levels of 1.2 million vs. about 2 million operations per year at full airport capacity build out! 4
- "Significant" noise impact term has been deceptively substituted for "Highly Annoyed"[i] and also, the industry metric is known to be too high (65dB DNL)[ii] to protect the public[iii]/[iv]/[v]. 5
- We are somehow asked to believe there is no significant noise impact on the public outside a 65dB DNL contour, even though noise in communities may have doubled or tripled from previous levels! 6
- Rumbling low frequencies and conversation-stopping peak noise impact events are suppressed or disregarded! 7
- Cardiovascular damage or heart attacks, due to stress hormones produced from the continuous, repetitive aircraft noise peaks, are not yet considered a matter of concern! 8
- Sleep interruption health problems are set aside.[vi] 9
- Air pollution impacts from airport operations are not even modeled or simulated for any areas beyond the airport fence-line boundary! 10
- Significant cardiovascular and other serious health impacts caused by clouds of fine, virus size, particulate matter, which stay airborne for days, are being "swept under the rug", along with ill-considered toxic emissions impacts. 11

| Comment | Response |
|---|---|
| 1 | The FAA disagrees with the commenter's statements. There has been no attempt to deceive the public. The EIS has been prepared in accordance with the National Environmental Policy Act (NEPA) and other applicable Federal environmental laws. |
| 2 | Please see response to comment 1 immediately above. |
| 3 | This commenter was not specific as to what scoping comments were not addressed by the Draft EIS. All comments received during scoping were considered in the development of the EIS. |
| 4 | Noise and air quality modeling is based on the operations projected by the 2002 Terminal Area Forecast (2002 TAF). The 2002 TAF projects approximately 1.2 million operations would occur in 2018 at O'Hare. FAA believes that the forecast used for the EIS is appropriate. The resulting noise and air quality impacts are disclosed in **Chapter 5** of the EIS. |
| 5 | Please see response to comment 28 of the *AReCO April 6, 2005* letter, document number 050406_02, beginning on page U.4-304. |
| 6 | Please see response to comment 30 of the *AReCO April 6, 2005* letter, document number 050406_02, beginning on page U.4-304. |
| 7 | Please see response to comment 31 of the *AReCO April 6, 2005* letter, document number 050406_02, beginning on page U.4-305. |
| 8 | Please see response to comment 32 of the *AReCO April 6, 2005* letter, document number 050406_02, beginning on page U.4-305. |
| 9 | Please see response to comment 33 of the *AReCO April 6, 2005* letter, document number 050406_02, beginning on page U.4-305. |
| 10 | FAA disagrees with the comment. The macroscale dispersion analysis evaluated (modeled/simulated) air pollutant concentrations on Airport property, at the Airport boundary, and at locations beyond the Airport boundaries. The microscale dispersion analysis also evaluated pollutant concentrations both on Airport property and beyond the Airport boundaries. |
| 11 | Please see response to comment 56 of the *AReCO April 6, 2005* letter, document number 050406_02, beginning on page U.4-309. |

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* The FAA grossly underreports the amount of pollution emitted from aircraft. 12

* Hazardous and toxic air pollutants (HAP's) are effectively not analyzed at all![vii] 13

And the list of DEIS defects and FAA failures goes on…

It is irrational to determine that O'Hare has no significant pubic health impacts harming a large percentage of the population.

- Here are a few facts about O'Hare that illustrate just how bad this problem is:
  1) O'Hare's aircraft alone, emit more Volatile Organic Chemicals (Compounds) than those from all Illinois electric power plants combined; additionally, Carbon Monoxide emissions as much as 60% of that total!
  2) O'Hare's operations release hundreds of different toxic and "criteria" chemicals into our environment in quantities of many thousands of tons per year[viii]!
  3) Poisonous, de-icing fluids flow into aquifers and through our communities in the air, and through streams on their way to sewage treatment plants (e.g. Stickney) and then into our waterways, without alteration or neutralization,[ix] and the toxic additives, which are more poisonous than the base glycols, cannot be filtered out. 14

* Mayor Daley and the industry have always falsely claimed that O'Hare and its aircraft have a minimal impact; however, logic dictates that is patently and deceivingly false:
  - Besides the huge impact that aircraft have and that the FAA is hiding, airports are often like functioning major cities with all the operations that a city would need for support. For example, no one wants to live next to an incinerator, but O'Hare has an onsite incinerator; no one wants to live next to a powerplant, but O'Hare has powerplants, plus major fuel distribution, maintenance and office facilities, and about 175,000 cars, trucks, taxis, etc. that go into the airport each day. O'Hare is compacted within about 4 square miles of land, located within a densely populated area. About 1 million people live within 4 miles and several million within 10 miles of O'Hare, affecting much of the Chicago population; yet, no hearings are being held there. 15

* The medical cost of just the additional cancers caused by the DEIS projected new flights will be approximately $3,750,000,000 annually.[x] 16

If you are forced to deceive us, something is very wrong and needs to be fully investigated. 17

**Some Necessary Remedies:**

* The FAA's and industry's purposely "streamlined" environmental process is short-circuiting proper analysis that would act to protect the people. A second supplemental Draft EIS must be created and released, rectifying all deficiencies, before proceeding to a "final" EIS. 18

* The USEPA and IEPA is hereby challenged to both properly and sufficiently exercise their responsibilities to protect the public and our environment, as "Cooperating Agencies", as the Clean Air Act and other NEPA laws mandate[xi]. 19

We will be submitting our full written comments later.

| Comment | Response |
|---|---|
| 12 | Please see response to comment 39 of the *AReCO April 6, 2005* letter, document number 050406_02, beginning on page U.4-306. |
| 13 | Please see response to comment 58 of the *AReCO April 6, 2005* letter, document number 050406_02, beginning on page U.4-310. |
| 14 | 1) FAA believes that the comparisons made by the commenter are not an appropriate basis for consideration of O'Hare's emissions. Nevertheless, to provide an indication of the magnitude of O'Hare's emissions relative to sources in the region and the region as a whole, the O'Hare estimates were compared to emission totals prepared by the USEPA AIRS database for 1999 (this is the most recent data available). Comparisons were made between O'Hare's emissions and power plants within the region, and all emissions in the region. Although FAA agrees that O'Hare would emit more carbon monoxide and volatile organic compounds than power plants in the region, it should be noted that power plants are one of many permitted sources within the area. Notably, O'Hare emissions represent only 11 percent of the total carbon monoxide emissions from permitted sources within the region, and 2 percent of the volatile organic compounds from permitted sources within the region. Further, these regional emissions do not consider motor vehicles and area sources, which are large contributors of carbon monoxide and volatile organic compounds. Overall, O'Hare's emissions represent a small portion of the total regional air pollutant emissions.<br>2) The levels of air pollutant emissions reported in the EIS vary depending on the pollutant/precursor and are not considered substantial when compared to regional levels. In any event, none of the criteria pollutants evaluated are estimated to exceed the applicable NAAQS. In contrast to the commenter's statement, there are relatively few hazardous air pollutants associated with O'Hare operations. See **Appendix I** for further HAPS information.<br>3) Water quality conditions are considered to be acceptable for discharge into one of the three creeks that drain the Airport when the runoff meets the appropriate standards set forth by the agencies that regulate water quality in the State of Illinois, the U.S. Environmental Protection Agency and the Illinois Environmental Protection Agency. |
| 15 | The FAA disagrees with the commenter's characterization. The EIS describes the air quality impacts in the vicinity of O'Hare. Please see response to comment 14 immediately above. |
| 16 | The commenter did not provide the cited study or data in support of this claim. |
| 17 | Please see response to comment 1, on page U.4-280. |
| 18 | Please see response to comment 2 of the *AReCO April 6, 2005* letter, document number 050406_02, beginning on page U.4-297. |
| 19 | Both the USEPA and IEPA submitted comments on the Draft EIS. Responses to their letters, document numbers 050406_01 (USEPA) and 050406_04 (IEPA) are contained in this appendix beginning on pages U.2-11 and U.3-5 respectively. |

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**ENDNOTES:**

[i] For example, in DEIS Appendix F 1.1.3, "As a result of these studies, in 1981 the Federal Interagency Committee on Urban Noise (FICUN) established DNL 65 as the threshold of significant noise impact." This is extremely deceptive; the threshold was for "Highly Annoyed", not "significant impact".

[ii] Ref. DEIS Appendix F. "The DNL has been identified by the U.S. Environmental Protection Agency (USEPA) as the principal metric for airport noise analysis." U.S. Environmental Protection Agency, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, U.S. EPA Report No. 550/9-74-004, 1974.

[iii] The World Health Organization, EPA and other credible institutions recommend a much lower noise protection metric;[iii] 55dB DNL outdoor is a "serious annoyance" and 50dB DNL is a "moderate annoyance." FAA needs to include those metrics as you have done elsewhere - nationwide.

[iv] Ref: http://www.who.int/docstore/peh/noise/ComnoiseExec.htm

**Table 1: Guideline values for community noise in specific environments.**

| Specific environment | Critical health effect(s) | LAeq [dB(A)] | Time base [hours] | LAmax fast [dB] |
|---|---|---|---|---|
| Outdoor living area | Serious annoyance, daytime and evening | 55 | 16 | - |
| | Moderate annoyance, daytime and evening | 50 | 16 | - |
| Dwelling, indoors | Speech intelligibility & moderate annoyance, daytime & evening | 35 | 16 | 45 |
| Inside bedrooms | Sleep disturbance, night-time | 30 | 8 | |
| Outside bedrooms | Sleep disturbance, window open (outdoor values) | 45 | 8 | 60 |
| School class rooms &pre-schools, indoors | Speech intelligibility, disturbance of information extraction, message communication | 35 | during class | - |

[v] IV. PRACTICAL IMPORTANCE OF DOSAGE-EFFECT RELATIONSHIPS IN COMMUNITY NOISE ASSESSMENTS

The U.S. Federal Interagency Committee on Noise (FICON) declared in its 1992 report that annoyance was its preferred "summary measure of the general adverse reaction of people to noise," and that "the percentage of the area population characterized as 'highly annoyed' by long-term exposure to noise" was its preferred measure of annoyance.

FICON institutionalized the fitting function developed by Harris *cf.* Fig. 5 for the U.S. Air Force as its preferred dosage-effect relationship. FICON also indicated in Section 3.3.1.2 of its 1992 report that "the DNL methodology" i.e., its preferred dosage-effect relationship was the basis for its judgments about the acceptability of noise exposure, as expressed in the agency's "land use compatibility" recommendations. The canon of community noise policy of U.S. federal agencies is based on FICON's endorsements of (1)

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annoyance as the primary measure of community reaction to noise exposure, (2) of a particular fitting function as a means for predicting annoyance from cumulative exposure, and (3) of a set of guidelines for the acceptability of annoyance prevalence rates, expressed as "land use compatibility" recommendations. Thus, decisions about the award of billions of dollars of federal subsidies to construct airport and highway infrastructure and to mitigate their noise impacts ostensibly rest on the shape of a purely descriptive fitting function, unsupported by quantitative, theory-based, or other systematic understanding of the origins and mechanisms of community reaction to transportation noise.

["The Schultz curve 25 years later: A research perspective", Sanford Fidell
Fidell Associates, 23139 Erwin Street, Woodland Hills, California 91367, September 2003! ]

[vi] For example, homes without A/C that are located in a 63dB DNL area will be pummeled with nighttime bedroom noise since they must leave their windows open on warm summer nights. They do not "qualify" for noise mitigation.

[vii] Collectively, the agencies believe that, given the absence of HAP emissions data and the limitations of HAP speciation profiles for commercial jet aircraft engines, a sound human health risk assessment cannot be accomplished.[2] [APPENDIX I HAZARDOUS AIR POLLUTANT DISCUSSION]
King, Suzanne, USEPA Region 5 facsimile to Mike MacMullen, FAA, December 17, 2004.

[viii] Toxic and criteria chemicals are chemicals the EPA controls; the EPA basically is, however, not able to protect us from airport and aircraft pollution especially particulate matter, one of the most significant public health problems. This is because no one in the US is able to do anything unless ICAO, an international, air industry controlled organization, allows us to, which is followed then by approval of the US air industry protector, the FAA.

[ix] Example, from DEIS Appendix K.4.2: The captured storm- and meltwater is routed to the South Detention Basin. The water collected in the basin is pumped by means of a new larger capacity pump station and force main. The force main extends a distance of approximately 13,600 feet to the existing MWRDGC TARP drop shaft located near the southeast corner of Des Plaines River Road south of Irving Park Road. The force main includes a diversion structure at the junction with River Road. The diversion structure directs the discharge to the MWRDGC Drop Shaft or, when water quality conditions are acceptable, to an existing drainage ditch in the Cook County Forest Preserve and then directly into the Des Plaines River. Question: What determines "…water quality conditions are acceptable…" Also, to date, no definition has been located in the DEIS stating "acceptable" de-icing fluid concentrations in sewer discharges or creek runoffs and also, specific deicing and anti-icing fluid/solid constituents.

[x] Cutler, Deshmukh, Mowen, Toh, Dec. 2002, p. 20.

[xi] "As a cooperating agency, U.S. EPA agrees to provide project-related input on our areas of expertise during the EIS development process. … We will participate in these discussions, and in others regarding the methods FAA will use to evaluate issues such as noise and air quality." [Thomas V. Skinner, Regional Administrator, October 20, 2003]

"We have been actively involved in the scoping study meetings and development to date of the Draft EIS for the O'Hare Modernization Program {and}…would be willing to serve as a Cooperating Agency in the development of the Draft EIS for the O'Hare Modernization program. [Renee Cipriano, Director IEPA, August 19, 2003]

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FEB 28 2005

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**District 6**
Linda A. Kurzawa
Pamela H. Rion
James F. Zay, Jr.

February 22, 2004

Mr. Mike MacMullen
Federal Aviation Administration
2300 East Devon
DesPlaines, Illinois 60018

Dear Mr. MacMullen:

Enclosed please find the written testimony of Robert J. Schillerstrom, Chairman of the DuPage County Board.

If you have any questions regarding this statement, please call me at 630-407-6013.

Thank you.

Very truly yours,

Katherine Selcke

Katherine Selcke
Chief Deputy to the County Board Chairman

DU PAGE CENTER • 421 N. COUNTY FARM ROAD • WHEATON, IL 60187

ROBERT J. SCHILLERSTROM
COUNTY BOARD CHAIRMAN
DuPage County
(630) 682-7282

Statement
to the
Federal Aviation Administration
and
United States Department of Transportation

Robert J. Schillerstrom
Chairman, DuPage County Board

February 22, 2005

DuPage County is the western neighbor of Chicago's O'Hare International Airport and home to over 950,000 residents who will be affected to varying degrees by the O'Hare Modernization Program. The DuPage County Board and I applaud your commitment to public involvement regarding this significant project. 1

The O'Hare Modernization Program, and it's surface road and public transit improvements, has presented a unique platform to maximize regional cooperation between the County of DuPage, the City of Chicago, and the state and federal governments in order to enhance the quality of life for all the people of Illinois. This massive infrastructure project, and the unprecedented economic opportunities it offers, will benefit all the people of region for generations to come. 2

The Chicago region came to prominence as a transportation center. Our central location and access to markets made us the crossroads of North America. The advent of air travel and the rise of O'Hare Airport as the nation's most significant hub and as an international gateway secured us a place as a dynamic commerce center and an attractive travel destination. The fulfillment of the O'Hare Modernization Program is vital to maintain our region's position as the aviation crossroads of North America and to allow us to remain competitive in a highly evolving and global marketplace. .



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| Comment | Response |
|---|---|
| 1 | The FAA appreciates the DuPage County Board's comments regarding the FAA's commitment to public involvement. |
| 2 | Comment noted. |

The ground transportation improvements initiated by the expansion of O'Hare Airport are equally vital and will help maintain our region's reputation as the transportation crossroads of North America. 3

When the DuPage County Board chose to endorse the O'Hare Modernization Program, we did so to enhance the quality of life for the citizens of DuPage County and to be sure we were at the table to reap the benefits of one of the most significant infrastructure projects of our generation. 4

The O'Hare Modernization Program offers unlimited possibilities for collateral development west of the airport, including convention centers, hotels, entertainment venues and commercial and light industrial developments.

DuPage County will be at the forefront of that development. We will be working hand-in-hand with local communities, land-use planners, IDOT, the City of Chicago, the business community, and Labor to make sure that we implement the planned improvements so that we may attract and retain the developments which will result in genuine economic benefit and quality, sustainable employment for the people of the region. 5

In addition, the O'Hare Modernization Program and its western access component will substantially reduce local traffic congestion, stimulate development west of O'Hare Airport and result in increased tax revenues and job creation for our region and its residents. For far too long, development opportunities west of O'Hare have been handicapped by this single entrance to the world's busiest airport. The O'Hare Modernization Program listened to the voices from throughout the region and included western access in the final plan. Because of the significance of these improvements, we envision not just new roadways, but new businesses, new schools, new industrial and commercial parks, new recreational parks and communities.

Western Access is not just a hole in a fence. The new western terminal and the automated people mover, both of which are included in the Airport Layout Plan as submitted to the FAA, will ensure that western access is comparable to eastern access. We will accept nothing less. 6

The DuPage County Board will also remain vigilant to be sure the environmental impacts of these improvements are as limited as planned. New technology and new aircraft, along with carefully designed runway plans are expected to reduce noise impact on residents. We will be carefully monitoring to ensure that residents, schools and parks will not be subjected to increased noise levels. Additionally we expect the City, the airlines and the FAA to continue to monitor air quality and make adjustments as needed in order to improve the air quality of the region.

2

| Comment | Response |
|---|---|
| 3 | Comment noted. |
| 4 | Comment noted. |
| 5 | Comment noted. |
| 6 | Comment noted. Western access is addressed in **Section 5.3** of the EIS. Also see topical response F-3 on page U.5-29 of this Appendix. |

The planned surface road improvements, along with the increased access to public transit, should greatly reduce traffic congestion and subsequently contribute to improved air quality. 7

The O'Hare Modernization Program will impact 69 acres of wetlands within DuPage County. The OMP has agreed to mitigate 131 acres off-site for replacement. This mitigation will benefit stormwater management, enhance water quality, improve wildlife habitat and also offer new educational and recreational opportunities. This wetland expansion will allow for a wide variety of habitat restoration, some of which is rare in DuPage County. 8

The DuPage County Board and I will work tirelessly to ensure that the benefits promised become the benefits realized.

Though there are still some DuPage residents who oppose the modernization of the airport, in the long run we believe it may serve those areas the most that currently oppose it the most.

We are proud to support this project, we are proud of the critical regional partnerships we have developed and we look forward to the opportunities that the O'Hare Modernization Program affords our region. 9

3

| Comment | Response |
|---|---|
| 7 | **Section 5.1** and **Section 5.6** of **Chapter 5** of the EIS disclose the FAA's assessment of the potential noise and air quality impacts of the alternatives considered.<br><br>Notably, there are no significant air quality impacts. Nonetheless, the project sponsor (the City of Chicago) has committed to emission reduction measures including measures that would reduce emissions from off-road diesel construction equipment and hazardous air pollutants. The level of reduction from the measures has been quantified and is presented in **Section 5.6** of the EIS.<br><br>There are significant noise impacts associated with the Build Alternatives. Please see **Chapter 7** of the EIS for information regarding noise mitigation. |
| 8 | Comment noted. |
| 9 | Comment noted. |

050224_152

STORMWATER MANAGEMENT COMMISSION

February 24, 2005

Michael W. MacMullen
Federal Aviation Administration
Chicago Airport District Office
2300 East Devon Avenue
Des Plaines, IL 60018

VIA EMAIL

RE: Public Notice Comments to Draft EIS and Supplemental Public Notice – Wetland Mitigation Sites for O'Hare Modernization Project, Chicago, Illinois

Dear Mr. MacMullen:

This letter provides the Lake County Stormwater Management Commission's (SMC) comments to the O'Hare Airport Modernization Project's Draft Environmental Impact Statement (DEIS). While the airport expansion does not directly impact Lake County, a portion of the planned compensatory wetland mitigation will occur within the county. The Lake County Watershed Development Ordinance (WDO) requires a Watershed Development Permit (WDP) for the proposed mitigation sites. Typically, a SMC-certified municipality would issue the WDP for a development within it's municipal borders. For this project, the multi-jurisdictional nature will require SMC's issuance of the WDP. Any proposed mitigation project will require conformance with the minimum standards of the WDO. 1

At this time, we are unable to determine whether the mitigation requires one or multiple WDPs. Four of the six possible wetland bank sites are located in Lake County: two are Lake County Forest Preserve properties, one is on Long Grove Park District property, and one is owned by Land and Water Resources Inc. 2

Concerning Wetlands on the Proposed Mitigation Sites: Please be aware that WDO requires a separate wetland delineation and report for each proposed mitigation site, conducted by a Lake County Certified Wetland Specialist (CWS). The application materials require a cover letter and WDP application form signed by a CWS also. For this project, we advise that the wetland mitigation applicant request a jurisdictional determination for all identified wetlands on all of the proposed mitigation sites. 3

Concerning Floodplain and Floodway: Please be advised that SMC approval of the existing and with-project Base Flood Elevation (BFE) may be required for the proposed mitigation sites. Fill within the floodplain will require compensatory storage for floodplain volume lost due to development. We highly recommend a pre-application meeting with SMC's Permit Engineer and Wetland Specialist. 4

Sincerely,

LAKE COUNTY STORMWATER MANAGEMENT COMMISSION

Joseph Hmieleski, CFM, PWS
Senior Wetland Specialist

C: Mr. Dennis Sandquist – LCPBD (via email) Kathy Chernich – USACE (via email)

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333-B Peterson Road • Libertyville, Illinois 60048 • 847/918-5260 • FAX 847/918-9826

| Comment | Response |
|---|---|
| 1 | The comments regarding the procedures for obtaining a Watershed Development Permit are noted. |
| 2 | The comment regarding the issuance of a single or multiple Watershed Development Permit is noted and will be determined upon completion of the wetlands mitigation plan. For further information, see **Chapter 7** of the EIS. |
| 3 | The comment regarding the need for a separate wetland delineation and report for each wetland mitigation site is noted. For further information, see **Chapter 7** of the EIS. |
| 4 | The comment suggesting a pre-application meeting with the Commission's Permit Engineer and Wetland Specialist is noted. If the wetlands mitigation occurs in Lake County, the FAA expects that the City of Chicago and US Army Corps of Engineers will coordinate with the Lake County SMC. |

Protecting Our Water Environment

050228_15

Metropolitan Water Reclamation District of Greater Chicago
100 EAST ERIE STREET CHICAGO, ILLINOIS 60611-3154 312-751-5600

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General Superintendent
312-751-7900 FAX 312-751-5681

RECEIVED MAR 04 2005 BY

February 28, 2005

Mr. John A. Roberson
Commissioner
Chicago Department of Aviation
10000 West O'Hare
Terminal 2, Mezzanine
Chicago, IL 60666

Dear Mr. Roberson:

Subject: O'Hare Modernization Program Draft Environmental Impact Statement

Reference is made to a letter from the Federal Aviation Administration (FAA) dated January 14, 2005, concerning the subject matter. We have reviewed the Draft Environmental Impact Statement (EIS) and have no objection in principle to its contents. However, some of the conclusions of the EIS are based on assumptions of developments that affect District operations and facilities. Since we have not been given the opportunity to comment formally on any draft plans, we would like to take this opportunity to express some of our concerns. 1

Your staff and consultants have been working closely with us to develop an acceptable wastewater and stormwater plan. In fact, Mr. Tim Coleman and Mr. John Schmitz of CH2M Hill met with our staff on February 14, 2005, to discuss further developments in the overall plan and answer some questions about the Draft EIS. Following are some of the issues covered.

- The new North Airfield configuration calls for a modification of the Willow-Higgins Flood Control Reservoir. This will require an amendment to the agreements between the City, NRCS, and MWRD. 2
- We are confident that your design will result in no increase in the rate of airfield runoff flow into MWRD's system. Also, it appears that any increase in sanitary flow with the expansion of O'Hare will be minimal. However, we are interested in estimated volume discharge increases to our system over time as these figures become available, both from an engineering and User Charge standpoint. 3

| Comment | Response |
|---|---|
| 1 | The FAA appreciates MWRDGC's comments on the Draft EIS. While the comments contained herein are directed to the City of Chicago, the FAA has published them herein as comments on the DEIS. |
| 2 | The comment that existing agreements between the City, NRCS, and MWRD would need to be amended is noted. The FAA expects that City of Chicago will coordinate with MWRDGC on this issue. |
| 3 | Comment noted. The FAA expects that City of Chicago will coordinate with MWRDGC on this issue. |

John A. Roberson -2- February 28, 2005

- The Supplemental Public Notice dated January 21, 2005, covered Wetland Mitigation. We noticed that one potential site for wetland mitigation is adjacent to the Buffalo Creek Reservoir, for which we have responsibility. We need to ensure that any wetland developed does not have indirect hydraulic/hydrologic impacts, since the proposed site is immediately upstream of our reservoir. Also, please note that the U.S. Army Corps of Engineers' design report on the Upper Des Plaines River flood control project considered this mitigation site for disposal of excavated material for a reservoir expansion project, as shown on the attachment. 4

- The stormwater plan for the South Airfield may result in the redrawing of basin boundaries, and we request that you send any such proposal to us for approval. 5

We look forward to working with you as the O'Hare Modernization Plan further develops. Please send any formal requests concerning the Plan to my office. 6

Very truly yours,

John C. Farnan
General Superintendent

JS:JMS
Attachment
cc: Mr. Michael MacMullen, FAA

| Comment | Response |
|---|---|
| 4 | Comments noted. |
| 5 | Comment noted. The FAA expects that City of Chicago will coordinate with MWRDGC on this issue. |
| 6 | Comment noted. |

050309_04

pfic7@aol.com
03/09/2005 05:08 PM

To 9-AGL-600-OMPEIS/AGL/FAA@FAA
cc
bcc
Subject o'hare expansion

To: FAA
From: Paul Fichtner, Member, DuPage County Board Dist.1
Re: Proposed expansion of O'Hare
To whom it may concern:
March 8, 2005

I am taking this opportunity to object to plans for the expansion of O'Hare airport. 1

Locally, over 600 homes and businesses in my district will be bulldozed to complete the expansion. Before I can find this sort of destruction palatable, there had better be some very good reasons to proceed with the expansion not only for my local area but for the region as well. 2

From what I've read of the plan, the City of Chicago's own numbers show this will only end up increasing capacity 13% in the long run. The city's numbers also show this will cost about 15 billion dollars (plus interest which hasn't been factored in). My concern is that the cost/benefit is not adequate to proceed. Additionally, the delay reduction mentioned by the City of Chicago appears to use current O"Hare traffic rates instead of the traffic flow from a completed expansion. 3

15 billion dollars for a 13% increase in capacity that demands the destruction of 600 homes and businesses plus two cemeteries? The Peotone plan is a viable alternative that increases capacity ten times the O'Hare plan at less than 25% of the cost of the O' Hare plan. 4

Please continue to look closely at the cost/benefit of the O'Hare plan and ask the tough questions regarding the underlying

| Comment | Response |
|---|---|
| 1 | The commenter's objection to the expansion is noted. In accordance with the NEPA process, the FAA makes its decision in a Record of Decision (ROD). The ROD may not be issued until a minimum of 30 days following the issuance of the Final EIS. FAA will ensure that its decision-maker is fully apprised of all comments pertaining to both the Draft and Final EIS. All comments will be taken into account prior to the issuance of a ROD. Although the FAA has released a schedule indicating a ROD will be issued in September 2005, the FAA will not in fact issue a ROD until the Agency's decision-maker is satisfied that all comments submitted as a result of the Draft and Final EIS or during public review have been thoroughly evaluated and satisfactorily addressed. |
| 2 | The commenter's opposition to the acquisition of land is noted. The FAA did examine alternatives that would not require land acquisition, however, none of these alternatives satisfied the FAA's statement of purpose and need. An evaluation of the alternatives is presented in **Chapter 3.** The impacts associated with the land acquisition are disclosed in **Chapter 5, Section 5.4.** |
| 3 | The preferred alternative (OMP) estimate of average annual delay is 5.8 minutes per operation in 2018, while serving the projected 1.2 million operations. In contrast, the existing airfield served approximately 990,000 operations at an annual delay of approximately 18 minutes per operation.<br><br>The FAA's stated purpose and need is:<br><br>To address the projected needs of the Chicago region by reducing delays at O'Hare, thereby enhancing capacity of the National Airspace System, and ensuring that future terminal facilities and supporting infrastructure can efficiently accommodate airport users.<br><br>In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** The cost estimate reported in the DEIS is the estimate of the capital cost—also referred to as project cost or construction cost. This cost estimate does not include financing costs. Capitalized interest has been considered by the City in the financing plan for capital development—but as one of several financing costs, and not as part of the capital cost estimate.<br><br>The FAA's estimate of aviation activity (FAA's 2002 Terminal Area Forecast) at O'Hare was used, not the City of Chicago's. This estimate of aviation activity assumes unconstrained growth, i.e. the aviation activity evaluated is what the FAA projects for that year in an environment where demand could grow independent of the capacity at O'Hare. |
| 4 | Please see the response to this comment on the following page. |

assumptions of the supposed benefits. 5

Sincerely,

Paul Fichtner
DuPage County Board, Dist. 1
630-251-7883
630-832-7978
e-mail: Pfic7@aol.com

| Comment | Response |
|---|---|
| 4 | The FAA examined the use of other airports as an alternative. Although, the use of other airports failed to meet the FAA's purpose and need, the FAA is undertaking a separate EIS to address the environmental impacts associated with a proposed South Suburban Airport.<br><br>Also see topical response B-2 on page U.5-7 of this appendix. |
| 5 | There is no statutory or regulatory requirement for FAA to include a cost benefit analysis within an EIS. However, a cost benefit analysis of the potential O'Hare development project, acceptable to FAA, must be provided as a pre-condition to provision of any FAA funding. The City of Chicago has provided FAA with its application for Federal funding including its cost benefit analysis. FAA will carefully review the City's submission, and no affirmative funding decision will be made, unless and until FAA is convinced that all statutory and regulatory requirements for funding have been met, including the requirements for environmental approval and a satisfactory cost benefit analysis.<br><br>In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** |

050317_03

**northeastern illinois planning commission**

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Gerald Sullivan
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Wallace D. Van Buren

March 17, 2005

MAR 21 2005

Mr. Mike MacMullen
U.S. Department of Transportation
Federal Aviation Administration
2300 East Devon Avenue
Des Plaines, Illinois 60018

RE: Comments of the Northeastern Illinois Planning Commission on O'Hare Modernization Draft Environmental Impact Statement from the US. Department of Transportation's Federal Aviation Administration (FAA).

Dear Mr. MacMullen:

The Northeastern Illinois Planning Commission, acting through its Planning Committee has reviewed the O'Hare Modernization Draft Environmental Impact Statement (DEIS). The City is seeking FAA approval to amend its Airport Layout Plan and seeks Federal funding for improvements to address existing and future delay and capacity problems.

The Federal actions associated with the proposed development are:

- Approval of an Airport Layout Plan depicting the proposed project
- Approval of Federal funding under the Airport Improvement Program and approval to impose and expend passenger facility charges
- Establishment of air traffic control and airspace management procedures designed to affect the safe and efficient movement of air traffic to and from the proposed runways, as well as in the airspace surrounding the airport.
- Establishment of flight procedure modifications
- Certifications as to the safety of instrumentation, procedures, and airfield operations, and
- Installation and/or relocation of navigational aids associated with proposed new and relocated runways

1

The content and key findings of the O'Hare Modernization DEIS were examined to determine their relationship and, where applicable, consistency with the adopted plans and policies of the Commission. The Commission's recommendations are as follows:

| Comment | Response |
|---|---|
| 1 | The FAA agrees with NIPC's understanding of the Federal actions associated with the proposed development. These same Federal Actions are listed in **Chapter 1** of the EIS. |

**Water Quality/Stormwater**

The DEIS states that the proposed Build Alternatives would not significantly increase the potential for water quality impacts due to the provision of adequate stormwater facilities designed to manage, contain and convey the increases in stormwater. NIPC concurs with this assessment, however, it is dependent not only on the components constructed as part of the project, but also on the continued implementation of best management practices (BMPs) by the Department of Aviation and its tenants. The DEIS (Section 5.7.2.1) states that revisions to the Stormwater Pollution Prevention Plan (SWPPP) are currently underway and that Appendix K, Water Quality provides more detail on the SWPPP. A review of Appendix K revealed only two additional sentences discussing generalities of BMPs. It would be preferable to include some additional discussion on proposed revisions to the SWPPP and how those might beneficially impact water quality. Section 5.7.2.1 also states that Appendix K contains additional information on the Spill Prevention, Control and Countermeasure (SPCC) Plan, however no additional information was found in Appendix K. In addition, the SPCC Plan under the provided by the link at www.agl.faa.gov/OMP/EISTechSim/ReferenceDocuments/Chapter5.htm is not the most recent SPCC Plan prepared by the Chicago DOA. 2

**Wetlands and Waters of the U.S.**

The proposed project involves impact to 153 acres of wetlands and Water of the U.S. (WUS). The DEIS describes the wetlands at the airport as small, individual sites that provide relatively few beneficial wetland functions. Water quality and flood storage functions are minimal. These functions will be replaced by the proposed stormwater management system. Wildlife habitat, especially for waterfowl, creates a safety hazard at the airport. The proposed mitigation plan involves the provision of 414 acres of mitigation credits. Final mitigation sites are still being reviewed and evaluated as part of the Section 404 permit process. Based on the selection criteria that have been established, it is expected that the proposed mitigation will increase the net benefits for water quality, flood storage and wildlife habitat in the Des Plaines River watershed and the region. 3

**Floodplains**

The City of Chicago is undertaking a major effort to relocate Willow-Higgins, Willow and Higgins Creeks as part of the O'Hare Modernization Program. The DEIS reviews the impacts of the proposed improvements under the assumption that the proposed relocations will be accepted by IDNR-OWR and FEMA. The proposed improvements will include detention facilities that would be sized to accommodate the increase in runoff. It is expected that these detention basins would actually reduce the size of the floodplain in the vicinity of the Airport and would result in flows that are similar to or less than those that currently occur in the creeks in the Airport vicinity. On the basis of this information, NIPC concurs

- 2 -

| Comment | Response |
|---|---|
| 2 | The comment regarding concurrence with the assessment that no significant impact to water quality would occur as a result of the proposed action is noted.<br><br>The update to the SWPPP is currently underway. Since this document is not complete and has not been approved, it is not appropriate to identify specific measures that could have a beneficial effect on water quality.<br><br>**Appendix K, Section K.4.6.2** of the EIS, contains information regarding the Spill Prevention, Control and Countermeasure (SPCC) Plan; the current versions of the SPCC is on file with the City of Chicago Department of Aviation. |
| 3 | The comment regarding the mitigation strategy for wetlands impacts stating that "[b]ased on the selection criteria that have been established, it is expected that the proposed mitigation will increase the net benefits for water quality, flood storage, and wildlife habitat and the Des Plaines River watershed and the region." |

that the proposed improvements will not adversely impact the existing floodplains. Any stand alone references, such as in Section 6.3.12, that state the proposed improvements will not encroach on the floodplain or the floodway should note that such comments are based on the successful completion of the proposed waterway relocations. 4

We appreciate the opportunity to review the O'Hare Modernization Draft Environmental Impact Statement (January 2005). We hope these comments and suggestions assist the City of Chicago and the USDOT Federal Aviation Administration in their continuing planning and programming of the O'Hare Modernization Impact Statement. 5

Sincerely,

Ronald L. Thomas
Executive Director

- 3 -

| Comment | Response |
|---|---|
| 4 | The comment regarding NIPC's concurrence that, "the proposed improvements will not adversely impact the existing floodplains." |
| 5 | Comment noted. The FAA appreciates NIPC's comments on the Draft EIS and looks forward to working with NIPC on the remainder of the project. |

050406_02

AReCO

ALLIANCE OF RESIDENTS CONCERNING O'HARE, Inc. "a grass roots organization"

P.O. Box 1702 ❍ Arlington Heights, IL 60006-1702 ❍ Fax 847/506-0202 ❍ Tel 847/506-0670 ❍ www.areco.org

April 6, 2005

Mr. Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, IL 60018

The Honorable Richard Durbin
United States Senate
364 Russell Senate Office Building
Washington, DC 20510

The Honorable Barack Obama
United States Senate
713 Hart Senate Office Building
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U.S. Congressman
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Governor, State of Illinois
Office of the Governor, 207 State House,
Springfield, IL 62706

The Honorable Wendell Jones
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27th Legislative District
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ARReCO
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P.O. Box 1702 ❍ Arlington Heights, IL 60006-1702 ❍ Fax: 847/506-0202 ❍ Tel: 847/506-0670 ❍ www.areco.org

April 6, 2005

**The ALLIANCE OF RESIDENTS CONCERNING O'HARE (AReCO) Comments to the FAA Draft Environmental Statement regarding the "O'Hare airport (sic) Modernization Program" (OMP), also known as the "Expansion Program."**

## GENERAL and PROCEDURAL

**The DEIS is seriously deficient in necessary considerations of the public's health, safety and welfare and, as such, must be considered only a "first draft" and, as a result, dictates that the Federal Aviation Administration (FAA) and the "Cooperating Agencies" of the Environmental Protection Agency (EPA)[1], rectify these deficiencies and produce a second or supplemental DEIS, well in advance of any attempt to publish a "final" EIS. The DEIS has not answered any of AReCO's scoping comments; thus, we notify the FAA that we request specific answers to our original comments and subsequent filings. 1

**The FAA's and air transportation industry's purposely "streamlined" environmental process is short-circuiting proper analysis that would act to protect the people. 2

Though deficient in content, the DEIS is massive in size and, given extremely limited time to review, the lack of any AReCO comment on any particular area should not be interpreted as tacit approval. Thus, the forced lack of sufficient reviewer's resources (checks and balances) to deal with the massiveness harms the rights of the people. 3

Additionally, considering the huge numbers of DEIS deficiencies, and insufficient public time to review, absorb, understand and comment, AReCO demands that a second or supplemental DEIS (SDEIS) be produced by the FAA, one that greatly rectifies all the deficiencies. 4

"Fast tracking" may be in the FAA's, air transportation industry and Chicago/O'Hare's best interests, but it does NOT serve the public's best interests when "fast tracking" actually means short shrifting the issues and "burying them with paper." 5

**There is no innovation in the "modernization" plan; it is just more of the same, including lack of any modern methods or technologies to deal with the myriad of environmental issues. 6

[1] "As a cooperating agency, U.S. EPA agrees to provide project-related input on our areas of expertise during the EIS development process. ... We will participate in these discussions, and in others regarding the methods FAA will use to evaluate issues such as noise and air quality." [Thomas V. Skinner, Regional Administrator, October 20, 2003]
"We have been actively involved in the scoping study meetings and development to date of the Draft EIS for the O'Hare Modernization Program {and}... would be willing to serve as a Cooperating Agency in the development of the Draft EIS for the O'Hare Modernization program. [Renee Cipriano, Director IEPA, August 19, 2003]



| Comment | Response |
|---|---|
| 1 | FAA disagrees with the commenter's assessment of the Draft EIS. The FAA has addressed the comments contained in this letter and in so doing so demonstrates that the commenter's assertion that Draft EIS is "seriously deficient" is not valid.<br><br>This commenter was not specific as to what scoping comments were not addressed by the Draft EIS. All comments received during scoping were considered in the development of the EIS. |
| 2 | FAA disagrees with the commenter's statement. The FAA has followed all applicable laws and FAA guidelines in the preparation of this EIS. The streamlining process refers to accomplishing some steps concurrently, not skipping or short-cutting steps in the process. |
| 3 | The FAA extended the public hearing comment period two weeks to allow AReCO and others additional review time beyond statutory obligations. |
| 4 | The FAA disagrees with this comment. Please see responses 1-3 immediately above. |
| 5 | Please see response to comment 2 of this letter. |
| 6 | The FAA disagrees with this comment. The FAA considered the use of new aircraft and air traffic control technologies as a stand-alone alternative. Although, it was found to not meet the purpose and need, it was also considered as part of the blended alternative considered by FAA. While the blended alternative did not pass the secondary screening criteria, the FAA believes that new aircraft and air traffic control technologies will come online with any of the alternatives considered throughout the EIS, Alternatives A (No Action), C, D, and G. In addition, the reconfiguration of the airfield into multiple parallel runway pairs, as in Alternatives C, D and G), could be considered "modernization". |

**The FAA's DEIS supporting documents, though theoretically available via the Internet, are actually not, due to "firewall" security implementations on their ftp server. Thus, the government blocks access to some of the necessary documents that are not available on compact disks and necessary to protect the public. 7

**The DEIS does not specifically answer any of the numerous questions submitted by AReCO (nor anyone else) in the "scoping" process. The DEIS shows that the questions have been examined and categorized for the future…but not answered. These questions still remain and are supplemented by those contained herein. 8

**The airline dominated International Civil Aviation Organization (ICAO) is used as a "shield" for the air transport industry, with cooperation and support from the FAA and EPA (subservient to FAA).

Toxic and criteria chemicals are chemicals the EPA supposedly controls in the U.S. However, the EPA basically is not able to protect the American public from the unique and insidious effects of airport and aircraft pollution, especially particulate matter, a cause of one of the most significant public health problems. This is because no one in the United States is able to do anything unless ICAO, with its international "U.N. Treaty" mantle, allows it, which is then followed by incorporation into the U.S. air transportation industry's FAA regulations, oriented toward protection of the air transportation industry, completing the "Catch 22" arrangement.

The only "fix" for this cozy arrangement is to have our government officially put the EPA back in charge of airport and related environmental issues and enforcement. EPA could still maintain its advisory role to the FAA regarding aircraft engine emissions standards and methods, but with the necessary legal capability to prevent operations at any airport by aircraft and other equipment (e.g., GSE/APU) that does not measure up to EPA requirements (primarily noise, pollution and public health). The U.S. Congress can and must implement this change and set aside proclamations by the air transportation industry that they cannot "because of the (1944!) "treaty".

During the interim, for this EIS, the FAA and the EPA must set aside any ICAO "guidelines" that are not in the best interest of protecting the public health and welfare. 9

** It is difficult to find the words "employee" or "airport worker" within the DEIS's 5000 pages. Even though the employees and workers on airport property would seem to get high priority from the FAA in protecting their health and well being, the DEIS makes it clear that that is not the case and that their priority is not even really considered in any analyses of their working environments, including dispersion analyses of Criteria pollutants and exposure to Hazardous Air Pollutants (HAPs). That is, analysis attention is focused strictly on public-access areas (e.g., curbsides), and that is where analysis receptors are placed. There are no analysis receptors placed in the aircraft fueling and baggage loading/unloading areas, nor in the de-icing areas, etc., even though those areas have a high probability of experiencing some of the highest concentrations of dangerous pollutants.

Perhaps the FAA doesn't care, under the assumption that that is an OSHA function. If so, why is OSHA not included as an official "cooperating agency" and, as a result, the DEIS including an OSHA-driven section dealing with employee/worker safety, as a function of the various OMP alternatives.

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| Comment | Response |
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| 7 | FAA has corresponded with AReCO to provide the necessary data in multiple letters. The FAA sent a letter dated April 25, 2005 outlining the availability of data on the Document Library Website and also in local libraries, including the commenter's local Arlington Heights library. On May 24, 2005, the FAA stated, "The [FAA]…has endeavored to be proactive in making information available to the public through various means, including posting documents on a publicly accessible website and placing copies of key documents in local public libraries. As stated in our April 25, 2005 letter to you, the information you seek has been available to you through these means."<br><br>The transmittal of the May 24, 2005 letter also included enclosed electronic media with information requested by the commenter. The letter stated, "Acknowledging your stated website difficulties…[the FAA] have suggested to you on multiple occasions that the very same files you seek have also been publicly available on DVD at numerous local libraries. Despite this fact, and to bring closure to the file access issue, we are enclosing with this letter a full set of DVDs for your use."<br><br>The May 24, 2005 letter from FAA to AReCO is published in its entirety on page U.4-853 of this appendix. |
| 8 | Please see response to comment 1 on the previous page. |
| 9 | The comments made by the commenter are beyond the scope of the EIS. The commenter's issues with congressional and regulatory standards are noted. |

AReCO believes that employees/workers exist within the "affected environment" just as much as the general public does and they deserve similar protections, and that OSHA must be brought in to provide that review and EIS documentation. 10

** In a similar manner, though even more surprising, the FAA makes absolutely no attempt to analyze the degree of environmental protection of aircraft passengers. AReCO addresses that issue for passengers while they are in the terminal (below details), BUT a large protection analysis gap exists for passengers during boarding/de-boarding and during the time that planes are on the ground but not at a gate.

We assume that planes do not furnish passengers with clean air from on-board storage tanks during these times, and thus pull the required ventilation air in from the planes exterior. This is not clean air…it may be some of the most polluted.

The DEIS should have done extensive analyses to characterize passenger exposure levels, especially to HAPs, and the resulting health and welfare impacts, including impacts on "sensitive" groups such as babies and children, pregnant women, the elderly, and passengers with pre-existing health problems (e.g., cardiovascular). Exposure time will obviously be a factor, and high-travel pattern passengers such as businessmen/women must be considered, as well as the aircraft crews [and construction workers]. 11

## PURPOSE and NEED/MAJOR ALTERNATIVES

**The FAA, by their own statement, has pre-judged their entire analyses and perspective as to what the primary issue is here, which is "How best to modernize the airport infrastructure of the Chicago metropolitan region, in an intermodally connected fashion, such as to achieve a significant improvement in the passenger and cargo capacity of the region over the next 25 years."

This has been stated instead as (emphasis added…Ed):

*To address the projected needs of the Chicago region by reducing delays at O'Hare, and thereby enhancing capacity of the National Airspace System (NAS).

*Ensure that existing and future terminal facilities and supporting infrastructure (access, landside and related ancillary facilities) [of O'Hare] can efficiently accommodate airport users.

Thus, the FAA has, at just about 100 pages into the 5000 pages DEIS compendium, already ruled out other alternative, better, solutions (e.g., additional airport use, new airport, world-class high-speed rail system, etc.) in favor of plunging tens of billions of dollars into an attempt to refurbish another aged, "shoe-boxed" airport, causing a huge drain on the taxpayer and a loss of revenue for other more needed projects. 12

*Notwithstanding the separate considerations by the FAA of the (proposed) ALP (airport layout plan) and the DEIS considerations of related issues of capacity, delay, etc., aviation experts disagree with many of the important conclusions from O'Hare's hired consultants and the FAA. William's Aviation Consultants provided their views in response to an AReCO request, which are incorporated here in Appendix J, as an official part of AReCO's DEIS comments. 13

*The FAA and industry purpose is to monopolize our transportation system and further the O'Hare duopoly scheme causing many imbalances; since, due to the way the industry has

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| Comment | Response |
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| 10 | The EIS addresses the entire O'Hare environment, including locations employees work. The FAA does not agree that "OHSA must be brought in" as a cooperating agency. |
| 11 | The EIS addresses the entire O'Hare environment, including locations utilized by passengers. |
| 12 | FAA has only ruled out alternatives after careful consideration and thorough analysis, as reported in **Chapter 3** of the FEIS. The assertion that the statement of purpose and need in **Section 2.3** prevents consideration of alternate solutions is incorrect. In fact, the FAA considered the use of other airports, use of alternative modes of transportation or communication, as well as other alternatives. For more detail, see **Chapter 3** of the FEIS. |
| 13 | The FAA response to *AReCO's Appendix J* comments addresses this comment. See responses to comments 66-71 of this document. |
| 14 | There are numerous airports in the region, as identified in **Exhibit 1-3** of **Chapter 1** of the EIS. The pre-eminence of two primary airports is a result of historic factors and consumer choice, not a FAA scheme. Further, the FAA is independently undertaking a study to develop the South Suburban Airport. The FAA carefully considered the use of a wide range of alternatives to meet the purpose and need of the project, including: use of high-speed rail and other airports. For more detail, see **Chapter 3** of the EIS. |

carved up the air system, true competition is between airports not necessarily airlines. The DEIS should address the environmental impacts of this airport competition issue, relative to other competitive services, including high-speed rail, which can be a sustainable industry. [The DEIS presents only token conversation in this regard, before dismissing any real considerations.] 14

This venture will drain the AIP coffers of the FAA (a $300 million request is already in play, just for "Phase I"), will drain the resources of the currently "broke" State of Illinois, will doubtfully be financially supported by the major, "legacy" airlines (going bankrupt) and will significantly increase passenger costs to the point that the FAA's goal of decreased delays will be achieved by further decreased demand. 15

AReCO states that the *OMP is a seriously wrong scheme to be doing*, at the equally wrong time and strongly recommends that the FAA and its "Cooperating Agencies" reject this project and, instead, redirect their efforts and resources to addressing the primary issue, as stated above. AReCO is not anti-air transportation, as some would paint us, we are instead against making seriously flawed decisions that will strangle the potentially vibrant Chicago-metropolitan area for decades to come. 16

## AVIATION DEMAND FORECAST

**The FAA's forecast of 1.2 million operations per year, in year 2018 is flawed from a number of perspectives.**

1) On the one hand, the FAA has wrongly assumed that the price of oil will remain at about $30/barrel. This assumption, which is " useful" to the FAA and the air transportation industry to help justify massive national airport expansion programs, is patently wrong. There is considerable evidence that points to developing worldwide oil shortages that will result in significantly higher petroleum prices, most likely in the range of $50-100 per barrel. This increasing cost of oil is one main reason that the air transportation industry is not sustainable in its current structure. Thus, either the FAA's forecast is too high, negating the need for the OMP, or the FAA has failed in its "crystal ball gazing" into what exactly is required in airport design and implementation in order to satisfy the new paradigm, which will result in a "white elephant" end result of any OMP proposal implementation. 17

2) On the other hand, the FAA appears to be in favor of expending vast sums of money and effort to "modernize" an airport, merely to increase its operations by about 30% over the next 15 years or more. The only justification for this would be that the FAA's real objective, in concert with the air transportation industry, is to actually double O'Hare's capacity to near 2 million operations per year, deceiving the public in order to assist in advancing the project expeditiously.

AReCO believes that either end result is unacceptable and demands reconsideration and restatement of these two conflicting issues.

"Demand" is fundamentally a customer oriented term, one that requires much more investigation and analysis by the FAA before any type of rational conclusions are reached.

The numerous optimistic assumptions and risks admitted to by the FAA in its own 2004 projections (see Appendix A) lead a rational person to conclude that it's actually just wildly guessing, in stating forecast conclusions.

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| Comment | Response |
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| 14 | Please see the response to this comment on the previous page. |
| 15 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |
| 16 | The commenter's opinion is acknowledged. |
| 17 | FAA has not predicted the future price of oil in developing the forecast used in the EIS. The commenter may be referring to the FAA acknowledgement of historic crude oil prices in the *FAA Aerospace Forecasts 2005-2016*. The FAA notes that the *FAA Aerospace Forecasts 2005-2016* states on page I-1, "record high fuel prices [have dampened] the demand for aviation services." Further, FAA notes that there are inherent uncertainties in forecasting, and as such, **Appendix R** of the EIS provides "sensitivity analyses", to disclose the environmental impacts resulting from prospective variations in the activity forecasts. |
| 18 | The FAA's mission is to provide the safest most efficient airspace system in the world. The FAA will do this by continuously improving the safety and efficiency of aviation, while being responsive to customers and accountable to the public. The O'Hare Modernization Program is consistent with that mission. Nowhere in the DEIS does FAA state that the objective is to increase ORD's capacity to 2 million annual aircraft operations. FAA does not forecast that this level of activity will be reached in the reasonably foreseeable period covered by the EIS.<br><br>Continued on the following page. |

The key assumption that we will experience an overall continuing healthy airline business flies in the face of major bankruptcies in the industry, with more to come. Today's passengers see little if any change to the downward trend in the quality of services provided by the airlines, in their struggle to remain afloat, resulting in a continuing and growing passenger dissatisfaction with flying. Keeping ticket prices below real break-even operating levels cannot remain as an effective business model to keep the planes loaded even with more government assistance and bailouts. 18

## USE OF OTHER AIRPORTS

**The FAA's basic conclusion that other airports cannot satisfy the purported need for the OMP is not logical and needs reevaluation.

The FAA concludes that an additional 250,000 operations per year cannot be effectively carried by existing surrounding airports and/or the construction, at much reduced cost, of a new airport (Peotone). This is ridiculous and based on circular logic that "even a caveman" would question.

First, mathematically, 250,000 operations divided between the airports at Milwaukee, Rockford, Gary, St. Louis (Lambert), Mid America and Peotone would result in only about a 40K-50K operations increase at each, which would require only about 7 or 8 extra operations per hour on a single runway! As a matter of fact, a single runway can handle about 300K operations per year in good weather, even that being greater than 250,000. 19

Second, the FAA's argument that they can't force the airlines to go there and, therefore, we must expend great amounts of treasure to make them more comfortable where they're at, boggles the mind! If the airlines are indeed de-regulated and operating in a free market system, then increasing delays and congestion at O'Hare (at least the real part, not that purposely caused by the airlines) will ultimately cause rational airline executives to move flights elsewhere to improve customer satisfaction. The absolutely wrong thing to do is to attempt to inject government driven "comfort" at extremely high cost. 20

Finally, it is no secret that O'Hare is already a "high cost" airport, supported in the past by acceptance of a controlling duopoly (United and American). This duopoly will fail in the not-to-distant future and lower cost airlines, which would already find O'Hare's costs to be unacceptable, will definitely not "backfill" the then available slots/gates if O'Hare's costs have doubled or tripled due to construction of the OMP "field of dreams". But they will go to the other airports. 21

## SURFACE TRANSPORTATION

**The FAA is complicit in allowing costs and environmental impacts of massive infrastructure programs that are mandatory to OMP success, but outside airport boundaries, to be excluded from the real OMP cost. Also, the FAA appears to not consider financing costs as "cost".

**"Western access" is almost mythical in that "it's there…but then again it's not." The impact on surface transportation is, at best, weakly assessed. 22

## EMPLOYMENT ["Secondary (Induced) Impacts"]

**The information on job creation in DEIS section 5.5 are extremely illuminating, bringing forth **what AReCO has said for some time…that O'Hare airport is not "the economic engine" of the region but, rather, a result of the region's economy**. The net number of jobs attributable

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| Comment | Response |
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| 18 continued | In addition, the EIS uses the 2002 TAF to establish unconstrained demand. The FAA's TAF was prepared using well-established industry forecasting methodology to determine this demand.<br><br>Also, please see response to comment 17. |
| 19 | The FAA rejects the commenter's characterization of the Agency's conclusions regarding the ability of other airports to handle the anticipated growth at O'Hare. Instead the FAA is concluding that based on experience around the country, it is unlikely that deregulated airlines and their passengers would choose to reallocate sufficient activity to other, less convenient airports so as to avoid the need for O'Hare modernization. This analysis and associated conclusions are presented in **Chapter 3** and **Appendices C** and **E** of the DEIS. |
| 20 | Recent industry experience at both O'Hare and other congested hub airports (e.g., New York LaGuardia) demonstrates that the deregulated system does not result in reallocation of sir service to match available airfield capacity.<br><br>Continued on the following page. |
| 21 | O'Hare is not currently a "high cost" airport by generally-accepted industry standards. As of 2003, the average cost per enplanement (the industry-accepted metric for airline costs at airports) was about $9, which is well within the range experienced at other large hub U.S. airports, and in fact about average. The commenter has not presented any data to suggest otherwise.<br><br>Continued on the following page. |
| 22 | The FAA notes that the commenter may be referring to the costs of the Elgin-O'Hare Expressway (EOH) or Western O'Hare Bypass (WOB). The FAA does not believe that the OMP's success is dependent upon these projects. The surface transportation assessment discloses the impacts to the study area, see **Section 5.3** of the EIS. However, western access is provided by the Build Alternatives, and is not the same as the EOH or WOB, see **Chapter 3** of the EIS. Finally, the FAA does not consider financing costs as capital costs. The **Section 1.7 of Chapter 1** has been revised to clarify FAA's consideration of the "costs" issues raised by the commenter. |

| Comment | Response |
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| 20 | In the past FAA has been required to implement High Density Rules to maintain delays at "tolerable" levels. Deregulated airlines have consistently provided financial support for development of additional capacity at large hub airports, because they know that this is where the majority of passenger demand exists. Providing customer satisfaction means providing airport capacity and air service at airports convenient and desired by passengers, not attempting to move air service to airports simply because there is available capacity. Moving flights to St. Louis will not provide customer satisfaction for a Chicago passenger.<br><br>Even for connecting passengers (frequently cited as "indifferent" to airport location), the specific airport is in fact important. If airlines are able to provide more connecting city opportunities (including international) at attractive fares due to the large scale of operation at a major system hub such as ORD, passengers will prefer connecting service at the major system hub to an alternative airport that would not offer the same features. None of the airports mentioned by the commenter have the scale of operation and range of destinations to serve as a true alternative to ORD.<br><br>For example, there is no non-stop service from any of the airports identified by the commenter (including STL) to any airport in Europe. Moreover, Cleveland, Cincinnati, Charlotte, Minneapolis, and Denver each has only one flight per day to London currently, while O'Hare offers eleven daily departures to London along with non-stop service to many other international destinations. In many domestic markets, O'Hare similarly offers greater frequencies than other airports identified by the commenter. See **Appendix A** for the list of non-stop markets served by O'Hare. |
| 21 | The commenter asserts that the "duopoly" at ORD (defined by the commenter as United and American) will fail in the not-to-distant future. FAA disagrees that it is certain that both United and American will fail, and the commenter has not provided any data or analysis to support this assertion. FAA cannot predict which airlines will be successful and which will not, and has not based its forecast for ORD on activity by any specific airlines. Rather, FAA has based its forecast on the historical trend in growth and an assumption that ORD will in the future remain an attractive major hub for the same reasons it has in the past. FAA has also acknowledged that there is inherent uncertainty in forecasts, and for this reason included **Appendix R** in the DEIS, which presents sensitivity analysis of alternative outcomes.<br><br>The commenter also suggests that the cost of the OMP will result in reduced airline service at O'Hare, following the asserted "failure" of United and American. FAA believes that it is unlikely that investment in capacity expansion at O'Hare would result in reduced airline service. O'Hare is one of the world's largest hubs, and airlines have indicated their willingness to participate financially in capacity expansion at O'Hare due to the significant revenue opportunities in one of the world's largest aviation markets.<br><br>The main question raised by this comment is: would the airlines serving O'Hare prefer to (1) pay somewhat higher airport costs in order to benefit from reduced delay costs, expanded capacity, and enhanced growth opportunities, or (2) incur increasing delay costs and forego potential market growth? FAA believes that the airlines serving O'Hare have indicated their preference by supporting the OMP. Thus, FAA believes that expansion of OMP would result in greater airline service than a "no action" alternative.<br><br>Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |

to O'Hare future growth is not the oft shouted "195,000" but, instead, only 89,240; 49,390 over Alternative A) and,

> *"The total increase in regional employment attributed to O'Hare development is a relatively small share of the total regional employment increase forecast by NIPC." [p. 5.5-8]*

Moreover, examination of tables 5.5-1 and 5.5-2 indicates that, basically, none of those jobs are significant (.5%) relative to the total growth expected in Chicago the suburbs around the airport, except for "possibly" Rosemont and Schiller Park. [Even that possibility seems muted by the information in exhibits 5.5-1 and 5.5-2, which show a declining population and employment trend for those areas.] 23

Additionally, the total number of "Build Alternatives" jobs shown for the 15 cities in table 5.5-1 is 29,143, leaving the balance of the supposed extra 20,247 jobs (49,390-29,143) to be distributed throughout at least 20,247/250 = 81 other suburban cities, somewhere. This seems very dubious i.e. to be able to say that the airport expansion will directly result in 250 more jobs in, say, Romeoville or Cary. The "direct line" would seem dotted at best.

So, the growth in airport related jobs in Chicago and the nearby (public health and environmentally impacted) suburbs is only 29,143 more with massive, destructive, expensive airport expansion. AReCO's studies (www.areco.org) show that the expansion cost (e.g., Alternative C) will be near $67 billion dollars, which amounts to a cost of $2.3 million per job! 24

O'Hare expansion will actually kill job growth: If one of the major benefits to the area is really about job growth and since O'Hare is competition to a new airport and since existing airports do not generate nearly as many jobs as a new airport would and cost a great deal more than a new "green-grass" airport would; then, why not support building a new airport and better yet, a world-class high-speed rail system possibility even integrated with the airports? (Appendix N: EMPLOYMENT (Sustainability).

*AReCO agrees with the FAA that the economic growth of the region is not significantly related to the O'Hare airport expansion OMP and thus cannot be used as a justifying reason for the program.* 25

## NOISE POLLUTION

**Basic noise assumptions.**

**FAA's noise religion underpinning, the "Schultz curve", is outdated and based on very questionable assumptions and definitions. 26

**IV. PRACTICAL IMPORTANCE OF DOSAGE-EFFECT RELATIONSHIPS IN COMMUNITY NOISE ASSESSMENTS** *[ "The Schultz curve 25 years later: A research perspective", Sanford Fidell, September 2003]*

The U.S. Federal Interagency Committee on Noise (FICON) declared in its 1992 report that annoyance was its preferred "summary measure of the general adverse reaction of people to noise,"[1] and that "the percentage of the area population characterized as 'highly annoyed' by long-term exposure to noise" was its preferred measure of annoyance.

FICON institutionalized the fitting function developed by Harris *cf.* Fig. 5 for the U.S. Air Force as its preferred dosage-effect relationship. FICON also indicated in Section 3.3.1.2 of its 1992

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| Comment | Response |
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| 23 | While FAA believes that ORD is an important contributor to economic growth in the region, FAA has not claimed in the DEIS that "ORD is the economic engine of the region". Please see topical response G-1, on page U.5-31. |
| 24 | With regard to the comments related to the numbers of jobs associated with the Build Alternatives, the FAA notes that there are a total of 32 municipalities in the study area for induced (secondary) impacts (**Section 5.5.1.3** of the EIS). Of those 32 municipalities, 15 had increases of greater than 250 jobs. The remaining 17 municipalities in the study area, combined with the 240 municipalities in the 6 county Chicago region that are outside of the study area, would collectively benefit from the remaining 20,247 jobs.<br><br>With regard to AReCO's cost estimate of OMP ($67 billion), the FAA notes that FAA does not agree with this estimate for OMP. In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-557 of this appendix. |
| 25 | The FAA has evaluated local employment growth associated with the OMP in the context of the EIS process, and this is reported in **Section 5.5, Chapter** of the EIS. The commenter has offered *AReCO Appendix N* as further support for this comment, and therefore more specific responses to this comment are provided in the response to *AReCO Appendix N*, below. |
| 26 | FAA's use of the "Schultz Curve" is consistent with both internal agency policy and relevant science. The material developed by T.J. Schultz and first published in 1978 has been validated in several subsequent studies. The Schultz equations demonstrate a relationship between aircraft noise levels and the percent of the population exposed that are "highly annoyed". According to the multi-agency *Federal Interagency Committee on Noise (FICON)* "The relationship is an invaluable aid in assessing community responses it relates to increases in both sound intensity and frequency of occurrence." |

report that "the DNL methodology" i.e., its preferred dosage-effect relationship was the basis for its judgments about the acceptability of noise exposure, as expressed in the agency's "land use compatibility" recommendations. The canon of community noise policy of U.S. federal agencies is based on FICON's endorsements of (1) annoyance as the primary measure of community reaction to noise exposure, (2) of a particular fitting function as a means for predicting annoyance from cumulative exposure, and (3) of a set of guidelines for the acceptability of annoyance prevalence rates, expressed as "land use compatibility" recommendations. Thus, decisions about the award of billions of dollars of federal subsidies to construct airport and highway infrastructure and to mitigate their noise impacts ostensibly rest on the shape of a purely descriptive fitting function, unsupported by quantitative, theory-based, or other systematic understanding of the origins and mechanisms of community reaction to transportation noise. 27

**"Significant" noise impact term has been deceptively substituted for "Highly Annoyed".

For example, in DEIS Appendix F 1.1.3, "As a result of these studies, in 1981 the Federal Interagency Committee on Urban Noise (FICUN) established DNL 65 as the threshold of significant noise impact." This is extremely deceptive; the threshold was for "Highly Annoyed", not "significant impact". 28

**The industry metric is known to be too high (65dB DNL) to even adequately protect the public and its health.

The World Health Organization, EPA and other credible institutions recommend a much lower noise protection metric; 55dB DNL outdoor is a "serious annoyance" and 50dB DNL is a "moderate annoyance." FAA needs to include those metrics as you have done elsewhere - nationwide.

Ref: http://www.who.int/docstore/peh/noise/ComnoiseExec.htm

**Table 1: Guideline values for community noise in specific environments.**

| Specific environment | Critical health effect(s) | LAeq [dB(A)] | Time base [hours] | LAmax fast [dB] |
|---|---|---|---|---|
| Outdoor living area | Serious annoyance, daytime and evening | 55 | 16 | - |
| | Moderate annoyance, daytime and evening | 50 | 16 | - |
| Dwelling, indoors | Speech intelligibility & moderate annoyance, daytime & evening | 35 | 16 | 45 |
| Inside bedrooms | Sleep disturbance, night-time | 30 | 8 | |
| Outside bedrooms | Sleep disturbance, window open (outdoor values) | 45 | 8 | 60 |
| School class rooms &pre-schools, indoors | Speech intelligibility, disturbance of information extraction, message communication | 35 | during class | - |

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AReCO DEIS Comments
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| Comment | Response |
|---|---|
| 27 | FAA's use of DNL and its thresholds of significance and Land Use Compatibility table are well established and have survived many legal challenges. FAA's noise policies, regulations and procedures and have been consistently upheld by the federal courts. |
| 28 | In response to this comment, the **Section F.1.1.2, Appendix F** of the EIS has been revised to reflect the correct definition of significance. DNL 65 by itself has never been a threshold of significance for noise. *FAA Order 1050.1E Appendix A paragraph 14.3* page A-61 defines the threshold of significance. |
| 29 | The comment mischaracterizes the recommendations of EPA and the World Health Organization. The document most often quoted is the EPA publication entitled "Information on levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Level of Safety" issued in 1974. This document commonly known as the "Levels" document was written to provide a source of information. The caveat that the recommended levels should not be considered "standards" is clearly stated as follows:<br>On the basis of its interpretation of available scientific information, EPA has identified a range of yearly Day-Night Sound Levels sufficient to protect public health and welfare from the effects of environmental noise. It is very important that these noise levels, summarized in Table VIII, not be misconstrued. Since the protective levels were derived without concern for technical or economic feasibility, and contain a margin of safety to insure their protective value, they must not be viewed as standards, criteria, regulations, or goals. Rather, they should be viewed as levels below which there is no reason to suspect that the general population will be at risk from any of the identified effects of noise.<br><br>FAA guidance provides that DNL contours 75, 70 and 65 be produced. Further additional contours are optional and are considered on a case-by-case basis, as noted in *FAA Order 1050.1 E, Appendix A, paragraph 14.4d(1).* Noise contours are not useful for assessing general land use compatibility below DNL 65. |
| 30 (on following Page) | Significance for noise impacts is defined in *FAA Order 1050.1E.* Even if there are noise increases in a certain area that do not rise to the DNL 65 level of significance, there are still noise impacts. To provide ample disclosure of noise impacts, the EIS includes analysis using supplemental noise metrics. See **Appendix F** of the EIS. |

**We are somehow asked to believe there is no significant noise impact on the public outside a 65dB DNL contour, even though noise in communities may have doubled or tripled from previous levels!

For example, homes without A/C that are located in a 63dB DNL area will be pummeled with nighttime bedroom noise since they must leave their windows open on warm summer nights. They do not "qualify" for noise mitigation. 30

**Rumbling low frequencies and conversation-stopping peak noise impact events are suppressed or disregarded! 31

**Cardiovascular damage or heart attacks, due to stress hormones produced from the continuous, repetitive aircraft noise peaks, are not yet considered a matter of concern! 32

**Sleep interruption problems are set aside. 33

**"Noise mitigation" programs are "voluntary" on the part of the airport, and proceed at slow pace. 34

**Mitigation must be in place before the (projected) noise arrives or, at worse, within a year after. 35

**Mitigation must be to at least a 55dB contour, not 65dB. 36

**Mitigation must not exclude multi-family dwellings (often poorer/minority residents), condominiums, private and municipal office buildings and other affected applications. 37

**The somewhat arbitrary O'Hare mitigation criteria excluding homes built after Oct. 1998 should, if OMP is approved, be changed to homes, multi-family/condominium/office buildings built after 2008. 38

## AIR QUALITY

### Emission Inventories

** Overall, the pollutant emissions inventories are wrong in that they must be calculated based on the airport's maximum aircraft capacity (for each alternative*), not on a minimum FAA estimation of what the actual number of operations will be at some future date. [*Approximately 2 million ops/yr for most alternatives, (e.g., alternative C), instead of 1.2 million currently used for DEIS analyses)].

Alternately, the people could be protected if the FAA includes in any approval of an airport plan a stipulated capping of aircraft operations to the number (and type) used for all pollution (and all other environmental impact areas) analyses and deliberations done as part of the EIS justification/validation serving as the basis for the approval. [However, the FAA has claimed in the past that they have no controls over number and type of aircraft operating at an airport.] 39

*Criteria Specific [Ref. Appendix B]*

** The DEIS greatly undercounts all categories of the Criteria* emissions inventory for O'Hare airport aircraft/GSE operations, for all scenarios (e.g., "Current"…Build out + 5…etc.). This must be corrected. 40

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| Comment | Response |
|---|---|
| 31 | Low frequency noise has in general been assessed using a C-weighted noise metric. The FAA properly evaluated reasonably foreseeable noise impacts of the Proposed Project in the DEIS using the A-weighted noise metric. In the EPA's "Levels Document" that addressed noise and public health, the EPA chose the A-weighted descriptor of noise because it best reflects the range of frequencies important to human hearing. FAA for similar reasons selected the A-weighted metric as the single system for measuring noise around airports in its noise compatibility regulations, *14 CFR Part 150*. See *49 USC 47502(a)*. In the August 1993 report entitled "Federal Agency Review of Selected Airport Noise Issues", the Federal Interagency Committee on Noise (FICON) concludes "There are no new descriptors or metrics of sufficient scientific standing to substitute for the present DNL cumulative noise exposure metric." |
| 32 | According to the report (page 3-15) issued in 1992 by the *Federal Interagency Committee on Noise (FICON)*, "…the current state of technical knowledge cannot support inference of a causal or consistent relationship, or a quantitative dose-response model, between residential aircraft noise exposure and health consequences." Thus, no technical means are available for predicting extra-auditory health effects of noise exposure. |
| 33 | See **Appendix F, Section F.1.3.2** for information on sleep disturbance. |
| 34 | Noise mitigation incorporated into a Record of Decision is not voluntary. |
| 35 | The City has committed to completing any required noise mitigation for the Build Out contour by the time Build Out is accomplished. For further information on noise mitigation, see **Chapter 7** of the EIS. |
| 36 | Noise mitigation is appropriate for incompatible land use. For further information on proposed noise mitigation, see **Chapter 7** of the EIS. |
| 37 | Multi-family dwellings are eligible for FAA funding as a part of an overall mitigation plan. (See *FAA Order 5100.38B, Change 1*, paragraph 812(a).) |
| 38 | With regard to the commenter's suggestion, the policy cited is FAA national policy not limited to O'Hare. (See *63 Federal Register, page 16409, April 3, 1998*.) |
| 39 | Please see the response to this comment on the following page. |
| 40 | Please see the response to this comment on the following page. |

**AReCO concludes that, shockingly, the DEIS inventories appear to have EXCLUDED ALL EMISSIONS FROM AIRBORNE AIRCRAFT, choosing instead to limit aircraft emissions to just those resulting from ground operations. 41

**AReCO believes that he FAA grossly miscalculates aircraft PM10 emissions through use of a purported "first order approximation" equation, based on the ancient ICAO "smoke number" and, thus, the DEIS PM10 emissions inventories are wrong and grossly understated. 42

**Even though the Chicago area is officially in "non-attainment status"; even though PM2.5 regulations have existed from since before 2000 (just in court challenge); even though Illinois has been monitoring PM2.5 concentrations since 1999; even though there is considerable and growing weight to the PM2.5 negative health impacts; the FAA refuses to calculate PM2.5 emissions inventories and dispersion analysis environmental concentrations. AReCO emphatically states that this is wrong and must be remedied. 43

**The Illinois Environmental Protection Agency (IEPA) implies in the DEIS (ref. Appendix B, PM2.5) that federal EPA PM2.5 regulations may not apply to the OMP at this time. This is incorrect and all necessary and accurate PM2.5 emissions inventories (and dispersion analyses) must be conducted, including any and all such emissions from any aircraft, on-ground and/or airborne within the mixing layer. 44

** All on-property emissions must be included in the inventories and dispersion analyses. 45

***HAPs Specific [Ref. Appendix E]***

**All aircraft calculated HAPs are undercounted to substantial degrees and must be re-evaluated/calculated to correct this error. 46

**We believe that O'Hare airport is an overall significant atmospheric mercury source and must be properly inventoried and measured against both air quality concerns and any other applicable EPA or governmental mercury emissions limits. 47

We believe that for conservative analysis, 30ppb of fuel use must be applied as the mercury emission factor for all GSE/APU and aircraft fuel use (within the mixing layer), with the appropriate other factors applied for stationary and vehicular sources within the expanded airport study area. [To be followed by dispersion analyses.] 48

**There is no HAP inventory related to vaporized de-icing/anti-icing fluids, including glycols and hazardous additives. All of these constituents must be defined and quantified as a function of their vaporization during aircraft treatment (and also evaporation from holding ponds). 49

**The only HAP emission included in the HAPs inventory was formaldehyde because it was "…the only HAP emission sampled during fuel fires [at Goodfellow Air Force base]". This is unacceptable, as if the only HAPs that exist are those that were "sampled" in some test, for whatever reasons. The FAA needs to access better open fuel burn HAPs emissions data (or get a test done) in order to create an adequate fuel burn characterization. [Ref. p. I-155] 50

**Air Quality Dispersion Modeling**

Reference Appendices D, D1 and E for all AReCO comments in this category. 51

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| Comment | Response |
|---|---|
| 39 | FAA develops forecasts, i.e. the Terminal Area Forecast (TAF), for commercial service airports. In this case, the FAA utilized the 2002 TAF to evaluate the air quality impacts associated with the alternatives considered for the planning horizon which is representative of 2018 conditions.<br><br>The commenter suggests that FAA evaluate the impacts based on a calculation of the theoretical capacity of the airport and thereafter cap operations at that level. **Appendix R** of the DEIS did evaluate the potential for alternate levels of activity. While it did not evaluate 2 million annual operations, the FAA believes that the range presented constitutes a reasonable estimate of potential range of alternate activity levels within the planning horizon.<br><br>Subsequent to the issuance of the Draft EIS, the FAA issued a Notice of Proposed Rulemaking (NPRM) to extend the limitation of flight schedules documented in the recent FAA orders limiting scheduled operations at O'Hare. The NPRM makes clear, however, that the use of arrival caps as a method of reducing flight delays is not preferable to the long term goal of increasing airport capacity through infrastructure enhancements. In addition, the capping of operations is contrary to the purpose and need of this EIS. These policies are confirmed in FAA's planning documents. |
| 40 | The emissions inventories presented in the DEIS and FEIS are based on the number of aircraft operations forecast for O'Hare, with and without the proposed improvements, throughout the project planning period. FAA has concluded that the results of the inventories accurately estimate, given the technology available to do so, the level of the criteria air pollutants that would emitted from airport and non-airport-related sources within the study area. |
| 41 | The inventories include emissions from airborne aircraft arriving and departing O'Hare up to an altitude of 2,510 feet (approximately 0.5 miles in altitude). This is the average annual altitude of the atmospheric mixing height in the Chicago area. Aircraft-related emissions above this altitude would have no discernible impact on ground level pollutant levels. |
| 42 | The FAA believes that the limited available data with respect to particulate matter emissions from aircraft engines prevents a more accurate quantification and characterization of particulate matter mass emission rates from aircraft engines than that presented in this EIS. Notably, however, the science, regulatory, industry, and international communities are working on a common methodology to physically measure particulate matter emissions from aircraft engines.<br><br>Continued on the following page. |

| Comment | Response |
|---|---|
| 42 continued | Continued from the previous page.<br><br>However, for the purpose of disclosing potential affects of the improvements to O'Hare on levels of this pollutant, the FEIS includes as thorough an evaluation of particulate matter (10 microns or less in size and 2.5 microns or less in size) as is possible at this time (see **Section 5.6** of the EIS). |
| 43 | Please see response to comment 42. |
| 44 | The ambient air quality standard for the pollutant $PM_{2.5}$ is relatively new. As such, procedures for determining conformity have not yet been published by the USEPA. Therefore, conformity requirements do not apply for $PM_{2.5}$ to the proposed improvements. Notably, it would not be possible to compare the emission estimates of $PM_{2.5}$ to regional emissions because the IEPA is currently in the process of preparing a regional inventory of sources of $PM_{2.5}$ emissions. Also, please see response to comment 42. |
| 45 | All airport-related sources were included in the evaluation except for a few sources that would produce, at best minimal emissions. In addition, because the study area extended beyond the airport property line, non-airport-related sources were also evaluated. Finally, the sources included in the analysis were approved, as part of the air quality protocol, by IEPA and USEPA. |
| 46 | FAA respectfully disagrees with this comment. The HAPs emission estimates are based on the operations forecast for the planning horizon of the EIS and were evaluated per the IEPA/USEPA approved HAPs protocol. To the extent that the commenter requests an evaluation of higher operation levels beyond the planning horizon, see response to comment 39 above. |
| 47 | FAA respectfully disagrees with the comment. In this regard, commercially available jet fuels contain very small levels of mercury, if any at all. Notably, large sources of this pollutant are facilities that would burn coal. There are no present or proposed coal-burning facilities at O'Hare. |
| 48 | FAA respectfully disagrees with the comment. A study report prepared by the U.S. Navy (Shumway, 2000), for example, analyzed elemental concentrations of Jet A and several military jet fuels. The U.S. Navy report indicates that mercury was not detected in Jet A. Please, see response to comment 47 immediately above. |
| 49 | FAA agrees that vaporization during aircraft treatment is appropriate to consider. However, when deicing and anti-icing fluids are used, the ambient temperature is low. At low temperatures, these fluids do not evaporate. As such, these types of fluids do not significantly contribute to hazardous air pollutants. |
| 50 | FAA disagrees with the comment. The inventory of hazardous air pollutants was performed for 66 compounds. Formaldehyde was only one of the 66 compounds analyzed. Based on available data, formaldehyde is the only detectable hazardous air pollutant emitted for fire training facilities. |
| 51 | Comments based on material provided within *AReCO Appendices D, D1,* and *E* are addressed above. |

## WATER POLLUTION

**Toxic, de-icing and anti-icing fluids flow into aquifers and through streams on their way to sewage treatment plants (e.g., Stickney) and then into our waterways, generally without alteration or neutralization. The toxic additives, which are more poisonous than the base glycols, cannot be filtered out and significant portions of the glycols remain in the sewage treatment effluents.

> "The captured storm- and melt water is routed to the South Detention Basin. The water collected in the basin is pumped by means of a new larger capacity pump station and force main. The force main extends a distance of approximately 13,600 feet to the existing MWRDGC TARP drop shaft located near the southeast corner of Des Plaines River Road south of Irving Park Road. The force main includes a diversion structure at the junction with River Road. The diversion structure directs the discharge to the MWRDGC Drop Shaft or, when water quality conditions are acceptable, to an existing drainage ditch in the Cook County Forest Preserve and then directly into the Des Plaines River." [Appendix K.4.2]

What determines "…water quality conditions are acceptable…"? 52

** To date, no definition has been located in the DEIS stating "acceptable" de-icing fluid concentrations in sewer discharges or creek runoffs and also, specific deicing and anti-icing fluid/solid constituents.

What are the total constituent lists (including amounts) for the de-icing and anti-icing fluids in use today and planed use for the OMP?

The FAA may defend a position of not addressing these HAPs by claims that the additive chemicals are manufacturer's "company secrets". This "don't know, can't tell" position is ridiculous, particularly given that the FAA's main charter is "safety" for the air transportation system and passengers (we assume that includes airport workers as well). We have sued the airports on this issue in the past, and many of the chemicals we exposed under discovery are now public knowledge and the FAA and EPA are fully aware of said chemicals.

The glycols and additives must be defined, both in content and in source emission rates, as part of the overall HAPs emission inventory, then analyzed for impact along with the rest by dispersion analyses. Also, dispersion to the atmosphere due to runoff from aircraft leaving the ground must be included in the analyses. 53

** Water quality monitoring by the airport includes only BOD (biochemical oxygen demand), pH, temperature, total dissolved solids and AN (ammonia nitrogen). [p. K-10] In other words, though BOD has some correlation to glycols, there is no monitoring for fluids' toxic additive concentrations and/or even the base compounds. Airport drainage samples analysis must include de-icing/anti-icing toxic additives and any and all permits must reflect that. 54

## HEALTH IMPACTS

Ozone [Ref. Appendix H]

** The DEIS does not translate their calculations of ozone pre-cursors into ozone impacts, which in turn substantially and negatively impacts the public's health and well being for millions in the Chicago ozone "non-attainment" area.

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| Comment | Response |
|---|---|
| 52 | Water quality conditions are considered to be acceptable for discharge into one of the three creeks that drain the Airport when the runoff meets the appropriate discharge limitations set forth by the agencies that regulate water quality in the State of Illinois, the U.S. Environmental Protection Agency and the Illinois Environmental Protection Agency. |
| 53 | When deicing and anti-icing fluids are used, the ambient temperature is low. At low temperatures, these fluids do not evaporate. Therefore, these types of fluids were not included in the HAPs emission inventory. |
| 54 | The existing NPDES stormwater discharge permit takes into account the use of glycol at the Airport. The preferred alternative includes the continued adherence to the NPDES stormwater discharge permit. In adherence to the NPDES permit, discharging into one of the three creeks that drain the airport when the runoff meets the appropriate standards, no change to water quality as a result of the preferred alternative would occur. |

AReCO believes that the DEIS short-cutted this issue and that O'Hare related emissions indeed have significant ozone effects in the area and that such effects can and must be estimated by simulation modelers, which have been in existence since the mid-90's, as is well known by the EPA, IEPA and FAA. 55

PM2.5 [Ref. Appendix B]

** Significant cardiovascular and other serious health impacts caused by clouds of fine, virus size, PM2.5 particulate matter, which stay airborne for days, are being "swept under the rug", along with ill-considered toxic emissions (HAPs) impacts. (See attachment M.) 56

** There are no PM2.5 analyses, based on outdated or spurious arguments by the FAA and the IEPA/EPA. The FAA continues to support the air transportation industry by not demanding (including to ICAO) that PM2.5 measurements be made on representative jet engines, not in ten years but now, and even "yesterday". The FAA tries to paper over this huge and glaring air transportation industry/DEIS deficiency by coming up with a totally inaccurate estimation equation for PM, then interprets it as PM10 and disregards any further PM2.5 consideration. AReCO considered just re-interpreting PM10 as PM2.5, but rejected that as the "first order estimation" equation did not include any volatiles. AReCO demands that this terrible state of affairs be accurately remedied before any attempt is made to construct a Final EIS. 57

HAPs

** The potentially huge negative impacts on both workers and the general public by HAPs emissions and dispersion into the airport property area and surrounding neighborhoods and communities are "swept under the rug" by the FAA in the DEIS. The emission inventories are considered to be in significant (undercount) error, and absolutely no dispersion analyses are done. Per the DEIS [p. I-1]:

> While the effects on human health from HAPs were raised in Scoping, the FAA, EPA, and IEPA concur that at this time it is not appropriate to conduct a human health risk assessment for the HAPs discussed in this Appendix, and that the influence of the proposed airport development on the health of those living in the vicinity of O'Hare cannot currently be quantified in a meaningful way. Collectively, the agencies believe that, given the absence of HAP emissions data and the limitations of HAP speciation profiles for commercial jet aircraft engines, a sound human health risk assessment cannot be accomplished.2

2 King, Suzanne, EPA Region 5 facsimile to Mike MacMullen, FAA, December 17, 2004.

And yet:

> When exactly WOULD be the "appropriate time" to conduct the risk assessment?
>
> Why cannot "the influence" be quantified in a "meaningful way" when (1) the Hap's emissions are well defined in the DEIS, such as in great detail for aircraft on page I-47, (2) HAPs toxicity air concentration values exist right there in Table I-13, and (3) the FAA and EPA are quite capable of running appropriate dispersion analyses, EDMS-based or otherwise (e.g., CALPUFF)?

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| Comment | Response |
|---|---|
| 55 | Emissions from O'Hare-related sources, along with emissions from all other sources were evaluated (simulated) by the IEPA for the purpose of demonstrating compliance with the one-hour ozone National Ambient Air Quality Standard. The results of IEPA's modeling efforts indicate that the Chicago area can attain the one-hour standard with the O'Hare-related emissions. Additionally, when compared to the level of regional emissions, the emissions resulting from the operation of all aircraft and ground support equipment within the non-attainment area (including those at O'Hare) do not contribute more than 3 percent of the regional emissions of ozone precursors.<br><br>It is not practical to perform ozone-related computer modeling for an individual project such as the improvements at O'Hare. Models used to perform ozone analysis (e.g., USEPA's Urban Airshed Model) are not structured to evaluate localized impacts from individual projects. |
| 56 | The assessment of PM2.5 and HAPs that was performed for the O'Hare EIS is the best possible assessment given the current limitations regarding the quantity and characterization of emission rates from aircraft engines. |
| 57 | Please see response to comment 42 on page U.4-306. |

Why is it that a "sound risk assessment cannot be accomplished" when Oakland airport did exactly that as part of their recent SEIR[2] AND the FAA/DEIS specifically references that study?

AReCO believes the answer is that the FAA and or the EPA (both EPA and IEPA) in fact DO NOT WANT TO DO A MEANINGFUL HAPs HEALTH RISK ASSESSMENT and that the "tonnage" of taking 161 pages in the appendix to say so, **is just an attempt to bury the issue in paper.** This is verified by the fact that in the main volume, there is NOT ONE WORD SAID ABOUT HAPs! Wouldn't 161 appendix (I) pages be worth even one page in the main body?

*AReCO demands that the FAA, with assistance from the EPA "cooperating agency", (1) re-evaluate the HAPs inventories to eliminate errors, (2) perform proper dispersion analyses for receptors both on the airport property and in the surrounding neighborhoods and (3) publish all results and conclusions before advancing this EIS and (4) provide necessary protection/mitigation processes.* 58

Indirect medical/hospitalization impacts.

** One would think that somewhere in this giant 5000 page DEIS that the indirect (or "secondary induced") human health, medical and hospitalization impacts on workers and the public of the various expansion options (and the "base") would receive some attention and discussion...But, there is nothing.

We believe that this is because the FAA, EPA and other authorities do not want to address this issue as it implies some form of "mitigation cost" liability, which they do not want to recognize, for obvious reasons. None-the-less, the FAA, EPA, et al cannot divorce themselves from the basic conclusion that increased pollution causes increased negative health impacts which lead to disease, illness, medical and hospitalization bills, etc. and sometimes death.

Until such "indirect" but hugely important costs are recognized and characterized as a normal constituent of "Environmental Impact" studies, including this one, such studies are relegated to being generally exercises for naught.

*AReCO believes that this is a serious defect-by-deletion in the DEIS and must be rectified. The FAA/EPA must first properly and accurately characterize noise and pollution conditions, both on the airport property and in the surrounding neighborhoods, then translate that into associated human health medical and hospitalization costs, etc. summarized on a lifetime basis.* 59

## IMPACT ON WILDLIFE

** Nowhere does the DEIS address air pollution effects and impacts on the local area bird population. Airport emissions drift into wide areas beyond the airport boundaries and impact to one degree or another the health of the bird populations, both by direct inhalation and indirectly through poisoning effects on or diminution of their food chain.

It is important to understand and quantify these effects, not only because of direct loss of birds to the human environment, but also because of secondary effects. One example of this would be a

[2] For FAA/EPA memory jogging, refer to the Oakland SEIR, Appendix C, "Port of Oakland, DRAFT Ambient Air Quality Human Health Risk Assessment for the Oakland International Airport, September 24, 2003 (Emphasis added...Ed)

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| Comment | Response |
|---|---|
| 58 | FAA, USEPA, and IEPA collectively agree that given the absence of HAP emissions data and the limitation of HAP speciation profiles for commercial jet aircraft engines, an accurate emissions inventory (the first step in what would constitute a sound human health risk assessment) cannot be accomplished. In addition, substantial material on HAPs is provided in **Appendix I**. Also, please see response to comment 42 on page U.4-306. |
| 59 | FAA interprets the comment as a request to conduct a human health risk assessment. FAA's response to this request is provided above in response to comment 58.<br><br>FAA notes that the request to include costs associated with health human impacts is predicated upon the completion of an HHRA. As FAA has not conducted a HHRA for the reasons stated above, consideration of the costs associated with human health impacts would not be appropriate. |

rise in mosquito populations associated with decreased bird populations, or substantial bird type shifts in the populations. Increasing mosquito populations are already a great disease concern and a cause for spending millions of dollars in mosquito control programs in Chicago and the surrounding suburbs.

The DEIS must address this issue by calculating the various expected changes (increases) in atmospheric content of chemicals, aerosols, particulates, etc. with known deleterious effects on birds and other animals, through dispersion analysis into the surrounding environments (5-10 miles radius and up to the mixing layer "lid" altitude) and then calculating/estimating the degree of bird and other animal population impacts of these concentrations (both "criteria" and HAPs). 60

## ENVIRONMENTAL JUSTICE

### *NOISE*

** Chicago's O'Hare airport "Noise Mitigation" program has historically disqualified any multi-family dwelling and mobile home parks from the program. Any OMP alternative must put an end to this disqualification, especially as it relates to dwellings in locations deemed qualified for Environmental Justice (EJ) treatment.

The FAA's criteria that defines a "substantial increase" in noise as 1.5dB greater than previously, AND when said location is within a 65dB DNL contour AND when compared to the Do Nothing" alternative, is a classic FAA impact minimization tactic, made even morally worse when applied to the EJ category of residents.

The FAA must modify its noise/health definitions to bring them into concert with the World Health Organization and other credible institutions recommendations (see the major Noise comments section above), recognizing that airport/aircraft noise that injects a 50dB or greater contour into an area is immediately of significance and that, at a minimum, the ">1.5dB increase" criteria must be applied to any area within a 55dB noise contour. Additionally, the ">1.5dB increase" must be measured against whichever has the lesser noise, the "base case" (today's) or the "do nothing" alternative (at the future date under consideration (e.g., 2018), in order to eliminate manipulation of the "do nothing" conditions, such as to minimize the apparent impacts of other alternatives (especially the airport's "preferred" alternative. 61

### *MINORITY AND LOW-INCOME FAMILY SAFETY*

Airport boundary areas (e.g. radius of 0-3 miles from the boundary) tend to experience heavier concentrations of minority and low-income family populations. As such, they are exposed to a disproportional extent to the risks of aircraft accidents ("ground incursions" or crashes). The DEIS does not speak to this issue at all and the degree of increased risk impacts must be evaluated by the FAA. [See also Aircraft Crash Risk Analyses below] 62

### *POLLUTION/AIR QUALITY*

** Basically, the DEIS considered only noise and forced relocation (by property acquisition[3]) in their environmental justice deliberations. The DEIS is deficient in that degradations in Air

[3] Property value "just" compensation should be based on both owner replacement cost as well as what the converted-to airport property will be worth in the post-expansion future. The "taking" of private property here is



| Comment | Response |
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| 60 | Based on consultation with Federal and State wildlife officials, the FAA concludes that all appropriate project-related impacts on birds and other wildlife within the project study area have been adequately presented within the EIS. |
| 61 | The FAA disagrees with the commenter's suggestion seeking a separate noise metric for environmental justice assessment. |
| 62 | The FAA believes that this comment involving potential aircraft accidents presents issues outside of NEPA's environmental focus. Moreover, it enters the realm of speculation and conjecture, and would improperly use the EIS process to displace FAA's other regulatory powers to assure air safety. In addition, the FAA is confident that any approval of an ALP will only occur if the Agency first concludes that such ALP fully conforms to all Agency safety standards. |

Quality and resulting health impacts must also be considered. There is no justification for not considering this by constraining dispersion analysis to the airport fence line. [See Dispersion Analyses comments]

The DEIS should have done this for both Criteria (including PM2.5) and HAPs and is deficient for not doing this.

Additionally, since minority groups, especially "low income", tend to have significantly reduced abilities to deal with adverse health impacts, both from initial immunity and from a subsequent curative perspectives, the air quality impact criteria "bar" must be set lower than otherwise. EPA must recommend the appropriate degrees of reduction, commensurate with any known genetic, racial, or other health-disadvantaged factors. The reduced bar must be reflected not only in decreased limit criteria (example: PM2.5 annual requirement of, say, 11.25 µ-grams/m3 instead of today's 15 (a 25% decrease), but also in allowable increase from an existing level (example: if" today" = 8 µ-grams/m3, then maximum "new" level allowed as a result of an OMP action of 10 µ-grams/m3 (25% increase), as calculated by dispersion analyses. 63

***CHILDREN***

{Reference Appendix L}

The FAA totally excludes from their Environmental Justice discussions [section 5.21] the fact that Children are an officially included Environmental Justice category, as clearly stated in the FAA's own guideline document, FAA Order 1050.1E, which also references a related Executive Order 13045.

As a matter of fact, one is hard pressed to find even mention of the word "children" in the entire 5000 page DEIS.

From 1050.1E, section 16.2b,: "FAA is encouraged to identify and assess environmental health risks and safety risks that the agency has reason to believe could disproportionately affect children."

Since there is no such identification and assessment found in the DEIS, AReCO concludes that either (a) the FAA prefers (illegally) not to deal with the issue (e.g. by not performing appropriate Criteria and HAPs dispersion analyses) or (b) the FAA has made an apriori decision, without any explanation or documentation, that no such disproportionality will exist under any OMP alternative.

This failure to address potentially significant children's health and welfare justice is particularly galling since:

(1) There are dozens of child-concentrating schools, parks and other facilities within the study area (e.g. Exhibit 4.2-3), over and above residencies and

(2) The EPA has been studying the issue of increased perinatal exposure sensitivity to environmental chemicals for years (i.e., no "secret", just recently releasing new exposure guidelines that indicate, for example, a 10-fold sensitivity increase for exposures during ages 0-2 years).

NOT for public use, as portrayed, but for the enhancement of other private interests, such as airlines, construction companies, financing companies, in-terminal business', on-property freight operations, etc.

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| Comment | Response |
|---|---|
| 63 | FAA disagrees with the comment. The macroscale dispersion analysis evaluated (modeled/simulated) air pollutant concentrations on Airport property, at the Airport boundary, and at locations beyond the Airport boundaries. The microscale dispersion analysis also evaluated pollutant concentrations both on Airport property and beyond the Airport boundaries.<br><br>The pollutant concentrations presented in the DEIS and FEIS are representative of the greatest estimated levels of pollutant concentrations (levels would decrease farther from the airport property line). The results of the analysis indicated that at the property line pollutant levels would be below the National Ambient Air Quality Standards. As such, levels beyond the property line would also be below the standards. Notably, the results of the analysis can be considered conservative because they are based on conservative assumptions including background concentrations that are representative of the highest measured levels in the Chicago area (levels are likely lower in the vicinity of the airport).<br><br>Comments related to more restrictive standards for minority groups will be referred to the USEPA as the agency is responsible for establishing such standards.<br><br>The environmental justice impacts, with regard to air quality, are further addressed in **Section 5.21** of the Final EIS. |

The FAA must seriously address Children's Environmental Justice issues (particularly pollution, but also noise, etc.), within a 5-mile radius around O'Hare. Criteria and HAPs dispersion analyses should be done with resulting concentrations evaluated against child-adjusted health standards. In the case of HAPs, the toxity levels listed in Tables I-13 and I-14 should be adjusted downward to child exposure/age levels as summarized in current EPA Guidelines. 64

## AIRCRAFT CRASH RISK ANALYSES

Certainly an important environmental impact would be an aircraft crash onto either the airport property or into the surrounding neighborhoods. Potential impacts include not only immediate human death and injury but, also, longer term health and environmental impacts due to such as wide dispersion of tens-of-thousands gallons of fuel, toxic fire fume inhalations (combination of fuel, brake fluids, plastics, etc.), dispersion of vaporized depleted uranium from aircraft still using same as ballast weights (older 747's, military aircraft, etc.) or carrying as munitions freight, etc. Crashes could also involve nearby rivers/streams (including some from which drinking water is drawn) and Lake Michigan. Major secondary effects could occur in crashes involving such as O'Hare or other fuel and chemical storage depots, industrial parks, etc. Crash risk is magnified even more considering the dozens of schools, hospitals, nursing homes, office buildings, etc. that lie under the proposed increased landing and takeoff areas.

*A 1997 Boeing study captured the magnitude of this issue: "by 2015 airlines in the U.S. will carry 1.2 billion passengers, roughly the same amount carried by all the world's airlines today. If the accident rate remains at today's levels, we could have a large jet aircraft crash every seven to ten days..."*[4]

Such risk analyses methodologies have existed for some time. Indeed, the air transport industry and the FAA themselves have substantial knowledge of these methods and associated impact cost estimates; unfortunately most focus mainly on impacts to the air industry, not the "collateral damaged" public.

It is also notable that most air transportation safety statistic pronouncements relate strictly to the "flying passengers" and not to those living under airport flyways. Additionally, studies have shown (rather understandably) that "groundling" risks increase rapidly with decreased distance from an airport, rising almost two orders of magnitude from a 4-mile distance to the airport boundary. This becomes doubly troubling when considering "Environmental Justice" issues, as the greatest risks tend to generally accrue to low income and minority population concentrations that tend to naturally exist near the airport boundary.

The FAA must fully evaluate these risks as they relate to alternatives, both associated with O'Hare expansion proposals and instead of O'Hare expansion (e.g. alternate and/or new airports, increased use of rail transportation, etc.). The relative risks must be included as a significant factor in any FAA project approval deliberations and conclusions. (See also: Appendix M Aviation Associates.) 65

[4] National Civil Aviation Review Commission, Avoiding *Aviation Gridlock and Reducing the Accident Rate – A Consensus for Change*, December 1997



| Comment | Response |
|---|---|
| 64 | This EIS has not identified any other project-related environmental health risks or safety risks that may disproportionately affect children. A discussion of impacts on children has been expanded in response to this comment, see **Chapter 5, Section 5.21** of the EIS. |
| 65 | Please see response to comment 62 on page U.4-311. |

## APPENDIX A 2004 FAA aviation forecast assumptions/risks

**FAA March 2004 Air Transportation Industry Forecast**

66

FORECAST RISKS

Two words aptly describe FAA's current outlook for aviation demand and activity-- "cautious optimism." Still, there remain numerous downside risks to achieving this year's forecasts. However, the probability of occurrence of these risks appears to be less than in the last several years and, for the first time in several years, there are actually some positive trends and/or factors that could cause aviation demand and activity to be higher than predicted.

Prominent in everyone's predictions of future aviation demand is the assumption that there will not be another terrorist incident aimed at the U.S. or world aviation community. Yet aviation, because of its high visibility and global reach, continues to be a target for international terrorism. However, tighter security measures have, to a large extent, restored the public's confidence in the integrity of U.S. and world aviation security systems.

Additionally, the SARS epidemic and, to some extent the war in Iraq, have amply demonstrated how sensitized global air travel has become to any form of extraordinary event. The reality is that in today's global marketplace, combined with the rapid assimilation of information/news, any extreme occurrence in one part of the world can cause ripples throughout the global community, including world travel markets. Terrorist activity in general remains one of the greatest risks to achieving the forecasts contained herein. The continuous random acts of terrorism against U.S. and United Nation troops and/or civilians both in Iraq, neighboring countries, and around the world are a constant reminder to the flying public that no place is safe from terrorism. These terrorist acts do have a negative impact on travel to targeted areas, both immediately as well as for some period of time following the incident.

In addition, just the anticipation of the war in Iraq resulted in a spike in jet fuel prices in early 2003 (up 33.3 percent in the 1st quarter), reaching a peak of $1.05/gallon in March. Fuel prices are up 23.1 percent to date in 2003, an increase that the financially fragile U.S. airline industry can ill afford. Although, OMB and most economic forecasting services predict a fall in fuel prices over the next several years, considerably higher prices remain a distinct and real possibility.

U.S. Airways emerged from Chapter 11 bankruptcy protection in early 2003 and United Airlines is expected to emerge in mid-2004. Despite the restructuring and cost cutting that has occurred among most legacy network carriers over the past several years, these carriers' costs are still far from competitive with those of the low-cost carriers. Further rounds of cost cutting and confrontations with labor are almost a certainty. If the network carriers are unable to obtain additional concessions from labor, the alternative may be a further contraction of their route networks. This scenario could lead to more reductions in aviation services to small and medium sized communities. The demand for aviation services could be significantly impacted under such a scenario.

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| Comment | Response |
|---|---|
| 66 | *AReCO Appendix A* appears to contain a quotation of the "Forecast Risks" section from the FAA's March 2004 Aerospace Forecasts 2004-2015 FAA prepared this language in connection with preparation of a national aviation forecast, and does not take issue with it. While FAA believes that this highlights the inherent uncertainty associated with aviation demand forecasting, FAA does not believe it is specifically relevant to the forecast for activity at ORD used in the EIS. The forecast for ORD was developed based on specific analysis of trends at ORD. The forecast for ORD, like the national forecast, is subject to risks and uncertainties. For this reason the EIS includes **Appendix R** to provide sensitivity analysis of impacts related to such uncertainties. |

The commercial industry's current financial problems could conceivably lead to consolidation of the industry over the next several years. Although consolidation may improve the financial health of individual carriers and the industry, the fear is that consolidation could lessen competition in many•I-39 markets. Less competition could lead to higher fares for the flying public and lower travel demand.

One of the major drivers of the forecast in traffic demand comes from the low-cost carriers who are expected to increase their share of total traffic over the 12-year forecast period. With the exception of Southwest Airlines, however, the track record of low-cost low-fare airlines has not been that good. Although the current low-cost carriers appear to have greater financial stability and access to funding than previous start-ups, a prolonged slump in traffic and/or prolonged destructive fare wars could possibly cause one or more of these carriers to cease operations. The loss of competition could lead to increased fares and a loss of passenger demand.

Additionally, the forecast also assumes continued rapid growth among regionals/ commuters, spurred in part by large air carrier restructuring and the continued transfer of routes to their smaller partners. This has, in turn, led to a rapid buildup in the carrier's regional jet fleet, including large numbers of future orders and options for additional jets. This year's forecast assumes that the large air carrier industry returns to profitability in 2005. Once demand for air travel does return, the question then becomes whether the larger carriers will "take back" routes that were transferred to their regional partners. Should this occur, some regional carriers could find themselves saddled with excess capacity and reduced demand, the combination of which could weaken their financial viability.

Although the industry received a 4-month "tax holiday" from security fees during 2003, the taxes were reinstated in October. However, the fact remains that the gap between what the passenger pays and the revenue that airlines receive has widened over the last several years. The debate over who should pay for the cost of increased security--passengers, airlines, or government--remains unresolved.

The economic forecasts used to develop this year's aviation forecasts assume very strong economic growth in 2004 and 2005. The latest Global Insight pessimistic scenario—a rapidly declining dollar, rising oil prices, higher inflation, and rising unemployment--projects a 20 percent probability that the U.S. economy will achieve real GDP growth of only 3.4 percent in 2004 and 2.2 percent in 2005. Slower economic growth would not only slow the recovery in the demand for aviation services but would also hamper and slow the industry's return to profitability.

However, Global Insight's optimistic scenario-- a capital spending boom, rapid technological progress, low inflation, and a delayed downturn in housing markets--projects an equal 20 percent probability that U.S. economic growth could exceed 5.0 percent in 2004 and 4.0 percent in 2005. Higher growth would lead to increased demand for aviation services and speed the industry's return to profitability.

Internationally, the global economy's performance has been disappointing, with 5 years of weak



or uneven growth since 1998. Although the current forecast calls for a return to higher trend growth rates starting in 2004, there are numerous downside risks inherent in these forecasts. Almost all world regions appear to be counting on strong export growth to the United States as a major contributor to their recoveries. If, as predicted, the U.S. dollar continues to fall, strong U.S. economic growth may not translate into strong U.S. import growth. As such, growth in the rest of the world could remain sluggish for some time into the future.

Doubts also remain over the strength of domestic demand in both Japan and the Euro zone as these countries continue to be constrained by structural economic problems, political gridlock, institutional constraints, and the authorities' reluctance to take decisive action. Additionally, it is feared that slow economic growth in Brazil and recessions in•I-40 Venezuela and Uruguay could worsen and spread to other South American economies. Also, if the economic recovery in the U.S. is weaker than forecast, this could also negatively impact countries whose economies are dependent on export trade with the United States. The current forecasts assume strong passenger growth for travel between the United States and other world regions. Any slowing of demand could seriously inhibit the growth in world passenger demand.

Historically, international markets have been subject to a series of bilateral agreements that have, for the most part, severely restricted competition. However, current negotiations between the U.S. and the European Union, prompted by a ruling of the European Court of Appeals that voided agreements negotiated by individual countries, are focusing on wider access of U.S. carriers to London Heathrow Airport and U.S. limits on foreign ownership. If successful, additional U.S. carriers could gain access to new markets and introduce new competition in the North Atlantic market. Greater competition could lead to lower fares and higher growth in these markets.

The demand for general aviation products and services, including business jets, has declined over the past 3 years. How quickly the industry recovers depends, in large part, on a strong recovery in the market for business jets. However, some financial analysts are predicting that the business jet industry is at the beginning of what could be a multiyear cyclical downturn How quickly this flying segment responds to the predicted economic rebound will go a long way in determining whether general aviation achieves the predicted increases in the demand for its products and services.

The current forecast assumes the introduction of the low priced Eclipse jet (or similar type aircraft) in 2006, with the market for this or similar aircraft totaling 4,600 by 2015. This is a relatively conservative assumption compared to some industry estimates. If the higher industry estimates are correct, the general aviation active jet fleet and hours flown could be considerably higher than forecast.

The current workload forecasts assume that commercial activity (air carrier and regionals/commuters) returns to pre-September levels in 2005/2006. Therefore, delays could become a critical limit to growth within this forecast period. It is critical that Government and industry planners use the next several years to develop comprehensive plans to head off certain future delays.

| Comment | Response |
|---|---|
| 66 | Please see the response to this comment on page U.4-314. |

Although total demand at FAA facilities remains at levels considerably below those achieved prior to September 11, these lower levels do not necessarily imply reduced workload for FAA air traffic controllers. At many U.S. large hub airports, peak period activity already exceeds that flown prior to September 11. Based on the 2003 FAA Terminal Area Forecasts, 10 of the 35 Operational Evolution Plan (OEP) airports currently exceed pre-September 11 activity levels. In addition, another six airports are expected to reach or exceed pre-September 11 levels in 2004.

The mix of aircraft now operating at most large hubs is also significantly more complex than before September 11. Smaller regional jets, that require greater separation than the larger aircraft they replaced, account for a significantly greater proportion of total flights--18.2 percent in 2003, up from 15.7 percent in 2000. This percentage is expected to increase to 19.2 percent by 2005. These complexities will make the FAA job more challenging even with less overall traffic.

The economic scenarios presented in this document call for a strong recovery beginning in 2004 and 2005 and sustained moderate Baltimore/Washington, Charlotte, Chicago Midway, Chicago O'Hare, Cincinnati, Ft. Lauderdale, Las Vegas, Memphis, Minneapolis/St. Paul, and Salt Lake City. Atlanta, Denver, Detroit, Houston Intercontinental, New York LaGuardia, and San Diego growth for both the U.S. and world economies. If these economic forecasts are realized, the demand for commercial and general aviation products and services should fully recover to pre-September 11 levels during the 2005/2006 time frame. Demand should also continue to expand throughout the rest of the forecast period. 66

ARecO DEIS Comments
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| Comment | Response |
|---|---|
| 67 | The FAA reviewed *AReCO Appendix B* in responding to the comments contained in the main text of this letter (AReCO dated April 6, 2005) regarding the same issues. |

67

## Appendix B: Significant Under-counting of Criteria Emissions

Aircraft General

The DEIS appears to greatly undercount all categories of the Criteria[5] emissions inventory for O'Hare Airport aircraft/GSE operations, for all scenarios (e.g., "Current"…Build out + 5…etc.). A letter was sent to the IEPA requesting clarification (Appendix B1) but a response was never received.

Further investigation has lead AReCO to conclude that, apparently, the DEIS inventories have EXCLUDED ALL EMISSIONS FROM AIRBORNE AIRCRAFT, choosing instead to limit aircraft emissions to just those resulting from ground operations. This is alluded to by the statement (p. J-151), "Aircraft emissions occur on the taxiways, at the end of active runways, and on the runways themselves." This means that just emissions from the taxiing function are included, leaving out all from approach/landing, takeoff and climb out functions within the mixing layer[6] (though part of the takeoff operation might also have been included).

The disparities are huge, with IEPA's figures for 1999 being 1704 and 6048 tons/year (t/y) of VOC and NOx, respectively, versus the DEIS 2002 "baseline" figures of 399 and 3956 t/y, respectively…differences of 427% and 153%!

Aircraft particulate matter

PM10

The FAA uses EDMS for aircraft emissions inventories but admits that EDMS does not include PM emission factors.

> "The emission inventories in this EIS air quality assessment were prepared using the FAA's Emissions and Dispersion Modeling System (EDMS-Version 4.12). Use of this model is required by the FAA when evaluating airport-related emissions at civilian airports and military air bases.18 The model was developed by the FAA in cooperation with the United States Air Force. EDMS generates an emission inventory of carbon monoxide, volatile organic compounds, nitrogen oxides, sulfur oxides, and particulate matter with a diameter of 10 microns or less. The EDMS does not include aircraft-related particulate matter emission factors. To estimate levels of this pollutant, mode-specific emission factors for turbine engines were developed using methodologies contained in recent literature[7]. (P.5.6-22)

[5] The "criteria" pollutants are so called because the U.S. EPA has, over the years, reached consensus with experts on unhealthy or dangerous concentrations and has codified these limits into regulatory limits or "criteria".

[6] The mixing layer is normally assumed to extend to 1000 meters altitude; the DEIS generally assumes a somewhat lower average O'Hare altitude of about 2500 feet.

[7] Footnote 19: Fleming, Gregg et al. 2003. "Derivation of a First Order Approximation of Particulate Matter from Aircraft" 96th Annual Conference and Exhibition of the Air and Waste Management Association, San Diego, CA, June 22-26, 2003, Paper #69970.

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The FAA calculates PM10 aircraft emissions through the use of the (Fleming) equation on page J-48. AReCO has great concerns over the application of this "approximation" equation. For instance, the reference document, "Derivation of a First Order Approximation of Particulate Matter from Aircraft" states that the calculated results are, "…for predicting the mass of the PM for commercial aircraft…", but the DEIS then converts "PM" to PM10 in an unwarranted and unexplained manner, thereafter summarizing all subsequent inventories as PM10.

The reference document also indicates that the calculation method is a "first-order approximation", which usually is interpreted to mean it could be an order of magnitude off. Also, the calculation does not include any volatile components of PM (which are believed to be substantial).

Given these concerns, a letter [Appendix G] was sent to the EPA to determine whether or not they agreed with the approach. The letter remains unanswered to date; however, we have received an email claiming that they are in negotiations with the FAA on this matter.

On balance then, AReCO is forced to strongly disagree with the method of PM10 calculation used in the DEIS, believing it is fraught with errors. As such, both the aircraft PM10 inventories and the resulting dispersion analyses are considered wrong and totally unacceptable.

PM2.5

There is existing and growing evidence that PM2.5 is a serious health hazard and investigations over the past several years have demonstrated that the hazards are even worse than initially thought in the mid-late 90's, especially in regards to cardio-vascular impacts.

The EPA set 24-hour and annual PM2.5 air quality limits before year 2000. Thus, this is not an unknown issue. The fact that major polluters delayed regulations implementation is no significance here as the FAA has, as clearly stated in the DEIS, been working very closely with "cooperating agencies", including both EPA and IEPA, and thus was very aware of impending (now in place) regulations and timing.

IEPA states (p. J-7) that, "The State of Illinois has not adopted the PM2.5 or 8-hour ozone standards at this time." This too is of little consequence here, as the State of Illinois (IEPA and IDPH) has, by their on-going actions or lack thereof, made it clear that they are not in control of protection of the public health around O'Hare Airport, especially regarding PM2.5 and HAPs. Further, the State of Illinois, by its actions in passing the now-infamous "Quick-Take" act (officially the "O'Hare Modernization Act"[8] or "Act"), has clearly abrogated it's responsibilities and authority over the OMP, thus waiving any "states rights" in this regard and placing the regulation and control of any OMP Air Quality issues into the higher federal responsibilities and authorities of the EPA.

Excerpts from the "Act" (HB721 text), demonstrating the passing/waiving of such state's rights are shown below {highlights added. Ed}. Particularly telling is the clause:

> Plans of all public agencies that may affect the O'Hare Modernization Program shall be consistent with the O'Hare Modernization Program, and to the extent that any plan of any public agency or unit or division of State or local government is inconsistent with the O'Hare Modernization Program, that plan is and shall be void and of no effect.

[8] Public Act 093-0450, HB0721 enrolled.



This clause makes it abundantly clear that the IEPA, a state agency, is not legally allowed to make any PM2.5 related plan, including a now-necessary PM2.5 SIP, that is "inconsistent" with the OMP. Since the IEPA is not allowed any PM2.5 inconsistencies with the OMP plan, and considering that the State of Illinois has waived any authority here that is "redundant" to federal agency authorities, **adherence to the EPA Air Quality standards is ordained.**

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16          (2) O'Hare cannot efficiently perform its role in
17      the State and national air transportation systems unless
18      it is reconfigured with multiple parallel runways.
---

24          (8) The General Assembly recognizes that the
25      planning, construction, and use of O'Hare and the
26      planning, construction, and use of the O'Hare
27      Modernization Program will be subject to intensive
28      regulatory scrutiny by the United States and that no
29      purpose would be served by duplicative or redundant
30      regulation of the safety and impacts of the airport or
31      the O'Hare Modernization Program.
---

7       (b) It is the intent of the General Assembly that all
 8   agencies of this State and its subdivisions shall facilitate
 9   the efficient and expeditious completion of the O'Hare
10   Modernization Program to the extent not specifically
11   prohibited by law, and that legal impediments to the
12   completion of the project be eliminated.
---

10      Section 25. Jurisdiction over airport property. Airport
11   property shall not be subject to the the laws of any unit of
12   local government except as provided by ordinance of the City.
13   Plans of all public agencies that may affect the O'Hare
14   Modernization Program shall be consistent with the O'Hare
15   Modernization Program, and to the extent that any plan of any
16   public agency or unit or division of State or local
17   government is inconsistent with the O'Hare Modernization
18   Program, that plan is and shall be void and of no effect.
---

except that a
31   certificate of approval shall be required under this Section
32   for construction of a new runway at O'Hare International
33   Airport with a geographical orientation that varies from a

 1   geographical east-west orientation by more than 10 degrees,
 2   or for construction of a new runway at that airport that
 3   would result in more than 8 runways being available for
 4   aircraft operations at that airport. The Department shall
 5   supervise, monitor, and enforce compliance with the O'Hare
 6   Modernization Act by all other departments, agencies, and
 7   units of State and local government.
---
```

GSE

It also appears that GSE (Ground Service Equipment) emissions are also significantly undercounted, at least for NOx [Ref. IEPA letter; 1999: approx. 3300 tons/year; DEIS 2002: 479 tons/year]. The reason for this huge disparity is still currently unknown.

Off-Airport Roadway

| Comment | Response |
|---|---|
| 67 | Please see the response to this comment on page U.4-317. |

The Criteria emission inventory information in the DEIS for off-airport roadway operations is insufficient to allow a proper understanding of the calculations used to reach net emissions results, that were subsequently utilized in the dispersion analyses.

Quoting from p. J-109, "Notably, the evaluation of motor vehicle emissions does not attempt to segregate airport-related motor vehicle activity from background (non-airport related) vehicles. Rather, the activity of all motor vehicles (Airport and background) was evaluated within the study area (Exhibit J.2-1)."

Exhibit J.2-1 maps a very strange Air Quality Study Area that includes some portions of some roads in the airport vicinity. Since subsequent dispersion analyses use "line sources" for road activity emission sources, it is unknown whether emissions associated with just the segments of the roads "in the study area" or more complete and logical segments are included in the inventory. What is not known are the details, such as exactly which roads/segments are/are not included. For instance, are the traffic activity/emissions on all of the "Major Roads" in the Study Area included (e.g., York Rd., Irving Pk. Rd., Route 83, Green St., Church Rd., etc.). Also, is the activity/emissions determination for peak weekday hour, or yearly daytime average, or what? As said, these are important but undisclosed details that need to be documented.

Additionally, the above statement (J-109) seems to indicate that the total amount of emissions from all vehicle activity in those segments is inventoried, not just some portion related to airport activity, which is an odd way, to say the least, of measuring "airport impact". This approach cannot be justified since the Surface Transportation section of the DEIS does what appears to be an excellent job of breaking down surface transportation on all nearby roads of significance into very detailed airport impact levels, for all alternatives. This is the data that should have been used to characterize road use line sources around the airport.

Other on-airport sources apparently not inventoried.

It appears that numerous on-airport-property emission sources have been excluded from the emission source inventories (which will adversely affect any subsequent dispersion analysis results). The exclusions (including any associated vehicle traffic) appear to include the U.S.P.S. postal facility, shipping/cargo facilities, O'Hare Hilton hotel, some airline facilities, de-icing/anti-icing process evaporations, "Lake O'Hare" evaporations, many of the sources mentioned in AReCO's scoping and probably many others.

Though it may be technically valid to exclude some of those sources in a "deminimus" emissions evaluation determination (e.g., for conformity purposes), it is NOT valid to exclude them, as pollution emission sources, from the important dispersion analyses. [These are certainly "nearby" sources and are not excluded from inventory by application of "background" concentrations which, by definition, are representative of cumulative of distant sources.]

All on-property emissions must be included in the inventories and dispersion analyses. 67

AReCO DEIS Comments
25

| Comment | Response |
|---|---|
| 68 | The FAA reviewed *AReCO Appendix B1* which contains a letter to IEPA requesting information. The FAA refers the commenter to page U.4-821 of this appendix for further information. |

68

**Appendix B1: Letter to IEPA Requesting DEIS Emissions Inventory Clarifications**

AReCO DEIS Comments

ARecO

ALLIANCE OF RESIDENTS CONCERNING O'HARE, Inc. "a grass roots organization"

P.O. Box 1702 ❍ Arlington Heights, IL 60006-1702 ❍ Fax: 847/506-0202 ❍ Tel: 847/506-0670 ❍ www.areco.org

February 2, 2005

VIA FACSIMILE and regular mail
Renee Cipriano, Director
Environmental Protection Agency
1021 North Grand Avenue, FL 003
Springfield, IL 62794

Subject: Major discrepancies between IEPA O'Hare emissions inventory and DEIS inventory

Dear Director Cipriano:

There appears to be some major discrepancies in O'Hare airport emissions inventories, between the recently released DEIS and the figures contained in the existing Illinois Ozone SIP and we are requesting review by your office with response to us ASAP and to the FAA where you agree these discrepancies need rectification.

The fundamental problem is that the FAA's VOC and NOx DEIS inventory figures appear to be much smaller than IEPA's, as evidenced in the following.[i]

A. DEIS 2002 "Baseline" inventory from Table 5.6-8

| | Tons per year | |
|---|---|---|
| Category | VOC | NOx |
| Aircraft | 399 | 3,956 |
| GSE | 442 | 479 |
| Total aircraft+GSE | 841 | 4,435 |

B. 1999 as stated by DEIS, from Tables 5.6-2 and 5.6-3

| | Tons per year | |
|---|---|---|
| Category | VOC | NOx |
| Total aircraft+GSE | 3431 | 12,183 |

As can be seen, if one accepts the DEIS statement of IEPA's 1999 summations, then the 2002 "Baseline" inventory used in the DEIS must be wrong by substantial amounts, using 841t/y of VOC compared to IEPA's 3431t/y and 4,435t/y of NOx vs. IEPA's 12,183. This degree of undercounting cannot be due to relatively minor flight operations increases from 2002 vs. 1999.

To check whether the DEIS has erroneously mis-stated the IEPA's figures, we glean the following aircraft operations and GSE figures from the IEPA's current SIP[ii] (Appendix F, Table 9 and Section 5, Table 5-18a, respectively).

C. IEPA 1999 SIP data

| | Tons per year | |
|---|---|---|
| Category | VOC | NOx |
| Aircraft | 1704 | 6048 |
| GSE[iii] | 594 | 3350 |
| Total aircraft+GSE | 2298 | 9398 |





Comparing the totals of Table C to those in Table B, it is seen that what the DEIS states that the 1999 IEPA's figures are, seems at odds with what the IEPA says in the SIP. Another conflict.

Of great significance however is that, even in light of these IEPA figures (either as stated by the DEIS or as stated in the SIP), the DEIS establishes 2002 Baseline numbers that are extremely small in comparison. Totals of 841t/y and 4435t/y for VOC and NOx, respectively, are so far below IEPA figures as to be not believed (giving the IEPA the benefit of doubt) i.e. 841 vs. 2298 (or 3431) and 4435 vs. 9398 (or 12,183) tons/year.

Even worse, the DEIS states (Table A) 2002 Baseline aircraft emissions as 399t/y VOC and 3956t/y NOx as compared to IEPA's (Table C) 1704t/y and 6048t/y, respectively, a huge difference!

A very large discrepancy also exists between the DEIS figure for GSE NOx (479t/y) and the IEPA's figure (3350t/y.

In summary, the DEIS is using very small emissions inventory numbers for O'Hare's 2002 Baseline reference. This is then carried forward into similarly very low DEIS estimations of future O'Hare inventories, such as seen in the DEIS Table 5.6-44 ("Build-Out + 5", or about year 2018), with total (Alt C) VOC's of only 719t/y (292 aircraft, 427 GSE) and NOx of 5,739t/y (5,359 aircraft and 380 GSE).

The DEIS figures and comparisons to IEPA's figures are quite hard to believe or understand. We believe that at a minimum, though inexplicable to the DEIS's main objectives[iv], the DEIS inventories may be deficient for in-flight aircraft emissions within the mixing layer (the deficiency may even be a total exclusion!).

We ask that you review these figures and explain the differences to us ASAP (the clock is running on DEIS Comments period). We also request that if your investigation indicates that the DEIS figures are in substantial error, that you submit Comments in this proceeding such that corrections may be made by O'Hare and the FAA.

Thank you.

Regards,

Jack Saporito
Executive director

c: D. Kolaz
K. Westlake

[i] It is suspected that other inconsistencies exist for CO, SO2 and PM inventories, though comparisons are not easily available e.g. no SO2 or PM inventories are in the SIP.
[ii] Illinois 1999 Periodic Emissions Inventory and Milestone Demonstration, IEPA, December 2001.
[iii] Table 5-18a presents Airport Service Equipment (GSE) emissions for the entire Chicago area, which would include a number of airports. Lacking better information, we have arbitrarily estimated O'Hare emissions as 2/3 of

| Comment | Response |
|---|---|
| 68 | Please see the response to this comment on page U.4-320. |

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the total.
[v] Said objectives must necessarily include all airport emissions and changes thereto, within the mixing layer, in order to correctly calculate (via dispersion analysis, etc.) public exposures, both direct and indirect (e.g. ozone) and to properly relate to Illinois current and near future SIP conformance requirements.

68

| Comment | Response |
|---|---|
| 69 | The FAA reviewed *AReCO Appendix C* in responding to the comments contained in the main text of this letter (AReCO dated April 6, 2005) regarding the same issues. |

## Appendix C: Significant Undercounting of HAPs Emissions

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Very simply, all HAPs emission inventories for aircraft operations were determined by applying some emission factor fraction to the aircrafts VOC/hydrocarbon emissions. Since it appears that all of these VOC's are undercounted by more than 4:1 (see Appendix B), then by definition all aircraft calculated HAPs are also undercounted to at least the same degree.

In addition, the FAA/DEIS determined that only 11 HAPs were "HAPs of interest", yet continuous re-reading of the methodology and specifics for doing so [I 1.7, p. I-43] has failed to show adequate documentation for this choice. An "evaluation" is referred to but no details of such an "evaluation" are supplied. ["Based on the results of the evaluation, 11 of the 66 HAPs emitted from sources operating at and in the vicinity of O'Hare contributed approximately 99 percent of the total, while accounting for emissions and toxicity levels of the evaluated scenarios." P. I-54]

We conclude that "the total" was some form of total summation of toxicity-weighted emissions values and, from Table I-15, we sense that, once again, the conclusions are being distorted by the tonnages of "motor vehicles" emissions included in the summation. We do not disagree with inclusion of vehicular related HAPs emissions, but it's the method(s) of including them that most often causes severe faults in results and conclusions. We are forced to conclude that here, as there is no supporting material to show otherwise.

Furthermore, we state that the entire method used here as the selection method for the "top 11" HAPs to consider, is faulty and unacceptable. The method would be, at best, an initial screen, woefully insufficient to use in any realistic evaluation of public health and welfare impacts. This is even admitted in the DEIS:

> The emission-toxicity methodology was developed by the EPA's Office of Pollution Prevention and Toxics (OPPT) in response to a need to screen HAPs. [King, Suzanne, EPA Region 5 Facsimile to Mike MacMullen, FAA, December 16, 2004]
>
> .....
>
> The emissions-toxicity values are unitless indexes and are intended to show the relative hazard potential of each HAP. The degree to which the emissions-toxicity values are indicators of actual air quality conditions is unknown. Many factors, including the source/receptor relationship and meteorological conditions, influence ambient air concentrations. Therefore, the highest emissions-toxicity value may not result in the highest pollution concentration in the ambient air. [p. I-52]

The reason that "…actual air quality conditions are unknown." is because air quality dispersion analyses were not performed at all, as stated and amplified elsewhere here. It is also of interest to see that the EPA's facsimile was transmitted just a short time before the DEIS was released, leading AReCO to believe that it may have been more of a post-analyses warning to the FAA regarding their HAPs positioning in the draft DEIS at that time.

The corrective action required here is to ensure correct overall emissions inventories (as discussed herein) and publish those results for all of the "…65 of the 188 EPA-identified HAPs that have the potential to be emitted by sources operating at and in the vicinity of O'Hare".

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| Comment | Response |
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| 69 | Please see the response to this comment on the previous page. |

[Then run the proper dispersion analyses for both on-airport and neighborhood receptors and draw human health and welfare conclusions based on those analyses results.]

Mercury

The DEIS is derelict in including mercury as one of the "…65 …EPA-identified HAPs that have the potential to be emitted by sources operating at and in the vicinity of O'Hare", but then saying nothing more about this very important HAP, which has seen substantial and on-going concerns in the Chicago and Great Lakes areas (as well as nationwide), including initiatives by Illinois Senator Durbin to greatly reduce area emissions and Lake Michigan entry.

Table I-1 is in error in showing that aircraft have no mercury emissions. This is based on Table 3 of the supporting documentation [p. I-149] that indicates that mercury was "not detected" as a mass fraction of Jet A fuel. Table 3, which is from "Shumway, 2000, …" reference (table footnote), is not incorrect but rather, the FAA's interpretation and subsequent disregarding of mercury as an aircraft emission is incorrect. The reason is that examination of the Shumway document clearly shows that the measuring instrumentation had a threshold of "least detectable amount" of 1ppb (part per billion). Thus, the correct assumption for aircraft mercury emissions should have assumed a 1ppb fuel content, which then would be translated to some finite amount of mercury emitted by O'Hare operations, based on fuel-burn within the mixing layer). The FAA must have known this, as the recent Oakland airport expansion project was quoted as a reference [p. I-41, p. I-103] and AReCO commented extensively there on that issue in that proceeding.

We also said there, and repeat here, "…that other studies (e.g., turbine power plants) have detected mercury constituents and, with the volume of fuel burn at the airport, we believe that net mercury emissions could be meaningful." One such source is the EPA in its emissions factors document AP-42[9], which presents a factor 20 times greater than 1PPB. Also, the DEIS states that the "recommended" mercury emission factor for GSE/APU is 0.0002 lbs/1000 gallons of (diesel) fuel, equivalent to about 30ppb. [p. I-151] Adding in mercury emissions from other sources, such as heating plants, vehicles, etc. leads us to believe that O'Hare airport is an overall significant atmospheric mercury source and must be properly inventoried and measured against both air quality concerns and any other applicable EPA or governmental mercury emissions limits.

Since the various sources place mercury content in the 1-30ppb range, we believe that for conservative analysis, 30ppb must be applied as the mercury emission factor for all GSE/APU and aircraft fuel use (within the mixing layer), with the appropriate other factors applied for stationary and vehicular sources within the airport study area. [To be followed by dispersion analyses.]

De-icing/anti-icing fluids

There is no HAP inventory related to vaporized de-icing/anti-icing fluids, which are known to contain both ethylene/propylene glycols and hazardous but ill defined additives. All of these constituents must be defined and quantified as a function of their vaporization.

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[9] http://www.epa.gov/ttn/chief/ap42

| Comment | Response |
|---|---|
| 70 | The FAA reviewed *AReCO Appendix D* in responding to the comments contained in the main text of this letter (AReCO dated April 6, 2005) regarding the same issues. |

## Appendix D: Flawed/Missing Criteria Pollutant Dispersion Analysis

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There are numerous flaws and deficiencies associated with the FAA's attempt to achieve the overall objective of characterizing and predicting atmospheric pollution content, resulting from airport emissions, in areas where people might be exposed to unacceptable levels of these pollutants that can create potential health and welfare dangers.

BASICS

*The purpose of this "tutorial" section is to provide reader context in order to better assess and judge the following DEIS criticisms/comments.*

The primary objective of dispersion analysis is to translate emissions into atmospheric concentrations at various geographical locations, at some distance from the emissions source(s), under meteorological and other influences, such as emission and "receptor" altitudes, emission rise (due to elevated temperature), etc. Such analyses are in reality models and methods that largely attempt to simulate the meteorological transport mechanisms that influence emissions movement toward and dispersion during transport from source to receptor (a geographical point in the atmosphere, most often defined to be points where people are or may be present).

There are at least three categories of "people" that need to be included in such analysis: (1) exposure to the public beyond the airport boundary, (2) exposure to the public within airport boundaries, (3) exposure to airport workers (employees and non-employees) within the airport boundaries. In the latter case, airport/airline employees, contract workers, public safety, etc. workers operating within the active aircraft areas are of particular concern (e.g., fuelers, de-icers, baggage handlers, etc.) due to their close proximity and long term exposure working conditions.

Thus models need to be able to accurately (reasonably) simulate conditions over short (10's to hundreds of meters), medium (hundreds to few thousand meters) and longer distances (up to about 15,000 meters). This might result in the need for various models and various sets of historical meteorological data.

Such simulations also assume that the weather in the future, here perhaps 15 years from now, can be adequately characterized as being "the same as" a period from the past. This is of course open to speculation. Nonetheless, the analyst must choose some set of acceptable past data to apply to the model as the assumed future. Sometimes this selection is made on the basis of an attempt to characterize the data as "worst case" (i.e., such that its use has been demonstrated to result in worse case concentration predictions). Historical weather databases are generally obtained from the National Weather Service (NWS).

Emission sources are inventoried as to amount (e.g., grams/second, tons/year, etc.), horizontal and vertical locations and other parameters (e.g., plume rise parameters). Decisions are made as to how to characterize the sources in order to present them to the model, with key types being point, line, and area and volume sources. Since traditional dispersion models cannot deal with dynamic situations, sources are generally averaged over an hour's time. For example, emissions

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from planes using a given runway will be summed over each hour, then averaged to an emission rate of, say, X grams per second by dividing the sum by 60.

In the case of planes (and roadways), the normal approach would be to model them as line-sources by then taking the emission rate and spreading it uniformly over the planes travel paths, including airborne (both horizontal and vertical parameters), runways and taxiways locations. Where the resulting lines are actually curved (such as a takeoff path), line segments might be implemented to approximate the curve.

Parking lots and the like are often modeled as area or volume sources. Stationary sources are usually modeled as point sources, though a fixed location volume characterization might be useful in some cases as well. Stationary sources with elevated chimney outputs (e.g., heating plants, manufacturing facilities, etc.) generally need additional characterizations related to pollutant plume rise due to buoyant forces (high temperature) and exhaust output velocity. These chimney structures are generally designed to discharge the pollutants high in the air, such that they travel over nearby people locations and are reduced in concentration before reaching people locations on the ground or other places.

All of the input data is then supplied to the dispersion model "core" for analysis. Most of these cores use a Gaussian dispersion approach. (A visual helps here; e.g., consider a chimney with a visible plume of pollutants streaming out in a horizontal direction, as set by the horizontal wind, which has been blowing in the same direction for an extended period of time. If there were no vertical up and down winds, and no crosswinds, the plume would be seen as a constant thickness pencil line across the sky [much like upper atmosphere plane contrails]). But within the "mixing layer" close to earth (generally less than 1000 meters thick), there are considerable circulating up/down/cross winds induced by thermal heating of the earth's surface. These numerous, random circulations, characterized as atmospheric "instability", will cause the plume to widen with distance, becoming non-uniform in cross-sectional concentration, with the non-uniformity characterized as a Gaussian distribution…thus the "Gaussian" model. The degree of instability used in the analysis is normally determined for each hour by the pre-processor, or sometimes set at a fixed value (e.g., "neutral").

It is important to understand that such a Gaussian model first converts the point source into a horizontal line source with the line's emission rate over its length being inversely proportional to the assumed wind speed. For instance, a point source emission of 100 pounds per hour would, with a wind speed of 10mph, be converted into an infinitely thin line source of 10 pounds per hour per mile. Then the atmospheric instabilities would be applied to the line to cause it to spread (disperse) with distance, and how much of this spread reaches the ground (or 6' above it) would be calculated along its length i.e. distance from the original point source.

Instability factor assessment within the simulator (the under-pinning mathematics) has advanced over the decades, but still is associated with restrictions on ranges of applicability. For example, if one plans on doing a dispersion analysis over a distance of ten miles, one must necessarily assume that the atmospheric stabilities determined at a single point, (e.g., O'Hare airport weather station), are unchanged over that entire distance. Alternately, the hourly instabilities could be



actually characterized over that distance (area) through use of more extensive atmospheric data sets and/or use of expanded capability simulation models.

On the other hand, for very short distances, in complex physical environments, such as an airport, validity of the use of stability factors, perhaps determined for 10 meters and above, becomes questionable at best when dealing with near-ground sources and receptors (potential people locations). Conditions in a layer immediately above the earth might be even more unstable than higher up in the summer, due to ground heating (e.g., tarmac, and more stable in winter due to frigid and/or snow covered ground) [creating a low altitude inversion layer (i.e., gets warmer as altitude increases)]. The impact of these situations may not be too significant for long-term averages, such as a year, but could be very significant for short-term conditions (e.g., 1-24 hours).

It is clear that lower wind speeds increase the line source's "center line" concentration and that more stable atmospheric conditions will spread it less at a given distance. It is also clear that for any given point source above the ground (think chimney again), that ground level pollutant concentration will be near zero at the base of the chimney, will increase to a peak level at some distance from the chimney, then decrease farther on (all this assumes the simplistic case of a constant wind and stability condition over the distance being considered). Thus, it is incorrect to state that pollutant concentrations always decrease with distance.

Finally, the model core outputs all the hourly calculation data to a post-processor module that converts the numbers into averages over time, creates maps and documentation, etc. The post-processor may be a data base system (e.g., Microsoft Access or a spreadsheet program [e.g., Microsoft Excel, or combinations]). The key requirement here is accuracy of the information retrieval process. That is, one has to be confidant that the value returned for "maximum hourly carbon monoxide level" is indeed the maximum, etc.

The FAA's EDMS analysis system uses a Gaussian modeler core (AERMOD), as do many others, modernized to use a (vertical) probability density function for unstable conditions. It includes a meteorological pre-processor (AERMET), along with various databases and processing capabilities (e.g., handling of line sources via CALINE and mapping). EDMS/AERMOD also includes the capability to model building downwash (plume downwash effects downwind behind a source building) via PRIME.

More advanced modelers exist and are approved for use by the EPA, such as "puff" models like CALPUFF or specialized modelers like the Offshore and Coastal Dispersion Model (OCD). CALPUFF is often particularly useful. To quote the EPA (APPENDIX W TO PART 51—GUIDELINE ON AIR QUALITY MODELS):

> CALPUFF is a multi-layer, multi-species non-steady-state puff dispersion modeling system that simulates the effects of time- and space-varying meteorological conditions on pollutant transport, transformation, and removal. CALPUFF is intended for use on scales from tens of meters from a source to hundreds of kilometers. It includes algorithms for near-field effects such as building downwash, transitional buoyant and momentum plume rise, partial plume penetration, subgrid scale terrain and coastal interactions effects, and terrain impingement as well as longer range effects such as

pollutant removal due to wet scavenging and dry deposition, chemical transformation, vertical wind shear, overwater transport, plume fumigation, and visibility effects of particulate matter concentrations.

(2) CALPUFF may also be used on a case-by- case basis if it can be demonstrated using the criteria in Section 3.2 that the model is more appropriate for the specific application. The purpose of choosing a modeling system like CALPUFF is to fully treat stagnation, wind reversals, and time and space variations of meteorology effects on transport and dispersion, as discussed in paragraph 8.2.8(a).

DEIS DISPERSION ANALYSIS FAILURES and DEFICIENCIES

** Failure to adequately characterize emission source quantities.
The emissions inventories shortfalls enumerated in Appendices B and C and other places, will cause inaccuracies in outputs, generally translating into understatements of any calculated pollutant concentrations (i.e., errors).

** Failure to analyze beyond airport "fence line".
Failure to promulgate the dispersion analysis beyond the airport boundaries (fence line) is just unacceptable. The analysis must go out to a minimum of at least a 5-mile radius around the airport boundaries (10 miles is preferred).
Justification that the fence line represents the "maximum" pollutant concentrations, without any supporting simulation evidence is unwarranted and unacceptable. In fact, pollutant concentrations can be higher at more distant points, especially if the emission sources are substantially elevated and/or close to the fence line (e.g., the north runway under light south winds).

**Failure to properly place receptors around the airport.
Receptors were apparently purposely placed on the airport "fence line" in most cases. Since major roads border the airport, this "conveniently" decreases maximum receptor values for some (many) conditions where roadway emissions are removed from receptor impact by wind directions (or where one chemical's concentration is diminished by another's).

For example, with a south wind, airport receptors along the north periphery would include effects from aircraft activity on the north runway, but would not include any effects from roadway traffic on the I-90 expressway. Those living in Des Plaines, just north of I-90 would be fooled into believing that the calculated receptor values approximately represented the levels of pollutant concentrations they would be exposed to. If the receptors were instead placed just north of I-90 (maybe a shift of only several hundred feet), they would now register much higher calculated values (southerly winds) due to the combined effects of the north runway (and all other airport activities south of there) and the I-90 traffic and the general prevailing winds for the summer months.

This appears to be a planned deception, since, supposedly, the emissions from roadway traffic are taken into consideration when calculating receptor values via dispersion analysis. ["The emission inventories include contributions from vehicles on major arterials in the vicinity of the airport." P. J-111]



Even more, the magnitude of the deception is not small, as exhibited by the fact that motor vehicles are stated to make major contributions to the total emissions inventories, for instance 15,589 tons per year of CO out of a total of 28,838 tons per year, for 2002 "base" conditions. [Table J.2-71, p. J-142]

Receptor placement in the near-airport area must be revised to be placed on both sides of the "major arterials" from the airport, and analyses rerun.

**Failure to consider situations where pollutants are drawn into building ventilation systems.
The "convenience" of terminating the dispersion analysis at the airport fence line obviates the need to consider situations where the pollutants are drawn into rooftop building ventilation systems, thereby exposing all of the occupants to potentially dangerous conditions. These buildings are of particular concern as they are usually multi-story and vulnerable to pollutants lofted into the air from the airport operations, such as from elevated chimney structures or airborne aircraft.

Office workers, etc. spend great parts of their time at their place of work (8-12 hours per day, everyday) and expect the building owner and their business management to provide a safe environment. The DEIS analysis does not validate such expectations.

Tourists and visitors staying in expensive hotels, such as the O'Hare Hilton on the airport property or in nearby Rosemont, and employees, expect a safe environment and therefore need to be assured that airport emissions entry will not compromise that safety. The DEIS analysis does not provide such assurance.

Multi-story apartment residents nearby, such as along River Road, in Schiller Park or just northeast of O'Hare, do not expect a hazardous atmosphere for their family (including young children, pregnant mothers, the elderly and other "sensitive" groups) when opening their windows for summertime ventilation. Yet the DEIS does not even address those expectations, let alone assuring safety.

The dispersion analyses must be re-run with additional receptors located coincident (horizontally and vertically) with key surrounding building ventilation intakes, including:

All airport terminals, airport located office buildings (e.g., U.S. P.S., etc.), O'Hare Hilton, Rosemont Hotels, the office building at Lawrence and Mannheim, and any other office building or hotel located within 5 miles of the airport perimeter.

Additionally, receptors must be located coincident with any multi-story apartment building within 5 miles of the airport perimeter. Each location must have receptors located vertically at the second floor height, as well as the top floor and building vertical mid-point (as one does not know, apriori, which height will experience the highest pollutant concentration level).

**Failure to analyze HAPs at all.

Limited Hazardous Air Pollutants (HAPs) are considered, documented and inventoried in endless pages (J-1 to J161) of the DEIS. Yet in the end, no dispersion analysis at all is done, even to the airport's fence line (which would seem, at minimum, of value to protect airport employees, especially those working outside on airport property).

**Questionable decision on "worst case" weather year.
The DEIS uses 1990 as the "worst-case" weather year, "…for the five-year period (1986-1990)…based on discussions with IEPA…" [p. J-155, Teleconference with IEPA, 11/22/02]. The DEIS does not clarify why or how 1990 was chosen as worst, though there is an implication that some dispersion analyses were run for those years in order to choose "worst". The DEIS also does not clarify why the period of 1986-1990 was chosen for examination as contrasted to, say 1986-2000.

Much of this DEIS is "borrowed" from the (now reincarnated as part of OMP) World Gateway project proposal, which was also under IEPA guidance. There, 1994-1999 was examined and 1995 was picked as the worst year, based on dispersion run screens. [WGP p. I-14] So is 1990 a "worst" year, or perhaps 1995, or maybe some other year, say 1993…

To complicate matters further, in order to run screening dispersion analyses to pick a worst year to use as the model for future characterizations, one logically must input the meteorological data for each year within the chosen range into the model. EDMS, being used for FAA analyses here, uses a weather pre-processor (AERMET) to ensure quality in the data finally submitted to the dispersion analyzer (AERMOD). Any deficiencies noted by the pre-processor are flagged to the analyst for correction. Human intervention here, though warranted, leaves open the possibility that a truly "bad" year for dispersion might be converted to a not-so-bad year for entering into the model. The DEIS must document any changes that were made to the (NWS) meteorological databases before entering into the dispersion model for analysis. [See also "Calms", below.]

**Failure to characterize "calms" meteorology (wind speed) situations and residual pollutant effects, which combined are usually the "worst-case" pollution scenarios, instead just disregarding them because of EDMS in capabilities. [See Appendix D1] A more capable modeler must be applied, such as CALPUFF.

**Probable mis-measurement determination of true "calms" conditions by the O'Hare weather station due to local wind disturbances from nearby landing/takeoff aircraft (i.e., makes it appear officially windier than it actually is in the airport area.

**Failure to consider building downwash and other structure effects; failure to adequately define the terminal roadways (curbsides) areas models.

The DEIS dispersion results today tend to show high(est) pollutant concentrations in the terminal curbside areas. These areas are located next to building structures, often in semi-enclosed environments. At a minimum, the DEIS must document exactly how these complex areas were physically modeled, along with any associated assumptions, either in the DEIS body or in reference EPA agreed-upon "protocols." This documentation must include whether or not EDMS building downwash modeling (PRIME) was implemented for any sources and which.



Additionally, the assumptions used to model the terminal area roadways (curbsides) are incomplete and suspect. The only information provided is that they "…were modeled as line sources located next to the on-Airport roadways immediately in front of the various terminals." "Next to" does not define how distant from the roadway centerline a line source was placed nor on which side of the centerline it was placed, both of which can make substantial differences in the calculated results (from vehicle emissions). Nor is it clarified as to exactly where the modeled receptors (R1-R8, 15 total) were placed.

Line source placement should be instead on the road centerlines for both upper and lower curbsides. The lower levels must be modeled, where physically appropriate, as two adjacent roadways, with a center island between them. Receptors must be placed on the pickup/dropoff areas adjacent to and, in the case of the lower levels, on the island between the two roadways.

Even given these modeling improvements, it is a matter of debate as to how accurate the EDMS dispersion analysis portrays the complex nature of these areas. There must be documentation included in the DEIS that clarifies the methods used.

**Failure to treat numerous, location shifting airport sources with statistical methods in order to properly assess risks.

Mobile airport emission sources are just that…mobile (i.e., they are in a constant state of moving around). The technically correct way to model this situation is to use a statistical approach, not the EDMS approach of trying to "average" everything. [See Appendix F]

**Failure to characterize airborne aircraft as airborne line sources.
The DEIS appears to not characterize airborne aircraft emissions, or if it does (which is a serious question here), does not place the emissions on a line-source trajectory, in order to then include as a source in the dispersion analysis, even if the trajectories are assumed "nominal" vs. real world spreads (note that most important trajectories, closer to airport, are reasonably well defined).

**Failure to document exactly how the aircraft airborne emissions were characterized as sources.
Sometimes analysts take shortcuts and calculate aircraft airborne emissions but artificially place them in the model as point sources at the end of the runways (takeoff or landing ends). This can introduce errors in pollutant concentration results and should not be done except for special cases, and then well documented.

**Failure to distribute aircraft on runways/taxiways as line sources.
The DEIS indicates that:

> "Aircraft emissions occur on the taxiways, at the end of the active runways, and on the runways themselves. These emissions were simulated as a set of stationary point sources at each terminal apron area next to aircraft gate locations." [p. J-151]

Though this may have provided simplification for the analyst, or was done as an artifice to allow "worst-case" analysis of the aircraft emissions on terminal areas, it is basically wrong.

| Comment | Response |
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| 70 | Please see the response to this comment on page U.4-325. |

This act will result in a reduction of modeled emissions concentrations in some areas (i.e., in proximity to where the emissions actually occurred). For example, artificially moving all of the proposed north runway emissions to the center of the airport (apron areas) will substantially reduce the calculated effects in Des Plaines under south wind conditions (i.e., the runway source is now [artificially] much farther away). Another example might be locations where planes actually taxi by or queue up in a takeoff waiting line now have (artificially again) these sources moved to more distant locations.

Furthermore, consolidating more distant aircraft line sources much closer to receptors (e.g., terminal curbsides) can actually cause a reduction in the calculated receptor concentrations. Consider a simple example: a distant, say 1600 meters, point source is directly upwind from a receptor, but offset 100 meters. A substantial amount of the source pollutants will arrive at the receptor due to horizontal dispersion as the pollutants move towards it. Now place the same source, say, and 200 meters directly upwind from the receptor and again 100 meters offset. Very little of the pollutant will reach the receptor as the source "plume" has little horizontal spread at the receptor's location.

This simplifying approach should not have been taken. If run as a separate "worst-case" analysis, great care must be taken as to artificial source consolidation locations and wind directions. [Ideally, several artificial source location alternatives should be test-runned, with variable direction winds to determine "worst-case".]

**Failure to publish methods used to determine annual averages of simulated results, from which the "highest" was picked.
It is not clear whether EDMS automation or analyst manual methods of determining 3 hour, 8 hour, 24 hour and yearly averages are done in exactly the proper fashion proscribed by the EPA in setting the various pollutant concentration regulatory limits.

For example, one of the CO limits is an 8-hour average. Was that determined in EDMS for 3 discrete 8-hour periods in the days, or several overlapping 8-hour periods, or by some form of moving average? And how does that method compare to EPA methods requirements?

This must be well documented.

**Failure to do second level analyses that clarify and state what the major source was behind any high receptor values, even if not, by current calculations, in exceedance of limits.

Such analysis is required in order to (a) assess what are actually the "drivers" of the high numbers, (b) to allow judgment of viability and sensitivity and, (c) to allow consideration of possible mitigation methods, including airport design changes. It is critical to situational understanding to be able to quantify the relative source contributions to any receptor location for the various pollution sources in the analysis. Without this characterization, one is totally unable to understand, for example, what the major CO contributor to curbside conditions is. Is it primarily vehicles, or aircraft/GSE, or a nearby heating/refrigeration plant, or ? 70

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| Comment | Response |
|---|---|
| 71 | The FAA reviewed *AReCO Appendix D1* in responding to the comments contained in the main text of this letter (AReCO dated April 6, 2005) regarding the same issues. |

**Appendix D1: Slight Of Hand…How the potentially highest predicted pollutant concentrations "disappear"!** 71

CALMS

Question: When is pollution really bad? When the weather is "calm". This generally means, as most who live in major urban areas know, when the wind speed goes to zero, or close to it, especially if it stays that way for hours (or days). So one would of course expect that a dispersion modeler, such as EDMS, would indeed predict the highest levels of pollutant concentrations to occur during hours of the year that are defined as "calm." You would be sorely disappointed!

The reason is that all hours of the year that are defined as "calm"…get discarded!

Yes, it's true. The dispersion analysis core modeler (AERMOD) in EDMS, like most "Gaussian" models, is incapable of doing its job when the wind speed is defined as "calm", so when it encounters a "calm" wind speed in the meteorological file sent to it, it marks the calculated pollutant concentration as zero and sets a flag in the output file to let the analyst know.

The "calm" definition comes to AERMOD from the EDMS meteorological preprocessor (AERMET), which gets its input from a historical National Weather Service (NWS) file. Now it gets a little worse.

The NWS measures wind speed with an instrument that has a threshold speed measurement capability, usually in the range of range of 0.5-1.0 m/s. But the NWS theoretically never reports lower than 0.5 m/s, so even if a file shows a speed of, say, 0.3 m/s, it is set to 0.5 by AERMET. [This is believed to be the case…older modelers (e.g., ISC set the speed to 1.0 m/s).]

> …This condition is not likely to occur since the minimum wind speed reported by NWS is 1 knot (about 0.5 m/s), excluding calm winds. … [Ref. AERMET Users Guide]

What happens if the NWS reports that the wind was "calm" for 8 hours in a row? That's correct, it all gets marked as "zero"/flagged!

Now, if a few hours of what would have been high readings get set to zero concentration and some 8760 hours (a year) of concentration calculations are being averaged to calculate a yearly average number, not a big impact. But what about averages over 24 hours (PM2.5, PM10, SO2) or 8 hours (ozone, CO) or 3 hours (SO2) or… 1 hour (i.e., "that hour" [ozone, CO])? Then it makes a big potential difference!

How this is handled is explained in the "calms-processing routine", demonstrated in these references:

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APPENDIX W TO PART 51-GUIDELINE ON AIR QUALITY MODELS
9.3.4 Treatment of Near-calms and Calms
9.3.4.1 Discussion
6. Treatment of calm or light and variable wind poses a special
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problem in model applications since steady-state Gauissian plume models assume that concentration is inversely proportional to wind speed. Furthermore, concentrations may become unrealistically large when wind speeds less than 1 m/s are input to the model. Procedures have been developed to prevent the occurrence of overly conservative concentration estimates during periods of calms. These procedures acknowledge that a steady-state Gauissian plume model does not apply during calm conditions, and that our knowledge of wind patterns and plume behavior during these conditions does not, at present, permit the development of a better technique. Therefore, the procedures disregard hours which are identified as calm. The hour is treated as missing and a convention for handling missing hours is recommended.

9.3.4.2 Recommendations

a. Hourly concentrations calculated with steady-state Gaussian plume models using calms must not be considered valid; the wind and concentration estimates for these hours must be disregarded and considered to be missing. Critical concentrations for 3- , 8- , and 24-hour averages must be calculated by dividing the sum of the hourly concentrations for the period by the number of valid or non-missing hours. If the total number of valid hours is less than 18 for 24- hour averages, less than 6 for 8-hour averages or less than 3 for 3-hour averages, the total concentration must be divided by 18 for the 24-hour average, 6 for the 8-hour average and 3 for the 3-hour average. For annual averages, the sum of all valid hourly concentrations is divided by the number of noncalm hours during the year. For models listed in Appendix A, a post-processor computer program, CALMPRO114 has been prepared, is available on the SCRAM Internet Web site (subsection 2.3), and must be used. b. Stagnant conditions that include extended periods of calms often produce high concentrations over wide areas for relatively long averaging periods. The standard steadystate Gaussian plume models are often not applicable to such situations. When stagnation conditions are of concern, other modeling techniques should be considered on a case-by-case basis (see also subsection 8.2.8). c. When used in steady-state Gaussian plume models, measured site specific wind speeds of less than 1 m/s but higher than the response threshold of the instrument should be input as 1 m/s; the corresponding wind direction must also be input. Wind observations below the response threshold of the instrument be set to zero, with the input file in ASCII format. In all cases involving steady-state Gaussian plume models, calm hours must be treated as missing, and concentrations must be calculated as in paragraph (a) of this subsection. [40 CFR Ch. I (7-1-03 Edition) Pt. 51, App. W] {Emphasis added…Ed}

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"When calm wind conditions are encountered, AERMET does not perform any computations and inserts missing data indicators into the output files for the boundary layer parameters... [Ref. AERMET Users Guide]

The AERMOD model uses the same routines for processing calm hours as ISCST3, namely, hourly concentrations are not considered valid and are treated as missing, and concentrations for 3-, 8-, and 24-hour averages are calculated by dividing the sum of the hourly concentrations for the period by the number of valid (non-calm) hours. If the total number of valid hours is less than 18 for 24-hour averages, less than 6 for 8-hour averages or less than 3 for 3-hour averages, then the total concentration is divided by 18 for the 24-hour average, 6 for the 8-hour average and 3 for the 3-hour average. For annual averages, the sum of all valid hourly concentrations is divided by the number of non-calm hours during the year. However, the NOCALM option available in ISCST3, which models the calm hour by setting the wind speed to 1.0 m/s, is not available in AERMOD, since AERMOD uses a full profile of wind speeds, and is considered valid for cases when the wind speed is below 1.0 m/s but above the instrument threshold. A calm hour in AERMOD is identified by a reference wind speed of 0.0 m/s in the surface meteorological data file generated by AERMET. [Ref. http://home.pes.com/aerfaqs.htm]

…This condition is not likely to occur since the minimum wind speed reported by NWS is 1 knot (about 0.5 m/s), excluding calm winds. … [Ref. AERMET Users Guide]

It is notable that no mention of "1-hour average" is made here, as there is no such thing (i.e., the minimum period is one hour).[10] Thus, in say a 24 hour period, where there was perhaps 8 calm hours, there is now 16 hours of valid data and 8 hours of invalid (to be not counted). Similarly, if a given year (8760 hours) is picked as the "worst case" for use in predicting the highest levels of CO, the perhaps 760 "calm" hours of concentrated pollution would be discarded and the only the highest calculated value from the remaining 8000 hours would be reported! Think about that when considering the CO limit requirement which is, "not to be exceeded more than once each year"! The top 760 probables were just tossed.

RESIDUALS

Another "quirk" of modelers such as EDMS is that they inherently assume that no residual pollutant concentrations from emission sources exist from hour to hour. That is, each hour of analysis assumes that the location being considered (a grid point) was pure, clean air that then is polluted by the calculated emission source(s) impact. ["Background" concentrations are added in later.]

This is a reasonable approximation as long as the wind speed is not small/zero and doesn't reverse direction, as any pollutants that move into an area (say a cubic meter around your head) are offset by removal of pollutants due to the same wind that brought in the new ones. But what

[10] Though vector addition of winds might be done within the hour in order to calculate the 1-hour number.

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| Comment | Response |
|---|---|
| 71 | Please see the response to this comment on page U.4-330. |

if happens in a relatively "calm" condition where wind speed is near zero and the direction meanders back and forth under the influence of local conditions (e.g., thermals, passing vehicles, etc?). The pollutants from the first hour are still there in the second hour…and perhaps the third, fourth, etc.

These residuals, combined with the calm conditions, cause a gradual buildup of pollutant concentrations not characterized at all by EDMS (since it doesn't handle "calms" in the first place). Residual effects can also be realized in an area even for non-zero speed wind reversals or meanders. These situations are typical of conditions of "stagnation" that can occur in all seasons, typically due to the influence of relatively non-moving high pressure centers that park themselves over an area for an extended period, and the typical dispersion modeler does not work for these conditions, which indeed are usually the "worst case" scenarios (where people sicken and die). 71

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| Comment | Response |
|---|---|
| 72 | The FAA reviewed *AReCO Appendix E* in responding to the comments contained in the main text of this letter (AReCO dated April 6, 2005) regarding the same issues. |

## Appendix E: Missing HAPs Dispersion Analysis

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AReCO first expresses fundamental disagreements with the implied "what HAPs problems?" conclusions related to the DEIS section 1.2.1 [p. I-126] "IEPA's Chicago O'Hare Airport Air Toxic Monitoring Program". These disagreements and comments are captured in a requested critique of that report* and have been in the public eye (www.areco.org) for more than 2 years and the FAA is derelict in not providing that critique document in the DEIS.

{*TECHNICAL NOTE Date: Tue, 04 Jun 2002 [Revised 9/21/02]
Comments on IEPA "Final Report, Chicago O'Hare Airport Air Toxic Monitoring Program"}

The critique in entirety is included here as Appendix K and should be addressed by the FAA/EPA.

Inexplicably, there were no HAPs dispersion analyses done for the DEIS. This is even more mind-boggling since the DEIS quotes the recent past Oakland Airport (OAK) as a key reference (see appendix I, p.I-41), and OAK in-fact ran HAPs dispersion analyses! (The question again arises; is someone trying to cover-up?)

Nothing more can be said than it needs to be done and it needs to be modeled out to a distance that is sufficient to guarantee no problems in populated or public-use areas. A 10-mile distance from the airport boundary is recommended.

As with Criteria pollutants, there are at least three areas that need to be included in the analysis: (1) exposure to the public beyond the airport boundary, (2) exposure to the public within airport boundaries, (3) exposure to airport workers (employees and non-employees) within the airport boundaries. In the latter case, airport/airline employees, contract workers, public safety, etc. workers operating within the active aircraft areas are of particular concern (e.g., fuelers, de-icers, baggage handlers, etc.) due to their close proximity and long term exposure working conditions.

In addition to analyzing the impact of the specific HAPs emissions discussed in Appendix I (but not, again inexplicably, in the main body (e.g., associated with Air Quality), critical attention must be paid to personnel and public exposures to vaporized ethylene/propylene glycols from de-icing/anti-icing fluids and, importantly, to the HAPs contained therein, as the many "additives" included in these solutions. While normal temperature evaporation of these fluids is minimal, the de-icing and anti-icing processes heat the fluids to relatively high temperatures (180 degrees F) and vaporization is significant. Further, ethylene glycol gas is lighter than air, increasing its ability to maintain itself within the local atmospheric environment.

The FAA may defend a position of not addressing these HAPs by claims that the additive chemicals are manufacturer's "company secrets". This "don't know, can't tell" position is ridiculous, particularly given that the FAA's main charter is "safety" for the air transportation system and passengers (we assume that includes airport workers as well). [AReCO has sued the airports on this issue in the past and many of the chemicals we exposed under discovery are now public knowledge; the FAA and EPA are fully aware of said chemicals, as they were our co-plaintiffs in one of our lawsuits.]

The glycols and additives must be defined, both in content and in source emission rates, as part of the overall HAPs emission inventory, then analyzed for impact along with the rest by

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dispersion analyses. Also, dispersion to the atmosphere due to runoff from aircraft leaving the ground must be included in the analyses. 72

**Appendix F: Proper statistical analysis methods for airport related dispersion analyses conclusions.**

Mobile airport emission sources are just that…mobile (i.e., they are in a constant state of moving around. The technically correct way to model this situation is to use a statistical approach instead of the typical (EDMS) approach of trying to "average" everything. The source types are "averaged", their emission rates are "averaged", their locations are fixed at "average" choices, meteorological conditions are "averaged", etc. Past a certain point it becomes doubtful what the end result of subsequent dispersion analysis means, other than some kind of ill-defined "average". The problem here is that even a calculated "highest concentration value" of a pollutant at a given receptor is, in fact, then not the highest!

That is, all "averages" must be accompanied by some distribution description, such as a "sigma" associated with the average/mean. For instance, assume a calculated "highest value" of 1.0 was associated with a "normal" distribution, with a sigma 0.2.

Then it could be said that the "highest value" would be exceeded approximately 50% of the time or, alternately, that one is only 50% confident that the "highest value" is indeed the highest value. Consulting standard statistical tables, one could also state that one is 84% confident that the highest value is less than (mean + one sigma) 1.2, 95% confident that it's less than (mean + 1.65 sigma) 1.33 and 98% confident that it's less than (mean + 2.05 sigma) 1.41.

Since the EPA and others would consider a 98-percentile conclusion to be acceptable, the real "highest value" must be stated as 1.41, with 98% confidence.

The average of the average of the average…approach to analysis was often taken in decades past because of computational limitations, since the statistical approach requires making numerous simulation runs, each time changing the parameters in random fashions (with some range for each source here). EDMS was itself originally designed for "IBM PC's" running DOS, which in comparison to today's affordable PC's (e.g., 2GHz Pentium) would be equivalent to still flying on post-WWII prop planes. Thus, any rationalization that proper statistical analysis approaches cannot be accomplished today is totally without merit. 73

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| Comment | Response |
|---|---|
| 73 | The FAA reviewed *AReCO Appendix F* in responding to the comments contained in the main text of this letter (AReCO dated April 6, 2005) regarding the same issues. |

| Comment | Response |
|---|---|
| 74 | The FAA reviewed *AReCO Appendix G* which includes a letter requesting information from the USEPA. |

**Appendix G: AReCO Letter to EPA Requesting Clarification and Opinion on DEIS PM Calculation Method/Formula.** 74

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AReCO
ALLIANCE OF RESIDENTS CONCERNING O'HARE, Inc. "a grass roots organization"
P.O. Box 1702 ❍ Arlington Heights, IL 60006-1702 ❍ Fax: 847/506-0202 ❍ Tel: 847/506-0670 ❍ www.areco.org

February 4, 2005

VIA FACSIMILE and email
Kenneth A. Westlake
Chief, Environmental Planning and Evaluation Branch
312-353-5374
< westlake.kenneth@epa.gov >

**Subject: OMP DEIS Aircraft PM Emission Calculation Method**

In the recently released O'Hare Modernization Program (OMP) DEIS, dispersion analysis results are presented for a number of the criteria emissions associated with the airport project, including projections of the various pollutant concentrations for 16 years into the future.

One of the key emission types is obviously particulate matter, both PM10 and PM2.5.

In order to calculate the PM emissions from aircraft exhaust, as a function of operational mode and time-in-mode, the DEIS states that an approximation equation was used:

$EIPM = 0.6 \times SN^{1.8}$ where:
EIPM = Particulate Matter Emission Index, in milligrams/kilogram fuel
SN = ICAO reported smoke number, unitless

as shown in the excerpted Appendix J section on the next page here.

Our questions are:
(1) Does the USEPA agree with this method of calculation?
(2) Does the USEPA agree it is a reasonable approximation for PM10, (which we infer as the objective, based on the text in J.2.2 of this appendix (also excerpted below for your reference)?
(3) Does the USEPA believe that since PM10 inherently fully contains PM2.5, that the results of the use of this approximation could be interpreted as a conservative (high) value for PM2.5?

We would appreciate a quick turnaround on this to aid in our understanding of the contents of the DEIS and, to reply in the short timeline.

Thank you.

Regards,

Jack Saporito
Executive Director

Proud Recipients -- *1995 Environmental Merit Award, Arlington Heights, IL 1996, '99 Illinois State Senate Recognition*
***Protecting the Health and Safety of Millions of O'Hare Affected Citizens***

*Chicago O'Hare International Airport Draft EIS Appendix J J-48 January 2005*

**Aircraft Emission Factors**
The FAA's EDMS contains a database of aircraft engine-specific emission factors based on engine make and model and the four engine operational modes (taxi/idle, takeoff, climb out, and approach). EDMS also contains a database of emission factors for ground support equipment and aircraft auxiliary power units. With the exception of the Airbus 380 (A380), the EDMS default aircraft engine emission factors were used in the analysis. The EDMS does not contain emission data for the A380. This wide body passenger aircraft (average seating capacity of 555 passengers) will enter airline service in the year 2006. To account for operations of this aircraft, a user-defined aircraft/engine was developed. Emission indices and time in mode data for the aircraft were developed based on data from the International Civil Aviation Organization (ICAO) Engine Exhaust Emissions Data Bank.[3] Particulate matter emission factors for aircraft are not contained in the EDMS. As such, modespecific particulate matter emission factors for aircraft turbine engines were estimated based on methodologies contained in recent literature.[4] The particulate matter emissions were estimated using the following formula which relates the smoke number (SN),[5] where smoke number means the dimensionless term quantifying smoke emissions relating to opacity, to black carbon particulate matter emissions:

$EIPM = 0.6 \times SN^{1.8}$ where:
EIPM = Particulate Matter Emission Index, in milligrams/kilogram fuel
SN = ICAO reported smoke number, unitless

This equation provides an approximation of the level of jet aircraft-related particulate matter while accounting for the available emission testing completed on aircraft engines (limited). The calculation also relies on the smoke number, which is available for most aircraft engines. This approximation is intended for use until such time when enough measurement data is available that the approximation is no longer needed. Turboprop and piston aircraft particulate matter emission factors were estimated from the one turboprop engine particulate matter emission index provided in the Fifth Edition of AP-42, Volume 2.6 Because the EDMS does not allow users to enter particulate matter emission indices, and in order to conduct dispersion modeling for particulate matter emissions from aircraft, a separate modeling analysis was conducted by imputing the aircraft fleet as user-defined aircraft with the appropriate particulate matter emission indices.

3 ICAO Annex 16, Volume 2, Part III, Appendix 3, July 1993 with Amendments (www.QinetiQ.com/aviation_emissions_databank)
4 Derivation of a First Order Approximation of Particulate Matter from Aircraft, Roger Wayson, Gregg Fleming, and Julie Draper, July 2004, Proceedings for the Annual Air and Waste Management Conference.
5 ICAO Annex 16, Volume 2, Part III, Appendix 3, July 1993 with Amendments (www.QinetiQ.com/aviation_emissions_databank)
6 Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources, U.S. Environmental Protection Agency, Office of Mobile Sources, Ann Arbor, MI. 1992.

**J.2.2 Emission Inventories**
Estimates of air pollutant and pollutant precursor emissions by source are known as emission inventories. Emission inventories provide an indication of the potential increase/decrease in air pollutants and precursors with proposed projects when compared to a no-action alternative.
For airport-related assessments, emission inventories summarize the total quantity of each pollutant emitted by aircraft, motor vehicles, and other airport-related emission sources within a defined area. For the evaluation, annual emissions, expressed in tons, were estimated from airport-related sources and from motor vehicles on the major roadways in the vicinity of the Airport. The pollutants and pollutant precursors inventoried were volatile organic compounds, nitrogen oxides, carbon monoxide, sulfur dioxide, and respirable **particulate matter with a diameter of 10 microns or less.**

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| Comment | Response |
|---|---|
| 75 | The FAA reviewed *AReCO Appendix H* in responding to the comments contained in the main text of this letter (AReCO dated April 6, 2005) regarding the same issues. |

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## Appendix H: FAA "Mandated" EDMS Modeler Not Validated

"Validation" in the strictest sense means that sufficient testing of observed versus predicted values has been done in order to determine that the subject simulator, or "modeler", "does what it is supposed to do, under the conditions and within the limits it is designed for, and does it accurately".

Determining the degree of accuracy is always a main validation objective. From a scientific perspective, +/-10% would be considered reasonably accurate in this category of prediction. However, when it comes to the regulatory aspect of protecting human health and welfare, "accurately" means that the predicted values of pollutant concentrations should always be greater than what will be actually observed. That is, +/-10% is unacceptable but +10-20% error is acceptable. [Obviously +100-125% still protects the public, but it is excessive in error and might be considered "inaccurate".]

A modeler that is inaccurate in the regulatory sense might have its fundamental codes modified, or have additional limits placed on its use, or have procedural changes made, all to increase its accuracy to an acceptable degree. This is not a simple task when dealing with complex application environments, as it is necessary to determine exactly why the inaccuracy exists in order to fix it with confidence.

The FAA's current version of its "mandated" EDMS airport pollution simulator has never been validated as to operational predictability and accuracy for the relatively short distances, complex infrastructure, and complex emission sources, such as aircraft, associated with today's airports. This is obviously necessary before any conclusions of airport dispersion analyses could be considered…valid.

A program to do just this was initiated at the United States Department of Transportation/Volpe Center in 2001, using CO measurements/observations to compare to the predictions of EDMS (v. 4.1). Unfortunately, though the gathering of all data was accomplished in January 2002, only an interim report was published in 4/03 (modified 6/03), said report containing no results of comparisons of measured/observed vs. predicted. [See paper extracts below.]

*AReCO believes the now three-year wait for results publishing means that, in fact, good correlation and thus validation was not demonstrated. If we are wrong, the DEIS must be re-issued with a copy of a final results version published to demonstrate that.*

Another, but similar reason for not publishing (lack of?) validation results, is that these possibly negative results may have been fed back to the EDMS scientists in order to modify EDMS to move it toward improved accuracy. For example, EDMS v.4.1, used for this analysis, was released on Oct. 2002, according to the FAA's web site. Subsequently, v.4.1.2 was released in Oct. 2003, carrying significant GSE emissions changes and aircraft engine default changes. Then v.4.2 was released in Sept. 2004, with PM2.5 capabilities added (but not for aircraft), improved modeling for multi-level parking lots and allowing identification and locations of each airport building (affecting point-source plume modeling (e.g., "downwash"). Of course, this scenario leaves us still with the fact that no published validation exists for EDMS v.4.1.2, which was used for DEIS analyses.

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**Validation of FAA's Emissions and Dispersion Modeling System (EDMS): Carbon Monoxide Study Paper # 69607** {Published 4/2003. Emphasis added….Ed.}

**ABSTRACT**

Air quality at airports has received substantial attention in recent years. In a 2000 report by the U.S. General Accounting Office (GAO), air quality was cited as the number two environmental concern (after noise) by the 50 busiest airports in the United States.[1] Accurate air quality models are needed to properly analyze air pollution in the vicinity of airports, develop appropriate mitigation and policies, and to plan for increased growth.

The FAA's Office of Environment and Energy (FAA/AEE) and the Environmental Measurement and Modeling Division at the United States Department of Transportation's John A. Volpe National Transportation Systems Center (Volpe Center) are engaged in a multi-year validation effort of FAA/AEE's Emissions and Dispersion Modeling System (EDMS). EDMS is the FAA required tool for assessing aviation emissions and concentrations near airports. A systematic validation effort is needed to assess the accuracy of the model and identify any needed refinements.

This study involved the measurement of carbon monoxide (CO) concentrations at 25 locations at a major U.S. international airport. In addition to the CO measurements, a detailed accounting of all related airside and landside activity was also done. This additional data included aircraft types and runways, ground support equipment activity, auxiliary power unit activity, roadway and parking lot traffic activities, stationary sources, and meteorological data.

The airside and landside data are currently being input to EDMS. EDMS-predicted concentration levels will then be compared with measured concentrations, and a detailed statistical assessment of the AERMOD dispersion algorithm within the model will be conducted. As such the information contained in this report is interim, with more detailed results to follow.

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**Excerpt**------

As background information, EDMS was developed in the mid-1980s as a complex source microcomputer model (i.e., multiple air pollution sources at an airport) to assess the air quality impacts of proposed airport development projects. EDMS is designed to assess the air quality impacts of aircraft, auxiliary power units, ground support equipment, stationary sources, fueling operations, motor vehicles, and training fires. The model uses the latest aircraft engine emission factors from the International Civil Aviation Organization (ICAO) Engine Exhaust Emissions Data Bank[2], vehicle emission factors from the Environmental Protection Agency's (EPA) MOBILE5a[3], and stationary source/fueling emission factors from AP-42.[4] Since 1993, EDMS has been an EPA "Preferred Guideline" model for use in civil airports and military air bases. In 1998, the FAA revised its policy on air quality modeling procedures to identify EDMS as the required model to perform air quality analyses for aviation sources. This revised policy ensures the consistency and quality of aviation analyses performed for the FAA.

In response to the need for increased accuracy and flexibility by the air quality analysis community, the FAA, in cooperation with the United States Air Force (USAF), reengineered and enhanced EDMS in 1997 and released Version 3.0.[5] The FAA has continued to improve EDMS. To take advantage of new data and algorithm developments, the



FAA released Version 4.0 in May 2001. EDMS 4.0 was developed under the guidance of a government/industry advisory board composed of experts from the scientific, environmental policy, and analysis fields.

A primary enhancement of the Version 4.0 release of EDMS was the incorporation of the EPA's next-generation dispersion model, AERMOD[6,7]. The manner in which AERMOD is used in EDMS is based on guidance from the American Meteorological Society/EPA Regulatory Model Improvement Committee (AERMIC), which is responsible for developing AERMOD and introducing state-of-the-art modeling concepts into the EPA's local-scale air quality models. In theory, the incorporation of AERMOD should result in substantial improvements in EDMS accuracy, but validation using appropriate field measured data is desirable to substantiate this assumption and refine the manner in which airport emission sources are characterized using AERMOD. Although AERMOD has been validated for stationary sources, the dispersion algorithms of AERMOD have not been validated with regard to the many and varied sources found at an airport, particularly aircraft. Complete sets of data, including measured concentrations and associated operational data are lacking.

Because AERMOD, the emission calculation procedures, and the emission factors used in EDMS are well established and EPA developed and/or recommended, the purpose of this study is not to evaluate these parts of the analysis process. Rather, the manner in which AERMOD is being used to characterize dispersion from airport sources is being evaluated and quantified so that FAA can refine how AERMOD is applied in EDMS to model airport sources. This evaluation is needed because there is no official EPA guidance on how AERMOD should be used to model airport sources, (e.g., should aircraft be modeled as an area or a volume source). EPA has given FAA guidance on applying AERMOD in EDMS, but in an effort to maximize model accuracy FAA is evaluating EPA's guidance and will refine the source characterization where possible.

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**CONCLUSIONS**

A substantial database has been assembled. It includes CO concentrations for eighteen, one-hour periods from January 8th to January 10th, 2003. The database also includes a detailed quantification of both airside and landside activity at the airport during the entire measurement period. Over the coming months, **[three years ago…Ed.]** these data will be utilized to assess the performance of the AERMOD dispersion algorithm recently incorporated into FAA's EDMS. As deemed necessary, enhancement to AERMOD and/or recommendations on its use within the context of EDMS will be documented in a final comprehensive report, which will be made available to the modeling community. Final results of the study will be available on the FAA website at www.faa.gov.

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| Comment | Response |
|---|---|
| 76 | The FAA reviewed *AReCO Appendix I* in responding to the comments contained in the main text of this letter (AReCO dated April 6, 2005) regarding the same issues. |

## Appendix I OZONE MODELING

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The DEIS does not translate their calculations of ozone pre-cursors into ozone impacts, which in turn substantially and negatively impacts the public health and well being of millions of people in the Chicago ozone "non-attainment" area.

AReCO does not agree at all with the FAA's rationalization as to why this is not done:

> The dispersion model that will be used in the DNL analysis does not have the capability of predicting concentrations of O3 for comparison with the NAAQS. The formation of O3 in the atmosphere is complex to model on a local scale and the effects of elevated O3 concentrations are generally realized on a regional scale rather than a local level. However, where possible, the air quality analyses for the CMP will include information relevant to the new standard.

The fact that EDMS was "mandated" by the FAA for use in analyzing airport situations has nothing to do with off-airport ozone conditions and analyses. Though "mandated" by the FAA, importantly here, **"[T]he regulator is also the air traffic services provider**"11. In fact, the FAA and project proponents are not limited to use of only EDMS.

Indeed, the capability to successfully model photochemical ozone creation processes has existed for many years, for instance with Environ's CAMx modeler, which was well performing in 1997 and is up to version 4 at this time. CAMx has the ability to use nested grids, down to sizes in the 500-1000 meter range; using 1000 meters would even allow O'Hare airport to be gridded into at least 9 grid zones. Further, individual emission sources can be tracked, traced and checked for their contributions to the net ozone modeled results.[12]

As a matter of fact, the Urban Airshed Model (UAM) was used by the State of Illinois (IEPA/LADCO) in year 2000 for simulation of the areas ozone situations, in order to evaluate and set forth plans for their "NOx SIP Call". Quoting from the paper, "Midwest Subregional Modeling: 1-Hour Attainment Demonstration for Lake Michigan Area (Sept. 18, 2000)":

> "Grid resolution was 12[k]m for most model runs and 4km for a few runs." and "In summary, it is reasonable to conclude that model performance is acceptable and that the model can be used for regulatory application in the Lake Michigan area."

The DEIS statement that "...O3 effects are generally realized on a regional scale than on a local level." is purposely misleading, attempting to imply that individual sources, such as an O'Hare airport "bubble" could not be adequately and accurately treated. Not only that, the statement is also disingenuous and patently incorrect, since the IEPA did exactly that, "way back" in year 2000, when they wanted to evaluate the impact of proposed new emissions, "...from combustion turbine electrical generating units recently permitted in Illinois."[13]

Here was a case where modeler runs were made to calculate ozone level changes in the gridded region surrounding and including the Chicago metropolitan area, due to additional point source emissions from power plants, including 10 in the Chicago area, each of which generated only

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[11] The International Herald Tribune, "Emissions by airliners leave Europe and U.S. split," Mar. 19, 2005. Comments by Carl Burleson, director of the FAA Office of Environment and Energy.

[12] Published CAMx results of analyses demonstrates that, typically, around 50% of ozone concentrations are caused by nearby sources of less than about 25km. (15.5 miles) distance.

[13] "Ozone Attainment Demonstration for the Chicago Nonattainment Area (December 21, 2000)", Chapter I

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about 10% of the total NOx generated by O'Hare (not even counting associated "roadways" emissions). Modeled results were able to detect and show ozone concentration changes of only 1-3ppb out of average levels of >100ppb.

Finally, it is not at all clear that if the limits for pre-cursors were just met in the area (including O'Hare NOx and VOC contributions), that this would imply a good ozone situation (i.e., ozone levels always below EPA NAAQS limits), since the pre-cursor limits are based on their own human health hazards, not ozone hazards. Additionally, O'Hare airport NOx and VOC emissions are deposited in the atmosphere in a spectrum of altitudes, from ground level to miles, which would generally result in considerably different ozone formation impacts than near ground level emissions (and where airport analyses receptors are placed i.e., "human environment"). Even if constrained to those deposited in the "mixing layer", deposition altitudes extend to about 1000 meters.

In summary, AReCO believes that the DEIS short-cutted this important issue and that O'Hare related emissions indeed have a significant ozone effect in the area and that such effect could and must be calculated via simulation. 76

**Appendix J: William's Aviation Consultants DEIS Comments**

Williams Aviation Consultants, Inc.

March 7, 2005

Mr. Jack Saporito
Jack Saporito, Executive Director
The Alliance of Residents Concerning O'Hare
POB 1702
Arlington Heights, IL 60006-1702

RE: Capacity at O'Hare International Airport

Dear Jack:

As promised we have put together a few items regarding the O'Hare Airport Master Plan proposal. As you know we have not officially reviewed any of the O'Hare documents we will be speaking from our experience as members of the Federal Aviation Administration's (FAA) air traffic service and from our specific knowledge of traffic flows and issues in the Chicago area.

We have read that the increased capacity at O'Hare has been revised downward to approximately 300,000 operations. This is a drastic reduction in benefit from the increases that were claimed when the project was introduced. The 300,000 operations amount to an increase of approximately 822 operations per day based on a 365 day operating year. If you figure that the majority of the airports experience the majority of their demand in a sixteen hour period you are looking at an hourly increase in arrival/ departure capacity of approximately 51 aircraft.

The airlines will normally reduce flights on the weekends. If you take the 300,000 flight increased with the O'Hare plan and eliminate 104 weekend days you have 261 days of peak air traffic. This equates to 1,150 flights per day. If the 16 hour day is used this means an increase of approximately 72 arrival/departure operations per hour.

O'Hare currently experiences long delays on a regular basis. The addition of runways only speaks to part of the airport problem and does not address the issue of enough available gates to handle the increased operations. As you know, the airlines will often hold a departure on the ground while waiting for a late arrival. As the number of late arrivals increases, the number of late departures increase and gates become saturated as does the airport movement area. When this happens gridlock occurs and nothing moves into an out of the airport. 77

2594 W. Wrangler Way, Queen Creek, AZ 85242 USA
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| Comment | Response |
|---|---|
| 77 | **General:** The commenter admits that his company has not officially reviewed any of the O'Hare documents. Therefore, these comments can have only very limited validity. Nevertheless, the FAA has attempted to address them.<br><br>**Comment:** *The addition of runways only speaks to part of the airport problem and does not address the issue of enough available gates to handle the increased operations.*<br><br>As described in **Section E.3, Appendix E** of the EIS, the proposed project includes a plan for expansion of the terminal building and aircraft parking gates, as well as for the expansion of many other needed Airport facilities, that will balance the increased capacity of the runways. A major component of the planning effort has been devoted to achieving a reasonable capacity balance among the various elements of the OMP. For example, as shown in **Table E-13,** the plan includes the provision for adding 43 new gates by 2018, a 23% increase over the number of gates available today. |

If O'Hare had enough gates to accommodate demand, regardless of how high the demand became, it is not possible that the en-route portion of the air traffic control system could accept the number of departing aircraft per hour that would be necessary to keep the airport from becoming saturated. 78

Storms that occur between O'Hare and the destination or departure airports result in in-trail restrictions to aircraft that have to transit the area that is encountering the storm activity. O'Hare could be experiencing excellent weather while other parts of the country are not having good weather. When these conditions occur, terminal delays will occur at O'Hare due to problems in other parts of the country that are impacting the en-route air traffic control system. 79

Our experience has shown that most of the consultants who work for airports are able to inflate the benefits of airport construction projects through their modeling of the throughput of the airport. When the departure capacity of an airport project is modeled, the aircraft are only modeled for a short distance after takeoff and they are then dropped from further analysis. As a result, delays that normally occur to aircraft that must enter the en-route air traffic control structure are not considered and the modeling results show a great increase in capacity. If the modeling were to include the en-route portion of the flight, the increase in capacity would be minimal. 80

When the consultants model arrival capacity, the model is constructed so that every time there is an opportunity for an aircraft to land, the model records a landing. The model assumes that as one aircraft turns off the runway another is ready to land. A modeling database constructed in this fashion will show a very high capacity arrival rate that cannot be achieved in a real world environment. 81

Although we have not been retained to examine the O'Hare project in depth we are confident that the database for the modeling was constructed in the manner that gives inflated results. It should be noted that the modeling result is based on the assumptions put into the database that are not achievable with live aircraft. 82

Other factors impact the ability of O'Hare or any airport to operate unconstrained. As mentioned previously, en-route weather will usually result in in-trail restrictions or an increased number of miles between aircraft on the same route, resulting in delays when departing aircraft must wait on the ground for an appropriate gap in the overhead en-route stream of traffic. Weather at the destination airport results in reduced capacity at that airport and delays for departing aircraft bound for the weather-impacted airport. Depending on the volume of aircraft departing O'Hare for that impacted airport, ground delays can result in a lack of gates or parking space for aircraft that vacate the gate but cannot depart the airport.

Historically, severe weather along the Mississippi River in the warmer months result in in-trail restriction on aircraft arriving O'Hare from the West and for aircraft departing to the West from O'Hare. These thunderstorms will impact the overhead stream of traffic from the east coast going west and from the west coast going east, resulting in delays for O'Hare traffic due to a lack of surplus space in the overhead stream.

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| Comment | Response |
|---|---|
| 78 | Again, there are plans for increasing the capacity of the en-route airspace serving O'Hare. **Appendix E, Section E.5,** describes the airspace changes included as part of the proposed Alternatives C, D, and G. The changes include additional arrival and departure routes in to and out of the en-route airspace serving O'Hare. |
| 79 | There always will be constraints due to storms that affect the en-route air traffic control system between O'Hare and its destination or departure airports, which is true of many other airports as well. However, it is not reasonable to say that such storms are a reason not to expand the Airport. |
| 80 | This comment shows the self-admitted lack of familiarity on the part of the commenter with the analyses that were done of the OMP. The TAAM model was chosen for use in the EIS because it models aircraft movements from gate-to-gate. The model included assumptions regarding commonly-used in-trail separations in the Chicago region, and the inputs to the simulation modeling were thoroughly reviewed with the air traffic specialists currently operating the system. |
| 81 | This comment reveals that the commenter does not understand even the most rudimentary aspects of airspace/airfield simulation modeling. Even the most limited models that have been available over the past 30 years do not have the shortcomings mentioned by the commenter in the foregoing comment. The TAAM model that was used for the OMP simulation analyses was calibrated to actual landing and takeoff rates at O'Hare, and the minimum separation assumptions in the model were thoroughly reviewed by air traffic specialists currently operating the system. This comment is totally false. |
| 82 | This comment is an admission that the commenter has not reviewed any of the available material and yet is biased enough to conclude that the analyses must be wrong. Such an admission can only invalidate all the commenter's statements, which should therefore be discounted as uninformed. Therefore, the FAA rejects these comments and the remaining comments in *AReCO Appendix J,* which are just restatements of these same uninformed opinions. |

We have not seen any substantial comments from the air traffic controllers at O'Hare Tower/TRACON or from the Chicago En-route Air Traffic Control Center (ARTCC) regarding the claims of increased capacity. The current airport is able to provide more departing aircraft to the Center than it is capable of handling. Additional runways will increase O'Hare's ability to provide the Center with more aircraft but will not provide the Center with any increased capability to handle those aircraft. As a result, O'Hare will be constrained by the capacity of the Center, which is not being increased.

The Center is also constrained on the number of arrival aircraft that it can provide to the tower. The tower often requires speed restrictions or in-trail restriction on arrival aircraft. With more runways the tower could conceivably handle more aircraft, but it is not likely that the Center could provide anywhere near the number that the proposed runway configuration could handle. It is not possible for the en-route system to handle the increased number of aircraft that the consultant has projected.

We noted with interest that the FAA spokesman stated that wind is no longer a factor for the aircraft of today. As we work on projects at other airports we see controllers changing the direction of landing and takeoff to align the airport into the wind. Perhaps the FAA spokesman was merely passing wind with his comment. If not it should be good news for noise-impacted communities that aircraft that might normally fly over then due to wind direction will no longer be a problem. Boston's new runway comes to mind, I believe that the FAA Administrator (Garvey) negotiated a wind component into that project. The FAA spokesman also indicated that the fly quiet program would help to alleviate the noise over Chicago. We have seen many fly quiet programs, all are voluntary, and it is difficult to distinguish the "fly-quiets" from the "no fly-quiets." We would suggest that any of the spokesman's statements should be checked with at least one other source before you accept them as anything more than rhetoric.

There are a set number of arrival and departure routes into and out of the Chicago area. It is not realistic to assume that additional routes can or will be developed to accommodate the O'Hare project. Without additional routes for aircraft to operate on, the en-route air traffic control system will still be governed by the same constraints that are in place today.

We are also of the opinion that even if O'Hare builds the east-west parallel runways, the existing runways will not be torn out and will continue to be used. The Federal Government paid for those runways, they are still serviceable and the FAA has not stated that they are allowing them to be removed. It is our contention that the existing runways will continue to be used in conjunction with any new runways and that the new runways will not eliminate any of the presently impacted areas from aircraft over-flights.

We also believe that the opponents of the project should be attacking the claims of efficiency and capacity as well as the cost benefit, financing, environmental, airline cost, viability etc. We are of the opinion that the present tact will not significantly influence the FAA to oppose the project and misses many of the factors that could require the FAA to take a harder look at the projects overall benefit.



We hope that our comments will prove useful to you as you continue to review the project and voice your concerns. Do not hesitate to contact me if you have any questions and the best of luck in getting your issues before the people and the FAA.

Sincerely,

George D. Williams
Secretary/Treasurer

| Comment | Response |
|---|---|
| 83 | The FAA reviewed *AReCO Appendix K* in responding to the comments contained in the main text of this letter (AReCO dated April 6, 2005) regarding the same issues. |

**Appendix K: AReCO critique of IEPA's O'Hare vicinity "Toxic Monitoring" study.** 83

AReCO requested and received an independent research critique of the IEPA's "toxic monitoring" study, below, which has been public information on AReCO's web site (areco.org) since then.

TECHNICAL NOTE Date: Tue, 04 Jun 2002 [Revised 9/21/02]
Comments on IEPA "Final Report, Chicago O'Hare Airport Air Toxic Monitoring Program"
Ross Ruthenberg

First, it seems that the report is put together more to defend and deny pollution than it is to advance the protection of the environment...the authors being of course the Illinois Environmental Protection Agency. The report concludes overall that, based on measurements, Chicago area toxic and hazardous air pollution concentrations are similar to other major, polluted cities and that O'Hare Airport emissions have an impact on the air quality in adjacent communities, but "that impact did not result in levels higher than those found in a typical urban environment."

Toxics measurements "demonstrated" that:
*Lemont was quite clean, even though it was downwind from major polluters such as refineries, etc.
*Washington school in the south Calumet region was much worse, due to nearby industrialization, than the O'Hare area. [No mention of concern for this bad pollution condition on the children of the area.]
*Northbrook measurements showed it also to be quite clean.
*Difference measurements between Bensenville and Schiller park monitors showed minimal O'Hare impact on days when the former was upwind and the latter was downwind.
*Toxics levels were generally comparable or lower than at other major cities.

More specifically:
The data analysis demonstrated that O'Hare Airport emissions had an impact in the areas adjacent to the airport for several key target compounds, including acetaldehyde, benzene, formaldehyde, polycyclic organics and lead. All these compounds are Urban Air Toxics and have been identified as associated with airport operations. The downwind concentration of acetaldehyde was found to be 45.6% higher than upwind, formaldehyde was 32.8% higher, benzene was 34.1% higher, polycyclics (PAHs) were 65.9% higher and lead was 87.5% higher. An impact from airport operations was not unexpected as airport operations, including aircraft takeoffs, landings, taxiing, refueling and use of support equipment, result in significant emissions of volatile organics and target air toxic compounds. The resulting airport emissions should have had, as the monitoring data shows, some impact in the areas adjacent to the airport. While the downwind concentrations were found to be higher, the results showed that the levels found at O'Hare Airport are still in the "typical urban range" and comparable to or lower than levels found in other large urban areas.

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Monitoring Issues

The main monitoring site used by the IEPA to determine O'Hare toxics levels is the Schiller Park location which, in my opinion, is a very poor location choice. Most significantly, it is located too far south to get a good gauge on airport emissions under wind directions of anything except between about WSW to NNW. This means that of the report's 16 total measuring days, distributed every 12 days from June through December of year 2000, only 6 were primarily downwind (in WSW-NNW winds; 1-June, 1-September, 2-November, 2-December). Also poor is the fact that the site is sandwiched between two sources of auto/truck emissions, Mannheim road to the immediate west and the Tri-state tollway to the east, both within a few hundred feet (airport emissions sources are at least 10X this distance). This makes it difficult to separate vehicular emissions from airport emission.

The Schiller Park site is relatively low to the ground (<20 feet) as compared to all other sites (typically at least two stories up), increasing its vehicular emissions exposure and probably decreasing its airport exposure. One would surmise that aircraft emissions, being very hot, would tend to immediately rise up, aided in the summer by rising thermals from the expanses of heated asphalt. Thus, in light winds, the emissions would have an initial "up and over" trajectory of any low placed monitor probe.
[Though this was also true for the Environ study measurements, those measurements were meant to be preliminary in nature (several 8- hour samples) and the study pointed out that there was a need for vertical measurements. Also, the monitoring sites were located west of Mannheim, with measurements limited to "downwind" days, minimizing any vehicular traffic effects.]

The Northbrook site is too far north and acts more like a northern pollution boundary reference monitor. The Bensenville monitor, southwest of the airport, can act as an airport pollutant detector but only under northeast wind conditions, which occurred much less frequently during the June- December period.

What is needed is to have more and better placed monitors, such as an additional one on the northeast airport fence line, relocating the Schiller monitor to the top (west side) of the tall office building just across Lawrence avenue, a monitor in Park Ridge and one in Lincolnwood. This would place 3 monitors in line from the airport fence line to Park Ridge to Lincolnwood (through the high cancer incidence area) and one high up to minimize the vehicular emissions influence. Indeed, many Illinois pollution emissions sources (e.g. industrial manufacturing) have their own dedicated monitoring systems, as a condition for Illinois to grant the source a permit to operate with such emissions. Considering that O'Hare Airport is a major source of emissions, it should have its own dedicated set of robust, continuous monitors, including "upwind" control monitors. The placement of these monitors should be based on comprehensive pollutant dispersion modeling that considers both ground based and in- flight aircraft emissions sources, as well as the meteorology of the area (especially between the airport and the lake).

Finally, on the monitor sitting issue, one would hope that sufficient testing has been done to verify that locating monitors on top of hot, tarred building roofs does not adversely affect the accuracy of measurements. These types of location seemed to be the norm for 4 of the 5 locations (all except Schiller Park and there is a concern that some VOC measurements, for



instance, could be desensitized by roof material emissions.

Averaging

"Average" is a word that maybe shouldn't have been invented. Here again in this report, averaging tends to cloud conclusions, in my opinion. For example, even though the 16 (max.) measured days of information for any toxic could have been charted showing both the averages and the min/max ranges, only the average is shown. Though this simplifies media coverage, it purposely minimizes the scientific need to examine and attempt to explain these min/max ranges. For instance, though winds were monitored and meteorological conditions were noted, there was no apparent attempt to correlate them to specific measurement results, which might show that the substantial variations were a direct function of wind speed, in addition to direction.

The daily measurements are already averages (over 24 hours) in most cases, being based on continuous sample collection through the day. This means that the airport's 10 p.m. to 6 a.m. low emission period is averaged in to the entire measurement, reducing the net value to around 2/3 of the (average) level of the important 6 a.m. to 10 p.m. period of maximal airport emissions (and also vehicular emissions). Thus, to compare to Environ's 8-hour measurements, the IEPA numbers should probably all be multiplied by a factor of 1.5.

General

The IEPA study made no attempt to model airport emission dispersions, beyond considering wind rose patterns. There was no attempt to identify types and quantities of airport source emissions (especially aircraft) in order to incorporate into an overall dispersion model as well as to attempt to "tag" specific pollutants to the source in order to aid differentiation from other sources at monitoring sites e.g. Schiller Park. Though this was not in the scope of this 6- month toxic monitoring program, it makes it even more difficult to compare results to the original "triggering" Environ study.

There was no attempt in the program to place portable monitoring sites in key communities e.g. Lincolnwood. And there was little post-analysis of results implications other than impact minimization.

The resulting airport emissions should have had, as the monitoring data shows, some impact in the areas adjacent to the airport. While the downwind concentrations were found to be higher, the results showed that the "levels found at O'Hare Airport are still in the 'typical urban range" and comparable to or lower than levels found in other large urban areas." This conclusion leaves one quite uncomfortable, considering that most of the "typical" urban pollution concentrations are known to be unacceptable (the raison de' etre for the EPA). Thus, it is of little comfort to know that our atmosphere is just as bad as other major cities. Furthermore, the study does not cite the specific locations used in this comparison, leaving the probability that those sites are also influenced by airport emissions and thus creating a situation of justifying one airport's pollution impact on the basis of being no worse than that from other airports!

Finally, one is left with the distinct feeling that there is less than coincidence to the timing of the release of this "O'Hare emissions are of minimal significance to your health" report, considering

(a) it is (a long) 18 months after the last measurement was taken, (b) the IDPH recently also released their "What cancer...we find no out of ordinary incidence rates" and (b) the U.S. Congress is being lobbied very heavily to enact law that removes all Illinois EPA, DPH and legislative authority over such matters.

Overall, the report has value but is an inadequate addressing of the major issues. Part of the inadequacy derives from the short term of the study, which was limited by lack of sufficient funding. It is unfortunate that even that funding ($200K) had to come from Park Ridge rather than the state, in order to get some attention to the issues. 83

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| Comment | Response |
|---|---|
| 84 | The FAA reviewed *AReCO Appendix L* which includes quotations from the *FAA Order 1050.1E* as well as a March 2005 EPA document. |

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**Appendix L: Environmental Justice...Children**

1050.1E 06/08/04 excerpts:

**SECTION 16. SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS**

Executive Order13045, Protection of Children from Environmental Health Risks and Safety Risks (62 CFR 19883, April 23, 1997). 40 CFR 1508.27

**16.1b. Children's Environmental Health and Safety Risks.** Pursuant to Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, Federal agencies are directed, as appropriate and consistent with the agency's mission, to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. Agencies are encouraged to participate in implementation of the Order by ensuring that their policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

**16.2b. Children's Environmental Health and Safety Risks.** FAA is encouraged to identify and assess environmental health risks and safety risks that the agency has reason to believe could disproportionately affect children. Environmental health risks and safety risks include risks to health or to safety that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or be exposed to. The Task Force on Environmental Health Risks and Safety Risks to Children created by the Order may develop guidance and recommendations useful for evaluating actions with the potential to disproportionately affect children.

**16.3 SIGNIFICANT IMPACT THRESHOLDS.**
**16.3b. Children's Environmental Health and Safety Risks.**
Disproportionate health and safety risks to children may represent a significant impact.

**16.4 ANALYSIS OF SIGNIFICANT IMPACTS**
**16.4a.** This analysis is triggered when the potential for significant impact exists, because of extensive relocation impacts, fragmentation of neighborhoods and communities, disproportionately high adverse impacts on minority or low income communities, disproportionate health and safety risks to children, or other significant community disruption. In these cases, additional analysis is needed to describe the degree of impact and to identify mitigation or alternatives that could minimize such adverse effects.

Excerpt from:
EPA/630/R-03/003F March 2005
**Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens**

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The following adjustments represent a practical approach that reflects the results of the preceding analysis, which concluded that cancer risks generally are higher from early-life exposure than from similar exposure durations later in life:

- For exposures before 2 years of age (i.e., spanning a 2-year time interval from the first day of birth up until a child's second birthday), a 10-fold adjustment.
- For exposures between 2 and <16 years of age (i.e., spanning a 14-year time interval from a child's second birthday up until their sixteenth birthday), a 3-fold adjustment.
- For exposures after turning 16 years of age, no adjustment.

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Appendix M: AVIATION ASSOCIATES, INC.

**AVIATION ASSOCIATES, INC.**
*Aviation Planning Consultants*

*Airport & Airspace*
*Environmental • Security • Financial*
**Governmental Relations**

December 13, 2001

Mr. Jack Saporito, President
US-Citizens Aviation Watch Association
POB 1702
Arlington Hts., IL 60006-1702

Dear Jack:

O'Hare Airport is located within airspace identified as Enhanced Class B Airspace (ECB). All major airports in the U.S. are located within similarly designated airspace the purpose of which is to enhance flight safety. Also located within O'Hare ECB is Midway, Palwaukee, DuPage County, Schaumburg and Meigs airports. In the year 2000 more than 1,600,000 aircraft operated within the airspace which included 900,000 at O'Hare alone. FAA records show that O'Hare's ECB has had the highest rate of near mid-air collisions of any airspace in the U.S. due to congestion.

Mayor Daley's concept for O'Hare will elevate the operations at O'Hare to 1,600,000 per year, which with continued growth at Midway and the other airports will approximate 2,500,000 operations a year within the ECB. That level of operations will greatly expand the danger of mid-air collisions especially under instrument meteorological conditions (IFR).

Based on 1,600,000 operations at O'Hare, there would be 4384 operations per day. Based on 16 hours of average daily operation on six runways there would be 730 operations per day per runway. That would be 45 operations per hour or one operation each 1.3 minutes per runway. At a maximum, runway operations should not exceed one operation every 2 minutes to meet safety standards.

The National Transportation Safety Board (NTSB) has indicated that air turbulence contributed to the recent crash of American Airlines, Flight 587, after take-off from Kennedy Airport in New York. The turbulence was created by an aircraft that took-off on the same runway just less than two minutes prior to the American flight. A take-off or landing every two minutes or less on each of the six proposed parallel runways at O'Hare will create turbulence in the ECB and jeopardize flight safety.

85

Robert L. Donahue, President
Aviation Associates, Inc.

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| Comment | Response |
|---|---|
| 85 | The forecast of aviation demand for the reasonable foreseeable period considered in the EIS projects approximately 1.2 million operations in 2018 for O'Hare, not 1.6 million.<br><br>The FAA's capacity and delay simulation modeling conducted for the EIS includes appropriate mile-in-trail separations for safety of operations.<br><br>Also, please see the response to comment 91 within *Karaganis-Cohn's April 6, 2004* comments on the DEIS, document number 050406_36, on page U.4-432 of this appendix. |

## Appendix N: EMPLOYMENT (Sustainability))

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O'Hare expansion will actually kill job growth: If one of the major benefits to the area is really about job growth and since O'Hare is competition to a new airport and since existing airports do not generate nearly as many jobs as a new airport would and cost a great deal more than a new "green-grass" airport would; then, why not support building a new airport and better yet, a world-class high-speed rail system possibility even integrated with the airports?

As predicted, a new mega airport would create hundreds of thousands of new jobs and a whole new infrastructure for the Northern Illinois Region, rather than the 25,000-49,000 mostly temporary jobs at O'Hare?

Furthermore, if it was the really intent of the government to produce beneficial and sustainable job growth, the intent would be to go even one step further into the future with innovation and build a world-class high speed rail system. It has been reported that would create at least 400 thousand new jobs in Northern Illinois, perhaps over a million in the whole state, certainly millions nationwide, at what appears to be at much less cost than the whole O'Hare/NAS scheme?

If this expansion project were truly about jobs or better alternatives for our transportation long-term capacity needs then there are much better alternatives than expanding O'Hare airport at a fraction of the costs.

The California High Speed Rail EIS (March 2004) a thorough, in-depth EIS by the state of California to evaluate their transportation systems found that:

For one-half the cost of building more highway lanes and airport runways, the planned high-speed train system could carry up to 68 million passengers by 2020 and would increase mobility, help relieve highway congestion, help protect California's environment, and create hundreds of thousands of jobs14.

All of this should certainly apply directly to the transportation situation in Illinois and the Midwest region, and should prove that building the Midwest Regional Rail System.

Near the beginning of this report15 is a statement that this "Plan update confirms that the Midwest Regional Rail System continues to provide a viable framework for developing and implementing a 21st Century regional passenger rail system."

Since this rail network spanning eight states and covering trips of 400 - 600 miles would cover well over half or more of all aircraft operations at O'Hare and Midway, the rail system entirely obviates the alleged phony "need" for any O'Hare expansion, and the project will be a massive

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http://www.cahighspeedrail.ca.gov/eir/pdf/report/Summary_3-1-04.pdf (S.5 Key Findings", "S.5.3 - High-Speed Train Alternative" at pp. S-6-8. See also "S.6 - System-wide Environmental Impact Comparison" at pp. S-9-16.)

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| Comment | Response |
|---|---|
| 86 | The FAA disagrees that O'Hare expansion will "kill job growth". The Build Alternatives under consideration (Alternatives C, D, and G) are estimated to result in an increase of 89,240 jobs, approximately 49,390 more than Alternative A. This does not include temporary jobs related to construction. For more information please refer to **Section 5.5** of the EIS.<br><br>In addition, the economic impact of potential O'Hare improvements was not a consideration in development of the purpose and need for this EIS. However, **Section 5.5** of the EIS identifies the potential socioeconomic impacts associated with the evaluated Alternatives.<br><br>Also see topical response G-1 on page U.5-31 of this appendix. |

public works boondoggle, totally unsustainable. However, it would be beneficial to O'Hare and Midway as it would open much needed origin and destination slots and airspace.

For aviation and O'Hare sustainability: some form of airport ownership of high-speed rail, that would link the airports together and code sharing with the airlines, could be very beneficial to the industry and local communities. It would generate millions of new jobs and thousands of new businesses, job spin offs, and a whole new industry. All of this will be eliminated by the proposed airport expansions. (Also see Appendix O: "Solutions and Real Modernization (Sustainability)" for more information.) 86

**Appendix O: Solutions and Real Modernization (Sustainability)**

## SOLUTIONS AND REAL MODERNIZATION

There are intelligent steps that could be taken that will really modernize our transportation system, and O'Hare, such as implementation of world-class high-speed rail alternatives and a much stronger emphasis on world-class intermodal transportation links.

There are better, more viable and more competitive transportation modes available that are much faster. There are some basic immediate steps that we can take that are outlined in an independent government report.

1) Take the issue away from the Federal Aviation Administration; make this a long-term capacity transportation issue and not just a short-term air-transport band-aid.
2) Put back the airport operational and management controls that Congress relaxed and/or took away. The removal of which caused the massive delays back in 2000 as well as, those that we are experiencing now at the major airports.
3) Build a Wayport system for a medium-term solution to which we can send transfer traffic and freight, opening existing slots for the important origin-destination and international flights.
4) Build a national world-class high-speed rail system. Additionally, establish HSR research centers (e.g. at/near Argonne). In the longer term, win back manufacturing for HSR (e.g. from Bombarier in Canada, etc.).

Several additional solutions can be found in *" A VICIOUS CYCLE: HOW CAN THE GOVERNMENT JUSTIFY EXPANDING AIRPORT CAPACITY TO SOLVE AN OVERCAPACITY* PROBLEM? (http://www.areco.org/A%20Vicious%20Cycle2.pdf -p. 31).

For aviation and O'Hare sustainability: some form of airport ownership of high-speed rail, that would link the airports together and code sharing with the airlines, could be very beneficial to the industry and local communities. It would generate millions of new jobs and thousands of new businesses, job spin offs, and a whole new industry. All of this will be eliminated by the proposed airport expansions.

**Innovation is needed, not just more of the same problems.*

(*For independent government report confirming above see:* Government Accounting Office, *"Long-Term Capacity Needed Despite recent Reduction in Flight Delays,"* GAO-02-185, Dec. 2001.) 87

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| Comment | Response |
|---|---|
| 87 | The FAA notes the comments within *AReCO Appendix O*. The FAA is required to evaluate the City's proposal and alternatives to it from an environmental standpoint. In evaluating the alternatives, the FAA did examine the use of other modes of travel or communication including the use of high-speed rail. The FAA found that this alternative did not meet the purpose and need. For more context for FAA's finding, see **Chapter 3** of the EIS.<br><br>Also see topical response B-7 on page U.5-12 of this appendix. |

O'Hare Noise Compatibility Commission

050406_05

Arlene J. Mulder
Chairperson

Raymond J. Kuper
Vice-Chairperson

April 6, 2005

Mr. Michael W. MacMullen
Airport Environmental Program Manager
Federal Aviation Administration
Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, IL 60018

Dear Mr. MacMullen:

On behalf of the entire O'Hare Noise Compatibility Commission (ONCC), I am respectfully submitting our written comments for the O'Hare Modernization Program (OMP) Draft Environmental Impact Statement (DEIS).

While choosing to remain neutral on the OMP itself, the ONCC has pledged to remain engaged in the process on issues related to aircraft noise.

After the details of the O'Hare Modernization Program were announced, we officially went on record stating that we intended to be involved in the process of defining noise issues that need to be addressed in the OMP. 1

As this process continues, one of the ONCC's main goals is to make sure that the decision makers, whether they are at the local, state or federal levels, address quality of life issues for all residents around O'Hare International Airport.

Thank you for the opportunity to submit our written comments regarding the O'Hare Modernization Program (OMP) Draft Environmental Impact Statement (EIS). The ONCC looks forward to participating in those meetings and providing additional input to the FAA throughout the EIS process.

Sincerely,

Mayor Arlene J. Mulder
Village of Arlington Heights and
Chairperson, O'Hare Noise Compatibility Commission

CC: Members, O'Hare Noise Compatibility Commission

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Phone: 773-686-3198 • Fax: 773-686-4980
www.oharenoise.org

| Comment | Response |
|---|---|
| 1 | The FAA greatly appreciates the careful review of the DEIS and comments provided by the ONCC. The FAA concurs with the ONCC's goal to ensure that decision-makers address quality of life issues for all residents around O'Hare International Airport. It was the intent of the EIS to fully address quality of life issues by identifying significant environmental impacts to local residents and, wherever possible, to devise approaches that avoid, minimize, or mitigate such impacts prior to the FAA's Record of Decision.<br><br>We welcome the participation of the ONCC in furthering that goal. Toward that end, we will continue to participate in ONCC meetings as requested throughout the remainder of the EIS process. |

# Comments on the Draft Environmental Impact Statement (DEIS) for the O'Hare Modernization Program (OMP)

**Respectfully Submitted by**

O'HARE NOISE COMPATIBILITY COMMISSION

**April 6, 2005**

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## O'Hare Noise Compatibility Commission (ONCC) Comments on Draft Environmental Impact Statement (DEIS) For O'Hare Modernization Program (OMP)

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## ONCC MISSION STATEMENT

To assist in developing meaningful methods of reducing the impacts of aircraft noise on our surrounding neighborhoods through home and school sound insulation, and to reduce, wherever possible, aircraft noise at its source.

## ONCC BACKGROUND

The O'Hare Noise Compatibility Commission (ONCC) is comprised of 37 representatives of communities and public school districts surrounding O'Hare International Airport. The Commission, chaired by Arlington Heights Mayor Arlene J. Mulder, participates in the planning of noise relief projects to be implemented in the O'Hare area; oversees an effective and impartial noise monitoring system; and advises the City of Chicago on O'Hare-related noise issues.

In 1996, Chicago Mayor Richard M. Daley invited suburban community leaders to participate as a policy-making group to direct funding for noise insulation projects. This group became the O'Hare Noise Compatibility Commission and quickly assumed responsibilities. As the Commission acquired expertise in aircraft noise issues it began investigating and promoting technological advancements that address the issue of noise at its sources in addition to its points of impact.

The Commission works primarily through three standing committees.

The Technical Committee examines and promotes the use of cutting-edge technologies and procedures aimed at reducing aircraft noise at its sources.

The Committee also evaluates reports from the Chicago's airport noise monitoring system and oversees the work of the commission's nationally respected independent expert who reviews the accuracy of the system and the data.

The ONCC's other two standing committees are concerned with reducing noise at its points of impact, specifically schools and homes.

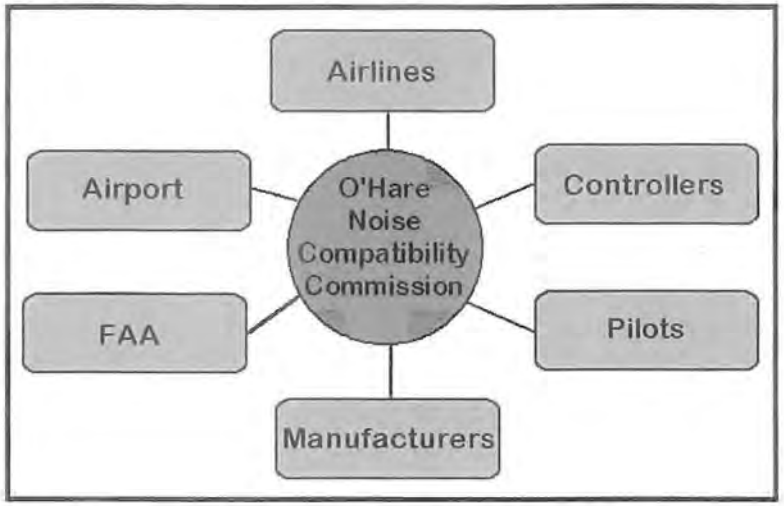
The O'Hare School Sound Insulation program is the world's largest. To date, more than $253 million have been spent on effectively sound-insulating schools around O'Hare International Airport, with 93 completed and 13 in design or construction.

By the end of 2004 program year, the O'Hare Residential Sound Insulation Committee will have directed the insulation of more than 5,900 homes, totaling over $181 million.

The 37 Municipal and School District members of the ONCC understand that there needs to be a balance between the regional economic engine that is O'Hare International Airport and the quality of life issues that are vital to the residents living near the airport.

The ONCC is dedicated to achieving this balance by bringing all the entities that have a stake in this issue to the same table for constructive dialogues with the goal of achieving meaningful noise reduction.

2




The basic premise of the ONCC agrees with the following statement from the Federal Aviation Administration's original Aviation Noise Abatement Policy of 1976:

"It is clear, however, that the only successful attack that can be launched on this problem is one that involves the cooperative participation of all levels of government--state, federal and local--as well as airport operators, air carriers, aeronautical manufacturers, and airport neighbors. Only if each of these parties performs all the functions for which it is uniquely suited will we achieve significant and lasting progress in reducing both the number of people exposed to serious levels of aircraft noise and the severity of noise exposure for each and every American."

3

## ONCC MEMBERSHIP ROSTER

April 6, 2005

Arlington Heights
Bellwood
Chicago
Des Plaines
Elmwood Park
Franklin Park
Hoffman Estates
Melrose Park
Mount Prospect
Niles
Norridge
Northlake
Oak Park
Palatine
Park Ridge
River Forest
River Grove
Rolling Meadows
Rosemont
Schaumburg
Stone Park
Unincorporated Cook County
School District 59
School District 63
School District 80
School District 81
School District 84
School District 84.5
School District 85.5
School District 86
School District 87
School District 89
School District 214
School District 234
School District 299
School District 401

## ONCC POSITION ON O'HARE MODERNIZATION PROGRAM

*While the ONCC chooses to neither officially endorse nor oppose the O'Hare Modernization Program, it remains concerned about the potential impact of aircraft noise on the quality of life for residents living around the airport, now and in the future.*

Since the O'Hare Modernization Program was proposed by Chicago Mayor Richard M. Daley in 2001, the ONCC has followed the OMP EIS process through active participation in public forums and communications with federal, state and local officials.

The ONCC has invited and hosted FAA and OMP personnel to communicate and update members on OMP Environmental Impact Statement (EIS) progress. It has looked at the various impacts of aircraft noise being addressed as part of the OMP.

In its review of the OMP Draft EIS, the ONCC recognizes and certainly appreciates the vast progress made since O'Hare Airport's 1984 Final EIS, which identified 94,000 noise-affected homes in the its 1982 Baseline 65 DNL contour. In comparison, only 8,400 homes are exposed to the 2002 Baseline 65 DNL contour.[1] This greater achievement is due to the constructive involvement and strong commitment of representatives from those organizations and governmental entities that have an impact on reducing aircraft noise at O'Hare Airport, including the City of Chicago and its Department of Aviation, the FAA, suburban leaders, and individual residents.

As the OMP proceeds, the ONCC urges all decision-makers in the process, including the FAA, to consider quality of life issues at the same priority level as airport efficiency. The ONCC understands and agrees that safety must be the top priority. 2

## Proposed FAA Priorities

[1] O'Hare Modernization Program Draft Environmental Impact Statement EIS Executive Summary, Page ES-18.

5

| Comment | Response |
|---|---|
| 2 | Again, FAA appreciates the active participation of the ONCC in public forums and communications with federal, state, and local officials during the course of the EIS process. We agree that the 90+% reduction in noise impacts around O'Hare between 1984 and 2002 is due to the continued involvement and commitment of the City of Chicago, the airlines using O'Hare, suburban leaders, individual residents, and many FAA employees, all who have been actively committed to reducing noise at the airport.<br><br>We are pleased to note that the ONCC concurs with the FAA that safety is the number one priority. Moreover, we note that the enormous reductions in noise impact around O'Hare have been achieved without any compromise to margins of safety.<br><br>While FAA has addressed the quality of life for airport neighbors by conducting a rigorous analysis of noise and other environmental impacts within the EIS, operational safety is and must remain FAA's highest priority. Consistent with the FAA mission, the FAA has developed the *Flight Plan 2005-2009 (Flight Plan)*. One of the goals of the *Flight Plan* is to "work with local government and airspace users to provide capacity in the United States airspace system that meets projected demand in an environmentally sound manner." The FAA is committed to working with the public, ONCC, and the City of Chicago on these matters in the future. |

The ONCC is providing its specific comments on the Draft Environmental Impact Statement (EIS) for the O'Hare Modernization Program (OMP) to promote awareness of local community concerns about existing and possible future aircraft noise impacts and to establish that, without proper identification of aircraft noise impacts, efforts to mitigate noise effectively will be thwarted.

## THE ONCC RECOMMENDS THAT THE FOLLOWING AREAS BE ADDRESSED IN THE FINAL EIS AND RECORD OF DECISION FOR THE OMP BUILD ALTERNATIVE, IF SELECTED: 3

## 1. CORRECTIVE AND PREVENTIVE LAND USE ACTIONS

### 1.1 MAINTAIN CITY OF CHICAGO AND FEDERAL AVIATION ADMINISTRATION STRONG FINANCIAL COMMITMENTS FOR RESIDENTIAL AND SCHOOL SOUND INSULATION PROGRAMS AND EARMARK ADDITIONAL FUNDING FOR THESE PROGRAMS

The City of Chicago should continue to work with the O'Hare Noise Compatibility Commission (ONCC) and local community leaders and officials to reduce aircraft noise at its source and improve the quality of life for residents surrounding O'Hare International Airport.

The ONCC and City of Chicago have made tremendous progress in the O'Hare Residential Sound Insulation Program, making it the most aggressive in the nation. Mayor Daley has well exceeded his originally-stated funding commitment for the O'Hare Residential Sound Insulation Program which he made in 1996. He should be commended for his willingness to provide funding for this extremely popular Program, which through 2004 will exceed 5,900 homes, well beyond the initial commitment of 3,000 homes.

For both phases of the OMP, regardless of the Build Alternative selected, the City of Chicago should continue funding the O'Hare Residential Sound Insulation Program to provide sound insulation to noise-impacted owner-occupied, single family homes surrounding O'Hare Airport to the 65 Day/Night Sound Level (DNL) and above.

The ONCC instituted a policy of worst-first, insulating the homes that are most impacted by aircraft noise based on the most recent adopted noise contour (currently the 2000 Noise Contour Map). The City of Chicago should continue to follow that standard to determine who is eligible for the available sound insulation funding and work.

Consistent with approved FAA guidelines, the City and FAA should fund the O'Hare School Sound Insulation Program and provide noise-impacted schools with windows, doors, ceiling insulation, and related measures to reduce the transmission of aircraft noise.

8

| Comment | Response |
|---|---|
| 3 | FAA concurs that proper identification of aircraft noise impacts is essential to efforts to mitigate noise effectively. FAA anticipates that the ONCC will continue to play an essential role in community outreach to hear the view of the airport's neighbors regarding noise impacts and the continuing efforts to reduce and mitigate noise. The following recommendations provided to the FAA in these comments on the Draft EIS, along with our responses to those comments, are an important step in that process. |

The ONCC, City of Chicago, and the FAA have been cooperatively responsible for the acceleration of the O'Hare School Sound Insulation Program, making it the largest such program in the world.

The ONCC supports annual funding levels for sound insulation projects as articulated in the document submitted by the O'Hare Modernization Program and Chicago Department of Aviation to the Federal Aviation Administration. [2] 4

### 1.2 PROMOTE BUILDING CODE MODIFICATIONS IN LOCAL COMMUNITIES

This measure recommends that the City of Chicago and FAA support efforts to have communities adopt and enforce ordinances and controls to regulate building construction methods and materials for the purpose of attenuating aircraft noise in habitable buildings in and around the O'Hare Airport noise zone.

Local building codes should be revised to require that all new (see Section 2 of Resolution 2002-1) and remodeled structures be sound insulated during construction.

In 2003 the ONCC launched an initiative to help O'Hare area communities reduce the impact of aircraft noise through sound insulation guidelines for new construction. While aircraft noise has been greatly reduced since the ONCC began its work, there is no guidance for communities that wish to further reduce the impact of noise through the proper insulation of newly constructed homes. Homes continue to be constructed in areas around O'Hare that are affected by aircraft noise, but current national building codes, used by many communities, do not address sound insulation.

To address these issues, the ONCC formed a New Construction Noise Standards Ad Hoc Committee, which has been researching specific guidelines that could be used as resources for communities attempting to develop their own noise insulation building codes. Noise insulation standards for external noise are generally absent from most national and local building codes. A focus of this initiative is to bring together experts in the field and local officials to begin drafting noise insulation standards, which could then be adopted on a voluntary basis by O'Hare area communities as part of their local codes.

As such, the ONCC feels that noise affected communities look at implementing voluntary modifications to their building codes. Noise insulation standards are generally absent from most national and local building codes. A focus of this initiative is to bring together experts in the field and local officials to begin drafting noise insulation standards, which could then be adopted on a voluntary basis by O'Hare area communities as part of their local codes. 5

[2] Request for Letter of Intent to Provide a Multi-Year Commitment of Airport Improvement Program Grant-in-Aid Funding, Appendix F, Airport Master Plan – Capital Development Program (Updated February 2005).

7

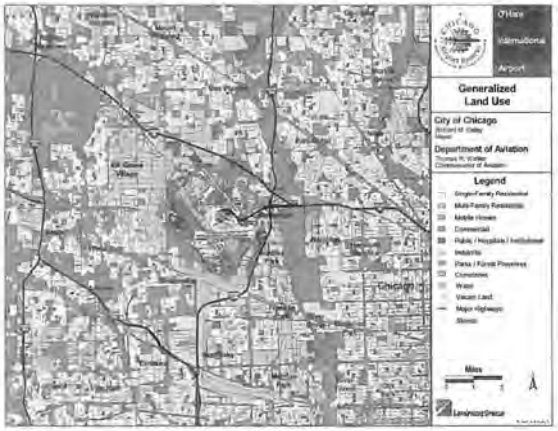
| Comment | Response |
|---|---|
| 4 | The City of Chicago has committed to the FAA to continue its work with the ONCC and local community leaders and officials to reduce aircraft noise at its source and improve the quality of life for residents around O'Hare. Based on the major strides taken by the City in the past, in association with ONCC, to reduce noise around O'Hare, we are confident that such a productive relationship will continue into the future.<br><br>We note the request of the ONCC that, for both phases of OMP, the City of Chicago continue funding the O'Hare Residential Sound Insulation Program (RSIP) to provide sound insulation to noise-impacted owner-occupied, single family homes surrounding O'Hare built before October 1, 1998, that are exposed to aircraft noise levels of 65 DNL and greater. As noted in **Chapter 7** of the Final EIS, the City of Chicago could continue the existing voluntary RSIP. For example, the City could provide sound insulation for eligible residences which are subject to a significant noise impact, or which would become incompatible, as a result of selecting any of the Build Alternatives (DNL 1.5 db increase within the 65 DNL or greater contour, or newly within the 65 DNL or greater noise contour), to reduce the transmission of outside noise into the homes.<br><br>Continued on the following page. |
| 5 | The FAA notes that the ONCC is researching specific guidelines that could be used as resources for communities attempting to develop their own noise insulation building codes. We note further that the ONCC advises noise-affected communities to look at implementing voluntary modifications to their building codes. The FAA has actively been promoting noise/land use compatibility planning in airport vicinities for many years. In 1983, the FAA published *Advisory Circular 150/5020-1, Noise Control and Compatibility Planning for Airports,* to provide guidance for local communities and airport operators. In recent years, the FAA has developed a land use compatibility toolkit that is available on its website (http://www.aee.faa.gov/noise/lupitoolkit.htm). The toolkit includes a number of references describing methods for undertaking airport land use compatibility planning and regulation.<br><br>Continued on the following page. |

**1.3 ENCOURAGE DEVELOPMENT OF COMPATIBLE LAND USES IN AREAS EXPERIENCING SIGNIFICANT NOISE EXPOSURE AROUND AIRPORTS, TO THE EXTENT FEASIBLE, AND PREVENT THE DEVELOPMENT OF NEW NON-COMPATIBLE USES IN THESE AREAS.**

Historically, land use plans prepared by local governments have only minimally recognized the implications of planning for airports and for offsite, airport-related development.

Land use planning, as a method of determining appropriate and inappropriate use of properties around airports, should be an important part of the land use policy and regulatory tools used by both airports and local land use planners.

The ONCC agrees with the concept that open land near airports should remain zoned for compatible uses. However, the communities near O'Hare International Airport are generally built out.




GENERALIZED LAND USE AROUND O'HARE AIRPORT AREA

Municipal zoning ordinances can be used by a community to prevent incompatible land uses in the future. However, because established communities often experience land use transitions over time, the ONCC advocates that those communities consider utilizing zoning powers or establishing ordinances to prevent future incompatibilities.

The FAA should communicate support for one or more of the following land use measures to be implemented by communities near O'Hare International Airport:

8

| Comment | Response |
|---|---|
| 4 continued | ONCC comments further that the City and the FAA should continue to fund the O'Hare School Sound Insulation Program, which provides noise-impacted schools with windows, doors, ceiling insulation, and related measures to reduce the transmission of aircraft noise. We note that ONCC supports annual funding levels for sound insulation projects as articulated in the document submitted by the O'Hare Modernization Program and the Chicago Department of Aviation to the FAA. These funding levels are identified in *Appendix F* of *Request for Letter of Intent for a Multi-Year AIP Grant-in-Aid Funding* submitted by the City of Chicago to the FAA on March 1, 2005. |
| 5 continued | One of the documents available on the site, *Land Use Compatibility and Airports,* is a guidebook developed by the FAA's Southern Region, Airports Division. In *Chapter VII, Compatible Land Use Tools and their Potential Applications,* are detailed guidance and suggestions for establishing airport-compatible land use policies and regulations, including building code amendments setting sound insulation requirements, requiring appropriate noise insulation standards as part of construction would be a very productive means of assuring noise compatibility. With respect to the O'Hare environment, the FAA recognizes the particular advantage to the communities of compatibly redeveloping or modifying existing land uses rather than acquiring and demolishing sections of established neighborhoods. |
| 6 | ONCC comments that municipal zoning ordinances can be used by a community to prevent incompatible land uses in the future. They note that, in the many local cases in which land is already incompatibly developed, emphasis should be placed on utilizing zoning powers or other ordinances to prevent future incompatibilities as land uses transition over time. As outlined in the guidebook, *Land Use Compatibility and Airport*, referenced above, the FAA strongly concurs with this comment and supports zoning for compatible land use development and amendments to local land use plans. Through our continued participation with ONCC, we look forward to further advancing noise compatibility in the O'Hare communities. |

- Zoning for compatible land use development
- Amendments to local land use plans

The ONCC recommends that the FAA address compatible land use as it relates to changes in noise contours over time. 6

## 2. FACILITIES AND AIRFIELD MEASURES

### 2.1 RELOCATE GROUND RUNUP FACILITY/ENCLOSURE AS PART OF SELECTED BUILD ALTERNATIVE

GROUND RUNUP ENCLOSURE – O'HARE INTERNATIONAL AIRPORT

The ONCC should advise the City of Chicago on the re-location of the GRE as part of its oversight of the O'Hare Fly Quiet Program. This adjusted existing measure will help standardize maintenance runup procedures and locations. Effective GRE utilization will significantly reduce single-event noise exposure to the communities nearest the runup location on the airport. 7

### 2.2 PROVISION FOR SOUND BARRIER WALLS AND BERMS TO REDUCE NOISE

The OMP should provide for sound barrier walls and/or berms and natural landscaping to reduce aircraft noise for the communities surrounding O'Hare International Airport. 8

## 3. NOISE ABATEMENT OPERATIONS AND PROCEDURES

### 3.1 PROMOTE USE OF TECHNOLOGY AND GLOBAL POSITIONING SYSTEM (GPS)

9

| Comment | Response |
|---|---|
| 6 | Please see the response to this comment on the previous page. |
| 7 | In its comments on the Draft EIS, ONCC points out that they should advise the City of Chicago on the relocation of the GRE (Ground Runup Enclosure) as part of its oversight of the ORD Fly Quiet Program. FAA welcomes input from the ONCC on the optimal location of the GRE, a commitment to which has been made a part of each Build Alternative. As described in **Section 5.1** of the EIS, the GRE facility is currently located on the scenic hold pad in the north quadrant of the airport. Under the Build Alternatives, the GRE will be relocated slightly to the northeast. The existing and future locations of the GRE facility are depicted in **Exhibits F-19** and **F-20,** respectively, of the EIS. |
| 8 | ONCC requests that the OMP provide for sound barrier walls and/or berms and natural landscaping to reduce aircraft noise off airport. The FAA believes that sound attenuation of the type described in the ONCC comments is most cost effectively provided by earthen berms. The City has successfully used excess earthen materials in the past to create berms. However, the quantity and availability of these materials for berms, in the future, is unknown at this time. Subject to the material availability, the FAA encourages the City of Chicago to provide such facilities. |

Regardless of the Build Alternative selected, this measure recommends that the City of Chicago and the FAA evaluate and implement emerging Global Positioning System (GPS) technologies for noise mitigation.

The ONCC fully supports the consideration of incentives to airlines for installing updated avionics equipment to enable fuller implementation of procedures that enable better management of noise abatement aircraft flight tracks.

The ONCC fully advocates an increase in funding for development and implementation of new technologies, such as GPS, that will enable better management of aircraft flight tracks over more compatible areas and will reduce delays by making more efficient use of airspace. 9

### 3.1.1 ADVOCATE IMPLEMENTATION OF RNAV DEPARTURE PROCEDURES

As part of nighttime noise mitigation measures, the ONCC recommends for the selected Build Alternative that the FAA review and select opportunities to utilize RNAV departure procedures to ensure accurate and repeatable operation of proposed Fly Quiet procedures such as those offered by the Advanced Flight Track Procedures (AFTPro) program, which is awaiting approval by the FAA.

AFTPro will utilize existing Area Navigation (RNAV) technology to enable aircraft to adhere to a track over the ground with greater precision. The procedures developed follow the preferential nighttime flight tracks that were designed to navigate aircraft towards areas of more compatible land use, such as forest preserves, highway corridors and industrial areas. The use of this technology will automatically compensate for wind drift and air speed while ensuring airspace safety, efficiency, and, when possible, minimizing the noise impacts to surrounding residences.

AFTPRO – RUNWAY 32 LEFT FLYOVER

10

| Comment | Response |
|---|---|
| 9 | For purposes of improving better implementation of procedures that make better use of noise abatement flight tracks, ONCC recommends that the City of Chicago and the FAA evaluate and implement emerging Global Positioning System (GPS) technologies. Toward that end, they further support consideration of incentives to airlines for installing updated avionics equipment and they advocate an increase in funding for development and implementation of new technologies that better manage flight tracks and reduce delays by making more efficient use of airspace. Since the late 1990's, the FAA has actively supported the use of GPS for noise abatement at ORD, working with the ONCC to implement procedures based on GPS technologies. That effort is discussed in more detail in the response to comment, immediately below.<br><br>Regarding the installation of advanced equipment in aircraft, however, neither the FAA nor the City of Chicago may spend funds derived from aviation revenue sources for investment in aircraft avionics equipment. The airlines, which are the proper source of such investment, have been making substantial investment in new aircraft with state-of-the-art avionics and, in cases where there is economic justification, have been retro-fitting older aircraft with advanced avionics. |
| 10 | ONCC recommends that FAA review and select opportunities to utilize RNAV departure procedures such as those offered by the Advanced Flight Track Procedures (AFTPro) program, which is awaiting FAA approval. FAA notes ONCC's interest in the AFTPro program. We also note that the ONCC also fully supports an increase of funding available for research, development, and implementation of new technologies to reduce noise at the source, such as NASA's Quiet Aircraft Technology Program. |

Therefore, the ONCC fully supports the increase of funding available for research, development and implementation of new technologies to reduce noise at the source, such as NASA's Quiet Aircraft Technology Program. 10

### 3.1.2 DESIGN AIR TRAFFIC ROUTES AND PROCEDURES TO MINIMIZE AVIATION NOISE IMPACTS IN AREAS BEYOND THE LEGAL JURISDICTION OF THE CITY OF CHICAGO, CONSISTENT WITH LOCAL CONSENSUS AND SAFE AND EFFICIENT USE OF THE NAVIGABLE AIRSPACE

While the ONCC supports the development of new programs and airspace changes to the extent that they will reduce noise impacts to airport neighbors, the ONCC recommends that the FAA and City of Chicago renew their commitment to adhere to existing and proposed noise abatement procedures, including the O'Hare Fly Quiet Program. 11

As part of the OMP EIS, it would be most beneficial to recommend a re-examination of how the airspace around O'Hare Airport is utilized for arrival and departure traffic. 12

The ONCC urges the FAA to consider, as a part of any restructuring of airspace, the ability to provide aircraft unrestricted climb as quickly as possible to en route altitudes.

The ONCC encourages the FAA to continue research into technologies that will enable better management of airspace to the extent that any efficiencies gained will translate into fewer flights delayed into nighttime hours. 13

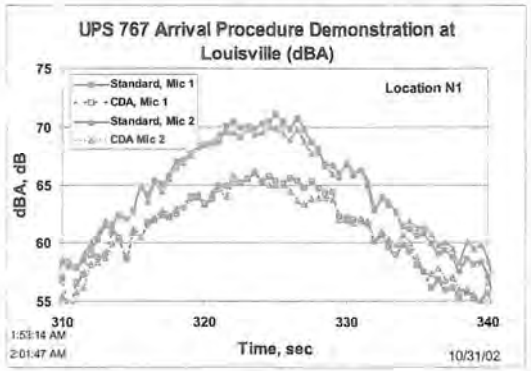
The ONCC also encourages the development of approach procedures that will promote additional noise reduction, especially at night. 14

One of these approach procedures, which is still in the experimental stage, is the Continuous Descent Approach (CDA). This technology allows pilots to fly computer-driven steeper runway approaches. A steeper approach reduces noise by keeping aircraft at higher altitudes for longer periods, reducing required engine power during descent and delaying flap extension which reduces airframe noise.

The ONCC highly recommends that the FAA positively consider O'Hare International Airport as a site for testing and implementing the Continuous Descent Approach during both phases of the OMP. 15

11

| Comment | Response |
|---|---|
| 10 | Please see the response to this comment on the previous page. |
| 11 | ONCC recommends that FAA and the City of Chicago renew their commitment to adhere to existing and proposed noise abatement procedures, including Fly Quiet. The FAA and the City respond that they continue to be committed to the successful use of Fly Quiet and other procedures, as is evidenced in part by the 90+% reduction in noise impacted homes around O'Hare in the 1984-2002 time period. Furthermore, both the FAA and the City commit to continue to work with the ONCC to develop beneficial noise abatement and mitigation programs that enjoy the support of the ONCC member communities.<br><br>At this point it is not reasonable to either assume that there would be a new Fly Quiet Program or speculate about what a new Fly Quiet Program would be. FAA will, however, give consideration to suggestions for changes in the Fly Quiet Program developed by the ONCC and requested of the FAA by the City of Chicago. It is FAA's understanding that it is the City Chicago's intent to continue the existing Fly Quiet Program. The Fly Quiet Program would be modified by ONCC in the future only if needed; such modification would be done in consultation with the FAA and the City of Chicago Department of Aviation. Modification requiring FAA action would be subsequent to its prior approval, and any necessary environmental review. If FAA's Record of Decision approves a Build Alternative, the existing Fly Quiet Program would remain in place, except as affected by runway decommissioning. The EIS discloses the potential effects of runway decommissioning on the Fly Quiet Program. |
| 12 | In addition, ONCC asked FAA to recommend in the EIS a re-examination of how the airspace around ORD is utilized for arrival and departure traffic, and how it might be restructured to permit unrestricted climb. The FAA considered this request and has concluded that the examination of airspace traffic in the TAAM modeling contained in the FEIS has covered all possible features of the O'Hare airspace and all capabilities of the current ORD ATC system. This analysis and its results are described in **Appendix D** of the FEIS. |
| 13 | ONCC comments that they encourage research into technologies that enable better airspace management and unrestricted climb capability. Please see responses to ONCC comments 9 and 12. |
| 14 | ONCC encourages the development of approach procedures that will promote additional noise reduction, especially at night, as well as other improvements as outlined in later comments, provided below.<br>At this point it is not reasonable to either assume that there would be new nighttime approach procedures. However, the FAA and the City of Chicago welcome such recommendations by the ONCC and commit to work with them in the future to review the feasibility of such procedures. |
| 15 | Please see the response to this comment on the following page. |




### 3.2 ENHANCE EFFECTIVENESS OF O'HARE FLY QUIET PROGRAM

The ONCC requests that, if the FAA approves a build alternative that thereafter the FAA evaluate the effectiveness of the O'Hare Fly Quiet Program in relation to the selected Build Alternative and identify a new or different form of the voluntary nighttime program that would benefit the communities around O'Hare International Airport.

O'HARE FLY QUIET PROGRAM NIGHTTIME DEPARTURE PROFILES

12

| Comment | Response |
|---|---|
| 15 | The recommendation by ONCC for the FAA to test and implement Continuous Descent Approach (CDA) procedures refers to a type of procedure being tested at Louisville International Airport and at Frankfurt, Germany. At Louisville, the FAA-funded Center of Excellence program, a group of researchers, in conjunction with United Parcel Service, have been conducting tests of CDA procedures. CDA entails a continuous descent angle, which begins farther from the airport and at higher altitudes, thus requiring fewer power and flap-setting changes during the approach. By remaining higher over more distant communities and by avoiding protracted low-altitude level flight, noise is reduced over those communities. CDA is not expected to reduce noise at communities located beneath the approach and near the airport (typically within 8 to 9 miles distance), nor to lower noise over communities that are significantly impacted by noise. FAA considered the potential for applying CDA in the O'Hare environment and has tentatively concluded that it would not be operationally feasible, as it would require complete restructuring of the Chicago airspace to provide unimpeded continuous descents over long distances through the airspace, at the expense of efficient routing of departing traffic. The final results of the Louisville trial will be provided to the ONCC. However, given the minimal noise reduction associated with the procedure and its associated airspace impacts, it is doubtful that CDA would be warranted at O'Hare. |

The revised O'Hare Fly Quiet Program should still address nighttime arrival and departure procedures, preferential runway usages, and the Ground Runup Enclosure (GRE).

When existing or new runways are extended or new runways constructed as part of the selected Build Alternative, noise abatement and mitigation actions established for runways should be re-evaluated and adjustments made to adhere to the intent and spirit of the Fly Quiet Program.

Departure and arrival procedures should be designed as such to minimize noise on compatible land areas. The promise of new GPS technology in aircraft will hopefully lead to the use of "highways in the sky".

Another factor that should be looked at is the use of entire runways for departures, especially during nighttime hours.

The FAA should request that the City of Chicago conduct an analysis of how traffic flows could or might change with the selected Build Alternative. Traffic flow changes could cause unwarranted noise over communities or residential areas that may do experience the same frequency or type under current conditions. 16

The ONCC currently identifies, suggests and monitors enhancements for the O'Hare Fly Quiet Program, which has resulted in fewer deviations from procedures for nighttime operations at O'Hare International Airport. As part of the review of the O'Hare Fly Quiet Program for the OMP, the ONCC requests that the City of Chicago adopt and maintain a formal communications program to keep the airlines and controllers informed of deviations in order to institute corrective actions.

The FAA should indicate that noise mitigation measures be evaluated and implemented for existing and new runways in order to avoid populated areas close to O'Hare International Airport. These flight tracks and procedures should provide appropriate guidance to ensure that aircraft avoid populated areas en route to their destinations. 17

Reporting for the Fly Quiet Program should rely on the DNL (Day/Night Sound Level) metric analysis for an evaluation of nighttime noise conditions at O'Hare International Airport. However, the FAA and City of Chicago should support the use of supplemental noise metrics (i.e. Leq, SEL, Lmax and Time-Above) to enhance the analytical and reporting capabilities for the Fly Quiet Program.

In summary, there should be a strong commitment by the FAA and the City of Chicago to review the O'Hare Fly Quiet Program in detail with the ONCC in the context of a selected Build Alternative. There should be a review of the applicability of the present Fly Quiet Program to construction of new runways and reconfiguration of existing ones. 18

13

| Comment | Response |
|---|---|
| 16 | ONCC offers several suggestions for improvements to the night Fly Quiet Program and for effectively adapting the current program to the new airfield configuration of the selected Build Alternative. These suggestions include: nighttime arrival and departure procedures, preferential runway usage, Ground Runup Enclosure, use of entire runway length (as opposed to intersection departures), improved guidance for flight track adherence, etc. At this point it is not reasonable for the FAA to assume that there would be a new Fly Quiet Program or to speculate about what it might be. FAA will, however, give consideration to suggestions for changes in the Fly Quiet Program developed by the ONCC and requested of the FAA by the City of Chicago. Also see the response to ONCC comment 11 above. |
| 17 | Since the middle 1990's, it has been the responsibility of the ONCC to identify, suggest, and monitor enhancements to night noise procedures at ORD. ONCC requests in their comments on the DEIS that the City of Chicago adopt and maintain a formal communications program to keep the airlines and controllers informed of deviations from the procedures in order to institute corrective actions. The Fly Quiet Report is an example of a very successful formal reporting mechanism to the public and the aviation community. The FAA and the City concur with that recommendation and commit to working with the ONCC to continue to evaluate improvements that can be made in the Fly Quiet Program. |
| 18 | ONCC also recommends that DNL (Day-Night Average Sound Level) be the principal metric for evaluation of the effectiveness of the Fly Quiet Program on nighttime noise conditions at O'Hare, but that supplemental noise metrics may used to enhance the analytical and reporting capabilities of the Fly Quiet Program. Examples of supplemental metrics include Leq (hourly average levels), SEL (sound exposure levels used to describe the noise of an entire single noise event), Lmax (the peak level) and Time-Above (the duration of noise above a selected level). The FAA does not object to these ONCC recommendations. Although DNL is the noise metric specified for use in all FAA noise impact assessment, we also recommend that noise assessments be made using supplemental metrics, only if deemed appropriate to do so. DNL is the principal noise metric used in this EIS for general impact assessment, while information about supplemental metrics is provided in **Appendix F, Section F.1** to provide a better understanding of the implications of the predicted noise levels in particular circumstances. Finally, an assessment of noise levels at noise sensitive facilities based on a series of supplemental metrics is provided in **Appendix F, Section F.3.** |

### 3.2.1 ENCOURAGE CONTINUED USE OF DISTANT NOISE ABATEMENT DEPARTURE PROCEDURE

Pilots are encouraged to perform the Distant Noise Abatement Departure Procedure (NADP) from all runways at O'Hare International Airport as part of the noise mitigation program for the selected Build Alternative. This measure will continue to reduce single-event aircraft noise impacts through thrust reduction and flap management techniques over residential areas aligned with the runways utilized for departures. 19

### 3.2.2 ENFORCE O'HARE CONTROL TOWER ORDER

As part of ongoing and future noise mitigation programs, the FAA should work with the City of Chicago and ONCC to evaluate the enforcement, workability and effectiveness of the O'Hare Tower Order. This Order permits the use of overlay maps on radar screens to assist air traffic controllers in keeping departing aircraft on nighttime noise abatement flight tracks and away from residential areas. This overlay allows the controllers to give pilots course corrections to account for wind drift during departures.

The ONCC feels strongly that there should be greater adherence to the Tower Order by the controllers and pilots, especially regarding the elevation of departing aircraft at 3,000 feet when they are permitted to turn.

These departure procedures should continue to protect existing compatible land uses and the people who reside in these communities. 20

### 3.3 IMPROVE CAPABILITIES OF AIRPORT NOISE MONITORING SYSTEM (ANMS)

The Airport Noise Monitoring System (ANMS) must continue to be a vital tool for collecting operational data on aircraft movements. The City of Chicago's permanent airport noise monitoring system is considered to be the most complete and extensive of its kind in the nation.

The ONCC recommends that the City of Chicago's noise monitoring system be further enhanced to provide more data on aircraft noise events.

The FAA should encourage the City of Chicago to work with the ONCC and local community representatives to determine the optimal locations for deployments of permanent noise monitors to reflect changing runway and airfield conditions, contingent on the selection of a Build Alternative.

The ANMS must continue to disseminate a system of comprehensive aircraft noise reports for residents around O'Hare International Airport. The City of Chicago and the ONCC should be obligated to continually inform residents and political leaders about aircraft noise issues in the Chicagoland area through their respective web sites, as well as with printed and multimedia materials. 21

### 3.4 REMEDIATION OF GROUND NOISE REDUCTION

14

| Comment | Response |
|---|---|
| 19 | This comment refers to the use of Distant Noise Abatement Departure procedures (NADPs) from all runways at O'Hare as part of the noise mitigation for the Build Alternative. Based on FAA Order 91-53, the NADPs are either "distant" or "close-in." Distant procedures entail power and flap management that results in less noise impacts to communities that are not located close to the runway (generally within about three miles, depending on the airplane). Close-in procedures reduce noise on communities located very close to the airport (typically 1-3 miles away), but at the expense of communities located somewhat farther out. NADPs were studied at O'Hare in the early 1990's, and it was concluded that Distant NAPDs were better suited for use at O'Hare than were close-in procedures. However, it was also concluded at that time that Stage 3 noise-level aircraft showed little or no noise benefit from either procedure. Accordingly, it was recommended that Distant NADPs be used for the older Stage 2 and retrofitted Stage 3 aircraft, but that pilot discretion be used to select the appropriate noise abatement procedures for the newer Stage 3 aircraft. Since all aircraft over 75,000 lbs. operating at O'Hare are now Stage 3, as are the lighter Regional Jets, use of the Distant NADP is no longer applicable to the bulk of the fleet using the airport. |
| 20 | ONCC states that it feels strongly that there should be greater adherence to the O'Hare Tower Order by controllers and pilots, especially regarding the altitude of departing aircraft at 3,000 feet when they are permitted to turn. Reference was made to the use of overlay maps on radar screens to assist air traffic controllers in keeping departing aircraft on nighttime noise abatement flight tracks and away from residential areas. ONCC requests that the FAA work with them and the City to evaluate the enforcement, workability, and effectiveness of this tower order. In response, we acknowledge the close working relationship that has existed among the ONCC, the FAA and the City to improve adherence to the desired tracks and turn altitudes.<br><br>Continued on the following page. |
| 21 | ONCC recommends that the City of Chicago's noise monitoring system be further enhanced to provide more data on aircraft noise events, including additional noise monitors, optimally located relative to the selected new runway configuration. In response, the City of Chicago agrees to work with the ONCC to relocate monitors and add monitors, optimized to the selected new runway configuration.<br><br>Continued on the following page. |

| Comment | Response |
|---|---|
| 20 continued | Continued from the previous page.<br><br>As is evidenced by the quarterly Fly Quiet Report, substantial improvement has been accomplished by raising pilot and controller awareness of the procedures. FAA and the City commit to continuing to work with the ONCC to improve adherence to the desired procedures.<br><br>With a multi-directional runway system such as exists at O'Hare, the ability of the FAA to precisely control tracks and turns has been limited because of the necessity for a high degree of controller flexibility in safely and efficiently routing potentially conflicting traffic. With the transition to a more parallel runway operation, as proposed in the Build Alternatives, there may be opportunities to install navigational aids and procedures that will better standardized flight procedures. The FAA and the City will work with the ONCC to evaluate such procedures prior to the commissioning of a new runway, consistent with the EIS modeling assumptions. |
| 21 continued | Continued from the previous page.<br><br>ONCC also states that the City and ONCC must continue to be obligated to continually inform residents about noise data and noise issues in the region through their respective web sites, as well as printed and multimedia materials. In response, the City of Chicago concurs with this request and will continue to work with the ONCC to seek improvement in these areas. |

The OMP should consistently evaluate and remediate the impacts of noise mitigation on ground procedures that may be affected by any runway addition or reconfiguration or material alternations to the airfield. 22

### 3.5 AIRLINES SHOULD EVALUATE QUIETER FLEET MIX ALTERNATIVES

Measurable reductions in aircraft noise at O'Hare International Airport and the trend toward lower noise levels were accelerated with the elimination of Stage-2 aircraft in 2000. Also, the early retirement of most hush-kit equipped aircraft from the fleets of the major airlines at O'Hare produced additional reductions in aircraft noise. For example, United Airline's older aircraft, including the 727s and 737-200s, were all retired by 2001.

The ONCC urges airlines based at O'Hare International Airport to utilize aircraft with newer-generation engines that reduce noise. Airlines will need to follow the development of noise standards for the next generation of civil aircraft. The Stage 4 noise standard adopted by the International Civil Aviation Organization (ICAO), which will take effect on January 1, 2006, requires that newly manufactured aircraft to be at least 10 decibels quieter than Stage 3 aircraft. 23

## 4. REVIEW OF NOISE COMPATIBILITY PROGRAM AND NOISE EXPOSURE MAPS (NEMS)

Throughout the duration of the OMP there should be regular updates to the O'Hare International Airport Noise Compatibility Plan and reviews of the Noise Exposure Maps (NEMs). This will formalize the continuing process of determining noise and land use compatibility at O'Hare International Airport. The NEMs should be reassessed internally throughout both phases of the OMP.

There should be an analysis of noise impacts resulting from runway reconfigurations during each phase of construction. For construction of each new runway and altered runway, the City of Chicago should separately analyze and report noise impacts by comparing current frequency of flight operations and noise impacts and assume increases in frequency of flight operations enabled by the configuration.

The OMP EIS noise analysis should clearly document the number of additional takeoffs and landings anticipated and how they were assigned to existing and/or future flight paths.

The Noise Exposure Map for the 2002 Baseline Noise Contour should be considered final at this point. The future noise exposure maps, which will be prepared assuming current operating procedures, should be considered preliminary. Future conditions maps would be subject to modification as a result of recommendations that might be made in the update to the O'Hare International Airport noise mitigation plan.

15

| Comment | Response |
|---|---|
| 22 | The FAA did conduct a composite noise analysis including assessment of ground procedures associated with the OMP, see **Appendix F, Attachment F-2**. This analysis concludes that for Build Out +5 there would be no significant impacts due to ground noise. Adjacent neighborhoods exposed to lower ground noise levels will be included in the sound insulation program for aircraft noise as applicable. |
| 23 | ONCC cites the efforts of the airlines to replace the older Stage 2 and retrofitted Stage 3 aircraft fleet with more advanced, quieter aircraft, and urges the carriers to continue that effort, working toward the more stringent *ICAO Chapter 4 standard*, which goes into effect for newly-manufactured aircraft in 2006. FAA acknowledges this comment and encourages ONCC to work further with the airlines in this very beneficial effort. |
| 24 | ONCC requests that the ORD noise compatibility program and noise exposure maps be regularly updated throughout the duration of the OMP, including an evaluation of noise impacts resulting from runway reconfigurations during each phase of construction. This should entail a comparison of the changing frequency of flight operations and noise impacts, as well as the changing flight tracks and frequency of use.<br><br>In response, the FAA has projected and disclosed the noise impacts during each phase of construction in both the Draft EIS and Final EIS. In addition, information on operations and flight tracks has been included in **Appendix F** of the Final EIS. If the City of Chicago and the ONCC choose to produce updated noise exposure maps during implementation, the FAA would not object.<br><br>ONCC points out that the 2002 Baseline Noise Contour used in the EIS should be considered final at this point, but that the future noise exposure maps, which reflect current noise abatement policies, should be considered preliminary. These maps should be subject to modification during an update of the ORD noise mitigation plan. In response, please see our response to ONCC comment 16.<br><br>In addition, ONCC states that the ultimate goal of OMP noise mitigation and abatement programs should be to ensure that noise impacts from the operation of each reconfigured runway phase should be less than the noise impact in 2000.<br><br>Continued on the following page. |

The ultimate goal of the noise mitigation and abatement programs as part of the OMP should demonstrate that the aircraft noise impacts of operations in the calendar year immediately following the year in which the first runway is first used, and in each calendar year thereafter, will be less than the noise impact in year 2000. 24

## 5. REPORT CRITERIA AND ASSOCIATED COSTS FOR EVALUATING NOISE MITIGATION INITIATIVES

The FAA should recommend the criteria for the evaluation of the noise mitigation measures for the Selected Build Alternative, with input from the City of Chicago and ONCC. The FAA and City of Chicago should prepare cost estimates for these mitigation measures. 25

## 6. CITY OF CHICAGO SPONSORSHIP OF ONGOING PUBLIC OUTREACH PROGRAMS AND FORUMS

The City of Chicago should sponsor formal and informal workshops at periodic points during the planning and implementation processes of the selected OMP Build Alternative. These forums - presented by City of Chicago Department of Aviation staff, consultants, and FAA representatives - should provide information and answer questions about the progress of the selected Build Alternative. Information regarding the project and its environmental impact should be made understandable to the general public. This process should encourage dialogue and allow for opportunities for maximum input from the general public.

Community involvement may be comprised of a combination of small group briefings, public information forums or workshops, or formal public hearings.

The City of Chicago should be prepared to disseminate ongoing construction awareness information for communities that could potentially be affected by scheduled runway and taxiway construction and maintenance work at O'Hare International Airport.

Finally, the City of Chicago should make a concerted effort to notify residents when changes in aircraft operating procedures occur throughout construction of the selected Build Alternative. 26

## CONCLUSION

While there are numerous issues that should be considered in the environmental process for the O'Hare Modernization Program (OMP), it is important to ONCC members that the mitigation of aircraft noise be a paramount consideration. Aircraft noise adversely affects the daily lives of thousands of people residing, working and attending schools in the vicinity of an airport and constitutes a major negative impact on the quality of life in communities nearby.

16

| Comment | Response |
|---|---|
| 24 continued | In response, the FAA notes that we conducted our noise impact analysis utilizing 2002 baseline contours. The FAA and the City of Chicago agree to seek this result, subject to the limitations of the funding commitment made in response to ONCC comment and to the practicability of the noise abatement planning efforts to be undertaken by the ONCC with support from the FAA and the City.<br><br>The FAA and the City of Chicago agree to seek this result, subject to the limitations of the funding commitment made in response to ONCC comment and to the practicability of the noise abatement planning efforts to be undertaken by the ONCC with support from the FAA and the City. |
| 25 | ONCC requests that the criteria for evaluation of the noise mitigations measures should be recommended by FAA, with input from the City of Chicago and ONCC. We support ONCC's involvement with O'Hare noise mitigation measures. Our long-standing policy is that the Day-Night Average Sound Level of 65 dBA (65 DNL) is the primary criterion for evaluating aircraft noise impacts, noise mitigation, and eligibility for FAA funding assistance. The FAA has used that criterion for evaluation of the alternatives in this EIS and recommends it for future evaluations at O'Hare. Other criteria that may be selected for use by the ONCC and the City at that time may include the year(s) of evaluation, the operational assumptions, locally-established noise compatibility standards, and supplemental metrics. See response to ONCC comment 4 with regard to the cost estimates. |
| 26 | The final comments of ONCC pertain to public outreach programs and forums. They urge the City of Chicago to sponsor formal and informal workshops at periodic points during the planning and implementation processes of the selected OMP Build Alternative. The FAA acknowledges the request and notes that in **Section 5.20** of the EIS, the City has committed to a public outreach program throughout the construction process. Dialogue with the public and opportunities for input will be encouraged. Other forums might be small group briefings, public information workshops, and public hearings, as appropriate and as jointly agreed by ONCC and the City of Chicago. |

| Comment | Response |
|---|---|
| 26 | *Continued from the previous page.*<br><br>The City of Chicago also agrees, as requested by the ONCC, to disseminate ongoing construction awareness information for communities that could potentially be affected by scheduled runway and taxiway construction and maintenance work, and significant changes to aircraft operating procedures at O'Hare. These outreach efforts may resemble current methods used by the City during substantial airfield disruptions or may be expanded to include other methods suggested by the ONCC and the public. **Section 5.20.4.5** of the Final EIS provides a list of methods that the DOA has used in the past to coordinate with and/or inform the public regarding various construction activities and that will be used as public coordination devices for the Build Alternatives. |

Due to the importance of these issues, the ONCC stresses that the FAA and City of Chicago continue to promote open dialogue, accessibility to information, and forums for the exchange of viewpoints on the impacts, alternatives, and mitigation prospects.

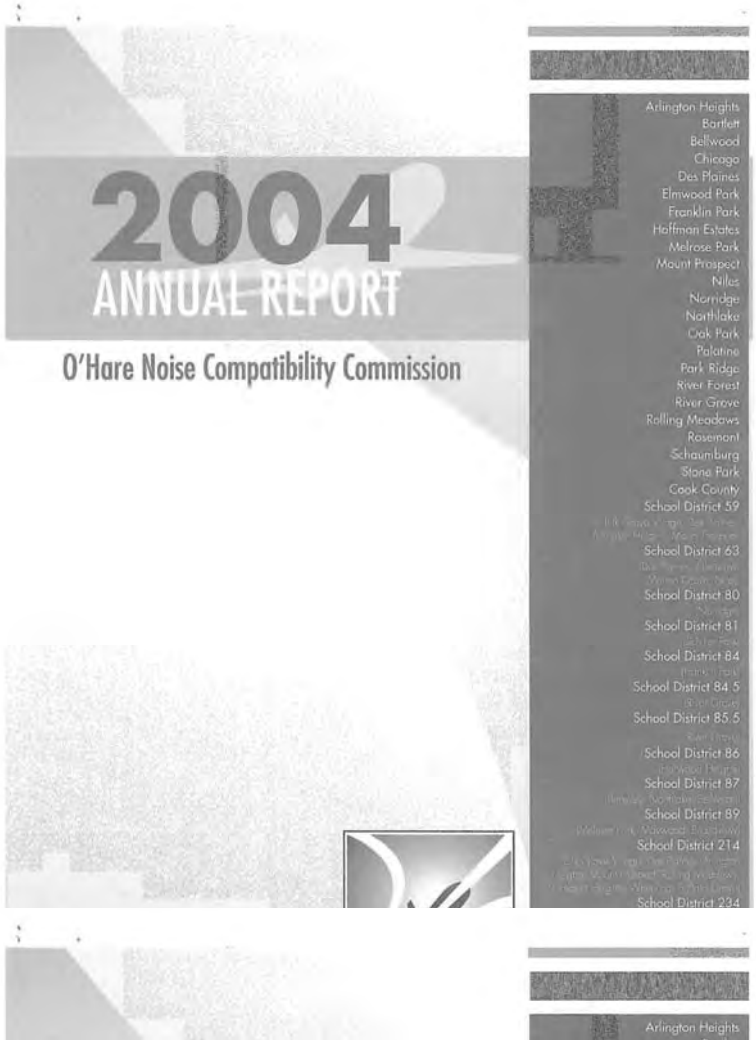
The ONCC and its members sincerely thank the FAA for the opportunity to present comments and for its consideration of the potential noise impacts of the O'Hare Modernization Program (OMP) on the quality of life of residents around O'Hare International Airport. The ONCC urges that the aircraft noise issues and comments included above be thoroughly addressed during the Environmental Impact Statement (EIS) process. 27

Respectfully Submitted,

Mayor Arlene J. Mulder
Village of Arlington Heights and
Chairperson, O'Hare Noise Compatibility Commission
April 6, 2005

17

| Comment | Response |
|---|---|
| 27 | ONCC concludes its comments by stressing the need for continued dialogue and access to information, and urging that the above comments be addressed during the EIS process. We thank the ONCC for its thoughtful comments and note that the above responses will be placed for public view in the Final EIS. Both the FAA and the City of Chicago commit to continued dialogue with and access to information by ONCC during the remainder of this EIS process and during subsequent implementation phases. |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School District 63
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School District 84.5
School District 85.5
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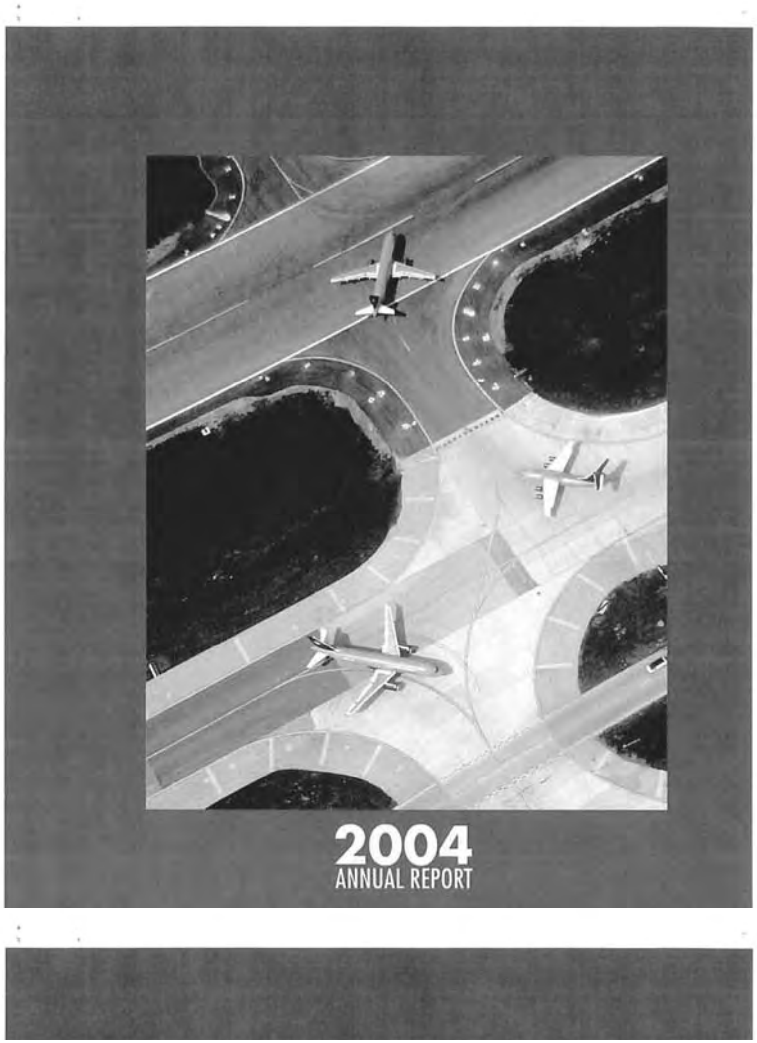
Arlington Heights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# ONCC Membership

Arlington Heights
Mayor Arlene J. Mulder (Chairperson)
Alternates: Stephen Dodey
Bill Enright

Bartlett
Mayor Catherine Melchert
Alternates: John Kavouris, Paula Schumacher

Bellwood
Mayor Frank Pasquale
Alternate: Roy McCampbell

Chicago
Commissioner John Roberson
Alternate: Patrick Harney

Cook County
Mr. Frank Damato
(Residential Committee Chair)
Alternate: Trudy Zisja

Des Plaines
Mayor Anthony Arredia
Alternate: Thomas Becker

Elmwood Park
Mayor Peter Silvestri
Alternates: Alan Kaminski
John Dalicandro

Franklin Park
Mayor Don Pritchett

Hoffman Estates
Mayor William McLeod
Alternate: Jennifer Mitchell

Melrose Park
Mayor Ronald Serpico
Alternate: Carlotta Ariola

Mount Prospect
Mayor Gerald Farley
(Technical Committee Vice Chair)
Alternates: Irvana Wilks
David Strahl

Niles
Mayor Nicholas B. Blase
Alternates: Joe Annunzio
Steven Vinezeano

Norridge
Mayor Earl Field
Designate: Judith Duane Bernardi

Oak Park
Mayor Joanne Trapani
Alternates: Pete Dame
Galen Gockel

Palatine
Mayor Rita Mullins
(Technical Committee Chair)
Alternates: Robert Kenny
Reid Ottesen

Park Ridge
Mayor Michael Mulkous
Alternates: Dawn Dicker
Jeffrey Cox

River Forest
Mayor Frank Paris
Alternate: Dale Rider

River Grove
Acting Mayor Marilynn May
Alternates: Joseph Campell
Frank Uitvlugt

Rolling Meadows
Mayor Kenneth Nelson
Alternates: Barry J. Krumsiek
Glenn Adams
Thomas Melene

Rosemont
Mayor Donald Stephens
Alternates: Jack Dargan
Kevin Lambert

Schaumburg
Mayor Al Larson
Alternate: June Johnson

Stone Park
Mayor Beniamino Mazzullo
Alternates: Loretta Toens
Robert Gonzini
Marco Paz

School District 59
Superintendent Daniel Schwers
Alternates: Tony Rocci
Ruth Glaede

School District 63
Superintendent Kathleen Williams
Alternate: Michael Nowlan

School District 81
Superintendent Roberta J. Taylor
Alternate: Jessica Donato

School District 84
Superintendent David Nemec
Alternate: John Barry

School District 84.5
Superintendent Jeffrey Schleff
Alternate: Denis O'Connor

School District 85.5
Superintendent Jon Bartelt

School District 86
Superintendent Raymond J. Kuper
(Vice Chairperson)
Alternates: Paul Draniczarek
Thomas Simmons

School District 87
Superintendent Joseph Palermo
Alternates: Grant Saba
Michael Locigno

School District 89
Superintendent Cynthia Broughton
Alternates: Michael Cushion
Susan Carter

School District 214
Superintendent Elizabeth Ennis
Alternates: Dale Falk
James Popernik
Seymour Schwartz
Bob Smith

School District 234
Superintendent Robert Lupe
Alternate: Cheryl Flinn

School District 299
Chief Executive Officer Arne Hansen
Alternate: Eric Johnson

School District 401
Superintendent Frank McKinzie
Alternate: Thomas Zelek

ONCC Staff
Brian Gilligan, Executive Director
Jeanette Camacho, Administrative Coordinator

ONCC Membership

# MESSAGE FROM THE CHAIR

As a former teacher, I know the tremendous role that education plays in addressing important and complex issues. Aircraft noise is a great example of the power of knowledge. The O'Hare Noise Compatibility Commission (ONCC) has found that the more citizens know about aircraft noise, from the physics behind it to the economic realities that affect it, the more they understand and support the efforts to manage and reduce aircraft noise.

Through the ONCC Web site (www.oharenoise.org), Noise 101 presentations, more than 30 public meetings each year, guest speakers and in many other ways we bring unbiased facts to the discussions on aircraft noise. The Commission believes that everyone affected by aircraft noise should understand as much as possible about this vital issue.

One of the exciting things that we all learned in 2004 is that much quieter aircraft are coming soon. During one of the several special ONCC-sponsored presentations by aircraft noise experts, we learned that the goal for the next generation of airliners is to confine most of the noise they produce to airport properties. Aircraft manufacturers and others with the ability to affect aircraft noise are hearing our call to help improve the quality of life in our communities. As a result, the future looks brighter...and quieter.

I hope that you find the ONCC 2004 Annual Report interesting. It is part of our efforts to enlighten and educate, so the teacher in me also hopes that you learn something from it.

Sincerely,

Arlene J. Mulder
Chairperson, O'Hare Noise Compatibility Commission
Mayor, Village of Arlington Heights

# Frequently Used Terms

**A-Weighted Sound (dBA)**—A-weighted decibels adjust sound pressure towards the frequency range of human hearing.

**Advanced Flight Track Procedures (AFTPro)**—AFTPro will utilize existing Area Navigation (RNAV) technology enabling aircraft to adhere to a track over the ground with greater precision. The procedures developed follow the preferential nighttime flight tracks that were designed to navigate aircraft towards areas of more compatible land use, such as forest preserves, highway corridors and industrial areas. The use of this technology will automatically compensate for wind drift and air speed while ensuring airspace safety, efficiency and, when possible, minimizing the noise impacts to surrounding residences.

**Ambient Noise**—The totality of noise in a given place and time; usually a composite of sounds from varying sources at varying distances.

**Day-Night Average Sound Level (DNL)**—A noise measure used to describe average aircraft noise levels over a 24-hour period, typically an average day over the course of a year. DNL penalizes aircraft operations that occur between the hours of 10 p.m. and 7 a.m. by 10 decibels to account for increased annoyance when ambient noise levels are lower and people are trying to sleep. DNL may be determined for individual locations or expressed in noise contours. DNL is currently the accepted measure for aircraft noise analysis.

**Decibel (dB)**—Sound is measured by its pressure or energy in terms of decibels. The decibel scale is logarithmic; when the scale goes up by ten, the perceived sound is two times as loud.

**Ldn**—(See DNL). Ldn is used in place for DNL in mathematical equations only.

**Leq**—Equivalent Sound Level. The steady A-weighted sound level over any specified period (not necessarily 24 hours) that has the same acoustic energy as the fluctuating noise during that period (with no consideration of a nighttime weighting). It is a measure of cumulative acoustical energy. Because the time interval may vary, it should be specified by a subscript (such as Leq for an 8-hour exposure to noise)

Frequently Used Terms

## Frequently Used Terms

or be clearly understood from the context.

**RNAV**—RNAV stands for Area Navigation. RNAV is a method of navigation which permits aircraft operations on any desired flight path within the coverage of station referenced navigation aids or the limits of the capability of self contained aids, or any combination thereof. Airborne RNAV equipment automatically determines aircraft position by processing data from one or more sensors and guides the aircraft in accordance with appropriate routing instructions. Additional navigation parameters such as distance and bearing to a preselected waypoint can also be computed from the aircraft position and the location of the waypoint, depending upon the capability of the RNAV equipment. Position can be displayed to the pilot in various ways, most practically in terms of the aircraft position relative to the precomputed desired track. Most RNA equipment can employ any lateral displacement of the aircraft from the desired track to generate track guidance signals to the auto-pilot. With other less sophisticated RNAV equipment manual corrective action is taken by the pilot.

**Noise**—Unwanted sound.

**Noise Abatement**—A measure or action that minimizes the amount or impact of noise on the environs of an airport. Noise abatement measures include aircraft operating procedures and use or disuse of certain runways or flight tracks.

**Noise Contour Map**—A map representing average annual noise levels summarized by lines connecting points of equal noise exposure.

**Single Event**—An occurrence of audible noise, usually above a specified minimum noise level, caused by an intrusive source such as an aircraft overflight, passing train or ship's horn.

**Sound**—Sound is the result of a sound source vibration in the air. The vibration produces alternating bands of relatively dense and sparse particles of air, spreading outward from the source in the same way as ripples do on water after a stone is thrown into it. The result of the movement is fluctuation in the normal atmospheric pressure or sound waves.

**Sound Exposure Level (SEL)**—A measure of the physical energy of the noise event that takes into account both intensity and duration. Expressed in decibels (db).

**Stage 2 Aircraft**—Aircraft that meet the noise levels prescribed by FAR Part 36 and are less stringent than those established for the quieter designation (Stage 3). The Airport Noise and Capacity Act required the phase-out of all Stage 2 aircraft over 75,000 pounds by December 31, 1999.

**Stage 3 Aircraft**—Aircraft that meet the most stringent noise levels set in FAR Part 36.

## Commission Overview

### *About the ONCC*

The O'Hare Noise Compatibility Commission is the only organization that is dedicated to reducing aircraft noise in the communities around O'Hare International Airport. It was established in 1996, following an invitation from Chicago Mayor Richard M. Daley to suburban mayors to begin constructive dialogues on aircraft noise issues with the goal of reducing the noise.

Since its founding, the ONCC's membership has grown tremendously and now includes 22 municipalities, Cook County and 14 school districts that represent nearly 40 communities around O'Hare. These members are represented by their mayors and school superintendents at nearly 30 public meetings that the ONCC and its committees hold annually.

The ONCC, which has a full-time executive director and an administrative coordinator, operates through three standing committees. Technical, Residential Sound Insulation and School Sound Insulation. The Technical Committee identifies and promotes technological advancements that are designed to reduce aircraft noise. The sound insulation committees oversee one of the most aggressive residential noise remediation programs in the nation and the world's largest school sound insulation program. The total spending on these programs since they began is approximately $400 million.

The ONCC believes in replacing confrontation with cooperation by bringing together the City of Chicago and suburban communities, the airlines, the Federal Aviation Administration (FAA), the controllers and the pilots to reduce the impact of aircraft noise in the communities surrounding O'Hare. This approach has reduced aircraft noise and increased spending for sound insulation programs.

Commission Overview

# 2004 Highlights

## ONCC Welcomes New Commissioner

In 2004, the O'Hare Noise Compatibility Commission welcomed Aviation Commissioner John A. Roberson as the Chicago's official representative on the ONCC. Roberson was appointed by Mayor Richard M. Daley to oversee all airport terminal, airfield and landside operations, maintenance, fiscal affairs, planning and capital development for O'Hare and Midway International Airports. Commissioner Roberson oversees a staff of over 2,000 employees with an annual operating budget of over $800 million.

Roberson brings extensive management experience to the Department of Aviation. In addition to his previous position as Chicago's Executive Director of Construction and Permits, he served as Commissioner of the Department of Buildings, Commissioner of Sewers, and Chief of Development for the Chicago Housing Authority (CHA).

Prior to joining CHA, Roberson served as an assistant to the Mayor, coordinating neighborhood development and major infrastructure initiatives. He also served as Purchasing Manager for the Chicago Park District, responsible for managing the Contracts Division and the Minority and Woman-Owned Business Program.

Roberson is a United States Air Force veteran who received commendations during the Persian Gulf War. He is President of the Chicago Metropolitan Housing Development Corporation, Chairman of the Chicago Public Schools JROTC Advisory Board and involved in several community and civic activities.

Since his appointment as Aviation Commissioner, Roberson has worked closely with the ONCC on numerous aircraft noise issues and programs. He and his staff provide ONCC members with frequent updates on the operations at O'Hare.

## O'Hare Home and School Noise Insulation Programs Expanded

The 2004 O'Hare Residential Sound Insulation Program included an additional 600 homes, bringing the total number of single-family owner-occupied homes in the program to nearly 6,000 since 1996, the year Mayor Daley created the program with an original pledge to insulate 3,000 homes. More than a dozen communities around O'Hare, both ONCC members and non-members, have benefited from the residential sound insulation program.

In addition, $9.02 million was earmarked for the 2004 school sound insulation program, which will allow work to be started and completed at four more schools. Those schools are MacArthur Middle School, Berkeley; Abraham Lincoln Middle School, Park Ridge; Al Hattendorf E.C.C., Elk Grove Village; and Embers Elementary School, Park Ridge.

2004 Highlights

# 2004 Highlight

## Fly Quiet Award

In 2004, the ONCC presented its annual Fly Quiet award to American Airlines for the second consecutive year. The airline was recognized by the Commission for its sustained commitment to the Fly Quiet Program.

The Fly Quiet Program began in 1997 and is designed to reduce nighttime aircraft noise over residential areas around O'Hare through the use of preferred departure runways and flight paths. In addition, the program encourages airlines to use the O'Hare Ground Run-up Enclosure, which significantly reduces the impact of aircraft engine noise during the routine testing and maintenance that occurs primarily at night.

In addition to supporting the elements of the Fly Quiet Program, American Airlines was also cited for its use of quieter aircraft at night and its outstanding support of the ONCC's other noise reduction efforts.

## Quieter Aircraft Arriving Soon

During an ONCC Technical Committee briefing last year, a Boeing Aircraft representative said that a major goal in reducing aircraft noise is closer to achievement than many people might think. Taso Chrisafis, Regional Director of Product Marketing for Boeing Commercial Airplanes, said that the new 289-passenger Boeing 787 would have a drastically reduced noise footprint compared to other popular aircraft. In fact, Boeing predicts that the highest noise levels for the 787 will be contained entirely within the boundaries of O'Hare and other major U.S. airports that will be served by the new aircraft.

Production of the 787, which Boeing has dubbed "Dreamliner," is scheduled to begin in 2006. The first flights are slated for the following year. Airbus is also scheduled to roll out the new 555-passenger A380 in 2006. The European-based company claims that it, too, is a much quieter aircraft than current models.

## O'Hare Modernization Program

The Federal Aviation Administration's Airports Environmental Manager in Chicago, Michael MacMullen, continued to brief Commission members last year on the Environmental Impact Statement (EIS) process for the O'Hare Modernization Program (OMP).

While the Commission remains neutral on the OMP, it is vitally interested in all developments that might affect aircraft noise around O'Hare. MacMullen assured the Commission members that the environmental review is extremely thorough and detailed. He added that the final EIS would evaluate potential aircraft noise impacts and provide substantial detail on how

2004 Highlight

2004 Highlight

## ONCC on the National Stage

The O'Hare Noise Compatibility Commission was invited last year to join a new U.S. Government initiative focused on aircraft noise reduction sponsored by the FAA and NASA. The ONCC was the only community-based aircraft noise group invited to participate on the Partnership for Air Transportation Noise and Emissions Reduction (PARTNER) Center of Excellence Advisory Board. The FAA's Chief Scientific and Technical Advisor for Environment, Lourdes Q. Maurice, extended the invitation citing the ONCC's "outstanding reputation and track record of success."

The PARTNER Center of Excellence is a world-class collaboration of academia, industry and government to identify solutions for existing and anticipated aircraft noise and emissions-related problems. The Center will conduct basic research and engineering development and will develop prototype solutions. More information is available online at www.coe.faa.gov.

In addition, the O'Hare Noise Compatibility Commission was one of only three community-based organizations that participated last year in a new federal study on the long-term environmental effects of aviation and ways to reduce those effects, including those from aircraft noise. The study was mandated by the U.S. Congress under terms of the budget reauthorization for the Federal Aviation Administration. The FAA and NASA led the study, which had the goals of finding ways to reduce aircraft noise and emissions and to increase aircraft fuel efficiency.

In addition to the ONCC, the study's participants included representatives from the Departments of Defense, Commerce and Transportation, the Environmental Protection Agency and aviation industry groups.

## ONCC Support in D.C.

U.S. Representative Jan Schakowsky (D-IL 9th) spoke at an ONCC meeting last year and pledged to be one of the Commission's partners in Washington, D.C. on aircraft noise issues.

While noting that federal money for aircraft noise related projects is not currently threatened, Schakowsky promised to support full funding of the ONCC's sound insulation programs and NASA's Quiet Aircraft Technology Program. "You can look to me and my staff for assistance on issues that are important to the ONCC," she said.

Schakowsky's 9th Congressional District includes Park Ridge, Chicago, Rosemont, Norridge, Niles and Des Plaines, which are all ONCC members. Schakowsky, elected to Congress in 1998, is a member of the House Energy and Commerce Committee.

2004 Highlight

# Technical Initiatives

A significant part of the O'Hare Noise Compatibility Commission's (ONCC) mission is to reduce aircraft noise at its source. To that end, the ONCC continually investigates and promotes cutting-edge technology and flight operations procedures. In addition, the ONCC monitors progress in reducing aircraft noise around O'Hare and works to develop systems and procedures that enhance current noise reduction programs. Much of this work is done through the ONCC Technical Committee, chaired by Palatine Mayor Rita L. Mullins.

The Committee continued to monitor ongoing aircraft noise mitigation programs during 2004 and was pleased with the FAA decision to extend the O'Hare Control Tower Order for another year. The order permits the use of overlay maps on radar screens to assist air traffic controllers in keeping departing aircraft on nighttime noise abatement flight tracks and away from residential areas. The overlays allow the controllers to give pilots course corrections to account for wind drift during departures. Strong winds can push an aircraft away from a desired flight track even though the pilot maintains an assigned heading. At night, a pilot might not realize when the aircraft is flying over residential areas. A decision on making the order permanent will come at a later date once there is sufficient information about the procedure's effectiveness.

During 2004, members of the Committee also met with the O'Hare Control Tower Manager and the local president of the air traffic controllers' association to improve lines of communications and the workability of the Tower Order.

While monthly aircraft noise reports fluctuate depending on wind directions and runway usage, overall aircraft noise remained at lower levels in 2004 as compared to previous years. This occurred while O'Hare was recording 928,691 aircraft operations last year.

The Technical Committee worked with the City of Chicago in upgrading the Airport Noise Monitoring System (ANMS) and improving the reports generated by the system. The ANMS collects aircraft noise data 24 hours a day through its network of permanent noise monitors that are strategically positioned around O'Hare. Portable monitors are also deployed to various communities to sample noise data on a temporary basis. The ONCC reviews the ANMS reports monthly and used an independent aircraft noise expert to verify the system's methodology and data.

In addition to the data provided by the noise monitors, another indication that aircraft noise is being reduced is the decreasing number of complaints submitted to the O'Hare Noise Hotline. A trend analysis shows a dramatic reduction from a peak of 25,773 calls in 1998 to 3,067 calls in 2004, a reduction of 88 percent.

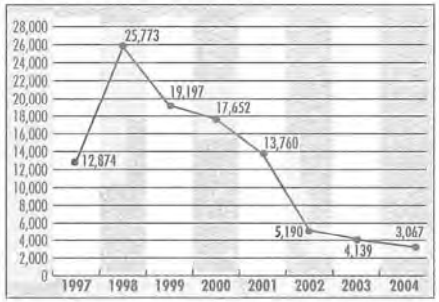
Review of City of Chicago Department of Aviation projects, as they relate to noise mitigation efforts, is another important task of the Technical Committee. During 2004 the Committee members participated in briefings and forums sponsored by the Chicago Department of Aviation and Federal Aviation Administration on the Environmental Impact Statement (EIS) process for the O'Hare Modernization Program.

In order to enhance noise mitigation efforts, technical briefings for ONCC members and the public are often scheduled. In 2004 the Committee received expert briefings from representatives of the Chicago Department of Aviation, Boeing Aircraft, American Airlines, and Rolls Royce Aircraft Engine Company.

Technical Initiatives

Technical Initiatives

## O'Hare Noise Hot Line Call Trend Report




**Annual Airport Noise Report Summary (Aircraft DNL)**
Chicago O'Hare International Airport
Period: December 2004
Metric: Aircraft DNL

| ANS # | Community | Last 12 Months Noise Levels: Jan 04 | Feb 04 | Mar 04 | Apr 04 | May 04 | Jun 04 | Jul 04 | Aug 04 | Sep 04 | Oct 04 | Nov 04 | Dec[1] 04 | Last Dec 03 | Last 12 Months[2] | Modeled 1997 Values | Last 12 Months[3] | Modeled 2000 Values |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Arlington Heights | 58.7 | 59.9 | 61.3 | 61.3 | 62.2 | 62.2 | 61.7 | 62.3 | 61.2 | 61.8 | 61.8 | **61.3** | 60.8 | [illegible] | 63.0 | [illegible] | 63.0 |
| 2 | Mehrer Park | 55.1 | 55.8 | 57.8 | 56.8 | 57.3 | 57.4 | 54.8 | 55.1 | 56.1 | 55.5 | 54.8 | [illegible] | 55.7 | [illegible] | 63.4 | [illegible] | 63.0 |
| 3 | Bensenville | 59.4 | 59.7 | 62.2 | 62.8 | 61.6 | 60.7 | 59.6 | 61.4 | 60.8 | 60.2 | 60.8 | **61.0** | 61.5 | 61.0 | 71.3 | [illegible] | 67.3 |
| 4 | Schiller Park | 55.9 | 57.7 | 58.6 | 59.2 | 58.6 | 57.3 | 57.4 | 56.7 | 60.2 | 60.5 | 55.6 | **57.0** | 56.7 | [illegible] | 62.0 | [illegible] | 63.6 |
| 5 | Chicago | 56.4 | 55.6 | 56.6 | 56.5 | 58.5 | 57.3 | 57.9 | 56.8 | 56.1 | 57.3 | 57.6 | **57.1** | 57.1 | 57.0 | 60.6 | [illegible] | 59.4 |
| 6 | Chicago | 55.5 | 54.6 | 55.9 | 56.6 | 58.1 | 55.9 | 57.4 | 56.5 | 56.7 | 57.2 | 57.4 | **54.9** | 55.5 | [illegible] | 61.3 | [illegible] | 59.6 |
| 7 | Des Plaines | 57.7 | 56.1 | 56.9 | 58.7 | 58.6 | 58.7 | 59.4 | 59.8 | 55.1 | 59.0 | 60.1 | [illegible] | 58.1 | [illegible] | 63.4 | [illegible] | 62.0 |
| 8 | Des Plaines | 64.4 | 64.8 | 65.4 | 66.2 | 67.6 | 67.1 | 67.4 | 66.6 | 66.0 | 67.1 | 66.5 | **64.5** | 64.9 | [illegible] | 70.0 | [illegible] | 68.4 |
| 9 | Des Plaines | 61.7 | 62.3 | 63.8 | 64.2 | 63.9 | 65.0 | 67.4 | 63.6 | 65.7 | 66.0 | 65.9 | [illegible] | 61.3 | [illegible] | 74.3 | [illegible] | 68.9 |
| 10 | Kelling Meadows | 57.2 | 58.0 | 59.9 | 59.1 | 61.7 | 60.9 | 60.4 | 61.1 | 61.8 | 60.9 | 58.2 | **59.7** | 60.1 | [illegible] | 59.0 | **60.2** | 60.8 |
| 11 | Chicago | 56.3 | 57.9 | 58.3 | 60.5 | 59.4 | 59.3 | 59.1 | 58.8 | 59.3 | 58.3 | 57.8 | **57.2** | 57.4 | [illegible] | 60.9 | [illegible] | 60.7 |
| 12 | Elk Grove | 58.2 | 59.1 | 58.3 | 57.5 | 56.5 | 60.1 | 58.7 | 59.6 | 57.8 | 59.4 | 59.7 | **60.7** | 60.0 | [illegible] | 66.7 | [illegible] | 62.1 |
| 13 | Elk Grove | 71.8 | 72.9 | 74.1 | 73.1 | 73.4 | 73.2 | 74.6 | 73.2 | 73.2 | 73.0 | 72.8 | **74.1** | 74.6 | [illegible] | 80.0 | [illegible] | 77.6 |
| 14 | Elk Grove | 61.0 | 62.1 | 63.2 | 64.7 | 63.3 | 63.6 | 63.7 | 64.1 | 63.4 | 64.1 | 64.0 | **63.1** | 63.6 | [illegible] | 67.6 | [illegible] | 65.3 |
| 15 | Franklin Park | 57.8 | 57.4 | 58.6 | 57.3 | 58.3 | 57.8 | 56.4 | 58.4 | 60.1 | 60.4 | 58.1 | [illegible] | 58.3 | [illegible] | 64.1 | [illegible] | 62.4 |
| 16 | Franklin Park | 68.2 | 67.6 | 67.6 | 67.3 | 68.8 | 70.3 | 69.6 | 70.5 | 71.2 | 71.5 | 70.1 | **70.6** | 69.8 | [illegible] | 72.2 | [illegible] | 72.1 |
| 17 | Harwood Heights | 64.5 | 64.3 | 66.7 | 64.7 | 64.6 | 66.6 | 66.0 | 65.6 | 63.2 | 64.0 | 63.9 | [illegible] | 66.0 | **66.5** | 66.4 | **66.5** | 65.4 |
| 18 | Rosemont | 57.9 | 57.9 | 59.9 | 59.9 | 56.4 | 59.9 | 59.4 | 60.1 | 60.4 | 59.9 | 59.2 | [illegible] | 58.9 | [illegible] | 64.7 | [illegible] | 61.7 |
| 19 | Mount Prospect | 59.0 | 60.1 | 61.0 | 61.1 | 61.8 | 61.3 | 61.6 | 60.8 | 60.8 | 61.8 | 61.1 | **60.4** | 59.9 | [illegible] | 63.3 | [illegible] | 62.4 |
| 20 | Mount Prospect | 53.0 | 54.8 | 54.4 | 57.0 | 56.0 | 57.6 | 58.3 | 56.8 | 54.8 | 56.8 | 56.9 | **54.8** | 54.8 | [illegible] | 59.6 | [illegible] | 58.6 |
| 21 | Norridge | 68.9 | 68.7 | 68.6 | 67.3 | 66.9 | 68.7 | 68.7 | — | — | 65.7 | 67.8 | [illegible] | 67.7 | [illegible] | 69.2 | **67.1** | 67.7 |
| 22 | Northlake | 62.0 | 62.4 | 64.8 | 63.3 | 63.8 | 63.5 | 64.1 | 63.0 | 66.7 | 65.0 | 64.5 | [illegible] | 63.9 | [illegible] | 73.5 | [illegible] | 69.1 |
| 23 | Park Ridge | 54.8 | 55.8 | 56.8 | 57.6 | 58.8 | 58.0 | 59.3 | 58.0 | 56.7 | 57.3 | 57.1 | **56.7** | 55.7 | [illegible] | 60.5 | [illegible] | 58.8 |
| 24 | Park Ridge | 57.2 | 56.1 | 57.7 | 58.4 | 59.1 | 58.2 | 58.9 | 58.1 | 57.1 | 60.1 | 56.8 | [illegible] | 57.0 | [illegible] | 69.1 | [illegible] | 61.8 |
| 25 | Park Ridge | 58.6 | 57.1 | 58.1 | 58.6 | 58.9 | 58.9 | 59.3 | 58.0 | 58.3 | 59.3 | 58.4 | **58.3** | 58.9 | [illegible] | 64.0 | [illegible] | 61.2 |
| 26 | Rosemont | 63.7 | 64.2 | 66.1 | 66.8 | 65.5 | 64.0 | 65.5 | 64.1 | 62.4 | 66.5 | 63.4 | **62.3** | 63.2 | [illegible] | 73.0 | [illegible] | 67.6 |
| 27 | Schiller Park | 75.1 | 76.5 | 78.4 | 77.1 | 76.3 | 79.0 | 78.5 | 77.7 | 75.3 | 75.2 | 77.3 | [illegible] | 78.1 | [illegible] | 79.6 | [illegible] | 78.3 |
| 28 | Wood Dale | 68.4 | 67.4 | 63.6 | 62.9 | 65.2 | 61.7 | 64.4 | 63.4 | 61.5 | 61.9 | 61.8 | [illegible] | 66.3 | [illegible] | 71.2 | [illegible] | 66.4 |
| 29 | Elk Grove | 56.2 | 56.4 | 59.6 | 57.3 | 58.3 | 60.0 | 59.4 | 59.0 | 57.4 | 58.2 | 58.3 | [illegible] | 58.3 | [illegible] | 68.3 | [illegible] | 61.2 |
| 30 | Unincorporated Cook | 58.9 | 59.8 | 62.5 | 60.7 | 61.0 | 62.4 | 63.4 | — | — | 63.5 | 63.5 | [illegible] | 60.9 | [illegible] | 70.0 | [illegible] | 63.4 |

Technical Initiatives

# Residential Sound Insulation Program

The O'Hare Residential Sound Insulation Program is considered one of the most aggressive programs of its kind in the nation. It is operated and funded by the City of Chicago with monies from the Passenger Facilities Charge (PFC). The program is coordinated and directed by the ONCC Residential Sound Insulation Committee, which is chaired by Cook County Director of Community and Intergovernmental Affairs Frank Damato.

The goal of the program, which began as a 10-home pilot project in 1995, is to improve the quality of life for residents surrounding O'Hare International Airport by reducing the impact of aircraft noise in homes. Single-family, owner-occupied residences constructed before October 1998 and impacted by aircraft noise levels, as determined by the 2000 Airport Noise Contour, are eligible for the program. The sound insulation work makes it easier for residents to sleep, talk on the phone, watch television, listen to music, or simply have a conversation in their own homes.

An ONCC survey of homeowners who have participated in the Residential Sound Insulation Program found a very high level of satisfaction. Ninety-four percent of survey respondents indicated that the quality of living inside their homes improved or greatly improved after the sound insulation work was completed. When asked if they would recommend the Program to their eligible neighbors, 98 percent said that they would.

### O'Hare Residential Sound Insulation Program Summary

| Community | Homes |
|---|---|
| Bensenville | 721 |
| Chicago | 178 |
| Des Plaines | 611 |
| Elk Grove | 267 |
| Franklin Park | 125 |
| Norridge | 559 |
| Northlake | 913 |
| Rosemont | 93 |
| Schiller Park | 471 |
| Elk Grove Township | 46 |
| Unincorp. Cook Co | |
| Leyden Township | |
| Unincorp. Cook Co | 1,314 |
| Unincorporated DuPage County | 218 |
| Wood Dale | 430 |
| TOTAL | 5,946 |

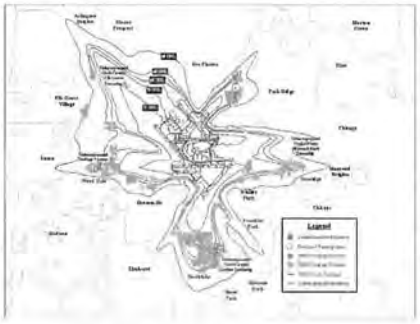
## Online Property Locator

The online O'Hare Property Locator makes it easy for residents around O'Hare Airport to determine if their homes are within the boundaries of the 2000 Noise Contour and possibly eligible for the Residential Sound Insulation Program.

The Web-based program pinpoints a home's location relative to the aircraft noise contours. Anyone with Internet access can type in a street address and quickly learn if the property is within one of the noise contours. The O'Hare Property Locator can be accessed through the Commission's Web site at www.oharenoise.org

Residential Sound Insulation Program

# Residential Sound Insulation Program



## Homeowners' Sound Insulation Guide

The O'Hare Noise Compatibility Commission and the Chicago Department of Aviation updated the "Sound Insulating Your Home" booklet in 2004. The booklet helps homeowners sound insulate their homes and assist municipalities that are developing building codes to include noise reduction measures. The free booklet draws from the extensive sound insulation expertise that both the Commission and the Chicago Aviation Department's Noise Office have gained through the O'Hare Residential Sound Insulation Program.

In addition, local governments are increasingly interested in strengthening their building codes to include requirements for sound insulation. Because there are no national guidelines for residential sound insulation, the booklet is a valuable resource for local government officials who are attempting to write new codes. The 30-page booklet includes detailed diagrams, photos and numerous suggestions for reducing noise inside homes. The booklet also contains a list of suppliers who offer acoustical windows and doors. The information in the booklet applies to existing homes and new construction.

"Sound Insulating Your Home" is available free of charge by

# School Sound Insulation Program

**O'Hare School Sound Insulation Program Summary**

| Community | Schools | Total Spent |
|---|---|---|
| Arlington Heights | 3 | $ 13,080,092 |
| Bensenville | 7 | $ 14,500,510 |
| Berkeley | 1 | $ 64,000 |
| Chicago | 14 | $ 32,774,472 |
| Des Plaines | 12 | $ 33,274,873 |
| Elmwood Park | 1 | $ 3,320,000 |
| Elk Grove Village | 8 | $ 15,729,850 |
| Elmhurst | 6 | $ 11,377,064 |
| Franklin Park | 7 | $ 13,242,929 |
| Harwood Heights | 1 | $ 4,179,765 |
| Itasca | 5 | $ 9,915,372 |
| Medinah | 2 | $ 923,671 |
| Melrose Park | 2 | $ 10,270,832 |
| Mt. Prospect | 2 | $ 4,476,031 |
| Norridge | 4 | $ 15,497,642 |
| Northlake | 8 | $ 24,321,158 |
| Park Ridge | 8 | $ 21,955,392 |
| River Grove | 3 | $ 9,966,775 |
| Roselle | 1 | $ 2,394,794 |
| Rosemont | 1 | $ 971,334 |
| Schiller Park | 5 | $ 6,404,047 |
| Wood Dale | 5 | $ 3,832,091 |
| TOTAL | 106 | $ 252,467,694 |

The O'Hare School Sound Insulation Program continued growing during 2004 to include more schools in the noise testing and design funding phases. In addition, insulation construction work continued on schools approved under previous years' programs.

The program is the largest of its kind in the world. It is operated and funded by the City of Chicago with monies from the Airport Improvement Program (AIP), the Passenger Facilities Charge (PFC) and Non-Passenger Facility Charges. It is overseen by the ONCC through its School Sound Insulation Committee, which is chaired by School District 86 Superintendent Dr. Raymond J. Kuper.

As of December 31, 2004 total disbursements for 106 schools with executed grant agreements was $252.4 million and construction has been completed at 93 schools. Thirteen schools are in close out process or in design and/or construction.

School Sound Insulation Program

# School Sound Insulation Program

## Testing

During 2004, the following schools were tested for aircraft noise levels:

- East Leyden High School, Franklin Park
- Elk Grove High School, Elk Grove Village
- Ridgewood High School, Norridge
- Stevenson Elementary School, Des Plaines
- Theodore Roosevelt Elementary School, Park Ridge
- St. Andrew's Lutheran, Park Ridge
- St. Cyprian School, River Grove
- Jane Addams School, Melrose Park
- George Washington Elementary, Park Ridge
- John Mills Elementary School, Elmwood Park
- George B. Carpenter Elementary School, Park Ridge
- Stevenson School, Melrose Park
- Brentwood Baptist Christian Academy, Des Plaines
- Zion Evangelical Lutheran Elementary, Bensenville
- Brentwood Elementary School, Des Plaines

Each of the schools, which were selected based on several established criteria including proximity to the airport, were tested during a four-day period when maximum aircraft activity was expected. Three noise monitors were used for each school. One monitor measured exterior noise levels, one measured noise levels with classroom windows closed and the third monitored noise levels with classroom windows open.

## Funding

In 2004, $9,022,695.00 million was approved for sound insulation design work at the following schools, which qualified based on testing in 2003:

- MacArthur Middle School, Berkeley
- Abraham Lincoln Middle School, Park Ridge
- Al Hattendorf E.C.C., Elk Grove Village
- Embers Elementary School, Park Ridge

## Construction Completed

The following schools completed sound insulation work in 2004 or were in the final punch-list phase of their projects:

- St. Zachary Elementary School (Private), Des Plaines
- St. Monica (Private), Chicago
- Bethlehem Lutheran School (Private), River Grove
- Taft High School District 299, Chicago
- Dever Elementary District 299, Chicago
- Mary Seat of Wisdom (Private), Park Ridge

## Construction Underway

The following schools had sound insulation construction underway during 2004:

| | |
|---|---|
| Maine East High School, Park Ridge | 98% Complete |
| St. Celestine Elementary, Elmwood Park | 99% Complete |
| Parkview Baptist Academy, Northlake | 94% Complete |
| MacArthur Middle School, Berkeley | 7% Complete |
| Abraham Lincoln Middle School, Park Ridge | 17% Complete |
| Al Hattendorf E.C.C., Elk Grove Village | 77% Complete |

# Community Outreach

Reducing aircraft noise is a complex issue and the work of the O'Hare Noise Compatibility Commission is multi-faceted. To help further a better understanding of the issues and the ONCC's efforts on behalf of all residents around O'Hare, the Commission reaches out to the communities in many ways.

## Internet Web site: www.oharenoise.org

Launched in 2001, www.oharenoise.org has become one of the main communication vehicles for the ONCC. The Web site is an international resource on aircraft noise issues. Thousands of visitors from around the world visit the site each month for the latest information and for educational materials that can be downloaded from the site.

### O'Hare Monitor

The *O'Hare Monitor* is the ONCC's quarterly newsletter distributed free to more than one thousand subscribers in the Chicago area and other parts of the U.S. The newsletter highlights the work of the ONCC and the many accomplishments in reducing aircraft noise at O'Hare. The *O'Hare Monitor* is also available via the ONCC Web site and e-mail.

### Aircraft Noise Reduction: The O'Hare Story

This video presentation continued its wide distribution in 2004 via DVD, VHS tape and Chicago area cable TV outlets. The program explains the work of the ONCC and provides visual details on many of the ONCC's projects, especially the residential and school sound insulation programs. The video is available by writing to the ONCC or ordering online via the ONCC Web site.

### Community Outreach Vehicle

Outfitted with technology to demonstrate aircraft noise issues, the Community Outreach Vehicle (COV) travels to schools, libraries and community events. The COV is owned and operated by the Chicago Department of Aviation. In addition to demonstrations on aircraft noise monitoring, an interactive aircraft noise demonstration system and video presentations, the COV also carries ONCC information to communities around the Chicago area.

### Additional Outreach Programs

The ONCC provides a wide variety of informative and educational presentations throughout the year.

Community Outreach

# Community Outreach

## Expert Guest Speaker Program

Experts in the field of aircraft noise and government programs appear regularly at the ONCC meetings, which are always open to the public. During 2004, the ONCC heard from

- Illinois Congresswoman Jan Schakowsky (D-9th)
- Michael MacMullen, Federal Aviation Administration
- Deanna Sloss, Chicago Department of Aviation
- Taso Chrisafis, The Boeing Company
- Paul Dunholter, Bridgenet
- Captain John Burton, American Airlines
- William Dalton, Rolls-Royce
- Joseph Annunzio, John Marshall Law School

## School Outreach Program

This free program makes available to teachers the expertise and resources of the ONCC and the Chicago Airport System on topics related to aviation and aircraft noise mitigation, including a wide variety of interactive learning tools, advanced technology demonstrations, multimedia presentations, guest speakers, and exhibits. The program can be tailored to meet specific curricula requirements for students from the primary grades to college level.

## Speakers Bureau

The ONCC Speakers Bureau makes available to community groups and service organizations expert speakers on O'Hare aircraft noise reduction programs and general aircraft noise issues.

## Noise 101 Presentations

The Noise 101 Program provides the basics on the issue of noise. Through lectures and Web-based presentations, information is provided on how noise is measured, how it is perceived, how it affects people and how it can be reduced.

Community Outreach

# 2005 Meeting Schedule

| O'Hare Noise Compatibility Commission | Residential Sound Insulation Committee | School Sound Insulation Committee | Technical Committee |
|---|---|---|---|
| All meetings begin at 8:00 a.m. | All meetings begin at 9:30 a.m. | All meetings begin at 10:00 a.m. | All meetings begin at 9:00 a.m. |
| January No Meeting | January No Meeting | January 26, 2005 School District 214 2121 S. Goebbert Rd., Arlington Heights. | January 25, 2005 Arlington Heights Village Hall 33 S. Arlington Hts. Rd. |
| February 4, 2005 Donald E. Stephens Convention Center 5555 N. River Rd., Rosemont | February 16, 2005 Norridge Village Hall 4000 N. Olcott | February No Meeting | February 22, 2005 Arlington Heights Village Hall 33 S. Arlington Hts. Rd. |
| March 11, 2005 Donald E. Stephens Convention Center 5555 N. River Rd., Rosemont | March 17, 2004 No Meeting | March No Meeting | March 22, 2005 Arlington Heights Village Hall 33 S. Arlington Hts. Rd. |
| April No Meeting | April 20, 2005 Norridge Village Hall 4000 N. Olcott | April 6, 2005 No Meeting | April No Meeting |
| May 6, 2005 Donald E. Stephens Convention Center 5555 N. River Rd., Rosemont | May 18, 2005 Norridge Village Hall 4000 N. Olcott | May 25, 2005 School District 59 2123 S. Arlington Hts. Rd., Arlington Heights | May 24, 2005 Arlington Heights Village Hall 33 S. Arlington Hts. Rd. |
| June 3, 2005 Donald E. Stephens Convention Center 5555 N. River Rd., Rosemont | June 15, 2005 Norridge Village Hall 4000 N. Olcott | June No Meeting | June No Meeting |
| July No Meeting | July No Meeting | July No Meeting | July No Meeting |
| August No Meeting | August No Meeting | August No Meeting | August 23, 2005 Arlington Heights Village Hall 33 S. Arlington Hts. Rd. |
| September 9, 2005 Donald E. Stephens Convention Center 5555 N. River Rd., Rosemont | September 21, 2005 Norridge Village Hall 4000 N. Olcott | September No Meeting | September 27, 2005 Arlington Heights Village Hall 33 S. Arlington Hts. Rd. |
| October 7, 2005 Donald E. Stephens Convention Center 5555 N. River Rd., Rosemont | October 19, 2005 Norridge Village Hall 4000 N. Olcott | October 12, 2005 School District 59 2123 S. Arlington Hts. Rd., Arlington Heights | October 25, 2005 Arlington Heights Village Hall 33 S. Arlington Hts. Rd. |
| November 4, 2005 Donald E. Stephens Convention Center 5555 N. River Rd., Rosemont | November 16, 2005 Norridge Village Hall 4000 N. Olcott | November No Meeting | November 22, 2005 Arlington Heights Village Hall 33 S. Arlington Hts. Rd. |
| December 2, 2005 Donald E. Stephens Convention Center 5555 N. River Rd., Rosemont | December No Meeting | December No Meeting | December No Meeting |

Meeting schedules are subject to change. Please check www.oharenoise.org for updates.

O'Hare Noise Compatibility Commission
P.O. Box 1126

2005 Meeting Schedule

## Mission

eveloping meaningful methods of
impact of aircraft noise on our sur-
hborhoods through home and
insulation, and to reduce, wherever
raft noise at its source.

## Where to Learn More

The ONCC maintains an extensive Internet Web site that contains the latest information from the Commission, facts about the O'Hare sound insulation programs, recent developments in aircraft noise issues and links to scores of other aircraft noise related Web sites.

**www.oharenoise.org**

## ision

maintain coalitions of communities
dedicated to the reduction of aircraft
near O'Hare International Airport,
nhance the quality of life for area

## Ahead

ks to the future for additional ways
raft noise. Its efforts include imple
precise methods for keeping air-
with nighttime flight tracks that are
idential areas, promoting NASA's
Technology Program, and working
ernments to develop building codes
sound insulation for newly con-
es.

e Commission monitors the O'Hare
n Program and frequently provides
to aircraft noise issues. It should be
er, that the ONCC neither supports
the modernization program.

## Leadership

ONCC Chair
**Arlene J. Mulder**
Mayor, Arlington Heights, IL

ONCC Vice-Chair
School Sound Insulation Committee Chair
**Raymond J. Kuper**
Superintendent, School District 86, Harwood Heights, IL

Chicago Aviation Commissioner
**John A. Roberson**

Residential Sound Insulation Committee Chair
**Frank Damato**
Cook County Director of Community and Intergovernmental Affairs

Technical Committee Chair
**Rita A. Mullins**
Mayor, Palatine, IL

## How to Contact Us

Executive Director Brian Gilligan
**773-686-3198**
bgilligan@ohare.com
**P.O. Box 1126**
**Des Plaines, Illinois 60017-1126**

**O**'Hare
**N**oise
**C**ompatibility
**C**ommission

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on

# lare Noise Compatibility Commission

## o We Are

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69

are Noise Compatibility Commission
is the only organization that is dedicated
ing aircraft noise in the communities
O'Hare International Airport. It was estab-
1996, following an invitation from Chi-
yor Richard M. Daley to suburban mayors
constructive dialogues on aircraft noise
with the goal of reducing the noise.

s founding the ONCC has grown tremen-
nd now includes more than 20 municipali-
more than a dozen school districts that
nt nearly 40 communities around O'Hare.
C holds more than 25 public meetings
ar. Most members are represented at
sion meetings by mayors and school su
ndents. The Commission has a full-time
e Director.

C operates through three standing com-
Technical, Residential Sound Insulation
ool Sound Insulation. The Technical Com-
dentifies and promotes technological ad-
ents that are designed to reduce aircraft
he sound insulation committees oversee
nsive programs that significantly reduce
noise inside homes and schools

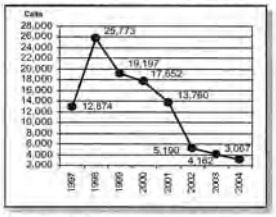
## What We Do

- The ONCC brings a new approach to the issue of aircraft noise in the Chicago area.
- The ONCC works to eliminate the remaining noisy, hush-kit equipped aircraft at O'Hare. Most are already gone due to ONCC efforts.
- The ONCC conducts dozens of public meetings each year, providing forums for discussion and education on aircraft noise issues.
- The ONCC utilizes and disseminates a system of comprehensive aircraft noise reports for O'Hare. The ONCC implemented the first of its kind system
- The ONCC continually informs residents and political leaders on aircraft noise issues in the Chicago area through a Web site and a variety of printed and multi-media materials.
- The ONCC actively promotes and supports advancements in quiet aircraft technology.
- The ONCC identifies, suggests and monitors enhancements for the Fly Quiet Program, which has resulted in fewer deviations from procedures for nighttime operations at O'Hare.
- The ONCC reviews and verifies the comprehensive noise contours for O'Hare

## Accomplishments

- The ONCC has made significant progress in reducing aircraft noise in communities around O'Hare.
- The ONCC has advanced tremendous growth in the Residential Sound Insulation Program making it the most aggressive in the nation.
- The ONCC is responsible for the acceleration of the School Sound Insulation Program making it the largest such program in the world.
- The ONCC reduced aircraft noise complaints received via the O'Hare Noise Hotline.

**Aircraft Noise Hotline Trend Report**




**Noise Hotline 1-800-435-9569**

050406_06

Village of Arlington Heights

33 South Arlington Heights Road
Arlington Heights, Illinois 60005-1499
(847) 368-5000
Website: www.vah.com

Arlene J. Mulder
Mayor

April 6, 2005

Mr. Michael MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, IL 60018

Dear Mr. MacMullen:

I am writing you on behalf of the Village of Arlington Heights, a community of nearly 80,000 residents, located directly northwest of O'Hare International Airport.

As a community in close proximity to O'Hare, Arlington Heights has been concerned with the impact of aircraft noise for many years. In 1991, we were the first Chicago suburb to take an active role in monitoring jet noise and addressing noise-related issues. In direct response to these issues, we formed the Arlington Heights Advisory Committee on O'Hare Noise, which continues to counsel the Arlington Heights Village Board.

I was the first chairman of that committee and I continue to be very active in addressing aircraft noise issues as chairperson of the O'Hare Noise Compatibility Commission (ONCC). 1

For your information, under separate cover, the ONCC previously submitted comments to the Federal Aviation Administration (FAA) regarding the Draft Environmental Impact Statement (DEIS) for the proposed O'Hare Modernization Program (OMP). 2

The Village of Arlington Heights remains officially neutral on the O'Hare Modernization Program (OMP). However, I am writing you as a mayor representing residents who desire that some specific issues be addressed concerning the potential environmental impact of the Draft Environmental Impact Statement. 3

It is often noted that the Federal Aviation Administration's priorities are safety and efficiency. While no one can argue with the overriding need to ensure the safety of air travel, those of us who live near O'Hare International Airport also consider our quality of life, including a quieter community, to be an important issue. 4

In reviewing some of the OMP environmental matters referenced in the DEIS, as part of a recommended mitigation strategy I respectfully request that the FAA analyze the effect of the departure routes on a proposed noise mitigation initiative at

| Comment | Response |
|---|---|
| 1 | Comments noted. |
| 2 | The FAA has responded to *ONCC's April 6, 2005* letter commenting on the DEIS. Please see document number 050406_05, on pages U.4-354-383 of this appendix. |
| 3 | The comment on Village of Arlington Height's neutral position on the OMP is noted. |
| 4 | The FAA agrees with the commenter. The FAA takes into consideration all the impacts of the proposal evaluated within the EIS prior to making any decision. |

2

O'Hare International Airport called Advanced Flight Track Procedures (or AFTPro). This initiative, using new technology and departure procedures, promises to direct flights with greater precision along flight tracks that are over compatible land areas, such as forests, industrial areas and expressways. We wish to make certain that the OMP in no way impairs development of AFTPro. 5

The FAA should also work with the City of Chicago and local community leaders to assess the effectiveness and enforcement of the O'Hare Tower Order. There must be greater adherence to the Tower Order by controllers and pilots, especially regarding the issue of departing aircraft being required to attain 3,000 feet before they are permitted to turn. An example of the effect of non-adherence to the Tower Order is enclosed for your reference. 6

It is important that a thorough review of the O'Hare Fly Quiet Program be conducted. There should be an evaluation as to whether a new or different form of the voluntary nighttime program can benefit the communities around O'Hare International Airport. This review should encompass the setting of guidelines for equitable nighttime runway usage, especially for Runway 32 Left, which affects my community a great deal. This Runway has by far the most nighttime departures, even though under the current Fly Quiet Program it is listed as the number two preferred runway. I also petition the FAA to require departing aircraft to use the full pavement of these runways and minimize the use of the T-10 intersection, which frequently results in aircraft departing at lower altitudes over Arlington Heights. 7

In conclusion, I commend the FAA and the City of Chicago for considering the potential impacts of the O'Hare Modernization Program on the quality of life of residents around O'Hare International Airport. However, I urge that the issues outlined above be thoroughly addressed before the final EIS is issued.

Thank you for the opportunity to present my remarks. 8

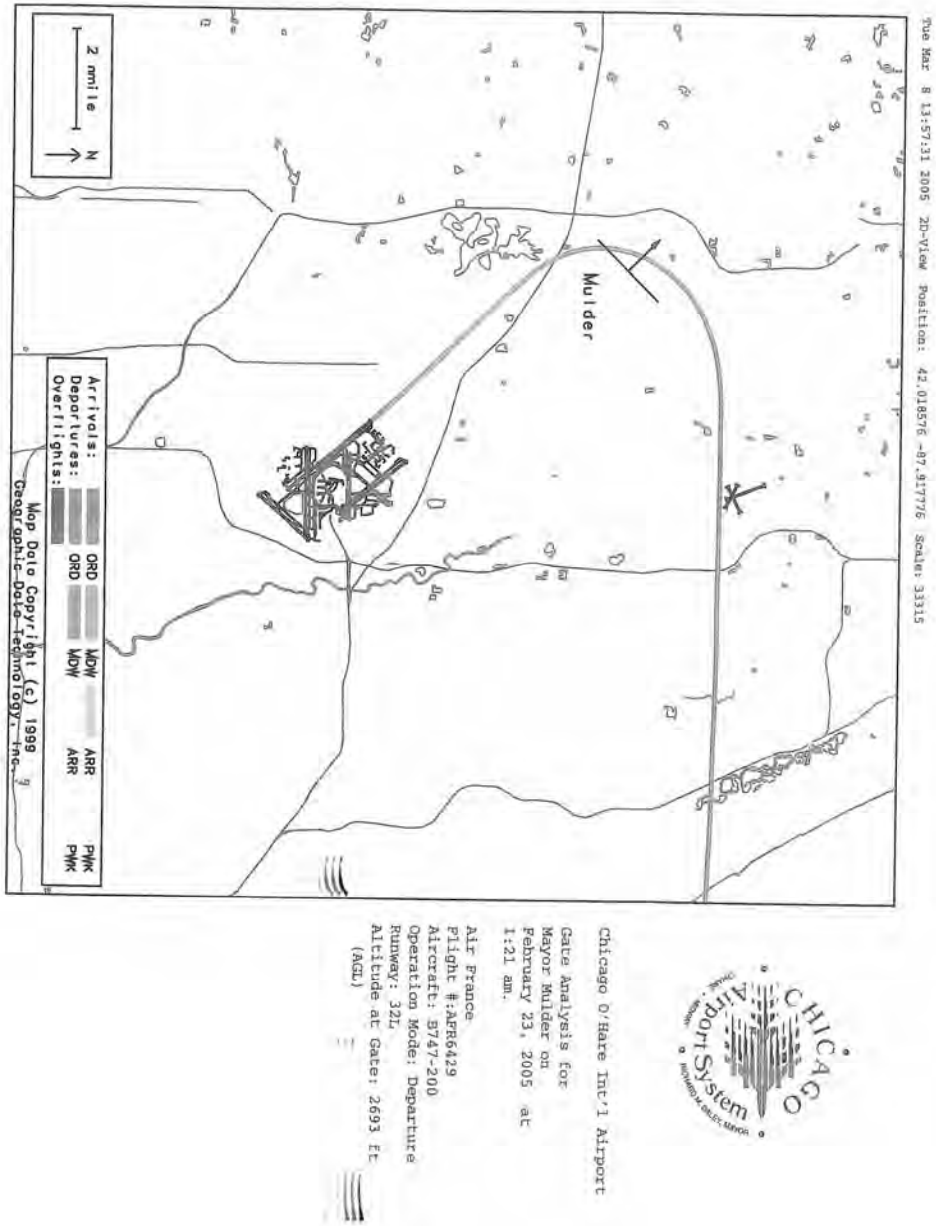
Sincerely,

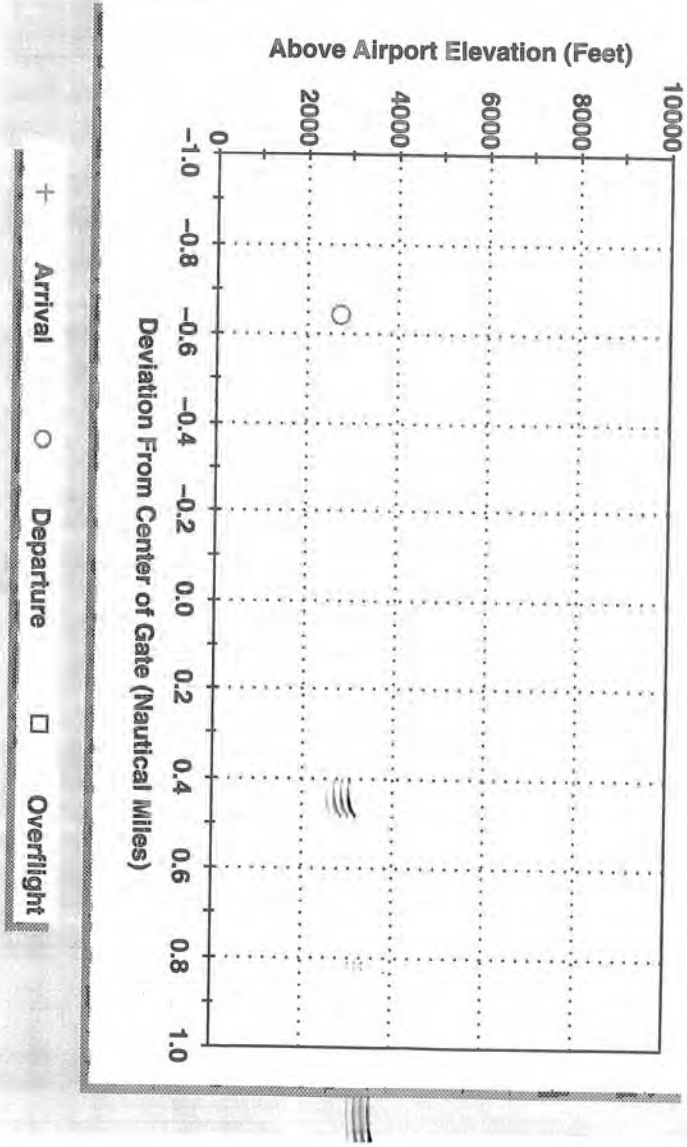
Arlene J. Mulder
Mayor, Village of Arlington Heights

Enclosure

cc: Village Board, Village of Arlington Heights
Members, Arlington Heights Advisory Committee on O'Hare Noise
Bill Dixon, Village Manager, Village of Arlington Heights
Bill Enright, Deputy Director of Planning, Village of Arlington Heights

| Comment | Response |
|---|---|
| 5 | Please see the response to comment 10 within *ONCC's April 6, 2005* comments on the DEIS, document number 050406_05, on page U.4-363 of this appendix. |
| 6 | Please see the response to comment 20 within *ONCC's April 6, 2005* comments on the DEIS, document number 050406_05, on page U.4-367 of this appendix. |
| 7 | Please see the response to comments 16-18 within *ONCC's April 6, 2005* comments on the DEIS, document number 050406_05, on page U.4-366 of this appendix. |
| 8 | The FAA appreciates Arlington Heights comments on the DEIS. |


Tue Mar 8 13:57:31 2005 2D-View Position: 42.018576 -87.917776 Scale: 33315
Mulder
2 nmile
N
Arrivals: ORD MDW ARR PWK
Departures: ORD MDW ARR PWK
Overflights:
Map Data Copyright (c) 1999 Geographic Data Technology, Inc.
Chicago O'Hare Int'l Airport
Gate Analysis for
Mayor Mulder on
February 23, 2005 at
1:21 am.
Air France
Flight #:AFR6429
Aircraft: B747-200
Operation Mode: Departure
Runway: 32L
Altitude at Gate: 2693 ft
(AGL)
CHICAGO
Airport System


Chicago O'Hare Intl Airport
Penetration Gate Plot for Gate Mulder
02/23/2005 01:19:40 – 02/23/2005 01:28:26
1 Track Crossed Gate: Left = 1 (100.0%), Right = 0 (0.0%)
Above Airport Elevation (Feet)
10000
8000
6000
4000
2000
0
–1.0
–0.8
–0.6
–0.4
–0.2
0.0
0.2
0.4
0.6
0.8
1.0
Deviation From Center of Gate (Nautical Miles)
+ Arrival
○ Departure
□ Overflight

**Runway Use Summary Report**
Chicago O'Hare International Airport
Period: December 2004
Time of Day: (10:00 P.M. to 7:00 A.M.)

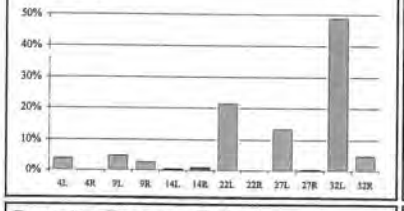
COPY

## Runway Utilization

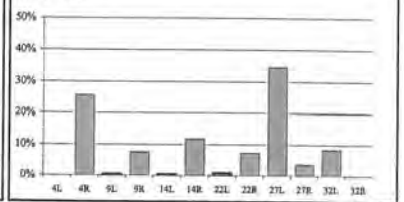
*Source: Airport Noise Monitoring System (ANMS)*

| | Runway Utilization | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *4L* | *4R* | *9L* | *9R* | *14L* | *14R* | *22L* | *22R* | *27L* | *27R* | *32L* | *32R* |
| **Average Daily Operations** | | | | | | | | | | | | |
| *Departures* | 4 | - | 5 | 3 | 0 | 1 | 24 | - | 15 | 0 | 54 | 5 |
| *Arrivals* | - | 33 | 1 | 10 | 1 | 15 | 1 | 10 | 45 | 5 | 11 | - |
| **Percentage Utilization** | | | | | | | | | | | | |
| *Departures* | 4% | 0% | 5% | 3% | 0% | 1% | 21% | 0% | 13% | 0% | 49% | 5% |
| *Arrivals* | 0% | 26% | 0% | 8% | 0% | 12% | 1% | 7% | 34% | 3% | 8% | 0% |

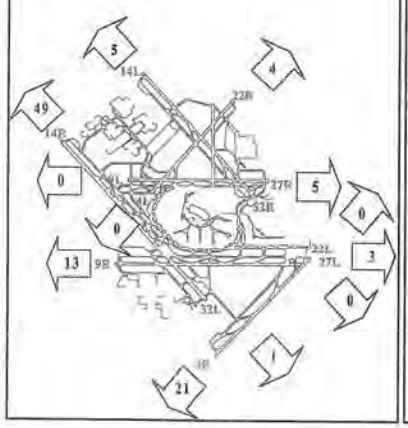
Departures



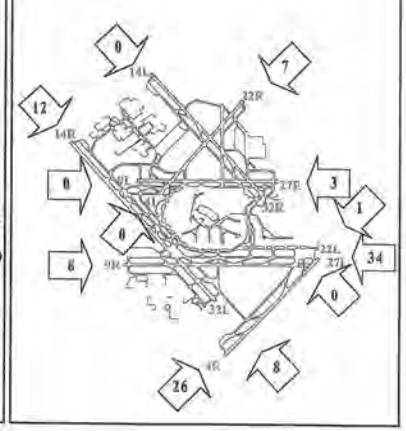

Arrivals




Percentage Departure Utilization




Percentage Arrival Utilization




*City of Chicago Department of Aviation* *Printed 1/28/2005*

050406_23

SUBURBAN O'HARE COMMISSION
115 W. MAIN STREET • BENSENVILLE • ILLINOIS • 60106
PHONE: 630-594-1166 FAX: 630-594-1167

April 6, 2005

Mr. Michael MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, Illinois 60018

**Re: Comments on DEIS for O'Hare Master Plan-OMP project**

Dear Mr. MacMullen:

The Suburban O'Hare Commission (SOC) hereby submits its comments to the FAA on the DEIS for the O'Hare Master Plan-OMP project. SOC hereby adopts and incorporates the comments of Bensenville and Elk Grove Village and the Religious Objectors as SOC's comments as well.

In addition, SOC adds the following individual comments.

1. **The DEIS failed to analyze and address "regional needs".** The DEIS starts by saying that the "purpose" of the DEIS is to address "regional" needs for aviation. Yet, the FAA never identifies what these "regional" needs are.

Clearly, Midway will soon be out of capacity. Where will the excess Midway traffic go? To O'Hare? To another regional airport?

Clearly, OMP—even under the tortured manipulation of demand and delay numbers engaged in by FAA—will be out of capacity within five years after it opens and suffer from unacceptable levels of delay in the interim. Where will the excess O'Hare demand go after that?

What FAA must do is conduct a regional or system-wide analysis to address the system needs of the Chicago region. FAA clearly has not done so.

FAA's deliberate failure to conduct such an analysis of regional needs and regional solutions for the Chicago Metropolitan Area is particularly egregious since FAA,

Mr. Michael MacMullen
April 6, 2005
Page 2

in its 1984 Record of decision on the last major O'Hare expansion, explicitly stated that FAA would fund a "system plan" to address regional needs:

> Development of another air carrier airport to serve the Chicago Metropolitan Area will be studied again as part of a State System Plan to be prepared by the Illinois Department of Transportation under a series of grants to be funded by the FAA's Airport Improvement Program. The initial grant was issued in September 1984.
>
> 1984 ORD ALP ROD at 4 (emphasis added).

The State System Plan (funded by the FAA) was published in 1988 and concluded that while O'Hare would grow within the framework of its existing runway capability, there would be no new runways at O'Hare but that a large share of the future traffic that could not be handled by O'Hare would be accommodated at a new South Suburban Airport. FAA has offered no reason why the elements set forth in the 1988 System Plan (paid for by the FAA) would not work.

The DEIS makes no mention of the 1984 ROD or the 1988 System Plan —a plan that FAA ordered as part of the adjudicatory resolution of the 1980s dispute about an earlier O'Hare expansion. The SOC communities are entitled to rely on and be protected by the 1984 ROD and the 1988 System Plan. FAA cannot simply ignore the commitments it made in the 1984 ROD and the protections FAA's 1984 ROD gave to our communities.

If there is a new or different system plan that examines the needs of the region and comes up with a different solution to address regional needs, SOC is unaware of such a plan. Nor have the SOC communities — the intended beneficiaries of the 1984 ROD— been given an opportunity to participate in the formulation of any "new" (as yet undisclosed) system plan that comes up with a different solution than the 1988 System Plan. 1

**2. The OMP will not meet the needs set by FAA as the purpose and need.** OMP will clearly not meet the capacity needs of the region or even the capacity needs as expressed by the TAF solely for O'Hare. Even under the FAA's relaxed and questionable definition of "practical capacity" as the level of traffic that can be pushed through at 15 minutes Average Annual All Weather Delay (AAAW) OMP runs out of capacity within a few years after it opens. When OMP reaches its capacity limit, the excess traffic forecast for O'Hare will have to be accommodated somewhere else— *i.e.*, at another airport.

Nor will OMP reduce delays to acceptable levels. The FAA DEIS deliberately "low-balled" the demand level to produce low predicted delays. However, FAA knew full well that if a more recent forecast (the 2003 TAF) were used the delays under OMP would rise dramatically. Independent analysis by the firm of Campbell-Hill (as well as by FAA's own narrative admission at p. R-11) show that OMP would be out of capacity within five years after it opened and have unacceptable levels of delay virtually from the time it opened to the time it ran out of capacity

| Comment | Response |
|---|---|
| 1 | Please see the response to comments 39-45 within *Karaganis-Cohn's April 6, 2004* comments on the DEIS, document number 050406_36, beginning on page U.4-408 of this appendix.<br><br>This comment was also raised by *ShawPittman's June 27, 2003 letter*. Please see the responses to *ShawPittman's* comments 12-15, 21, and 24, beginning on pages U.4-59, U.4-66 and U.4-70, respectively. |

Mr. Michael MacMullen
April 6, 2005
Page 3

The only answer to address projected O'Hare demand and reduce and keep delays at acceptable levels is what FAA calls a "blended alternative" Even OMP if built will require demand management to reduce delays and use of other airports to handle the excess demand. Even OMP will require a "blended alternative" of O'Hare plus demand management plus use of other airports. 2

**3. There are various blended alternatives which will avoid damage to Bensenville and Elk Grove and avoid the destruction of religious cemeteries.** Clearly every alternative considered by FAA— from the existing O'Hare to Phase I to the full OMP will require congestion management and the use of other airports to control delay and accommodate forecast demand. A blended alternative which uses demand management to keep the existing O'Hare to acceptable levels of delay while accommodating traffic growth at another regional airport(s) is a blended alternative which accomplishes all the stated needs of the DEIS while avoiding the destruction of homes and businesses in Bensenville and Elk Grove and avoiding the destruction of the religious cemeteries. 3

**4. The DEIS surface transportation analysis is woefully deficient.**

**A. Congestion on Local Roads** The DEIS called for a massive increase in Origin-Destination traffic at O'Hare (using ground transportation for ingress and egress to the airport) without identifying the road expansion elements necessary to avoid chaotic conditions on the roads adjacent to the airport.

While proclaiming the need to reduce delays at the airport (easily done administratively) the OMP will cause very significant increases in delay for both airport travelers on local roads as well as non-airport vehicles. FAA never quantifies how much this total increase in surface congestion and delay will be and how much it will cost the users of vehicles. It has long been recognized that the three pillars of airport planning are 'airside", terminals and "landside" (surface roads and access).

FAA's actions here are akin to stuffing an ever larger pig into a python. FAA says it is reducing delays on the runways (a debatable claim contradicted by the rising delay curve for OMP) but at the same time it is simply pushing the pig in different locations in the python. FAA is jamming congestion and delay into local roads without a solution and without quantifying the cost of the increased delay to local road users.

FAA is also pushing the pig in the other direction by trying to jam more aircraft operations into an airspace that is already severely overloaded and for which FAA has made no firm financial commitment or deadline for fixing. One of two things will happen. Either increased flights from the expanded runway system will exacerbate the airspace choke points even further or FAA will have to step in and impose demand management on the choked airspace— resulting in lower levels of traffic that claimed by FAA as benefits for the project. 4

**B. The Location of the Ring Road.** The location of the ring road is a critical element in assessing the damage to homes and business and community from the OMP. Without the OMP, there is vacant land on O'Hare to accommodate the ring road. With OMP the ring road is pushed west and south.

| Comment | Response |
|---|---|
| 2 | Please see the response to comments 46-93 within *Karaganis-Cohn's April 6, 2004* comments on the DEIS, document number 050406_36, beginning on page U.4-412 of this appendix.<br><br>Also, please see the response to comments 43-87 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-525 of this appendix. |
| 3 | Please see the response to comments 134-140 within *Karaganis-Cohn's April 6, 2004* comments on the DEIS, document number 050406_36, beginning on page U.4-451 of this appendix.<br><br>Also, in response to this comment and others, the FAA has added **Section 5.22** to **Chapter 5** of the EIS for the FAA's discussion of legal issues involving potential destruction of St. Johannes and Rest Haven Cemeteries.<br><br>Finally, the FAA has evaluated the commenter's proposals in a new **Section 3.6** in **Chapter 3.** |
| 4 | The FAA conducted a detailed surface transportation analysis for various phases of the alternatives. The results of this analysis indicate that traffic congestion is already present within the surface transportation study area. For more information on the surface transportation analysis please see to **Section 5.3** of the EIS.<br><br>Also, please see the response to comments 85-89 within *Karaganis-Cohn's April 6, 2004* comments on the DEIS, document number 050406_36, beginning on page U.4-429 of this appendix. |

Mr. Michael MacMullen
April 6, 2005
Page 4

Chicago and the DEIS speak of a corridor on the western boundary of the airport. But Chicago refuses to disclose what other routes are under consideration or to make a binding commitment that the route along the inside of the western boundary will be used.

Moreover, the OMP has consumed land that would have avoided the need to move the road south from the southern boundary of the airport. As a direct consequence of the OMP, the ring road route to connect to I-294 is now likely to head south through Bensenville and perhaps part of Elmhurst — destroying hundreds of homes and businesses which are not even addressed in the DEIS. 5

**C. Western Access.** Western Access is increasingly looking like a political sham with major surface transportation repercussions. First, there will be no western access unless all of OMP and the terminals are built. Based on the huge cost of OMP, it is extremely unlikely that there will ever be a western access.

Ironically, that result may be good for some since western access for passengers with checked baggage — either deplaning anywhere on the east side of the Airport or departing with checked baggage from Terminals 2-6— will face a 1 hour bus ride (longer with increased congestion).

What is the cost (for those of us who want western access) of a high speed non-secure ATS similar to the ATS on the eastern side of the airport? This would allow both passengers with checked baggage either deplaning or embarking on the eastern side of the airport to have the same convenient rapid surface access as those on the eastern side of the airport. (Speaking of the eastern ATS, how will users of the remote parking on the east access the terminals since the DEIS says that the remote ATS station serving remote parking will be dismantled to make room for one of the runway clearance areas.)

If there is no western access, how will the increased surface traffic that will need to access and park on the eastern side of the airport impact eastern access? 6

**5. Cost and Financing.** FAA continues to hide the detailed and full cost of the project and the details of how it will be financed. On a project of this massive cost and scale, it is professionally and rationally unacceptable for FAA to only disclose part of the costs and then to blindly "assume" that billions of dollars will somehow magically appear. 7

**6. The St. Louis Problem and Possible Regional Taxation to Pay For OMP.** The DEIS fails to discuss the potential impact of the high cost of OMP on taxes and the local economy. The enormous cost of this project must be born initially by the airlines and the extremely high per passenger cost of paying for the project will have an extremely negative impact on the O'Hare airlines' financial viability.

In St. Louis, a much less costly project (a $1 billion runway) has raised per passenger costs at Lambert Field to $13 per passenger (far less than the $25-$30 increase per passenger that will likely be the result of the proposed O'Hare expansion). But this $13 cost is far too high for St. Louis to attract the extremely cost-conscious low-cost carriers that are increasingly the norm in today's industry. Bottom line: St Louis is in danger of losing air traffic (and the jobs and economic development associated with that traffic) unless St. Louis can get the per passenger cost to the airlines much lower. And

| Comment | Response |
|---|---|
| 5 | The location of the ring road is not part of the OMP or any other Build Alternative considered within the EIS. The ring road or "western O'Hare bypass" (WB) is a separate project that would be undertaken by others. The impacts of such a project would be subject to other environmental documentation.<br><br>The FAA discloses in the EIS the documentation that the City provided within its *February 2004 O'Hare International Airport Master Plan* for the provision of a 300 foot corridor on airport project for the WB. The location and routes being considered for the WB are beyond the scoped of this EIS. The WB is assessed from a cumulative impact standpoint in **Section 5.21** of the EIS.<br><br>Also, please see the response to comments 85-89 within *Karaganis-Cohn's April 6, 2004* comments on the DEIS, document number 050406_36, beginning on page U.4-429 of this appendix. |
| 6 | The commenter asserts that there will be no western access unless all of OMP and the terminals are built. The commenter is referred to the O'Hare Modernization Act which states, "[t]he Illinois General Assembly finds and determines: Public roadway access through the existing western boundary of O'Hare to passenger terminal and parking facilities located inside the boundary of O'Hare and reasonably accessible to that western access is an essential element of the O'Hare Modernization Program. That western access to O'Hare is needed to realize the full economic opportunities created by the O'Hare Modernization Program and to improve ground transportation in the O'Hare area. It is important to the State that the western access be constructed not later than the time existing 14R-32L is removed from service." The phasing for when the various components are projected to come on line is included in **Section 5.20** of the EIS.<br><br>The FAA does not agree with the commenter's assessment of the western access. The western access for each of the Build Alternatives considered in **Chapter 5** of the EIS would function as described in the City's *February 2004 O'Hare International Airport Master Plan, Section VI.* In regard to the concerns regarding the ATS, the planning and operation of the ATS is the responsibility of the airport sponsor. Finally, the FAA notes that the surface transportation assessment is included in **Section 5.3** of the EIS. This assessment includes the components of western access as they come online. |
| 7 | Please see the response to this comment on the following page. |

Mr. Michael MacMullen
April 6, 2005
Page 5

one way St. Louis business and political leaders are proposing to meet this shortfall (a far smaller shortfall than would occur with the O'Hare expansion) is by a tax on residents and property owners in the St. Louis metropolitan area – a portent a of regional tax on residents in the Chicago suburbs to pay for Chicago's folly.

Even if we avoid a tax, the high per passenger cost of the project to the airlines will drive traffic and jobs away from the region. The DEIS fails to examine the negative economic potential of the OMP on job losses. 8

**6. Where are the facts to support Chicago's claims?** Chicago made the OMP proposal with a whole series of glossy slides claiming huge benefits from OMP. Among these claims was that OMP would provide capacity for 1.6 million flights; would have capacity for 76 million boarding passengers (enplanements); would reduce All Weather delays by 79% and bad weather delays by 95%; would only cost $6.6 billion; and would create 195,000 jobs. Has Chicago ever submitted any data to FAA to support these claims? Does FAA have any such data or evidence? 9

**Conclusion**

OMP simply does not work on a host of levels: cost, ability to finance; lack of significant delay reduction; lack of significant capacity increase; destructive of homes, businesses, and religious institutions, etc. FAA should focus on blended alternatives that control delays, allow traffic growth through use of other airports, and avoid the destruction that would be caused by Phase I or OMP. 10

Sincerely yours

Joseph Karaganis
Counsel for SOC

| Comment | Response |
|---|---|
| 7 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** Also, please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |
| 8 | With regard to the possibility of St. Louis imposing a metropolitan-wide tax, the FAA understands that no local tax dollars or revenue are being used for their expansion project, see http://www.lambert-pmo.org/id39.asp. Should any such tax be levied, this would reflect the will of local communities in the St. Louis area. |
| 9 | The FAA does not have data from the City with regard to the Chicago claims. The FAA did not use the claims in their analysis of the City's proposal. The EIS discloses the environmental impacts associated with the alternatives considered at various levels of operations and passengers. The FAA did not base its EIS on announcements made by the City of Chicago. The EIS also provides the relevant information on delays in both good weather and bad in **Appendix D.** |
| 10 | The FAA has responded to the individual comments within this "Conclusion" and respectfully disagrees. The responses to these comments may be found in comments 1 through 9 of this document as well as the responses to the Bensenville/Elk Grove Village and Religious Objectors. |

050406_28

CITY OF ROCKFORD, ILLINOIS
425 EAST STATE STREET
61104

DOUGLAS P. SCOTT
MAYOR

WILLIAM L. BITTNER
DIRECTOR OF PUBLIC WORKS

April 6, 2005

Federal Aviation Administration, Chicago Airports District Office
Attn: Mr. Michael W. MacMullen, Airports Environmental Program Manager
2300 East Devon Avenue
Des Plaines, IL 60018

**Re: Comments on the Draft Environmental Impact Statement (EIS) for Proposed O'Hare Modernization Program (OMP)**

Dear Mr. MacMullen:

1 Thank you for the opportunity to comment on the FAA's Draft Environmental Impact Statement (EIS) for the proposed O'Hare Modernization Program (OMP). The City of Rockford recognizes the regional and national significance of the City of Chicago's proposal to modernize Chicago O'Hare International Airport to address existing and future delay and capacity problems. The City of Rockford would like to formally go on record as supporting the expansion effort and the OMP. As part of this expansion effort, however, there should be some clarification within the Draft EIS and OMP as to how Greater Rockford Airport (also known as Northwest Chicagoland International Airport at Rockford (RFD)) can support O'Hare and the Chicago air space system with regards to both air passenger and air cargo service. With regards to this clarification, our comments will first focus on specific revisions and analysis of the draft EIS itself, and then focus on a broader level of how the City of Rockford and RFD can assist the City of Chicago and OMP.

2 **Section 1.3.2.3 Northwest Chicagoland Regional Airport at Rockford** – The word "Regional" should be replaced with "International". On January 27, 2005, RFD opened its new International Arrival Gate. With funding assistance from the FAA, this new gate will allow RFD to provide customs, immigrations, and other inspection services associated with processing international passengers, and changes the airport's designation to international status. This enables RFD to clear international aircraft arriving from destinations around the world, and enhances our ability to address capacity issues within the Chicago airspace system. Throughout the draft EIS, the name of RFD should be changed to Northwest Chicagoland International Airport at Rockford.

3 This section also fails to note that RFD also has expanded commercial air service dramatically over the past year, including five air carriers carrying passengers to regional, national, and international destinations. Year 2004 enplanements were approximately 100,000 and this number is anticipated to exceed 250,000 by year-end 2005.

**Section 2.4 Purpose and Need Summary** – In the final paragraph of this section, it states in part that:

> "Both the current and forecast aviation demand in the Chicago market signal the need for immediate action to reduce congestion and delay. The EIS's for O'Hare, Gary/Chicago, and South Suburban airports are an early step in a length process to address the current problems and prepare for the future needs."

This section fails to mention the existing and future expansion plans of RFD as being an integral part of addressing aviation demand in the Chicago marketplace. The Rockford region, a sub-market of Chicago with respect to economic and transportation activity, is continuing to become an important area for addressing Chicago-area transportation

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| Comment | Response |
|---|---|
| 1 | Comment noted. |
| 2 | All references to the airport within the EIS have been changed to refer to the official name of the airport. The FAA remains open to airport name changes officially submitted by the airport owner (Greater Rockford Airport Authority). |
| 3 | **Section 1.3.2** of **Chapter 1** includes a brief overview of the Greater Rockford Airport, as well as other regional airports. None of the desciptions of these airports includes the number of enplanements served by the individual airports. Therefore, the FAA has not made the requested revision. However, the growth and number of the Greater Rockford Airport's year 2004 enplanements is noted. In addition, FAA provides greater detail on the Greater Rockford Airport in **Appendix C, Section C.1.2.4.** |

4 congestion and demand. Evidence of that is at RFD with increasing air cargo and passenger operations, as well as the emergence of the Union Pacific Global III Intermodal railyard in Rochelle, IL to address Chicago surface congestion. Contrary to being characterized as a "downstate" community, the Rockford region, and RFD in particular, is a major contributor to addressing current problems and future needs in the Chicago aviation arena.

**Section 3.1.2.2 Use of Other Airports** – On page 3-19, "Use of Other Regional Airports, it states:

> "While Rockford and Gary/Chicago both have surplus capacity that could be available to support future commercial activity, presently Rockford and Gary/Chicago both have surplus capacity and to date have had little to no impact on commercial activities at O'Hare. Additionally, the South Suburban Airport could also have surplus capacity if built."

5 It should be noted that Rockford's air passenger activity has grown substantially over the past year, in addition to its cargo operations being one of the most active in the United States. The ability of Rockford to support air cargo and passenger operations now and in the future can help the air congestion and delays at Chicago O'Hare. The fact that UPS moved its Asian-bound cargo flights via Anchorage from Chicago O'Hare to RFD is evidence that RFD can assist not only with more efficiencies for Chicago O'Hare passenger service, but also more efficiencies for private companies.

6 **Section 5.20 Construction Impacts** – It is important to note that during construction, in order to alleviate air passenger and air cargo delays and inconvenience during construction of the O'Hare Modernization Plan, RFD would be able to be accommodate additional air traffic on a temporary basis. The physical runway layouts at RFD, world-class instrument landing system and new International Arrival Gate enables us to assist greatly during the construction process.

7 **Section 5.3.2.9 Railroads** – This section should note that there are currently two feasibility studies examining the future extension of the Metra Milwaukee District West Line passenger rail system from its existing terminus in Big Timber through the communities of Huntley, Marengo, Belvidere, and Rockford. This could further provide congestion relief in the region and should be factored into the planning of the Chicago O'Hare expansion effort.

This project is called the Northern Illinois Commuter Rail Initiative (NICRI) and should also be highlighted in Section 5.3.4 of this Chapter as a major regional project effort aimed at reducing congestion and providing transportation alternatives.

8 **Executive Summary - On** page ES-24, Section C.2 Other Considerations, the Northern Illinois Commuter Rail Initiative passenger rail extension to Rockford should be listed as a project.

9 **Appendix C – Use of Other Airports:** Section C.1.2 Available Airports in the Chicago Region. Under this Section, Chicago Midway, Gary/Chicago, and General Mitchell Airport have a specific subsection that outlines their existing and future capabilities, yet RFD is only mentioned within the Gary/Chicago subsection. The information related to RFD should be in its own subsection in light of its importance in air passenger and air cargo operations in the northern Illinois region.

10 We would like to thank you again for this opportunity to comment on the Draft Environmental Impact Statement (EIS) for the proposed O'Hare Modernization Program (OMP), and again reiterate that the Northwest Chicagoland International Airport at Rockford is poised to be a major contributor in addressing the existing and future aviation demands in the greater Chicago area, and are prepared to assist in the expansion efforts where we can.

Sincerely,

Doug Scott

Douglas F. Scott, Mayor
City of Rockford

| Comment | Response |
|---|---|
| 4 | Comment noted. |
| 5 | Comment noted. In a deregulated domestic aviation industry, the Federal government does not control where, when, and how airlines provide their services; nor is the Federal government the driving force in airport capacity development or airport utilization. Rather, the aviation industry, in partnership with local and regional government, in response to market demand, drives where and how air travel is accommodated. |
| 6 | At this time, there is no plan to redirect flights during the construction of any alternative. |
| 7 | The FAA notes the fact that two feasibility studies examining the future extension of the Metra District West Line are currently underway. However, **Section 5.3.2, Baseline Conditions** addresses the 2002 existing conditions within the surface transportation study area. Therefore, the FAA has not made the requested revision. |
| 8 | This section of the Executive Summary was intended to summarize **Section 5.3.5** of the EIS, which addresses major planning projects that would be completed by other entities and have a connection to O'Hare. **Section 5.3.5** was not intended to be an all inclusive list of Metra planning projects. Therefore, the FAA has not made the requested revision. |
| 9 | **Appendix C** has been revised accordingly. This was an error in the Draft EIS; Rockford should have had its own subsection. |
| 10 | The FAA would like to thank the City of Rockford for their comments on the Draft EIS. |

050406_36

**BEFORE THE**
**FEDERAL AVIATION ADMINISTRATION**
**CHICAGO AIRPORTS DISTRICT OFFICE**

| | |
|---|---|
| **In the matter of the** | ) |
| | ) |
| **DRAFT ENVIRONMENTAL IMPACT** | ) |
| **STATEMENT FOR THE O'HARE** | ) |
| **MODERNIZATION PROGRAM** | ) |
| **(OMP)** | ) |

**COMMENTS ON AND OBJECTIONS TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE O'HARE MODERNIZATION PROGRAM**

Communications with respect to this document should be addressed to:

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**April 6, 2005**

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BEFORE THE
FEDERAL AVIATION ADMINISTRATION
CHICAGO AIRPORTS DISTRICT OFFICE

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| In the matter of the | ) |
| | ) |
| DRAFT ENVIRONMENTAL IMPACT | ) |
| STATEMENT FOR THE O'HARE | ) |
| MODERNIZATION PROGRAM | ) |
| (OMP) | ) |

## COMMENTS ON AND OBJECTIONS TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE O'HARE MODERNIZATION PROGRAM

The Village of Bensenville and Elk Grove Village (the "Community Objectors"), St. John's United Church of Christ, Helen Runge, Shirley Steele, Rest Haven Cemetery Association, Robert Placek and Leroy Heinrich (the "Religious Objectors") and Roxanne Mitchell representing the Homeowner Objectors[1] hereby submit these comments on and objections to the FAA's Draft Environmental Impact Statement ("DEIS") for the O'Hare Modernization Program ("OMP").

## I. INTRODUCTION

The DEIS is legally flawed, factually and analytically deficient and fails properly and adequately to examine the environmental,

[1] The Community, Religious and Homeowner Objectors are collectively referred herein to as the "Objectors"

**Comments on and Objections to the DEIS**
**Page 2**

economic and social impacts of the OMP. The DEIS violated NEPA's mandate by failing to take an objective and critical "hard look" at the OMP. Instead, the DEIS is a classic results-oriented document designed to favor the OMP as the preferred solution over all other alternatives—the antithesis of what the NEPA and FAA law and policy require. Despite thousands of pages of virtually useless filler, the DEIS fails to address, much less discuss key issues relating to the OMP project and those areas that are discussed contain critical defects and omissions in analysis. Among the key failures of the DEIS are: 1

1. **The DEIS fails to identify and address regional aviation needs and instead focuses solely on the asserted and unjustified needs of O'Hare, to the exclusion of other more viable regional solutions to address delays and congestion in the Chicago metropolitan area.** 2

2. **The OMP (Alternative C in the DEIS) fails to meet the stated purpose and needs identified in the DEIS: A) OMP will not accommodate all forecast demand for O'Hare; B) OMP will not reduce delays to acceptable levels and C) OMP will not provide adequate terminal capacity and D) OMP will not provide adequate surface road infrastructure:** 3

   A. Virtually on the day OMP opens in 2013, OMP will experience delays equal to if not greater than the recent historic "high" levels of delays experienced at O'Hare and will exceed even the questionable newly-invented 15 minute delay standard used by the FAA in the DEIS within a few short years after it opens. 4

   B. FAA deliberately used an outdated low-ball traffic forecast (the 2002 TAF instead of the more recent 2003 TAF) which

| Comment | Response |
|---|---|
| 1 | This document filed by Joseph Karaganis and Robert Cohn is hereafter referred to as KC. The comments in *KC Section I* are summarized comments, which are articulated in greater detail in *KC Sections II* through *VIII*. Specific responses are provided in the relevant *KC Sections II* to *VIII*. Nonetheless, the FAA has provided references adjacent to the summarized comments to the location of the more detailed comments and their respective responses.<br><br>The FAA notes that much of this document is based on the Campbell-Hill (hereafter referred to as CH) comments on the DEIS. Where applicable, the FAA has provided cross-reference to the responses to similar comments that can be found within the CH document. The CH comments on the DEIS begin on page U.4-501 of this appendix.<br><br>Finally, the FAA notes that many of the comments made throughout the document focused on one of the Build Alternatives considered in the EIS: the O'Hare Modernization Program or "OMP" which is the sponsor's proposal. Within the EIS, this alternative was referred to as Alternative C. In the interest of clarity in response, when the FAA drafted these responses, the FAA used OMP to refer to this proposal as did the commenter. |
| 2 | Please see response to comments made in *KC Section II*, beginning on page U.4-408. |
| 3 | Please see response to comments made in *KC Section IIIA - IIIC*, beginning on page U.4-411. |
| 4 | Please see response to comments made in *KC Section IIIA2*, beginning on page U.4-421. |

**Comments on and Objections to the DEIS**
**Page 3**

artificially biased the DEIS results in favor of the OMP by showing unreasonably low delay results. 5

C. OMP will fall far short of the accommodating the demand forecast for O'Hare alone. Expert analysis, prepared by Campbell-Hill, a leading aviation economic consulting firm, of the FAA TAAMs results shows the OMP will be out of capacity within 3 years of completion under the traditional FAA standards of acceptable delay and will be out of capacity within 5 years of completion (by 2018) — even under the questionable 15 minute delay standard used in the DEIS. 6

D. OMP will not produce required terminal capacity because neither Chicago, nor the airlines, nor FAA can afford the massive multi-billion cost of the terminals alone, let alone the overall cost of the entire project. The airlines cannot afford either the WGP terminals or the Western Terminal. 7

E. The so-called Western Access proposal is a sham and provides no effective and meaningful access. For all of the passengers with checked baggage deplaning from Terminals 1-6 or for those passengers arriving the western terminal with checked baggage going to Terminals 1-6, the vaunted "western access" means a one hour bus ride around the perimeter of the airport. 8

F. The expressways leading to and from O'Hare are already severely congested, and the DEIS does not adequately examine the problems of providing sufficient ground access for millions of additional O'Hare passengers. The project costs do not include multi-billion dollar surface transportation

| Comment | Response |
|---|---|
| 5 | Please see response to comments made in *KC Section IIIA1d,* beginning on page U.4-420. |
| 6 | Please see response to comments made in *KC Section IIIA2,* beginning on page U.4-421. |
| 7 | Please see response to comments made in *KC Section IIIC1,* beginning on page U.4-428. |
| 8 | Please see response to comments made in *KC Section IIIC2,* beginning on page U.4-428. |
| 9 | The "multi-billion" dollar surface transportation improvements referred to by the commenter are likely the Western O'Hare Bypass and the Elgin O'Hare Expressway extension. These projects are not part of the proposed action or any of the Build Alternatives considered in the EIS. Therefore, their costs are not included in the capital costs of the project. Also see response to comments made in *KC Section IIIC2,* beginning on page U.4-428. |

**Comments on and Objections to the DEIS**
**Page 4**

improvements, which, even if constructed, are likely to be an unsatisfactory solution. 9

3. **OMP costs are prohibitive, the project is not financially feasible and OMP should be rejected as a non-feasible alternative.** 10

   A. Despite the FAA's own injunction that it must evaluate the "economic consequences" and economic impacts of all alternatives (FAA Order 5050.4A, par. 83 b), FAA has failed adequately to evaluate the true costs of the project and has failed to disclose the full costs of the OMP. FAA's $14.2 billion DEIS cost estimate ignores significant cost elements which raise the cost several billion dollars higher. 11

   B. Campbell-Hill, a leading aviation economic consulting firm, estimates the cost of OMP at $21 billion. 12

   C. Even at a cost of $14.2 billion there is no way for Chicago, the airlines and the FAA to assemble the dollars to pay this enormous cost. The FAA's entire discussion of the City's ability to pay for the OMP is limited to a single sentence in which FAA merely "assume[s] that ... sufficient funds will exist to complete the proposal, if approved." 13

   D. The airlines have already refused to commit themselves to pay for major terminal components of the OMP (namely the "World Gateway" terminals) and United Airlines, the airline scheduled in the Chicago Master Plan to use and pay for the western Terminal 7 has already defaulted on hundreds of millions in bonds for its existing Terminal One at O'Hare. 14

| Comment | Response |
|---|---|
| 9 | Please see the response to this comment on the previous page. |
| 10 | Please see response to comments made in *KC Section IV*, beginning on page U.4-434. |
| 11 | Please see response to comments made in *KC Section IVA*, beginning on page U.4-436. |
| 12 | Please see response to comments made in *KC Section IVB*, beginning on page U.4-438. |
| 13 | Please see response to comments made in *KC Section IVB*, beginning on page U.4-438. |
| 14 | Please see the response to comments 103-104 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-568 of this appendix. |

**Comments on and Objections to the DEIS**
**Page 5**

E. FAA has acknowledged that an alternative that is not economically feasible should be rejected and that it should consider only those alternatives that are feasible. 15

I. **The DEIS Alternative Analysis is fatally flawed because it improperly rejected or completely ignored a number of reasonable and feasible alternatives.**

**A. Use of other Local Airports.** The FAA improperly rejected the use of other local airports in the Chicago region. Midway's success stands as a dramatic rebuttal to FAA's unsupported assertion that no local airport can grow to service significant amounts of traffic that would otherwise be served by O'Hare. 16

**B. Use of Other Hub Airports.** The major airlines serving O'Hare — United and American — have explicitly acknowledged that they can use other hubs for some of their transfer traffic. 17

**C. Use of Congestion Management.** It is clear that FAA can use and has used congestion management to keep delays at acceptable levels. FAA has used congestion management techniques at a variety of airports for years. Because OMP will produce delays equal to historic high levels in the first year of operation, FAA will be required to reinstate congestion management virtually on opening day of the OMP. There is no reason for rejecting congestion management as a tool to reduce delays to acceptable levels at O'Hare. 18

**D. Use of "Blended" Alternatives.** It is clear that even the full OMP (a project which is not likely to occur because of financial infeasibility) will rapidly reach unacceptable levels of delay

| Comment | Response |
|---|---|
| 15 | Please see response to comments made in *KC Section IV*, beginning on page U.4-434. |
| 16 | Please see response to comments made in *KC Section VB*, beginning on page U.4-444. |
| 17 | Please see response to comments made in *KC Section VA*, beginning on page U.4-439. |
| 18 | Please see response to comments made in *KC Section VC and VD*, beginning on page U.4-448. |
| 19 | Please see the cross-reference on the following page. |

| Comment | Response |
|---|---|
| 19 | Please see response to comments made in *KC Section VD*, beginning on page U.4-451. |
| 20 | Please see response to comments made in *KC Sections VD* and *VE*, beginning on pages U.4-451 and U.4-455, respectively. |

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very soon after it opens which will curtail or eliminate OMP's ability to accommodate additional traffic growth. Therefore, even the full OMP will require a "blended" alternative of congestion management at O'Hare plus use of other regional airports or hub airports to accommodate traffic demand now projected for O'Hare. Indeed, every single O'Hare alternative considered by the FAA — from the existing airport to Phase I to full OMP — will require some form of "blended" alternative, including congestion management. Contrary to FAA's unsupported claim, FAA has amply authority through airspace management and funding decisions to implement blended alternatives. 19

**E. Other non-destructive on-airport alternatives as part of blended alternatives.** A fatal flaw in the DEIS is the failure to consider any on-airport alternative configuration that does not entail the destruction of the communities and the religious cemeteries. Incredibly, the only alternative to action which FAA says would not destroy the communities and the cemeteries is the "no-build" alternative. Every other alternative considered by FAA was identical in one significant respect—it would destroy the communities and the religious cemeteries. However, there are alternatives which would not involve such destruction which the FAA did not even bother to consider. The existence of viable but unexamined alternatives renders the DEIS fatally defective. FAA has restricted its discussion of a "blended" alternative to the proposed "Phase I"

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as the O'Hare component of a blended alternative. But other various blended alternatives should be considered which consider other O'Hare components. For example, the existing O'Hare as part of a blended alternative (*i.e.*, that combined congestion management with use of other airports) is certainly feasible would address delays, would meet forecast demand, and would not require the destruction of homes, businesses, or the religious cemeteries. Similarly, alternative additional runway configurations at O'Hare other than Phase I could be used as part of a blended alternative. These alternative runway configurations could be located so as to avoid the need to destroy the religious cemeteries and to avoid the need to acquire and destroy homes and businesses in Bensenville and Elk Grove Village. 20

**F. The Los Angeles Example.** The FAA recently approved the City of Los Angeles Plan which involved use of a blended alternative to regional aviation to accommodate growth through a system of regional airports, coupled with capping LAX at a certain passenger level relying on other regional airports to accommodate growth beyond that level. 21

**5. The full OMP is too expensive and cannot be financed.**

A. Because OMP is too costly and cannot be financed, the only "real" proposal before the FAA is Phase I. 22

B. Phase I (not full OMP) should be the project against which alternatives are examined. 23

| Comment | Response |
|---|---|
| 20 | Please see the cross-reference on the previous page. |
| 21 | Please see the response to comment 138 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-595 of this appendix. |
| 22 | Please see response to comments made in *KC Sections IVA* and *IVB*, beginning on pages U.4-436 and U.4-438, respectively. |
| 23 | The FAA disagrees with this comment. The commenter believes that the full-build OMP is too costly and then draws this conclusion. Because the FAA believes the full-build financially feasible, the FAA disagrees with this conclusion based upon the assertion that the OMP is too costly. Also, see response to comments made in *KC Section IV*, beginning on page U.4-434. |

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C. Phase 1 will produce massive delays immediately upon completion. In fact, the City's Master Plan rejected Phase 1: "Option 1 [which is Phase 1] reaches excessive delays and gridlocks in certain configurations between PAL 1 and PAL 2 demand levels. As a result, Option 1 was eliminated from further consideration." Master Plan, Section 5.1.4, page V-42. 24

D. Phase I will require the use of a "blended alternative", including congestion management and the use of other airports because delays will exceed acceptable delay standards on opening day. 25

F. There are alternatives to Phase I that do not require the destruction of the religious cemeteries or the destruction of homes and businesses in Bensenville and Elk Grove Village. These alternatives include: 1) using the existing configuration with congestion management and relying on other airports and 2) using alternative non-destructive runway configurations with congestion management and other airports. 26

**6. The DEIS fails to conduct a through and probing examination and disclosure (a "Hard Look") of OMP and/or Phase I as to their social, economic, physical and public health impacts on the Environment.**

**A. Economic Impacts**

(1) The DEIS fails to examine the impact of the costs of OMP on the continued economic viability and competitiveness of the major legacy carriers at O'Hare, especially United. 27

| Comment | Response |
|---|---|
| 24 | Please see response to comments made in *KC Section VD*, beginning on page U.4-451.<br><br>Also, see the response to comments 43-87 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-525 of this appendix. |
| 25 | Please see response to comments made in *KC Section VD*, beginning on page U.4-451. |
| 26 | Please see response to comments made in *KC Section VE* and *VG*, beginning on pages U.4-455 and U.4-457, respectively. |
| 27 | Please see response to comments made in *KC Section VIA*, beginning on page U.4-459. |

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(2) The DEIS fails to examine the impact of the massive costs of the OMP on passengers using O'Hare 28

(3) The DEIS fails to examine the impact of the high OMP costs on probable traffic loss and the consequent serial cycling of traffic loss, higher unit costs on the remaining traffic base, more traffic loss due to these higher costs and so on in a "death spiral" effect. 29

**B. Social Impacts**

(1) The DEIS is flawed in its analysis and evaluation of historic resources. 30

(2) The DEIS completely ignores the destruction of the religious cemeteries and the issues of the constitutional right of the Free Exercise of Religion under the First Amendment and compliance with the federal Religious Freedom Restoration Act. 31

**C. Physical and Public Health Impacts**

(1) The DEIS misstates and understates the true impacts of noise injury under OMP. 32

(2) The DEIS failed to conduct a human health risk assessment for toxic air pollutant emissions related to OMP. 33

(3) The DEIS failed to conduct an air quality impact analysis for small particulate matter known as PM2.5. 34

(4) The DEIS failed to consider the indirect air quality impacts of the proposed project. 35

**D. Safety and Security Impacts**

| Comment | Response |
|---|---|
| 28 | Please see response to comments made in *KC Section VIA*, beginning on page U.459. |
| 29 | Please see response to comments made in *KC Section VIA*, beginning on page U.459. |
| 30 | Please see response to comments made in *KC Section VIF*, beginning on page U.4-475. |
| 31 | Please see response to comments made in *KC Section VIB*, beginning on page U.4-465. |
| 32 | Please see response to comments made in *KC Section VIE*, beginning on page U.4-474. |
| 33 | Please see response to comments made in *KC Section VID2*, beginning on page U.4-471. |
| 34 | Please see response to comments made in *KC Section VID1*, beginning on page U.4-469. |
| 35 | Please see response to comments made in *KC Section VID3*, beginning on page U.4-473. |

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(1) The DEIS contains no discussion or analysis of safety risks to passengers both during the extended construction cycle and after completion of OMP. 36

(2) The DEIS fails to discuss the safety risks relating to the massive number of additional runway crossings that will be required by OMP. 37

(3) The DEIS fails to discuss the adverse security risks relating to the construction of OMP over many years. 38

**II. THE DEIS INCORRECTLY EVALUATED THE PURPOSE AND NEED FAILING TO IDENTIFY AND ADDRESS REGIONAL AVIATION NEEDS.**

First, although the DEIS states that the central purpose and need of the project is "to address the needs of the *Chicago region*," it completely fails to do so. Instead, the DEIS analysis focuses solely on O'Hare-only solutions and does not identify or give meaningful consideration to the "needs of the Chicago region", nor does it give adequate consideration to alternatives that will be necessary to meet needs of the Chicago region.

Other than a passing reference to a regional forecast -- which is then ignored (DEIS page 1-30, Table 1-4) -- the DEIS makes no analysis of regional aviation needs. Yet, these regional aviation needs are highly relevant to the selection of any alternatives at O'Hare and highly relevant to the FAA's statutory obligation (under the NPIAS statute, 49 U.S.C. §47103, the NPIAS Order, Order 5090.3C, and related FAA guidance documents) to identify those airport elements necessary to meet the needs of the Chicago region. 39

| Comment | Response |
|---|---|
| 36 | Please see response to comments made in *KC Section IIID*, beginning on page U.4-431. |
| 37 | Please see response to comments made in *KC Section IIID2*, beginning on page U.4-432. |
| 38 | The Transportation Security Administration (TSA) was involved in the ALP review process commenting specifically on security issues. The City of Chicago, in consultation with the TSA, would develop and implement procedures to ensure that the airfield remains secure during construction operations. |
| 39 | In the DEIS, FAA did give meaningful consideration to the needs of the Chicago region and did give adequate consideration to alternatives to meet the needs of the Chicago region.<br><br>**Appendix C** of the EIS is dedicated to the evaluation of the needs of the Chicago region and the potential alternatives that involve use of other airports. **Appendix E** of the EIS provides information on the evaluation of the use of regional airports to satisfy the demand at O'Hare. **Chapter 3** of the EIS includes a summary of FAA's detailed consideration of regional airports and alternatives that include the use of other airports.<br><br>With regard to the analysis of regional aviation needs, the FAA also refers the commenter to the FAA's response to *Bensenville-Elk Grove-Park Ridge's Comments on the Preliminary Draft Purpose and Need April 21, 2003*, document number 030421_01, beginning on page U.4-12 of this appendix.<br><br>Also see response to comment 40, regarding the "regional forecast" referenced by the commenter. |

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There are several pertinent facts that are either ignored or glossed over by the DEIS. First, if the 120 million 2030 enplanement forecast by Chicago and the State of Illinois[2] is accurate, then there will be a significant shortfall in capacity at Midway and O'Hare — even with OMP in place.[3] 40

Second, although the DEIS indicates that Midway will rapidly run out of capacity, nowhere in the DEIS is there an analysis of where the excess traffic that is included in the Midway Terminal Area Forecast (TAF) will go when Midway is out of capacity and how much of that traffic will use O'Hare or other regional airports. 41

Third, FAA in its June 2004 NPIAS report, *Capacity Needs In the National Airspace System*, states that FAA estimated passenger traffic forecasts among metropolitan areas (*i.e.* the region) as opposed to individual airports (including for Chicago). The DEIS fails to discuss or analyze FAA's forecast regional demand for the metropolitan Chicago area and how Chicago regional demand compares with the capacities computed by FAA for each of the Chicago regional airports.[4] Further, 42

[2] FAA never describes the relationship of this 120 million enplanement forecast to rational transportation planning? If this forecast of enplanements is for "surface" transportation planning, why is it not equally relevant for aviation planning. Is the 120 million enplanement forecast accurate? If not, why not? The DEIS simply cites the forecast, then ignores it.

[3] The 2030 time frame is also relevant here. The FAA master planning grant for the OMP selected the year 2030 as the Planning Activity Level for analysis, yet the DEIS only forecasts to 2018.

[4] The June 2004 FAA report further compares with this metropolitan demand or the sum of the total demand at each airport in the region with the capacities of each airport. What are the regional demand forecasts for the Chicago region (either in FAA's metropolitan demand forecast or in the sum of the individual

Footnote continued on next page

| Comment | Response |
|---|---|
| 40 | The commenter refers to a forecast of 120 million enplanements in the year 2030. This was an earlier forecast using a different non- aviation derived methodology developed for a different planning purpose. The forecast for O'Hare used for the EIS is documented in **Chapter 1** and **Appendix B** of the EIS. These sections of the EIS explain why the forecast adopted for the EIS is appropriate.<br><br>The FAA has concluded that the projected enplanements described in **Table 1-4** of the EIS [those referred to by the commenter] for surface transportation planning purposes do not present a realistic projection of aviation demand in the Chicago region. For example, although the projections in **Table 1-4** of the EIS may be appropriate for long-term surface transportation needs attendant to these airports, the information contained in **Table 1-6** of the EIS presents what the FAA and the State of Illinois believe to be more realistic projections for aviation demand at the South Suburban Airport.<br><br>For purposes of the EIS, FAA determined that the period through 2018 was the appropriate "reasonably foreseeable future" in terms of activity levels and analysis of impacts. With regard to footnote 3, the FAA believes that 2030 is beyond the "reasonably foreseeable future" and that the horizon year of 5 years beyond the full build is adequate for NEPA purposes. It is not unusual or illogical that the "reasonably foreseeable future" for an FAA EIS would be different from the forecast horizon used in other planning studies or non-FAA EIS due to the different roles that the documents serve. |
| 41 | The EIS provides information related to Midway, indicating that Midway will not have significant future capacity to "take" regional demand. This is further support for the need for capacity enhancement at ORD. FAA cannot predict where unaccommodated demand at Midway will go. However, this is not critical to the FAA's conclusion that demand at ORD will exceed capacity without improvements. FAA's forecast of demand growth at ORD is not contingent on any specific assumptions regarding the demand-capacity balance at Midway. |
| 42 | The FAA's forecast of demand for ORD was used in the EIS, as required to analyze the demand-capacity relationship at ORD. The FAA's forecast used for the EIS (the 2002 TAF) was the most current available at the time the detailed modeling for the EIS was required to be undertaken. In addition, the EIS provides an analysis of regional airports, as presented in **Appendix C.** Thus, FAA has considered regional issues in preparing the EIS. FAA acknowledges that multiple forecasts have been prepared for different purposes over time, and that there are uncertainties regarding any particular forecast. For this reason, FAA includes **Appendix R** in the EIS, which provides analyses of alternative forecast outcomes for ORD. |

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the DEIS fails to assess the impact of O'Hare demand on OMP beyond 2018, despite the fact that the Master Plan grant planning framework was based on an end date of 2030. 43

The DEIS should have examined (and modeled) when O'Hare will run out of capacity using not only the 2002 TAF, but the 2003 TAF and the 2004 TAF as well. Campbell Hills' analysis shows that O'Hare with OMP runs out of capacity within 3-5 years of completion using the 2003 TAF and 2004 TAF. When demand exceeds an airport's capacity, the FAA's NPIAS *Capacity Needs* report states that "regional solutions such as the reallocation of traffic should be explored." *Id.* at p. 30. 44

The requirement to identify the needs of the "region" is not only stated as the ***central*** purpose of the DEIS but it is also a central element of the FAA's 1984 Record of Decision (ROD) on an earlier O'Hare expansion. The FAA's 1984 ROD expressly stated that the location of airport facilities to handle projected O'Hare and regional commercial aviation growth beyond the capacity of O'Hare's existing runway configuration would be the subject of an FAA funded State System Plan:

> "Development of another air carrier airport to serve the Chicago Metropolitan Area will be studied as part of a State System Plan to be prepared by the Illinois Department of Transportation under a series of grants to be funded by the FAA's Airport Improvement Program. The initial grant was issued in September 1984."

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Footnote continued from previous page

airport forecasts) and how do they compare with the capacities computed by FAA for the sum total capacity of the Chicago region's airports?

| Comment | Response |
|---|---|
| 43 | Please see the response to comment 40 on the previous page. |
| 44 | As noted in the response above, the 2002 TAF was used for the EIS analysis because this was the most recent FAA forecast available when the EIS modeling efforts were required to be undertaken. In approving the use of the 2002 TAF, FAA recognized that subsequent TAFs would be issued, and determined to conduct analyses if and when such subsequent forecasts were published. **Appendix R** of the EIS contains analyses of alternative forecast outcomes, including consideration of the 2003 TAF. When the DEIS was published, the more recent 2004 TAF had not yet been finalized. FAA has reviewed the 2004 TAF in the context of the analyses contained in EIS **Appendix R,** and has concluded that the results of the 2004 TAF are within the bounds of analysis contained in **Appendix R**.<br><br>Also, see the response to comments 43-87 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-525 of this appendix. |
| 45 | Please see the response to this comment on the following page. |

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1984 FAA ROD at 4 (emphasis added)

The State System Plan developed by the State of Illinois under FAA planning grants referred to in the FAA's 1984 ROD concluded that O'Hare's runways should not be expanded and that new aviation capacity for the Chicago region should instead be constructed at a new south suburban airport. FAA must adhere to this precedent and enforce its 1984 ROD with regard to O'Hare and to comply with the 1988 State System Plan ordered by the 1984 ROD and paid for by FAA. *Consolidated Edison Co. of New York v FERC*, 315 F3d 316 (D.C. Cir. 2003).

The DEIS is completely silent on this 1984 ROD requirement and completely silent on any other subsequent system plan that addresses the regional aviation needs of the Chicago region. Other than the 1988 system plan funded by the FAA and ordered in the 1984 ROD, what other system plan exists for the aviation needs of the metropolitan Chicago region? 45

**III. THE OMP (ALTERNATIVE C IN THE DEIS) FAILS TO MEET THE PURPOSE AND NEEDS IDENTIFIED IN THE DEIS: A) OMP WILL NOT ACCOMMODATE ALL FORECAST DEMAND FOR O'HARE; 2) OMP WILL NOT REDUCE DELAYS TO ACCEPTABLE LEVELS AND 3) OMP WILL NOT PROVIDE ADEQUATE TERMINAL AND SURFACE ROAD INFRASTRUCTURE**

**A. OMP will not accommodate forecast demand for O'Hare**

One of the central requirements set forth by the FAA in the DEIS for accepting any alternative is the requirement that the alternative accommodate forecast demand (DEIS page 3-13). An examination of

| Comment | Response |
|---|---|
| 45 | The FAA rejects the concept that it is bound by a 17 year-old State System Plan as offered by the commenter. Clearly, the enactment of the O'Hare Modernization Act supersedes whatever remaining relevance the 1988 State System Plan may have had with respect to O'Hare. Moreover, the dramatic changes at both Midway and O'Hare in the recent past suggest that even in the absence of the OMA, the 1988 State System Plan would have little relevance today.<br><br>FAA does not agree with the assertion that the 1984 ROD requires the current EIS to include a regional demand study. Nonetheless, regional airport issues and demand have been considered in the preparation of this EIS, as documented in **Appendix C** and **Appendix E.**<br><br>Subsequent to, and in accordance with, the Federal Aviation Administration's (FAA) 1984 Record of Decision (ROD), several FAA grants were issued for state system planning which studied Chicago regional aviation capacity issues and the needs for a supplemental air carrier airport. Contrary to the commenter's assertion the State System Plan did not in fact conclude "that O'Hare's runways should not be expanded….". The plan did recommend, however, a new south suburban airport. As indicated in **Chapter 1, Section 1.3** of this EIS, planning for the new South Suburban Airport is underway.<br><br>In response to this comment and other related comments, the FAA has included an expanded discussion of this issue in **Chapter 1, Section 1.2.4.1** of the Final EIS. |
| 46 | Please see the response to this comment on the following page. |

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the relevant data demonstrates that the OMP (Alternative C in the DEIS) will not accommodate forecast demand. 46

**1. Preliminary Issues**

As a preliminary discussion to Objectors' analysis of the defects of the DEIS delay analysis, it is necessary to address four related issues: a) the longstanding delay standard adopted by FAA based on the FAA's traditional FAA analysis of the relationship between delay and capacity; b) the new, less stringent delay-capacity standard adopted by FAA in the DEIS; c) the "apples vs. oranges" discrepancy between ASPM delay values used in the DEIS and the modeled and reported delay values used in the 2002 Delay Task Force, the 2003 Ricondo simulations, and as reported by FAA in the 2005-2009 NPIAS; and d) the use of outdated and unreasonably understated forecasts by FAA in the DEIS deliberately designed to favor the selection of OMP as the preferred alternative. 47

***a. The traditional FAA analytical framework as to the relationship between delay and capacity.***

FAA has long recognized that there is a difference between the theoretical maximum capacity of an airport and the "practical" capacity of that airport to operate at acceptable levels of delay. This relationship is expressed in a graph — known as the delay-capacity curve — which shows that at a point when the airport nears its practical capacity as traffic grows, delays begin to rise exponentially (*i.e.*, almost vertically) so that even the addition of small increments of traffic lead to large increases in delay for all traffic. 48

| Comment | Response |
|---|---|
| 46 | The FAA rejects the comments that Alternative C will not accommodate forecast demand. The FAA analysis of Alternative C is contained in **Chapter 3** and **Appendix E** of the EIS. The basis for FAA's disagreement may be found in the following responses to the comments offered in support of this conclusion. Also, see the response to comments 43-87 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-525 of this appendix. |
| 47 | FAA disagrees with the comment's conclusions in this section. This is a summary comment of these conclusions contained in the commenter's subsections, and the FAA's responses are provided below. |
| 48 | FAA agrees with the commenter that FAA has recognized that there is a difference between the theoretical maximum capacity of an airport and the practical capacity to operate at acceptable levels of delay. FAA believes that the TAAM model used for the EIS in evaluating ORD capacity is an appropriate tool to evaluate the capacity of ORD to operate at various levels of delay. TAAM produces estimates of delay, which are used in evaluating alternatives in the EIS. |

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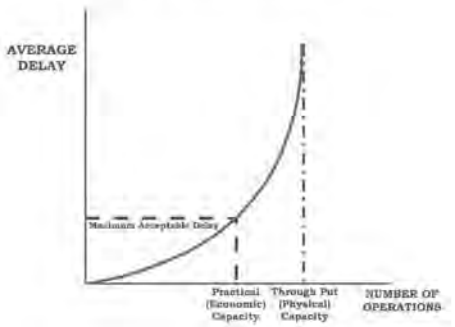
RELATIONSHIP BETWEEN CAPACITY AND AVERAGE DELAY




48

***b. The questionable and extremely relaxed delay-capacity standard used by FAA in the DEIS***

The acceptable level of delay standard adopted by the FAA in the DEIS of 15 minutes of Average Annual All Weather (AAAW) delays per operation has not been substantiated by any analysis and is wholly inconsistent with FAA's longstanding determinations that an airport reaches its practical capacity when the AAAW delay reaches 4 minutes per operation and that an airport becomes severely congested when the AAAW delay reaches 5-6 minutes:

49

- FAA Order 5090.3C FAA *Field Formulation of the National Plan of Integrated Airport Systems* states that an airport reaches annual capacity" when average annual level of delay is 4 minutes. Section 3-3, page 20.

50

| Comment | Response |
|---|---|
| 48 | See response on previous page. |
| 49 | Although there is no direct citation in this comment to Campbell-Hill (CH), the concerns raised are virtually identical to those raised in *CH Section 2.2*. Please see FAA's response to *CH Section 2.2,* beginning on page U.4-528.<br><br>The commenter suggests that 15 minutes of delay was used as a standard. This is not true. This appears to be related to the determination used in developing the constrained forecast, rather than the criteria used for screening alternatives. **Section E.1.1** of **Appendix E** of the EIS describes the delay criteria used in evaluating ORD alternatives. |
| 50 | FAA notes that comments 50-55 are citations to various delay criteria. The EIS **Appendix E, Section E.1.1** contains references to many of the same citations. See response to comment 45 of the Campbell-Hill comments on the DEIS, beginning on page U4-529. |

| Comment | Response |
|---|---|
| 51-55 | Please see the response to comment 50 on page U.4-413. |

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- FAA's 1998-2002 NPIAS Report states that "the practical capacity of an airport is reached" when "average delay per aircraft is in the range of 3-5 minutes. Delays increase rapidly once traffic demand increases beyond this level. An airport is considered to be congested when average delay exceeds 5 minutes per operation." FAA National Plan for Integrated Airport Systems (NPIAS) (1998-2002), page 10. 51
- The 2005-2009 NPIAS Report uses 4-6 minutes: ("the onset of rapid growth in delay often occurs when delay is between 4 and 6 minutes per aircraft operations.") FAA National Plan for Integrated Airport Systems (NPIAS) (2005-2009) page 12. "The Annual Service Volume (ASV), at a particular level of delay is used to measure airfield capacity at individual airports. Traditionally, a delay of four to six minutes per aircraft operation is used in ASV calculations." Id. 52
- The City of Chicago itself acknowledged that FAA considers that "an airport is at its practical capacity when the average annual delay reaches a range of 4-6 minutes per operation." City of Chicago Application for a AIP Letter of Intent, March 2004. 53
- The City's own airport consultant stated that 10 minutes is the outside or upper limit for acceptable delays:

  "The practical capacity of the airfield will be defined as the maximum level of average all-weather throughput achievable while maintaining an acceptable level of delay. * * *Ten minutes per aircraft operation will be used as the maximum level of acceptable delay for the assessment of the existing airfield's capacity… This level of delay represents an upper bound for acceptable delays at major hub airports . . ."( Landrum & Brown January 1993 Demand Forecast Analysis for the City of Chicago) 54

- The DOT, in its 1995 report to Congress on the High Density Rule states:

  There are no defined criteria that delineate acceptable versus unacceptable delays. **FAA has historically regarded up to four minutes of AAAW**

| Comment | Response |
|---|---|
| 55 | Please see the response to comment 50 on page U.4-413. |

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**delay per operation to be an "acceptable" level.** At some airports, however, this level of delay is exceeded on a regular basis. At the largest airport facilities, AAAW delays in excess of six minutes per operation are routinely experienced. Growth in delays to higher levels has and will continue to occur at airports with increasing operations, at least until new capacity can be added.

In the absence of specific acceptability criteria for delays, a level-of-service scale has been developed to describe the operational conditions generally associated with increasing AAAW delays. This scale provides a means to gauge the extent to which delays ***will be tolerated*** rather than accepted. On the basis of AAAW delay, ***operational conditions at large hub airports*** could be characterized as follows:

- 0 to 4 minutes of delay per operation: efficient overall operations; delays limited to the most extreme weather conditions.
- 4 to 6 minutes of delay per operation: less *efficient* overall operations; limited peak hour VFR delays along with IFR delays experienced in both moderate and extreme weather conditions.
- ***6 to 8 minutes of delay per operation: increasing VFR delays in peak hours; increasing delays and eroding operational reliability in IFR conditions; high sensitivity to operational anomalies.***
- ***8 to 10 minutes of delay per operation: increasing VFR delays in peak hours with translation to shoulder hours in all but optimum conditions; high delay in IFR with resulting flight cancellations.***
- ***Over 10 minutes of delay per operation: VFR operations experience increasing delays in peak periods and shoulder hours in all but optimum conditions; very high delays in IFR resulting in extensive flight cancellations.***

***

"…[W]hen the AAAW delay per operation reaches **6 minutes**, project planning, engineering and design of capacity improvements should be actively pursued. When AAAW delay reaches **eight minutes**,

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implementation• of capacity improvements should be underway."

1995 DOT entitled *A Study of the High Density Rule* Report, Technical Supplement # 3, page D- 55

The 4-minute standard used by FAA in FAA Order 5090.3C Field Formulation of the National Plan of Integrated Airport Systems, is the standard which is used to determine whether proposed facilities will provide adequate capacity to meet forecast demand[5]. 56

Whichever of these standards is used, several things are apparent. At 3-5 minutes AAAW and above the airport is congested and becomes increasingly congested as the average delay rises. At 4-6 minutes the delay curve starts to go vertical and even small increments in added traffic cause major increases in delay for all traffic. At eight minutes of AAAW delay, the airport should be building new capacity. Finally at ten minutes of delay, there are significant VFR delays and very high delays in IFR (bad weather) conditions — with extensive cancellations. 57

It is in this context that delays and capacity at the existing O'Hare must be examined. According to the 2002 Delay Task Force Report, O'Hare in 2001 experienced an AAAW delay of 9.9 minutes. According to the DEIS TAAMS modeling, O'Hare in 2002 experienced a

[5] The FAA made an affirmative decision to place Phase I of the OMP in the 2005-2009 NPIAS thereby determining that Phase I will produce capacity sufficient to meet forecast demand under the 4 minute AAAW requirement of Order 5090. The DEIS is silent on this issue and the Objectors have sought, but have not been provided any evidence to support the FAA's NIPIAS determination. The evidence in fact contravenes any such determination. Phase 1 will not accommodate forecast demand at any acceptable level of delay.

| Comment | Response |
|---|---|
| 55 | Please see the response to comment 50 on page U.4-413. |
| 56 | The FAA notes that OMP Phase I yields an average annual delay higher than 4 minutes per operation. This is, in part, why Alternative B (or OMP Phase I) failed to meet the purpose and need of the EIS as a stand alone alternative. For more detail on the consideration of Alternative B, see **Chapter 3, Section 3.2.2.2.** |
| 57 | Comment noted. |
| 58 | Please see the response to this comment on the following page. |

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delay of 9.3 minutes AAAW. The 2005-2009 NPIAS reports that delays at O'Hare average 7 minutes. 58

In the past, FAA has recognized the need for congestion management when delays reached unacceptable levels. The FAA has recognized that much of the delay that occurred in late 2003 and 2004 was the result of deliberate over-scheduling by the major airlines at O'Hare. By dialing back the schedule to be more in balance with the capabilities of the airfield, FAA can eliminate unacceptable levels of delay with the stroke of a pen. 59

FAA in the DEIS proposes allowing the existing O'Hare to rise in the future to the level of 15 minutes AAAW delay and then uses that very high delay to compare the existing O'Hare to the OMP. There is no reason for FAA to allow the AAAW delays at the existing O'Hare to rise to these levels. FAA through congestion management can allow O'Hare to operate at much lower levels of delay. 60

These longstanding AAAW delay standards must be considered when reviewing the FAA's delay reduction claims for the full OMP and for Phase 1 of the OMP. As discussed below, regardless of which standard is used (whether it is 4-6 minutes traditionally used by FAA, 9.3 minutes of delay that existed in 2002, 7 minutes used in the 2005-2009 NPIAS, 10[6] minutes, or even the new 15 minute standard, the FAA's own modeling results demonstrate that

[6] The significance of an "average" annual all weather delay of 10 minutes masks the reality that at 10 minutes AAAW, average bad weather delays are much worse. Thus under OMP, Chicago's consultant Ricondo predicted that when AAAW delays were 10.8 minutes, bad weather delays would "on average" be more than 40 minutes.

| Comment | Response |
|---|---|
| 58 | Comment noted. |
| 59 | The FAA notes the comments on the issuance of the orders limiting scheduled operations at O'Hare, which is a temporary measure and not a preferred course of action. FAA cannot "dial back the schedule." FAA does, however, have a defined role in reviewing projects by local sponsors for the purpose of reducing delay. |
| 60 | The FAA used 15 minutes as a "cap" to evaluate the No Action Alternative as this is a realistic level of delay under the constraints given the existing airfield. See **Appendix B** of the EIS for more on the 15 minute delay "cap" utilized to develop the constrained forecast. |
| 61 | Please see the response to this comment on the following page. |

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- **Phase I will produce unacceptable levels of delay with extremely high bad weather delays and extensive cancellations virtually from the day it opens.**
- **The full OMP will experience delays equal to or grater than the delays experienced at O'Hare in 2001 and 2002 within a few years after it opens.**
- **Based on FAA's own model results, both Phase I and the full OMP will necessitate FAA to utilize congestion management at O'Hare to reduce the massive OMP and Phase 1 delays — a reality that runs contrary to the claims made by FAA in the DEIS.** 61

FAA in the DEIS now proposes a new, higher standard of 15 minutes AAAW delay as the criterion for defining the acceptable level of delay. Increasing the allowable delay standard does two things to bias the results in favor of OMP:

First, it allows FAA to claim more benefits for delay increases that are essentially self-inflicted and which could be eliminated by the stroke of a pen through congestion management.

Second, it allows FAA to claim that OMP will have a higher level of capacity than OMP would otherwise have under application of the traditional FAA delay standards. 62

Thus by increasing the delay standard the FAA artificially pumps up the delay "costs" of the existing airport while expanding the

| Comment | Response |
|---|---|
| 61 | FAA disagrees with the comments. Please see FAA's response to these issues raised by CH in *CH Section 2.0,* beginning on page U.4-525. |
| 62 | FAA did not propose a new standard of 15 minutes of average annual delay, see **Section E.1.1** of **Appendix E** of the EIS. The commenter asserts that the use of constrained forecast as presented in the EIS biases the results. In fact, the use of a constrained forecast is necessary in evaluating a no action alternative because it is not possible to generate the operational and environmental impacts using an unconstrained demand forecast. See **Section B.5.1.1** of **Appendix B** of the EIS for more on the 15-minute delay "cap" utilized to develop the constrained forecast. Of note, the delay levels assumed in developing the constrained forecast are substantially similar to delays that led to the scheduling orders limiting operations at O'Hare.<br><br>With regard to the commenter's second bullet, the FAA notes that the capacity of OMP is not judged solely versus the capacity provided by the No Action Alternative or the number of operations served by the No Action Alternative. |

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acceptable delay and capacity "benefits" of the OMP, creating a false picture of the benefits of OMP. 63

*c. The "apples vs. oranges" discrepancy between ASPM delay values used in the DEIS and the modeled and reported delay values*

There is a serious logical disconnect between the modeled delay values for the existing O'Hare — in the 2002 Delay Task Force, the 2003 Ricondo simulations, and the 2002 FAA TAAMS runs — vs. the ASPM annual average delay values reported and used in the DEIS for the years 2001 and 2002. Similarly, there is a logical disconnect between the ASPM AAAW values used in the DEIS and the average minutes of delay listed for O'Hare and the other 34 OEP airports in Table 4, page 15 of the 2005-2009 NPIAS.

The model values (all from either Chicago or the FAA) purport to be calibrated and verified with real world data and purport to be accurate representations of the actual delays that occurred in a given year at O'Hare (or the other 34 OEP airports). Yet the ASPM values — which are dramatically different from the modeled values — also purport to be accurate representations of the actual delays that occurred in the same years. 64

A similar disconnect occurs with regard to the ASV capacity calculations used in the DEIS. As the 2005-2009 NPIAS points out, typically a delay of 4-6 minutes of AAAW is used as the defining limit for ASV calculations. Id at 12 What level of delay was used for the ASV calculations in the DEIS for Midway and the other airports for which an ASV capacity was reported? Using the same delay criterion

| Comment | Response |
|---|---|
| 63 | FAA disagrees with the comment. See response to comment 62 on page U.4-418. |
| 64 | The commenter compares delay estimates from several delay databases and different generations of simulation modeling, concluding that differences in these estimates represent "logical disconnects" between modeled and historical delay values. Interestingly, the commenter does not reference any specific delay values that represent "logical disconnects" nor does he define the term "logical disconnects" in his comment, making it difficult for the FAA to respond directly to this comment.<br>Nevertheless, the FAA does not find any major inconsistencies between the TAAM simulation results produced for the EIS and historical delay statistics from the Aviation System Performance Metrics (ASPM) data system. The FAA believes that the average annual delay estimates from TAAM agree reasonably well with historical delay statistics recorded in ASPM for both 2002 and 2003 conditions.<br>For example, for 2003 conditions, average annual delays of 14.9 minutes per operation were reported in ASPM, whereas TAAM simulations conducted for the EIS indicated average annual delays of 15.2 minutes per operation.<br>The commenter cites delay estimates from both the 2001 O'Hare Delay Task Force Study and separate simulation exercises conducted by Ricondo and Associates ("2003 Ricondo simulations"), which are presumably simulation results presented in the Master Plan for O'Hare. These simulation exercises, which were not conducted as part of the EIS, did not rely on the same assumptions used in the EIS modeling effort. Accordingly, the FAA asserts that comparisons of these delay values are inappropriate without citing the differences that existed between the various generations of modeling, including differences in the models that were used, the components of the airfield and airspace system that were modeled, the activity levels/flight schedules that were modeled, among others.<br>The FAA respectfully disagrees with commenter's assertion that the model was not validated. More than 100 simulation experiments prepared for this assignment were thoroughly reviewed by FAA experts – including: Air Traffic Representatives, Airports Division, and Third Party Contractor simulation experts. Simulation model calibration and validation efforts were conducted on every simulation model prepared for the EIS. These efforts focused on further simulation models which produced expected runway throughput rates and reasonable average annual delay estimates. The efficacy of these efforts is indicated by the reasonably close relationship between average annual "excess travel time" delays empirically determined from ASPM and delays estimated in TAAM. |

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as used in the DEIS for these other airport ASV calculations, what is the ASV capacity for the existing O'Hare? Similarly what is the ASV capacity for Phase I or the full OMP using the same delay criterion? 65

***d. The use of outdated and deliberately low-ball forecasts by FAA in the DEIS***

The FAA inappropriately continued to rely on the 2002 TAF more than a year after the 2003 TAF was available. By doing so it artificially and erroneously skews the results in favor of OMP. As discussed below, when the 2003 TAF is applied to the simulation model, the delays for OMP would be much higher and OMP would run out of capacity much sooner. FAA got the results it wanted from the modeling effort by deliberately inputting low demand numbers into the model. 66

Indeed, instead of modeling based on the 2003 TAF, FAA in Appendix R tries to use a short-cut to dismiss the importance of the 2003 TAF by stating that "using extrapolation and professional judgment" OMP would reach capacity near or above the 15 minute delay level in 2018, five years after OMP opens. FAA's refusal to do its job right and run the model using the 2003 TAF is further evidence of the lack of thoroughness and objectivity of the DEIS and of the result-oriented approach taken by the FAA to artificially favor OMP over all other alternatives. 67

There is a second issue with regard to the forecasts. Objectors asked early on to participate in any FAA decisionmaking in developing the Terminal Area Forecast for O'Hare because of its potential significance to the FAA's OMP decisionmaking. FAA refused to

| Comment | Response |
|---|---|
| 65 | The methodology used to produce these ASVs is described in Chapter 2 of *FAA Advisory Circular 150/5060-5, Airport Capacity and Delay.* This methodology relies on published data for a variety of typical airfield configurations found in the United States. All of the airports for which ASVs are presented in **Table C-3** of the EIS lend themselves to evaluation using this methodology because they have airfield configurations that appear in Chapter 2. ORD, on the other hand, has a complex configuration that cannot be accurately evaluated using the Chapter 2 methodology. Accordingly, the FAA cannot provide an ASV estimate for ORD that is comparable to those presented in **Table C-3.**<br>It should be noted that, although ASV is useful for long-range airport planning at airports that experience low levels of airfield congestion and delay, ASV is not an appropriate evaluation metric for highly congested airports like ORD, where the actual number of operations accommodated annually exceeds ASV by a large margin. In such cases, more sophisticated techniques—such as the TAAM simulations prepared as part of the EIS—are more appropriate for evaluating the ability of alternatives to reduce delays and accommodate forecast demand.<br>TAAM results indicate that the OMP would reduce average annual delays at the airport from approximately 17 minutes per operation to approximately 6 minutes per operation at the build plus five years demand level (i.e., 1.2 million annual operations) while simultaneously accommodating 220,000 additional aircraft operations. These results clearly indicate that the OMP would substantially enhance airfield capacity at ORD.<br>The 2005-2009 *National Plan of Integrated Airport Systems* does not make the statement that "typically a delay of 4 to 6 minutes of [average annual all weather] delay is used as a defining limit for ASV calculations" as claimed by the commenter. Nevertheless, the FAA agrees that the characterization of ASV's in this manner is reasonably appropriate. With such a definition, it is possible to estimate the ASV of ORD using the TAAM-based delay curves prepared for the DEIS. This evaluation results in an estimated ASV for the existing airfield at ORD of between 775,000 and 850,000 operations, well below the level of 931,000 operations level accommodated at ORD in 2003 and the 992,000 operations level accommodated at ORD in 2004. As this evaluation indicates, ASV is not a particularly accurate indicator of the operations levels that can realistically be accommodated at congested airports. |
| 66 | When the EIS modeling was undertaken, the 2002 TAF was the most recent FAA forecast available. Because of the time required to complete comprehensive simulation modeling, it is not possible to adopt each new forecast that may be developed during the EIS process. However, it is possible to review any new forecasts and determine the potential impact on the conclusions of the EIS—and confirm that the forecast used continues to be valid. In fact, in approving the use of the 2002 TAF for the EIS, FAA noted that the EIS Team would need to review any new forecasts and conduct sensitivity analysis as appropriate.<br>Continued on the following page. |
| 67 | Please see the response to this comment on the following page. |

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acknowledge or honor our request and proceeded to promulgate a 2004 TAF for O'Hare which produces a lower forecast than the 2003 forecast. Not only have the Objectors been denied participation in the formulation of the O'Hare TAF forecast, but FAA has withheld from this record, the documentary evidence which discloses and justifies the change in the forecast from 2003 to 2004. Such evidence is important because the economic correlations on which such forecasts are based would suggest that the 2004 forecast should be even higher, not lower, than the 2003 forecast. (*See* Campbell-Hill report at sec. 2.6.2.) FAA's refusal to include this material and data and FAA's failure to even discuss the issue in the DEIS suggests again that FAA is deliberately manipulating the data to reach a pre-determined conclusion. 68

**2. Using any delay standard, OMP's capacity will be exhausted shortly after it opens**

The well respected aviation consulting firm of Campbell-Hill conducted detailed analyses of the FAA TAAMs modeling claims. As noted above, unlike the 2003 modeling efforts by Ricondo which used the year 2030 PAL 2 Forecast extrapolated from the 2001 TAF (*i.e.*, the year 2030 was selected as Planning Activity Level 2 (PAL2)), FAA stopped its analysis at 2018. Using a 2002 TAF (low-ball) and a 2018 end year, FAA was able to claim a higher capacity and lower delay than would otherwise have been the case had the 2003 TAF forecast been used. 69

Contrary to the claim in the DEIS (Appendix R-11), FAA's failure to model the higher values of demand such as were used in the Ricondo

| Comment | Response |
|---|---|
| 66 continued | As a result, FAA conducted sensitivity analysis of more recent forecasts that became available during the EIS modeling process—including the 2003 TAF (which was higher than the 2002 TAF). This sensitivity analysis is presented in **Appendix R** of the DEIS. The FAA agrees with the commenter that newer forecasts need to be reviewed and accounted for. Since publication of the DEIS, a 2004 TAF has been published, which is lower than the 2003 TAF and very similar to the 2002 TAF. This latest forecast is included in the sensitivity analysis reported in **Appendix R** for the FEIS. FAA believes that consideration of th e latest forecast—the 2004 TAF—further supports the activity levels used for EIS modeling. The use of the 2002 TAF and sensitivity analysis of new forecasts is further addressed below. |
| 67 | As discussed above, FAA cannot "re-start" complex modeling every time a new forecast is published. However, FAA can and did confirm, using sensitivity analysis, the latest forecast does not invalidate the results of the analyses developed using the original forecast. For the DEIS, FAA conducted sensitivity analysis for a variety of factors, including the 2003 TAF activity levels. These results are presented in **Appendix R** of the DEIS. Since publication of the DEIS, a 2004 TAF has been published, which is lower than the 2003 TAF and very similar to the 2002 TAF. This latest forecast is included in the sensitivity analysis reported in **Appendix R** for the FEIS. FAA believes that consideration of the latest forecast—the 2004 TAF—further supports the activity levels used for EIS modeling. |
| 68 | The change in the forecast from the 2003 TAF to the 2004 TAF represents an update of FAA's analysis of demand trends at ORD, in much the same way that there was a change from the 2002 TAF to the 2003 TAF. The commenter has suggested that the 2003 TAF is preferred to the 2002 TAF because the 2003 TAF is more current, but for some reason the commenter has not used the same logic in regards to the 2004 TAF. The 2004 TAF, which is lower than 2003 TAF and very similar to 2002 TAF, was not discussed in the DEIS because the 2004 TAF was not finalized at the time that that DEIS was published. The 2004 TAF is discussed in the FEIS. The commenter appears to "pick and choose arguments"—that is: (1) the 2003 TAF is preferred to the 2002 TAF because it was more recent; but (2) the 2004 TAF is not preferred as even more recent, perhaps because the commenter does not agree with the results of the 2004 TAF. FAA has taken a more objective approach—any new forecast needs to be considered, and evaluated in relation to the 2002 TAF that was used as the basis for EIS modeling. This full consideration of all more recent forecasts will be provided in **Appendix R** of the FEIS. |
| 69 | Please see the response to comment 40 on page U.4-409. |

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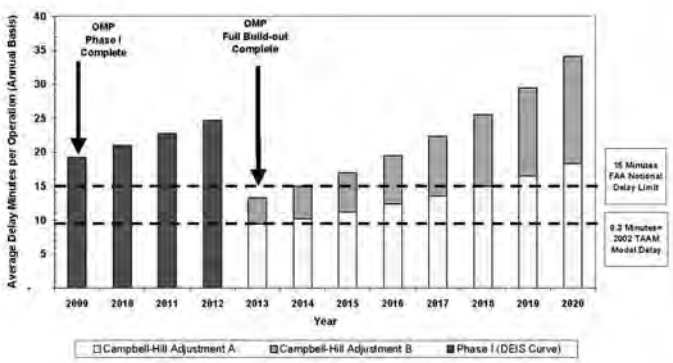
master plan simulations makes it difficult to "derive" delay curves for the 2003 TAF from the delay curves shown in Appendix D to the DEIS.

However, Campbell-Hill was able to construct a delay curve for the higher levels of traffic based on Appendix R which states that at 1.4 million operations the delay at O'Hare would be 13-16 minutes and by examining the comparative throughputs of OMP. 70

Campbell-Hill's analysis demonstrates that when one uses this delay curve, the OMP will be out of capacity shortly after it opens—whatever TAF is used and whatever standard of delay is used. If one uses the 9.3 minutes of delay experienced in 2002, OMP will exhaust its capacity by 2014. Even is one uses the DEIS 15 minute standard, OMP will exhaust its capacity by 2015—only two years after opening. *See*, Campbell-Hill Chart 1-2:

**THE OMP WOULD PRODUCE CURRENT LEVELS OF DELAY THE YEAR IT OPENS AND BE OUT OF CAPACITY UNDER ANY STANDARD NO LATER THAN 2018**




71

| Comment | Response |
|---|---|
| 70 | FAA disagrees with the comments. Please see FAA's response to these issues raised by CH in *CH Section 2.0,* beginning on page U.4-525. |
| 71 | The commenter has based this assertion on an alternative demand-capacity analysis prepared by CH. While FAA does not disagree with the commenter's characterization of CH as a "well respected aviation consulting firm", FAA is not aware of CH's experience or expertise in conducting airfield simulation analysis. Further, the report that the CH data come from includes the statement: "[CH] was not able to re-run the FAA's version of TAAM". The report simply states that adjustments were made. Without an alternative set of modeling assumptions and results comparable to the modeling conducted by FAA for the EIS, it is not appropriate for the FAA to discard the results of its use of a commercially available state-of-the-art modeling program in favor of the commenter's less sophisticated approach to this complex issue. Therefore, the FAA does not agree with the commenter's conclusions regarding delays at ORD based upon the comprehensive modeling results produced by FAA and documented in the DEIS.<br><br>The FAA does not understand why CH was "not able to run the TAAM model." The FAA used a commercially available version of the TAAM model for the EIS operational analysis. The TAAM data inputs to the model were posted on the FAA's publicly available website (www.agl.faa.gov/omp) beginning approximately seven months prior to the release of the DEIS. In addition, TAAM data inputs were provided to Mr. Joseph Karaganis, of the law firm of Karaganis, White and Magel, beginning approximately nine months prior to the DEIS release. The TAAM input files were provided in an electronic format that would enable interested parties to re-run the original inputs, or to adjust assumptions and re-run the model.<br><br>Moreover, the FAA's analysis of this comment demonstrates that it contains several fatally incorrect assumptions. First, CH assumed a traffic level at the high-end of the range described in **Appendix R** coupled with the presumption that the project would conclude with OMP Phase I, ignoring FAA's acknowledgement that Phase I alone would not meet the purpose and need. In addition, the commenter extrapolated delay levels beyond the reasonably foreseeable future considered in the EIS, and coupled the extraction with "adjustments" to the delay curves with which the FAA does not agree. |

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Source: Exhibit 200

In the absence of FAA doing what it should have done — *i.e.*, using the 2003 TAF and running the TAAMS model at the higher operations shown in the 2003 TAF and running the model for incremental interval years through the end year of the Master Plan horizon (2030) — the Campbell-Hill adjusted delay curve is the best and only evidence of what the delays will be in 2018 and beyond under the 2003 and 2004 TAFs. FAA should run the TAAMS model under the 2003 and 2004 TAFs through incremental interval years through the end year of the Master Plan horizon (2030) so that the public, senior FAA decisionmakers, Congress, and the courts can see when, under FAA's own model runs, OMP reaches higher delay levels and runs out of capacity. 72

The implications of the use of the proper delay curve and the use of the 2003 TAF or 2004 TAF are significant. The delay analysis shows even with the full build-out of OMP, O'Hare will reach levels of delay unacceptable to FAA and the public within a few years after it opens. This will require FAA to use some form of congestion management at O'Hare (with full OMP in place) soon after OMP opens. The delay results demonstrate that even with full OMP, FAA will have to use some form of "blended alternative" *i.e.*, a combination of congestion management at O'Hare and use of other airports to handle even the limited forecast traffic earmarked by FAA for O'Hare, let alone the excess regional demand that will result from Midway's capacity limit. 73

| Comment | Response |
|---|---|
| 72 | FAA disagrees with this comment. The TAAM modeling conducted for the EIS was a comprehensive modeling effort using an industry standard analytical tool (TAAM) and the most recent forecast available at the time (the 2002 TAF). FAA recognizes that more recent forecasts have become available since the modeling was conducted (including a 2004 TAF that is very similar to the 2002 TAF), and has undertaken sensitivity analysis to ensure confidence in the modeling results used for the EIS (see Appendix R of the EIS).<br><br>As explained in the response to comment 40 on page U.4-409, the FAA included estimates of delay or forecasts through 2018, the "reasonably foreseeable future."<br><br>Also, see FAA's response to these issues raised by CH in *CH Section 2.0*, beginning on page U.4-525. |
| 73 | Pleased see response to comment 72 immediately above. |

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Because OMP will be out of capacity virtually on opening day, the FAA will be required to use a blended alternative of congestion management coupled with reliance on use of other airports. The FAA must therefore consider use of a blended alternative with each and every O'Hare alternative — from maintaining the existing configuration (with congestion management and other airports) to Phase I, to other intermediate runway options at O'Hare, to the full OMP. The DEIS is defective because it has failed to evaluate the relative merits, costs, feasibility, and environmental impacts of each of these blended alternatives. 74

**B. OMP will not reduce delays to acceptable levels**

There are several reasons why OMP will not meet the stated purpose and need in the DEIS of reducing delays to acceptable levels.

First, as shown by the Campbell-Hill analysis, delays under OMP and the 2003 (or 2004) TAF will be high soon after completion and rise relatively quickly to the point that delays under OMP will equal the highest levels of delays historically experienced at O'Hare. Since more traffic will be moving through OMP at equivalent levels of delay, OMP will produce more total delay at the same level of delay per operation. Any reduction in delays by OMP per operation will be short lived as traffic and delays rise quickly to the 6 and 10 minute AAAW level and soon after to the 15 minute level. 75

Second, it is erroneous to use a 16 minute level of delay as the base case comparison for the "existing" airport. This is because the FAA will not, indeed has not, allowed continuation of delays at that level

| Comment | Response |
|---|---|
| 74 | The FAA recognizes that as a conceptual matter the number of alternatives available for consideration in almost any proposal is virtually infinite. For that reason, the NEPA process utilized by FAA has been carefully crafted to consider the range of reasonable alternatives. Here, as shown in the EIS, the FAA has considered a wide variety of both non-airfield and build alternatives. In addition, the FAA has considered the use of a blended alternative. This is defined and evaluated in **Chapter 3** and **Appendix E** of the DEIS. The blended alternative is as the name suggests—a blending of different solutions. The main purpose of the blended alternative was to evaluate the potential for non-development actions to minimize the need for airfield development. This is described in **Chapter 3** and **Appendix E** of the EIS.<br><br>FAA does not agree that adding blended alternative elements to other alternatives would change any of the conclusions in the EIS. The best solution would still be the best solution from a relative standpoint, although certain absolute values or metrics might change. |
| 75 | The commenter's assertion regarding future delay levels is based on the independent delay estimates prepared by CH. As explained above, the independent delay estimates prepared by CH are not based on a modeling tool that is appropriate for this project.<br><br>The delay estimates prepared for the EIS are based on an industry-standard airfield modeling tool—TAAM—and were prepared under a comprehensive effort. FAA does not accept the delay estimates prepared by CH. There is no evidence that the commenter's preferred analyst---CH—performed airfield modeling that can be considered accurate or conforming to standards used in the industry. CH's own report acknowledges that "proprietary models" can be considered valid for demand-capacity analysis. However, neither the commenter nor CH has provided any evidence that a suitable model was employed for the analysis reported by the commenter. In the absence of such evidence, FAA cannot accept the results offered by the commenter.<br><br>Also, see FAA's response to these issues raised by CH in *CH Section 2.0*, beginning on page U.4-525. |
| 76 | Please see FAA's response to these issues raised by CH in *CH Section 2.0*, beginning on page U.4-525. |

| Comment | Response |
|---|---|
| 76 | See response to the previous page. |
| 77-82 | Please see FAA's response to these issues raised by CH in *CH Section 2.0,* beginning on page U.4-525. |

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and has installed congestion management to reduce delays to acceptable levels. If FAA wants to reduce delays at O'Hare to the level represented by the 9.3 minutes of delay experienced according to the FAA TAAMS analysis for 2002 or the 8.9 minutes AAAW reported in the Ricondo 2003 analysis, FAA need only structure a congestion management program designed to achieve that value. In short, FAA is using congestion management now at O'Hare and as Campbell Hill conclusively demonstrates FAA will have to use congestion management for **every** alternative, including OMP. Therefore, the proper comparison of no-build and OMP should be a comparison between the existing airport with congestion management designed to achieve whatever level of delay FAA selects vs. each alternative at a comparable level of delay. FAA should model the 2002, 2003, and 2005 "existing" airport configuration with varying congestion management techniques and levels to determine what levels of delay would occur under those congestion management alternatives. 76

For FAA to allow delays at the existing airport to build up from 9.3 AAAW to 16 minutes as suggested in the DEIS is highly irresponsible given the concerns raised by the DOT in its 1995 HDR report stating that at 10 minutes AAAW, O'Hare will experience extremely high IFR delays, increasing VFR delays, and extensive cancellations. 77

Given FAA's ability to control and reduce delays at the existing O'Hare (and at any change in O'Hare from Phase I to full OMP) to whatever level FAA deems appropriate, any delay that FAA tolerates at O'Hare is essentially self-inflicted and remediable. FAA cannot

| Comment | Response |
|---|---|
| 78-80 | Please see FAA's response to these issues raised by CH in *CH Section 2.0,* beginning on page U.4-525. |

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bootstrap itself into allowing high delays to grow from 8.9 or 9.3 to 16 minutes (or higher) as a concocted delay justification for expansion 78

Third, there are several factors which strongly suggest that simply placing additional runways down will not address delays in the quantitative statistical relationship FAA assumes between adding runways and delays, especially bad weather delays. 79

- Campbell-Hill has done statistical analyses of the correlation between levels of operations and delays at O'Hare and does not find a reliable correlation between the two. Indeed, the data show significant scatter which suggests that there are other variables that often cause bad weather delays independent of the level of traffic and runway availability. In short, there is a serious question as to whether the underlying premise of the TAAMS model sufficiently correlates with the real world data to support the assumptions and framework of the TAAMS model. 80
- The DEIS recognizes that some of the delays currently experienced at O'Hare are caused by limitations in the existing airspace. (DEIS at 2-9) The DEIS fails to quantify the amount of delays currently experienced at O'Hare due to airspace limitations and fails to quantify the amount of delays that will be experienced as a result of airspace limitations if the current airspace constraints are not removed. Nor does the DEIS identify what physical and manpower investments will be needed to correct these current delay problems and to provide sufficient airspace capacity to accommodate the

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forecast OMP traffic. Nor does the DEIS indicate when those necessary airspace investments will be made. Finally, the DEIS does not quantify the delays that would exist on the current airfield (with or without congestion management) if these airspace constraints (and the delays they cause) were eliminated. 81

- The DEIS fails to quantify the level of delay at the current airport that is caused by gate shortages and the location of those gate shortages. (DEIS ES-8) This is particularly important since there is no showing that American or United is willing or able to make a significant investment in new terminal and gate facilities as proposed in the OMP. If a significant portion of the delay currently at O'Hare is due to gate deficiencies at American and/or United facilities, putting in added runways without investing in added terminal and gate facilities will be a hollow exercise. 82

**C. OMP will not provide adequate terminal and surface road infrastructure**

Contrary to the statements and assumptions in the DEIS, OMP will not provide adequate terminal and surface transportation facilities to address the 2003 and 2004 TAF. 83

| Comment | Response |
|---|---|
| 81-82 | Please see FAA's response to these issues raised by CH in *CH Section 2.0,* beginning on page U.4-525. |
| 83 | The FAA disagrees with this comment. The comment is based on comments 84-89 which are separately responded to below. |

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**1. The Airlines Will Not Be Willing or Able To Finance the Billions of Dollars in Terminal Costs Needed for the OMP and the Forecast Traffic.**

There is simply no evidence that the major airlines serving O'Hare can or will pay for the several billion dollars in terminal costs needed for the OMP and the traffic increases projected in the FAA's Terminal Area Forecast. According to the Chicago Tribune, the major airlines at O'Hare have refused to provide required "Majority In Interest" ("MII") approval for the terminals in the World Gateway Program. Without those terminals, there can be no OMP.

Nor is there any evidence (other than empty public relations rhetoric) that either American or United is willing or able to make such a huge multi-billion dollar financial commitment.

Similarly, the Master Plan and all the EIS modeling on which the entire DEIS is based is predicated on United paying for and using the new Western Terminal— Terminal 7. The suggestion in the Master Plan is that the huge cost of this terminal will be financed with special facility bonds— presumably issued by United Airlines. This is laughable. United has just defaulted on several hundred million dollars in bonds for its existing Terminal 1. There is no way United could finance the proposed new Terminal 7. 84

**2. The Surface Transportation Components relating to the OMP Are Not Adequately Examined in the DEIS.**

There are several problems of surface transportation that are not adequately examined, evaluated or disclosed in the OMP.

| Comment | Response |
|---|---|
| 84 | Contrary to the commenter's assertions, the major airlines serving ORD have supported OMP, and have provided majority-in-interest (MII) approval for the financing thus far required. This MII approval, dated March 28, 2003, includes approval for the cost of land acquisition that only makes sense if the full OMP is developed. Thus, this is an indication that the major airlines have committed to the full OMP.<br><br>Please see FAA's response to these issues raised by CH in *CH Section 3.0*, beginning on page U.4-557. Specifically, see response to comments 103 and 104, beginning on page U.4-568. |

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First, the surface transportation analysis identifies a huge length of York-Elmhurst Road and associated intersections that OMP will cause to become severely congested (*i.e.*, above thresholds of significance) and other large sections of other area roads such as Irving Park that will experience additional significant additional delay. (See *e.g.*, DEIS, Exhibit 5.3-7) But nowhere does the DEIS describe what the additional delay caused by OMP will be on drivers — both drivers trying to get to and from O'Hare (how much additional delay) as well as non-O'Hare drivers who will face congestion caused by the OMP expansion. The DEIS only reports a selective group of delays but does not quantify all the surface traffic delays that will occur with and without the OMP. 85

Second, the DEIS neglects to explore and disclose problems relating to other surface transportation aspects of OMP. For example, the DEIS fails to fully disclose and discuss the problems with "western access." "Western access" will only occur if all of the runway and terminal projects involved in the expansion project are built – an extremely unlikely event given the huge project cost which cannot be financed. The DEIS makes no mention of the fact that if less than all the runways are built, or unless United agrees to and can pay for Terminal 7, there will be no "western access". 86

Third, FAA fails to disclose what a sham "western access" really is for passengers with baggage to check in terminals 2-6 or for passengers arriving at O'Hare with baggage to collect at Terminals 1-6. Chicago says it does not have enough money to build the kind of "non-secure" perimeter rapid transit system that currently exists on the

| Comment | Response |
|---|---|
| 85 | The FAA conducted a detailed surface transportation analysis for various phases of the alternatives. The results of this analysis indicate that traffic congestion is already present within the surface transportation study area. The current traffic congestion is expected to worsen with both the No Action and Build Alternatives. However, the Build Alternatives when compared to the No Action alternative result in some intersections and roadways segments deteriorating such that they would exceed the threshold of significance for surface transportation criteria levels. For more information on the surface transportation analysis please refer to **Section 5.3** in the EIS. Mitigation for identified surface transportation impacts is documented within **Chapter 7** of the EIS.<br><br>Additionally, the Federal Highway Administration (FHWA) has commented on the analysis of the surface transportation impacts of the project inquiring as to "whether or not the increased traffic volumes are generated by the O'Hare improvements." The FAA has updated **Section 5.3** of the Final EIS to address the FHWA comment. See document 050406_03 on page U.2-28 of this appendix. |
| 86 | In accordance with the National Environmental Policy Act of 1969 (NEPA), the FAA evaluates the City's proposal and alternatives to it from an environmental standpoint. The details of how a western access point to the Airport would be provided are the responsibility of the City of Chicago.<br><br>Currently, access points leading to the passenger terminal and other functional areas are located at the east and northeast perimeter. Consequently, airport users on the west and southwest of the airport must travel around the perimeter of the airport. To enhance convenience for airport users accessing O'Hare from the west and southwest, roadway access to O'Hare from the west should be provided. The O'Hare Modernization Act (OMA), related to the proposed expansion of O'Hare, was adopted by the Illinois legislature and signed into law by the Governor on August 6, 2003. |

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eastern side of the airport. What does this mean? According to Chicago, it means that if you live in the western suburbs, and have baggage to check, and want to use the airlines in Terminals 2-6 on the eastern side of the airport, you will park in the "western access" parking lot near Irving and York, take a bus to the Western Terminal, and then get on another bus which will take you on an hour long bus ride South on York to Irving, East on Irving to Mannheim, and North on Mannheim to the eastern entrance to O'Hare. Similarly, if you arrive at Terminals 1-6 and collect your baggage at any of the baggage carousels at those terminals (these are non-secure areas), you have to ride the bus over to the western terminal in the other direction. 87

Fourth, the DEIS fails to disclose where the so-called "ring" or "by-pass" road will go to connect I-90 with I-294. Under proposals made in the 1980s, state officials had proposed making the connection across vacant airport property. Now with the OMP runways using this vacant land, the OMP project is pushing the "ring road" back into Bensenville. It is simply not sufficient to make vague statements about a right-of-way corridor on the western boundary of the airport, especially since the likely connection of the ring road moving south from the southern boundary of the airport to connect to 294 will take hundreds of additional homes and businesses— none of which are addressed in the DEIS. 88

Fifth, the DEIS reveals that the remote parking ATS station on the eastern side of the airport will have to be destroyed because of runway clearance issues. How will passengers using remote parking on the eastern side of the airport get to the terminals? 89

| Comment | Response |
|---|---|
| 86 continued | Following are quotes from the OMA:<br>"The Illinois General Assembly finds and determines: Public roadway access through the existing western boundary of O'Hare to passenger terminal and parking facilities located inside the boundary of O'Hare and reasonably accessible to that western access is an essential element of the O'Hare Modernization Program. That western access to O'Hare is needed to realize the full economic opportunities created by the O'Hare Modernization Program and to improve ground transportation in the O'Hare area. It is important to the State that the western access be constructed not later than the time existing 14R-32L is removed from service."<br><br>This law clearly sets forth a plan to deal with western access to O'Hare. The law does not provide specifics about the exact geographic location of the proposed access; it only indicates that the access will be on the west side of O'Hare, and outlines the timeframe for the construction of said access. For more information on the surface transportation analysis please refer to **Section 5.3** in the EIS. |
| 87 | Please see the response to comment 86. |
| 88 | The western access to O'Hare, the "Western O'Hare Bypass" connecting I-294 south of O'Hare to I-90 northwest of the airport has been widely discussed in news media reports. This project, like the extension of the Elgin-O'Hare expressway (EOH), is outside the scope of this EIS, and the planning and construction of a western bypass would have to be pursued by agencies other than the City or FAA. The most likely entity to lead an initiative related to a western bypass would be the Illinois State Toll Highway Authority (ISTHA). The City of Chicago has agreed to provide a land corridor for the western bypass within the western border of O'Hare, as shown in the *February 2004 O'Hare International Airport Master Plan*.<br><br>Continued on the following page. |
| 89 | Please see the response to this comment on the following page. |

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**D. OMP Both in Construction and As an End State is Operationally Unsound and Unsafe.**

The DEIS failed to consider the significant adverse consequences of OMP on airport operations and safety both during its construction and as an end point. 90

**1. Adverse Construction Impacts.**

OMP construction will be highly complex and therefore highly disruptive to airport operations over a ten-year period. Construction phasing presents serious concern for the level of safety during the construction period. Major airport accidents have occurred as a result of extensive and prolonged construction while attempting to maintain high levels of flight operations. Changing operations environments cause a lack of routine, which is detrimental to flight safety.

The dangers posed by runway construction are very real, as underscored by the tragic loss of Singapore Airlines flight SQ006, which crashed at Taipei on October 31, 2000. The 747-400 had attempted to take off at night, in bad weather conditions, from a runway supposedly "closed" for repair. As it was leaving the ground, the plane struck a concrete barrier and construction equipment, split into three pieces, crashed and burned. While ICAO regulations generally require a runway under repair to be cordoned off, the accident runway at Taipei had not been completely blocked because it was frequently used for taxiing aircraft.

The negative safety implications of OMP construction are obvious: (1) construction is scheduled to take place at night, when construction hazards are least visible and most confusing to pilots; (2)

| Comment | Response |
|---|---|
| 88 continued | The Western O'Hare Bypass and an extension of the Elgin O'Hare expressway are in the early stages of planning. Neither is included in any alternative considered within this EIS. During the development of this EIS, assumptions were made regarding surface transportation improvements that would be in place for each of the construction phase years, based on the Transportation Improvement Program for the Chicago metropolitan area. Neither of these two projects is contained in the current Transportation Improvement Plan. It is recognized that regional transportation planning is an ongoing and fluid process, and that implementation of any of the Build Alternatives would be expected to facilitate advancement of that planning. It is anticipated that a number of the adverse impacts that have been identified in this EIS could be reduced as a result of some of the surface transportation initiatives that are under consideration. However, specific impacts of these projects will not be known unless and until sufficient information is available to allow a detailed study. |
| 89 | The ATS station would be relocated as shown on the Airport Layout Plan permitting passengers using remote parking on the east side would use the relocated station in parking Lot F. |
| 90 | The FAA disagrees with this comment. The FAA has provided responses to the material supporting this comment in the following subsections. |

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like Taipei, O'Hare will rely on "closed" runways for taxiing aircraft and it is difficult to see how construction crews would be able to completely cordon off construction areas during the brief work periods allotted; (3) O'Hare is used by long-haul foreign air crews that may visit the airport only a few times a month, and who are arriving fatigued; and (4) O'Hare is and will be one of the most complex and confusing airports in the world, where routine and familiarity are especially beneficial to flight safety. Simply put, the proposed OMP reconstruction of O'Hare is an accident waiting to happen. 91

**2. Huge Increase in Runway Crossings.**

Runway incursions are a serious safety hazard, and the potential for such incursions rises with each runway crossing. The NATCA Controllers at O'Hare have estimated that the City-proposed configuration of new East West runways would increase the number of daily runway crossings per day from 100 today, to over 1700 if OMP is built.

Runway crossings occur when either an aircraft that wants to take off has to cross an active runway to get to its departure runway, or an aircraft that has already landed has to cross an active runway to get to the terminal. The OMP parallel runway layout will require far more crossings than the existing airport configuration. More runway crossings increase the potential for mistakes. Pilots may misunderstand controller instructions and attempt to cross when another aircraft is getting ready to land or take off, or controllers may make a mistake by issuing a clearance when it is not appropriate, or

| Comment | Response |
|---|---|
| 91 | The FAA is aware that on rare occasions, aviation accidents related to airport construction have occurred. In addition, to the case cited by the commenter, for example, there was also an event in the 1970s when a Western Airlines aircraft landed in the pre-dawn hours on a Mexico City Runway closed for construction. Worldwide, the airline industry along with aviation authorities and third party entities, have taken many steps to prevent such occurrences. As a result, in the United States alone, major airport improvement projects have been completed safely and without incident at many airports, including among others DFW, PHX, MIA, ATL, DTW, and SDF. All but Louisville, have significant international service. In addition major construction is underway or about to begin, at both PHL and BOS, also international airports. The FAA believes the OMP can be accomplished safely and it will use the full measure of its authority to ensure that this is so.<br><br>There are well defined construction procedures for the coordination of construction work on the airfield as outlined in **Chapter 5, Section 5.20.4.7** of the EIS. As part of these requirements, contractors will submit construction phasing plans to establish guidelines and constraints that contractors must follow during construction on the airport, and within the Aircraft Operations Area (AOA). Additionally, numerous Federal and state regulations govern construction activity as outlined in **Chapter 5, Section 5.20.1.1** including *FAA AC 150/5370-10A, Standards for Specifying Construction of Airports,* to which the phasing plans will adhere. In addition, all construction-safety phasing plans are coordinated within all lines of business within the FAA. |

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foreign pilots may simply not have a good enough command of English to follow complicated controller taxi instructions, or any number of other problems may arise – and this is especially true in low visibility conditions. More runway crossings equate to a greater "potential" for safety hazards, and this is even more important as the number of aircraft taxiing increases.

Furthermore, the huge increase in runway crossings, combined with longer taxi routes, will significantly increase the time it takes for an aircraft to travel between the terminal gate and the arrival or departure runway. This increased taxi time should be offset against the OMP delay reduction claims. 92

**3. Loss of Critical Crosswind Runways.**

O'Hare's present runway configuration permits takeoffs and landings into the wind, no matter from which direction it happens to be blowing on any particular day. This is highly desirable from a safety standpoint -- particularly during periods of high winds -- for which Chicago, "the windy city," is known.

OMP drastically reduces crosswind runway capabilities. Six of the eight proposed runways would point in the east-west direction, (9-27 and 10-28) and only two, relatively short, runways in the northeast-southwest (4-22) direction. The present 10,003 foot long runway 14L-32R and the 13,000 foot long runway 14R-32L would be eliminated. The two northeast-southwest runways could not be used in combination with the east-west runways because the runways overlap and/or conflict.

| Comment | Response |
|---|---|
| 92 | With respect to concerns regarding potential increases in runway crossings, the FAA notes that many international and domestic airports in the United States with more than one runway (including, for example, BOS, JFK, PHL, DTW, ATL, MIA, DFW, LAX, SFO, and SEA) have Air Traffic procedures and runway layouts that call for aircraft to cross active runways. This is also true at ORD today.<br><br>Runway-crossing and land-and-hold-short operations (LAHSO) procedures are conducted safely with the existing O'Hare airfield. These same procedures have been incorporated into the proposed operation of the preferred alternative. These procedures were developed by experienced FAA air traffic controllers from the O'Hare tower to ensure their safety and viability, and adhere to all applicable FAA Air Traffic directives; specifically, FAAO 7110.65 and supplements. In addition, the FAA employed Mitre, an FAA contractor, to evaluate the City's proposal. As the Mitre report indicates, these procedures effectively implement the Office of Runway Safety suggested practices, and result in fewer active runway crossings in the middle third of the runway than the current airfield. In addition, these numbers are far lower than several other large multiple-parallel runway airports. |

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Thus, normal operations will be oriented into the wind only when it is blowing directly east or west. During the winter it is common to have strong winds out of the northwest with low temperatures, snow and icy conditions. It is critical during these conditions to have runways aligned into the wind. As observed by NATCA, favorably oriented runways permit slower landing speeds, easier control of the aircraft and quicker deceleration after landing -- all important safety factors on icy runways. Without effective and useable northwest-southeast runway capability, the OMP will require pilots to operate during snow and/or icy conditions with strong crosswinds. Similarly, during strong northeast-southwest wind conditions, crosswind landings will be necessary.

NATCA has expressed serious safety concerns about OMP, and its lack of countervailing capacity benefits. Thus, NATCA has publicly stated that the OMP, "if built as publicized, will do little for capacity and/or will create serious safety issues." The DEIS fails to address, much less resolve, these concerns. 93

**IV. OMP IS SIMPLY NOT ECONOMICALLY OR FINANCIALLY FEASIBLE AND SHOULD BE REJECTED AS A NON FEASIBLE ALTERNATIVE.**

The DEIS expressly states that any proposed alternative that is not feasible or prudent should be rejected. This requirement of financial feasibility and prudence is reflected in the FAA's Master Planning Guidance document, FAA Advisory Circular 150/5070-6A, *Airport Master Plans*

| Comment | Response |
|---|---|
| 93 | Based on the FAA review of the analysis contained within the O'Hare Master Plan, an airfield configuration that combines an east-west orientation with crosswind runways in a northeast-southwest configuration meets and exceeds FAA wind coverage criteria. The resulting airfield would resemble those existing at Hartsfield-Jackson Atlanta International (Atlanta) and Dallas/Fort Worth International airports, where recent advances in air traffic control technology for parallel runway operations have been incorporated. **Exhibit A-7** of **Appendix A** of the EIS shows the runway layouts of Atlanta and Dallas/Fort Worth. |

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> little purpose is served by preparing a plan which is infeasible because of cost or engineering requirements...
> P 49 (emphasis added)

> There should be reasonable assurance prior to undertaking the master plan study and during the organizational phase that the airport operator will have the financial capability to undertake airport development. Also, as stated earlier, there should be repeated testing of the financial feasibility of development concepts throughout the requirements analysis.
>
> p. 67 (emphasis added)

> The general tests of financial feasibility applied at the outset and throughout the planning process measure the ability of the airport operator to cover the potential costs of alternative development concepts and schedules.
>
> pp. 74-75 (emphasis added)

This concern of financial feasibility is echoed in the FAA's Airport Environmental Handbook which directs the FAA to assess alternatives that are both feasible and prudent. In fact, the "Handbook" states the following regarding the elimination of alternatives, ... "(An alternative) may not be prudent, however, because of safety, policy, environmental, social or economic consequences."(emphasis added)[7]

[7] FAA Order 5050.4A, Airport Environmental Handbook, Paragraph 83b, October 8, 1985.

94

| Comment | Response |
|---|---|
| 94 | The comments in this section are based on the referenced *Campbell-Hill* comments on the DEIS. Please see the response to comments 88-119 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix.<br>The FAA notes that each of the Build Alternatives retained for detailed consideration in the EIS is financially feasible. |

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**A. OMP Costs will Exceed $21 Billion.**

As the findings of the Campbell-Hill report demonstrate, the DEIS failed to critically analyze OMP's complete costs and how these costs would be financed. The DEIS made no assessment of the impact on demand that would be occasioned by the vast capital cost increase at O'Hare, as it would reflect itself in significantly higher rates and charges. In the DEIS, the FAA is required to consider elements beyond those related strictly to environmental impacts. The Airport Environmental Handbook directs the FAA to assess alternatives that are both feasible and prudent. In fact, the "Handbook" states the following regarding the elimination of alternatives, ... "(An alternative) may not be prudent, however, because of safety, policy, environmental, social or economic consequences."(emphasis added)[8] If a project incurs excessive costs it can have devastating economic consequences that can diminish or outweigh all the benefits. 95

Significant findings of the Campbell-Hill analysis are as follows:

- The OMP capital costs are understated by at least $7 billion – due to failure to account for capitalized interest and a responsible cost contingency. OMP will cost at least $21 billion and this *excludes* approximately $3 billion for the western access system, delay and disruption costs

[8] FAA Order 5050.4A, Airport Environmental Handbook, Paragraph 83b, October 8, 1985.

| Comment | Response |
|---|---|
| 95 | FAA disagrees with the comment that there is a failure to critically analyze OMP costs. The commenter refers to the *Campbell-Hill* comments on the DEIS as the basis for the assertion. Please see the response to comments 93-100 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-560 of this appendix. |

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during construction, and other "overlooked" elements of the OMP cost.

| | | |
|---|---|---|
| Campbell-Hill adjusted costs | = | $21.1 Billion |
| FAA adjusted costs | = | 14.2 Billion |
| Difference | | $ 6.9 Billion |
| City of Chicago Costs (incomplete and out of date) | | $ 6.6 Billion |

96

- The FAA made no analysis of the financeability or viability of the OMP (using City or FAA cost estimates). The FAA irresponsibly assumed the OMP could be financed. It accepted uncritically the City's assertions and false assumptions without any independent analysis. 97
- The capital costs of the OMP will raise the airport costs per enplaned passenger to $30 per passenger an increase solely due to OMP of $20 per enplaned passenger. As a result of the enormous cost increase, forecast 2013 enplanements will be reduced by 4.5 million, or 10%.[9] The FAA made no adjustment to its traffic and operations forecasts to reflect the costs of the OMP. Every airline industry observer is keenly aware of the high degree of price sensitivity among air travelers. 98 99

[9] Using the 2002 TAF.

| Comment | Response |
|---|---|
| 96 | This comment refers to the Campbell-Hill (CH) analysis of proposed increases in capital cost estimates for two factors: (1) capitalized interest, and (2) cost contingency. The proposed increases reported in the CH report have been determined inappropriate by FAA. Please see the response to comments 93-100 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-560 of this appendix. |
| 97 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** The commenter has referenced the CH report in making this comment. The FAA has separately responded to the financial feasibility questions raised in the CH report, showing that these comments in total do not demonstrate that OMP is not financially feasible. |
| 98 | The commenter's basis for asserting that the capital costs of OMP will raise the airport cost per enplaned passenger to $30 is a reference to the CH report. FAA has separately responded to the comments in the CH report, including demonstrating that the CH estimate of future cost per enplaned passenger at ORD is unpersuasive. Please see the response to comments 101-117 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-565 of this appendix. |
| 99 | The commenter's assertion regarding "enormous cost increase" is based on the comment immediately above. The comment immediately above refers to an alternative cost estimate which has been determined by FAA to include both "double-counting" and inappropriate costs, see FAA's response to *CH Section 3.2* beginning on page U.4-560. Further, FAA has provided evidence (in response to the CH document that provides the basis for this comment) that the future airline cost per enplanement at ORD will not be unreasonable in the context of other comparable large hub airports. |

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In summary, the FAA's cost and financial analyses are so fraught with error, bias and omission that the OMP approval process cannot go further without complete re-examination of the costs, financeability and demand forecasts. 100

**B. OMP Cannot Be Financed.**

Despite a requirement in its own Order to consider the economic feasibility and prudence of each alternative, the DEIS failed to analyze the availability of funds for the OMP, even for the FAA's highly understated costs. The FAA simply accepted the City's incomplete, yet overstated, sources of funding from the City's Master Plan at face value. Instead of requiring Chicago to produce a detailed financing plan, the FAA simply assumed that OMP can be funded: "While the exact mix of funding sources that would be used by the City at this stage of the project is not known, **it is reasonable to assume** that, based upon the impact O'Hare has on the NAS and the benefits to the regional economy, sufficient funds will exist." (emphasis added)[10] 101

Such assumption is a serious dereliction of FAA's responsibility. As the Campbell Hill demonstrates, OMP cannot be financed. Errors and omissions in the financing plan show that

(1) the OMP would have to absorb an unrealistically large amount of the total available discretionary AIP funding. 102

[10] FAA, O'Hare Modernization Draft Environmental Impact Statement, p. ES-43, (January 2005).

| Comment | Response |
|---|---|
| 100 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.**<br><br>Nonetheless, the FAA disagrees with the basis for this comment, as outlined in the responses above. Therefore, FAA disagrees with the summary comment as well. |
| 101 | Contrary to the commenter's assertion, in preparing the EIS, FAA considered the availability of funds for the OMP. FAA reviewed the City's financing plan for OMP, and determined that this financing plan was reasonable. More specific comments are addressed below. Please see the response to comments 101-117 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-565 of this appendix. |
| 102 | This comment is based on the analysis performed by the commenter's consultant, Campbell-Hill (CH). The calculation in *CH Exhibit 304* divides the assumed OMP federal grant funding by an estimated amount of nationwide AIP discretionary funds—a Campbell-Hill estimate of $500 million per year. In fact, the "available AIP funding" for airports nationwide over the 10-year period referred to in the comment will include both AIP entitlement funds and AIP discretionary funds. The analysis performed by CH is not valid for several reasons, as further explained in the response to comments on the CH document. Please see the response to comments 101-117 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-565 of this appendix. |

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(2) PFC revenue will fall well short of the assumed PFC debt service and, 103

(3) total new debt requirements[11] will be $5.7 billion more than the FAA estimated in the DEIS, and 104

(4) the plan fails to account for the fact that many investors will not accept the risk in airport bonds where the total debt load is as great as it would be with the OMP, especially with United's future precariously in doubt. 105

## V. THE DEIS IMPROPERLY REJECTED A NUMBER OF REASONABLE AND FEASIBLE ALTERNATIVES

### A. The DEIS Improperly Rejected Alternative Connecting Hubs.

In its rush to approve the City's preferred OMP alternative, the DEIS barely paid lip service to the important alternative of using other mid continent connecting hubs. *See* DEIS Sec. [3-1; C-2.] This is hardly the type of rigorous, searching and objective analysis of alternatives the FAA is required to perform under the CEQ regulations. 106

The DEIS's summary rejection of alternative connecting hubs is a particularly glaring deficiency, considering that connecting passengers are the primary, if not sole, justification for constructing OMP. As discussed in the Campbell-Hill report, the existing O'Hare could fully accommodate local passengers *at least* through 2018 (a year when OMP

[11] Includes both PFC bond and general airport revenue bond debt (see Exhibits 306 and 309).

| Comment | Response |
|---|---|
| 103 | This comment is based on the analysis performed by the commenter's consultant, CH. The analysis performed by CH is not valid for several reasons, as explained in the response to comments on the CH document. Please see the response to comments 88-117 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix. |
| 104 | Please see the response to comment 103. |
| 105 | The City has issued bonds to fund initial costs associated with OMP, and the financial community has thus far accepted the risk that exists. FAA has reviewed the City's financial plan for the full OMP, and has concluded that the project is financially feasible. The FAA finds the comment suggesting that investors will not accept the risks associated with OMP unpersuasive. This comment is also a reference to the separate CH report. Please see the response to comments 88-117 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-558 of this appendix, as well as the response to comment 117 on page U.4-574 and *CH Section 3.4* beginning on page U.4-574. |
| 106 | FAA disagrees with the comment. FAA carefully considered the use of other mid-continent hubs in preparing the EIS. FAA does not believe it is reasonable to assume that airlines will move hubs to other airports just because there is available capacity. Please see the response to comments 129-132 within *Campbell-Hill's April 6, 2004* comments on the DEIS, document number 050406_37, beginning on page U.4-586 of this appendix. |

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itself would become saturated) merely by (i) altering the mix of local to connecting passenger from 50/50 to 60/40, and returning to the use of somewhat larger aircraft. 107

Moreover, the current delay conditions at O'Hare are the *direct result* of scheduling decisions made concerning the nearby St. Louis mid continent hub. American decided to draw down its hubbing operation at St. Louis, and to move those flight to O'Hare. This produced competitive response by United, with each carrier trying to one-up the other in terms of scheduling. 108

Since connecting passengers can just as readily be accommodated at one mid continent hub as another, the FAA has a compelling responsibility under its DEIS alternatives analysis to explore this alternative more thoroughly – including what incentives may be possible to encourage carriers to utilize mid continent airport capacity that has already been constructed using substantial FAA funds. Notably, the FAA chose to press forward with the approval and development of a major new parallel runway at St. Louis notwithstanding TWA's demise. This project will be completed in 2007 at a cost of $1.1 billion substantially underwritten by FAA grants. 109

Moreover, contrary to the central argument made in the DEIS for rejecting alternatives which would require FAA to take action to cause the use of other airports, FAA has two major existing authorities to cause the use of other airports: 1) the FAA's funding authority and 2) the FAA's authority to impose congestion management requirements. The funding decisions made by the agency concerning where new runways are built (or not built), as well as setting reasonable operating

| Comment | Response |
|---|---|
| 107 | FAA disagrees that connecting passengers are the primary or sole justification for OMP. Almost half (49%) of O'Hare's enplanements are due to origin and destination traffic. At a connecting hub and international gateway such as ORD both originating and connecting passengers are important. |
| 108 | The commenter has suggested that the reduction in service at the STL hub has resulted in an increase at service at the ORD hub. FAA agrees that airlines are deregulated, and free to make decisions as to which airport can best serve their strategic goals. In the case offered by the commenter, airlines have determined that ORD is a preferred hub to STL. This supports FAA's conclusion that, absent new regulation by the federal government, ORD will continue to be a preferred hub. |
| 109 | The commenter correctly notes that the FAA is proceeding with funding for a major new parallel runway at STL, having found that project to meet all applicable financial, environmental and other criteria for approval. Presumably, this continued FAA funding is the type of action the commenter identified as an "incentive to encourage carriers to utilize mid continent airport capacity." However, as noted in the response to the comment immediately above American closed its STL hub after FAA approval of the new runway there. This empirical evidence is contrary to the commenter's assertion that decisions on AIP/PFC funding necessarily impact where and how airlines choose to schedule their operations.<br><br>Contrary to the commenter's assertion, the FAA may not use its safety and efficiency authority to dictate which airports the carriers must use. |

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limitations on how many flights can safely and efficiently operate at a given airport, most certainly have an effect on how and where "airline conduct their network operations." DEIS at 3-20.

First, decisions on AIP/PFC funding impact where and how airlines schedule their operations.

Second, FAA has authority which it has already exercised at O'Hare (and La Guardia) to set operational caps as necessary for the safe and efficient use of the airport. This is exactly what FAA did in response to United and American's excessive hub scheduling at O'Hare. 110

It is highly irresponsible to for the DEIS to summarily dispense with the alternative to more efficiently utilize NAS capacity at other mid continent hubs, before embarking on a $20+ billion develop project that is predicated on connecting traffic. 111

As noted in the Campbell-Hill report, at least eleven mid-continent airports are utilizing less than eighty percent of their current capacity. Sec. 4.3. These airports can readily be used to accommodate connecting traffic in lieu of O'Hare at far less cost and with far fewer adverse environmental consequences. The diversion of flights to the alternative hubs would have a positive delay reduction benefit at O'Hare. And, importantly, rather than just alleviating runway utilization, the use of alternative hubs has the added benefit of taking aircraft out of the critically overburdened O'Hare airspace. 112

The DEIS seriously errs in concluding that the use of alternative hubs is likely to lead to "a reduction in the frequency and range of nonstop service [at O'Hare]" that would adversely affect smaller

| Comment | Response |
|---|---|
| 110 | Please see the response to comment 109 on the previous page. |
| 111 | The proposed action is not predicated on serving connecting passenger traffic alone. **Chapter 2** of the EIS outlines the purpose and need for the EIS. Also, see the response to comment 107 on the previous page. |
| 112 | The commenter has referred to a conclusion by their analyst, Campbell-Hill, that many airports in the mid-continent United States have available capacity. No analysis was provided regarding the suitably of these airports for the demand that is forecast for ORD. The comment suggests that the availability of capacity is sufficient to attract demand. FAA does not agree with this assertion.<br><br>If availability of capacity alone is the key factor in determining where airlines will provide service, the commenter has not explained why this has not solved the capacity problems in the rest of the airport industry. In fact, the commenter's analyst, Campbell-Hill, co-authored a study in July 2002 entitled *The National Impact of Civil Aviation.* In *The National Impact of Civil Aviation* —it was suggested that "additional investment in the nation's aviation infrastructure will facilitate economic growth and employment" and "more aggressive investment in civil aviation infrastructure is not only justified by benefit/cost analysis—it is also essential to the well being of the U.S. economy and its citizens". In this same study, the only actions deemed significant by Campbell-Hill were the construction of new runways at large hub airports, including ORD. Nowhere in the study was there any mention that the use of alternative or secondary airports could help alleviate congestion and reduce delays at the nation's major airports. |
| 113 | The commenter suggests that a reduction in the capacity of ORD would not adversely affect the ORD hub. FAA believes that provision of adequate capacity at ORD is critical to supporting hub operations.<br><br>Major system hubs depend on a critical mass of air service and passenger activity. This is particularly true for international gateways. With fewer connecting passengers, ORD would be less able to serve its forecast role as a major international gateway, for either the two main hubbing airlines (American and United) or their airline alliance partners.<br><br>While FAA cannot predict what service would be reduced in the event that sufficient capacity is not provided at ORD, the airfield modeling documented in the DEIS demonstrates that without such capacity there would be less passenger and flight activity than the forecast of unconstrained demand. This would result in a lesser hub operation (relative to the unconstrained demand forecast), and failure to meet purpose and need.<br><br>Continued on the following page. |

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domestic markets and international service resulting in "diminished service to local Chicago passengers." 113

First, the justification for OMP is predicated on *growth* of traffic. There is no rational basis to conclude that airline decisions to carry additional flow traffic via other airports would result in diminished service to local Chicago passengers. 114

Second, international flights are timed to just one or two connecting banks per day. The fact that 12 or more flights a day may operate between DCA and O'Hare has no relevance to the international passenger seeking to make a mid morning connection to Tokyo. That service will surely continue to be provided by the carriers operating at O'Hare -- regardless of whether or not they move additional LaGuardia-to-Los Angeles connecting traffic via O'Hare, Denver, or DFW. 115

Third, as shown by the Campbell-Hill analysis, the existing O'Hare could serve all local traffic and serve a very large component of connecting traffic simply by making a relatively minor shift in the mix of connecting vs. O&D traffic from 50:50 to 60:40, and using slightly larger aircraft. 116

Fourth, the FAA's rejection of the use of other hubs is directly contradicted by a letter written by two senior airlines executives, one from United and one from American. On behalf of United and American, these executives explicitly stated that the Chicago region did not need new runways at O'Hare or a new south suburban airport because United and American could easily shift a portion of their connecting flights to their other hubs:

| Comment | Response |
|---|---|
| 113 continued | The commenter offers as evidence a letter written by airline representatives in 1996. The FAA's analysis of ORD demand-capacity conditions is based on data through 2004, and therefore represents more current and relevant conditions than existed in 1996. |
| 114 | Please see the response to comment 112. |
| 115 | The commenter's opinion is noted. |
| 116 | FAA disagrees with this comment. Please see response to comments within *Campbell-Hill, Section 4.4* beginning on page U.4-592. |

| Comment | Response |
|---|---|
| 117 | The FAA notes that in the public hearing conducted by the FAA for the EIS, both American and United Airlines appeared in support of this project, see page U.6-52 (American) and U.6-98 (United). |

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The "myth" that Chicago airports are out of capacity was explained as follows:

> Capacity at a hub airport is defined in terms of available aircraft seats, not flights. The myth that Chicago airports are nearing capacity has been proffered by uninformed individuals who lack a basic understanding of the aviation industry's economics and operational methods. Blind acceptance of their definition of airport capacity can be very costly and will cause mortal damage to Illinois' economy.

Joint Letter of Herb Gardner (United) and Bill Hood (American), July 22, 1996. (Attachment 1)

Messrs. Gardner and Hood explicitly and affirmatively stated that United and American could shift some of the connecting traffic using O'Hare to other hub airports:

> The airlines have the ability to route connecting passengers through other hubs thus accommodating local passengers of increase in local demand.

*Id.* (emphasis added) 117

These critical observations relating to airline scheduling behavior, airport capacity, and alternate hubs are remain true today, and have been expressly recognized by FAA in its assessment of the capacity and delay problems at O'Hare. In fact, scheduling delays at O'Hare reached a crisis only after American closed its St. Louis hub and expanded its schedule at O'Hare (using many low-capacity Regional Jets). As the FAA recently observed,

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> At the same time [American and United] added regional jet operations, they reduced mainline jet operations. The result was a decrease in seat capacity by 5.5 percent from April 2000 to November 2003. In November 2003, more than 40% of American's and United's O'Hare flights were operated with regional jets, many to large and medium hubs. The significant increases in scheduled operations during this time period resulted in excessive delays and congestion at O'Hare
>
> 70 Fed Reg 15521 ( March 25. 2005). 118

Yet, the DEIS dismisses out-of-hand the consideration of alternative connecting hubs and congestion management (including encouraging the use of larger aircraft) as part of the solution to the alleged "capacity problem" at O'Hare. 119

Finally, the DEIS claim that ORD must get all the traffic growth in order to remain an international gateway is belied by the recent FAA decision to approve a regional airport plan in Los Angeles. LAX is a bigger international gateway than O'Hare but FAA has just approved a plan where a significant portion of the O-D traffic in the Los Angeles region that would otherwise use LAX will be directed to other regional airports on the Los Angeles area. 120

**B. The DEIS Improperly Rejected Other Regional Airports.**

Other regional airports must be considered as part of any long-term regional solution. O'Hare will have enough capacity to serve local Chicago passengers at least until the year 2018. Campbell Hill Sec. 4.3, 4.3.1. To the extent additional capacity is added in the Chicago region, it should be of efficient and low cost design to improve service and provide attractive low fares to the public. With a price tag in excess of 121

| Comment | Response |
|---|---|
| 118 | The commenter refers to an FAA statement regarding the increase in regional jet operations at ORD, and excessive delays related to increases in scheduled operations.<br><br>FAA agrees with the quoted statement that increases in overall operations, including regional jet operations, at ORD have contributed to excessive delays. This, combined with the reasonable expectation that there will continue to be growth in demand (and scheduled flights) at ORD are a primary basis for the purpose and need for the project.<br><br>The increasing use of regional jets in recent years is not unique to ORD; this is an industry trend generated by strategic decisions of major airlines and better "matching" of aircraft to demand on individual routes. FAA does not control the evolution of airline aircraft fleets or the decisions by airlines of which aircraft to use on which route. However, FAA must respond to such trends by providing adequate capacity at airports.<br><br>Finally, the fact that American closed its St. Louis hub and increased its hubbing activity at ORD is further evidence that ORD is a vital major hub in American's route system, and that alternative hubs, despite having available capacity, are unlikely to be used to provide the capacity that is needed at ORD. The FAA does not have the power to undo the decision of American Airlines to stop hubbing operations at St. Louis.<br><br>Perhaps the decision by American Airlines to shift its resources to ORD was based substantially on its proximity to one of the world's largest origin-destination markets, the critical mass of international and connecting services, and to realize cost efficiencies of operation. |
| 119 | FAA considered each of these alternatives in the EIS, and only eliminated them after due consideration during the alternatives screening process. **Chapter 3** and **Appendix E** of the EIS provide the information used to analyze these alternatives and the basis for the conclusions. |
| 120 | Please see response to comment 138 of *Campbell-Hill's April 6, 2005* comments on the DEIS, on page U.4-595. |
| 121 | The commenter refers to *Campbell-Hill's April 6, 2005* comments on the DEIS as the basis for this comment. Please see the response to *CH Section 4.3*, beginning on page U.4-586. |

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$20 billion, OMP is the least efficient and should be the least desirable alternative for addressing the region's airport capacity needs. 122

The DEIS recognizes that "the use of [alternative] regional airports could potentially relieve demand at O'Hare and reduce the urgency or need for certain improvements." DEIS at 3-19. However, as with alternative mid continent hubs, the DEIS summarily dismisses alternative regional airports without evidence or analysis. 123

As detailed in the Campbell-Hill report,[12] alternative airports in the greater Chicago region include Rockford, Milwaukee, Midway, Gary, and the South Suburban Airport. Given Southwest Airlines' continued expansion of its high volume operations at Midway Airport, Midway is not a realistic option for absorbing a significant amount of the Chicago regional traffic growth. Nevertheless, Midway Airport provides a clear demonstration of the fact that other regional airports can develop large volumes of passengers and serve the connecting markets as well. This truth is contrary to the FAA's erroneous and unfounded assertions that (1) no regional airport could satisfy more than a small amount of local passengers, and (2) it is unlikely that any other regional airport could become a significant hub during the forecast period.[13]

[12] *See*, sec. 4.2

[13] FAA, Ibid., pages 3-19 to 3-20.

| Comment | Response |
|---|---|
| 122 | The commenter refers to a "price tag in excess of $20 billion" for OMP. There is no source for this estimate, but it appears to be a reference to the independent cost estimate prepared by Campbell-Hill. This cost estimate is considered by FAA to be unpersuasive, as documented in the response to *Campbell-Hill's April 6, 2005* comments on the DEIS. See response to *CH Section 3.2* beginning on page U.4-560.<br><br>Other than this unpersuasive cost estimate, the commenter does not offer any other information supporting the comment. FAA has documented in the EIS why OMP is the preferred alternative. |
| 123 | In **Chapter 3, Appendix C,** and **Appendix E** of the EIS, FAA provides both evidence and analysis related to the determination that the use of other regional airports would not be an alternative that would meet purpose and need.<br><br>The information offered by the commenter is either quoted directly from, or paraphrases, the *Campbell-Hill's April 6, 2005* comments on the DEIS. The *Campbell-Hill's April 6, 2005* comments on the DEIS are separately responded to beginning on page U.4-501.<br><br>See response to *CH Section 4.2* and *CH Section 4.3*, beginning on pages U.4-582 and U.4-586, respectively. |

| Comment | Response |
|---|---|
| 124 | Please see the response to this comment on page U.4-448. |

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At the time that Midway Airlines[14] began scheduled service at Midway Airport on November 1, 1979 there were only two round trips per day operated by Delta between Midway and St. Louis. Midway Airlines' entire strategic plan was to be a hub and spoke airline centered at Midway Airport. Over the years it grew its route structure by adding spokes to the east, to the west, and to the south with schedules designed to optimize connections and maximize the flow of passengers over Midway Airport.

In the mid-1990's Southwest Airlines entered Midway and expanded the airport's operations rapidly. With its recent purchase of six additional gates from ATA, Southwest now has 25 gates at Midway and its scheduled operations will soon reach a level of 200 daily departures. Southwest serves O&D markets in all directions to/from Midway, except for Canada and Mexico.

For the year ended June 30, 2004, Midway Airport (with only two air carrier runways) recorded 6.3 million outbound local O&D passengers which was 46% as much as O'Hare. Another 2.0 million Midway enplanements were connecting passengers (Exhibit 400). Clearly Midway Airport's air carrier traffic has grown from nothing at the height of recession and extremely high fuel costs and interest rates in late 1979, to a fully developed air carrier airport serving a very large segment of Chicago's local O&D market, as well as a significant volume of connecting passengers.

[14] The first Midway Airlines.

| Comment | Response |
|---|---|
| 124 | Please see the response to this comment on page U.4-448. |

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The South Suburban Airport at Peotone has the potential to rival or exceed Midway in terms of new, low cost capacity for local O&D passengers. This airport will be built with private financing and will be attractive to low-fare carriers with operating costs in the range of $10 per enplaned passenger. Moreover, SSA is being constructed on a new greenfield site, with ample room and a clear blueprint for expansion. Over the long term, the airport will have the capability of offering 180 gates and handling over 30 million annual enplanements. Moreover, this capacity can be built in incremental steps at far lower cost and far quicker than the much higher cost, lower capacity OMP. (*See*, Long-Term Site Plan at Attachment 2).

Yet, despite Midway's explosive local passenger growth and the clear potential for SSA to do the same, the DEIS allocates a paltry 2.5 million enplanements to SSA "at the upper end of the feasibility envelope" and concludes, without evidentiary support, that "a proposed SSA would not likely function as a significant secondary airport for the region." DEIS at C-28. The repeated and persistent failure of the DEIS to give meaningful consideration to reasonable alternatives prejudges the outcome in favor the City's predetermined alternative and violates FAA's NEPA obligations.

The Campbell Report finds that Milwaukee is well positioned to penetrate further the greater Chicagoland market, especially to the north of the City. Gary could penetrate the downtown and southeastern markets. Rockford could attract some of the western Chicago market, and South Suburban can penetrate all of Chicago,

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except possibly the north and northwest segments, assuming rapid access is available.

The notion that without the OMP, O'Hare will somehow lose its ability to serve as a hub is patently absurd. The greatest threat to O'Hare's ability to continue to grow as a connecting hub is the increase in cost/fare of $20 per enplaned passenger that would be required to pay for the OMP. O'Hare operates as a hub today for two large legacy carriers. If all the future growth in both local and connecting traffic went to other airports, and even if it took 25% of the current volumes with it, O'Hare would still be of sufficient size to retain the same breadth and diversity of service it currently enjoys. 124

**C. The DEIS Improperly Rejected Non-Runway Alternatives.**

The DEIS failed to thoroughly and adequately consider non-airfield alternatives. Contrary to the DEIS, such alternatives would be less disruptive, less costly, and would produce greater net aviation benefits. The Chicago ATC system is in need of a major overhaul -- yet the FAA is lagging years behind in hiring and training controllers required to fill essential positions. A more flexible and dynamic ATC system would help to alleviate some of the major causes of delay at O'Hare by giving pilots more routing options and greater flexibility – particularly in adverse weather conditions. 125

The DEIS rejected the Airspace-Only Improvement Alternative (Alternative A), saying that "improving the airspace at O'Hare without also making improvements in the runway capacity would be akin to adding new entrance ramps on a highway without adding new lanes."

| Comment | Response |
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| 124 | This appears to be a summary of *CH Section 4.2*. Please see response to *CH Section 4.2,* beginning on page U.4-582. |
| 125 | FAA considered several non-airfield alternatives. The analysis and consideration is documented in **Chapter 3, Appendix C,** and **Appendix E** of the EIS. |

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DEIS at 3-21. In point of fact, the FAA has it backwards. There are already enough entrance "ramps," i.e. runways, but not enough "lanes", i.e. airspace. Gate holds at O'Hare for airspace is saturation are common, even though additional aircraft could be launched from the runways. Since is far less costly and less environmentally harmful, the FAA should see if it can actually add the "lanes" it has been promising for nearly a decade before building additional and potentially useless "ramps". 126

Thus, airspace congestion — in the TRACON and en route centers — currently limits the number of operations (both departures and arrivals) that can use O'Hare in its current configuration. Several significant capital and operational investments must be made by FAA to increase the capacity of the TRACON and en route centers in order to be able to handle the forecast traffic using OMP. 127

There is no evidence that a financial commitment has been made by Congress to fund the necessary capital and operation investments (including staffing) to change the TRACON and en route center capabilities to handle forecast OMP traffic. As stated by the Office of Technology Assessment:

> The three segments of the aviation system — airports, ATC facilities, and airspace use procedures — need to be developed in coordination. Piecemeal development could lead to inefficiencies, bottlenecks, and misdirected investment. For example, it would probably be a waste of resources to add runway capacity at an airport if the ATC system cannot be upgraded to handle the additional traffic in that area until several years later. 128
>
> *Airport System Development* (OTA-STI-231 1984): p. 205 (emphasis added)

| Comment | Response |
|---|---|
| 126 | FAA has evaluated and found that the airspace-only alternative was not able to meet purpose and need. The reasons are documented in **Chapter 3** and **Appendix E** of the EIS. |
| 127 | FAA agrees that airspace improvements must be made in order to accommodate the unconstrained forecast for ORD. The expected improvements have been included in the TAAM airfield/airspace modeling conducted for the EIS, and documented in Appendix D of the EIS. FAA believes it is reasonable to expect that these airspace improvements, estimated to provide for the ORD unconstrained demand, will be made. |
| 128 | Every year, the FAA receives an appropriation of funding from Congress for all of its many activities including airspace improvements. The commenter's search for "evidence" of a financial commitment by Congress to improve the O'Hare TRACON and en route center is unavailing. In most circumstances the appropriation process does not work this way; regardless the FAA is able to fund important projects that have regional and nationwide benefits. FAA expects that, given the importance of ORD to the national transportation system, required federal funds will be forthcoming for airspace improvements. |

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The DEIS never quantifies the portion of the current O'Hare delays that are due to airspace congestion. Nor does the DEIS address the capacity and delay conditions that would exist under OMP if the airspace investments necessary to correct these airspace choke points are not made. 129 130

The Objectors have raised airspace capacity concerns repeatedly in their prior submissions to FAA. These concerns were confirmed by FAA/Mitre study issued on January 30, 2004 entitled "The O'Hare Effect on the System." That study shows that Chicago airspace is highly congested ("with the airspace consistently full of ORD traffic, there are more frequent opportunities for airborne holding to occur initiated by unexpected events"; *Id.*, Chart 11), that adding flights at ORD will further increase Chicago airspace congestion, and that Chicago congestion "due to full overhead ORD arrival streams" impacts other airports throughout the country. 131

The DEIS incorrectly and prematurely dismisses the Airspace-Only alternative – a glaring omission in light of the fact that airspace congestion is currently one of the most significant constraints at O'Hare. 132

The FAA's own recent NPRM concerning delay mitigation at O'Hare recognizes that there are a variety of non-airfield alternative that hold significant potential:

> The FAA is reviewing the possibility that additional aircraft might be able to utilize land and hold short operations under more runway configurations, and if approved, this could provide operational arrival and departure benefits. New category II and category III

| Comment | Response |
|---|---|
| 129 | Airspace improvements were included in the delay/capacity assessment conducted for the EIS. The FAA evaluated an airspace-only alternative and found that it did not satisfy purpose and need, see **Chapter 3, Section 3.2.2.2.** |
| 130 | The DEIS considers the airspace improvements that must be made in order to accommodate the unconstrained demand forecast for ORD. FAA believes, given the importance of ORD to the national transportation system, that it is reasonable to expect that the required airspace improvements will be made. |
| 131 | Please see response to comment 130. |
| 132 | FAA disagrees with the comment. See **Chapter 3, Sections 3.2.2.2** and **Appendix E, Section E.1.2.4** of the EIS for the rationale for the dismissal of the airspace only alternative. |

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instrument landing systems for runways 27L and 27R are expected to be operational during fall 2005 and would increase arrival capacity in adverse weather conditions. The FAA is also considering airspace redesign as part of the Midwest Airspace Capacity Enhancement (MACE) plan, including new routes and sectors in Chicago, Cleveland, and Indianapolis Air Route Traffic Control Centers, as well as departure and arrival routes in the Chicago airspace area that could increase capacity at O'Hare.

57 Fed. Reg. 15520, 15523 (March 25, 2005)

Despite the wide range of non-airfield alternative currently under active consideration by the agency, and their acknowledged potential for increasing capacity and reducing delay at O'Hare, the DEIS dismissed these alternatives out-of-hand. 133

**D. The DEIS Failed to Adequately Consider Blended Alternatives -- Including the Essential Role of Congestion Management.**

The Objectors submit that a "Blended Approach" is the only way to address the regional, NAS, and delay-reduction needs identified in the DEIS. Even the unrealistic and unduly biased output of the DEIS TAAMs model shows that OMP will reach unacceptable levels of delay, at best, only a few years from completion. Thus, even if OMP is built, on or shortly after opening day, congestion management will be necessary because delays at O'Hare will exceed current levels before the first year of operations and will exceed even the FAA's unwarranted 15 minute standard within a few years after it opens. 134

| Comment | Response |
|---|---|
| 133 | The commenter correctly references a document indicating potential benefits of refined operational procedures and new airspace improvements. The benefits of these changes, while important, would not be sufficient to meet purpose and need and, absent investment in ORD airfield capacity, accommodate forecast demand. The evaluation of non-airfield alternatives is provided in **Chapter 3, Appendix C,** and **Appendix E** of the DEIS. |
| 134 | FAA evaluated a blended alternative, as documented in **Chapter 3** and **Appendix E** of the DEIS. For the reasons cited in the DEIS, this blended alternative was not sufficient to satisfy the secondary screening criteria.<br><br>In addition, the FAA does not agree that the OMP, if built, would result in delays exceeding the current levels before the first year of operations or the "15 minute standard" the commenter asserts the FAA uses in the EIS. In 2018, the OMP is projected to perform at an average annual delay of approximately 6 minutes per operation. In contrast, the FAA notes that, according to ASPM, the average annual delay for 2004 was approximately 18 minutes per operation.<br><br>With regard to the "15 minute standard", please see response to comments 49 and 60, on page U.4-412, and U.4-416 respectively. Also, please see response to *Campbell-Hill's April 6, 2005* comments on the DEIS, specifically comments 43-50, beginning on page U.4-525. |

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Congestion management should be considered *now* in conjunction with a range of blended alternatives – ranging from the existing airport to Phase I to the full OMP.

The DEIS correctly recognized that limited airport development, in conjunction with other airports, new air traffic control and navigation technologies, and congestion management may provide a viable alternative to the City's preferred full-build OMP. 135

However, the sole blended alternative retained for screening (Phase I as the O'Hare base) is a straw man designed for failure. The blended alternative presumes the City's "Phase 1" northern runway, which O'Hare controllers have stated in working groups would be "a disaster" as an endpoint without full OMP.

The northern east-west runway cuts off departures from the existing northwest and northeast parallel, and is actually detrimental to the efficient operation of the airport. The proposed new intermediate southern runway is too close to the existing parallel runway to be used to provide a new independent IFR arrival stream, and would also involve the destruction of the religious cemeteries. In interviews with controllers from the O'Hare Tower by our team of experts, the controllers have described Phase I and its impact on O'Hare operations as a "catastrophe" and a "disaster". They have stated that Phase I would create a severe imbalance between IFR arrival and departure capacity that will lead to extreme delays in IFR conditions. Their concerns are validated by the TAAMS simulation results which show that Phase I will experience very high IFR delays virtually the day it opens and will reach "gridlock" (Chicago's term) shortly thereafter. 136

| Comment | Response |
|---|---|
| 135 | The FAA has evaluated congestion management as a stand-alone alternative and as part of a blended alternative in the EIS. The stand-alone alternative combined the existing airfield with congestion management and was shown to not meet the purpose and need, see **Chapter 3, Section 3.2.2.2.** The blended alternative combined, among other things, Phase I of the OMP and congestion management; this alternative, however, did not pass the secondary screening, see **Chapter 3, Section 3.3.2.6.** |
| 136 | The blended alternative used in the DEIS was designed to consider non-airfield alternatives in combination with limited airfield development that would minimize development impacts. The fact that the limited airfield development does not provide the same benefits as full airfield development (e.g., OMP) is not unexpected. The commenter's remarks do not invalidate the concept of blended alternative used by FAA; rather, they validate FAA's conclusion that limited airfield development at ORD does not provide nearly the benefits of the full-build OMP airfield development.<br><br>Moreover, the suggestions by the commenter that the addition of the new northernmost runway will somehow "be a disaster" are inaccurate. Based on the modeling results of Alternative B (OMP Phase I) versus the No Action Alternative, the construction of the proposed new north runway provides a more efficient operating environment and delay reduction benefits because it allows for a separate independent arrival stream in IFR west-flow operating conditions.<br><br>In addition, the commenter suggests that the proposed runway 10C-28C could not be used for "independent" IFR operations because it is too close to the existing Runway 9R-27L. However, Runway 10C-28C is designed to operate as both an arrival and departure runway as described in **Appendix D** of the EIS. As a result, the concerns raised by the commenter with regard to 10C-28C are based on erroneous assumptions and lack merit. |

| Comment | Response |
|---|---|
| 137 | The FAA has evaluated the commenter's proposals Alt H-L in a new **Section 3.6** in **Chapter 3.** |

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As discussed below, there are more sensible blended alternatives that can and should be considered. These include: 1) using the existing airport configuration as a base with congestion management with use of other airports, etc.; or 2) using other less destructive additional runway configurations in a blended alternative (*i.e.*, with congestion management and use of other airports) that (i) can be constructed on-airport, (ii) would avoid needless destruction of the communities and religious cemeteries. Congestion management is currently being used by FAA at O'Hare and is likely to be extended. As stated in the Notice of Proposed Rulemaking issued on March 25, 2005:

> The FAA has broad authority under 49 U.S.C. 40103 to regulate the use of the navigable airspace of the United States. This section authorizes the FAA to develop plans and policy for the use of the navigable airspace and to assign the use the FAA deems necessary to its safe and efficient utilization. It further directs the FAA to prescribe air traffic rules and regulations governing the efficient utilization of the navigable airspace. The FAA interprets its broad statutory authority to ensure the efficient use of the navigable airspace to encompass management of the nationwide system of air commerce and air traffic control.
>
> 57 Fed. Reg. 15520, 15523 (March 25, 2005).

137

The FAA has successfully used congestion management techniques have been successfully utilized both at O'Hare and at LaGuardia to control unacceptable operational delays that were impeding the safe and efficient use of the airports. Furthermore, "the FAA and the Office of the Secretary of Transportation (OST) are also considering various administrative and market-based methods of

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allocating available capacity at an airport where capacity is not available to meet aviation demand." Id. at 15522. 138

In light of the inability of even full OMP to solve the ultimate problem of delay and capacity at O'Hare, it is clear that some form of blended alternative – including congestion management – will be necessary, even for the full OMP[15]. The time to weigh the sensible blended alternative is *now* before resources are irretrievable committed, and before adverse environmental consequences have been suffered by the Objectors.

As stated in the Campbell-Hill Report:

> Congestion management simply recognizes the fact that the public is not responsible for building unlimited numbers and configurations of runways at any and all airports in the U.S., just so the airlines can operate any mix of small/medium/large aircraft that they chose and are free to change their minds about that mix whenever they wish.
>
> A blended solution is required that recognizes that (1) there are economic and environmental

[15] The Campbell-Hill delay curve analysis shows that under virtually any TAF (2002, 2003, or 2004) a proper delay curve shows OMP to be out of capacity *i.e.*, beyond the even the DEIS's relaxed 15 minute AAAW delay standard, by 2020. FAA's own narrative statement at Appendix R, R-11 acknowledges that under the 2003 TAF, OMP would reach its capacity limit in 2018. If FAA seeks to contest Campbell-Hill's findings, FAA should and must (consistent with the framework of the FAA Master Plan Grant) model OMP with demand values out to 2030. All such analyses would show that OMP runs out of capacity and will have to be used as a "blended alternative" with congestion management and other airports to meet forecast demand for O'Hare alone — let alone the regional shortfall that will occur when Midway shortly runs out of capacity.

| Comment | Response |
|---|---|
| 138 | As the commenter notes, administrative rules and other congestion management techniques have been used to ration available capacity at ORD and LGA. However, this is not the same as accommodating unconstrained demand. FAA believes that actions required to ration available capacity at ORD and LGA have resulted in "suppression" of demand, out of necessity. The commenter's own quotation refers to a situation where "capacity is not available to meet aviation demand".<br><br>Increases in capacity at ORD will be needed to accommodate future unconstrained demand, as demonstrated by the analyses documented in the EIS.<br><br>As the FAA has stated earlier in the EIS for the Runway 17-35 Extension Project at Philadelphia,<br><br>> "As a matter of policy, [the Office of the Secretary of Transportation] and FAA disfavor administrative approaches to demand management as an artificial constraint on the demand for air transportation. For example, such approaches bar air carriers from offering air travelers as much service as they would like. Administrative approaches should only be employed where absolutely necessary and as an interim, stop-gap measure, until an acceptable solution to delay can be implemented."<br><br>Accordingly, it remains the FAA's position that administrative rules that cap operations may be suitable interim actions where improvements are physically impractical, or not yet implemented.<br><br>In footnote 15 of the commenter document, it is suggested that the FAA must model OMP with demand values out to the year 2030. The Agency has conducted some forecasting for this timeframe for nationwide activities and different planning purposes. See response to comment 40. With regard to the specific claims in this footnote involving delay, see FAA response to *Campbell-Hill's Section 2.0* beginning on page U.4-525. Here, it is simply appropriate to note that any slightly diverging forecast, if extended far enough into the future, will produce apparently dramatic but irrelevant differences in outcome. |

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> limits to unbridled airline scheduling practices at any particular airport, (2) the FAA and local communities have already invested in highly underutilized capacity at other regional airports and mid-continent hubs which are acceptable options to a very large segment of O'Hare's future passengers, and (3) simple and proven administrative procedures can produce the desired result without distorting the marketplace and without undue economic hardship to the airlines and their customers.
>
> Sec. 4.1

139

It is not necessary for FAA to mandate where carriers can fly and what planes they may operate. Rather, by applying neutral and non-discriminatory congestion-management techniques to allocate the scarce resources at O'Hare, FAA can allow the marketplace to encourage airlines to return larger aircraft to O'Hare (as opposed to regional jets), and to flow the small numbers of connecting passenger that may not be accommodated at O'Hare via alternative hubs.

Such a blended alternative is vastly superior not only from an environmental and public policy standpoint, but also as a matter of pure airline economics, considering the staggering cost of OMP.

140

**E. The DEIS Failed to Consider Less Destructive On-Airport Development Alternatives.**

A fatal defect of the DEIS is its failure to consider even a single "build" alternative within the existing airport footprint that would avoid the destruction of homes, businesses and religious cemeteries of the Objectors.

| Comment | Response |
|---|---|
| 139 | Please see FAA's response to *Campbell-Hill's April 6, 2005* comments on the DEIS, specifically number 120 on page U.4-581. |
| 140 | In responses to *Campbell-Hill's April 6, 2005* comments on the DEIS, specifically, *Campbell-Hill's Section 4.0* beginning on page U.5-581, the FAA described the deregulated aviation industry in which it conducts its environmental analysis. In addition, market-based demand management concepts have been considered, please see **Chapter 3, Section 3.2.2.2** and **Appendix E, Section E.1.2.3** of the EIS. |

| Comment | Response |
|---|---|
| 141 | The FAA has evaluated derivatives of Alternative C that would "avoid the destruction of homes, businesses and religious cemeteries" in a new **Section 3.6** in **Chapter 3, Alternatives.** |

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Based on interviews conducted with the NATCA controllers at O'Hare, it appears that there are less destructive alternatives -- such as runway extensions that could permit additional LAHSO operations, and/or a limited new runway plan that could avoid the need to acquire and destroy homes and businesses impacting the communities and religious cemeteries. Objectors have retained Mr. Joseph Del Balzo, former Acting Administrator of the FAA and Dr. Kenneth Fleming of Embry-Riddle University, a leading aviation technical expert, to evaluate alternative locations to examine and develop alternative on-airport runway configurations. Messrs. Del Balzo and Fleming have identified other on-airport runway alternatives that address the controllers' concerns about Phase I and do not require the destruction of homes and businesses or the destruction of the religious cemeteries. Objectors would be pleased to have Messrs. Del Balzo and Fleming meet with FAA to discuss these alternatives in a framework that openly explores all of the blended alternatives discussed below.

It is essential that FAA evaluate reasonable and less costly and less destructive blended alternatives before embarking on this huge and costly project. 141

**F. The Los Angeles Example**

FAA has recently approved a blended alternative mix of regional airports in Los Angeles that runs directly contrary to FAA's rejection of a blended alternative in the OMP DEIS. In Los Angeles the FAA has approved a plan in which LAX growth will be limited to that growth which would have occurred under the "no-build" alternative with

| Comment | Response |
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| 142 | See response to comment 138 of the *Campbell-Hill's April 6, 2005* comments on the DEIS on page U.4-595. |

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additional traffic which would have otherwise used LAX being diverted to other regional airports. 142

**G. Other alternatives that FAA Must Model and Evaluate**

It is clear that there are several "blended alternatives" that FAA can and must consider and evaluate — all of which involve some configuration of O'Hare and all of which involve congestion management and use of other airports. One of these blended alternatives necessarily includes OMP which, as Campbell-Hill and FAA's own modeling data show, will need congestion management and the use of other airports to meet even the projected O'Hare demand.

Objectors have listed these blended alternatives which are identified using a letter code similar to those used in the DEIS.

| | |
|---|---|
| **Alt H** | Existing O'Hare with congestion management (and other airports) to achieve and maintain the 9.3 minute AAAW delay level modeled for 2002 by FAA. |
| **Alt I** | Existing O'Hare with congestion management (and other airports) to achieve and maintain the modeled delay level FAA has as a goal in its March 25, 2005 Notice of Proposed Rulemaking[16]. |

[16] Because of the "apples vs. oranges" confusion caused by FAA's use of various delay metrics, it is difficult to determine how the goals of the March 25 NPRM quantitatively compare with the 9.3 2002 AAAW modeled delay.

| Comment | Response |
|---|---|
| 143 | The FAA has evaluated the commenter's proposals Alt H-L in a new **Section 3.6** in **Chapter 3.** |

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| | |
|---|---|
| **Alt J** | Existing O'Hare with congestion management (and other airports) to achieve and maintain whatever level of AAAW and IFR delay FAA determines is most cost-effective, including delay levels at the 4, 6 and 8 minute AAAW levels reflected in other FAA statements as to acceptable delay.[17] |
| **Alt K** | Phase 1 with congestion management (and other airports) to achieve and maintain any of the AAAW delay levels described in Alternatives H-J |
| **Alt L** | Existing O'Hare with additional runways which would not require the destruction of homes businesses and religious cemeteries — with congestion management (and other airports) to achieve and maintain any of the AAAW delay levels described in Alternatives H-J |

143

## VI. THE DEIS MINIMIZES AND FAILS TO TAKE A "HARD LOOK" AT THE IMPACT OF THE DEVELOPMENT ON THE SOCIAL, PHYSICAL AND ECONOMIC ENVIRONMENT

The OMP DEIS has not completed, and in many cases has not even begun the review of impacts on environmental and historic resources required by federal law and sound public policy. By failing to commence and complete these reviews, the OMP DEIS minimizes the impact of the proposed development on the environment, thwarts critical procedural safeguards required by law, and clearly fails to take the "hard look" at impacts required by both the National

[17] The Objectors' preferences are with Alternatives H-J.

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Environmental Policy Act ("NEPA") and the National Historic Preservation Act ("NHPA"). 144

Moreover, as discussed in detail earlier in the comments, the use of the 2002 TAF creates a fundamental defect in the NEPA analysis because this TAF understates traffic and resultant airspace and airfield congestion and thereby minimizes the air quality and noise impacts, discussed below, that can realistically be expect to result from OMP. To accurately assess the noise, air quality, and other environmental impacts under NEPA, the FAA must utilize the most up-to-date forecasts available in the DEIS -- especially where there are material changes in those forecasts that were available to the agency nearly a full year before the DEIS was issued.

The existence of an updated TAF at a minimum triggers the CEQ NEPA regulatory requirement for developing a Supplemental EIS at 40 C.F.R. Section 1502.9(c ) which provides that agencies "shall prepare supplements to either draft or final environmental impact statements if: . . .(ii) if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 145

**A. Economic Impacts**

As discussed above, the FAA's own regulation on preparing environmental impact statements requires FAA to examine the economic impacts of the proposal:

| Comment | Response |
|---|---|
| 144 | The FAA disagrees with this comment and has provided response to the comments raised in more detail in the following subsections. |
| 145 | As explained in response to earlier comments, the 2002 TAF was the most current forecast available when the EIS modeling efforts were initiated. Since that time, more recent TAFs have been published (the 2003 TAF and the 2004 TAF). The 2003 TAF was available when the DEIS was produced, and is considered in the sensitivity analysis conducted by FAA (and reported in **Appendix R** of the EIS). The 2004 TAF is included for consideration in the EIS. Because the EIS includes consideration of both of these more recent forecasts, FAA does not agree that there is any fundamental defect with respect to forecasts. Accordingly, the FAA sees no need to prepare a supplemental EIS. |

| Comment | Response |
|---|---|
| 146 | Please see the response to this comment on the following page. |

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**1. Airlines and Passengers Using O'Hare Cannot Afford the high cost of OMP.**

As demonstrated in the Campbell-Hill Report (Sec. 3.4), even assuming that Chicago is able to obtain the funds required to build the OMP, the airline cost per enplaned passenger would increase from approximately $9 dollars in 2003 to $30 in 2013.[18] Of the $30 cost per enplanement, $20 dollars would derive from the OMP alone. In this regard, it is instructive to note that the average fare at ORD is $170 for local passengers and $232 for all passengers including connections.

A $20 increase to the passenger is highly significant. This increase of more than 200% is caused by two factors. The first is the increased costs of the OMP. The second is a "death spiral" effect caused by the high cost per enplanement occasioned by the OMP. This occurs because the airlines operating at O'Hare must increase fares to recover the increase in airport costs. Due to the fact that demand for air travel is elastic with respect to price, the OMP costs will decrease significantly the number of passengers that would use O'Hare. This, in turn, will increase the cost per enplanement of the remaining passengers (principally local O&D passengers). The cycle continues until a new equilibrium is established.[19]

[18] In 2004 dollars.

[19] For purposes of illustrative analysis, it is assumed that the death spiral effect would reach a new equilibrium after two rounds of demand (passenger volume)/unit price adjustment. In reality it could reduce passengers even further. It is important to note that connecting passengers are likely overstated in the Campbell-Hill death spiral analysis because it does not allow explicitly for the fact that more connecting passengers would avoid O'Hare and simply connect at other

Footnote continued on next page

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The $30 cost per enplanement would be even higher in the likely event that some airlines discontinue service at O'Hare and the fixed costs are spread over fewer and fewer passengers causing more and more travelers to avoid O'Hare (the price elasticity effect). It is most extraordinary to find that the FAA relied upon its own TAF forecasts (outdated) yet made no effort to adjust demand and operations as a result of the massive OMP costs. This is a significant failing of the DEIS. 146

**2. The DEIS Fails To Consider The Impact of The Massive OMP Costs On Airline Employees and Jobs.** 147

It is clear that the huge cost of OMP — assuming the major O'Hare airlines are foolhardy enough to make the huge financial commitment needed to fund OMP— will have a serious deleterious effect on the cost structure of United and American and on their resultant ability to compete with low-cost carriers for both business and leisure travel[20].

At least one major airline employees union has expressed their concern over the economic impact the cost of OMP will have on United's ability to pay its pension obligations. The DEIS completely fails to

Footnote continued from previous page

mid-continent hubs where they will have relatively cheaper alternatives (origin to destination air fares).

[20] See *e.g.*, "Southwest Smells Blood" April 3, 2005 Crain's Chicago Business for an example of the intense competitive challenge facing American and United in the Chicago market from low cost carriers such as Southwest.

| Comment | Response |
|---|---|
| 146 | The commenter refers to the *Campbell-Hill's April 6, 2005* comments on the DEIS as the basis for this comment. The CH document has been separately responded to. In summary: (1) the City has prepared financial analyses demonstrating the financial feasibility of OMP, and (2) the alternative assumptions offered by the commenter (and CH) have been determined to be invalid.<br><br>Also, please see the response to *Campbell-Hill's* comments on the DEIS, specifically response to comments 88-117, beginning on page U.4-558. |
| 147 | This comment is incorrect. FAA included in the EIS the results of an economic impact analysis, which demonstrates the expected employment and income impacts of ORD activity and OMP development. |
| 148 | The cost of OMP is expected to cause airlines serving ORD to pay higher user charges. These financial implications have been identified in the City of Chicago's *February 2004 O'Hare International Airport Master Plan*.<br><br>FAA does not agree that the cost of OMP will have a serious deleterious effect on the cost structure of United and American. First, airport costs are a relatively small share of total airline costs. Fuel and labor costs are much more significant. Second, the benefits of capacity enhancement will yield significant cost savings (in terms of avoidance of delay) for United and American. Third, the commenter's data on increased airlines costs from OMP are based on faulty independent cost estimates. Fourth, the commenter has ignored the revenue benefit that airlines will receive from the ability to accommodate growth in demand. Fifth, on balance, considering the significant cost savings (delay reductions), the fact that airport costs are a relatively small share of total airline operating expenses, and the revenues that airlines will receive from future demand, FAA does not believe it is reasonable to conclude that OMP will be a major factor affecting the financial viability of American and United. It is more reasonable to conclude that the support for OMP from these same airlines is an indication that the potential financial benefits exceed the costs. |

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examine the economic impact of OMP on the ability of United and American to compete with the low-cost carriers and the resultant impact on the jobs and pensions of United and American employees. 148

**3. The DEIS Fails to Consider the Significant Impacts of the Loss of A Hub Carrier at O'Hare.**

The DEIS (Appendix R) blithely concludes that the loss of a hub carrier (United or American) at O'Hare would have a relatively insignificant effect on the report's assessments and conclusions, or on the need for the OMP. The FAA has asserted this conclusion based on a series of unsupported assumptions, all of which are completely lacking in empirical foundation or analysis. The fact is that the loss, or significant reduction in service by either United or American, would dramatically alter conclusions about the need for the OMP. Additional capacity at O'Hare would not be needed for 15 to 20 years. And in light of the distinct possibility that United will not survive as a large hub carrier at O'Hare, and that we will know this outcome soon, the rational and responsible fiduciary decision would be to wait a year or two before approving any part of the OMP.

In the event that United fails or significantly downsizes its hub, American would be strengthened very significantly as the remaining hub carrier. No other airline would challenge American at O'Hare, certainly not for supremacy or equality as a second hub carrier. The other carriers are far too weak financially to mount a serious attack on American; and besides, a strategy of strengthening their own hubs in other cities would be a more profitable use of assets. The major

| Comment | Response |
|---|---|
| 148 | Please see the response to this comment on the previous page. |
| 149 | **Appendix R** of the EIS contains an analysis of alternative forecast outcomes, including the implications of the potential loss of a hub carrier at ORD. Thus, this potential impact was in fact considered. In addition, contrary to the assertion of the commenter, empirical evidence was used in the evaluation presented in **Appendix R** of the EIS.<br><br>The remainder of the commenter's points related to the potential loss of a hubbing carrier at ORD are references to the *Campbell-Hill's April 6, 2005* comments on the DEIS. The *Campbell-Hill's April 6, 2005* comments on the DEIS has been separately responded to. Please see response to *CH Section 5.0* beginning on page U.4-600. |

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competitive reaction by incumbent carriers, other than American, would be to compete aggressively against American for United's connecting traffic (e.g. Syracuse-Los Angeles traffic, via O'Hare/Philadelphia/Pittsburgh/Detroit/Mineapolis/Cincinnati/Atlanta/Newark, etc).

With American as the remaining hub carrier it would enjoy a monopoly in approximately 126 Chicago non-stop markets. This would permit American to rationalize significantly the combined flight schedule operated by United and American today, as well as the Chicago local fare structure. It is entirely reasonable to expect that overall frequencies will decline at O'Hare and that fares will rise, especially for the Chicago local O&D traffic. The increase in fares will have a further dampening effect on traffic. In regard to schedule rationalization, American Airlines (with a limited aircraft fleet at any time) will consolidate United's schedules with its own, attempting to use larger aircraft wherever possible. For example, in a market that has 8 flight per day by American and 10 flights per day by United currently, it is reasonable to expect that American by itself would operate 10 to 14 trips a day.

In regard to O'Hare markets that are served by domestic carriers other than American, as well as foreign carriers, the competitive responses would be similar. That is, there will be capacity and frequency rationalization, use of larger aircraft, and efforts to increase fares.

Campbell-Hill's analysis shows that if United fails, total operations at O'Hare will not surpass year 2003 actual operations until

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2025, and the revised 2023 operations will be 28% below the DEIS forecast. Correspondingly, the Campbell-Hill study shows that total enplanements (absent United Airlines) will not return to 2003 actual levels until the year 2021, and the revised 2023 enplanements will be 39% below the DEIS forecast.

This potential for significant loss of traffic if United downsizes or fails has major implications for the entire DEIS analysis. As shown by the Campbell-Hill report, a United failure or downsizing would eliminate the need for any additional capacity at O'Hare for many years into the future and would have an immediate effect of a major delay reduction at O'Hare. 149

**4. Economic Impacts on Bensenville and Elk Grove and surrounding communities**

The DEIS states that Phase I and OMP will cause the loss of approximately 5 million dollars in annual tax revenues to local school districts and other taxing bodies. There is no analysis of what this loss of revenue means to the families and children served by those school districts and taxing bodies.

The loss of these monies will have a huge impact on the quality of education in the impacted school districts — particularly Bensenville District #2 and Fenton District 100. Similar adverse impacts on human services, public safety, and economic development are ignored in the DEIS.

Yet all of this loss could be prevented by several of the Alternatives listed in the Alternatives table above. 150

| Comment | Response |
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| 149 | Please see the response to this comment on page U.4-462. |
| 150 | With respect to the potential tax loss impact on schools and community colleges, the O'Hare Modernization Act sets forth terms under which these entities could be reimbursed for tax losses. See **Chapter 5.4, Social Impacts** for more detail. |

| Comment | Response |
|---|---|
| 151 | In response to this comment and others, the FAA has added **Section 5.22** to **Chapter 5** of the EIS for the FAA's discussion of legal issues involving potential relocation of St. Johannes and Rest Haven Cemeteries. |

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**B. Violation of Religious Objectors Religious Rights Under the First Amendment Free Exercise Clause and the Federal Religious Freedom Restoration Act.**

The DEIS makes the astounding statement that Chicago (the sponsor) has the legal "authority" to implement OMP and Phase I. But the DEIS totally ignores the fact that both Phase I and the full OMP call for the destruction of two religious cemeteries in violation of the First Amendment Free Exercise Clause and the federal Religious Freedom Restoration Act. (See discussion *infra*).

FAA is openly participating and assisting Chicago in violating these rights by proposing to fund both Phase I and OMP. Further, FAA is deliberately hiding from its responsibilities under the federal RFRA. Federal RFRA requires FAA to follow RFRA and protect Religious Objectors' rights in every federal decision it (the FAA) makes that create a "substantial burden" on the practice of religious beliefs. Yet FAA has already decided in its NPIAS 2005-2009 to approve the destruction of the cemeteries as part of the 2005-2009 NPIAS plan. Further, FAA has been stonewalling Religious Objectors' repeated requests that FAA answer Religious Objectors' questions regarding FAA's obligation under both the First Amendment and the federal RFRA.

Because FAA has privately stonewalled Religious Objectors inquiries, we hereby re-state them:

1. Does FAA agree that the destruction and removal of the Rest Haven and St. Johannes cemeteries will inflict a "substantial burden" on the religious practices and beliefs of the Religious Objectors within the meaning of the First Amendment Free Exercise Clause and the federal Religious Freedom

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Restoration Act? If FAA does not agree, what are the reasons for FAA's disagreement?

2. Does FAA agree that the affidavits previously submitted to the FAA by the Religious Objectors are sufficient evidence of the fact that the destruction and removal of the Rest Haven and St. Johannes cemeteries will inflict a "substantial burden" on the religious practices and beliefs of the Religious Objectors within the meaning of the First Amendment Free Exercise Clause and the federal Religious Freedom Restoration Act? If FAA does not agree, what are the reasons for FAA's disagreement?

3. Does FAA agree that Chicago and the State of Illinois have treated the Rest Haven and St. Johannes religious cemeteries differently from all other religious institutions in the State of Illinois (including all other religious cemeteries in Illinois) by stripping the protections of the Illinois Religious Freedom Restoration Act (Illinois RFRA) from the Rest Haven and St. Johannes religious cemeteries while preserving the protections of Illinois RFRA for all other religious institutions in the State of Illinois (including all other religious cemeteries in Illinois)? If FAA does not agree, what are the reasons for FAA's disagreement?

4. Does FAA agree that the differential treatment of the Rest Haven and St. Johannes religious cemeteries from all other religious institutions in the State of Illinois (including all other religious cemeteries in Illinois) — by stripping the protections of the Illinois Religious Freedom Restoration Act (Illinois RFRA) from the Rest Haven and St. Johannes religious cemeteries while preserving the protections of Illinois RFRA for all other religious institutions in the State of Illinois (including all other religious cemeteries in Illinois) — violates the constitutional guarantees of Equal Protection of the law? If FAA does not agree, what are the reasons for FAA's disagreement?

5. Does FAA agree that, pursuant to the requirements of the First Amendment Free Exercise Clause, FAA cannot allow the destruction and removal of St. Johannes and Rest Haven religious cemeteries without first demonstrating: 1) that there is a compelling governmental need to destroy these religious cemeteries and 2) that there are no alternatives to meet that governmental need that would not destroy these religious cemeteries? If FAA does not agree, what are the reasons for FAA's disagreement?

6. Does FAA agree that, pursuant to the requirements of the federal Religious Freedom Restoration Act, FAA cannot allow the destruction and removal of St. Johannes and Rest Haven religious cemeteries without first

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demonstrating: 1) that there is a compelling governmental need to destroy these religious cemeteries and 2) that there are no alternatives to meet that governmental need that would not destroy these religious cemeteries? If FAA does not agree, what are the reasons for FAA's disagreement?

7. Does FAA contend that there is a compelling governmental need to destroy and remove St. Johannes and Rest Haven religious cemeteries? If so, please set forth the evidence which demonstrates that compelling governmental need.

8. Does FAA contend that there are no alternatives to meet the governmental need which FAA says requires the destruction and removal of St. Johannes and Rest Haven religious cemeteries? If so, please set forth the evidence which demonstrates that there are no alternatives to meet the governmental need which would not destroy and remove St. Johannes and Rest Haven religious cemeteries.

9. Does FAA agree that the determination of contested issues of law and fact as to the claims for protection of the Religious Objectors' religious rights — under the First Amendment Free Exercise Clause and under the Equal Protection component of the Fifth Amendment under the doctrine of *Bolling v. Sharpe, supra,* — fall within the mandate of Article III of the Constitution that these issues be determined by an Article III Court. If FAA does not agree, what are the reasons for FAA's disagreement?

10. Does the FAA agree that determination of contested issues of law and fact as to the FAA's compliance with federal RFRA falls within the Article III mandate and that the determination of these disputed legal and factual issues must be made by an Article III Court? If FAA does not agree, what are the reasons for FAA's disagreement?

11. Does the FAA agree that the FAA decisions — as to whether to: 1) approve the Airport Layout Plan for the OMP, 2) approve the elements of the OMP in the NPIAS-CIP, 3) approve PFC and AIP funding for the OMP — are adjudications within the meaning of 5 U. S. C. §551? If FAA does not agree, what are the reasons for FAA's disagreement?

12. Does the FAA agree that Religious Objectors are entitled to participate as opposing parties to Chicago's requests for FAA approval in these various FAA decision-making actions? If FAA does not agree, what are the reasons for FAA's disagreement?

13. Does the FAA agree that in such FAA decision-making proceedings the Religious Objectors have liberty and property rights in the continued

| Comment | Response |
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| 151 | Please see the response to this comment on page U.4-465. |

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sanctity and physical integrity of these two religious cemeteries that are protected by the Due Process Clause? If FAA does not agree, what are the reasons for FAA's disagreement?

14. Does the FAA agree that the Due Process rights of the Religious Objectors in these FAA adjudicatory proceedings trigger the application of 5 U.S.C. §554 (and §§556 and 557) under the holding of *Wong Yang Sung v. McGrath*, 339 U.S. 33 (1950). If FAA does not agree, what are the reasons for FAA's disagreement?

15. Does the FAA agree that under the Due Process Clause, the Religious Objectors have a right to be provided the data, communications and other material exchanged between Chicago and the FAA as well as the evidentiary material developed internally by FAA (relating to the proposed FAA adjudicatory decisions at issue) at a meaningful time and in a meaningful manner? If FAA does not agree, what are the reasons for FAA's disagreement?

16. When will FAA provide Religious Objectors with the data, communications and other material exchanged between Chicago and the FAA as well as the evidentiary material developed internally by FAA (relating to the proposed FAA adjudicatory decisions at issue?

17. When will FAA provide Religious Objectors with responses to our letters of January 16, 2004, May 4, 2004 and July 22, 2004 and to the questions contained in this list of questions?

18. What is the schedule for the various FAA decisionmaking processes involved in the OMP — *e.g.*, ALP approval, NEPA EIS process, AIP and PFC funding requests, and inclusion of OMP elements in the NPIAS-CIP— and when will FAA address the First Amendment and federal Religious Freedom Restoration Act obligations under these decisions ?

FAA's continued and long-term stonewalling on these questions can only lead to the conclusion that FAA officials are complicit in knowingly violating Religious Objectors rights under the First Amendment and the federal Religious Freedom Restoration Act. 151

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**C. Environmental Justice**

The bottom line on FAA's environmental justice discussion is that FAA will allow and fund the destruction of the largest supply of affordable housing for in DuPage County that is available to ethnic minority families. Yet FAA makes no provision or commitment to identify and develop an equivalent concentration of such affordable housing anywhere in DuPage County. There are clearly alternatives which avoid this destruction. 152

**D. Air Quality Related Deficiencies**

**1. The FAA failed to conduct an air quality impact analysis for PM2.5**

On July 18, 1997, EPA promulgated a National Ambient Air Quality Standard ("NAAQS") for particulate matter smaller than 2.5 microns in diameter ("$PM_{2.5}$").[21] These fine particles are emitted from industrial combustion sources and from motor vehicle exhaust. Fine particles are particularly harmful because they can penetrate deep into lung tissue, and even find their way into the bloodstream. EPA set a new health-based standard of 15 $\mu g/cm^3$ (annual) and 65 $\mu g/cm^3$ (24-hour).[22]

EPA concluded that $PM_{2.5}$ poses significant risks to human health, including significant associations between elevated fine particle levels and premature mortality. Exposure to $PM_{2.5}$ may result in

[21] See 62 Fed. Reg. 38,652 (1997).

[22] See id. at 38,677.

| Comment | Response |
|---|---|
| 152 | As **Section 5.21** of the EIS states, "[d]ue to the nature of this project, any impacted owner or tenant in the acquisition area will be afforded all appropriate rights established in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and various FAA Orders as identified in **Section 5.4.1.1, Regulatory Context**. In addition, the City of Chicago has developed of a Draft Relocation Plan to ensure fair treatment of the acquired owners and tenants if property acquisition were to take place." In addition, the Uniform Act applies to the OMP.<br><br>**Section 5.21** further states, "[i]n addition, because a large number of Spanish-speaking residents with the acquisition areas, the City's Land Acquisition Consultant will provide a Spanish translator (and other languages as needed), with knowledge of 49 CFR Part 24 requirements, throughout the land acquisition process."<br><br>In addition, significant community outreach was conducted in those areas where a potential environmental justice direct impact could occur as a result of the proposed action. Those residents that participated seemed to predominantly ask questions about suitable replacement housing and fair treatment under the Uniform Act. FAA was able to convey and build a sense of trust that residents, or businesses in the acquisition area would be fairly treated under the Uniform Act. |
| 153 | Please see the response to this comment on page U.4-471. |

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premature death, the aggravation of respiratory and cardiovascular disease, lung disease, impaired lung function, asthma attacks, and cardiovascular problems (including heart attacks and cardiac arrhythmia. The results of exposure to $PM_{2.5}$ include increased hospital admissions and emergency room visits, as well as reduced productivity at school and work. Children and the elderly are most at risk from exposure to these fine particles.[23]

EPA implements the NAAQS by designating whether geographic areas of the United States are in attainment or non-attainment with the standard. On December 17, 2004, EPA designated Cook and DuPage counties as non-attainment for $PM_{2.5}$.[24] This designation means that the level of $PM_{2.5}$ in those counties has been determined by EPA to exceed the national health-based standards. As a result of this designation, new and modified sources of $PM_{2.5}$ in these counties must pay particularly close attention to the impact of the source on the ability of the county to achieve and maintain the health-based standards.

Contrary to its own NEPA rules and in disregard of the public health impact of $PM_{2.5}$, the FAA's draft EIS fails to analyze the impact of the OMP on $PM_{2.5}$ non-attainment in Cook and DuPage counties.[25] FAA Order 1050.1E plainly requires the FAA to analyze the impact of the proposed project on all NAAQS. Order 1050.1E states: "When a

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23 See generally id. at 38,652.

24 See http://www.epa.gov/pmdesignations/documents/final/preamble.pdf.

25 See, e.g., DEIS at ES-25, J-16.

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NEPA analysis is needed, the proposed action's impact on air quality is assessed by evaluating the impact of the proposed action on the NAAQS."[26] These counties already experience unhealthy levels of $PM_{2.5}$—leading to elevated early deaths, hospital admissions, impacts on children with asthma, and lung disease—yet the FAA makes no attempt to examine how its proposed project will worsen the health effects of fine particulates. And because a large contributor to fine particle emissions comes from construction, the multi-year construction project proposed by FAA will almost certainly have an impact on $PM_{2.5}$ attainment. But the FAA failed to take a hard look at $PM_{2.5}$ emissions, leaving the public in the dark about the adverse health impacts associated with the project. FAA must address fine particle emissions using the best tools it has available, and demonstrate that this massive project will not cause further deterioration of air quality in Cook and DuPage counties. 153

**2. The FAA failed to conduct a human health risk assessment for toxic air pollutants**

The FAA recognizes that toxic air pollutants "are gaseous organic and inorganic chemicals and particulate matter that are either known or suspected to cause cancer (to be carcinogenic) or known or suspected to cause other serious health effects (non-carcinogenic)."[27] Yet despite this knowledge, the FAA baldly and without factual support asserts that "at this time it is not appropriate to conduct a human health risk

[26] FAA Order 1050.1E § 2.1c.

[27] DEIS at ES-30.

| Comment | Response |
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| 153 | The FAA has performed an air quality analysis of PM2.5 emissions, including dispersion in coordination with IEPA. The results of these analyses are included in **Section 5.6** of the Final EIS. These results indicated that there would be no exceedances of the NAAQS, with or without the proposed O'Hare Modernization. The NAAQS takes into consideration impacts on children and the elderly as the most sensitive portions of the population. |
| 154 | FAA, USEPA, and IEPA collectively agree that given the absence of HAP emissions data and the limitation of HAP speciation profiles for commercial jet aircraft engines, an accurate emissions inventory (the first step in what would constitute a sound human health risk assessment) cannot be accomplished. In addition, substantial material on HAPs is provided in **Appendix I**. Human health risk assessment information was provided in the LAX EIS because of State requirements mandating such coverage. It should also be noted that air quality criteria for a variety of HAPs exist in California, but not in Illinois.<br><br>The FAA respectfully disagrees that the Park Ridge Study identifies O'Hare as the largest source of HAPs in the State of Illinois. Rather, the Park Ridge Study concludes that due to the limited sampling that was performed, additional studies should be pursued to further evaluate the contribution of O'Hare to local and regional levels of HAPs.<br><br>The FAA respectfully disagrees that the DEIS did not include a comparison of O'Hare-related HAPs to other sources within the region (see **Table I-71** in **Appendix I**). |

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assessment" for these toxic air pollutants.[28] And the FAA most certainly knows how to conduct a toxic air pollution analysis—it performed a detailed study at the Los Angeles International Airport earlier this year.[29] In that analysis, the FAA was able to estimate the emissions from airport operations (including aircraft, ground support equipment, and construction activities), and perform air dispersion modeling of these toxic emissions. Similar toxic emission and toxic dispersion analysis resulting in toxic risk assessment for the population residing near the airport have been performed at other airports as well, *e.g.*, Oakland.

The New England States have identified major airports in Massachusetts, Rhode Island, and New Hampshire as the largest emission sources of toxic air pollution in their respective states[30]. The air toxics study done for Park Ridge identified O'Hare as the largest source of toxic or hazardous air pollutants in the State of Illinois.

The DEIS fails to describe the quantitative comparison of O'Hare toxic emissions vs. other major sources of toxic air emissions in the State of Illinois, *e.g.*, refineries, power plants, *etc.* Further, the DEIS utterly fails to quantitatively and qualitatively describe the cancer and

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28 Id.

29 See "Appendix LAX Master Plan Final EIS— Summary Comparison of Hazardous Air Pollutant Emissions and Dispersion Using the FAA EDMS and EPA ISCST3 Models," (U.S. Dep't of Transportation, Federal Aviation Admin., January 2005) [hereinafter, "LAX HAP Study"]. See also FAA Order 1050.1E § 2.4e ("If air toxics analysis is performed, EDMS should be used or supplemented with other air toxic methodology and models in consultation with the appropriate FAA program office and AEE.").

30 See *Controlling Airport Related Air Pollution*, NESCAUM, June 2003.

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other toxic health risks posed by these emissions on the homeowners and families living in the communities surrounding O'Hare. 154

**3. The FAA failed to consider the indirect air quality impacts of the proposed project**

Contrary to its own NEPA rules, the FAA failed to analyze the impact of indirect emissions caused by the project. FAA Order 1050.1E states:

> In determining whether emission threshold levels are exceeded (and a conformity determination required), agencies must consider direct and indirect emissions. Direct emissions are those that are caused by or initiated by the Federal action and occur at the same time and place as the action. Indirect emissions are those caused by the Federal action, but occur later in time and/or may be removed in distance from the action.[31]

The draft EIS fails to assess or consider the impact of indirect emissions. And the FAA knows that indirect emissions must be analyzed because it did consider the indirect impacts of additional electric production as the result of the expansion of the Los Angeles International Airport.[32] The indirect emission impacts from off-site power production were lower in Los Angeles because of the prevalence of gas-fired power production. But in Chicago and the surrounding areas, a significant amount of the power production is based on the combustion of coal. These indirect emissions must be quantified and

[31] FAA Order 1050.1E § 2.1o.

[32] See FAA LAX Master Plan Final EIS/EIR at 4-749.

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| 154 | Please see the response to this comment on page U.4-471. |
| 155 | The air quality analysis assumed that there would be an increase in emissions associated with the power plant at O'Hare with the proposed improvements. In addition, the IEPA accounts for the growth in emissions from the commenter's identified indirect source, electrical production, within the non-attainment area in their SIPs. FAA utilized the information provided in the SIP as a part of its EIS process. The results of this utilization are presented in this EIS. |

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analyzed in order the draft EIS to comply with FAA's own internal NEPA guidance. 155

**E. Noise Related Deficiencies**

**1. FAA's Historical Noise Value Comparison is Misleading**

The FAA begins their noise impacts assessment by comparing 1982 baseline exposure levels to the 2002 baseline levels, and then concludes that the "slight increase in affected residences" expected from the OMP build-alternatives, when compared to the 2002 baseline, is small in relation to the overall decreases experienced since 1982. The reference to the 1982 exposure baselines and even the 2002 baselines are highly misleading.

FAA fails to disclose that different noise models were used in these earlier noise exposure modeling efforts. Much of the change between 1982 and the present can be attributed to changes in the computer models rather than the claimed percentage of actual noise reduction in the DEIS. 156

**2. FAA Understates The True Impact of Noise Exposures**

Throughout the remaining analysis of noise impacts, the FAA focuses almost exclusively on comparing the total noise exposure of the no-build alternative to the total noise exposure of the three build alternatives, and then focuses on the net change in exposure levels to summarize the extent of the impacts. This type of comparison enables

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| 155 | Please see the response to this comment on the previous page. |
| 156 | The FAA rejects the comment that its historic noise value comparison is misleading. Complaints about the FAA's use of a different noise model in 2002 from that used in 1982 cannot mask the significant reduction in O'Hare aircraft noise. The observed change in 65 DNL between 1982 and 2002 shown in EIS **Exhibit 5.1-1** is largely due to the reduction in the noise generating characteristics of the air carrier aircraft fleet that has occurred during this time frame. For example, in the 1982 O'Hare noise contour case, 20% of the aircraft operations were conducted in Stage 1 category aircraft, 40% were conducted in Stage 2 aircraft and 40% were in Stage 3 compliant aircraft. By contrast, in 2002, nearly all of the operations conducted at O'Hare complied with the more stringent Stage 3 Federal noise standards. Hence, the referenced comparison of the 1982 to the 2002 contours is designed in part to illustrate the noise reduction benefits that have been realized at the Airport through the modernization of the air carrier fleet during this timeframe. |
| 157 | A number of the exhibits and tables in EIS **Sections 5.1** and **5.2** and EIS **Appendix F** provide information to assist the reader in comparing differences in the predicted levels of noise exposure for the No Action Alternative to the levels for the various Build Alternatives. For example, the tables in **Section 5.1** compare estimated impacts for each Build Alternative to the corresponding No Action Alternative based on such measures as acres by land use type, the number of noise sensitive facilities and population and housing unit counts. In **Section 5.2,** noise contours for each Build Alternative are laid over the contour for the corresponding No Action Alternative to show areas where increases or decreases in noise exposure greater than 65 DNL are anticipated to occur.<br><br>Finally, the grid point exhibits in **Section 5.1** and in **Appendix F, Attachment F-1** depict areas that would experience a 1.5 db change in DNL in areas greater than 65 DNL, a 3 db change in DNL in areas between 60 DNL and 65 DNL or a 5db change in DNL in areas within 45 DNL to 60 DNL. To augment this comparative information, the noise contour overlay exhibits in **Section 5.2** of the FEIS include estimated counts of population and housing units that are either within areas newly exposed to noise greater than 65 DNL if the respective Build Alternative was to be implemented or are within areas that would no longer be exposed to noise greater than 65 DNL if the respective Build Alternative was to be implemented. |

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the FAA to conclude that that there is only a "slight increase" in affected residences. This approach overlooks the extent of newly impacted noise sensitive receivers and accordingly minimizes the noise impact of the build alternatives on newly exposed noise sensitive receivers. The number of newly impacted residences and other noise sensitive receivers is not adequately discussed or evaluated.

For example, the noise exposures at and above 65 DNL at build-out under Alternative A are expressed in total acres (12,427), total acres of single-family residential use (1,060); total acres of multifamily use (60), and total acres of public parks (451). Noise exposure at build-out at and above 65 DNL under Alternative C are expressed in total acres (11,263), total acres of single-family residential use (1,260); total acres of multifamily use (88), and total acres of public parks (458). The DEIS then focuses on the net change in exposure, by comparing the total number of affected acres with and without the proposed build-alternatives. In the case of Alternative A vs. C, this enables the FAA to conclude that the project will result in a "9% decrease over Alternative A (No Action Alternative)." This type of net change analysis minimizes the real impacts, by failing to account for the gross number of new acres, and newly affected residents that will be impacted by the project. 157

**F. Historic Resources Related Deficiencies**

The DEIS identifies 12 properties of "historic interest" within the area of potential affects. Three of these properties are currently listed on the National Register of Historic Places ("NRHP"), one property is currently listed by the Commission on Chicago Landmarks, and eight

| Comment | Response |
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| 157 | Please see the response to this comment on the previous page. |
| 158 | The FAA disagrees with the commenters' opinion that the FAA's analysis "eliminate[s] the consideration of impacts on historic resources from the overall decision-making process." Rather, information was provided in the DEIS related to potential impacts on historic properties as a result of any of the alternatives under consideration.<br><br>Further, in accordance with Sections 800.2 and 800.3 of its revised regulations (36 CFR Part 800, "Protection of Historic Properties, effective June 17, 1999) implementing Section 106 of the NHPA, the FAA initiated coordination with the Illinois Historic Preservation Agency (IHPA) related to potential impacts of historic resources. This coordination has been ongoing since the initiation of the EIS process, and is still ongoing. At the time the DEIS was published, formal Determinations of Eligibility (DOEs) were being prepared for the potential historic resources that could be impacted as a result of any of the Build Alternatives. Each of the DOEs was submitted for review to the IHPA. Copies of these documents, including all correspondence with the IHPA, and with the "Keeper" of the National Register of Historic Properties (NRHP), were forwarded to the commentors. The current status of these DOEs is included in Section 5.9, Historic, Architectural, Archaeological, and Cultural Resources of the FEIS, as well as in **Appendix L,** Final Section 4(f) and Section 6(f) Evaluation.<br><br>Further analysis was also provided in the Draft Section 4(f) and Section 6(f) Evaluation (Evaluation) related to historic properties. In that Evaluation, FAA undertook an analysis of suggested alternatives submitted on May 6, 2005 by representatives of St. John's United Church of Christ, Rest Haven Cemetery Association, the Village of Bensenville, and Elk Grove Village. Based on this analysis, FAA concluded that none of the suggested alternatives presented, even though potentially feasible, would meet the purpose and need of the proposed project.<br><br>The FAA has evaluated the commenter's proposals in a new **Section 3.6** in **Chapter 3.** |

| Comment | Response |
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| 158 | Please see the response to this comment on the previous page. |

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of these properties have been identified by the FAA and Illinois Historic Preservation Agency ("IHPA") as "of historic interest" and "potentially eligible" for listing on the NRHP.[33]

The DEIS also recognized that five of these historic properties, including two cemeteries, would be destroyed or relocated by each of the three build-alternatives retained for detailed consideration in the "Environmental Consequences" section of the DEIS. Alternative C would require demolition or relocation of six properties. In spite of the recognition of devastating impacts on valuable historic resources, the FAA's analysis minimizes the gravity of these impacts, and ultimately turns the NEPA and NHPA procedural requirements regarding historic resources on their head to effectively eliminate the consideration of impacts on historic resources from the overall decision-making process. 158

### 1. NEPA Analysis Historic Resource Impacts Is Incomplete and Fundamentally Flawed

Section 102 of the National Environmental Policy Act, as interpreted and implemented through the Council on Environmental Quality ("CEQ") regulations requires that an EIS evaluate and assess "historic and cultural resources . . . including the conservation potential of various alternatives and mitigation measures."[34] The evaluation and

[33] The properties currently on the NRHP include: Churchville School; Noble-Seymour-Crippen House; and the Norwood Park Historical District which includes 788 contributing buildings. The Wingert House is listed by the Commission on Chicago Landmarks. The properties identified as potentially eligible for NRHP listing include: Green Street School; Gas Service Station; Rest Haven Cemetery; St. Johannes/St. John's Cemetery; United Terminal 1; Old Control Tower; Schwertfeger Farmstead; and the Geodesic Dome.

[34] 40 C.F.R. § 1502.16(g).

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assessment of impacts on historic resources contained in the OMP DEIS is incomplete because it grossly understates the gravity of those impacts, and avoids any objective consideration of alternatives and mitigation.[35] 159

*a. DEIS Understates Impacts On Historic Resources*

The evaluation of impacts on the twelve historic properties included in the DEIS is inadequate. The discussion of impacts on these properties focuses almost exclusively on indirect effects from noise, and then implies that significant noise impacts would be eliminated by the simply destroying or removing the resources within the 65 DNL in the course of constructing the project. There is essentially no discussion of the far more significant permanent direct impacts associated with demolition or relocation of the historic properties. 160

*i. Indirect Impacts from Noise*

The analysis identifies eight properties that would be impacted by a 1.5 dB (or more) increase in DNL noise exposure within the 65 DNL or greater Noise Contour under Alternative C.[36] Two of these

[35] "Eligibility for listing on the NRHP" is a threshold requirement for triggering the evaluation process required by section 106 of the National Historic Preservation Act, but it is not a threshold requirement for the evaluation of impacts on "historic and cultural resources," and the assessment of alternatives and mitigation measures that are required by NEPA.

[36] The eight potentially noise-impacted properties include: Green Street School (options D and G only); Gas Service Station; Rest Haven Cemetery; St. Johannes/St. John's cemetery; United Terminal 1; Old Control Tower; Schwertfeger Farmstead; and the Geodesic Dome. Under build-alternative C all six properties would be noise impacted; and under Alternatives D&G, all of these properties excepting the Green Street School would be noise impacted.

| Comment | Response |
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| 159 | For the reasons stated in the above response to comment 158, FAA disagrees with the commenters' opinion that the NEPA analysis related to historic resources impacts is "Incomplete and Fundamentally Flawed". |
| 160 | The DEIS included an analysis of both direct impacts and indirect impacts on potential historic resources within the areas of potential effect. As discussed in **Section 5.9.2.2** of the EIS, for purposes of the EIS, direct impacts would occur if a historic resource would be acquired and removed or relocated. Discussion of the potential direct impacts on historic resources were presented in **Section 5.9.4.2,** as Construction Phase II is the phase when the proposed land acquisition is anticipated to be completed. |

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properties are on the current airport property, and reflect land uses that are compatible with the projected noise levels. With respect to the remaining six noise-impacted properties, the DEIS concludes that they would not actually be noise-impacted because they would be removed during construction. Thus the DEIS happily concludes the substantive discussion of indirect impacts by stating that "there would be no noise impacts to these resources" because they would be "removed or relocated." This analysis completely overlooks or ignores the potential for preservation of the structures and appears to consider demolition of properties to a be a form of noise mitigation. 161

*ii.* ***Direct Impact of Demolition and Excavation***

Five of these properties would be "removed" under Alternative C, and four properties would be "removed" under Alternatives D & G. One additional property would be "removed or relocated" under each of the three build-alternatives. The DEIS acknowledges that "demolition and/or relocation" is a "direct impact" but provides no analysis or evaluation of that direct impact.

This conclusory treatment ignores the magnitude of the direct impact associated with demolition and relocation. For the 5 properties slated for "removal" this would presumably mean total destruction and a permanent loss of the entire historic resource. Clearly this impact crosses the FAA's threshold for impact significance, yet not a single word in the DEIS is devoted to trying to evaluate and quantify this impact of the loss of these properties. There has been no attempt to

| Comment | Response |
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| 161 | The analysis within the DEIS did not identify any indirect noise impacts on the historic properties where acquisition of the property would be required under a Build Alternative. Rather, these impacts were identified as direct impacts.<br><br>Through the EIS process, a number of alternatives were considered to address the stated needs of the proposed project. Only three Build Alternatives (Alternatives C, D, and G) were identified as meeting the stated project needs, as well as being sufficiently prudent and feasible for consideration. All three Build Alternatives would affect historic properties. Alternative A (No Action) does not meet the purpose and need as concluded in the DEIS, and is not a reasonable alternative to the proposed action under NEPA. FAA concludes that Alternative A is imprudent because it does not meet the purpose and need of the proposed project.<br><br>Green Street School was originally proposed for acquisition and demolition under Build Alternative C. Subsequent to the preparation of the DEIS, as a part of the Section 4(f) and Section 6(f) Evaluation, and while preparing the Final EIS, FAA identified that a minor modification to the Green Street School chimney would obviate the need to acquire the property. FAA technical experts identified that a chimney on this structure would penetrate the Terminal Instrument Procedures (TERPS) Surfaces of proposed Runway 10R/28L. At present, it appears that if Build Alternative C were selected, the City of Chicago would be required to obtain an avigation easement to lower the height of the chimney by 9.1 feet. This would avoid acquisition of the property. The FAA has determined that the lowering of this chimney could be done in accordance with Secretary of Interior's *Standards for the Treatment of Historic Buildings* (U.S. Department of Interior, National Park Service, 1995). Therefore, the effect to this structure would not cause a substantial impairment. |
| 162 | Please see the response to this comment on the following page. |

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assess the meaning of these properties to either the community, or to history, or the importance of maintaining the properties in their current locations. Without this evaluation, there is no way for the FAA to assess the significance of losing these properties, and the evaluation required by NEPA of the most significant potential impact of this project, destruction of historic resources, has really not even begun. 162

***b. DEIS Lacks Adequate Assessment of Alternatives***

NEPA also requires that an EIS contain an assessment of the "conservation potential of various alternatives . . ." 40 C.F.R. § 1502.16(g). The DEIS lacks any substantive discussion of the relative impact of alternatives on historic resources. The section entitled "Alternatives Analysis" at section 5.9.4 contains no "analysis" whatsoever. This section simply lists the four alternatives that were retained for detailed consideration, and then reiterates the conclusion that the No Action Alternative (Alternative A) would not have direct effects on historic resources, and that the three build-alternatives C,D, and G would have impacts on historic resources. There is no discussion of the conservation potential of various of options as required by NEPA. As currently drafted, all of the alternatives discussed are equally destructive. Thus, this omission is a symptom of the more fundamental process defect discussed above relating to the failure to consider additional viable alternatives with less damaging impacts on historic resources. 163

| Comment | Response |
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| 162 | Further background information from the formal Determinations of Eligibility (DOEs) was provided in the Final EIS for each historic property that would be directly impacted by a Build Alternative.<br><br>Regulations at 36 CFR 800.8(a) state that "an adverse effect finding does not automatically trigger preparation of an EIS (i.e., a significant impact). The section 106 consultation process includes consideration of alternatives to avoid adverse effects on National Register listed or eligible properties; of mitigation measures; and of accepting adverse effects. But in all cases, the FAA makes the final determination on the level of effect…" |
| 163 | Regulations at 36 CFR 800.8(a) state that "an adverse effect finding does not automatically trigger preparation of an EIS (i.e., a significant impact). The section 106 consultation process includes consideration of alternatives to avoid adverse effects on National Register listed or eligible properties; of mitigation measures; and of accepting adverse effects." Accordingly, the FAA's analysis of impacts on historic properties included consideration of alternatives, and of mitigation measures in making its findings.<br><br>In addition to the alternatives analysis that was presented in the DEIS, further analysis was also provided in the Draft Section 4(f) and Section 6(f) Evaluation (Evaluation) related to historic properties. In that Evaluation, FAA undertook an analysis of suggested alternatives submitted on May 6, 2005 by representatives of St. John's United Church of Christ, Rest Haven Cemetery Association, the Village of Bensenville, and Elk Grove Village. Based on this analysis, FAA concluded that none of the suggested alternatives presented, even though potentially feasible, would meet the purpose and need of the proposed project.<br><br>The FAA has evaluated the commenter's proposals in a new **Section 3.6** in **Chapter 3.** |

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*c. DEIS Lacks Any Discussion of Mitigation*

NEPA also requires that an EIS contain an assessment of the "conservation potential of various . . . mitigation measures." 40 C.F.R. § 1502.16(g). The DEIS contains no assessment of specific mitigation measures. The DEIS dismisses the need to discuss mitigation by indicating that mitigation will be discussed in the Final EIS.[37] Withholding a discussion of mitigation from the DEIS is unacceptable. The purpose of the DEIS is to allow for review and comment on the NEPA process during the process. The NEPA regulations on Draft EIS preparation explain that "the draft must fulfill and satisfy to the fullest extent possible the requirements established for final statements . . . If the draft is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion."[38] The failure to address mitigation prevents the public and the FAA from understanding the final impact of the proposed action on these resources and must be remedied at the DEIS stage and not withheld until the public review and comment period has closed, and the final decision is made on the preferred alternative as proposed by the FAA in the DEIS. 164

*d. The DEIS NEPA Analysis is Fundamentally Flawed*

Each of the three omissions outlined above are evidence of the underlying fundamental flaw in the FAA's analysis. The purpose of the

[37] DEIS at 5.9-28.

[38] 40 C.F.R. § 1502.9.

| Comment | Response |
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| 163 *continued* | Also, Green Street School was originally proposed for acquisition and demolition under Build Alternative C. Subsequent to the preparation of the DEIS, as a part of the Section 4(f) and Section 6(f) Evaluation, and while preparing the Final EIS, FAA identified that a minor modification to the Green Street School chimney would obviate the need to acquire the property. FAA technical experts identified that a chimney on this structure would penetrate the Terminal Instrument Procedures (TERPS) Surfaces of proposed Runway 10R/28L. If Build Alternative C were selected, the City of Chicago would be required to obtain an avigation easement to lower the height of the chimney by 9.1 feet. This would avoid acquisition of the property. The FAA has determined that the lowering of this chimney could be done in accordance with Secretary of Interior's *Standards for the Treatment of Historic Buildings* (U.S. Department of Interior, National Park Service, 1995). Therefore, the effect to this structure would not cause a substantial impairment. |
| 164 | **Chapter 7** of the EIS included a discussion of potential mitigation measures for the resource categories where impacts are anticipated. More detailed information related to mitigation measures has been provided in the Final EIS. |
| 165 | For the reasons stated in the above response to comments 160-164, FAA disagrees with the commenters' opinion that the "DEIS NEPA Analysis is Fundamentally Flawed."<br><br>Related to the Blended Alternative, even if it could be implemented, this alternative would still yield the least delay reduction, while not serving the forecast demand at O'Hare. Further, the Blended Alternative would require changes to federal laws and/or national policy that have created the federally-deregulated, free market based, national aviation system to enable its full implementation. Under present law, the federal government cannot prescribe controls affecting the rates, routes, or services governing commercial aviation. Similarly FAA cannot require a change in the passenger distribution pattern of other modes of transportation. While the FAA must consider alternatives beyond its jurisdiction, CEQ also states, "A potential conflict with local or federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered." The conflict with Federal law and policy coupled with the inability of the FAA to control the market forces makes the Blended Alternative not reasonable. Therefore, further consideration of the Blended Alternative is not prudent or reasonable, and therefore was eliminated from further consideration. |

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| 165 | Please see the response to this comment on the previous page. |
| 166 | The FAA intends to complete the Section 106 process prior to making any approvals or findings in a Record of Decision. |

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EIS is to insure that the FAA takes environmental factors into account during the decision-making process. The OMP DEIS demonstrates that the FAA is considering environmental factors as an afterthought to the decision making process, not within the process. As discussed above, the DEIS is an exercise in reverse engineering designed to support the project proponent's predetermined objective.

From the outset, the DEIS eliminated the "Blended Alternative" without any analysis of the merits of such an alternative from an environmental perspective. This is the only alternative identified with real potential to avoid or mitigate impacts on historic resources. Each of the remaining alternatives have essentially identical impacts on the environment and historic resources. Thus, the remaining discussion of environmental consequences and alternatives present no real choices or alternatives with respect to impacted resources, and the OMP NEPA process has become a useless rubber-stamping exercise with no potential to select an option which minimizes or eliminates harmful impacts on historic resources. 165

**2. The NHPA Section 106 Process Has Been Effectively Suspended and Rendered Moot**

Like Section 102 of NEPA, Section 106 of the National Historic Preservation Act of 1966, as amended ("NHPA") 16 U.S.C. § 470f, also requires the FAA to take into account the effects of its undertakings on historic resources. Unlike the broad terms of the NEPA implementing regulations, the NHPA requirements apply more specifically to properties included or "eligible for inclusion" on the National Register of Historic Places. Where Section 106 of the NHPA is triggered, federal

| Comment | Response |
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| 166 | Please see the response to this comment on the previous page. |

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agencies like the FAA must follow the specific process for such evaluations set for in the Advisory Council on Historic Preservation ("ACHP") regulations at 36 C.F.R. Part 800 (the "section 106 Process").[39]

In contrast to the NEPA requirements, the 106 Process establishes a number of critical mandatory procedural protections for historic resources, including early consultation with interested parties, and a formally documented resolution of any adverse affects identified. While the FAA may combine the section 106 and NEPA processes under certain circumstances, the FAA appears to be using the "normal Section 106 process" rather than the combined "NEPA/Section 106 Streamlining process" for the OMP.[40] Nevertheless, the EIS outlines the status of the ongoing section 106 process in detail, and makes it clear that the OMP section 106 process is seriously flawed, and in fact, appears designed to prevent the timely constructive review required by the NHPA. 166

***a. Inadequate Section 106 Consultation***

"Conducting consultation" and "Identification of other consulting parties" are critical initial steps in the "Initiation of the section 106 process." 36 C.F.R. § 800.3(c)(3); 36 C.F.R. § 800.3(f). The CEQ's

[39] In addition to its own obligation to assess impacts on historic resources under the Section 106 regulations, the FAA is also required to afford the ACHP a reasonable opportunity to comment on such undertakings. 16 U.S.C. § 470f.

[40] The FAA may use the NEPA process to meet its Section 106 obligations, but when doing so, it must carefully adhere to the requirements of 36 C.F.R. Part 800 and make an express election with advanced notification to the SHPO and the ACHP before doing so. FAA Order 1050.1E, Appendix A, Section 11.2p, and 36 C.F.R. § 800.89(c) sets forth the specific procedures by which the FAA can utilize the EIS process to comply with section 106.

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section 106 regulations provide that "a representative of a local government with jurisdiction over the area in which the effects of an undertaking may occur is entitled to participate as a consulting party." 36 C.F.R. § 800.2(c)(3). Subsection 800.2(c)(5) further provides that individuals and organizations with a demonstrated interest in the undertaking may participate as consulting parties due to the nature of their legal or economic relation to the undertaking or affected properties, or their concern with the undertaking's effects on historic properties. See also, FAA Order 1050.1E, Section 11.2n(1)(D-E) (reiterating these requirements).

The Municipalities of Bensenville and Elk Grove Village, and the Bensenville Historical Society have a vital interest in the potential impacts of the proposed action, and have repeatedly made these interests known to the FAA.[41] According to the DEIS, section 106 consultation began with the IHPA on November 7, 2002, but to date, these communities have not been invited to serve as consulting parties to the section 106 process. The FAA's apparent refusal to include these parties prevents a complete and objective evaluation of the impacts of the proposed action on historic resources, violates the section 106 implementing regulations, and thwarts the intent of the section 106 process. 167

[41] See, October 15, 2004 letter from Robert E. Cohn to Amy B. Hansen and Charles Prock Re: O'Hare Modernization Program: Eligibility of St. Johannes and Rest Haven Cemeteries for Listing in the National Register of Historic Places; October 15, 2004 letter from Anne H. Adams to Amy B. Hansen Re: St. Johannes Cemetery and Rest Haven Cemetery, Bensenville, Illinois.

| Comment | Response |
|---|---|
| 167 | FAA plans to fully comply with the Section 106 process. In accordance with Sections 800.2 and 800.3 of its revised regulations (36 CFR Part 800, "Protection of Historic Properties, effective June 17, 1999) implementing Section 106 of the NHPA, the FAA initiated coordination with the Illinois Historic Preservation Agency (IHPA) related to potential impacts of historic resources. This coordination has been ongoing since the initiation of the EIS process, and is still ongoing.<br><br>At the time the DEIS was published, formal Determinations of Eligibility (DOEs) were being prepared for the potential historic resources that may be impacted as a result of any of the Build Alternatives. Each of the DOEs was submitted for review to the IHPA. Copies of these documents, including all correspondence with the IHPA, and with the "Keeper" of the National Register of Historic Properties (NRHP), were forwarded to the commenters. FAA intends to continue consultation with representatives of local governments having jurisdiction over affected historic properties in compliance with Section 106. |

| Comment | Response |
|---|---|
| 168 | The current status of the DOEs is included in, **Section 5.9** of the FEIS, as well as in **Appendix L, Final Section 4(f) and Section 6(f) Evaluation.** The FAA intends to complete the Section 106 process prior to making any approvals or findings in a Record of Decision. |

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*b. FAA is Thwarting the Section 106 Process By Failing to Complete the Identification and Evaluation of Resources In a Timely Manner*

The heart of the section 106 process is the Assessment of Adverse Affects (§ 800.5) and Resolution of Adverse Affects (§ 800.6) since it is these phases of the process that can actually eliminate or mitigate harm to historic resources. However, under the NHPA, these efforts cannot even begin until the Identification and Evaluation of Historic Properties process has identified the properties that are listed or eligible for listing on the National Register of Historic Places ("NRHP"), since only those properties are covered by the protective procedures of the section 106 process.

As indicated above, the FAA began the formal section 106 process almost two and half years ago in November, 2002 with a consultation meeting with the IHPA. According to the DEIS the Green Street School was identified from the very beginning as "potentially significant" and appropriate for further evaluation through a Determination of Eligibility (DOE).[42] The DEIS also indicates that "Rest Haven Cemetery and St. Johannes Cemetery, due to their sensitivity, were immediately focused on the higher level of investigation, a DOE. The two cemeteries were verbally recommended by the FAA to IHPA to be potentially eligible to the NRHP."[43] According to the DEIS, DOE's on these properties and five others remain "in progress" as of January, 2005, two and a half years later.

[42] DEIS at 5.9-5.

[43] DEIS at 5.9-7.

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While these decisions are pending, the assessment and formal documented resolution of adverse affects on historic properties under section 106 cannot even begin. The completion of a DOE analysis is a routine matter for a properly qualified professional. The criteria for eligibility for listing on the NRHP are straight-forward and set forth succinctly in federal regulations at 36 C.F.R. Part 60. The Village of Bensenville and the Bensenville Historical Society submitted a detailed analysis in support of the DOEs for the two cemeteries in October of 2004. The failure to complete the DOEs by now is completely inexplicable.

Because the historic properties covered by 106 have not been finally identified, the entire section 106 process has been effectively suspended. Suspension and delay of the section 106 process is preventing the impacts on historic properties from being evaluated under section 106 in advance of the final decisions on the proposed action, and is preventing the section 106 process from being used, as intended, to allow decision makers to consider alternatives and mitigation measures that will avoid, minimize, or mitigate impacts on historic resources.

The full section 106 process should be a valuable input in the informed decision making process required by NEPA and NHPA. By failing to complete the DOEs and more importantly the section 106 assessment and resolution of adverse effects prior to publication of the DEIS, the FAA has effectively eliminated the possibility of even considering mitigation and alternatives that would avoid the

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destruction of these resources. This subversion of the section 106 process is a clear violation of the NHPA. 168

## VII. PROCEDURAL AND DUE PROCESS VIOLATIONS.

### A. The Substantive Decisions Being Made By FAA

The DEIS at ES-1 lists several "federal actions" which are associated with the "proposed development". The FAA decisions that relate to the OMP proposal include the following: 169

1) **Approval of the Airport Layout Plan under Section 47107(a)(16) of Title 49 and the related "Airspace Case No: 2003-AGL-878-NRA".** Section 47107(a)(16) expressly requires the FAA to approve any changes in an airport layout plan at an airport which has been the recipient of federal financial assistance — before the airport operator or owner can make any changes in the prior approved Airport Layout Plan. FAA initiated a case file for technical analysis of the City's draft ALP in "Airspace Case No: 2003-AGL-878-NRA". As opposing parties, the Objectors have sought and are entitled to a) o participate as a party to the FAA ALP decision-making proceeding under Section 47107(a)(16), b) be advised of the "relevant factors" FAA considers in making its decision under Section 47107(a)(16), and 3) all information, communications, documents, and data FAA received or considered in with respect to its decision under Section

| Comment | Response |
|---|---|
| 168 | Please see the response to this comment on page U.4-484. |
| 169 | As the commenter concedes at page 105 of this submission (U.4-494), there are no FAA or other statutes implicated by the commenter's concerns that require adjudicatory FAA decisions to be "determined on the record after opportunity for agency hearing." The Agency knows of no other credible basis for providing the type of formal process sought by the commenter, and therefore have concluded that the informal procedures adopted here have afforded all parties more than ample opportunity for participation and comment. Finally, with respect to the commenter's assertion of entitlement to determinations by an Article III court, the FAA's findings with respect to the OMP will be subject to judicial review and appropriate judicial scrutiny.<br><br>The FAA also addresses the commenter's claims of procedural and due process violations in **Section 5.23** of the Final EIS. In addition, the FAA also addresses the commenter's concerns regarding RFRA in **Section 5.22** of the Final EIS. |

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47107(a)(16). The FAA has failed to accord the Objectors the rights to which they are entitled.

2) **FAA Decisions as to requests for AIP grants.** The DEIS acknowledges that one of the federal actions involves authorization of AIP grants. DEIS provides no information with regard to the status of any requests for AIP grants relating to the OMP other than the pending application for Letter of Intent for the Phase 1. As interested opposing parties, Objectors have sought and are entitled to participate in any administrative proceeding involving FAA consideration of any AIP requests and for access to all information and materials submitted to FAA by the City or otherwise considered by FAA. The FAA has failed to accord the Objectors the rights to which they are entitled.

3) **FAA Decisions as to requests for PFC approvals with respect to OMP.** The DEIS acknowledges that one of the federal actions involves requests for PFC funds. The DEIS provides no information with regard to the status of any requests for PFC authorizations relating to the OMP. Objectors successfully obtained a remand in the U.S. Court of Appeals for the District of Columbia Circuit of the FAA's authorization of $240 million in PFC funds for the OMP. As opposing parties, Objectors have sought and are entitled to participate in any administrative proceeding involving FAA consideration of any PFC requests and for access to any information and materials submitted by the City related

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thereto or considered by FAA. The FAA has failed to accord the Objectors the rights to which they are entitled.

4) **The FAA's decision to include the OMP or any elements of the OMP in the National Plan for Integrated Airport Systems (NPIAS) under 49 U.S.C. §47103.** Section 47103 requires FAA to develop a "national plan of integrated airport system" and requires a determination of whether the OMP will meet "the needs of civil aeronautics". FAA cannot approve federal grants for projects unless they are identified in the NPIAS. As opposing parties, the Objectors have sought and are entitled to participate in any process involving any proposal to include any elements of the OMP in any NPIAS issued by the FAA, b) to be informed what "relevant factors" are considered by FAA in making its NPIAS decision as to proposed inclusion of OMP elements in the NPIAS or in the related NPIAS-ACIP database, and c) access to any materials considered by FAA in reaching any decision as to inclusion of any components of the OMP in the NPIAS or in the related NPIAS-ACIP database. The FAA has failed to accord the Objectors the rights to which they are entitled. In fact, FAA has proceeded — in advance of and in disregard of Objector's rights and FAA's NEPA compliance obligations and prohibitions against pre-determinations — to reach a decision to include Phase I of the OMP in the NPIAS; and by doing so has determined (without giving Objectors an opportunity to participate in the FAA decision making process) that OMP Phase I is "necessary to

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provide a safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics". See *National Plan of Integrated Airport Systems, 2005-2009.*

5) **The 1984 Record of Decision with regard to FAA approval of the 1984 proposed expansion of O'Hare.** FAA Order 150/5050-3B requires that "the NPIAS must be based on well-coordinated system planning at the state level of government." The last time FAA evaluated new runways at O'Hare it issued a Record of Decision acknowledging the importance of developing a new major airport for the Chicago region and requiring that the aviation needs of the metropolitan Chicago region would be delineated in a State "System Plan". The FAA's 1984 Record of Decision (ROD) expressly stated that the location of airport facilities to handle projected O'Hare and regional commercial aviation growth beyond the capacity of O'Hare's existing runway configuration would be the subject of an FAA funded State System Plan:

> "Development of another air carrier airport to serve the Chicago Metropolitan Area will be studied as part of a State System Plan to be prepared by the Illinois Department of Transportation under a series of grants to be funded by the FAA's Airport Improvement Program. The initial grant was issued in September 1984."
> 1984 FAA ROD at 4 (emphasis added)

As discussed above, the State System Plan developed by the State of Illinois under FAA planning grants referred to in the 1984 ROD concluded that O'Hare's runways should not be

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expanded and that new aviation capacity for the Region should instead be constructed at a new south suburban airport. FAA must adhere to this precedent and enforce its 1984 Record of Decision with regard to O'Hare and to comply with the 1988 State System Plan ordered by the 1984 ROD. *Consolidated Edison Co. of New York v FERC*, 315 F3d 316 (DC Cir. 2003). Objectors have also asked to be given notice of any proposed changes to the 1988 System Plan, an opportunity to participate in any revisions or FAA consideration of any revisions to the State System Plan, and for access to any materials considered by FAA relating to the State System Plan since 1984. FAA has refused to provide Objectors with the requested information and there is no mention of the 1984 ROD or the State System Plan in the DEIS.

**B. FAA continues to violate Objectors rights as parties and under FOIA by withholding thousands of documents which have been considered by FAA in the administrative decision making proceedings involving OMP.**

Objectors have two independent bases for obtaining information and documents relating to the OMP. First, the Objectors have filed Freedom of Information Act (FOIA) requests as to all of the materials FAA has considered that relate to OMP and the matters listed above. Thus far Objectors have identified approximately almost 5,000 documents which FAA acknowledges relate to the FAA's OMP decision making and the matters listed above — but which FAA has withheld from Objectors. FAA has yet to identify what basis under the federal

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FOIA statute — if any — that FAA has for refusing to produce these thousands of documents, all of which relate to the OMP and the issues and FAA decisions involving the OMP. Failure to provide Objectors all the requested documents and information violates the Freedom of Information Act.

In addition, Objectors are opposing parties in the administrative proceedings involving the OMP and as opposing parties are entitled under the Due Process Clause and the federal Administrative Procedure Act to obtain and comment on all documents and materials that FAA has considered or will be considered as part of the administrative record in the FAA's administrative decision making process.

### C. Objectors prior correspondence is incorporated as exhibits to these Comments

As discussed above, the DEIS contemplates several significant federal actions that would impair the Objectors' interests and cause irreparable harm to their communities, homes and religious cemeteries. Objectors have previously raised objections to the OMP and the processes and procedures used by FAA, including FAA's failure to disclose information and failure to protect the constitutional due process, Administrative Procedure Act and Religious Freedom Restoration rights of the Objectors. The FAA has failed to accord Objectors the rights to which they are entitle. To insure that Objectors' prior objections and correspondence is given formal attention by the FAA in its response to comments on the DEIS, the Objectors hereby

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incorporate by reference and attach as exhibits hereto all such prior correspondence.

### D. The FAA Must Consolidate the ALP, AIP, PFC and Related FAA Adjudicatory Decisions For Contemporaneous Consideration and Decision.

Chicago seeks to pursue a procedural path that would allow the City to destroy Objectors' properties before FAA determines the merits of the OMP. First, the City seeks to have the FAA make a narrow technical decision on the City's ALP approval request without evaluation the full merits of the OMP including its costs, financial feasibility and cost/benefits. That decision will in turn lead to the immediate acquisition and destruction by the City of the businesses, residences and religious cemeteries located in the Objectors' communities and injury to Objectors' constitutional rights. Finally, then and only then, after the acquisition and destruction of Objectors' properties has become a *fait accompli*, will the FAA address the critical (and unachievable) OMP funding and cost/benefit decisions on Chicago's AIP and PFC funding requests.

The Objectors believe that such a piece-meal approach — to permit the destruction of Objectors' properties and constitutional rights before the FAA has decided the merits of the OMP and whether the OMP project (or Phase I) meets the statutory requirements and qualifies for federal AIP and PFC funding assistance — is contrary to law, to sound FAA policy and to the fundamental constitutional rights of the Objectors.

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If the FAA ultimately determines that the City is not entitled to the substantial AIP (and PFC) authorizations the OMP requires, as it should for the reasons discussed below, the OMP will not proceed as proposed, and the destruction of the communities and the religious properties will have needlessly occurred with the FAA's full knowledge, concurrence, and assistance.

The statutory framework requires the FAA to conduct a comprehensive inquiry before it takes action on the ALP, AIP, PFC and NPIAS decisions relating to the OMP. In the context of the OMP, the statute requires the FAA to examine the entire merits of the OMP (including collectively ALP and AIP funding issues) to determine whether the six-runway preferred plan proposed by the City is viable, whether or not it will achieve its touted objectives and whether its benefits (which are small) will outweigh the costs (which are enormous).

Failure to consider all facets of the OMP contemporaneously will substantially prejudice the Objectors and the FAA's decision-making. If the FAA approves the ALP prior to evaluation of the AIP funding requests, the ALP approval will create a *fait accompli* as to the destruction of the communities and properties of the Objectors, fundamentally and irreversibly changing the impacts on the Objectors which the FAA is required to examine as part of the benefits-cost analysis for an AIP grant award.

By destroying the properties based on the ALP decision, the City, with the FAA's approval, will effectively make it impossible for FAA to take a hard look at the full "costs" of the OMP (the social and economic

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consequences and impacts of OMP), which by necessity must include the potential destruction of the properties, the religious cemeteries and the communities, as well as alternatives to such destruction. This will prejudice the FAA's AIP cost-benefit evaluation to the detriment of the Objectors. If the FAA ultimately determines that the City should not be granted the substantial AIP (and PFC) authorizations OMP requires or if it determines, as it must that OMP is not financially feasible, the OMP will not proceed as proposed, and the destruction of the communities and the religious properties will have needlessly occurred with the FAA's full knowledge and concurrence.

Such a piecemeal approach has been rejected by the federal Courts. In *Old Town Neighborhood Assoc. v Kauffman*, 333 F.3d 732 (7th Cir. 2003), the Court of Appeals for the Seventh Circuit rejected a "two-step" process under which a proposal by a City to widen a road (Third Street in Goshen, Indiana), without preparation of an environmental evaluation, was determined to have been improperly piecemealed from a potential federally funded project. The Court noted:

> What concerned the district judge is the possibility that Goshen will seek reimbursement [from the Federal Highway Administration] after the fact—either in cash or in money's worth, such as a swap of Third Street for land now owned by the federal government. Once the historic structures have been razed, the Secretary [of Transportation] could certify that the federal approval or expenditure does not affect any historic site, for none would be standing. That two-step process would subvert federal laws.
>
> *Id.* at 736 (emphasis added).

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The Court's remedy was to direct the federal District Court to permanently enjoin the City from accepting directly or indirectly any federal funds, including by reimbursement, for construction and widening of the road.[44] Here, if the FAA approves the ALP before considering the merits of the funding applications, the City should either be prohibited from acquiring and destroying the properties until the FAA has evaluated the AIP and PFC applications or be prohibited from receiving any federal funding authorizations (including AIP and PFCs) for the OMP.

For the foregoing reasons, the Objectors submit that the FAA is required to examine and decide the AIP and PFC funding and ALP approval issues on a concurrent coordinated basis before the FAA allows Chicago to undertake any acquisition and destruction of the communities and the religious cemeteries.

**E. The Constitutional and Statutory Protections for the Religious Objectors Prohibit the FAA From Approving or Funding the OMP (including OMP Phase I).**

The OMP, including Phase I of the OMP, calls for the destruction of both St. Johannes and Rest Haven Cemeteries and as a result will impose a "substantial burden" on the religious practices and beliefs of the Religious Objectors. Both the First Amendment Free Exercise Clause and the federal Religious Freedom Restoration Act prohibit the

[44] See District Court Injunction Order in *Old Town Neighborhood Assoc. v Kauffman*, 2003 U.S. District Court LEXIS 14567 (August 12, 2003).

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FAA from approving or funding the construction of the OMP — or Phase I — without first affirmatively demonstrating that there is:

1) a compelling governmental need to destroy the religious cemeteries for the OMP, and

2) that the OMP is the "least restrictive means" (i.e., that there is no available alternative to meet that governmental need that would not destroy the cemeteries).

The FAA cannot meet the burdens of the First Amendment Free Exercise Clause or the federal RFRA.

There is demonstrable evidence already in the record, supported by these Objections and the Campbell Hill report that conclusively shows that the FAA cannot meet those stringent requirements. First, the purported purposes of the OMP — and Phase I — are: 1) to "mitigate existing delays" and, 2) to provide "long-term capacity growth consistent with potential needs" (March 4, 2004 City of Chicago LOI application page 1-1).

As to the "governmental need" to mitigate existing delays, Chicago and the FAA have already acknowledged that there is no compelling need to destroy these religious cemeteries. As this Summer's delay situation at O'Hare amply demonstrates, much of the so-called "delay" problem at O'Hare stems from the airlines' deliberate over-scheduling of flights — a self-inflicted business problem created by the airlines. The self-infliction of delays because of over-scheduling by the airlines hardly demonstrates the compelling governmental need required by the First Amendment and the federal Religious Freedom Restoration Act.

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Moreover, as discussed herein and in the Campbell Hill report, neither Phase I nor the entire OMP will alleviate delays and congestion. To the contrary, the full OMP or Phase 1 will increase delays and congestion.

Significantly, there are several alternatives that would accomplish reduction in delays and congestion which would not require the destruction of the religious cemeteries.

First, Chicago itself has acknowledged that several studies performed by the FAA and Chicago (*e.g.*, the 1991 and 2002 "Delay Task Force" studies) have shown that "several options were available to reduce delays" (March 4, 2004 City of Chicago LOI application page 1-1, emphasis added). None of these other options, which Chicago has acknowledged would reduce delays, would destroy the religious cemeteries. In fact, as discussed below, the recommendations of the Delay Task Force have the potential to produce increases in operations equivalent to the maximum level of operations which the OMP would produce, without destroying the cemeteries.

Second, the FAA has not considered any alternative runway configurations (except the "no-build" alternative) that would not involve the destruction of the religious cemeteries.

Third, the congestion management practices imposed by the FAA this Summer at O'Hare and at other congested airports such as LaGuardia and Reagan National demonstrate that there are non-structural alternatives that can swiftly eliminate the problem. These congestion management controls would reduce delays without destroying the religious cemeteries. The DOT and the FAA currently

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have under consideration market based alternatives to relieve airline flight delays and congestion at the nation's busiest airports. See DOT Docket OST-2001-9849 and FAA Docket 2001-9852/9854.

Finally, as discussed above, there are off-airport alternatives to relieve delays/congestion and bolster regional capacity, including using excess capacity at other existing airports or building new airport facilities at other locations in the metropolitan Chicago area. The report recently issued by the FAA suggests that when existing airports in metropolitan areas such as Chicago reach capacity, traffic growth should be accommodated at new airport facilities.[45]

### F. Chicago's Requests for AIP Funding for Either the Full OMP or Phase I Fail to Meet the Statutory Requirements Under 49 U.S.C. Subtitle VII.

Chicago has stated that it will seek large amounts of AIP funding for the full OMP and will seek both discretionary and entitlement AIP funding for Phase I. Neither the full OMP nor Phase I qualify for AIP funding.

[45] *Capacity Needs In the National Airspace System* (U.S. DOT-FAA-MITRE June 2004). It has been suggested by Chicago that this study concluded that the full OMP could meet capacity needs for O'Hare in the year 2020. That is not what the study found. Moreover, neither the FAA nor Chicago can fund the full OMP and even under the capacity analysis approach used in the 2004 U.S. DOT-FAA-MITRE study, it is likely that Phase I would fail the capacity screening approach used in that report. Despite Objectors FOIA requests the underlying documents and data relating to MITRE's examination of existing O'Hare vs. OMP have not been provided to Objectors. This material should be in this record and should be available for examination and comment by Objectors before FAA reaches any decision on this matter.

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**1. Chicago Continues to Refuse to Produce and Disclose Detailed Cost Estimates and a Detailed Financial Plan as to How Chicago Will Pay for the OMP.**

The City of Chicago has refused to disclose: 1) the full costs of the OMP and related capital projects, and 2) Chicago's plan to pay for the OMP and related capital projects. Central to virtually all of the FAA decisions with respect to the OMP is the question of how much the OMP and related projected capital projects proposed at O'Hare will cost. Chicago has refused to produce a complete current quantity and unit cost estimate of the entire cost of constructing the various facilities which Chicago says are necessary to accomplish the asserted benefits of the OMP.

Section 49 U.S.C. § 47115(d) lists the criteria for granting AIP discretionary funds and requires the Secretary to consider:

i. "the effect the project will have on the overall national air transportation system capacity";

ii. "the project benefit and cost";[46] and

iii. "the financial commitment from non-United States government sources to preserve or enhance airport capacity."

Without such comprehensive cost estimates, it is impossible for the FAA to make rational and lawful decisions on the City's OMP approval requests.

Similarly, Chicago has refused to disclose its financing plan as to how it will finance (pay for) the OMP. The statute requires the FAA to

[46] This requirement means that the project benefits must exceed the project costs. 64 Fed Reg. 70107 (December 15, 1999).

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find that the City has "the financial commitment from non-United States government sources" and enough money available to pay the project costs "from non-federal sources" to finance the OMP. Without disclosure of the detailed financial plan, it is impossible for the Objectors to address and for the FAA to make rational and lawful decisions with respect to whether the OMP meets all statutory requirements.

Despite FAA's failure to seek or obtain a full cost accounting or and comprehensive finance plan for OMP, the record conclusively demonstrates, as discussed above, that OMP is too costly (at least $21 billion), cannot be financed, will result in costs that exceed benefits, will increase, not reduce delays, will adversely impact the consumers and airlines and the national airspace system.

## VIII. THE OBJECTORS ARE ENTITLED TO PROCEDURAL AND SUBSTANTIVE PROTECTIONS UNDER THE CONSTITUTION AND THE ADMINISTRATIVE PROCEDURE ACT TO PARTICIPATE AS PARTIES IN THE FAA ADJUDICATORY DECISIONS.

The Objectors have repeatedly put the FAA on notice that they intend to assert their constitutional and statutory due process rights, and that they are entitled to party status and a formal adjudication of their claim. Yet, the DEIS would appear to deny the Objectors their right to an adjudication of the merits. FAA asserts that "its Record of Decision (ROD) on this EIS will address the legal claims presented by the plaintiffs in their challenge to these proposed acquisitions if a Build Alternative is selected." DEIS at 5.4-23. However, the NEPA process

does NOT afford Objectors the due process rights to which they are entitled under the U.S. Constitution and the APA with respect to the underlying federal approvals required for the OMP. NEPA is a procedural process required to examine the impact of the environment, not to determine the underlying substantive decisions.

### A. The FAA Decisions at Issue Here Are Adjudications.

The FAA proceedings to which these comments and the DEIS relate are deemed by law to be "adjudications." Under the Administrative Procedure Act, an "adjudication" is defined as "an agency process for the formulation of an order." 5 U.S.C. § 551(7). An "order" is defined in § 551(6) to be "the whole or part of a final disposition, whether affirmative, negative, injunctive, or declaratory in form, of an agency in a matter *other than rulemaking...*" (emphasis added). The FAA decisions described in these comments relating to the proposed OMP are clearly <u>not</u> rulemaking and are therefore "orders" within the meaning of the APA. Since these FAA decisions are "orders," the APA defines the FAA decision-making processes leading to these FAA decisions ("orders") as "adjudications."

Moreover, the outcome of the City's AIP/LOI, ALP, and PFC requests will be an "order" in the form of a Record of Decision or Final Agency Decision. Indeed, the Record of Decision or Final Agency Decision is deemed to be an "order" subject to judicial review under 49 U.S.C § 46110.

Moreover, these proceedings are adjudications, as distinguished from rulemaking, because in determining the merits of the City's



requests the FAA must apply rules and requirements of general application to the specific facts of the OMP proposal and its impacts, as well as to the facts relating to alternatives to that specific proposal. *See* Koch, *Administrative Law & Practice*, §2.11 ("adjudication is the decision-making process for applying preexisting standards to individual circumstances"). This is the distinction between rulemaking and adjudication noted in *United States v. Florida East Coast Ry. Co.*, 410 U.S. 224, 244-45 (1973), *See also, People of State of Illinois v. United States*, 666 F.2d 1066, 1073, n.7 (7th Cir. 1981).

Nor does the fact that large numbers of people may be affected by the adjudicatory decision cause the decision not to be non-adjudicatory. Koch, *supra*, at §2.11 ("Although adjudications usually affect only a relatively small number of people, it is dangerous to incorporate [a] number into the definition. Just as class actions or derivative litigation can affect millions so can administrative adjudication.").[47]

Each of the FAA decisions listed above involves the final disposition of a matter (*e.g.*, decision on an AIP or PFC application, decision on the approval of the ALP application, decision on what

[47] Moreover, persons or entities adversely affected by a proposed administrative action can seek party status to challenge the proposed governmental action. Chicago does not dispute that the Objectors have asked for participation as opponents to Chicago's application for FAA approval of the project. The law is clear that the Objectors have a right to seek intervention in the FAA adjudicatory decision-making proceeding as opponents to Chicago's application. See: *Nichols v. Board of Trustees of the Asbestos Workers Local 24 Pension Plan*, 835 F.2d 881, 896 n. 107 (D.C. Cir.1987); *Koniag, Inc. v. Andrus*, 580 F.2d 601, 613 and n.5 (D.C. Cir.), cert. denied, 439 U.S. 1052 (1978); and 5 U.S.C. § 555. As noted above, the Objectors seek opposing party status in each of these administrative adjudications.

elements of O'Hare to include in NPIAS-CIP) and such decisions are not the process for the formulation of a "rule", *i.e.*, "rulemaking."

Since the APA defines an "order" to be any final disposition of a matter that is not rulemaking, since the FAA decisions listed above are not rulemaking, and since the APA defines an adjudication as the process for the formulation of an "order," it necessarily follows that the FAA decisions listed above are adjudications.

**B. The FAA Adjudications at Issue Here are Required under the Doctrine of *Wong Yang Sung v. McGrath* to be Conducted Pursuant to the Requirements of 5 U.S.C. §§ 554, 556 and 557.**

As demonstrated, these proceedings are "adjudications." But finding that a governmental decision is an adjudication does not determine whether the adjudication must follow "formal" or "informal" procedures under the APA. That question is partially determined under the APA by whether the FAA proceedings listed above are — under the terms of 5 U.S.C. § 554(a) — "required by statute to be determined on the record after opportunity for an agency hearing."

The Objectors are not aware of any FAA statutes that require the adjudicatory FAA decisions listed above to be "determined on the record after opportunity for agency hearing." However, that does not end the inquiry. The Supreme Court has emphatically held that if the objectors to a proposed government action are entitled to procedural Due Process protections, then the Due Process Clause itself is a "statute" requiring that the dispute be determined on the record after opportunity for an



agency hearing within the meaning of § 554(a). *See Wong Yang Sung v. McGrath*, 339 U.S. 33 (1950).

If the Religious Objectors and the Community and Homeowners Objectors are entitled to procedural Due Process protections before the FAA can approve the cemeteries for destruction, and the Communities' and Homeowners' properties for destruction, then the provisions of § 554 of the APA apply. If the provisions of § 554 apply, then the procedural requirements of §§ 556 and 557 also apply by their express terms.

The Due Process Clause of the Fifth Amendment prohibits the FAA from approving the destruction of the religious cemeteries or the property of the Community Objectors and the Homeowner Objectors without providing those who have liberty or property interests in the continued integrity and sanctity of the cemeteries and the other properties with procedural due process.

The question then turns to whether the Religious Objectors here have liberty or property interest in protecting the sanctity of the graves in Rest Haven and St. Johannes and whether the Community and Homeowner Objectors have property interests in the property Chicago proposes to demolish with the OMP.

The Religious Objectors have liberty and property interests protected by the Due Process Clause. St. John's and Rest Haven (as well as individual Religious Objectors like Helen Runge and Shirley Steele) are owners of real property in the cemeteries whose property interests will be adversely affected by any FAA decision (whether it is ALP approval or AIP or PFC funding) to allow destruction of the

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cemeteries for airport expansion. Finally, St. John's, Rest Haven, and the individual Religious Objectors have strong religious interests that are "liberty" interests protected by the Due Process Clause of the 5th Amendment.

Similarly, the Community Objectors and the Homeowner Objectors own property that is within the so-called "acquisition" zone. These properties are properties within the meaning of the Due Process Clause. The Community Objectors have the right to assert Due Process rights against the federal government. *In re Real Estate Title & Settlement Services Antitrust Litigation*, 869 F.2d 760, 765 n. 3 (3d Cir.), *cert. denied*, 493 U.S. 821 (1989); *Board of Natural Resources of State of Wash. v. Brown*, 992 F.2d 937, 943 (9th Cir. 1993); *River Vale Tp. v. Town of Orangetown*, 403 F.2d 684, 686 (2d Cir. 1968); *Aguayo v. Richardson*, 473 F.2d 1090, 1100 (2d Cir. 1973), *cert. denied*, 414 U.S. 1146 (1974); *cf. McMahan v. International Association of Bridge, Structural & Ornamental Iron Workers*, 858 F. Supp. 529, 536 (D. S.C. 1994) (recognizing municipality as corporate "person" entitled to Fifth Amendment Due Process protection).

Since all of the Objectors are entitled to constitutional procedural due process before the FAA can approve the destruction of their property, and since the triggering of Due Process protection in turn triggers the application of §554 of the APA under the doctrine of *Wong Yang Sung v. McGrath, supra*, the FAA decisions listed above which relate to the proposed destruction of the Objectors' properties by the approval or funding of the proposed OMP project are subject to the adjudicatory procedures required by §§ 554, 556 and 557 of the APA.

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### C. Due Process Requires that the FAA Disclose the Evidence and Communications Submitted to the FAA or Used by the FAA in Support of Chicago's Requests for FAA Adjudicatory Approvals.

The discussion above clearly establishes that the Objectors have Due Process rights to object to Chicago's requests for a number of related FAA adjudicatory approvals related to the OMP project and the associated destruction of the religious cemeteries. These Due Process rights are given even greater significance given the overriding requirements (for the Religious Objectors) of the First Amendment free Exercise Clause, the strict scrutiny requirements of the Fifth Amendment (*Bolling v. Sharpe)* Equal Protection violations, and the rigorous requirements of the federal RFRA.

It is axiomatic that in an administrative adjudication, a party opposing the proposed action is entitled to see the evidence being used by both its opponent and by the agency. *See Goldberg v. Kelly*, 397 U.S. 254, 268 (1970);[48] *Morgan v. United States*, 304 U.S. 1, 18 (1938) ("The right to a hearing embraces not only the right to present evidence, but also a reasonable opportunity to know the claims of the opposing party and to meet them. The right to submit argument implies that opportunity; otherwise the right may be but a barren one."); *Ralpho v. Bell*, 569 F.2d 607, 628 (D.C. Cir. 1977) ("An opportunity to meet and

[48] " 'Certain principles have remained relatively immutable in our jurisprudence. One of these is that where governmental action seriously injures an individual, and the reasonableness of the action depends on fact findings, the evidence used to prove the Government's case must be disclosed to the individual so that he has an opportunity to show that it is untrue.' " *Goldberg v. Kelly, supra*, 397 U.S. at 268 (quoting *Greene v. McElroy*, 360 U.S. 474, 496-97 (1959)) (emphasis added).

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rebut evidence utilized by an administrative agency has long been regarded as a primary requisite of due process."); *Moore-McCormack Lines, Inc. v. United States*, 413 F.2d 568, 585 (Ct. Cl. 1969) ("The right to be told your adversary's case is fundamental to a determination of this kind."); *North American Coal Co. v. Miller*, 870 F.2d 948, 950 (3d Cir.1989).

Further, Objectors are entitled to the protection of due process – here access to the documents, data and evidence Chicago has been transmitting to FAA – at a "meaningful time and in a meaningful manner." *Armstrong v. Manzo*, 380 U.S. 545, 552 (1965).

Wholly apart from the Freedom of Information Act, the Objectors are entitled under the Due Process Clause as opposing parties to receive any communications exchanged between Chicago and the FAA at the same time as the information is exchanged between Chicago and the FAA. The FAA must immediately proceed to make this material and information available to the Objectors.

**D. Article III Requirements.**

Article III of the Constitution requires that the adjudication of contested issues of fact and law relating to charges of violation of federal law be determined by an Article III court:

> The judicial Power of the United States, shall be vested in one supreme Court, and in such inferior Courts as the Congress may from time to time ordain and establish. The Judges, both of the supreme and inferior Courts, shall hold their Offices during good Behavior, and shall, at stated Times, receive for their Services, a Compensation, which shall not be diminished during their Continuance in Office.
>
> United States Const. Art. III § 1.

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> The judicial Power shall extend to all Cases, in Law and Equity, arising under this Constitution, the Laws of the United States, and Treaties made, or which shall be made, under their Authority;--to all Cases affecting Ambassadors, other public Ministers and Consuls;--to all Cases of admiralty and maritime Jurisdiction;--to Controversies to which the United States shall be a Party;--to Controversies between two or more States;--between a State and Citizens of another State;--between Citizens of different States;--between Citizens of the same State claiming Lands under Grants of different States, and between a State, or the Citizens thereof, and foreign States, Citizens or Subjects.
>
> United States Constitution, Art. III § 2, cl. 1.

The determination of contested issues of law and fact as to the claims for the Objectors' constitutional rights falls within the mandate of Article III that these fact and law issues be determined by an Article III Court. Under the Article III mandate, the constitutionally required demonstration that the FAA must make of a compelling need and the absence of an alternative that would not destroy the cemeteries must be made in an Article III court. The FAA cannot constitutionally be the adjudicator of disputed issues of fact and law as to whether the FAA has either violated the Constitution or whether the FAA has complied with the affirmative constitutional duty to demonstrate a compelling governmental need and the absence of a less destructive alternative to destroying the cemeteries.

Similarly, the determination of contested issues of law and fact as to the FAA's compliance with federal RFRA falls within the Article III mandate for several reasons. First, the plain language of Article III states that the requirement for an Article III court extends to all controversies "arising under" the Constitution and "Laws of the United

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States." Second, the FAA's refusal to follow the command of Congress as to federal RFRA — and the FAA's concomitant action to approve the destruction of the cemeteries in contravention of the limits placed by Congress through RFRA on Congress's delegation of power to the FAA — would constitute a constitutional violation of the Separation of Powers framework of the Constitution. The FAA (*i.e.*, the executive Branch) has no independent constitutional authority to approve the destruction of the cemeteries in the absence of delegated authority from Congress. And to comport with the constitutional framework of Separation of Powers, the FAA's exercise of that delegated authority must be within the limits imposed on that delegated authority by Congress (*i.e.*, the requirements of RFRA). Absent RFRA compliance, the FAA's approval would violate the Separation of Powers framework of the Constitution as an unlawful exercise of power not authorized by Congress.

**E. The Objectors' Right to Status as Opposing Parties.**

Section 555(b) of the APA (5 U.S.C. § 555(b)) gives the Objectors the right to participate as parties in these FAA proceedings:

"A party is **entitled** to appear in person or by or with counsel or other duly qualified representative in an agency proceeding."

5 U.S.C. § 555(b) (emphasis added).

An "agency proceeding" means either an "adjudication", "rulemaking" or "licensing." 5 U.S.C. § 551 (12). As discussed above, these proceedings are "adjudications" as that term is defined in the APA. Under the APA, a "party" includes a person named or admitted

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as a party in an agency proceeding (as noted, this is an agency proceeding), or a person "properly seeking and entitled as of right to be admitted as a party in an agency proceeding." 5 U.S.C. § 551 (3). By dint of the due process protections and the constitutional deprivations and injuries that will result from the OMP, the Objectors are entitled as a matter of right to be admitted as a party to these proceedings.

The law is clear that the Objectors have a right to seek intervention in the FAA adjudicatory decision-making proceeding as opponents to Chicago's applications and to the other FAA adjudicatory decisions which are needed to approve the OMP or Phase I. See: *Nichols v. Board of Trustees of the Asbestos Workers Local 24 Pension Plan*, 835 F.2d 881, 896 n. 107 (D.C. Cir. 1987); *Koniag, Inc. v. Andrus*, 580 F.2d 601, 613 and n.5 (D.C. Cir.), cert. denied, 439 U.S. 1052 (1978); and 5 U.S.C. § 555.

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## IX. CONCLUSION.

The DEIS fails to satisfy the FAA's fundamental obligation under NEPA to take a "hard look" at the environmental consequences of OMP and to disclose those concerns to the public. The analysis of the DEIS was reversed engineered to approve the City's predetermined alternative – rather than rigorously search out and evaluate *reasonable alternatives* – including such options as may spare the communities, religious organizations, and homeowners needless destruction and significant adverse environmental consequences. Furthermore, approval of the underlying federal actions, without the formal adjudicatory process outlined above would be unlawful. Simply stated, OMP cannot be approved on the basis of the flawed and incomplete analysis contained in the DEIS.

Respectfully submitted,

| | |
|---|---|
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UNITED AIRLINES

January 22, 1996

Laurie Stone
President
Greater O'Hare Assoc. of Industry & Commerce
1050 Busse Road, Suite 100
Bensenville, IL 60106

Dear Laurie Stone:

Over the past several years, much discussion and debate has taken place concerning where a new airport for metropolitan Chicago should be built, not whether it is actually needed. The assumption upon which the third airport debate has been centered is the myth that O'Hare Airport is at or near capacity.

Capacity at a hub airport is defined in terms of available aircraft seats, not flights. The myth that Chicago airports are nearing capacity has been proffered by uninformed groups and individuals who lack a basic understanding of the aviation industry's economics and operational methods. Blind acceptance of their definition of airport capacity can be very costly and will cause mortal damage to Illinois' economy.

Although O'Hare is the largest and most successful hub airport in the world, about 45% of O'Hare's 66 million annual passengers have Chicago as their point of origin or destination (local passengers). The remaining 55% are connecting to other planes destined for other places. The airlines have the ability to route connecting passengers through other hubs thus accommodating local passengers or increase in local demand. Local passengers have the priority. Additionally, last year, planes taking off from O'Hare had almost 37,000,000 unused seats available for local passengers.

**In reality, the Chicago Metropolitan area will not need a new airport for decades.**

We would like to remind you that the sixteen major airlines in the United States are opposed to a new airport. In a letter to Gov. Jim Edgar on January 17, 1995, we stated:

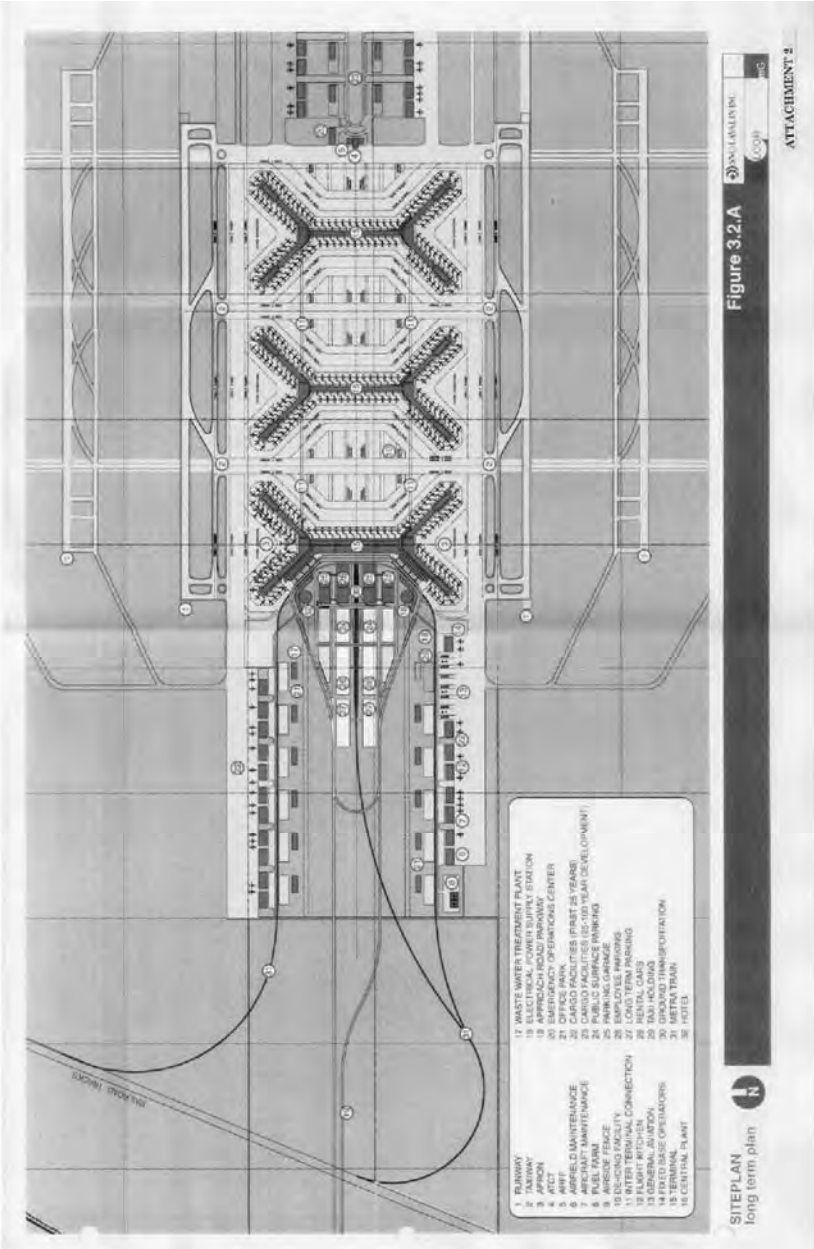
> "The airlines and their passengers and shippers have invested huge amounts -- measured in billions of dollars -- at O'Hare and Midway. We cannot afford to either abandon or underutilize these investments . . . Thus, the creation of another airport at Peotone will impose substantial and unnecessary costs on Illinois taxpayers without any commensurate benefit."

Sincerely,

Herb Gardner
United Airlines

Bill Hood
American Airlines

ATTACHMENT 1



050406_37

# A CRITICAL ASSESSMENT OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE O'HARE MODERNIZATION PROGRAM (OMP)

THE CAMPBELL-HILL AVIATION GROUP, INC.
Aviation and Economic Research Consultants

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Rex J. Edwards, Senior Associate
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Suite 300
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April 6, 2005

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April 6, 2005

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## 1.0 EXECUTIVE SUMMARY

### 1.1 Introduction

The Campbell-Hill Aviation Group, Inc. ("Campbell-Hill")[1] has examined the FAA's Draft Environment Impact Statement ("DEIS") and many supporting documents in regard to the City of Chicago's proposed O'Hare Modernization Program ("OMP"). 1

### 1.2 Summary of Campbell-Hill's Findings

As a result of Campbell-Hill's examination and analysis we have concluded that:

- OMP will **not** reduce delays to acceptable levels. Campbell-Hill's detailed analysis, based on FAA's and Chicago's own computer modeling efforts, demonstrates that delays under the full OMP will equal or exceed historic high levels soon after completion, if not immediately on OMP's opening date in 2013. 2
- OMP will **not** meet all forecast demand. First, OMP will not meet projected demand at O'Hare—OMP will be completely out of capacity within 3-5 years of opening, if not sooner. Second, OMP will clearly result in a significant shortfall in capacity to meet regional demand and thus fails to meet the aviation needs of the "Chicago Region" -- the stated purpose of OMP in the DEIS. 3
- OMP will **not** provide adequate terminal facilities. FAA cannot determine whether OMP will provide adequate terminal facilities without evaluating the ability of the airlines serving O'Hare to underwrite their share of the billions of dollars necessary to construct the OMP and the related terminals. The FAA has failed to make that essential evaluation. There has been no evidence that United and American, who represent more than 80% of the traffic using O'Hare, have given the contractually required "majority in interest" approval necessary for Chicago to move forward on these multi-billion dollar terminal components. 4

[1] Appendix A contains a brief description of the firm along with resumes of the key individuals who participated in this project.

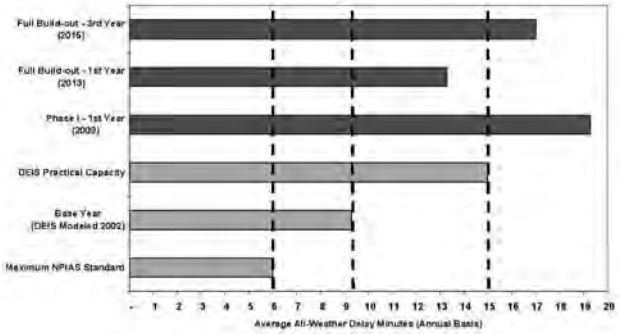
1

| Comment | Response |
|---|---|
| 1 | Campbell-Hill is hereafter referred to as (CH). The comments in *CH Section 1.0* are summarized comments, which are articulated in greater detail in *CH Sections 2.0* to *5.0*. Specific responses are provided in the relevant *CH Sections 2.0* to *5.0*. Nonetheless, the FAA has provided references adjacent to the summarized comments to the location of the more detailed comments and their respective responses.<br><br>In addition, many of the comments made throughout the document focused on one of the Build Alternatives considered in the EIS: the O'Hare Modernization Program or "OMP" which is the sponsor's proposal. Within the EIS, this alternative was referred to as Alternative C. In the interest of clarity in response, when the FAA drafted these responses, the FAA used OMP to refer to this proposal, as did the commenter. |
| 2 | The FAA respectfully disagrees with the comment. The comment is based on a number of assumptions by the commenter with which the FAA does not agree. The commenter assumptions are found throughout *CH Section 2.0*. The basis for FAA's disagreement can be found in the response to *CH Section 2.0*, beginning on page U.4-525. |
| 3 | Please see response to comment 2 immediately above. |
| 4 | Please see response to *CH Section 3.3.1*, beginning on page U.4-566. |

| Comment | Response |
|---|---|
| 5 | Please see response to comment 2 on the previous page. |
| 6 | Please see response to comment 2 on the previous page. |
| 7 | Please see response to comment 2 on the previous page. |

- The full build "OMP" project cannot meet the stated "purpose and need" of providing adequate capacity for the Chicago region and reducing delays at O'Hare. In fact, Campbell-Hill's analysis demonstrates that the OMP would exceed current levels of delay the year it opens:

**Chart 1-1**
**THE OMP WOULD PRODUCE CURRENT LEVELS OF DELAY THE YEAR IT OPENS**
**(Based on 2003 TAF)**




Source: Exhibit 200

5

- The FAA in the DEIS — by relying on a distorted forecast of demand — has understated the delays that will be experienced under OMP and overstated the length of time before OMP runs out of capacity (see Exhibit 202).

6

- Based on the FAA's own delay results, OMP will have as much or greater delays on the day it opens than the existing O'Hare airport, and OMP will rapidly run out of capacity even under the relaxed definition of capacity used in the DEIS. If only Phase I is built because full OMP is too costly and cannot be financed, O'Hare will be at full capacity by 2009 and will require a

2

"blended" alternative of other airports and congestion management to service the projected demand. 7

- The TAAM modeling used in the DEIS suffers from several major defects undermining its ability to be a predictive tool for forecasting delays. 8
- OMP Will Cost Over $21 Billion. 9
- Even at the FAA Estimate of $14.2 Billion, neither Chicago nor the airlines at O'Hare nor FAA can finance the $14.2 billion cost of the OMP. 10
- The OMP would produce severe economic consequences and impacts on consumers and the airlines which the DEIS fails to examine and incorporate. 11
- There are less expensive, less destructive, more efficient, and more sensible alternatives for the Chicago region. 12
- FAA abrogated its responsibility to conduct a thorough risk assessment regarding United and American's future at O'Hare. 13

**1.2.1 The Full O'Hare "OMP" Project Will Not Meet the Stated "Purpose and Need" Requirements Set Forth in the DEIS:**

- The FAA's DEIS fails to address Chicago's "regional" demand and the need for "regional" analysis, and "regional" demand allocation among the six different "regional" airports. As a result, the OMP solution supported by the DEIS is no "regional" solution at all. 14
- If OMP is constructed, the delays and capacity shortfall will equal if not exceed those of the historic high levels and will virtually on opening day require (a) imposition of congestion management techniques for the full OMP similar to those now in use at the existing O'Hare, coupled with (b) the use of other airports in the Chicago metropolitan area, and (c) the use of other hub airports in other areas. 15
- Every alternative presented in the DEIS — including the existing airport and the full OMP and all alternatives in-between — will require a blended alternative of the use of other airports and congestion management at O'Hare. 16
- The existing airport can be used with a combination of blended alternatives (*e.g.*, other airports and demand management) to accomplish all the delay and

3

| Comment | Response |
|---|---|
| 7 | Please see response to comment 2 on page U.4-506. |
| 8 | The FAA respectfully disagrees with the comment. The comment is based on a number of assumptions by the commenter with which the FAA does not agree. The commenter assumptions are found throughout *CH Section 2.4*. The basis for FAA's disagreement can be found in the response to *CH Section 2.4*, beginning on page U.4-535. |
| 9 | The FAA respectfully disagrees with the comment. The comment is based on a number of assumptions by the commenter with which the FAA does not agree. The commenter assumptions are found throughout *CH Section 3.2*. The basis for FAA's disagreement can be found in the response to *CH Section 3.2*, beginning on page U.4-560. |
| 10 | The FAA respectfully disagrees with the comment. The comment is based on a number of assumptions by the commenter with which the FAA does not agree. The commenter assumptions are found throughout *CH Section 3.3*. The basis for FAA's disagreement can be found in the response to *CH Section 3.3*, beginning on page U.4-565. |
| 11 | The FAA respectfully disagrees with the comment. The comment is based on a number of assumptions by the commenter with which the FAA does not agree. The commenter assumptions are found throughout *CH Section 3.4*. The basis for FAA's disagreement can be found in the response to *CH Section 3.4*, beginning on page U.4-574. |
| 12 | The FAA respectfully disagrees with the comment. The comment is based on a number of assumptions by the commenter with which the FAA does not agree. The commenter assumptions are found throughout *CH Section 4.0*. The basis for FAA's disagreement can be found in the response to *CH Section 4.0*, beginning on page U.4-581. |
| 13 | The FAA respectfully disagrees with the comment. The comment is based on a number of assumptions by the commenter with which the FAA does not agree. The commenter assumptions are found throughout *CH Section 5.0*. The basis for FAA's disagreement can be found in the response to *CH Section 5.0*, beginning on page U.4-600. |
| 14 | This comment appears to be based on *CH Section 4.5* discussion of LAX. The FAA response can be found in the response to comments within *CH Section 4.5*, beginning on page U.4-595. |
| 15 | The FAA respectfully disagrees with the comment. The comment is based on a number of assumptions by the commenter with which the FAA does not agree. The commenter assumptions are found throughout *CH Section 4.6*. The basis for FAA's disagreement can be found in the response to *CH Section 4.6*, beginning on page U.4-597. |
| 16 | Please see response to comment 15 immediately above. |

capacity goals articulated by the FAA as the purpose and need in the DEIS for many years to come. 17

- Furthermore, the 2002 TAF forecast for Midway Airport shows that Midway will soon exceed its Annual Service Volume Capacity of 350,000 operations. While purporting to address the needs of the "Chicago region," nowhere in the DEIS does the FAA address the issue of how Midway's excess demand will be accommodated. If it spills over to O'Hare, then the OMP will be less capable of handling future ORD growth than what is shown in the Campbell-Hill analysis, further undermining the efficacy of OMP. 18

**1.2.2 The FAA in the DEIS — By Relying on a Distorted Forecast of Demand — Has Understated the Delays That Will Be Experienced Under OMP and Overstated the Length of Time Before OMP Runs Out of Capacity.**

- The DEIS analysis is based upon the FAA's 2002 "TAF" (Terminal Area Forecast) operations and enplanement forecast for O'Hare. Yet, the FAA, and the City of Chicago, had a more recent forecast, the 2003 TAF forecast, **for almost a year before the DEIS was published**. The FAA's use of the outdated forecast in the face of more current and reliable data biased the DIES in favor of Chicago's predetermined result. The higher forecast values of the 2003 TAF — when applied to OMP — show that the OMP will fail to meet projected demand with acceptable levels of delays. In fact, delays will be as great as they are today soon after OMP completion in 2013. 19
- The FAA essentially dismissed without analysis the impact of the higher 2003 TAF in its so-called sensitivity analysis in Appendix R: Alternate Considerations.[2] The FAA did not perform any simulation analyses using the 2003 TAF, but rather, it merely assumed that the 2003 TAF represented the maximum demand level. If the FAA had performed simulation analyses using the 2003 TAF, such analyses would show that OMP will not work.[3]

[2] FAA, O'Hare Modernization Draft Environmental Impact Statement, pages R-1 to R-3, January 2004.

[3] FAA should have taken the 2003 TAF and run simulation modeling for each of the out years from 2013 (the year OMP would open) out to 2025 or 2030. This was the time frame in the original Master Plan grant given to Chicago by the FAA. Running such a modeling analysis would demonstrate that OMP rapidly reaches equal or greater levels of delay than the existing O'Hare and that OMP is out of capacity, under any

4

| Comment | Response |
|---|---|
| 17 | The FAA respectfully disagrees with the comment. It does not appear that the commenter mentions this as an alternative elsewhere in the CH document. However, the FAA has received a request to evaluate this alternative (the existing airfield coupled with congestion management and use of other airports) in *Karaganis-Cohn's April 6, 2005* comments on the DEIS, document number 050406_36, beginning on page U.4-396. See the responses to *Karaganis-Cohn's Section V*, beginning on page U.4-439. |
| 18 | This comment is a summary of *CH Section 4.2*. The FAA response can be found in the response to comments within *CH Section 4.2*, beginning on page U.4-582. |
| 19 | This comment is a summary of *CH Section 2.4.1*. The FAA response can be found in the response to comments within *CH Section 2.4.1*, beginning on page U.4-537. |
| 20 | Please see response to comment 19 immediately above. |

| Comment | Response |
|---|---|
| 20 | Please see response to comment 19 on page U.4-509. |
| 21 | Please see response to comment 19 on page U.4-509. |
| 22 | Please see response to comment 19 on page U.4-509. |

Since the 2003 TAF was the more recent and therefore more accurate and reliable forecast at the time of the DEIS study, the FAA should have based its analysis and TAAM model runs on that forecast. The 2003 TAF operations in fiscal year 2020 are 18% higher and enplanements are 11% higher than the 2002 TAF (Exhibit 104). Contrary to the FAA's conclusion[4], these differences are highly significant, especially where delay, at the margin, is exponentially related to operations as it is in the FAA's own model. Using the most recent forecast available at the time of the DEIS analysis would have substantially increased the forecast delays and decreased the efficacy of the OMP. 20

- The 2004 TAF—released in February 2005—understates demand. The demand levels under this forecast are still higher than the 2002 TAF demand levels, but are lower than the 2003 TAF demand levels. This decrease in the forecast aviation activity at O'Hare from the 2003 TAF to the 2004 TAF is unjustified. The 2004 TAF forecast predicts, without explanation or analytical support, that fiscal year 2020 enplanements will be virtually the same as the FAA had forecast in the 2002 TAF (Exhibit 105) despite the fact that one of the key indicators of aviation growth (real gross domestic product) increased 4.4% from 2003 to 2004, compared to a 1.9% growth from 2001 to 2002 and 3.0% from 2002 to 2003. The 2002 TAF was influenced significantly by the 2000-2001 recession and the dramatic impact of 9/11 and SARS on consumer travel and airline operations. 21
- It is a fundamental defect of the DEIS to rely on the 2002 TAF instead of the 2003 TAF or the 2004 TAF for the DEIS delay/congestion analyses. It simply does not make any sense for the FAA to use forecasts that are two years old when newer ones are available. The whole idea of publishing new forecasts annually is to capture recent trends and events that can alter forecast values. Using more recent forecasts is vital for the accuracy of the EIS findings

definition of capacity, within a few years after it opens. Such a modeling analysis would also demonstrate that OMP would need congestion management controls and use of other airports to handle the traffic forecast for O'Hare.

[4] FAA, Ibid., Appendix R, page R-2.

5

| Comment | Response |
|---|---|
| 22 | Please see response to comment 19 on page U.4-509. |
| 23 | This comment is a summary of *CH Section 2.2*. The FAA response can be found in the response to comments within *CH Section 2.2,* beginning on page U.4-528. |

because the differences in the forecasts significantly alter the delay and capacity results. In turn, this could have a significant effect on the conclusions about the usefulness and efficiency of any particular OMP alternative. Given the timing of the DEIS report and its preparation (and the lack of justification for the 2004 TAF), the FAA should have used the 2003 TAF in its analysis. 22

**1.2.3 Based On FAA's Own Delay Results, OMP Will Have As Much or Greater Delays on the Day it Opens Than the Existing O'Hare Airport and Will Rapidly Run Out of Capacity Even Under the Liberal Delay Standard Used in the DEIS.**

**1.2.3.1 The FAA Uses Moving Delay Standards and Invents New Ones to Suit the DEIS Purpose.** 23

- FAA defines the capacity of an airport as the level of traffic that can move through an airport at acceptable levels of delay.
- In the DEIS, the FAA chose 15 minutes of average annual all weather delay as the standard to use to define capacity.
- The new 15 minute standard has not been substantiated by any analysis and is inconsistent with FAA's prior longstanding determinations of acceptable delay.
  - FAA Order 5090.3C states that an airport reaches capacity when average annual level of delay is 4 minutes.
  - FAA's 1998-2002 NIPIAS Report states that "the practical capacity of an airport is reached" when "average delay per aircraft is in the range of 3-5 minutes. Delays increase rapidly once traffic demand increases beyond this level. "An airport is considered to be congested when average delay exceeds 5 minutes per operation." FAA National Plan for Integrated Airport Systems (NIPIAS) (1998-2002), page 10;
  - The 2005-2009 NIPIAS Report uses 4-6 minutes ("the onset of rapid growth in delay often occurs when delay is between 4 and 6 minutes per aircraft operations." FAA National Plan for Integrated Airport Systems (NIPIAS) (2005-2009) page 12;

6

- The USDOT in its 1995 report on the High density Rule stated that while 4 minutes AAAW is a desired standard, airports can operate at higher levels of delay but that at ten minutes AAAW delay the airport will be suffering major and severe cancellations and that at 8 minutes of delay, the airport should be building new facilities:

> **Over 10 minutes** of delay per operation: VFR operations experience increasing delays in peak periods and shoulder hours in all but optimum conditions; **very high delays in IFR resulting in extensive flight cancellations.**
>
> …[W]hen the AAAW delay per operation reaches 6 minutes, project planning, engineering and design of capacity improvements should be actively pursued. When AAAW delay reaches **eight minutes**, implementation of capacity improvements should be underway.
>
> 1995 DOT HDR Report, Technical Supplement # 3, page D-2 (emphasis added)

- The City of Chicago has acknowledged that "an airport is at its practical capacity when the average annual delay reaches a range of 4-6 minutes per operation"; [5]
- The City's own airport consultant stated that 10 minutes is the upper level for acceptable delays: "The practical capacity of the airfield will be defined as the maximum level of average all-weather throughput achievable while maintaining an acceptable level of delay. * * *Ten minutes per aircraft operation will be used as the maximum level of acceptable delay for the assessment of the existing airfield's capacity… This level of delay represents an <u>upper bound</u> for acceptable delays at major hub airports . . ."(Landrum & Brown January 1993 Demand Forecast Analysis for the City of Chicago. emphasis added)

[5] City of Chicago, Application for a Letter of Intent, March 2004

7

- At the traditional NPIAS 3 to 6 minute delay standard both OMP Full Build-Out and OMP-Phase I exceed this delay on the day they would open. And this conclusion is apparent without making any adjustments to the FAA's flawed application of the TAAM model (Section 2.3 and Chart 2-4) 23

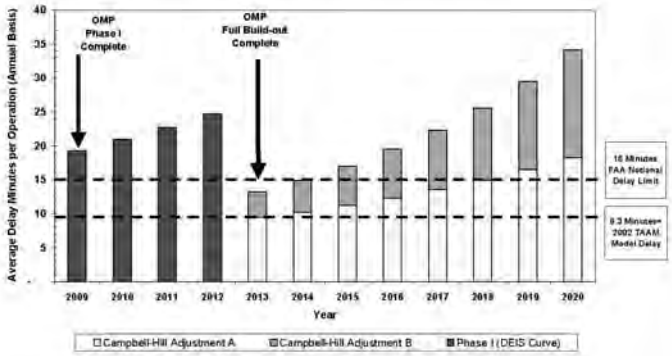
**1.2.3.2 Campbell-Hill's Adjusted Delay Estimates Show That OMP Will Not Reduce Delay Below Modeled 2002 Levels, or Below the FAA's Notional 15-minute Level for More Than a Few Years.**

- Despite the inconsistency of the DEIS standard with historical FAA standards, Campbell-Hill, in order to be conservative, compared projected delays with the 9.3 minutes modeled delay by the FAA for O'Hare in the year 2002 and with the new 15 minute delay standard. 24
- The DEIS model results, when properly adjusted to incorporate accurately the OMP's capacity at full operating conditions (Chart 1-2), show that the OMP would produce average delays that exceed:
  - the modeled delay of 2002 during its first year of operation (2013)
  - every FAA standard of acceptable delay previously published by FAA in the year it opens.
  - the FAA DEIS extremely liberal delay standard of 15 minutes and be out of capacity somewhere between the years 2015 and 2018.

8

| Comment | Response |
|---|---|
| 23 | Please see the response to this comment on page U.4-511. |
| 24 | This comment is a summary of *CH Section 2.6*. The FAA response can be found in the response to comments within *CH Section 2.6,* beginning on page U.4-552. |
| 25 | Please see response to comment 24 immediately above. |

**Chart 1-2**
**WITH REASONABLE ADJUSTMENTS TO THE FLAWED FAA DELAY MODEL, THE OMP WOULD PRODUCE CURRENT LEVELS OF DELAY THE YEAR IT OPENS AND BE OUT OF CAPACITY UNDER ANY STANDARD NO LATER THAN 2018**




Source: Exhibit 200

25

- As can be seen from the chart above, the full OMP will require congestion management to be in place soon after it opens and certainly no later than 2018. Thus, in order to satisfy the demand growth projected only for O'Hare beyond the year 2018, even with OMP, FAA will need to reinstate congestion management at O'Hare and rely on other airports to accommodate projected regional demand.

26

- To correct the deficiencies in its analysis, the FAA must, as Campbell Hill did, model delays for higher levels of traffic and must extend the simulation analysis to the out years beyond 2018, which the DEIS simulations failed to do. In the Master Plan grant given to Chicago and funded by the FAA, the FAA and Chicago specified that the "planning activity levels" for Master Plan analysis should be representative of 2015 and 2030. FAA Benefit-Cost

9

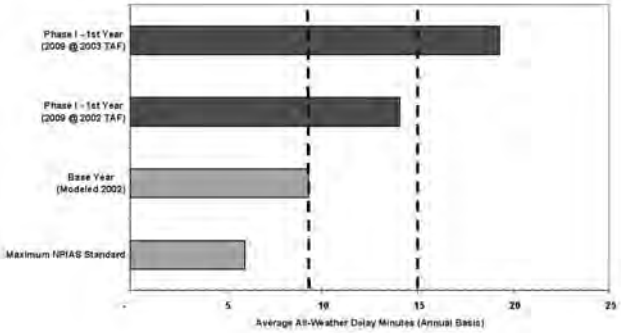
| Comment | Response |
|---|---|
| 25 | Please see response to comment 24 on the previous page. |
| 26 | Please see response to comment 24 on the previous page. |
| 27 | This comment is a summary of *CH Section 2.5*. The FAA response can be found in the response to comments within *CH Section 2.5* beginning on page U.4-543. |

Analysis Guidance also requires a project evaluation for at least a 20 year period (here 2025) and at the end year of the project as well. 27

**1.2.4 If Only Phase I is Built Because Full OMP Is Too Costly and Cannot be Financed, O'Hare Will be out of Capacity by 2009 and Will Require a "Blended" Alternative of Other Airports and Congestion Management to Meet the Projected Demand.**

- If OMP is not built because it is too costly, cannot be financed, and produces too little benefit (no long-term solution to delays and relatively little capacity gain) to justify its construction, O'Hare will be left with only Phase I which will be a delay and congestion disaster.
- Phase I reaches the 2002 modeled level of delay at existing O'Hare by 2009, and the 15 minutes of delay used by FAA, soon thereafter (Chart 1-3). Again Phase I will require a "blended alternative" of Phase I, congestion management at O'Hare, and the use of other airports.

**Chart 1-3**
**WITHOUT ADJUSTING THE FLAWED FAA DELAY MODEL, THE OMP PHASE I WOULD PRODUCE CURRENT LEVELS OF DELAY THE YEAR IT OPENS UNDER ALL FORECASTS**




28

Source: Exhibit 200

10

| Comment | Response |
|---|---|
| 27 | Please see the response to this comment on the previous page. |
| 28 | This comment is a summary of *CH Section 2.6.3*. The FAA response can be found in the response to comments within *CH Section 2.6.3,* beginning on page U.4-557. |

| Comment | Response |
|---|---|
| 29 | This comment is based on *CH Section 2.4*. The FAA response can be found in the response to comments within *CH Section 2.4*, beginning on page U.4-535. |

**1.2.5 The DEIS Delay and Capacity Modeling Suffers From Several Major Defects Undermining Its Ability to be a Predictive Tool for Forecasting Delays.**

- The DEIS simulation analysis is based upon flawed assumptions and an inappropriate application of the TAAM model, yielding erroneous results and misleading conclusions for both the OMP and the No Build scenarios.
- The DEIS modeling assumptions are unrealistic, over-simplified and not representative of real world conditions, and they ignore more realistic standards incorporated in previous FAA modeling for O'Hare.
- The DEIS model experiments of the OMP Full Build-out were limited to low traffic levels that can not produce (by calibration) a legitimate delay curve by the FAA's own guidelines for simulating new runway projects.
- The DEIS results for the OMP scenario produce delay estimates that do not follow the FAA's own delay curve standards and imply capacity increases that are unreasonable and unsupported by the modeling results.
- The DEIS model results for the "No Build" scenario were never validated. They do not reflect actual delays, relative delays, or even relative changes in delays. In fact, the model results bear no resemblance to actual FAA data on historical delays.
- The DEIS failed to recognize that operations (level) is not the sole determinant of delay. In fact, the FAA's data show that "volume" is only 4% of the cause of delay, while "weather" is 56% of delay occurrence and "other" factors are 40%. No simplistic single-cause model can overcome this reality.
- The DEIS' inaccurate and overly simplistic representation of bad weather conditions overstated IFR delays in the No Build scenario by: (1) simulating weather conditions (i.e., full day of IFR) that rarely occur, and (2) ignoring cancellations that reduce flight operations in the real world and should not be counted as delayed flights.
- The DEIS also overestimated all-weather delay in the No Build scenario by over-weighting the already over-stated IFR delays in the annualized calculations. 29

11

- The model, as applied, cannot be used to evaluate the effectiveness of OMP, or any amount of delay/capacity change that would be occasioned by OMP.
- The FAA's DEIS modeling results must be discarded, and an objective re-assessment using sounder analytical techniques must be initiated before any phase of OMP can be approved. To proceed on the basis of the DEIS findings would be highly irresponsible. The FAA must get it right. The place to begin is with a new delay/capacity analysis, objectively and properly specified in content and methodology and based on large samples of accurate empirical data. 30

**1.2.6 The OMP Will Cost Over $21 Billion.**

- Chicago has continually trumpeted the cost of the OMP as being only $6.6 billion. FAA did not evaluate the details of the City's vague and generalize costs and simply inflated the City's Master Plan costs ($13.5 billion) from 1999/2001 dollars to 2004 dollars. That adjustment alone increases the cost of the project to $14.2 billion. The FAA's adjusted amount is highly understated and excludes a number of essential components.
- Campbell-Hill made several critical adjustments which increase the cost of OMP to at least $21.1 billion. Even this amount excludes approximately $3 billion for the Western Access System, and the net present value of the increase in O&M costs, and the costs of disruption and delay during construction.
  - Campbell Hill used a contingency allowance of 27.6% (conservative and reasonable for projects of this magnitude), instead of the woefully insufficient contingency of just 4.14% used by the City and accepted in the DEIS.
  - The DEIS failed to include any component for capitalized interest expense. This element is at least $3.7 billion (using a conservative and a highly favorable 5% interest rate assumption). 31

12

| Comment | Response |
|---|---|
| 30 | This comment is based on the information from *CH Section 2.4* and *CH Appendix D*. The FAA respectfully disagrees with the comment. The FAA believes that the simulation modeling conducted for the EIS was an effective tool for evaluating the OMP. See the responses to *CH Section 2.4* and *CH Appendix D* for the basis for FAA's disagreement with the commenter's conclusions, beginning on page U.4-535 and U.4-772, respectively. |
| 31 | This comment is based on the information from *CH Section 3.2*. The FAA response can be found in the response to comments within *CH Section 3.2*, beginning on page U.4-560. |

**1.2.7. Even at the FAA Estimate of $14.2 Billion, OMP Cannot be Financed and Therefore Will Not be Built.**

- Even at the seriously understated $14.2 billion cost estimate of the FAA, the City will not be able to finance OMP. It will require more federal money than it will be able to obtain. This will create a huge shortfall that will have to be made up by additional debt. The financially beleaguered airlines at O'Hare will not be in a position to bear the several billion dollar bond burden of the higher costs of this project. (To date, the City has not received majority in interest approval from the O'Hare airlines for the full OMP project and will be unlikely to obtain such approval when the true costs are fully disclosed.) 32

**1.2.8. The OMP Will Produce Severe Economic Consequences and Impacts on Consumers and the Airlines Which the DEIS Fails to Examine.**

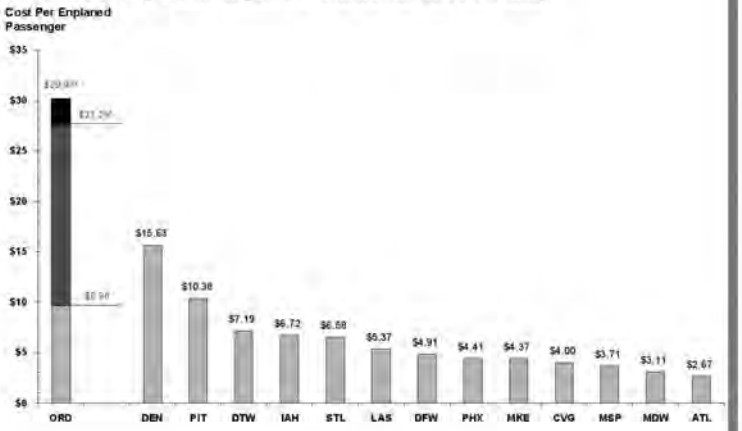
- The OMP's adjusted capital costs would drive O'Hare's cost per enplanement up by over 200% to $30 per enplaned passenger, making O'Hare non-competitive with other airports, and making it cost-prohibitive for all airlines, much less low-cost carriers (Chart 1-4). The higher rates and charges that must ultimately be paid by the passengers will trigger a "death spiral" sequence where costs rise, traffic will decline, service will be reduced due to reduced demand, fixed costs per passenger will rise further, traffic will decline further, until a new equilibrium or balance between demand and supply may be achieved. Using the 2003 TAF forecast, at least 4.5 million passenger enplanements would be lost as a direct result of the OMP costs.

13

| Comment | Response |
|---|---|
| 32 | This comment is based on the information from *CH Section 3.3*. The FAA response can be found in the response to comments within *CH Section 3.3*, beginning on page U.4-565. |
| 33 | This comment is based on the information from *CH Section 3.4*. The FAA response can be found in the response to comments within *CH Section 3.4*, beginning on page U.4-574. |

| Comment | Response |
|---|---|
| 33 | Please see the response to this comment on the previous page. |
| 34 | This comment is based on the information from *CH Section 4.0.* The FAA response can be found in the response to comments within *CH Section 4.0,* beginning on page U.4-581. |

**Chart 1-4**
**ORD AIRPORT COST PER ENPLANED PASSENGER COMPARED TO OTHER COMPETING HUBS**
**(Comparative Airport Costs Based On 2003 FAA Data)**




1/ ORD cost when OMP opens (Exhibit 325)
2/ ORD cost after the "death spiral" traffic adjustment (Exhibit 316)

Source: Exhibit 310

33

**1.2.9. There Are Less Expensive, Less Destructive, More Efficient, And More Sensible Alternatives For The Chicago Region**

- The FAA has simply abrogated its responsibility to examine carefully all reasonable alternatives to the proposed OMP. The DEIS simply dismisses out of hand without serious analysis the ability of carriers to make greater use of regional and mid-continent airports, or for the continuation of congestion management which has worked and is working at O'Hare and other airports, and which will need to be reinstated in any event the year OMP opens due to the substantial delays that will occur after OMP is completed.

14

- FAA's rejection of these viable alternatives was based on unsound logic and assertions that are contradicted by facts. 34
  - **FAA has the authority to impose operational limitations at airports and through its funding decisions to impact airline scheduling decisions and thereby funnel traffic to other airports.** The FAA makes the bold and erroneous statement that it cannot impact airlines scheduling decisions. While the FAA does not have authority to affirmatively order airlines where to serve, it has the ability to impact airline scheduling decisions through decisions on ALP/AIP/PFC requests and through its congestion management regulatory authority. Indeed, a certain portion of traffic that would otherwise use O'Hare is now using other airports as a result of the FAA's congestion management scheduling order at O'Hare. 35
  - **Use of Other regional Airports.** The FAA dismissed other regional airports (Rockford, Milwaukee, Midway, Gary, and South Suburban) without evidence or analysis. Other regional airports can emerge as significant centers of commercial activity as evidenced by the development history of Midway Airport since 1979. And the notion that traffic diversion from O'Hare would jeopardize, or diminish its role as a major hub is absurd. No realistic amount of diversion would diminish O'Hare's hub strength. 36
  - **Use of Other Connecting Hubs.** FAA's dismissal of other connecting hubs is equally without foundation. Connecting passengers have many options. They provide little economic benefit to the City, and they are relatively indifferent with regard to where they make their connections. Yet the FAA utterly failed to evaluate the potential use of other mid-continent hubs for some of O'Hare's future connecting passengers. It makes no sense for the FAA to see its huge investments in other highly underutilized hubs like St. Louis, Dallas/Ft. Worth, Denver, and Pittsburgh lie fallow, while it spends exorbitant federal dollars on a project to build new runways at ORD that have been 37

15

| Comment | Response |
|---|---|
| 34 | Please see the response to this comment on the previous page. |
| 35 | This comment is based on the information from *CH Section 4.2*. The FAA response can be found in the response to comments within *CH Section 4.2*, beginning on page U.4-582. |
| 36 | This comment is based on the information from *CH Section 4.3*. The FAA response can be found in the response to comments within *CH Section 4.3*, beginning on page U.4-586. |
| 37 | This comment is based on the information from *CH Section 4.4*. The FAA response can be found in the response to comments within *CH Section 4.4*, beginning on page U.4-592. |

demonstrably shown will not meet projected demand at acceptable levels of delay. 37

- **Congestion Management.** Congestion management is a necessary reality at O'Hare and other major airports now. It will be a necessary component of O'Hare operations even if OMP is built. There is no way that Phase I or the full OMP can handle the regional demand (*i.e.*, including the excess traffic that Midway cannot handle) or even the demand forecast for O'Hare. 38
- **Blended Alternatives.** All analysis shows that a "blended" alternative — *i.e.*, use of other airports plus congestion management at O'Hare — will be necessary for whatever alternative is selected at O'Hare, be it the existing airport or the full OMP. Indeed, a "blended" alternative based on the existing O'Hare would avoid virtually all of the environmental damage and damage to religious institutions while controlling delays to acceptable levels with congestion management, and allowing the region's traffic growth to be satisfied by underutilized existing or planned airports. A blended solution that recognizes that (1) there are economic and environmental limits to unbridled airline scheduling practices at any particular airport, (2) the FAA and other communities have already invested in highly underutilized capacity at other regional airports and mid-continent hubs which are acceptable options to a very large segment of O'Hare's future passengers, and (3) simple and proven administrative procedures that can produce the desired result without undue economic hardship to the airlines and their customers, is the optimum way to proceed with aviation system planning for the Chicago region. 39

- The biased alternative analysis for ORD contrasts sharply with the more reasonable and comprehensive process used by the FAA in the DEIS for Los Angeles International Airport. The preferred alternative of LAX was based on a truly regional perspective, producing a rational balance of runway expansion, changing airline practices, and broader use of regional airports. In

16

| Comment | Response |
|---|---|
| 37 | Please see the response to this comment on the previous page. |
| 38 | This comment is based on the information from *CH Section 4.6*. The FAA response can be found in the response to comments within *CH Section 4.6*, beginning on page U.4-597. |
| 39 | This comment is based on the information from *CH Section 4.5*. The FAA response can be found in the response to comments within *CH Section 4.5*, beginning on page U.4-595. |
| 40 | This comment is based on the information from *CH Section 5.0*. The FAA response can be found in the response to comments within *CH Section 5.0*, beginning on page U.4-600. |

its EIS, the FAA concluded that LAX can maintain and enhance its status as an international gateway by more efficiently handling a limited number of flights (the 1996 level), rather than trying to force-feed traffic expansion that alternative airports could handle. 40

**1.2.10 The FAA Abrogated Its Responsibility To Conduct A Thorough Risk Assessment Regarding United And American's Future At O'Hare** 41

- Without any analysis and nothing more than conclusory judgment, the DEIS states that ... "it is not believed that there is a significant 'downside' potential associated with the loss of one of the major hubbing airlines."[6] The FAA simply assumed (erroneously) that in the event of a loss of either United or American, other carriers would replace most of the hub services.
- Given Campbell-Hill's experience in the airline industry, it strongly disputes the FAA's conclusions. The FAA's only support for its conclusion is a single situation in Atlanta where Eastern Airlines failed 15 years ago, in another age and under completely different aviation economic conditions.[7]
- Times have changed dramatically since Eastern failed. Due to increasing competitive pressures from low-cost carriers, and the financial failure of many hubs since 1990, a number of hubs have been eliminated or downsized voluntarily. Abandoned legacy carrier hubs include American's hubs at Raleigh/Durham, Nashville and San Jose; Delta's hub at Dallas/Ft. Worth; US Airway's hub at BWI; TWA's hub at JFK and Continental's hub at Denver. Furthermore, significant dehubbing has occurred at St. Louis (American), Memphis (Northwest), and Pittsburgh (US Airways). In addition, 15 years ago airlines had the financial resources to expand aircraft capacity and operations. Much of Eastern's assets (routes, aircraft, slots) were sold to other airlines.

[6] FAA, O'Hare Modernization Draft Environmental Impact Statements, Appendix R, page R-4, January 2005.

[7] The City of Atlanta shopped The Eastern space aggressively to carriers other than Delta. Nothing happened until ValueJet came along and initiated low-fare services at Atlanta, partly because Atlanta's airport cost per enplanement is extremely low.

17

| Comment | Response |
|---|---|
| 40 | Please see the response to this comment on the previous page. |
| 41 | The FAA respectfully disagrees with the commenter's conclusions regarding the DEIS. The FAA has carefully reviewed the material provided by CH as well as all other commenters on the DEIS. In some cases, the FAA has modified the DEIS to address comments and provide more in-depth analysis within the FEIS. One such example is in response to CH and other's comments on the City's cost estimates and financial plan for the OMP. The FAA has taken a hard look at both the accuracy of the cost estimates and the financial feasibility of the full-build OMP. In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** |

| Comment | Response |
|---|---|
| 41 | Please see the response to this comment on the previous page. |

Airline financial resources and liquidity for substantial hub expansions are non-existent in today's environment. Airlines are cost cutting and retrenching, not expanding.

- Campbell-Hill has prepared a route-by-route analysis of the consequences to O'Hare's scheduled operations and passenger enplanements assuming United or American were to fail or significantly downsize (Section 5.0). In brief, if either were to fail, the remaining hub carrier (the overlapping competitor) would end up with approximately 126 monopoly non-stop routes. It would consolidate schedules somewhat. [8] It would raise fares 10% to 20%, depending upon other competitors, and some traffic would be lost due to the price elasticity effect. No legacy carrier could afford to challenge American as a second hub carrier, and no low-cost carrier would mount a large operation at greatly increased airport costs.
- The end result of such a failure or contraction would be a significant reduction in the number of operation at O'Hare. In the final analysis, O'Hare would not need any more runway capacity for at least 20 years.
- In Section 5.0 some recent trends in United's financial and operating posture are presented, and the picture is bleak. Its common stock price is pennies (less than $1.00). Campbell-Hill believes there is at least a 50% probability that United will fail, and if it does, it will occur within the next 12 to 24 months. Even if United does survive, it will likely do so with a severe contraction of its operations.
- Given all the facts, all the industry opinion and analysis of United, and given that the outcome will be known soon, the FAA should delay any decision on the OMP for 12 to 24 months before launching an unneeded and unjustified $21+ billion expansion program.
- With such a high risk of failure coupled with the enormous cost of the OMP, the FAA has a fiduciary responsibility to halt the decision process pending the outcome of United' rehabilitation efforts. 41

[8] A point the FAA acknowledges in Appendix B of the DEIS report (pages B-18 and B-26).

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**1.3 Conclusion**

The FAA's DEIS is so riddled with error, bias, incomplete analysis, and contrived conclusions that it cannot withstand any reasonable evaluation. As a consequence, the FAA cannot proceed toward an approval of the OMP with the DEIS document as a foundation. All of the DEIS analysis dealing with the evaluation of alternatives, the articulation of efficient solutions (options), and indeed the basic empirical predicates for purpose and need, must be discarded and re-examined de novo. 42

| Comment | Response |
|---|---|
| 42 | The FAA respectfully disagrees with the CH analysis and its conclusions. The FAA outlines its basis for this disagreement in the responses to the detailed comments throughout the remainder of this document. The FEIS discloses and analyses the impacts associated with implementation of the Build Alternatives as required by NEPA and the CEQ guidelines. |

## 2.0 O'HARE DELAY AND CAPACITY ANALYSIS

### 2.1 Summary And Conclusions

The DEIS purports to test the OMP as a solution ("the best solution") to current and historical delay/capacity problems at O'Hare. However, the FAA's analytical evaluation of the OMP is severely flawed and it fails to establish, by any reasonable test the need for OMP.

In simple terms, the purpose and need as described in the DEIS is to identify alternatives that will meet the projected level of demand at an acceptable level of delay, one that will "reduce delays at ORD and expand NAS capacity" while satisfying regional demand. OMP fails to meet this objective. Its intended course of action will not solve the problem of delay/congestion at ORD. In fact, OMP will at great cost produce levels of delay equal to if not greater than the historic "high" levels of delay. And OMP - Phase I is an even worse solution to short-run problems.

Although the FAA presents an array of confusing and contradictory delay standards against which to measure the suitability of the OMP, the Campbell-Hill analysis proves that both the Full Build-out and Phase I airfield options fail to create an unconstrained operating environment, much less improve on current conditions. Using the standard NPIAS delay standard of 3 to 6 minutes of delay[9], both airfields (OMP Full Build-out and OMP-Phase I) would have to be expanded as soon as they are opened, based solely on the DEIS model results and without the Campbell-Hill adjustments (Chart 2-4).

By making reasonable adjustments to the FAA's flawed DEIS modeling results and delay analysis[10], Campbell-Hill has found that OMP merely reproduces the current delay conditions at ORD, but on a greater scale. OMP will not meet likely demand at reasonable levels of delay and hence, it is no solution at all. As shown in Chart 2-1 and Exhibit 202, the OMP will produce existing "high" levels of delay the year the Full

[9] Referenced in the DEIS as the level of delay requiring capacity enhancement at ORD.

[10] By comparing reasonable delays generated for the most recent forecast of operations (2003 TAF) to baseline measures of delay and capacity used in the DEIS's own standards.

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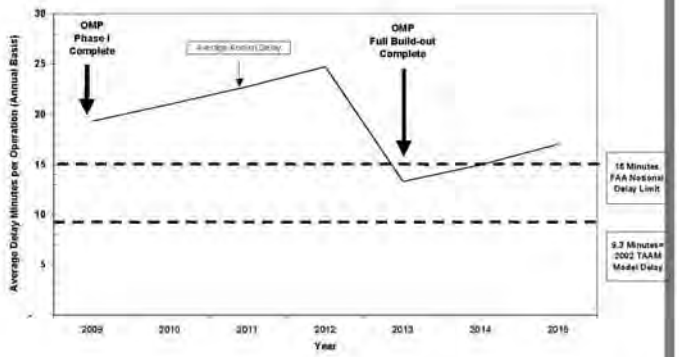
| Comment | Response |
|---|---|
| 43 | *CH Section 2.1* summarizes the issues and concerns that the commenter raises in detail in *CH Sections 2.2 through 2.6*. The FAA responds to these detailed points in the subsequent paragraphs of this document. Nevertheless, there are a few points in *CH Section 2.1* that the FAA would like to address directly in summary fashion, as follow:<br>• The delay metrics described in various versions of the FAA's NPIAS and cited by the commentor are not particularly applicable to O'Hare or other highly congested airports. FAA respectfully disagrees with the commenter's suggestion—namely that if a proposed airfield configuration is unable to comply with NPIAS metrics for an indefinite period into the future, it should be considered deficient and discarded. Use of this logic suggested by the commenter would have eliminated multiple worthy airport expansion and development projects from consideration, including the new Denver International Airport, the third parallel runway recently completed at Miami International Airport, and the third runway completed in 2000 at Phoenix International Airport. All of these airports, currently experience average annual delays—measured using the FAA ASPM data system—in excess of 6 minutes per operation. Using the commenter's argument, none of these improvements should have merited consideration because they would have failed to meet the NPIAS delay standards.<br>• The commenter mischaracterizes purpose and need of the EIS and the extent to which the OMP meets this purpose and need. As stated in the DEIS, the purpose and need for the proposed action is "*to address the projected needs of the Chicago region by reducing delays at O'Hare, thereby enhancing capacity of the NAS, and ensuring that future terminal facilities and supporting infrastructure can efficiently accommodate airport users*." As the results of the TAAM simulations performed for the EIS indicate, the OMP will substantially reduce airport delays at the Airport while simultaneously accommodating substantially greater volumes of aircraft operations. For example, in 2018, the OMP would accommodate approximately 1.2 million aircraft operations at an average annual delay of approximately 6 minutes per operation. In contrast, the No Action Alternative would accommodate less than 1 million aircraft operations at an average annual delay of more than 17 minutes per operation. Similar comparisons can be made for the other demand levels considered in the DEIS. |

Build-out airfield opens and OMP will reach its practical capacity within two years of completion.

**Chart 2-1**
**WITH REASONABLE ADJUSTMENTS TO THE FLAWED FAA DELAY MODEL, THE OMP WOULD PRODUCE CURRENT LEVELS OF DELAY THE YEAR IT OPENS**
**(Based on 2003 TAF)**



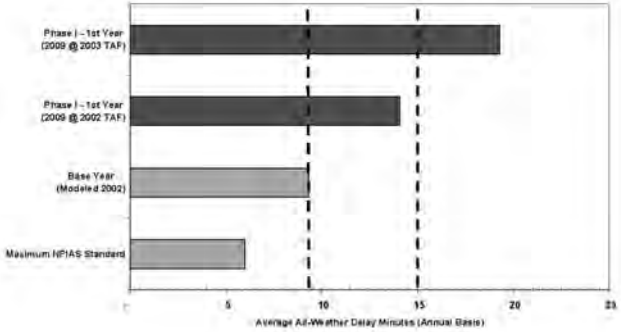

Source: Exhibit 200

21

| Comment | Response |
|---|---|
| 43 continued | • FAA respectfully disagrees with the commenter's assertion that "an array of confusing and contradictory delay standards" were used "to measure the suitability of the OMP." While we do agree that there are a variety of delay reporting systems that the FAA, the U.S. Department of Transportation, and the airlines use, each of these delay data sources consistently indicate that there are substantial delay problems facing O'Hare and the nation. These delay problems are further underscored by the FAA's recent *Notice of Proposed Rulemaking (NPRM) - Congestion and Delay Reduction at Chicago O'Hare International Airport*.<br><br>• The commenter appropriately notes that growth in aviation activity at O'Hare will cause delays at the Airport to rise in the future following completion of the OMP (if approved). Simulation results used in the DEIS clearly show that these delays will increase as demand continues to grow beyond 2013. Using the aviation activity forecasts compiled for the DEIS, activity growth appears likely to result in delays reaching levels similar to those experienced today—between 13 and 16 minutes per operation—sometime in the mid-2020s. Should aviation activity grow faster than forecast—as the commenter asserts—delays would be likely to reach levels similar to those experienced today sooner.<br><br>• In either case, however, the OMP would be capable of accommodating substantially more passengers and aircraft operations than the No Action Alternative. Based on the TAAM delay estimates prepared as part of the DEIS, the OMP would facilitate accommodation of approximately 200,000 additional aircraft operations than would be possible with the No Action Alternative. This incremental level of aircraft operations is approximately 20% more operations than were served at O'Hare in 2004.<br><br>Continued on the following page. |

If only OMP Phase I is constructed (a likely result since OMP costs too much and cannot be financed), the airfield will be severely congested and at full capacity when it opens in 2009 based on the 2003 TAF (Chart 2-2). Even the low-ball 2002 TAF projects demand levels that exceed OMP – Phase I delay standards (capacity) very soon after it opens.

**Chart 2-2**
**WITH REASONABLE ADJUSTMENTS TO THE FLAWED FAA DELAY MODEL, THE OMP PHASE I WOULD PRODUCE CURRENT LEVELS OF DELAY THE YEAR IT OPENS UNDER ALL FORECASTS**




Source: Exhibit 200

In other words, after having spent in excess of $20 billion on OMP, congestion management (or other policies) will need to be reinstated four years before the full build-out is completed and will need to be continued after completion of OMP.

The following sections summarize Campbell-Hill's analysis of the DEIS results concerning delay and capacity, including:

22

| Comment | Response |
|---|---|
| 43 *continued* | • A development alternative similar to Phase I (EIS Alternative B) of the proposed action was eliminated from further consideration in the initial screening of the alternatives conducted in the DEIS. Nevertheless, it should also be noted that Phase I of the OMP would reduce delays relative to the No Action Alternative.<br>• The commenter also states that "by making reasonable adjustments to the FAA's flawed DEIS modeling results and delay analysis, CH has found that OMP merely reproduces the current delay conditions at ORD, but on a greater scale." The FAA notes that the commenters "adjustments" are based on inappropriate analyses of incomparable simulaton data and inconsistent with the detailed simulation analyses conducted as part of the DEIS. Furthermore, the adjustments proposed by the commenter appear to have been developed principally to justify the commenter's preconception that the OMP should not be pursued. |

- A review of the wide spectrum of FAA delay standards and the inappropriate focus on the FAA's newly coined "practical capacity" standard (Section 2.2);
- A discussion of the general problems with the TAAM modeling of both the No Build and OMP Full Build-out scenarios focusing on how the failure to employ a realistic forecast (i.e., 2003 TAF) or produce reasonable delay curves (Section 2.4 and Appendix D) distorts so severely all of the FAA findings and results that the DEIS must be discarded;
- The presentation of logical adjustments to the OMP delay estimates to overcome fatal problems with the delay curves and the representation of OMP capacity in the modeling (Section 2.5); and
- A comparison of more realistic delay estimates for OMP (using more reasonable delay curves and operations forecasts) with objective delay standards reflecting both FAA's long-term standards (e.g., NPIAS) and existing conditions at ORD that were used to justify the OMP from the start (Section 2.2 and 2.6). 43

**2.2 The DEIS Analysis Has Used Newly Invented and Unreasonable Values for Acceptable Delay**

The FAA has recognized that, while an airport can process a certain number of operations to a theoretical limit, trying to push operations through an airport at its theoretical limit will result in unacceptable levels of delay. The FAA has therefore developed a concept called "practical capacity", *i.e.*, the maximum level of traffic that can be processed through an airport at acceptable levels of delay. The relationship between theoretical capacity and practical capacity is shown in a delay curve published by FAA (Chart 2-3).

23

| Comment | Response |
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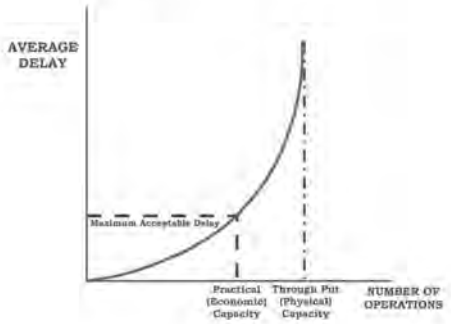
| 43 | Please see the response to this comment beginning on page U.4-525. |
| 44 | FAA concurs with the commenter's general characterization that the point at which an airport reaches capacity is the point at which delay curves exhibit asymptotically-increasing, "exponential" behavior. However, the commenter does not note that a variety of factors influence the shape of the delay curve for a particular airfield configuration. The ability of airfield configurations to accommodate demand in both good and poor weather conditions, hourly peaking patterns, the number of runways and how they are used, and aircraft fleet mix all have an impact on how quickly an annual delay curve changes shape from linearly-increasing delay behavior to exponentially-increasing delay behavior. Based on our review of the simulation results and experience at similar airports, the delay curve associated with the proposed action will gradually transition from a linear delay curve to an exponential curve as activity at O'Hare increases beyond 1.2 million annual operations. |

**Chart 2-3**
**FAA's ESTABLISHED CAPACITY DELAY CURVE**

**RELATIONSHIP BETWEEN CAPACITY AND AVERAGE DELAY**




The FAA has asserted that the relationship between airport delay and capacity is exponential. As shown in Chart 2-3, the point on the curve where delay begins to increase exponentially is the "practical capacity" 44

Over the years FAA has issued several statements that an airport reaches its practical capacity when the Average Annual All Weather (AAAW) delay reaches 4 minutes per operation and that an airport becomes severely congested when the AAAW delay reaches 5-6 minutes: 45

- FAA Order 5090.3C states that an airport reaches capacity when the average annual level of delay is 4 minutes.
- FAA's 1998-2002 NPIAS Report states that "the practical capacity of an airport is reached" when "average delay per aircraft is in the range of 3-5 minutes. Delays increase rapidly once traffic demand increases beyond this level. An airport is considered to be congested when average delay exceeds 5 minutes per operation."

24

| Comment | Response |
|---|---|
| 44 | Please see the response to this comment on the previous page. |
| 45 | The delay metrics described in various versions of the FAA's NPIAS and cited by the commenter are not particularly applicable to O'Hare or other highly congested airports. While planning an airfield configuration that would be capable of maintaining average annual delays at levels of between 3 minutes and 6 minutes per operation for an indefinite period into the future is an idealistic goal, it is not the sole criterion for project approval, especially at highly-congested, rapidly-growing airports. FAA respectfully disagrees with the commenter's suggestion—namely that if a proposed airfield configuration is unable to comply with NPIAS metrics for an indefinite period into the future, it should be considered deficient and discarded.<br><br>Use of this logic would have eliminated multiple worthy airport expansion and development projects from consideration, including the new Denver International Airport, the third parallel runway recently completed at Miami International Airport, and the third runway completed in 2000 at Phoenix International Airport. All of these airports, currently experience average annual delays—measured using the FAA ASPM data system—in excess of 6 minutes per operation. Using the commenter's argument, none of these improvements should have merited consideration because they would have failed to meet the NPIAS delay standards.<br><br>Rather than using an inflexible and inappropriate delay standard to assess the performance of airfield development alternatives, it is more appropriate and consistent with industry planning principles to assess the extent to which the proposed improvements reduce delays relative to the No Action Alternative. As is clearly demonstrated in the DEIS, each of the Build Alternatives, including OMP, facilitates substantial delay reductions when compared to the No Action Alternative while simultaneously enabling much higher levels of operations to be accommodated at O'Hare.<br><br>Continued on the following page. |

FAA National Plan for Integrated Airport Systems (NPIAS) (1998-2002), page 10.

- The 2005-2009 NPIAS Report uses 4-6 minutes ("the onset of rapid growth in delay often occurs when delay is between 4 and 6 minutes per aircraft operation." FAA National Plan for Integrated Airport Systems (NPIAS) (2005-2009) page 12. "The Annual Service Volume (ASV), at a particular level of delay is used to measure airfield capacity at individual airports. Traditionally, a delay of four to six minutes per aircraft operation is used in ASV calculations." Id.
- The City of Chicago acknowledged that "an airport is at its practical capacity when the average annual delay reaches a range of 4-6 minutes per operation." City of Chicago Application for a Letter of Intent, March 2004.
- The City's own airport consultant stated that 10 minutes is the outside or upper limit for acceptable delays: "The practical capacity of the airfield will be defined as the maximum level of average all-weather throughput achievable while maintaining an acceptable level of delay. * * *Ten minutes per aircraft operation will be used as the maximum level of acceptable delay for the assessment of the existing airfield's capacity… This level of delay represents an upper bound for acceptable delays at major hub airports . . ."(Landrum & Brown January 1993 Demand Forecast Analysis for the City of Chicago)

In recognition of the fact that several large airports operate at a non-optimal level of delay above four minutes per operation, the United States DOT, in its 1995 report to Congress on the High Density Rule, put forward the following scale as to "tolerable" levels of delay at a major airport:

The 1995 DOT HDR report states:

> There are no defined criteria that delineate acceptable versus unacceptable delays. **FAA has historically regarded up to four minutes of AAAW delay per operation to be an "acceptable" level.** At some airports, however, this level of delay is exceeded on a regular basis. At the largest airport facilities, AAAW delays in excess of six minutes per operation are routinely experienced. Growth in delays to higher levels has and will continue to occur at airports with

25

| Comment | Response |
|---|---|
| 45 continued | The commenter reiterates many of the facts presented in **Section 2.1** of the EIS regarding the variety of ways in which the FAA and the U.S. Department of Transportation (USDOT) have historically defined airfield congestion. After presenting these various definitions, however, the commenter states categorically and without justification or explanation that "the standards are inconsistent and self-serving (biased)". Although FAA concurs that the range of definitions that the FAA and USDOT have used over the years are not fully consistent with one another, FAA notes that each of the definitions has its own purpose and is best utilized for examining different aspects of delay and congestion. Because each of the delay metrics noted have their own purpose, should not lead to the conclusion that they are "self-serving" or "biased". Rather, the various delay metrics give the FAA, the airlines, and the traveling public a delay estimation that is most appropriate from their perspective. As shown in **Table 2-1** of the EIS, OPSNET assists the FAA in monitoring air traffic control resources, whereas ASQP provides the traveling public information regarding the performance of airlines, airports, and specific routes. The FAA notes in **Appendix A** of the EIS, that "[b]ecause of the direct relationship between excess travel time and aircraft direct operating costs, [ASPM] is the preferred measure for estimating the cost to the airlines of delays at an airport, and for calibrating airfield/airspace simulation models such as the Total Airspace and Airport Modeller (TAAM)." The FAA uses ASPM to present a picture of how the Airport has functioned historically in terms of average annual delay in minutes per operation to allow for a comparison to the TAAM estimates of average annual delay in the various future scenarios under consideration.<br><br>FAA also respectfully disagrees with the commenter's assertion that "the average annual delays measured by the FAA's modeling are dramatically different from delays measured by the FAA's own ASPM database." First, the delays estimated using TAAM or other airfield simulation models can never precisely replicate the delays measured in ASPM or other delay databases. This is because ASPM and other delay databases inevitably include delays that the simulation effort does not and should not consider. Principal among these delays that modeling should not consider are delays incurred by aircraft en-route to or from O'Hare for reasons not associated with conditions at the airport. Such conditions include weather conditions or congestion encountered en-route as well as conditions at origin and destination airports. Although there are ways to adjust ASPM data to isolate delays caused by conditions at O'Hare, such methods are imprecise.<br><br>Continued on the following page. |

| Comment | Response |
|---|---|
| 45 continued | Moreover, the computation of average annual delay estimates from individual simulation modeling runs necessarily relies on the averaging of weather conditions and runway use configurations over multi-year periods. ASPM data, on the other hand, reflect actual year-to-year variations in weather conditions and runway use configurations.<br><br>TAAM results compare quite favorably with historical delay data. For example, the FAA's ASPM database indicates that average annual delays were approximately 18 minutes per operation in calendar year 2004 in which there were approximately 990,000 operations at O'Hare. At a comparable level of activity-- 974,000 operations-- TAAM produced consistent estimates of average annual delay-- approximately 17 minutes per operation for the No Action Alternative. |

increasing operations, at least until new capacity can be added.

In the absence of specific acceptability criteria for delays, a level-of-service scale has been developed to describe the operational conditions generally associated with increasing AAAW delays. This scale provides a means to gauge the extent to which delays ***will be tolerated*** rather than accepted. On the basis of AAAW delay, ***operational conditions at large hub airports*** could be characterized as follows:

- 0 to 4 minutes of delay per operation: efficient overall operations; delays limited to the most extreme weather conditions.
- 4 to 6 minutes of delay per operation: less *efficient* overall operations; limited peak hour VFR delays along with IFR delays experienced in both moderate and extreme weather conditions.
- ***6 to 8 minutes of delay per operation: increasing VFR delays in peak hours; increasing delays and eroding operational reliability in IFR conditions; high sensitivity to operational anomalies.***
- ***8 to 10 minutes of delay per operation: increasing VFR delays in peak hours with translation to shoulder hours in all but optimum conditions; high delay in IFR with resulting flight cancellations.***
- ***Over 10 minutes of delay per operation: VFR operations experience increasing delays in peak periods and shoulder hours in all but optimum conditions; very high delays in IFR resulting in extensive flight cancellations.***

***

"...[W]hen the AAAW delay per operation reaches **6 minutes**, project planning, engineering and design of capacity improvements should be actively pursued. When AAAW delay reaches **eight minutes**, implementation of capacity improvements should be underway."

1995 DOT entitled *A Study of the High Density Rule* Report, Technical Supplement # 3, page D-2 (emphasis added in bold underscore and italics)

As shown above, the general range of average all-weather delay per operation that the FAA has asserted to be the practical capacity has consistently been between 3 and 6 minutes. At the outside, the maximum AAAW level that has been considered to be

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acceptable is 10 minutes, and FAA and DOT have recognized that even at that limit, there are very severe disruptions and delays in the operation of the airport. 45

The FAA Airport Benefit-Cost Analysis Guidance states that growth begins to increase exponentially on the FAA delay curve when average delay per operation is beyond 10 to 15 minutes.[11] Without explanation or justification, 15 minutes became the target used by the FAA in the DEIS as the acceptable standard of delay against which it would measure the capacity of the existing airport and the capacity of OMP.

Due to the fact that the standards are inconsistent and self-serving (biased), the FAA needs to clarify what the practical capacity of an airport should be. The Agency also needs to clarify how airport delay should be measured. Should it be measured using a model? Should it be measured using the FAA's ASPM or OPSNET databases? This is a vital clarification because of the large variation in the results. For example, the 2002 AAAW delay per operation at O'Hare was 11.9 minutes according to ASPM[12], 3.1 minutes according to OPSNET[13], 7 minutes according to the 2005-2009 NPIAS[14], and modeled at 9.3 minutes in the DEIS[15]. In addition, the FAA must illuminate the implications of reaching the specified standard. 46

As discussed above and in Appendix D of this report, average delays measured by the FAA's modeling are dramatically different from delays measured by the FAA's own ASPM database. As a consequence, the FAA's reliance on the TAAM model places the Agency in the untenable position of relying upon a model that cannot be validated or defended. In fact, real life actual data serve to invalidate the FAA's model along with every conclusion and observation that might flow from its application. 47

[11] FAA, FAA Airport Benefit-Cost Analysis Guidance, p. 39 (December 1999).

[12] Appendix B contains a summary of historical delay data for ORD.

[13] FAA, O'Hare Modernization Draft Environmental Impact Statement, p. ES-5, January 2005.

[14] FAA, National Plan of Integrated Airport Systems (NPIAS) (2005-2009), p. 15.

[15] FAA, O'Hare Modernization Draft Environmental Impact Statement, p. 2-3, January 2005.

27

| Comment | Response |
|---|---|
| 45 | Please see the response to this comment beginning on page U.4-529. |
| 46 | The commenter mischaracterizes how the "15 to 20 minute delay standard" was used in EIS analyses. This delay standard is explicitly cited by the FAA in *FAA Benefit-Cost Analysis Guidance* (*FAA BCA Guidance*), dated June 1999. As stated in the *FAA BCA Guidance*:<br><br>"Airports experiencing severe delay due to congestion will not be able to accommodate rising demand for air service. Average delay per operation of 10 minutes or more may be considered severe. At 20 minutes average delay (approximately the highest recorded average delay per operation known to FAA at an airport in the U.S.), growth in operations at the airport will largely cease. Prior to reaching these levels, airlines would begin to use larger aircraft, adjust schedules, and cancel or consolidate flights during peak delay periods. Passengers would make use of alternative airports, seek other means of transportation (e.g., automobile or train), or simply avoid making some trips.<br><br>Thus, it would be unrealistic to conclude that an investment alternative would save more than 20 minutes of delay per operation relative to the base case. Instead, at some point where delay in the base case begins to increase exponentially beyond 10 to 15 minutes per operation, it would be appropriate to modify the traffic projection developed for the airport in Section 5.2. It would be more realistic to reflect a flat or only slightly escalating rate of growth once delay reaches 20 minutes was adopted primarily to develop a methodology in which the aviation activity levels associated with the no action alternative could be capped, reflecting the inability of this alternative to accommodate forecast levels of demand."<br><br>Continued on the following page. |
| 47 | The rationale for using the Total Airspace & Airport Modeler (TAAM) are described in **Appendix D, Section D.2.2** of the EIS. The use of computer modeling simulation is currently the most accurate method of objectively evaluating multiple operational and configuration scenarios for airfield development. As the commenter notes, different delay quantification methodologies result in different delay estimates. TAAM is the FAA Air Traffic organization's tool of choice for simulation studies conducted in support of national airspace redesign efforts and is currently being used in other complex environmental and planning efforts in the country. |

| Comment | Response |
|---|---|
| 46 *continued* | Accordingly, in the DEIS, 15 minutes of delay was used as an assumption in the development of a constrained aviation activity forecast for application to the No Action Alternative, as detailed in **Appendix B** of the EIS. As noted by the FAA, empirical evidence at congested U.S. airports including O'Hare, LaGuardia, Newark, and Atlanta international airports indicates that the public finds delays in this range to be intolerable. This empirical evidence is supported further by the FAA's decision in January 2004 to issue the first Order limiting scheduled operations at O'Hare at a time when delays at O'Hare were approaching and exceeding 15 minutes per operation on a monthly basis. In response to the continued congestion and delay problem at O'Hare, the FAA in March of 2005 issued the *NPRM - Congestion and Delay Reduction at Chicago O'Hare International Airport* extending the voluntary flight caps until April 6, 2008.<br><br>It should be noted that the use of the 15 minute delay capping assumption used in the development of the constrained aviation activity forecast enables the No Action Alternative to perform better operationally, thereby reducing adverse environmental impacts than would be associated with a higher level of operations. This is because capping the aviation activity levels associated with the No Action Alternative reduces the level of pollutant emissions and noise exposure associated with the No Action Alternative. In turn, this increases the difference in air quality and noise impacts between the No Action Alternative and the Build Alternatives serving a higher level of operations. In the end, application of the demand cap increases the difference between environmental impacts attributable to the various Build Alternatives, including the OMP, compared to the No Action Alternative.<br><br>While no absolute level of delay was established, the FAA does include in **Appendix E** of the EIS a comprehensive description of major delay criteria that have been defined in previous NEPA studies and available FAA documents and recent decisions. The FAA recognized the lack of one-standard delay threshold for evaluation of the alternatives within the alternatives screening process, and the FAA determined that no absolute level of delay should be used to screen the range of reasonable alternatives. Rather the EIS concludes, in **Section E.1.1.3**, "…the FAA has elected to forego the use of any specific absolute level of delay in favor of a comparative analysis among the various alternatives." The favored "comparative analysis" removes the possibility that alternatives which substantially reduce delays but fail to meet such an arbitrary standard would be eliminated.<br><br>The commenter notes that using different delay quantification methodologies results in different delay estimates. The commenter requests that the FAA coordinate the multiple delay quantification methodologies to define the "practical capacity of an airport". While this may be a worthy academic exercise, it is not relevant to the EIS. Each of the Build Alternatives that passed the secondary screening criteria is able to accommodate forecast demand throughout the planning horizon of the EIS (i.e. 2018). Thus, "practical capacity" is not a factor in the comparison and evaluation of the Build Alternatives. As such, the FAA will not "… illuminate the implications" of reaching "practical capacity", a standard which the commenter notes has multiple definitions, but clearly will be exceeded at some point beyond the planning horizon. |

**2.3 On Their Face The OMP Phase I and Full Build-out Options Fail The FAA's Own Delay Standards**

The entire DEIS "testing" of the OMP, and other runway expansion options, is based on an assumption that an acceptable alternative must reduce delays in the forecast year compared only to projected delays at ORD under the "No Build" scenario, assuming the same forecasted level of operations (i.e., without any adjustments by the airlines). Without regard to whether the DEIS accurately measures future delays under the "No Build" scenario, or whether it reasonably explores "No Build" alternative scenarios (and it does neither), the proper test is whether the OMP (or its alternatives) solves the problem relative to historic delays that have caused demand constraints. In other words, the question is whether the OMP will result in the same situation that existed when operations were at "practical capacity", i.e. high delays that led to scheduling controls to prevent excessively high delays. If it does then it cannot pass a reasonable benefit-cost test. Even without any of Campbell-Hill's adjustments to the flawed modeling results (see Section 2.5), the OMP fails to meet FAA's own standards for practical capacity on the first day of operations for both the Phase I and Full Build-out airfields. 48

The FAA's traditional standard of 3 to 6 minutes of delay is the point where delay problems become acute and require capacity expansion or operating controls, as cited in the DEIS itself, "Given that present delays at O'Hare are well beyond 6 minutes, O'Hare is indicative of an airport for which capacity enhancement should be considered."[16] In addition, the DEIS acknowledges that delays as measured by ASPM are an appropriate measure to determine "severely congested" conditions, stating that "all six years shown 1998 through 2003 O'Hare average annual delay was well above 9 minutes"[17] including the modeling base year of 2002 (at 11.8 minutes of delay).[18]

If the standard of 3 to 6 minutes from the NPIAS reports is used to evaluate the merits of any option for "solving O'Hare's delay problems," the OMP would be out of capacity the day Phase I opens in 2009, and still out of capacity when the Full Build-out

[16] FAA, O'Hare Modernization Draft Environmental Impact Statement, p. 2-14, January 2005

[17] 9 minutes is simply another of the FAA's many trumped-up delay metrics.

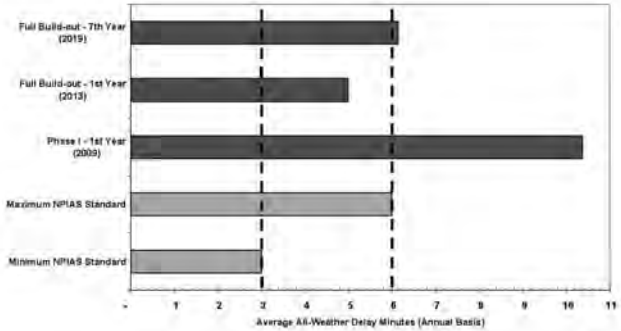
[18] FAA, O'Hare Modernization Draft Environmental Impact Statement, p. 2-13 and Exhibit 2-3, January 2005

28

| Comment | Response |
|---|---|
| 48 | The FAA respectfully disagrees with the commenter's characterization of the criteria used in the alternatives screening process, presented in **Chapter 3** of the EIS. As noted previously, the FAA favors a "comparative analysis" for the screening of alternatives rather than one which uses an absolute delay threshold. The FAA finds the argument for the use of an absolute delay threshold of "practical capacity" to be unpersuasive, and therefore, many of the assertions made by the commenter in the following sections based on this assumption to be unpersuasive, as well. |
| 49 | The commenter has contrived multiple delay comparison tests and seeks to have the alternative screening evaluation consider "practical capacity" as an absolute delay threshold. However, the commenter notes that the "practical capacity" is a standard which has multiple definitions. In the previous responses, the FAA has noted the rationale for not selecting an absolute delay threshold. The commenter- recommended evaluation techniques would not allow for the consideration of as broad a range of alternatives, as the screening evaluation presented in the EIS.<br><br>The FAA notes that the OMP (Alternative C) performed best of each of the Build Alternatives that passed the secondary screening evaluation (based on a variety of factors) within the EIS, and that the full-build OMP would yield approximately an average annual delay of 6 minutes per operation in the year 2018. As noted in the response to the introduction section, in any case, the OMP would be capable of accommodating substantially more passengers and aircraft operations than the No Action Alternative. **Appendix R** states, "[u]sing extrapolation and professional judgment, the FAA believes that [OMP] with the high range forecast would most likely perform at an average annual delay of between 13 and 16 minutes per operation at the high range forecast level in 2018 (1.4 million operations)."<br><br>The commenter asserts the project should not be undertaken because the project does not satisfy the absolute delay threshold identified by the commenter. The test proposed by the commenter involves using operational performance data from the construction period, or data extrapolated beyond the EIS planning horizon and then making a<br><br>Continued on the following page. |

is completed in 2013, even using the FAA's unreasonable delay curve and forecasts (see Chart 2-4) in the DEIS. **In other words, after spending in excess of $20 billion on the OMP, congestion management or other policies will need to be reinstated four years before the full build-out is completed, and they will need to be continued indefinitely beyond completion of OMP.** 49

**Chart 2-4**
**THE DEIS SHOWS THE OMP WILL EXCEED "PRACTICAL CAPACITY" WHEN BOTH PHASE I AND FULL BUILD-OUT OPEN**
**(Based on the 2002 TAF)**




Source: Exhibit 201 50

**2.4 Severe Modeling Problems In The DEIS Produce Erroneous Results**

The DEIS simulation analysis is based upon flawed assumptions and an inappropriate application of the TAAM model, yielding erroneous results and misleading conclusions for both the OMP and the No Build scenarios. Problems with the modeling are described in detail in Appendix D and may be summarized as follows:

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| Comment | Response |
|---|---|
| 49 continued | comparison to one of the delay standards, arbitrarily selected by the commenter. The FAA finds the evaluation technique recommended by the commenter, and the resultant conclusion of the commenter not persuasive. Nonetheless, the FAA notes, that beyond the planning horizon or in the event aviation activity increases at O'Hare at a greater rate than anticipated, levels of delay would rise above those projected by the EIS modeling. This possibility does not change the ability of the Build Alternatives to meet the purpose and need.<br><br>As discussed in other sections of this response, FAA respectfully disagrees with the commenter's assertion that the OMP will cost in excess of $20 billion. FAA did evaluate a development alternative similar to Phase I (EIS Alternative B) of the proposed action, which was eliminated from further consideration in the initial screening of the alternatives conducted in the DEIS. In addition, the FAA evaluated a blended alternative that included OMP Phase I and a suite of non-build alternatives, including congestion management. While the blended alternative initially appeared to have the potential to substantially meet the purpose and need, it would yield the least delay reduction of the alternatives evaluated. Furthermore, actions required to implement the blended alternative render it not reasonable. Thus, the blended alternative was eliminated from further consideration.<br><br>FAA also respectfully disagrees that "they [congestion management or other policies] will need to be continued indefinitely beyond completion of OMP." The simulation results prepared for the DEIS clearly indicate that the proposed action would substantially reduce aircraft delays at O'Hare while simultaneously enabling the airport to accommodate increased numbers of operations. Using full build-out plus five years (2018) as a nominal point of comparison, the proposed action would reduce average annual aircraft delays from approximately 17 minutes per operation to approximately 6 minutes per operation while simultaneously accommodating over 200,000 additional annual operations. |
| 50 | *CH Chart 2-4* does not appear to accurately represent delay data presented in the DEIS. As such, the FAA has no further comments pertaining to *CH Chart 2-4*. |

- The DEIS modeling assumptions are unrealistic, over-simplified and not representative of real world conditions, and they ignore more realistic standards incorporated in previous FAA modeling for O'Hare.
- The DEIS model experiments of the OMP were limited to low traffic levels that can not produce (by calibration) a legitimate delay curve by the FAA's own guidelines for simulating new runway projects.
- The DEIS results for the OMP scenario produce delay estimates that do not follow the FAA's own delay curve standards and imply capacity increases that are unreasonable and unsupported by the modeling results.
- The DEIS model results for the "No Build" scenario were never validated. They do not reflect actual delays, relative delays, or even relative changes in delays. In fact, the model results bear no resemblance to actual FAA data on historical delays.
- The DEIS failed to recognize that operations (level) is not the sole determinant of delay. In fact, the FAA's data show that "volume" is only 4% of the cause of delay, while "weather" is 56% of delay occurrence and "other" factors are 40%. No simplistic single-cause model can overcome this reality.
- The DEIS' inaccurate and overly simplistic representation of bad weather conditions overstated IFR delays in the No Build scenario by: (1) simulating weather conditions (i.e., full day of IFR) that rarely occur, and (2) ignoring cancellations that reduce flight operations in the real world and should not be counted as delayed flights.
- The DEIS also overestimated all-weather delay in the No Build scenario by over-weighting the already over-stated IFR delays in the annualized calculations. 51

The myriad flaws in the DEIS modeling leads to erroneous results and conclusions. The simulations are based upon faulty data inputs, contrived and highly limited operating conditions, and they do not produce results that are consistent with standard FAA delay curve metrics.

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| Comment | Response |
|---|---|
| 51 | Detailed responses to 7 bullet points are contained in response to *CH Appendix D* comments.<br><br>As stated in the EIS, the FAA oversaw a demand/capacity analysis of the No Action alternative and three Build Alternatives. This analysis involved the development of detailed computer simulation models of good weather conditions and poor weather conditions, explicitly incorporating appropriate air traffic control rules and procedures. The resulting models were thoroughly reviewed by the Air Traffic workgroup to ensure they accurately reflect how the existing and proposed airfield configurations could be operated. Air Traffic prepared a memorandum (see **Appendix D, Attachment D-3)** that further describes the Air Traffic workgroup composed of FAA Management and NATCA representatives from the Chicago O'Hare Tower, the Chicago O'Hare TRACON, and the Chicago Air Route Traffic Control Center which utilized more than 1400 staff hours to complete this review.<br><br>The FAA has reviewed and considered the commenter's suggested modifications to the TAAM modeling. FAA believes that TAAM modeling was conducted in accordance with accepted industry practices and standards and does not believe that the modifications suggested by the commenter are appropriate. |
| 52 | The FAA respectfully disagrees with the commenters conclusions related to EIS modeling. The EIS has modeled operational activity for all milestone dates considered in the EIS. The commenter is seeking modeling for activity that is not forecast to occur until after the EIS study period. Historically, the FAA engages in modeling, for environmental purposes, when it has satisfied itself that both the tools to conduct such modeling and the forecasting period can produce reliable projections. The Agency believes that the commenter's request to extend the forecasting horizon would require the FAA to engage in modeling involving speculation that would not provide credible projections for this EIS. The FAA reaffirms its decision to follow *FAA Orders 1050.1E* and *5050.4A* in selecting the analysis years. These Orders require the analysis through the reasonably foreseeable time period, in this instance, the full build-out plus five years, which is 2018. The commenter's suggestion for alternate TAAM model analysis would reflect conditions that are forecast to occur beyond the scope of the EIS and would provide minimal, if any, benefit in evaluating the alternatives.<br><br>The FAA believes that the delay curves produced as part of the DEIS appropriately reflect TAAM model results and provide a reasonable characterization of the delays that would result from the modeled airfield alternatives. |

In terms of an independent evaluation of the OMP for the DEIS, the primary flaws are (1) the failure to model high level of flight operations and (2) the failure to produce delay curves that meet FAA standards (both in terms of their determination and their functional form). 52

### 2.4.1 The FAA Deliberately Distorted Its DEIS Analysis By Relying Upon Its Own Outdated Forecasts

The DEIS analysis is based upon the FAA's 2002 TAF operations and enplanement forecast for O'Hare. Yet, the FAA, and the City of Chicago had a more recent forecast (the 2003 TAF) for almost a year before the DEIS was published. Clearly this was done because the higher forecast values in the 2003 TAF when applied to the OMP show that the OMP is impotent and will fail to meet projected demand with acceptable levels of delays. In fact, delays will be as great as they are today soon after OMP completion in 2013. 53

The FAA essentially dismissed without analysis the impact of the higher 2003 TAF in its so-called sensitivity analysis in Appendix R: Alternate Considerations.[19] In this analysis, the FAA assumed that its most recent forecast would be the maximum demand level, but it did not perform simulation analyses using the 2003 TAF, because such analyses would show that the OMP will not work. Since the 2003 TAF was the more recent, and therefore more accurate and reliable forecast at the time of the DEIS study, the FAA should have based its analysis and TAAM model runs on it. The FAA should have rejected the 2002 TAF. The 2003 TAF operations in fiscal year 2020 are 18% higher and enplanements are 11% higher than the 2002 TAF. Contrary to the FAA's conclusion[20], these differences are highly significant, especially where delay, at the margin, is exponentially related to operations as it is in the FAA's own model. Using the most recent forecast available at the time of the DEIS analysis would have substantially increased the forecast delays and decreased the efficacy of the OMP. Charts 2-5 and 2-6 below display the significant variance in the two forecasts. 54 55 56

[19] FAA, O'Hare Modernization Draft Environmental Impact Statement, pages R-1 to R-3, January 2004.

[20] FAA, Ibid., Appendix R, page R-2.

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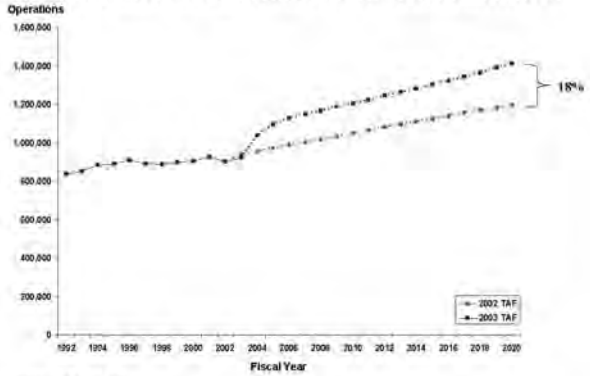
| Comment | Response |
|---|---|
| 52 | Please see the response to this comment on the previous page. |
| 53 | As noted in EIS **Chapter 1, Section 1.5.1,** the 2002 TAF was adopted as the "baseline" demand forecast for this EIS. When the EIS modeling was undertaken, the 2002 TAF was the most recent FAA forecast available. Approximately 12 months were required to complete the comprehensive simulation modeling (TAAM, noise, air, and surface) used in this EIS, the inputs which consist of flight schedules based on the 2002 TAF. Because the FAA issues an annual TAF as well as other forecasts, an FAA decision to use each new forecast as they become available during the EIS process would mean that for every EIS where modeling is necessary, either that EIS could never be completed or must be accomplished -- start to finish -- within eleven months. Nevertheless, it is possible to review any new forecasts and determine the potential impact on the conclusions in this or other FAA EIS's—and confirm that the forecast used continues to be valid. As noted in **Section 1.5.1** of the EIS, in approving the use of the 2002 TAF for the EIS, FAA noted that the EIS would need to review any new forecasts and conduct sensitivity analysis as appropriate. The use of the 2002 TAF and sensitivity analysis of new forecasts is further addressed below. |
| 54 | This comment is incorrect. **Appendix R** of the DEIS explicitly considers the potential for lower and higher activity levels than represented by the 2002 TAF used as the basis for the EIS. The high range of activity evaluated in **Appendix R** is sufficiently high to include the results of the 2003 TAF. Thus, by use of the forecast range in **Appendix R,** FAA has considered the implications of the potentially higher activity levels presented in the 2003 TAF. |
| 55 | As noted previously in response to comment 53, when the EIS modeling was undertaken, the 2002 TAF was the most recent FAA forecast available. Because of the time required to complete comprehensive simulation modeling, it is not possible to adopt each new forecast that may be developed during the EIS process. However, it is possible to review any new forecasts and determine the potential impact on the conclusions of the EIS—and confirm that the forecast used continues to be valid. As noted in **Section 1.5.1** of the EIS, in approving the use of the 2002 TAF for the EIS, FAA noted that the EIS would need to review any new forecasts and conduct sensitivity analysis as appropriate.<br>Continued on the following page. |
| 56 | The most recent forecast available at the time that the DEIS analyses were conducted was the 2002 TAF, and this was used for the DEIS analyses. Since the DEIS analyses were undertaken, new forecasts have been prepared—notably, the 2003 TAF and the 2004 TAF. Consistent with instructions received from FAA, the EIS evaluated each new forecast in relation to the analyses conducted using the 2002 TAF. These evaluations, and appropriate sensitivity analyses, are reported in **Appendix R** of the EIS.<br>Continued on the following page. |

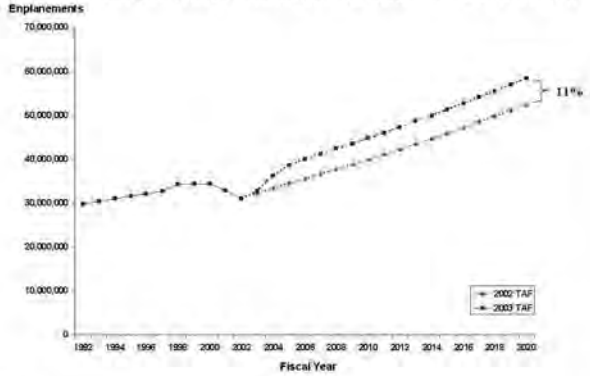
| Comment | Response |
|---|---|
| 55 *continued* | As noted in the DEIS, sensitivity analysis was performed to evaluate more recent forecasts (such as the 2003 TAF) and potential alternate conditions. New forecasts will continue to be developed, and each needs to be evaluated in relation to the 2002 TAF used for the DEIS. As noted by the commentor, the 2003 TAF was issued since the initiation of analyses using the 2002 TAF for the EIS. The 2003 TAF includes activity levels higher than the 2002 TAF, and these higher activity levels have been considered in the sensitivity analysis reported in **Appendix R** of the EIS. More recently, FAA has published a 2004 TAF, which has activity levels lower than the 2003 TAF and substantially similar to the 2002 TAF used for the DEIS modeling. Thus, the most recent FAA forecast (the 2004 TAF) serves to validate the 2002 TAF that has been used for the EIS. FAA continues to evaluate all of these more recently developed forecasts, and has concluded that the 2002 TAF used as the basis for DEIS modeling is a reasonable forecast for purposes of the EIS. |
| 56 *continued* | The most recent forecast available at the time that the DEIS analyses were conducted was the 2002 TAF, and this was used for the DEIS analyses. Since the DEIS analyses were undertaken, new forecasts have been prepared—notably, the 2003 TAF and the 2004 TAF. Consistent with instructions received from FAA, the EIS evaluated each new forecast in relation to the analyses conducted using the 2002 TAF. These evaluations, and appropriate sensitivity analyses, are reported in **Appendix R** of the EIS.<br><br>**Appendix R** states, "[u]sing extrapolation and professional judgment, the FAA believes that [OMP] with the high range forecast would most likely perform at an average annual delay of between 13 and 16 minutes per operation at the high range forecast level in 2018 (1.4 million operations)." |

**Chart 2-5**
**2002 AND 2003 TERMINAL AREA FORECAST OF ORD OPERATIONS**




Source: Exhibit 104

**Chart 2-6**
**2002 AND 2003 TERMINAL AREA FORECAST OF ORD ENPLANEMENTS**




Source: Exhibit 104

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| Comment | Response |
|---|---|
| 57 | The FAA notes the *CH Chart 2-5* comparison of the 2002 TAF and the 2003 TAF for annual aircraft operations at ORD.<br><br>The FAA notes the *CH Chart 2-6* comparison of the 2002 TAF and the 2003 TAF for annual enplanements at ORD.<br><br>As noted in the response to comment 55, FAA has published a 2004 TAF, which has activity levels lower than the 2003 TAF and substantially similar to the 2002 TAF used for the DEIS modeling. Thus, the most recent FAA forecast (the 2004 TAF) serves to validate the 2002 TAF that has been used for the EIS. FAA continues to evaluate all of these more recently developed forecasts, and has concluded that the 2002 TAF used as the basis for DEIS modeling is a reasonable forecast for purposes of the EIS. |

In February 2005, the FAA released its 2004 TAF. The demand levels under this forecast are higher than the 2002 TAF demand levels, but are lower than the 2003 TAF demand levels. This decrease in the forecast aviation activity at O'Hare from the 2003 TAF to the 2004 TAF is unjustified. One of the best indicators of aviation growth (real gross domestic product) increased by 4.4% from 2003 to 2004, compared to a 1.9% growth from 2001 to 2002 and 3.0% from 2002 to 2003.[21] In fact, the U.S. GDP growth rate from 2003 to 2004 was the highest one-year increase since 1998-1999. Furthermore, O'Hare's 2003 to 2004 passenger growth of 8.6% and operations growth of 6.7% were well above the growth rates from 2002 to 2003 (4.4% and 0.6%, respectively).[22] Yet, the 2004 TAF forecast predicts, without explanation or analytical support, that fiscal year 2020 enplanements will be virtually the same as the FAA had forecast in the 2002 TAF, and lower than the 2003 TAF (Exhibit 105). In fact one would expect the 2004 TAF forecast would be higher than the FAA's 2003 TAF. 58

The 2002 TAF was influenced significantly by the 2000-2001 recession and the dramatic impact of 9/11 and SARS on consumer travel and airline operations. After 9/11 and extending through 2002, air travel declined significantly as did industry capacity (approximately 20%) and then came SARS in 2003 which impacted some international and U.S.-Canada markets. From March 2001 to March 2002 total ORD weekly seat-departures declined by 121,000, or 12% (Exhibit 100). Once again, there is no justification for the 2004 TAF enplanements forecast to be anywhere close to the 2002 TAF levels. 59 60

The 2004 TAF fiscal year 2020 operations are, on the other hand, 9% higher than the 2002 TAF forecast operations (Exhibit 105). 61

Reliance on the 2002 TAF instead of the 2003 TAF or the 2004 TAF for the DEIS delay/congestion analyses is a fundamental defect of the DEIS. It simply does not make any sense for the FAA to use forecasts that are two years old when newer ones are

[21] The U.S. Bureau of Economic Analysis, Current and "Real" Gross Domestic Product, March 30, 2005.

[22] Chicago Department of Aviation, O'Hare Statistics, http://www.flychicago.com/doa/about/AirportStatistics.shtm

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| Comment | Response |
|---|---|
| 58 | FAA disagrees with the comment that the decrease in activity from the 2003 TAF to the 2004 TAF is unjustified. FAA conducts a comprehensive review of recent airline activity and future outlook for each annual TAF. This review is coordinated with a review of national aviation trends used in developing the forecast of aviation activity for the nation as a whole. In preparing the 2004 TAF, FAA determined that the long-term outlook for ORD was different from that reported in the 2003 TAF, and this is reflected in the results of the 2004 TAF. The FAA finds the commenter data for a few recent historical years unpersuasive on this issue. The assumptions regarding the future growth at ORD are based on the judgments of the FAA's forecast experts.<br><br>This notwithstanding, FAA agrees that there is uncertainty with any forecast. For this reason, **Appendix R** of the EIS contains an analysis of alternate conditions and the implications of a range of future activity levels. The alternative range of future activity considered in **Appendix R** encompasses the higher levels of activity presented in the 2003 TAF and 2004 TAF. In addition, the FAA notes the *CH Exhibit 105* comparison of the 2004 TAF with the 2002 TAF. |
| 59 | All forecasts are influenced by significant events affecting aviation demand, such as those mentioned by the commenter. The relevant question is: does the subject forecast reasonably predict future demand in the context of historical events and future outlook? FAA believes that the 2002 TAF is a reasonable forecast of future activity levels, taking into account historical events and the future outlook. However, as described above, FAA acknowledges that there is uncertainty in forecasting, and has therefore included **Appendix R** to the EIS to evaluate the implications of alternative future activity levels. |
| 60 | *CH Exhibit 100* shows the change in weekly capacity at ORD from 1999 to 2005. *CH Exhibit 100* was developed using airline schedule information that FAA also uses in preparing the annual TAF. The intent of the *CH Exhibit 100* is not clear. FAA is aware that seating capacity at ORD declined after September 11, 2001, and has since recovered. This information has been used in developing the 2002 TAF, the 2003 TAF, and the 2004 TAF. The 2002 TAF was used as the basis for the EIS modeling, and the more recent TAFs (2003 and 2004) have been analyzed to confirm that the conclusions reached using the 2002 TAF are reasonable. |
| 61 | *CH Exhibit 105* appears to be an accurate comparison of the 2004 TAF with the 2002 TAF. The comment related to this *CH Exhibit 105* is that FY2020 aircraft operations in the 2004 TAF are about 9% higher than the 2002 TAF. FAA agrees that the aircraft operations for FY2020 in the 2004 TAF are about 9% higher than in the 2002 TAF, which reflects an updated assessment of aircraft fleet mix and aircraft operations trends. This variance in aircraft operations from the 2002 TAF is within the range considered in **Appendix R** of the DEIS. |

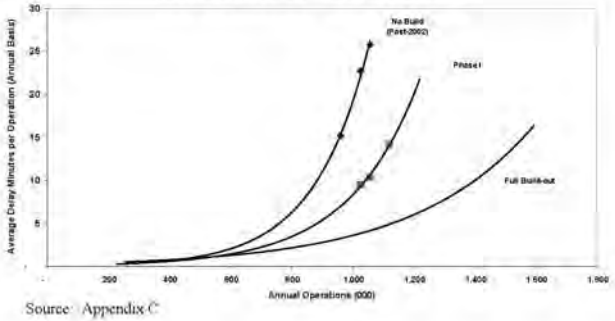
available. The whole idea of publishing new forecasts annually is to capture recent trends and events that can alter forecast values. Using more recent forecasts is vital for the accuracy of the EIS findings because the differences in the forecasts significantly alter the delay and capacity results. In turn, this could have a significant effect on the conclusions about the usefulness and efficiency of any particular OMP alternative. Given the timing of the DEIS report and its preparation, **the FAA should have used the 2003 TAF in its analysis**. 62

### 2.4.2 The DEIS-Based Delay Curves for OMP Do Not Resemble the FAA Standard Curve

A proper test of the reliability of the modeling performed for the OMP is whether or not the results produce a reasonable set of delay curves. The TAAM modeling utterly fails this test. The TAAM forecast of ORD delays for the OMP produces a delay curve that is inconsistent with, and does not track, the established and accepted delay curve historically used by FAA (see Chart 2-3).

As shown on Chart 2-7, the "No Build" version of the DEIS model reasonably tracks the FAA's established pattern (Chart 2-3), but the OMP delay curves do not come close to tracking the established FAA delay curve. This introduces significant bias. 63

**Chart 2-7**
**DEIS MODELING: ALL WEATHER**



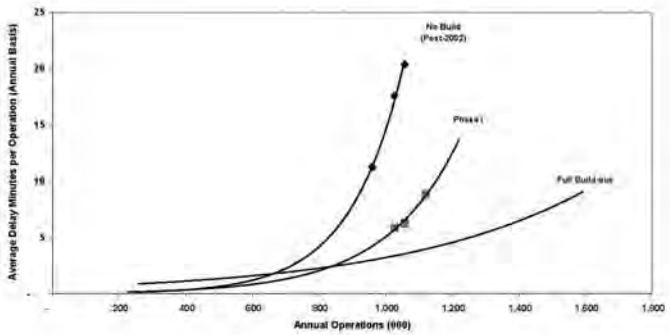

Source: Appendix C



| Comment | Response |
|---|---|
| 62 | FAA believes that the 2002 TAF is a reasonable forecast of future activity at ORD. As stated in previous responses, the FAA also recognizes that new forecasts will continue to be developed, which need to be reviewed and considered. FAA has conducted sensitivity analysis to confirm that the use of the 2002 TAF is a reasonable basis for the EIS. The results of this sensitivity analysis are presented in **Appendix R.** |
| 63 | The commenter has failed to define what represents a "… *reasonable set of delay curves*", or explain why inconsistencies with a conceptual illustration of the "delay curve" present a problem. The FAA has reviewed the *CH Charts* provided and does not find the *CH Charts* depicting various delay curves to be an accurate illustration of the operational behavior of the full build-out of OMP. The FAA demand delay curves can be found in **Appendix D** of the EIS. See the FAA response to comment 64 for further information pertaining to the delay curves developed as part of the EIS . |
| 64 | The current *FAA Advisory Circular* on this topic (*AC 150/5060-5, Airport Capacity and Delay*) includes similar graphics in a highly idealized and generic form and is intended for illustrative purposes only. The generic curves presented in the Advisory Circular are not specifically applicable to O'Hare or any particular runway configuration. For this reason, O'Hare-specific simulation models were developed to more accuractly capture the specific operational characteristics associated with O'Hare.<br><br>The FAA developed the delay curves contained in the EIS in a manner fully consistent with standard industry practices. In the EIS simulation analysis, it was not necessary to use regression analysis to determine future levels of delay because these delays for the full build out plus five-years (2018) were determined directly via simulation.<br><br>Continued on the following page. |

The OMP Full Build-out all-weather delay curve appears unreasonably (and artificially) flat. The shape of the DEIS delay curves for both VFR and IFR conditions also show unreasonably low slopes. In Chart 2-8, the VFR curves are shown, again with the Full Build-out curve being even flatter than the all-weather curve (Chart 2-7).

**Chart 2-8**
**DEIS MODELING: VFR CONDITIONS**




Source: Appendix C

As shown in Chart 2-9 the IFR curves for the Full Build-out, while not as flat as the all-weather slope (Chart 2-7), are still way off the mark when compared to the FAA standard delay curve (Chart 2-3).

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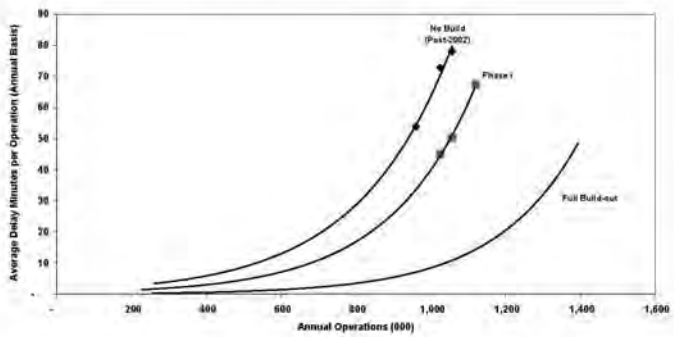
| Comment | Response |
|---|---|
| 64 continued | In *CH Appendix C, p. C-3,* the commenter asserts the FAA's delay curve can be characterized as a two variable exponential equation; this is inaccurate and a gross oversimplification of the relationship between delay and capacity. There is no indication of how well the regression equations actually fit the TAAM results, and any number of functional forms of the equations could be used to approximate such convex functions. More importantly, these TAAM simulations were designed to apply specific relevant assumptions about the characteristics of the demand being simulated (e.g., a specific mix of aircraft types that are forecast to change significantly over time) which are different for variable demand levels.<br><br>Therefore, these flawed equations for a "proper delay curve" are strictly the creation of the commenter and are not endorsed by FAA. The determination of a delay curve relies upon a myriad of input variables. These variables that affect the delay curve include airfield geometry, aircraft fleet mix, airspace configuration, FAA operational procedures, pilot behavior, and airline scheduling. The various runway configurations of O'Hare contemplated in the Build Alternatives within the EIS result in a complex delay-capacity relationship that is much more sophisticated than the commenter has portrayed. For the aforementioned reasons, the FAA rejects the commenter's methodology of extrapolating and adjusting the DEIS delay curves and the assertion that the TAAM model results and associated delay curves are indicative of "bias" or have "unreasonably low slopes." Therefore, the FAA has considered the commenter's adjustments and have reaffirmed that the demand delay curves presented in the EIS are accurate. As noted above, the FAA demand delay curves can be found in **Appendix D** of the EIS. |

**Chart 2-9**
**DEIS MODELING: IFR CONDITIONS**




Source: Appendix C

64

## 2.5 DEIS Model Results Require Reasonable Adjustment

Although Campbell-Hill was not able to re-run the FAA's version of the TAAM model under more reasonable assumptions, minimal adjustments can be made which produce more logical results. The Campbell-Hill adjustments correct two key flaws: (1) the OMP model was not run at a level of operations high enough to generate any semblance of a valid delay curve; and (2) the implicit assumptions concerning capacity increases from the OMP exceed any realistic expectation for the Full Build-out airfield. The following sections describe adjustments to the DEIS model results that produce more realistic delay estimates. The adjusted delay curves are more appropriate and valid for testing the OMP.

65

36

| Comment | Response |
|---|---|
| 64 | Please see the response to this comment beginning on page U.4-541. |
| 65 | The comments made in *CH Section 2.5* are a paraphrase of comments made in the subsections of *CH Section 2.5* and are addressed in the responses to the comments made in those subsections that follow.<br><br>The FAA does not understand why CH was not able to run the TAAM model. The FAA used a commercially available version of the TAAM model for the EIS operational analysis. The TAAM data inputs to the model were posted on the FAA's publicly available website (www.agl.faa.gov/omp) beginning approximately seven months prior to the release of the DEIS. In addition, TAAM data input and output files were provided to Mr. Joseph Karaganis, of the law firm of Karaganis, White and Magel, on computer disks beginning approximately nine months prior to the DEIS release. The TAAM input files were provided in an electronic format that would enable outside interested parties to re-run the original inputs, or to adjust assumptions and re-run the model. FAA also notes that comment C2, in *CH Appendix C* acknowledges that the OMP Simulation Data Packages are available online on the FAA's website. |

### 2.5.1 The OMP Was Not Tested At A Level of Operations Required For Accurate Delay Curve Calibration

Logic, and FAA's own BCA guidelines, dictate that the delay patterns for an airfield can only be estimated adequately over a full range of operating levels. The FAA Airport Benefit-Cost Analysis Guidance document (p. 37) states that a simulation model[23] should run at three levels; one at the beginning of the project's operation, one at or near **the end** of the project's life, and one in the middle. The TAAM model analysis stopped just five years after completion (and at a suppressed level of operations), so unless the OMP has a project life of only 5 years, the TAAM modeling fails to develop the data necessary for any reasonable evaluation of the project's merits. At the very least, an appropriate modeling of 2003 TAF operating levels would have generated reasonably high levels of operations on which to validate the OMP results (e.g. 2018 and 2030). 66

The failure to model the OMP at a high level of operations (i.e., beyond the 2002 TAF forecast for 2018) provides an inadequate range of data points with which to generate a sensible delay curve (as shown in Section 2.4.1). Without a reasonable set of model runs, the defined delay curve is uncharacteristically flat rendering it unusable for predicting delays at medium-to-high levels of operations using the appropriate demand forecast. 67

Consequently, adjustment is required in order to provide a better predictor of OMP delays; that is, a better fit between future operating levels and expected delay minutes. Based on an "extrapolation" of the flawed TAAM modeling, the DEIS estimated that average delays for the Full Build-out airfield would be 13-16 minutes using the 2003 TAF operating level of 1.4 million operations in CY 2018.[24] Campbell-Hill derived a delay curve using an exponential regression of the three "low level" model runs for the OMP (from the DEIS) plus this additional data point. The adjusted curve is shown in Chart 2-10 as "Adjustment A"[25]. Note that this curve is somewhat closer to the

[23] It should be noted that the TAAM model is not specified as an approved model for delay analysis, unlike SIMMOD, although the FAA guidelines do allow for the potential use of proprietary models

[24] DEIS Appendix R at page R-11

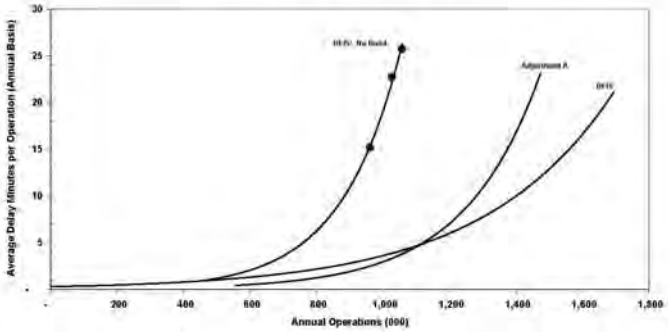
[25] Appendix C contains a full explanation of the methods used to generate the adjusted curves.

37

| Comment | Response |
|---|---|
| 66 | The commenter asserts that FAA should use guidance developed for financial analysis to complete environmental analysis. The FAA respectfully disagrees with this assertion. The FAA reaffirms its decision to follow *FAA Orders 1050.1E* and *5050.4A* in selecting the analysis years. These Orders require the analysis through the reasonably foreseeable time period, in this instance the full build-out plus five years, which is 2018. The commenter's suggestion for alternate TAAM model analysis would reflect conditions that are forecast to occur beyond the scope of the EIS and would provide minimal, if any, benefit in evaluating the alternatives. |
| 67 | As discussed in response to comments 53-56, the FAA used the most current data available when the EIS began. Since the EIS started, two new TAF's have been issued; the 2003 TAF (issued January 2004) and 2004 TAF (issued January 2005). When the EIS modeling was undertaken, the 2002 TAF was the most recent FAA forecast available. Approximately 12 months were required to complete the comprehensive simulation modeling (TAAM, noise, air, and surface) used in this EIS, the inputs which consist of flight schedules based on the 2002 TAF.<br><br>In fact, in approving the use of the 2002 TAF for the EIS, FAA noted that the EIS would need to review any new forecasts and conduct sensitivity analysis as appropriate. A sensitivity analysis was performed to evaluate more recent information (such as the 2003 and 2004 TAFs) and potential alternative conditions and is contained in **Appendix R** of the EIS. **Appendix R** demonstrated that the new information contained in more recent TAFs does not affect the results of the alternative analysis; predicted delay levels for each alternative would change, but the relative performance of the alternatives is unaffected. FAA continues to evaluate all of these more recently developed forecasts, and has concluded that the 2002 TAF used as the basis for DEIS modeling is a reasonable forecast for purposes of the EIS.<br><br>As described in FAA's response to comment 64, FAA disagrees with the overly simplistic characterization of the delay curve as *"uncharacteristically flat"*. Please see FAA's response to comment 64 for further explanation. |

standard shape of the FAA delay curve, although it still does not resemble the slope of the "No Build" option or the FAA theoretical curve (Chart 2-3).

**Chart 2-10**
**OMP DELAY CURVE ADJUSTED FOR HIGH LEVEL OPERATIONS**
**(Campbell-Hill Adjustment A)**




Source: Appendix C

68

**2.5.2 The OMP Delay Results In The DEIS Imply Unjustified Capacity Improvements That Are Not Matched by the Model's Own Throughput Capacity Estimates**

The Adjustment A curve is based solely on the DEIS model results. As such it does not account for the modeling problems discussed in Section 2.3. Even if the OMP model was sensibly modeled at higher operations levels, the low delay results suggest fundamental problems in the model that are likely due to errors in the assumptions and methods. The illogical shape of the DEIS delay curves, particularly for VFR operations, suggests a misrepresentation of the OMP airfield capacity. This is evident by comparing the DEIS VFR delay curves with previous (and recent) modeling of the OMP, as well as by examining how capacity levels are reflected in the DEIS model results themselves.

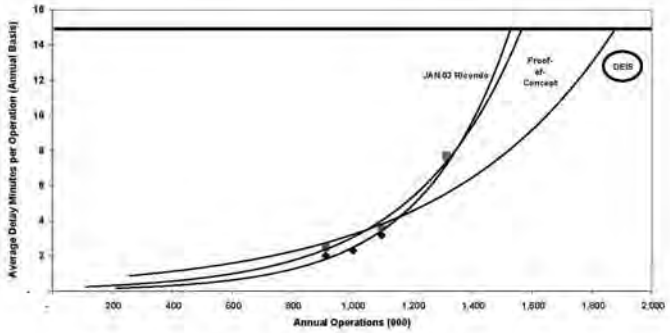
69

38

| Comment | Response |
|---|---|
| 68 | As identified in the FAA's response to *CH Section C.4*, the FAA does not agree that adjustments to the delay curves presented in **Appendix D** of the EIS are warranted. Therefore, the delay curve developed by the commenter in *CH Chart 2-10* is not relevant to the evaluation of alternatives. The FAA also notes that the commenter's delay curve extrapolation does not accommodate the data points developed in the EIS.<br><br>It is also noted the delay curve the commenter has labeled "DEIS" is not reflective of the delay curve for the OMP as shown in **Exhibit D-7** of **Appendix D** of the EIS. The delay curve contained in the DEIS does not extend beyond 1.2 million annual operations. |
| 69 | FAA's response to comments 63-68 note the inherent flaws in the delay curve developed by the commenter, and the FAA reiterates that the delay curves presented in **Appendix D** of the EIS are accurate.<br><br>Even if the FAA were to accept the delay curves drawn by the commenter, the suggested modifications, beyond the EIS study period, would have little to no impact on the relative operational performance of the alternatives considered within the EIS. |

As shown in Chart 2-11, both the January 2003 Ricondo report and the September 2003 Proof-of-Concept report produced VFR delay curves closer to the FAA standard delay curve, yet the DEIS curve is much flatter and bears no resemblance to either past results or theoretical expectations. The level of operations that would result in 15 minutes of VFR delay for the OMP airfield is 20-23 percent higher than earlier modeling of the same airfield.[26] While it is difficult to diagnose what causes this great shift in results for the same basic airfield using the exact same model (TAAM), it is clear that the DEIS results imply an OMP capacity that far exceeds any in the previous modeling. This is evident by comparing (a) the "implicit" capacity levels that can estimated from the all-weather delay curves based on the limited DEIS model runs with (b) the model's only measure of capacity - the maximum peak throughput rates.[27]

**Chart 2-11**
**OMP MODELING WITH TAAM: VFR CONDITIONS**




Source: Appendix C

70

[26] An extrapolation of these three VFR delay curves (see Exhibit C-2) and solving for a "practical capacity" at 15 minutes yields annual operating levels of 1.53-1.57 million operations for the earlier OMP modeling compared to 1.88 million operations in the DEIS modeling.

[27] Although capacity is a primary concern of the DEIS analysis, there is no attempt either to measure the OMP capacity or to indicate how the capacity of the expanded airfield is represented in the model's inputs. "Implicit" capacity (in annual operations) is calculated by Campbell-Hill by solving for a 15-minute standard of delay using the delay curves derived by regression (in Appendix C).

39

| Comment | Response |
|---|---|
| 70 | The commenter implies again in the second paragraph of *CH Section 2.5.2* that the shape of the "DEIS" curve in *CH Chart 2-11* should resemble the "dimensionless," strictly illustrative FAA curve in *CH Chart 2-3*. The FAA notes that this argument is the same as the argument made in comment 63 referring to *CH Chart 2-7*. Please see the FAA response to comment 64 for further information pertaining to the delay curves developed as part of the EIS<br><br>As noted in the second paragraph of response to comment 68, delay curves for the alternatives are presented in **Exhibit D-7** of the DEIS do not extend beyond 1.2 million annual operations. The "DEIS" delay curve cited in *CH-Chart 2-11* has been developed by the commenter.<br><br>The FAA notes that within *CH Section.5.1*, the commenter cites **Appendix R** of the DEIS regarding possible delay levels associated with extrapolation of the delay curve. However, within *CH Section 2.5.2* the commenter has chosen to ignore Appendix R and arbitrarily develop a delay curve lower than suggested in **Appendix R**. The commenter then asserts that the extrapolated curve (generated by the commenter) is too low.<br><br>As stated previously, the TAAM simulations were designed to apply specific, relevant assumptions about the characteristics of the demand being simulated. For additional information, see the FAA response to comment 51.<br><br>The FAA delay curve for OMP is contained in **Exhibits D-7** and **D-9** of the EIS. The commenter suggests that inconsistencies in the commenter-developed extrapolation of this delay curve compared to delay curves developed during preliminary modeling of the OMP concept (commenter titles these: Proof of Concept, and January 2003 Ricondo) is indicative of faults. The commenter's concern about differences between the preliminary and final modeling comes from differences in the range of the commenter-developed extrapolation of the delay curve. The comments raised here do not persuade the FAA to revise the delay curves depicted in **Exhibit D-7** of the EIS.<br><br>In addition, FAA notes that the 2003 Ricondo report and the September 2003 Proof of Concept Report were the results of early planning efforts which were developed using different modeling assumptions than were used in the more refined EIS modeling effort. Consequently, these earlier results were not utilized by the FAA in the operational assessment for the EIS. |

As shown in Table 2-1, the TAAM model produces a Full Build-out "implicit" capacity that is 63% greater than the current runway capacity.[28] This implies that all components of the airfield, terminal, roadway and airspace systems will be able to handle almost two-thirds more aircraft operations than at present. This is an unsubstantiated assumption that is embedded in the model, and it suggests that the model is misrepresenting system capacity, and consequently passenger and aircraft delay as well. 71

A comparison of the VFR-based capacity results shows even greater distortion, and it suggests why the DEIS model results differ so greatly from previous OMP modeling efforts. The model results imply an increase of Full Build-out capacity by 87% for VFR conditions over the No Build scenario. Again, this implies that every component of the airport system will be able to handle this increase in operations during VFR conditions, which is unsubstantiated and is left unaddressed and without construction cost in the DEIS. The Full-Build-out's IFR capacity is 59% higher than at present. None of the DEIS environmental impact analysis contemplates anything like these levels of ORD capacity increase. 72

[28] Practical capacity operating levels are based on the DEIS's definition of operations at 15 minutes of delay and are estimated using the delay curves described in Appendix C.

40

| Comment | Response |
|---|---|
| 71 | FAA is uncertain as to the meaning of the term "implicit" capacity. However, for the purpose of this response, FAA assumes that the definition of this term is synonymous with the term "practical capacity" as defined in footnote number 28. The EIS only examines the environmental impacts of the alternatives during the reasonably foreseeable period (full build-out plus five years), which is 2018. Speculating on infrastructure needs beyond this period is beyond the scope of this EIS. |
| 72 | The commenter raises concerns about the full build-out capacity of the alternatives. The commenter has defined full build-capacity based upon an inappropriate extrapolation of the delay curve (see the FAA response to comment 70). The issue raised by the commenter – disparate full build-out capacities of infrastructure components – would not affect the alternatives evaluation. The EIS follows *FAA Order 1050.1E*, considering the ability of each alternative to meet the purpose and need in the reasonably foreseeable time period. The commenter's request to address the eventual differences in infrastructure capacities would not be relevant until after the EIS study period. Speculating on infrastructure needs beyond this period is beyond the scope of this EIS. |

**Table 2-1**
**"IMPLICIT" CAPACITY INCREASES**
**BASED ON DEIS MODELING**

| | No Build | OMP Phase I | OMP Full Build-out |
|---|---|---|---|
| All-Weather | | | |
| 15-Minute Capacity Delay (000 Operations) 1/ | 957 | 1,135 | 1,560 |
| Difference from No Build | | 19% | 63% |
| VFR Conditions | | | |
| 15-Minute Capacity Delay (000 Operations) 1/ | 1,005 | 1,241 | 1,881 |
| Difference from No Build | | 23% | 87% |
| IFR Conditions | | | |
| 30-Minute Capacity Delay (000 Operations) 1/ | 811 | 934 | 1,286 |
| Difference from No Build | | 15% | 59% |

1/ Estimated from exponential delay curves at 15 and 30 minutes of delay.
Source: Campbell-Hill analysis (Appendix C)

72

The relative increase in "implicit" capacity levels differs sharply from the increases that can be derived by comparing the maximum peak throughput levels produced by the TAAM model itself, which are ignored in the DEIS.[29] A comparison of the maximum throughput for each of the airfield scenarios is summarized in Table 2-2.[30]

[29] While the TAAM modeling does not explicitly measure the relative increase in capacity, it is possible to measure runway capacity using the statistic "Peak Operations (Rolling Hour)", a model statistic that measures the maximum operations that are handled by the airfield in any 60-minute period of all the model runs.

[30] In order to measure capacity, the throughput values must apply to a relatively high level of operations for peak period operations. Since the DEIS runs for the Full Build-out scenario did not include any high volume runs, the maximum values generated in the Proof-of-Concept runs were used.

41

| Comment | Response |
|---|---|
| 72 | See previous page for response. |
| 73 | The comment is predicated on outdated model results that were superseded by the modeling utilized for the EIS analysis. As noted in response to comment 51 and in responses to multiple comments made in *CH Appendix D,* the FAA oversaw a demand/capacity analysis of the No Action alternative and three Build Alternatives. This analysis involved the development of detailed computer simulation models of good weather conditions and poor weather conditions, explicitly incorporating appropriate air traffic control rules and procedures. The resulting models were thoroughly reviewed by the Air Traffic workgroup to ensure they accurately reflect how the existing and proposed airfield configurations could be operated. Air Traffic prepared a memorandum (see **Appendix D, Attachment D-3)** that further describes the Air Traffic workgroup composed of FAA Management and NATCA representatives from the Chicago O'Hare Tower, the Chicago O'Hare TRACON, and the Chicago Air Route Traffic Control Center which utilized more than 1400 staff hours to complete this review. This extensive effort refined the modeling sited by the commenter in *CH Table 2-2* with the end result being the modeling used for the various analysis within the EIS. Therefore, the FAA does not find the comments persuasive and these comments do not warrant change to the conclusions reached within the EIS. |

**Table 2-2**
**CAPACITY INCREASES BASED ON MAXIMUM PEAK THROUGHPUT LEVELS**

| | No Build | OMP Phase I | OMP Full Build-out |
|---|---|---|---|
| All-Weather (ops. per hour) | 202 | 230 | 261 |
| Difference from No Build | | 14.3% | 29.5% |
| VFR Conditions (ops. per hour) | 206 | 236 | 267 |
| Difference from No Build | | 14.4% | 29.3% |
| IFR Conditions (ops. Per hour) | 156 | 172 | 219 |
| Difference from No Build | | 9.8% | 39.9% |

1/ Based on Proof-of-Concept runs at the maximum level of operations.

Source: Exhibit 201

73

The throughput capacity shown for the "No Build" scenario is relatively close to the "benchmark capacity" estimates of the FAA for ORD (190-200 operations per hour) indicating the reasonableness of this statistic for measuring capacity. As shown, the Full Build-out "capacity" for all-weather conditions increases 29.5% over the current airfield based on a 29.3% increase in VFR throughput and a 39.9% increase in IFR throughput.[31] The OMP Phase I capacity increases are also less than those evident in the "implicit" capacity comparisons, but they do not differ as significantly as the Full Build-out estimates.

74

An OMP delay curve that accurately reflects the expected capacity increases at ORD can be derived by assuming that the OMP's practical capacity (i.e., that producing 15 minutes of delay) is 29.5% over that of the "No Build" scenario. This

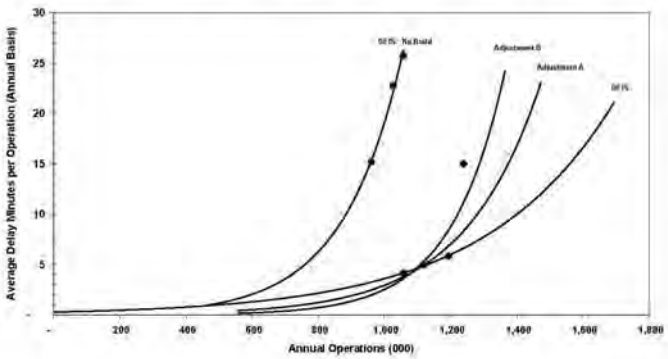
[31] It should be noted that the relative increases in IFR and VFR capacity are, in this case, consistent with the assertion that the greatest capacity increase occurs for IFR conditions.

42

| Comment | Response |
|---|---|
| 73 | Please see the response to this comment on the previous page. |
| 74 | The commenter oversimplifies the relationship of peak throughput levels and delay. Airfield modeling requires many additional inputs beside airfield peak throughput, including inputs such as airline schedules and fleet mix, which can have significant impacts on overall delay. For example, delay can be significantly different for similar peak period operational levels. Delay levels would be significantly different for cases in which 1) departures are scheduled at regular intervals, versus 2) a group of departures that are scheduled to leave at exactly the same time. Thus, the commenter's assertion that peak throughput levels are proportionately related to practical capacity is not appropriate. |
| 75 | Please see the response to this comment on the following page. |

"practical capacity" result which is based on the expectation that "accurate modeling" should have produced 15 minutes of delay at 1,239,000 annual operations,[32] is combined with the three DEIS model results to produce Campbell-Hill's best estimate of the OMP delay curve shown as Adjustment B in Chart 2-12. Note that the shape of the Adjustment B curve resembles the shape of the "No Build" curve much more closely, as it should. Campbell-Hills Adjustment B curve is used for all of its summary analysis and conclusions because it has the best empirical foundation.

**Chart 2-12**
**OMP DELAY CURVE ADJUSTED FOR CAPACITY (Adjustment B)**




Source: Appendix C

The delay curve generated by the DEIS model runs for OMP Phase I is shown in Chart 2-13. Although the "implicit" capacity increase reflected in these runs also exceeds that indicated in the TAAM model's throughput rates, Campbell-Hill made no adjustment to this curve since the overstated results in the DEIS greatly exceed existing delay and capacity condition (see Section 2.6.3).

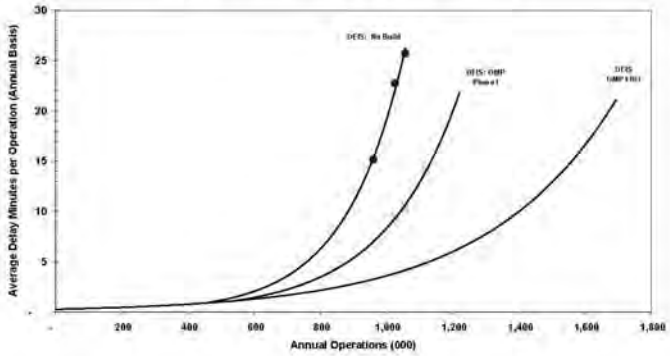
[32] Therefore, the OMP airfield would generate 15 minutes of average annual all-weather delay at 1,239,000 annual operations (957,000 x 1.295).



| Comment | Response |
|---|---|
| 75 | The modeling contained in the EIS is based upon carefully selected input parameters, the delay curve suggested by the commenter (*CH Chart 2-12*) deviates significantly from the EIS model results. The FAA rejects the commenter's recommendation to perform analysis using the CH delay curve (Adjustment B) since it is predicated on 1) out-of-date model results, 2) unjustified adjustments to those results, and 3) an oversimplification of the delay curve (see preceding FAA responses). The commenter has justified this deviation from modeling results based on the CH hypothesis about extrapolating the delay curve to activity levels forecast to occur beyond the EIS study period. As stated previously, each of the TAAM simulations was designed to apply specific relevant assumptions about the characteristics of the demand being simulated, which are different for different demand scenarios (e.g., the specific mix of aircraft types and the peaking pattern that are forecast to change over time). Therefore, one cannot explain the variation of aircraft delay as a function of the number of aircraft operations alone as the commenter has done. Therefore, the FAA rejects the commenter's methodology for extrapolating and adjusting the DEIS delay curves and rejects the assertion that the TAAM model results and associated delay curves are indicative of "bias" or have "unreasonably low slopes." For these reasons, neither the suggested evaluation methodology, nor the CH Adjustment B delay curve, substantiates revisions to the EIS. |
| 76 | Detailed comments contained in response to *CH Appendix C*. |

| Comment | Response |
|---|---|
| 76 | Please see the response to this comment on the previous page. |

**Chart 2-13**
**OMP DELAY CURVE FOR OMP PHASE I**




Source: Appendix C

76

**2.6 The OMP Fails to Solve Delay and Capacity Problems at ORD Using Reasonable Delay Estimates, Traffic Levels and Standards for "Improving Delay and Capacity" at O'Hare**

**2.6.1 Testing of OMP Should Match Purpose and Need Criteria**

As stated in Section 2.3, a reasonable test of the OMP is not a comparison of (a) understated OMP delays derived using an unrealistic level of "constrained" operations with (b) unrealistically high delays from a No Build scenario that will not occur. Rather, a logical evaluation of the OMP should be based on the following elements: 77

**2.6.1.1 Reasonable Levels of Operations for the OMP**

A key flaw in the entire DEIS analysis is the FAA's refusal to use the 2003 TAF in the modeling analysis. Nevertheless, the Campbell-Hill analysis shows the OMP will not satisfy need using **any** of the recent TAF's (2002, 2003 or 2004). At no point does the DEIS consider the possibility that expanded runway capacity, even if true, would simply result in the airlines increasing their schedules (and reducing aircraft size) to levels that produce exactly the same delay situation as occurred in 2002-2004. This increased level of operations could occur without any positive effect on the satisfaction of regional passenger demand and at a great cost to all travelers, especially the local O&D. It is reasonable that the OMP should be judged relative to how well it handles the most recent forecast of operations growth, and therefore the 2003 TAF forecast levels is the appropriate benchmark for evaluation. 78 79 80

**2.6.1.2 Projected Delays Reflecting True Capacity**

The Campbell-Hill Adjustment B delay curve is the best estimate of how the OMP would perform under higher traffic levels. (The Adjustment A provides a minimal level of adjustment that is based entirely on the DEIS's own flawed delay estimates.) Average annual delay is estimated using the adjusted curves as applied to each of the TAF forecasts. 81

**2.6.1.3 Reasonable Delay Standards**

As shown in Section 2.3, the OMP fails to match FAA's own standards for an adequate level of capacity using the DEIS understated modeling results for delay; and it certainly fails after reasonable adjustments are made. A reasonable test of the OMP

45

| Comment | Response |
|---|---|
| 77 | The response to comments in *CH Section 2.4.1,* above, provide the basis for the 2002 TAF as a reasonable forecast for purposes of the EIS. |
| 78 | Please see response to comment 67. |
| 79 | FAA believes that the 2002 TAF is a reasonable forecast of future aviation activity at ORD. FAA has considered potential alternative conditions—including changes in airline aircraft fleet mix—in **Appendix R** of the DEIS. Both the derivative flight schedule based on the 2002 TAF and those used in the sensitivity analysis explicitly incorporated assumptions regarding potential changes in aircraft size. |
| 80 | Please see the response to this comment on the following page. |
| 81 | Please see the response to this comment on the following page. |
| 82 | Please see the response to this comment on the following page. |

should be a comparison to (1) existing delay levels and (2) delay representing "practical capacity".

For the former, it is fair to compare delays as modeled for the OMP with delays modeled for the base year of 2002, a level of delay that the DEIS characterizes as "severely congested" (page 2-13).[33] For the latter, Campbell-Hill compared OMP modeled delays to the DEIS' own newly created standard of 15 minutes. Thus, Campbell-Hill used the DEIS' two metrics to test the effectiveness of OMP relative to existing conditions.[34]

- Campbell-Hill used the 9.3 minute Average Annual Delay reported in the DEIS as the modeled delay value at O'Hare for the year 2002[35]. This corresponds to the maximum outer limit described in a number of FAA and DOT publications as ten minutes.
- Campbell-Hill used the newly invented 15 minute AAAW used in the DEIS as the modeled value for delay at "practical capacity."

82

### 2.6.2 OMP Full Build-out Fails To Improve On Existing Delay and Capacity Conditions On Or Soon After Opening

The OMP Full Build-out scenario not only fails to provide adequate capacity by the objective NPIAS standard of 3-6 minutes of delay, it is predicted that delay and capacity conditions deemed "severely congested" will be reached when the airfield opens or very soon thereafter. Table 2-3 summarizes the results of the comparison between predicted delays for the OMP and the two delay standards.

[33] As previously noted, the model results were not calibrated to actual delay statistics and cannot be expected to predict future delays. However, it should be possible within the modeling environment to determine relative changes in delays, and when conditions will result in comparable levels of delay.

[34] It has already been shown that the OMP cannot solve the problem even on opening day against the traditional NPIAS delay standard.

[35] This 9.3 minute AAAW delay is consistent with other modeled AAAW values reported in the January 2003 Ricondo Simulation Analysis for the year 2001 and by the 2002 Delay Task Force report modeled value for 2001.

46

| Comment | Response |
|---|---|
| 80 | In preparing the DEIS, FAA used the most recent forecast that was available at the time that the DEIS modeling was required to be undertaken—the 2002 TAF. FAA has conducted sensitivity analysis of alternative levels of activity—including levels that are sufficient to include more recent forecasts—as reported in **Appendix R** of the DEIS. The most recent forecast published by FAA—the 2004 TAF—is substantially similar, in terms of activity levels, to the 2002 TAF. |
| 81 | The FAA's response to comment 75 dismisses the utility of Adjustment B and it's applicability to analysis in the EIS. |
| 82 | As stated above, FAA does not agree with the CH analysis of delay and their suggested adjustments included within that analysis.<br><br>FAA does not agree with CH's definition of a "reasonable test" of the OMP. However, for the purpose of discussion, if one accepts the CH "reasonable test", the results of simulation analyses performed as part of the EIS clearly show that the OMP (Alternative C) meets both parts of the test. For the first part of the "test," which compares OMP delays to existing delay levels, the OMP reduces delay to approximately six minutes per operation by full build out plus five years (2018), well below 2004 delay levels that are estimated to be approximately 18 minutes per operation. The OMP does this while simultaneously enabling the airfield to accommodate approximately 200,000 additional aircraft operations than in 2004. For the second part of the "test," which compares OMP delays to the CH definition of "practical capacity," OMP delays remain well below both a ten-minute standard and a 15-minute standard, both of which are cited by the commenter in the CH report.<br><br>It is also notable that, the commenter omits the information they provided on *CH Section 2.2* by failing to acknowledge the FAA has identified numerous delay standards in the DEIS, often in different contexts. |
| 83 | Please see the response to this comment on the following page. |

**Table 2-3**
**SUMMARY OF OMP FULL BUILD-OUT CAPABILITIES VS. DELAY METRICS**

| Operations Forecast | Delay Curve DEIS | Adjustment A 1/ | Adjustment B 1/ |
|---|---|---|---|
| Years Until ORD Hits Existing Delays 2/ | | | |
| **2003 TAF** | **2** | **0** | **0** |
| 2004 TAF | 7 | 5 | 3 |
| 2002 TAF | 13 | 9 | 6 |
| Years Until Hit Practical Capacity 2/ | | | |
| **2003 TAF** | **9** | **5** | **2** |
| 2004 TAF | 13 | 10 | 6 |
| 2002 TAF | n/a | 17 | 11 |

1/ Campbell-Hill adjusted curves (see Charts 2-10 and 2-12).
2/ This is the number of years beyond the projected opening in 2013

Source: Exhibit 200

83

Based on the FAA's own delay curve, reasonable modeling[36], and the requirement to handle a reasonable level of demand (2003 TAF), the OMP would be at existing "high" levels of delay the year it opens, and at practical capacity within two to five years (Table 2-3 and Chart 2-14).

84

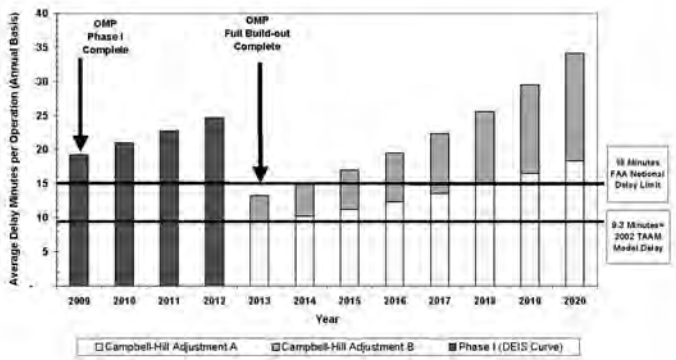
[36] Campbell-Hill's adjusted delay curves.

47

| Comment | Response |
|---|---|
| 83 | As stated earlier, the three to six minute NPIAS delay metric is inappropriate to apply to highly congested airports such as O'Hare.<br><br>The results of the simulation analyses conducted for the DEIS clearly and unequivocally indicate that the proposed action will substantially reduce aircraft delays while simultaneously enabling O'Hare to accommodate additional aircraft operations. Moreover, the DEIS clearly articulates that the proposed action would result in the greatest levels of delay reduction among the numerous airfield development alternatives considered.<br><br>As previously noted, the commenter's assertions rely on incorrect representation of DEIS delay data and unwarranted adjustments to delay estimates developed in the DEIS. However, even if these proposed adjustments were credible, the commenter's own analysis shows that the proposed action would accommodate substantially higher levels of aircraft operations at a given level of delay (e.g., more than 250,000 operations at a delay level of 15 minutes per operation). |
| 84 | The charts provided by the commenter depict model adjustments recommended by the commenter but these adjustments are dismissed by the FAA because they have been made in an arbitrary and biased fashion to support the commenter's preference for the No Action Alternative (see response to *CH Section 2.5.2)*.<br><br>The charts (*CH Charts 2-14* and *2-15*) presented by the commenter do not indicate the annual demand levels that the commenter has assumed would be associated with the years shown in each chart. The omission of these data is misleading and prevents a clear and direct understanding of the volume of additional traffic the proposed action would be able to accommodate (e.g., more than 250,000 operations at a delay level of 15 minutes per operation). |

| Comment | Response |
|---|---|
| 84 | Please see the response to this comment on the previous page. |

**Chart 2-14**
**THE OMP WOULD PRODUCE CURRENT LEVELS OF DELAY THE YEAR IT OPENS**
**(Based on 2003 TAF)**

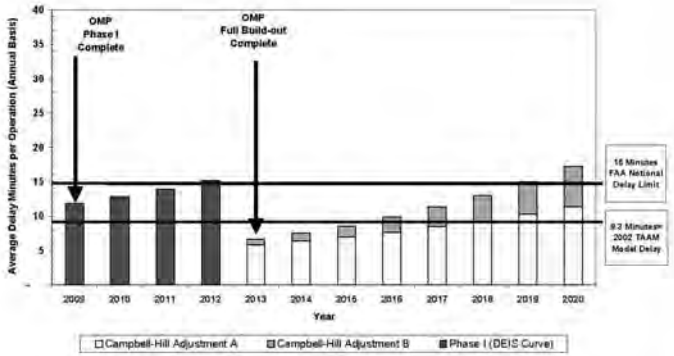



Source: Exhibit 200

48

Even assuming the latest estimate of demand (2004 TAF), ORD would return to current levels of delay by 2016 (three years after opening) and it would reach practical capacity by 2019 (six years after opening), as shown in Chart 2-15.

**Chart 2-15**
**THE OMP WOULD PRODUCE CURRENT LEVELS OF DELAY THREE YEARS AFTER IT OPENS**
**(Based on 2004 TAF)**




Source: Exhibit 200

84

Based on the lowest (and most outdated) forecast used in the DEIS (2002 TAF), ORD would return to current levels of delay by 2019. Even under the DEIS's flawed modeling (without the required adjustment), ORD would return to current levels of delay by 2016 (three years after opening) if the OMP analysis is reworked using the 2003 TAF. It is clear that at 2002, 2003, or 2004 TAF demand levels, delays under the full OMP would rise dramatically and OMP would be out of capacity within a very few years after it opens.

85

49

| Comment | Response |
|---|---|
| 84 | Please see the response to this comment on page U.4-554. |
| 85 | The commenter has made unjustified assertions about the ability of the proposed action to accommodate forecast demand. The simulation results prepared for the DEIS clearly indicate that the proposed action would substantially reduce aircraft delays at O'Hare while simultaneously enabling the airport to accommodate increased numbers of operations. Using full build-out plus five years (2018) as a nominal point of comparison, the proposed action would reduce average annual aircraft delays from approximately 17 minutes per operation to approximately 6 minutes per operation while simultaneously accommodating over 200,000 additional annual operations. |

### 2.6.3 OMP Phase I Will Not Work in the Short Term and If Full OMP is Not Built Phase I Would be A Disaster In The Long Term

The OMP Phase I airfield is currently presented as a transition to the full build-out. However, given the serious questions about whether OMP can ever be built due to high costs, the lack of financial feasibility, and grave environmental concerns, Phase 1 must also be evaluated as a stand-alone alternative. The DEIS modeling results, even without any adjustments, indicate that the Phase I airfield would immediately incur high delays, as shown in Table 2-4. Under all three of the TAF forecasts, the Phase I runway configuration would experience "severely congested" delay, when it opens in 2009. Under the 2003 TAF forecast, the Phase I runway will be at the airport's practical capacity four years before the OMP is completed in 2013 (Chart 2-14). In other words, under 2003 TAF, congestion management will never be lifted. Under 2004 TAF, congestion management will need to be reinstated three years after completion of Phase 1 (Chart 2-15) and one year before completion of the full build-out (if that ever occurs). 86

**Table 2-4**
**SUMMARY OF OMP PHASE I CAPABILITIES VS. DELAY METRICS**

| Operations Forecast | DEIS Delay Function[1] |
|---|---|
| Years Until ORD Hits Existing Modeled Delay (9.3 Minutes) 2/ | |
| **2003 TAF** | **0** |
| 2004 TAF | 0 |
| 2002 TAF | 0 |
| Years Until Hit "Practical Capacity" (15 Minutes) 2/ | |
| **2003 TAF** | **0** |
| 2004 TAF | 3 |
| 2002 TAF | 5 |

1/ Without Campbell-Hill's adjustments.

2/ This is the number of years beyond the projected opening of Phase I in 2009

Source: Exhibit 200 87

50

| Comment | Response |
|---|---|
| 86 | FAA did evaluate Phase I as a stand-alone alternative, in the EIS it is referred to as Alternative B. Notably, Alternative B performs considerably better than the No Action Alternative. As demonstrated in the **Section 3.2.2.1** of **Chapter 3** of the EIS, Alternative B did not satisfy purpose and need, thereby ratifying the FAA's decision not to perform further analysis of Alternative B. |
| 87 | As noted in comment 86, OMP Phase I (Alternative B) would not meet the purpose and need stated in the EIS. OMP Phase I is an essential step in developing the full-build OMP (Alternative C) which, using the forecast adopted by FAA, OMP provides for accommodation of unconstrained forecast demand during the period through 2018. |

## 3.0 OMP COST AND FINANCING

### 3.1 Introduction And Summary

The DEIS failed to critically analyze OMP's complete costs and how these costs would be financed. Furthermore, the DEIS made no assessment of the impact on demand that would be occasioned by the vast capital cost increase at O'Hare, as it would reflect itself in significantly higher rates and charges to the airlines. In the DEIS, the FAA is required to consider elements beyond those related strictly to environmental impacts. The Airport Environmental Handbook directs the FAA to assess alternatives that are both feasible and prudent. In fact, the "Handbook" states the following regarding the elimination of alternatives, … "(An alternative) may not be prudent, however, because of safety, policy, environmental, social or **economic** consequences."(emphasis added)[37] The FAA used similar language in the environmental impact statement chapter of Draft Order 5050.4B: National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects. It states, …"It (an alternative) may not be prudent, because it causes unacceptable safety, environmental, social, or **economic** impacts." (emphasis added)[38] Essential components of economic impact and consequences involve the cost and financeability of the project. If a project incurs excessive costs it can have devastating economic consequences that can diminish or outweigh all the benefits. 88

Significant findings of the Campbell-Hill analysis are as follows:

- The OMP capital costs will exceed $21 billion: DEIS has understated the OMP costs by at least $7 billion and this excludes (1) approximately $3 billion for the Western Access System, (2) delay and disruption costs during construction, and (3) other "overlooked" elements of the OMP cost.

[37] FAA Order 5050.4A, Airport Environmental Handbook, Paragraph 83b, October 8, 1985.

[38] FAA Draft Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects, Chapter 10, page 8, line 6, December 16, 2004.

51

| Comment | Response |
|---|---|
| 88 | These are summary comments that are addressed more specifically below. Nonetheless, the FAA has provided references adjacent to the summary comments to the location of the more detailed comments and their respective responses. |
| 89 | Please see response to comments 93 – 100, beginning on page U.4-560. |

| | | |
|---|---|---|
| Campbell-Hill adjusted costs[39] | = | $21.1 Billion |
| FAA adjusted Master Plan costs[39] | = | 14.2 Billion |
| Difference[39] | | $ 6.9 Billion |
| City of Chicago Costs[40] (incomplete and out of date) | | $ 6.6 Billion |

89

- The FAA made no analysis of the financeability or viability of the OMP (using either City or FAA cost estimates). The FAA irresponsibly **assumed** the OMP could be financed. It accepted uncritically the City's assertions and false assumptions.

90

- The capital costs of the OMP will raise the airport costs per enplaned passenger by $20 to a total cost of $30 each. This massive cost increase will result in a reduction in forecast 2013 enplanements by 4.5 million, or 10%.[41] The FAA made no adjustment to its traffic and operations forecasts to reflect the costs of the OMP. Every airline industry observer, including the FAA staff, is keenly aware of the high degree of price sensitivity among air travelers.

91

The FAA's cost and financial analyses are so fraught with error, omission, and bias that the OMP approval process cannot go further without complete re-examination of the costs, financeability and demand forecasts.

92

[39] In 2004 dollars.

[40] The City's cost is for only the stripped-down OMP in 2001 dollars.

[41] Using the 2002 TAF.

52

| Comment | Response |
|---|---|
| 89 | Please see response to comments 93 – 100, beginning on page U.4-560. |
| 90 | Please see response to comment 101 on page U.4-565. |
| 91 | See response to comments 118 – 119, beginning on page U.4-576. |
| 92 | In response to this comment, as well as others, the FAA has expanded the discussion of the financial feasibility of the OMP to **Chapter 1, Section 1.7.** |

### 3.2 The FAA's OMP Costs Are Understated By At Least $7 Billion[42]

The DEIS's cost estimate of $14.2 billion (2004 dollars) fails to account for over $6.9 billion (or 33%) of the total capital costs of the OMP (Exhibit 300). If the FAA's analysis had done more than simply inflating the City's cost estimates from 1999 and 2001 dollars to constant 2004 dollars, it would have realized that the City ignored many essential cost elements. These elements include a realistic construction cost contingency allowance, capitalized interest expense during construction, delay and disruption costs during the construction period, and roadway costs for new/improved ground access/egress systems. Chart 3-1 below shows a more realistic estimate of the OMP construction costs using the 2002 TAF, the 2003 TAF and the 2004 TAF.[43] 93

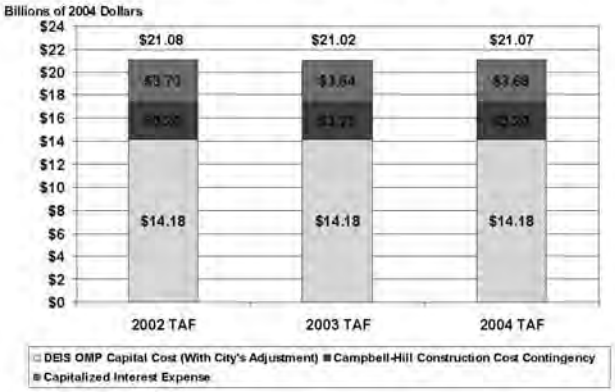
[42] In 2004 dollars, excluding the cost of the Western Access System (approximately $3 billion)

[43] The costs vary because the PFC revenue shortfall used to calculate part of the capitalized interest cost changes with different demand levels. For the rest of this section the costs are estimated using the 2002 TAF unless stated otherwise. Also, the FAA's cost of $14.19 billion is adjusted to $14.18 billion due to the fact that the City released updated cost estimates for the World Gateway Program in City of Chicago, Request for Letter of Intent to Provide A Multi-Year Commitment of Airport Improvement Program Grant-In-Aid Funding, Table E-1, February 2005.

53

| Comment | Response |
|---|---|
| 93 | In response to this summary paragraph submitted by CH, we begin our analysis by noting that the FAA does not agree with the commenter's alternative project cost estimate. This comment is addressed in more detail in the *CH subsections 3.2.1* and *3.2.2* in which the basis for CH's summary is provided.<br><br>First, the *CH Exhibit 300* presents three cases: (1) Using 2002 TAF, (2) Using 2003 TAF, and (3) Using 2004 TAF. The variance in each of these cases is not material, ranging from a low of $21.02 billion (using 2003 TAF) to a high of $21.07 billion (using 2002 TAF)—a variance of less than 1% for the entire range. Because there is almost no difference in the three cases presented on *CH Exhibit 300* (less than 1%), the data presented by the commenter seem to indicate that the OMP cost estimate is not materially related to the TAF that is considered. Furthermore, there is only one line item in the exhibit that varies depending on the different TAF assumed and that is capitalized interest on PFC debt service. As will be discussed further below, capitalized interest is not considered a capital cost.<br><br>Second, *CH Exhibit 300* also includes adjustments to the capital costs that were presented in the DEIS. There are two major adjustments identified in *CH Exhibit 300*: (1) Contingency, and (2) Capitalized Interest. FAA does not agree that these adjustments are warranted. Each proposed adjustment is addressed in the responses below to comments in *CH Section 3.2.1* (contingency) and *Section 3.2.2* (capitalized interest). |

**Chart 3-1**
**THE OMP WILL COST OVER $21 BILLION**
**(Excluding the Western Access System)**




Source: Exhibit 300

94

### 3.2.1 The FAA's Construction Cost Contingency Must Be Increased By At Least $3.2 Billion

The FAA's construction cost contingency is only 4.14% of its identified cost, and this is unreasonably low. The FAA's own Benefit-Cost Analysis Guidance suggests that the construction cost contingency should be at least 15% and a total contingency of up to 35% is reasonable.[44] In addition, a study presented in the Journal of the American Planning Association entitled Underestimating Costs in Public Works Projects: Error or Lie?[45] provides further support for a larger construction cost contingency than the City used and the FAA endorsed. This referenced study included a sample of 258

[44] FAA, FAA Benefit-Cost Analysis Guidance, p. 68, December 1999

[45] Flyvbjerg, Bent, Mette Shamris Hol and Soren Buhl, American Planning Association, Journal of the American Planning Association, "Underestimating Costs in Public Works Projects: Error or Lie?," Summer 2002. Vol.68, Iss. 3, p.279.

54

| Comment | Response |
|---|---|
| 94 | *CH Chart 3-1* is a graphical depiction of *CH Exhibit 300.* The response to the information presented in *CH Exhibit 300* is described directly above, with reference to more detailed responses provided directly below. |
| 95 | The commenter asserts that the construction contingency for the projects presented in the DEIS is only 4.14% of total project cost. This is not correct. The City's finance plan for the projects included in the DEIS include construction cost contingencies consistent with standard airport capital program practices. For OMP, the City's project cost estimate includes a contingency allowance of approximately 13% of the total project cost. For WGP, the City's project cost estimate includes a contingency allowance of approximately 14% of the total project cost.<br><br>For the CIP, the contingency allowance varies in accordance with the timeframe of the CIP project elements. The near-term (i.e., 5-year) CIP is comprised of specific projects with specific cost estimates and allowances, including contingency. The assumed contingency for the near-term CIP projects is about 9% of total project cost. The longer-term CIP allowance is not comprised of specific projects, but is the City's estimate of the amount of capital spending likely to be required beyond the 5-year near-term horizon based on historical trends. Thus, it is not possible to precisely assign contingency amounts to the longer-term CIP, given there are not specific projects with specific cost estimates. For purposes of FAA's review of contingency allowances for the overall capital program (including the near-term and long-term CIP), FAA considered a range of contingency allowance for the long-term CIP, as follows: (1) at the low end of the range, the long-term CIP would represent required projects that would have contingency amounts typical of other capital program elements (i.e., in the range of 13% of project cost); and (2) at the high end of the range, the long-term CIP would represent entirely contingency, in that there are not identified required projects, and this capital spending amount could serve as contingency for other capital program elements.<br><br>Taking into account the individual capital program elements and contingency allowances outlined above, the overall contingency amount for the $14.2 billion in project cost presented in the EIS is estimated by FAA to range from about 12% of total project cost (using the low end of the contingency range for the long-term CIP) to about 29% of total project cost (using the high end of the contingency range for the long-term CIP). FAA believes that it is reasonable to assume that the actual contingency amount for the longer-term CIP will be somewhere generally in the middle of the range described above (that is, not as low as other specifically-defined required projects, but not as high as 100%). Therefore, FAA believes that it is reasonable to expect that the overall contingency amount will be somewhere generally in the middle of the overall range of 12% to 29%, or about 20%.<br><br>Continued on the following page. |

transportation infrastructure projects, mainly from Europe and North America. The research finding was that the average transportation infrastructure project construction cost was 27.6% higher than the construction cost estimates used to determine initial feasibility. Increasing the contingency from 4.14% to a more realistic 27.6% increases the total OMP cost by $3.2 billion in 2004 dollars (Exhibit 300). 95

### 3.2.2 The FAA Ignored $3.7 Billion Of Capitalized Interest Expense

The DEIS cost estimate also excludes capitalized interest expense incurred during the construction periods. Capitalized interest arises due to the fact that the FAA prohibits airports from including interest expense (during construction) in the rates and charges cost base until the capital project is open for use by the airlines.[46] Despite the fact that the airlines do not pay for the OMP until portions of it are open for service, the airport must still pay the debt-holders interest on the money that is borrowed. This means that the airport will need to borrow more cash than just the amount required to pay for the construction costs. For this analysis, Campbell-Hill capitalized the interest expense that would accrue for the portion of each project that is to be paid for using general airport revenue bonds (GARBs) and third party financing, using the FAA's OMP financing plan in the DEIS.[47] Capitalized interest expense would also be accrued on funds borrowed as a result of the PFC shortfall discussed in Section 3.3.2 below. Using a highly conservative tax-free bond yield of 5% for the OMP, Campbell-Hill estimates that capitalized interest will add at least $3.7 billion (2004 Dollars) to the total OMP cost (Exhibits 300 and 301).[48] 96 97

[46] Accounting standards also require the capitalization of interest for construction projects. See Financial Accounting Standards Board, Statement of Financial Accounting Standards No. 34: Capitalization of Interest Cost, October 1979.

[47] The funding distribution is from FAA, O'Hare Modernization Draft Environmental Impact Statement, p. ES-43, January 2005.

[48] In this period of rising long term interest rates (and bond yields), coupled with a rapidly deteriorating credit picture for ORD bonds in the amount that would be needed for the OMP, it is instructive to note that each percentage point higher than 5% would add $730 million to the capitalized interest burden.

55

| Comment | Response |
|---|---|
| 95 continued | This estimated contingency factor—20%--is within the range cited by the commenter from FAA BCA guidance: 15% to 35%. Given that many elements of the extended period CIP will be discretionary, the actual contingency percentage for ORD is likely to be higher, but still within the range cited from FAA BCA guidance. The overall range cited for the ORD capital program above—12% to 29%--is very similar to the range cited from FAA BCA guidance: 15% to 35%.<br><br>The commenter also cites a contingency factor of 27.6% from a study presented in the Journal of the American Planning Association, and concludes that this factor should be applied to the ORD capital development program. FAA has reviewed the citation, and found that the survey of projects reported is based on three types of projects, rail, roads/highways, and bridges/tunnels. Accordingly, the FAA does not believe that reliance on this benchmark is preferable to the use of its BCA guidance. The CH alternative analysis of cost contingency for the ORD airport project using a 27.6% contingency factor derived from this citation is not persuasive, and therefore the FAA rejects this aspect of the CH cost estimate provided by CH.<br><br>In conclusion, FAA believes that the cost contingency established for the ORD capital program (as summarized above) is reasonable, and consistent with FAA's guidance, and does not need to be increased for any alternative financial analysis. |
| 96 | FAA disagrees with this comment. The cost estimate reported in the DEIS is the estimate of the capital cost—also referred to as project cost or construction cost. This cost estimate does not include financing costs. Capitalized interest has been considered by the City in the financing plan for capital development—but as one of several financing costs, and not as part of the capital cost estimate.<br><br>Continued on the following page. |
| 97 | As noted in the comment response directly above, capitalized interest is a financing cost and not a project cost. The financing plan developed for OMP, included in the City of Chicago's *February 2004 O'Hare International Airport Master Plan*, included consideration of capitalized interest, in the amount of about $1.6 billion. Campbell-Hill's analysis adds capitalized interest to the construction cost; but capitalized interest is a financing cost. Thus, because the City has already considered capitalized interest as a financing cost, Campbell-Hill's addition of this financing cost to the project capital cost represents an inappropriate "double-count".<br><br>Continued on the following page. |

| Comment | Response |
|---|---|
| 96 continued | Capitalized interest is a financing term that is used to represent interest paid by bond proceeds during a period in which revenues are not available (or determined not appropriate) to pay debt service on the project—e.g., during the project construction period. In airport bond issues and financing analyses, capitalized interest is presented as a financing cost and not a capital cost. The financing plans and bond issuance documents for airport projects make a clear distinction between capital costs (i.e., project costs or construction costs) and financing costs. The interest on bonds issued to finance capital costs (including capitalized interest) is an important consideration in a financing plan, but is not a part of the capital cost.<br><br>In preparing the financial plan for OMP, and confirming financial feasibility, the City considered capitalized interest and other financing costs. The City's financial plan reported in the O'Hare Master Plan, and referenced in the DEIS, includes assumed capitalized interest for OMP. The City's recent bond issuances related to OMP capital costs included capitalized interest for future projects. The fact that this financing cost was not included as a capital cost (because it is not a capital cost) does not mean that either (a) it was ignored, or (b) it should be added to the estimated capital cost. It simply means that capitalized interest is a financing cost and not a capital cost. |
| 97 continued | Recognizing that capitalized interest has already been included in the financing plan, FAA has also reviewed the commenter's estimates of capitalized interest. That is, capitalized interest should not be added twice, but FAA has reviewed the commenter's estimates to assess the amount already included in the City's financing plan relative to the commenter's independent estimates. FAA's comments regarding the commenter's analysis of capitalized interest are provided in the responses to *CH Exhibits 300* and *301*, below.<br><br>Based on the FAA's experience with other airport improvement projects, we note that airport sponsors have a variety of funding mechanisms available to them and a variety of financing strategies used to reduce the borrowing costs of a capital program. In our judgment, the CH alternative financial plan is likely to significantly overstate the required capitalized interest costs. The FAA notes that:<br>1. CH has used an alternative capital cost estimate of $21 billion. FAA believes that the capital cost estimate of $14 billion presented in the EIS is a more reasonable estimate on which to base any estimates of financing costs such as capitalized interest. Please see response to comments 93-95 for FAA's determination on project cost. Because CH has used an artificially inflated capital cost estimate, their estimate of capitalized interest is similarly artificially high.<br>2. CH has assumed a relatively inefficient schedule of issuing bonds. The City has assumed that revenue bonds would be issued approximately annually during the period of OMP development, thus ensuring that funds are available when needed, but not borrowed excessively in advance of requirement. CH has assumed less frequent borrowing, meaning that interest would be paid for several years on funds that are borrowed far in advance of their need. FAA believes that the City's assumption of more frequent borrowing to match availability of funds with need for funds is a more reasonable assumption, and thus a more reasonable basis for estimating capitalized interest. The CH assumptions regarding the timing of bond issuance results in excessive capitalized interest relative to the requirements of the capital development program.<br>3. CH has included capitalized interest associated with PFC-backed bonds. PFC-backed bonds are not paid through airline rates and charges, and there is no need to capitalize interest during construction. The CH assumption that there would be capitalized interest on PFC bonds results in excessive borrowing costs and a less efficient financing plan.<br><br>Finally, the commenter asserts that capitalized interest arises because "FAA prohibits airports from including interest expense (during construction) in the rates and charges cost base until the capital project is open for use by the airlines". This is incorrect. The use (or not) of capitalized interest is a financing decision made by the parties to the financing. The commenter is likely referring to an FAA rates and charges policy that covers situations in which there is not an agreement in place between the airlines and the airport sponsor. This policy does not apply if there is a lease or other agreement in place. In addition, there are specific situations in which capitalized interest is not used, and is not required by FAA policy. One example is PFC debt—it is very typical that capitalized interest is not used for PFC debt, because PFC revenue is available to pay debt service during the construction period. Another example is when another source of funds is used to pay interest during construction, such as airport sponsor retained earnings or short-term borrowing. These sources have been used by airports to significantly reduce the need for issuance of bonds to fund capitalized interest.<br><br>Continued on the following page. |

| Comment | Response |
|---|---|
| 97 *continued* | *CH Exhibit 300*<br>*CH Exhibit 300* is referenced in the comment above. *CH Exhibit 300* presents an addition of capitalized interest to the OMP capital cost, which is inappropriate for the reasons presented above—capitalized interest has already been included as a financing cost in the City's financial plan. The specific estimate of capitalized interest offered by the commenter is addressed in the response to *CH Exhibit 301*, below.<br><br>*CH Exhibit 301*<br>*CH Exhibit 301* is referenced in the comment above. *CH Exhibit 301* provides estimates of capitalized interest that are then included in the commenter's restated capital costs presented in *CH Exhibit 300*. As explained above, capitalized interest has been considered as a financing cost, and is not a part of the project capital cost. Therefore, it is inappropriate to add this financing cost to the project cost estimate. This would represent a "double-counting" of capitalized interest that has already been included in the City's financial plan for capital development.<br><br>As noted above, the City's financial plan includes $1.6 billion of capitalized interest, which was determined by the City to be the appropriate amount relative to the timing and amounts of various bond issues required. The commenter has produced an estimate of $3.7 billion of capitalized interest in *CH Exhibit 301*. The commenter has provided references to *CH Exhibit 321* and *CH Exhibit 306/307* as the sources for this estimate. The continuation of this response is therefore provided in the response to *CH Exhibit 321* and *CH Exhibit 306/307*, below.<br><br>*CH Exhibit 321*<br><br>*CH Exhibit 321* is referenced as support for *CH Exhibit 301*, which presents the commenter's estimate of additional capitalized interest. FAA does not agree with the commenter's estimate of capitalized interest cost presented in *CH Exhibit 321*, for the following reasons:<br>The commenter has developed independent assumptions regarding the timing and amounts of individual bond issues to support the ORD capital program. FAA believes that the City's financial plan, which is based on a detailed analysis of the need for funds at specific points in the project development process, is appropriate.<br>The commenter has used an artificially inflated project cost that includes the commenter's independent estimate of additional contingency. As explained in the response to comment 95, the City's cost estimates and financial plan already includes a reasonable contingency. This inappropriate "additional contingency" results in an over-stating of required capitalized interest.<br><br>In conclusion, FAA does not agree with the commenter's independent estimate of capitalized interest costs. FAA has concluded that (1) the City's financial plan adequately accounts for capitalized interest where needed, and (2) there is no need to add any financing costs to the assessment of financial feasibility.<br><br>*CH Exhibit 306* and *307*<br><br>*CH Exhibit 306* and *307* are a series of spreadsheets with the commenter's independent estimates related to PFC revenues and PFC debt financing. The commenter includes calculations of capitalized interest on PFC bonds, as input to *CH Exhibit 301*, above. The City does not intend to finance capitalized interest on PFC bonds (and this plan is typical of the airport industry)—unlike airline revenue-supported bonds (i.e., GARBs), PFC bonds have a source of revenue (PFC revenue) to pay debt service during the construction period, and therefore do not require capitalized interest to avoid impacting airline rates and charges. Thus, whatever the details of the commenter's calculations, the concept of capitalized interest for PFC bonds is not relevant, and the estimates are therefore not relevant to *CH Exhibit 301*. |

### 3.2.3 Other Costs Excluded By The FAA Include The New Western Access System

One major and essential cost that was not considered by either the City or the FAA is the cost of the $3 billion western access roadway and other infrastructure promised by the City and viewed as an integral requirement of the program.[49] The FAA knows that a new Western Access System is an essential and integral part of the OMP and master plan, yet in disregard for the "whole truth" the FAA ignored this critical cost component, sweeping it under the rug just like the City did. 98

Another element not included in the FAA's cost estimate is the disruption and delay cost incurred by passengers and airlines during the extremely long construction period. 99 The FAA also failed to add the $5.7 million annual tax loss to local communities[50] to its total cost of $14.2 billion, even though it is required to recognize this cost. 100

### 3.3 There Is No Showing That The OMP Can Be Financed

The DEIS failed to analyze the availability of funds for the OMP, even for the FAA's highly understated costs. The FAA simply accepted the City's incomplete, yet overstated, sources of funding from its Master Plan. Instead of requiring Chicago to produce a more detailed financing plan, the FAA simply concluded that, ...**"While the exact mix of funding sources that would be used by the City at this stage of the project is not known, it is reasonable to assume that, based upon the impact O'Hare has on the NAS and the benefits to the regional economy, sufficient funds will exist."** (emphasis supplied)[51] Errors and omissions in the financing plan show that (1) the OMP would have to absorb an unrealistically large amount of the total available discretionary AIP funding, (2) PFC revenue will fall well short of the assumed PFC debt service, (3) total new debt requirements will be $5.7 billion more than the FAA estimated in the

[49] Hilkevitch, John, The Chicago Tribune, "O'Hare Plan Seeks U.S. Funds; $300 Million Eyed to Help Expansion", March 24, 2004.

[50] From page 5.4-32 of the DEIS.

[51] FAA, O'Hare Modernization Draft Environmental Impact Statement, p. ES-43, January 2005.

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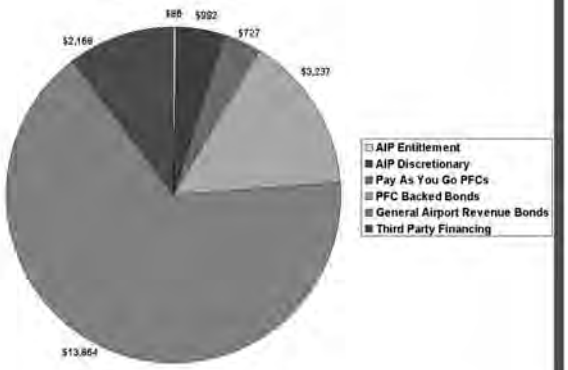
| Comment | Response |
|---|---|
| 98 | The western access to O'Hare, the Western O'Hare Bypass (WB) connecting I-294 south of O'Hare to I-90 northwest of the airport has been widely discussed in news media reports. This project, like the extension of the Elgin-O'Hare expressway (EOH), is outside the scope of this EIS, and the planning and construction of a western bypass would have to be pursued by agencies other than the City or FAA. The most likely entity to lead an initiative related to a western bypass would be the Illinois State Toll Highway Authority (ISTHA). The City of Chicago has agreed to provide a land corridor for the western bypass within the western border of O'Hare, as shown in the *February 2004 O'Hare International Airport Master Plan*.<br><br>Because neither the WB and EOH are not part of the proposed action, or any of the Build Alternatives considered in the EIS, the cost estimate does not include the costs related to the project. |
| 99 | This type of cost is not a capital cost that is relevant to discussion of project financing.<br><br>Disruption and delay costs, to the extent they occur, are impacts of any airport improvement project, and not a part of construction cost estimates. Similarly, the benefits of expansion (increased airline activity and regional business activity) are not considered as an "offset" or otherwise a part of the construction cost estimate. In fact, avoidance of delay cost is a key reason for why airlines support such improvement projects. Here this support is grounded in the comparison of average delays under the Alternatives C, D and G versus the "No Action" alternative. |
| 100 | Potential tax impact to local communities is important to consider, but is not part of the capital cost estimate of an airport project. Therefore, the $5.7 million tax impact (associated with Alternative C) was not included in the capital cost estimate for OMP. FAA did consider tax impacts as part of the EIS, along with other potential project impacts. These potential impacts are reported in **Chapter 5, Section 5.4** of the DEIS. |
| 101 | For the purposes of the EIS, the FAA relied on the financing plan presented in the City's Master Plan. The City's Master Plan identified a variety of funding mechanisms including: Airport Improvement Program grants (AIP), Passenger Facility Charges (PFC), General Airport Revenue Bonds (GARB), and third party financing. More specific comments related to the availability of funds are provided in the subsections of CH 3.3, and more specific responses are provided therein.<br><br>Continued on the following page. |

DEIS, and (4) the plan fails to account for the fact that many investors will not accept the risk in airport bonds where the total debt load is as great as it would be with the OMP, especially with United's future precariously in doubt. Chart 3-2 below shows the distribution of funding, adjusted for the Campbell-Hill's minimum cost estimate of $21.1 billion.

**Chart 3-2**
**OMP FINANCING PLAN AFTER CAMPBELL-HILL CAPITAL COST ADJUSTMENTS**
**(Millions of 2004 Dollars)**




Source: Exhibit 302.

101

### 3.3.1 AIP Funding Is Greatly Overstated

Using the FAA's total cost of $14.2 billion (2004 Dollars), the City's financing plan predicts that the OMP will require $812 million of the estimated $5 billion in total AIP discretionary funding over a ten-year period. Using the more realistic total OMP cost of $21.1 billion (2004 Dollars) would increase the AIP requirement to at least $992 million (Exhibit 304). The OMP would deprive all other U.S. airports of 20% of the available AIP funding over a ten-year period. It is highly likely that the other 3,343 U.S. airports competing for the limited AIP discretionary funding will protest vigorously such a large allocation to a single airport (Exhibit 304).

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| Comment | Response |
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| 101 continued | *CH Chart 3-2* references *CH Exhibit 302*, which presents the commenter's proposed alternative financing plan. The commenter's alternative financing plan is based on the commenter's assertion that the total capital cost should be $21.1 billion, instead of the $14.2 billion presented in the DEIS. The two main adjustments made by the commenter are: (1) contingency, and (2) capitalized interest. The response to the comments in *CH Section 3.2*, above, describe why these adjustments are not warranted. Thus, the FAA does not find the alternative financing plan presented in *CH Exhibit 302* to be persuasive—because the adjusted capital costs include inappropriate elements. |
| 102 | For purposes of evaluating the financial feasibility of this project under NEPA, the FAA believes that the level of estimated FAA funding is reasonable for a project of this magnitude and importance to the region and the nation. The City has submitted a request for FAA Letter of Intent grant funding for Phase 1 of the OMP, and this request includes the required demonstration of the project benefits in relation to costs. The City intends to follow this, at the appropriate time, with a request for FAA Letter of Intent grant funding for Phase 2 of the OMP. Until such requests are acted upon by FAA, the actual federal grant funding levels cannot be known with certainty. However, the City and the FAA believe that the assumptions regarding estimated federal funding are reasonable. These conclusions, made pursuant to the requirements of NEPA, do not constitute any formal agency determinations with respect to applications for federal funding.<br><br>The commenter indicates that the grant requirement would be higher than presented in the City's financing plan, due to an assumed increase in project cost. As explained in response to the comments in *CH Section 3.2*, the commenter's assumed increases in project costs are not warranted. Therefore, the commenter's assumed increase in required grant funding is also not warranted.<br><br>Continued on the following page. |

| Comment | Response |
|---|---|
| 102 *continued* | The commenter has asserted that the OMP would "deprive all other U.S. airports of 20% of the available AIP funding over a ten-year period". This comment is supported by a calculation presented in *CH Exhibit 304*. The calculation in *CH Exhibit 304* divides the assumed OMP federal grant funding by an estimated amount of nationwide AIP discretionary funds—a Campbell-Hill estimate of $500 million per year. In fact, the "available AIP funding" for airports nationwide over the 10-year period referred to in the comment will include both AIP entitlement funds and AIP discretionary funds. The commenter has greatly overstated the potential OMP percentage of "available AIP funding" by only including estimated AIP discretionary funds in the calculation and ignoring AIP entitlement funds. The amount of AIP funding for airports nationwide (e.g., $3.2 billion in 2005) will greatly exceed the $500 million per year presented by the commenter, because AIP funding will include both entitlement and discretionary funds. If the commenter had included an estimate of total AIP funding nationwide that includes both entitlement and discretionary funding, the calculated OMP percent of "available AIP funding over a ten-year period" would have been far less. Thus, the Agency declines to accept the conclusions of this comment due to the incorrect calculations and assumptions it contains.<br><br>*CH Exhibit 304*<br>*CH Exhibit 304* presented by the commenter offers a projection of assumed OMP FAA grant funds in relation to total FAA discretionary funding for U.S. airports.<br>While FAA cannot predict with certainty the annual level of discretionary funding that will be available during the period considered for the OMP financing plan, the Agency's 50-year experience with this annual funding program leads it to conclude that the commenter's analysis is invalid. The assumed FAA grant funding for OMP includes both entitlement and discretionary grants. The analysis presented in *CH Exhibit 304* divides this OMP grant funding (entitlements and discretionary) by an estimate of only total nationwide discretionary grants. The future total of nationwide FAA grant funding (entitlement and discretionary), while not possible to predict with certainty, will be far greater than the estimate of discretionary grants alone as presented by the commenter. Thus, the commenter's calculation is considered invalid. |

The Majority-in-Interest airline parties have only approved $2.3 billion of the costs of Phase I. And, this approval is conditioned upon the City receiving $300 million in AIP LOI funding (or another source of funding that has the same financial effect as a $300 million AIP grant), and it does not include approval for the costs of any terminal projects (e.g. the Western Terminal Airside Concourse included by the City as part of OMP Phase I). The airlines have not approved any part of the more costly Phase II of the OMP. Consequently, there can be no comfort or assurance at this time that the OMP has the financial support or backing from the O'Hare airlines.[52] 103

The City's Master Plan assumes that special facility financing may be utilized for certain OMP projects. Given United's previous default on $601 million[53] of O'Hare facility bonds, coupled with its precarious financial posture and uncertain future, it is unlikely that sufficient third party financing could be obtained for special facilities. 104

### 3.3.2 PFC Funding Is Short By $1.3 Billion

The financing plan anticipates that revenues from Passenger Facility Charges will be approximately $753 million less than the PFC backed debt service costs (Exhibit 305).[54] 105 Using a cost of $21.1 billion, instead of the FAA's understated $14.2 billion, and accounting for the reduction in ORD passenger demand due to the OMP costs, increases the PFC revenue shortfall to $1.3 billion (Exhibit 306). 106 This PFC shortfall will have to be assumed by the airlines and passengers that use O'Hare. Since the airlines do not pay for OMP costs during construction, O'Hare will have to borrow money to pay for the PFC shortfall. The interest on this borrowing would be an additional capitalized interest expense of the project (Exhibit 306). 107

[52] From Chicago O'Hare Airlines Top Committee, Certificate Numbers 1-4, http://egov.cityofchicago.org/city/webportal/portalDeptCategoryAction.do?BV_SessionID=@@@@1992721277.1111610834@@@@&BV_EngineID=ccedaddedmllmfkcefecelldfhdfln.0&deptCategoryOID=-536890294&contentType=COC_EDITORIAL&topChannelName=SubAgency&entityName=OHare+Modernization+Program&deptMainCategoryOID=-536887933, May 2003.

[53] The City of Chicago, Official Bond Statement of General Airport Third Lien Revenue Bonds, p.55, November 2003.

[54] This excludes the reduction in passengers that would result from the increased costs of the OMP.

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| Comment | Response |
|---|---|
| 103 | The commenter correctly notes that the majority-in-interest carriers have approved the initial investment phases for OMP. As is typical in projects of this scope, magnitude and duration, airport operators seek incremental approval from their majority-in-interest carriers as funding becomes necessary. Airlines have approved a substantial portion of Phase I of the OMP, in order to proceed with early planning, design, and land acquisition.<br><br>Continued on the following page. |
| 104 | Third-party financing involves a specific entity or a specific facility (such as an airline or a building) guaranteeing debt for a facility that is unique to its needs (such as a terminal building). The key questions for this type of financing are (1) the structure of the financing transaction, and (2) the value of the market that is being served. Each is discussed below.<br><br>Continued on the following page. |
| 105 | For purposes of responding to this comment as required by NEPA, the FAA notes that it is expected to review any PFC applications submitted by the sponsor and that this response to the PFC comment is not intended to indicate any pre-decisional assessment of such future applications.<br><br>Continued on the following page. |
| 106 | The FAA concludes that the commenter's projected estimated shortfall in PFC revenues is unlikely to occur for several reasons:<br><br>1. It builds on the estimated shortfall of $753 million presented in the comment above and in *CH Exhibit 305*. This shortfall does not exist, for the reasons discussed above.<br><br>Continued on the page U.4-569. |
| 107 | The City's financial plan includes consideration of capitalized interest during construction. The commenter has asserted that additional debt issuance would result in the need for additional capitalized interest. The responses provided previously demonstrate that the "asserted" need for additional debt issuance is not correct. Therefore, there would be no additional capitalized interest.<br><br>In addition, it is not typical to capitalize interest on bonds backed by PFC revenue. PFC revenue is available to pay interest on bonds during the construction period, in contrast to bonds backed by airline revenues. The commenter has apparently not considered this distinction between bonds supported by PFC revenues and bonds supported by airline revenues. |

| Comment | Response |
|---|---|
| 103 *continued* | What is significant is that the airline approvals to-date include approvals for planning and land acquisition associated with the full OMP (Phase I and Phase II)—that is, expenditures that would only make sense if the full OMP is completed. FAA believes that airline approvals of these "initial projects" is indicative of support for the full OMP, and that airline approvals of subsequent phases will be forthcoming. The initial majority-in-interest approval by the airlines acknowledged the need to provide subsequent approvals to accomplish the funding of the full OMP.<br><br>The largest airlines serving ORD have evidenced their support for OMP in public statements. For example, in a speech delivered in March 2002, the CEO of United Airlines stated "modernization of O'Hare also is an important part of United's financial recovery plan and critical to our long-term success". More recently, both United and American have formally expressed their support both in letters and at public hearings. |
| 104 *continued* | The structure of third-party financing transactions has become more important as there have been challenges to the validity of the debt security in certain recent instances. In some cases the security of the debt has been upheld, and in other cases the security of the debt has been compromised—in each case the specific structuring of the third party financing transaction has been key to the ultimate resolution. Thus, while this points out risk associated with third party financing, it also indicates that appropriate structuring of third party financing can be used to mitigate risk. In other words, recent issues associated with third party financing do not invalidate the concept, but provide "lessons learned" in appropriate structuring for the future use of third party financing.<br><br>Ultimately, even though third party financing is related to a specific corporate entity (such as an airline), the ultimate risk associated with such financing is largely related to the value of the specific aviation market. If properly structured, third party financing can withstand failure of the corporate party to the transaction, through legal alternatives such as transfer of facilities, shared use of facilities, or other "re-designation" of security for the debt. As a result, credit analysts and the financing market in general will place great emphasis on the "quality" of the local aviation market, in addition to the structuring of the deal, in evaluating future third party financing transactions. ORD serves one of the world's largest aviation markets, and is therefore among the best "credits" for third-party financing. |
| 105 *continued* | The estimated "shortfall" in PFC revenues is based on CH's alternative financing plan. The City's financing plan was developed based on detailed analysis of sources and uses of funds, and concludes that PFC revenues will be sufficient to pay the costs allocated to this source of funding. The commenter's attempted reconstruction of the City's financing plan is presented in *CH Exhibit 305*, and specific responses are provided in the responses to the information presented in *CH Exhibit 305*, below.<br><br>In summary, FAA believes that the City's financial plan for the sources and uses of PFC revenue is reasonable. While the commenter's alternative financial plan is interesting to review, it is not the financial plan that was developed for OMP.<br><br>*CH Exhibit 305*<br>*CH Exhibit 305* presents the commenter's analysis of forecast PFC revenues, PFC revenues required for existing PFC debt service, PFC revenues available for new PFC debt service, and a calculated "shortfall" of PFC revenue. *CH Exhibit 305* refers to information contained in *CH Exhibit 303* and *307*. Responses to these *CH Exhibits* are included in connection with this response to *CH Exhibit 305*. The alternative assumptions used in the commenter's analysis represent an alternative financing plan, but do not invalidate the financing plan used by the City. In fact, the commenter's independent assessment of PFC financing is, in FAA's opinion, not an efficient PFC financing plan. The commenter assumes only two PFC bond issuances (one in 2005 and one in 2008). For a capital program of this magnitude and duration, it is more likely, as assumed by the City, that there would be multiple financings over many years. The approach assumed by the City matches the bond financings more closely with the need for funds to pay project costs. The commenter's analysis assumes borrowing large sums well in advance of need, which results in excess interest costs. FAA agrees that a less efficient financing plan (as presented by the commenter) would result in increased financing cost. Therefore, the FAA considers the City's PFC financing plan to be a more reasonable approach.<br><br>*CH Exhibit 303*<br>*CH Exhibit 303* is referenced in support of *CH Exhibit 305,* above, and is a summary of the project cost estimates and funding sources presented in the DEIS, with certain additional assumptions made by the commenter. FAA agrees that this is an accurate representation of total project cost presented in the DEIS, which is the most material element of *CH Exhibit 303*. |

| Comment | Response |
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| 105 continued | *CH Exhibit 307*<br>*CH Exhibit 307* is referenced in support of *CH Exhibit 305*, above, and is the commenter's projection of PFC revenues from 2003 to 2018. Please see response to *CH Exhibit 305* above. |
| 106 continued | 2. It assumes the commenter's higher project cost estimate. As noted in the responses to *CH Section 3.2,* The Agency does not agree with the commenter's alternative project cost estimate.<br><br>3. It assumes a reduction in passenger demand on the basis of an assumption that the cost of implementing OMP would result in reduced airline service at O'Hare. FAA believes that the passenger forecast used for the EIS is appropriate. In addition, FAA does not agree with Campbell-Hill's concept of a "death spiral", which is discussed in more detail in the FAA's response to *CH Section 3.3.3*.<br><br>*CH Exhibit 306*<br>*CH Exhibit 306* is offered in support of the comment directly above. The detailed assumptions in *CH Exhibit 306* are invalid for the reasons provided in the response to comment on *CH Section 3.3.2,* above. |

One of the contributing factors in the large PFC shortfall is that the City assumed, without any justification, that the PFCs would increase from $4.50 to $6.00 dollars per passenger. The airlines would vehemently oppose such an increase because it would translate into increased fares and/or lower aggregate passenger traffic, thereby reducing their profits or increasing their losses. Another factor contributing to the large PFC shortfall is that through the year 2018, $801 million (2004 Dollars) in PFCs is already committed to fund other projects (Exhibit 307). The FAA never recognized the dramatic errors of double counting, assumption, and forecasting that run throughout the City's financing plan. 108 109

### 3.3.3 The OMP Would Drive O'Hare's Fixed Debt Level To $20 Billion

In the DEIS, the FAA claims that approximately $1.0 billion in general airport revenue bonds (GARBs) have been issued for the OMP.[55] While some of the OMP costs are covered by the approximately $1.0 billion in GARBs issued in 2003, most of the funds raised by these bonds will pay the debt service on GARBs issued for previous projects. In fact, the City claims that only $340 million, or 30%, of the bond proceeds will pay for OMP projects (Exhibit 308). This is only 2.4% of the OMP funds needed according to the DEIS, and only 1.6% of the funds needed using the more realistic OMP cost estimate of $21.1 billion (Exhibits 300 and 308). 110

The Official Bond Statements for the bonds issued in 2003 failed to disclose the full cost and financing of the OMP, but included benefits for the entire OMP. The Report of the Airport Consultant, provided in both Official Bond Statements, claims that the OMP will reduce delays by over 70 percent and will be able to handle demand through 2030.[56] These numbers clearly apply to the whole project, not just Phase I. The Report goes on to list the costs for the five-year CIP, the Phase I Airfield Projects, and the $69.7

[55] FAA, O'Hare Modernization Draft Environmental Impact Statement, p. ES-43 and 1-46, January 2005.

[56] This report was prepared by Ricondo & Associates, same firm that preformed the City's faulty delay analysis.

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| Comment | Response |
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| 108 | Maximum PFC levels are set by law; the current maximum is $4.50 per passenger per flight. The prospect of legislation increasing the PFC ceiling to $6.00 is uncertain. In any event, PFC applications are submitted to the FAA by airport sponsors for approval. Airlines are consulted during the PFC application process, and have the opportunity to offer comments and objections. Should the PFC ceiling be increased by $1.50 and if Chicago is able to obtain FAA approval for such charges, the FAA believes that the recent significant volatility in airfares due to increasing fuel costs is likely to largely mask any additional PFC increase.<br><br>Historically, the FAA is unaware of evidence to indicate that increases in the PFC level in the incremental amount identified by the commentator has had any material adverse impact on passenger demand at major air carrier airports. |
| 109 | The FAA has reviewed both the detailed cost estimate and the City's financing plan and finds them to be reasonable. **Section 1.7** of **Chapter 1** of the Final EIS includes a discussion of financial feasibility. |
| 110 | The Final EIS has been updated in response to this comment.<br><br>*CH Exhibit 300*<br><br>*CH Exhibit 300* is offered in support of the comment above. *CH Exhibit 300* presents an adjusted cost estimate offered by the commenter which is not considered valid for reasons discussed in the response to comments in *CH Section 3.2* above.<br><br>*CH Exhibit 308*<br><br>*CH Exhibit 308* presents the commenter's calculation of debt issued to finance the OMP. FAA does not agree with the commenter's alternative project cost estimate presented in *CH Exhibit 308*, and therefore does not agree with the commenter's conclusion. In any event, the data presented in *CH Exhibit 308* do not materially influence issues associated with the EIS. For a $14 billion capital development program, the total amount of funding required from various sources is important, and the City's financing plan presents these data. The specific details of individual bond financings that represent a very small percentage (1.6% or 2.4%) of overall project financing do not materially affect the overall conclusions regarding project financial feasibility. FAA does not believe that the information disclosed in *CH Exhibit 308* is either (1) completely correct or (2) materially relevant. |

million World Gateway Program formulation costs that have already been incurred. These costs total only $4.3 billion. The City's own cost estimate for the CIP, the WGP and the OMP converted to constant 2004 dollars totals $14.2 billion[57], which is over three times the cost disclosed in the Official Bond Statements. The Report continues to obfuscate by including projected future debt service for only a portion of the Phase 1 Airfield Projects, the CIP and the WGP. It used this partial debt service to calculate the cost per enplaned passenger. If the City had disclosed the total costs of its planned projects, it may have had greater difficulty raising the $1 billion in 2003 bonds.[58] 111

Currently, O'Hare has one of the highest debt loads among the largest U.S. airports. Within this airport group, O'Hare's total debt is the second highest and its interest expense per enplaned passenger of $5.30 is 45% above the average for the ten largest U.S. airports today (Exhibit 309). O'Hare's total cost per enplaned passenger (as charged to the airlines) was $8.96 in 2003 (Exhibit 310). It would increase to $27.29 with the OMP fully built and to $29.98 after the "death spiral" takes effect and a new passenger demand/supply equilibrium is established (Exhibit 310 and Section 3.4 below). 112 113

It should be noted that only 7 of the 60 airports served by Southwest Airlines had a cost per enplaned passenger in excess of $9 in 2003 (Exhibit 311). This is no coincidence. At the OMP inflated costs to the airlines, O'Hare may never attract any sizeable operation of a "low cost carrier." The OMP would clearly shut-out low cost competition of any significance. O'Hare has almost none today when the costs are only $9 per enplaned passenger. 114

O'Hare has existing GARB debt of $3.2 billion in principal, and the total debt service that it will have to pay is $5.7 billion over the next 30 years (Exhibit 312). If the OMP is built, O'Hare will increase its GARB debt by $13.9 billion (in 2004 dollars) using realistic costs instead of the FAA's understated cost of $8.7 billion in the DEIS (Exhibits 302 and 303). The Campbell-Hill analysis shows that O'Hare's total debt 115

[57] FAA, O'Hare Modernization Draft Environmental Impact Statement, p. ES-42, January 2005.

[58] The City of Chicago, Official Bond Statement of General Airport Third Lien Revenue Bonds, Appendix E, (August 2003).

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| Comment | Response |
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| 111 | Official statements for bonds disclose relevant details of the specific financing transaction. FAA has not relied on the referenced Official Statement(s) of bond offerings in preparing the EIS, and will not comment on the validity of such documents. In the EIS, FAA has disclosed the full cost and financing of the OMP. |
| 112 | ORD is one of the busiest airports in the U.S., in terms of activity levels, so it is not unusual that ORD would also have one of the highest debt loads among U.S. airports.<br><br>*CH Exhibit 309*<br>The commenter's *CH Exhibit 309* presents data on interest expense and enplanements at several large U.S. airports, in support of the comment on p.60, above. Because ORD is one of the busiest airports in the U.S. (either number 1 or number 2 in passengers and operations), FAA believes it is not inconsistent that ORD would also be among the "leaders" in terms of debt load. Therefore, FAA has not undertaken any work to validate or invalidate the data presented by the commenter. |
| 113 | FAA agrees that ORD's cost per enplanement will increase following the financing of OMP. FAA does not agree that this would result in a "death spiral" as suggested by the commenter, or that cost per enplanement would increase to the levels suggested by the commenter. The commenter notes that support for this comment is provided in *CH Section 3.4*, and this is the section in which this comment is responded to in more detail.<br><br>Continued on the following page. |
| 114 | FAA does not believe that the list of 60 airports provided represents a particularly meaningful comparison for evaluating the financial feasibility of the OMP. The FAA believes that other large hub and major-connecting passenger airports are more valid comparisons in discussing cost per enplaned passenger. |
| 115 | This comment is a statement of outstanding debt at O'Hare as of the end of 2003, referencing information presented in commenter's *CH Exhibit 312*. FAA has no reason to believe that this is not a reasonable representation of the general level of outstanding debt at O'Hare as of the end of 2003. Further, FAA believes that these data no not invalidate any of the conclusions reached in the EIS. |

| Comment | Response |
|---|---|
| 113 continued | *CH Exhibit 310*<br>*CH Exhibit 310* is offered in support of the comment 113, above, and compares cost per enplanement at ORD with other airports presented by the commenter. There is no discussion by the commenter of the basis for deeming the other airports comparable, except for the words in the title of *CH Exhibit 310*—"Other Competing Hubs". In *CH Exhibit 309*, ORD is compared with the 10 largest airports in the U.S.; in *CH Exhibit 310*, ORD is compared with a different group of airports. It is not clear why different groups of airports would be used in different *CH Exhibits* addressing the same general topic—financial feasibility of ORD capital development in relation to the U.S. airport industry.<br><br>FAA does not believe that the selection of airports presented by the commenter in *CH Exhibit 310* is an accurate representation of other competing hubs. For example, Phoenix is included, but none of the New York airports are included. As one of the country's largest connecting hubs and international gateways, ORD is much more competitive with the New York Airports (e.g., Kennedy and Newark) than with Phoenix. *CH Exhibit 310* has other suspect inclusions and omissions: (1) Miami is one of the nation's largest hubs and international gateways (with a major presence by one of ORD's main airlines, American), but has not been included, (2) Pittsburg is no longer a hub, but has been included as a "competing hub", (3) St. Louis is no longer a major hub but has been included as a "competing hub", (4) Midway and Milwaukee are airports that can potentially serve some of the regional demand served by ORD, but are not major hubs, and therefore are not "competing hubs", and (5) major hubs at SFO and IAD (which compete with ORD in terms of the hub strategy of United) are excluded. This arbitrary collection of airports does not appear to be truly comparable or "competing", and is thus not considered to be valid to support the point offered by the commenter. A valid comparison would need to either: (1) include all large hub airports or (2) better explain the selected list of airports.<br><br>Whatever the collection of airports included in *CH Exhibit 310*, the CH Exhibit is fundamentally flawed in its presentation. *CH Exhibit 310* presents an estimate of the future cost per enplanement at ORD, but does not present any data on future cost per enplanement at the purported comparison airports. A comparison of the future airline costs at ORD with the current such costs at other airports is simply not meaningful. The relevant financial feasibility question is not (1) "how does the projected 2018 cost per enplanement at ORD compare with the costs that were experienced at other airports in 2003?", but is instead (2) "how does the projected 2018 cost per enplanement at ORD compare with the projections for other large hub airport costs in 2018?"<br><br>Most large hub airports, "competing" or otherwise, have major capital development programs that will be financed and implemented in the future. This will result in increases in cost per enplanement at these other large hub airports, which has been presented in various documents such as master plans and bond financing official statements. *CH Exhibit 310* would be meaningful if (1) it included airports more directly relevant for comparison to ORD, with associated explanation of the rationale, and (2) it included comparable estimates of future cost per enplanement. *CH Exhibit 310* lacks this critical information, and is considered by FAA not relevant as a comment. Examples that might have been cited include:<br><br>1. Washington Dulles (United hub)—projected cost per enplanement of $21 in 2012 (per 2004 bond official statement)<br>2. Miami (American hub)—projected cost per enplanement of $33 in 2015 (per 2004 bond official statement). |

(GARB and PFC debt) after the OMP is built will be $20.0 billion (Exhibit 313). This will catapult O'Hare's debt to five times the next most indebted airport, which is SFO with $4.3 billion (Exhibit 313). O'Hare's proposed unprecedented debt levels would deter rational investors due to the default risk. This reluctance by investors will make the OMP unfinanceable at reasonable interest rates since 80% of the OMP would be funded using debt backed by extremely shaky airline revenues (Exhibit 303). As one looks forward from today, how secure is the airline revenue stream given the financial health of United Airlines and many other legacy carriers? The FAA completely avoided this essential risk assessment. In doing so, the FAA abdicated its public fiduciary responsibility. 116 117

### 3.4 Passenger Enplanements In 2013 Will Decline By 10% As A Result Of The OMP Capital Costs

Assuming that Chicago was able to obtain the funds required to build the OMP, the airline cost per enplaned passenger would increase from approximately $9 dollars in 2003 (Exhibit 310) to $30 in 2013 (Chart 3-3).[59] Of the $30 cost per enplanement, $20 dollars would derive from the OMP alone (Exhibit 314), and this **excludes** the higher O&M costs that would be required as a result of the OMP. In this regard, it is instructive to note that the average fare at O'Hare is $170 for local passengers and $232 for all passengers including connections (Exhibit 315).

[59] In 2004 dollars

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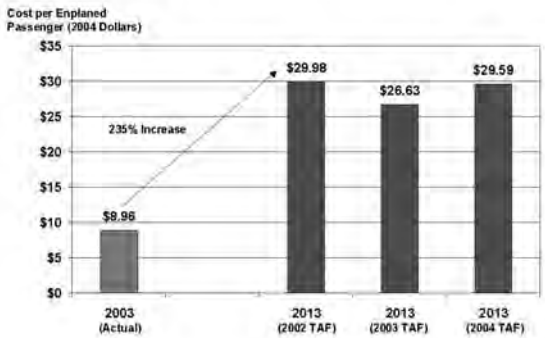
| Comment | Response |
|---|---|
| 116 | The comment refers to Campbell-Hill's independent estimate of capital costs, which is overstated, as discussed in earlier responses to comments. Because the commenter's capital costs are overstated, the commenter's estimate of total debt is also overstated. FAA believes that the City's financing plan appropriately identifies both the project cost and the associated debt.<br>Continued on the following page. |
| 117 | The commenter appears to use the data presented in *CH Exhibit 313* as evidence of "unprecedented debt levels" at ORD. As noted above, the data presented in *CH Exhibit 313* compare potential future debt levels at ORD with existing debt levels at a select group of airports. Rational investors are unlikely to use the same comparison. Rational investors are likely to be interested in future debt levels at ORD in relation to expected future debt levels at other comparable airports, not today's debt levels at other airports. Thus, FAA believes that the data offered by the commenter are not relevant to decisions that will be made by rational investors.<br><br>The commenter also asserts that OMP will be "unfinanceable at reasonable interest rates since 80% of the OMP would be funded using debt backed by extremely shaky airline revenues". The evidence for this comment is *CH Exhibit 303*. *CH Exhibit 303* presents the OMP financing plan, and does not demonstrate that OMP is backed by "extremely shaky airline revenues." FAA believes that the commenter means that a large portion of the financing plan for OMP is dependent on airlines continuing to serve ORD and contributing revenues that will be used to pay debt service. FAA believes that the size of the Chicago aviation market will result in airline service that will in turn produce activity levels sufficient to support debt required to finance OMP. The commenter has not provided persuasive documentation supporting an alternative conclusion.<br><br>Further, there is evidence in the U.S. airport industry that major capital projects are indeed "financeable" even when supported by airlines that may be considered "shaky". The commenter does not specifically name "shaky" airlines, but it is reasonable to interpret that with (1) the majority of the passengers at ORD carried by American and United and (2) the commenter asserting that airline revenue at ORD is "shaky", that the commenter believes that American and United are "shaky" airlines. Examples of recent airport bonds that have been "financeable" at reasonable interest rates for projects involving these airlines include:<br>MIA—Multiple bond issues for the capital development project at MIA. American is the largest airline serving MIA, and United is second.<br>IAD—Multiple bond issues for the capital program at IAD. United is the largest airline serving IAD.<br><br>Continued on the following page. |

| Comment | Response |
|---|---|
| 116 continued | *CH Exhibit 313*<br>*CH Exhibit 313* presents the commenter's analysis of future total debt at ORD compared with existing debt at a selected group of other airports. The data presented are both flawed and not directly relevant, for the reasons presented below.<br><br>First, the selected group of airports presented in *CH Exhibit 313* is again different from the group deemed "comparable" in immediately preceding *CH Exhibits* in this same section of comments (e.g., *CH Exhibit 310*, etc). There is no explanation of why this group of airports is relevant for *CH Exhibit 313*, but different groups are more relevant for the earlier *CH Exhibits*. For example, Honolulu is included in *CH Exhibit 313*, but this airport was not included as a "comparable" airport on *CH Exhibits 309, 310, or 311*. The commenter probably does not consider Honolulu a "competing hub", and recognizes that Honolulu is not one of the top 10 airports, which was why it was not included on earlier *CH Exhibits*--but for some reason the commenter has determined it appropriate for this airport to be included on *CH Exhibit 313* in a discussion of total airport debt. Without a more clear explanation for why some airports are relevant for certain financial comparisons and others are relevant for other financial comparisons, FAA cannot respond to the data presented in terms of "comparability" of results projected for ORD.<br><br>Second, the data do not support the assertion stated by the commenter in the title of CH Exhibit 313: "The Proposed Financing Plan Would Increase OMP Debt To 5 Times The Highest Debt Level For Any U.S. Airport". This assertion cannot be supported by the data presented by the commenter for two reasons:<br>*CH Exhibit 313* lists 20 airports, and in fact there are more than 20 airports in the U.S. Thus, it is not possible to conclude that the assertion regarding "any U.S. Airport" is correct.<br><br>*CH Exhibit 313* compares estimated future debt levels at ORD with existing debt levels at 19 other airports. Thus, it is not possible to conclude how future ORD debt levels (using any estimate) would compare to future debt levels at other airports—the future data for the other airports are not presented. If the intent was to compare the future debt level at ORD with the current debt level at other airports, the data are meaningless. Representing that this type of comparison is relevant requires assuming that either (i) no other "top 20" airport in the United States other than ORD will issue debt between now and 2018, or (ii) the financing community will for some reason want to consider future debt to be issued at ORD but ignore future debt to be issued at other airports.<br><br>In conclusion, FAA believes that other large hub airports that could be considered comparable to ORD will issue debt during the next 10-15 years to finance capital improvements. FAA does not have specific projections of the debt levels of all comparable airports, but is confident that the future debt levels of large hub airports will be greater than those presented in *CH Exhibit 313* (i.e., current debt), and therefore more comparable to the debt levels that will be experienced at ORD in future years. In summary, the data clearly do not support the *CH Exhibit* "headline", and also do not present information with which to draw any meaningful conclusions. |
| 117 continued | Finally, FAA does not believe that the amount of debt outstanding at an airport is the critical measure of financial feasibility. While outstanding debt is an important element of an airport's cost structure, it does not exclusively determine the costs that must be borne by users, and therefore does not exclusively determine the cost-competitiveness of an airport. An airport with significant outstanding debt could have very high concession revenues and thereby offer competitive airline rates and charges. *CH Exhibit 313* does not offer any data that would permit a direct connection between outstanding debt level and airline user charges. Thus, even in its flawed form, *CH Exhibit 313* only permits a comparison of debt levels—not any further conclusions regarding financial feasibility. As noted above, in the response to *CH Exhibit 310*, there are other comparable large hub airports which are projected to have cost per enplanement at or above the levels projected for ORD.<br><br>*CH Exhibit 303*<br>*CH Exhibit 303* is presented as support of the commenter's assertion that "80% of the OMP would be funded using debt backed by extremely shaky airline revenues". Whether this assertion is correct or not, the more important issue is whether the resulting impact on airline user charges is reasonable (see response to *CH Exhibit 310* in response to comment 113). |

**Chart 3-3**
**IF THE OMP IS BUILT O'HARE'S COST PER ENPLANEMENT WILL INCREASE BY 235% AFTER THE LOSS OF TRAFFIC**
**(Excluding Higher O&M Costs Related to the OMP)**




Sources: Exhibits 310 and 316

118

A $20 increase to the passenger is highly significant. This increase of 235% is caused by two factors. The first is the increased costs of the OMP. The second is a "death spiral" effect caused by the high cost per enplanement due to the OMP. This occurs because the airlines operating at O'Hare must increase fares to recover the increase in airport costs per enplanement. Due to the fact that demand for air travel is elastic with respect to price, the OMP costs will decrease by at least 4.5 million the number of passengers that would use O'Hare. In response, the airlines will reduce service. This, in turn, will increase the cost per enplanement further. The cycle continues until a new equilibrium is established.[60] The $30 cost per enplanement would be even higher in the likely event that some airlines discontinue service at O'Hare and the

[60] For illustrative analysis it is assumed that the death spiral effect would reach a new equilibrium after two rounds of demand (passenger volume)/unit price adjustment. In reality it could reduce passengers even further. It is important to note that connecting passengers are likely overstated in the Campbell-Hill death spiral analysis because it does not allow explicitly for the fact that more connecting passengers would avoid O'Hare and simply connect at other mid-continent hubs where they will have relatively cheaper alternatives (origin to destination air fares).

62

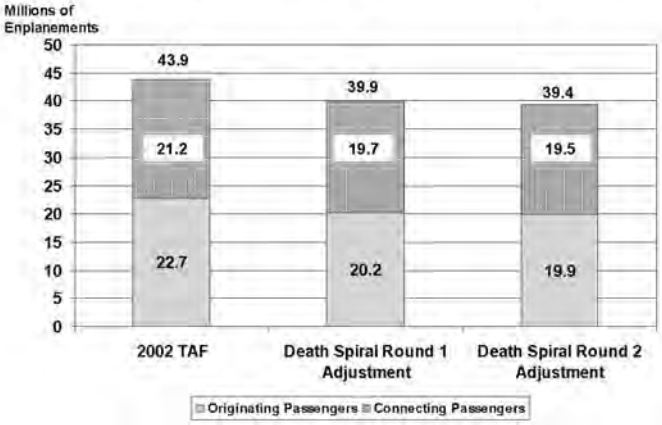
| Comment | Response |
|---|---|
| 118 | FAA does not agree with the commenter's analysis that cost per enplanement would increase to $30 in 2013. This assertion is based on assumptions the FAA does not accept regarding OMP financing (e.g., "double-counting" of capitalized interest). FAA believes that the cost per enplanement projections presented in the City's more detailed financial analysis are more accurate.<br><br>*CH Chart 3-3*<br>CH Chart 3-3 presents an alternative financial forecast developed by the commenter. This alternative forecast is not considered valid for the following reasons:<br>The financial plan presented in the ORD Master Plan indicates that airline cost per enplanement will be closer to about $25 in 2018 (between the figures presented of $20 in 2012 and $27 in 2022).<br>The commenter's alternative projection of cost per enplanement is based on the commenter's alternative financial plan, which FAA does not agree with as described in detail in earlier responses to comments.<br><br>*CH Exhibit 314*<br>*CH Exhibit 314* presents data that is meant to demonstrate the amount of future cost per enplanement at ORD that is attributable to OMP. The commenter's projection of increase in cost per enplanement is based on the commenter's independent estimates of project cost and financing, which have been previously shown to be not valid. Thus, FAA believes that the commenter's assertions regarding cost per enplanement are not valid and that the City's projections are reasonable.<br><br>*CH Exhibit 315*<br>*CH Exhibit 315* is a presentation of data on average one-way fares at ORD. FAA has not independently verified the data in *CH Exhibit 315*. In any event, the information contained in this *CH Exhibit* is not independently probative of any particular point, and therefore requires no specific response. |
| 119 | The commenter has provided a set of assumptions regarding the response of airlines to investment in ORD modernization, without any substantial justification for the assumptions. FAA agrees that the costs of ORD modernization will result in increased airport charges for airlines. FAA does not agree that this will result in a requirement for airlines to increase fares (and reduce service).<br><br>Continued on the following page. |

fixed costs are spread over fewer and fewer passengers causing more and more travelers to avoid O'Hare (the price elasticity effect) (Exhibits 316, 317, 318 and 319).

Exhibit 317 computes the impacts of the first two rounds of the death spiral effect. As stated above, the market may, or may not, reach equilibrium after two rounds of adjustment to the spiraling cost per passenger. The spiral is created by the fact that the enormous OMP fixed costs will be shared by fewer and fewer passengers spread over fewer and fewer flights. Chart 3-4 graphically illustrates the OMP's effects on O'Hare after two rounds of the "death spiral."

**Chart 3-4**
**THE OMP COSTS WILL DECREASE TOTAL FORECAST O'HARE ENPLANEMENTS BY 4.5 MILLION (10%) IN 2013 AS FARES INCREASE BY 7.2% TO 11.6%**

| | | | |
|---|---|---|---|
| Originating Fare | $170.38 | $187.96 | $190.13 |
| Connecting Fare | $275.87 | $293.45 | $295.62 |




Sources: Exhibits 318 and 319

63

| Comment | Response |
|---|---|
| 119 | The commenter has not recognized the benefits of ORD modernization—reduction in delays, associated reduction in delay costs for airlines, and ability to accommodate increased revenue traffic. A reason that airlines (generally, and specifically in the case of ORD) will support capital investments that can increase capacity and reduce delays, is the opportunity to realize a "net gain". Such carriers could realize a net benefit from the combination of accommodating increased revenue traffic and reducing delay costs that more than offsets the costs associated with the capital investment.<br><br>The analyses conducted for the ORD EIS and supporting planning demonstrate that airlines will substantially benefit from investment in increased capacity at ORD. Thus, it is not surprising that the major airlines at ORD support the OMP. In conclusion, FAA therefore does not agree with the commenter's suggestion that ORD modernization would result in a reduction in air service by the very airlines that support the program.<br><br>*CH Exhibit 316*<br>*CH Exhibit 316* is based on the compounding of assumptions contained in earlier *CH Exhibits* that the FAA does not agree with.<br><br>*CH Exhibit 317*<br>*CH Exhibit 317* presents the commenter's assumptions regarding the decrease in airline traffic that would occur with the development of OMP. FAA disagrees with these assumptions. The primary basis for the reduced activity presented in *CH Exhibit 317* is the "Death Spiral" analysis presented in commenter's *CH Exhibit 318*, which is addressed below.<br><br>*CH Exhibit 318*<br>*CH Exhibit 318* presents the commenter's analysis of the basis for a reduction in airline activity at ORD in the event that additional capacity is provided at ORD. FAA believes that the analysis presented in *CH Exhibit 318* is unpersuasive for several reasons, discussed below.<br><br>The increase in cost per enplanement is overstated. This is based on the commenter's financial analysis, which is not considered valid by FAA.<br><br>Continued on the following page. |

It is most extraordinary to find that the FAA relied upon its own TAF forecasts (outdated) yet it made no effort to adjust demand and operations as a result of the massive OMP costs. This is a significant failing of the DEIS. 119

| Comment | Response |
|---|---|
| 119 | The commenter suggests that the airlines' average fare would be required to increase by the amount of the increase in average cost per enplanement at ORD. The assumption that there would be required fare increases is rejected by the FAA as being unsupported by industry practice and by the FAA's historic observations of the deregulated airline industry. FAA believes that airlines set fares in relation to market conditions. Some of the most dramatic changes in average airfares at individual airports in recent years have occurred as a result of entry and/or exit of airlines and associated changes in competitive conditions rather than as a result of changes in airline user charges at airports. There is no industry evidence or consensus that airlines set fares directly in relation to airport costs. Indeed, over the last 15 years airport costs paid by airlines have represented between only 5% and 7% of total airline operating expenses.<br><br>Also, the concept of "required" fare increase ignores the benefits of ORD modernization. While certainly airlines consider the user charges they pay at airports, their complete evaluation of the economics of a particular airport include many other factors, such as operating costs they incur themselves due to delays, revenue they generate by accommodating growth in air traffic, etc.<br><br>In summary, FAA believes that airlines will set fares based upon prevailing market conditions, and that the traffic forecasts used for the EIS are reasonable.<br><br>*CH Exhibit 319*<br><br>*CH Exhibit 319* presents additional commenter analysis on the potential impact of airport costs on airline activity—referred to by the commenter as "Death Spiral Round 2". The methodology and conclusions presented in *CH Exhibit 319* are flawed in the same manner as the data in *CH Exhibit 318* ("Death Spiral Round 1"), as explained in the response to comment directly above: (1) the commenter's assumptions regarding cost per enplanement at ORD are invalid, because the commenter's proposed alternative financing assumptions are not correct; (2) FAA does not agree that airlines set fares in direct relation to airport cost per enplanements; and (3) the commenter ignores the savings in delay cost and other benefits that would affect airline decision-making.<br><br>Continued on the following page. |

| Comment | Response |
|---|---|
| 119 continued | Despite the fact that the FAA finds this scenario to be highly speculative and unlikely, it is important to recognize what the commenter omitted: the potential for lower airline traffic at O'Hare has been addressed and considered by the Agency in **Appendix R** of the EIS. **Appendix R** presents a range of potential alternate traffic levels, (high range: 56.9 million enplanements in 2018, low range: 44.7 million enplanements in 2018). *CH Exhibit 319* predicts, after the completion of CH "death spiral round 2", three alternate enplanement outcomes for 2018: 45.8 million (using the 2002 TAF as the reference forecast), 51.5 million (using the 2003 TAF as the reference forecast), and 46.0 million (using the 2004 TAF as the reference forecast).<br><br>It is also significant to note that throughout this commenter's document the FAA has been criticized for reliance upon the 2002 TAF instead of the data for the subsequent year which was issued after the EIS technical analysis began. We have responded elsewhere to that criticism. Here, CH's use of the 2003 TAF as the reference forecast for its prediction of dire consequences—a "death spiral" reduction in aviation demand—actually produces a predicted traffic level in 2018 (51.5 million enplanements) that is 2% higher than the FAA's baseline unconstrained forecast for 2018 (50.4 million enplanements). Consequently, the FAA does not find the commenter's projection of future consequences to be credible.<br><br>*CH Exhibit 320*<br>*CH Exhibit 320* is referenced in support of *CH Exhibit 300. CH Exhibit 320* presents the commenter's alternative capital cost estimate, which includes additional contingency. As explained in the response to comment 95 on page U.4-560, FAA has determined that the contingency included in the City's cost estimate is reasonable, and there is no basis for adding the amount suggested by the commenter.<br><br>*CH Exhibit 322*<br>*CH Exhibit 322* is referenced in support of *CH Exhibits 302 and 321. CH Exhibit 322* presents the commenter's analysis of ORD capital costs with an additional contingency added by the commenter.<br><br>*CH Exhibit 323*<br>*CH Exhibit 323* does not appear to be referenced in the comment document. *CH Exhibit 323* presents a summary of existing ORD debt to be repaid through 2013. FAA does not believe that the data in this *CH Exhibit 323* are material to the EIS, but has reviewed the material in concert with responding to the comments presented in the text of the CH comments.<br><br>*CH Exhibit 324*<br>*CH Exhibit 324* is referenced in support of *CH Exhibit 314 and 318. CH Exhibit 324* presents the commenter's analysis of incremental cost per enplanement at ORD. As noted in the responses to other comments in *CH-Section 3.0*, the commenter has adopted invalid assumptions regarding the cost of the ORD development program, and therefore the commenter's assumed alternative cost per enplanement figures are also invalid.<br><br>*CH Exhibit 325*<br>*CH Exhibit 325* is referenced in support of *CH Exhibits 310, 316, 324, and CH Chart 1-4. CH Exhibit 325* presents the commenter's analysis of incremental cost per enplanement at ORD. As noted in the responses to other comments in *CH-Section 3.0*, the commenter has adopted invalid assumptions regarding the cost of the ORD development program, and therefore the commenter's assumed alternative cost per enplanement figures are also invalid.<br><br>Continued on the following page. |

| Comment | Response |
|---|---|
| 119 *continued* | *CH Exhibit 326*<br>*CH Exhibit 326* is referenced in support of *CH Exhibits 306, 320, and 322*. *CH Exhibit 326* presents the commenter's summary of OMP capital costs. FAA agrees that the total capital cost presented in *CH Exhibit 326* ($14.2 billion) is consistent with the estimate presented in the DEIS. FAA has not audited the line-item detail contained in *CH Exhibit 326*.<br><br>*CH Exhibit 327*<br>*CH Exhibit 327* does not appear to be referenced in the comment document. *CH Exhibit 327* presents the commenter's analysis of O&M per enplanement at ORD. The commenter has not indicated the relevance of the data in *CH Exhibit 327*, nonetheless the FAA has reviewed the material contained in the exhibit in responding to the comments contained in the main text.<br><br>*CH Exhibit 328*<br>*CH Exhibit 328* does not appear to be referenced in the comment document. *CH Exhibit 328* presents a summary of existing GARB debt service at ORD. The commenter has not indicated the relevance of the data in *CH Exhibit 328,* nonetheless the FAA has reviewed the material contained in the exhibit in responding to the comments contained in the main text.<br><br>*CH Exhibit 329*<br>*CH Exhibit 329* does not appear to be referenced in the comment document. *CH Exhibit 329* presents the commenter's alternative analysis of debt service payments at ORD. The commenter has not indicated the relevance of the data in *CH Exhibit 329*, nonetheless the FAA has reviewed the material contained in the exhibit in responding to the comments contained in the main text.<br><br>*CH Exhibit 330*<br>*CH Exhibit 330* is referenced in support of *CH Exhibit 329. CH Exhibit 330* presents the commenter's alternative analysis of debt issued to finance OMP. The commenter has not indicated the relevance of the data in *CH Exhibit 330*, nonetheless the FAA has reviewed the material contained in the exhibit in responding to the comments contained in the main text. |

## 4.0 ALTERNATIVES TO THE OMP

### 4.1 Introduction

As part of the EIS process the FAA is required to examine and consider reasonable alternatives to the City's proposed action. In fact, . . ."the FAA recognizes that the portion of the EIS dealing with alternatives is 'the heart of the environmental impact statement' (Council on Environmental Quality (CEQ) Regulations)."[61] The DEIS report lists many types of alternatives allegedly considered by the FAA.[62] In this section, Campbell-Hill will deal with three groups of alternatives, in addition to the "No Action" option. The three alternative solutions are:

- Greater use of regional airports,
- Greater use of other mid-continent airports, and
- Congestion management (administrative and market-based).

In all cases the FAA made no effort to analyze the efficacy and reasonableness of any of these options. It simply assumed them away as valid options, using opinionated logic that has little or no foundation in fact or aviation experience.

The truth is that other airports can provide a superior economic solution without distorting free market principles. Congestion management is also a satisfactory solution, and it is being applied now. Congestion management simply recognizes the fact that the public is not responsible for building unlimited numbers and configurations of runways at any and all airports in the U.S., just so the airlines can operate any mix of small/medium/large aircraft that they chose and are free to change their minds about that mix whenever they wish.

A blended solution is required that recognizes that (1) there are economic and environmental limits to unbridled airline scheduling practices at any particular airport, (2) the FAA and local communities have already invested in highly underutilized capacity at

[61] From FAA, O'Hare Modernization Draft Environmental Impact Statement, page ES-9, January 2005.

[62] Ibid., page ES-9.

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| Comment | Response |
|---|---|
| 120 | These are summary comments that are addressed more specifically below. Before turning to specific responses, the FAA believes it would be helpful to describe briefly the types of non-construction alternatives to the City's proposed OMP that the Agency did examine in **Chapter 3** of the EIS. It is also important to note, that one of the commenter's suggestions in *CH Section 4.0* assumes the willingness of airlines and/or the ability of the FAA to "move" all of O'Hare's future growth and 25% of current activity to other airports. This is the equivalent of about 26.6 million enplanements or a level of traffic that is analogous to more than three times the enplanements served by MDW in calendar year 2003.<br><br>Since one of the stated "purposes and needs" is to address the projected needs of the Chicago region, the FAA certainly examined the potential for future growth in air traffic at other airports in the region. At the same time, the FAA recognizes that in the Chicago region O'Hare currently serves as the primary airport because of its origin-destination passenger base, connecting passenger hubs, and international gateway services. In addition, the state of Illinois has declared that modernizing O'Hare is a priority. Our conclusions, spelled out in greater detail in responses below and in the EIS text, show that the projected needs of the Chicago region cannot be met without improvements at O'Hare. Also, as discussed in the EIS, the FAA continues to respond to sponsor requests and support the development of other airports in the region, including GYY, RFD, MKE, MDW, as well as the proposed SSA.<br><br>In **Chapter 3** of the EIS, the FAA has acknowledged that other mid-continent hub airports could potentially be used to accommodate connecting passengers forecast for O'Hare. FAA believes it is not reasonable to expect (1) one or both hubbing carriers to voluntarily shift enough connecting traffic to avoid the need for improvements at O'Hare, or (2) that the FAA would obtain statutory authorization to mandate such a shift. Similar legislative authority would be necessary to undo the current deregulated airline environment and authorize the FAA to exercise direct control over the aircraft fleet mix or routes serving O'Hare.<br><br>Finally, congestion management was also considered as an alternative, by itself, and as part of a blended alternative. In **Chapter 3** of the EIS, the FAA analyzed the potential benefits of various congestion management strategies, including both administrative and market-based approaches. The conclusion of this analysis was that congestion management alone would not meet the purpose and need identified in the EIS.<br><br>Continued on the following page. |

other regional airports and mid-continent hubs which are acceptable options to a very large segment of O'Hare's future passengers, and (3) simple and proven administrative procedures can produce the desired result without distorting the marketplace and without undue economic hardship to the airlines and their customers. 120

**4.2 The FAA Dismissed Other Regional Airports Without Evidence Or Analysis**

The DEIS includes Rockford, Milwaukee, Midway, Gary, and South Suburban in its definition of other "Chicago region" air carrier airports. Greater use of these . . . "regional airports could potentially relieve demand at O'Hare and reduce the urgency or need for certain airport improvements."[63] 121

Given Southwest Airlines' continued expansion of its high volume operations at Midway Airport, Midway is not a realistic option for absorbing a significant amount of the Chicago regional traffic growth. Nevertheless, Midway Airport provides a clear demonstration of the fact that other regional airports can develop large volumes of passengers and serve the connecting markets as well. This truth is contrary to the FAA's erroneous and unfounded assertions that (1) no regional airport could satisfy more than a small amount of local passengers, and (2) it is unlikely that any other regional airport could become a significant hub during the forecast period.[64]

At the time that Midway Airlines[65] began scheduled service at Midway Airport on November 1, 1979 there were only two round trips per day at Midway, operated by Delta between Midway and St. Louis. Midway Airlines' entire strategic plan was to be a hub and spoke airline centered at Midway Airport. Over the years it grew its route structure by adding spokes to the east, to the west, and to the south with schedules designed to optimize connections and maximize the flow of passengers over Midway Airport.

[63] FAA, O'Hare Modernization Draft Environmental Impact Statement, page 3-19, January 2005.

[64] FAA, Ibid., pages 3-19 to 3-20.

[65] The first Midway Airlines.

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| Comment | Response |
|---|---|
| 120 continued | Moreover, congestion management was also included as one of several techniques in the Blended Alternative which was considered by the FAA as one of the alternatives that had the potential to substantially meet the purpose and need. The Blended Alternative, however, did not pass the secondary screening criteria, see **Chapter 3, Section 3.3.2.6.** |
| 121 | The commenter notes that the EIS examined the use of other regional airports as an alternative to the City's proposed OMP. However, the use of other airports was eliminated in the initial screening of alternatives, see **Chapter 3, Section 3.2.2.2.** |
| 122 | FAA agrees with the commenter that there will be limited opportunity for Midway to accommodate regional growth in the future. Midway has served an important role in accommodating regional origin-destination traffic, but does not have the capacity to accommodate significant future growth in demand in the Chicago region.<br><br>The commenter has offered a history of the success of Midway in attracting air service. The FAA agrees that Midway has been successful, in part, because such growth was based on strong local demand for origin-destination traffic. Moreover, as reflected in the EIS, there is virtually no unused capacity remaining at Midway. Other airports in the Chicago region are not as well-positioned as Midway was, and is, to attract such a large share of the local market in the Chicago region.<br><br>Further, satisfying purpose and need and forecast demand extends beyond just domestic origin-destination traffic, and includes accommodating the connecting hub and international gateway role of ORD. As a practical matter, the FAA believes air carriers would not transition from a situation in which one of the nation's largest connecting hubs and international gateways is based at a single airport to a situation in which these highly interconnected operations are spread over multiple airports.<br><br>Continued on the following page. |

In the mid-1980's Southwest Airlines entered Midway and expanded the airport's operations rapidly. With its recent (2005) purchase of six additional gates from ATA, Southwest now has 25 gates at Midway and its scheduled operations will soon reach a level of 200 daily departures. Southwest serves O&D markets in all directions to/from Midway, except for Canada and Mexico.

For the year ended June 30, 2004, Midway Airport (with only two air carrier runways) recorded 6.3 million outbound local O&D passengers which was 46% as much as O'Hare. Another 2.0 million Midway enplanements were connecting passengers (Exhibit 400). Clearly Midway Airport's air carrier traffic has grown from nothing, at the height of recession and extremely high fuel costs and interest rates in late 1979, to a fully developed air carrier airport serving a very large segment of Chicago's local O&D market, as well as a significant volume of connecting passengers. 122

Furthermore, Midway Airport will soon be at capacity and unable to handle more Chicago "regional" growth. The 2002 TAF shows a forecast increase in "unconstrained" demand at Midway from 303,837 operations in 2002 to 370,061 in 2009, 404,504 operations in 2013 and 453,025 in 2018.[66] Yet Midway is limited by its annual service volume capacity (ASV) of 350,000.[67] Where is the excess (spill) going to be accommodated? Does the FAA assume congestion management at Midway? Does it assume that Southwest Airlines and others will substitute larger planes to stay within the 350,000 operations cap? The FAA is silent, partly because its TAAM model application cannot handle "regional" demand and alternative airport assignment since it deals with just one airport in the system; and partly because if the FAA addresses the problem of how to handle the overflow growth from Midway it would completely undermine every rationale that is trumped-up to favor OMP. It would be a clear admission that OMP will not solve delays at ORD because demand would be even greater than the 2003 TAF shows. It would be an admission that other airports in the region can serve as relievers.

[66] FAA, O'Hare Modernization Draft Environmental Impact Statement, p. 1-32, January 2005.

[67] FAA, O'Hare Modernization Draft Environmental Impact Statement, p. C-6, January 2005.

67

| Comment | Response |
|---|---|
| 122 continued | *CH Exhibit 400*<br>*CH Exhibit 400* is used in support of the comment noted above. *CH Exhibit 400* contains data on annual enplaned passengers (originating and connecting) at selected large U.S. airports. FAA has not audited the data in *CH Exhibit 400*, but has no reason to believe the data are inaccurate. The data in *CH Exhibit 400* are offered to support the statement that "2.0 million Midway enplanements were connecting passengers". This may be true, but FAA does not believe that this is substantially related to any conclusion regarding the ability of other airports to satisfy the purpose and need for the proposed action. |
| 123 | In connection with the purpose and need for the ORD project, FAA has considered the availability of capacity at Midway to serve demand that would otherwise use ORD. FAA has concluded, consistent with the commenter's remarks, that Midway will "soon be at capacity", and therefore not able to accommodate long-range demand that has been forecast for ORD. |

And, it would be an admission that congestion management in a large aviation complex like Chicago is essential for balanced and efficient growth over the long term. 123

Neither the City nor the FAA has addressed regional traffic distribution with the correct model(s). TAAM and SIMMOD deal only with one airport. They do not incorporate a system of local/regional airports "competing" with each other for passenger patronage. These models do not address the problems of passenger choice behavior and airline schedule determination across several airports at once (simultaneous solution). Consequently, the FAA's DEIS is based upon static modeling that is incapable of evaluating passenger and flight schedule distributions among competing airports for a sensible range of airport capacity and congestion management options.[68]

Milwaukee is well positioned to penetrate further the greater Chicagoland market, especially to the north of the City. Gary could penetrate the downtown and southeastern markets. Rockford could attract some of the western Chicago market, and South Suburban can penetrate all of Chicago assuming rapid access is available, except possibly the north and northwest segments.

Had the FAA modeled passenger choice behavior, as opposed to relying upon a static single-airport time series approach, it would have realized that 5, 10, or even 15 minutes of average delay is relatively insignificant in the passenger's choice of airports. Previous studies have concluded that passengers make airport choices based primarily on price[69] and total trip time (including waiting time between departures – i.e., the effect of comparative frequency). Total trip time for any given local passenger includes access

[68] When the FAA conducted its analysis of alternatives for updating the operating rules (including numerical slot limits, curfew hours, perimeter rules, and allowable aircraft sizes) at Reagan Washington National in the late 1970's and early 1980's it employed the Multiple Airport Demand Allocation Model (MADAM). This model provided the FAA with simultaneous outputs for each of DCA, IAD and BWI in each run. This not only permitted the FAA to assess the impact of its policy options on the passenger volumes and flight schedules at DCA, but at IAD and BWI as well. See, for example, Federal Aviation Administration, Office of Aviation Policy, Description of the Multiple Airport Demand Allocation Model, September 1977. (Report No. FAA-AVP-77-39).

[69] Frequent flyer program loyalty is an element of "price".

68

| Comment | Response |
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| 123 | Please see the response to this comment on the previous page. |
| 124 | As shown in **Chapter 3,** the FAA did evaluate the use of other airports in the EIS, and this alternative did not meet the purpose and need. The FAA justification is presented within the EIS and the Agency has not been presented with a persuasive reason to alter that rationale. |

time, airport facilitation time,[70] schedule waiting time, schedule block time to destination, and expected delay time. Thus, delay time is relatively inconsequential in airport choice behavior and as an element in total travel demand estimation. 124

In the City's updated Request for a Letter of Intent[71], it admits that the OMP will add 6.5 minutes of taxi time to the average passenger trip and airline block time. Nowhere in the FAA or City delay analysis designed to promote OMP Alternative C is this element introduced to offset the apparent delay savings from the OMP Full Build-out. The added taxi time and greater access and terminal facilitation times could well obliterate delay savings. Campbell-Hill will address this issue in greater detail in it comments on the City's February 2005 BCA report. 125

At Pages 3-19 and 3-20 of the DEIS report the FAA appears concerned that the diversion of traffic growth to other regional airports could diminish O'Hare's ability to function as a hub. This is false. O'Hare operates as a hub today for two large legacy carriers. If all the future growth in both local and connecting traffic went to other airports, and even if it took 25% of the current volumes with it, O'Hare would still be of sufficient size to retain the same breadth and diversity of service it currently enjoys. In fact, if only the local traffic grew and all growth in connections went elsewhere, the airlines would still schedule O'Hare as they do today, while adding frequencies or upgauging to accommodate local O&D growth.[72] As shown in Exhibit 401, if the forecast (2002 TAF) 2018 connecting passengers equaled the 2002 actual number of 15.8 million, total enplanements in 2018 would still be 43.0 million, or 36% greater than 2002 actual enplanements. Under such circumstances O'Hare would remain a very large hub serving a wide range of domestic and international markets. 126

Similarly, if both the local and connecting passenger volumes remained constant at the 2002, 2003 or 2004 levels, O'Hare would still be operated as a major hub. 127

[70] Including parking, walking, check-in, and waiting at the departure gate.

[71] Request for Letter of Intent to provide a Multi-Year Commitment of Airport Improvement Grant-in-Aid Funding, City of Chicago, O'Hare Modernization Program (Updated February 2005), Table IV-5.

[72] See Section 4.3 below.

69

| Comment | Response |
|---|---|
| 124 | Please see the response to this comment on the previous page. |
| 125 | The TAAM modeling captures all movement of aircraft in the air and on the ground. This detailed aircraft movement includes unimpeded taxi time in addition to the time an aircraft is delayed. Unimpeded taxi time is defined as the time it takes aircraft to maneuver from point a to point b on the airfield if that aircraft is the only aircraft on the airfield. The preferred alternative does result in additional travel times to the existing or No Action airfield, however, as demonstrated in the simulation modeling, the delay reduction far offsets the increase in taxitime. |
| 126 | FAA believes that the analyses presented in the EIS demonstrate the need to provide additional capacity at ORD in order to provide for forecast demand and avoid unreasonable delays. The commenter refers to what ORD "currently enjoys" as an acceptable situation. FAA believes that the current situation is not acceptable, for the following reasons: (1) delays are unacceptable and (2) forecast demand growth cannot be accommodated.<br><br>The commenter's suggestion that all of ORD's growth and 25% of current activity be relocated to other airports is not considered reasonable by FAA. FAA has considered the possibility that other airports could accommodate some of the growth forecast for ORD, and this assessment is included in **Appendix E** of the DEIS. However, as reported in **Appendix E,** the FAA's conclusion is that other airports are not likely to attract enough of ORD's demand to avoid the need for improvements at ORD. The FAA's analysis of other airports presented in the DEIS is based on a realistic assessment of airline service decisions and empirical regional airport data.<br><br>The amount of activity that the commenter assumes can "move" to other airports--all of ORD's future growth and 25% of current activity volume--is the equivalent of about 26.6 million enplanements. Midway is the most significant other airport nearby ORD, and the commenter's data (*CH Exhibit 400*) show this airport had only 8.3 million enplanements in 2004 (and, according to the commenter, little capacity to take on any more activity). The 26.6 million enplanements would represent the second largest airport on the commenter's *CH Exhibit 400* (after ATL and ORD). This level of activity is far too large to simply "assume away." |
| 127 | FAA does not agree that the commenter's scenario represents a reasonable forecast scenario for ORD. American and United operate major connecting hubs at ORD, and FAA believes it is reasonable to expect that these airlines will seek to increase connecting traffic, along with local traffic, in future years, as reflected in the unconstrained demand forecast used for the EIS. The commenter's scenario is more consistent with a constrained demand scenario, which does not satisfy the purpose and need for the proposed action.<br><br>Continued on the following page. |

The notion that without the OMP, O'Hare will somehow lose its ability to serve as a hub is patently absurd. The greatest threat to O'Hare's ability to continue to grow as a connecting hub is the increase in cost/fare of $20 per enplaned passenger that would be required to pay for the OMP. 128

**4.3 The DEIS Failed To Evaluate The Use Of Other Mid-Continent Airports For Connecting Passengers**

The FAA's consideration of the use of other mid-continent hubs for some of O'Hare's future connecting traffic is presented on just two pages of the 5,000+ page DEIS report.[73] Since the FAA's responsibility is to create and maintain a **National** Airspace System (NAS), not just to build and reconfigure runways at O'Hare, it is irresponsible that it did not evaluate the use of other, less congested and lower cost mid-continent airports. If the FAA had examined its own 2004 Capacity Benchmark Report[74] it would have noticed that at least eleven mid-continent hubs are utilizing less that 80% percent of their current capacity (Exhibit 402 and Chart 4-1). Large, expensive infrastructure improvements, like the ones proposed in the OMP, are not needed at these other airports. In fact, by 2007 a new $1.1 billion runway will open at St. Louis, even though American recently downsized its hub by 75%. Consequently, if the FAA would support policies that provide incentives (market or administrative) for airlines to direct connecting traffic to these other hubs, it would mitigate NAS delays at substantially less cost than the $21.1 billion OMP.

[73] FAA, O'Hare Modernization Draft Environmental Impact Statement, p. 3-20 and C-29, January 2005.

[74] FAA, Airport Capacity Benchmark Report 2004, September 2004.

70

| Comment | Response |
|---|---|
| 127 continued | Here, the FAA has been presented with a proposal for an airport improvement project by a sponsor desiring to undertake such improvements on a site capable of handling those improvements and with a sponsor's proposal to address the projections of significant unconstrained growth. Under these circumstances, the FAA does not believe it would be appropriate for the Agency to reject the sponsor's application on the terms offered by the commenter, thereby effectively capping operations at O'Hare and preventing the Chicago region from meeting the aviation demand forecast by the TAF.<br><br>*CH Exhibit 401*<br>*CH Exhibit 401* presents a summary of enplaned passengers for the 2002 TAF, the 2003 TAF, and the 2004 TAF. FAA has not audited the data, but they appear to be reasonable representations of the total enplaned passengers reported in the respective TAFs (after adjustment for calendar years). The commenter's notes that the originating/connecting split has been assumed for the 2003 TAF and the 2004 TAF. |
| 128 | FAA believes that provision of adequate capacity at ORD is critical to providing for the ORD hub. Airlines decide where to operate hubs, and the airlines operating hubs at ORD (American and United) have indicated that additional capacity is needed at ORD.<br><br>Further, the stated purpose and need for the project includes accommodating all unconstrained demand—including both originating and connecting passengers. The analysis presented in the EIS provides conclusive evidence that the proposed action is required to accommodate unconstrained demand at ORD. |
| 129 | As described in **Chapter 3** of the EIS, the FAA considered the use of other mid-continent hubs as an alternative to relieving congestion and addressing future demand at O'Hare. FAA is aware that other airports in the mid-continent area have available capacity. This does not mean that airlines will choose to make them major connecting hubs and international gateways.<br><br>Moreover, the FAA does not believe that it has the statutory power, for example, to reverse the decision of American Airlines relative to its St. Louis service and require American or any other carrier to increase its operations at that or any other location, simply because such other locations have more capacity than that of the applicant for an improvement project. The fact that there remains available capacity at other mid-continent hubs while delays at ORD have increased is evidence that ORD is a preferred location for a hub, in relation to other locations.<br><br>Continued on the following page. |

**Chart 4-1**
**MANY HUBS THAT ARE SIMILAR TO ORD IN TERMS OF FEED POTENTIAL HAVE SUFFICIENT CAPACITY TO HANDLE A SIGNIFICANT PORTION OF O'HARE'S CONNECTING TRAFFIC**

Source: Exhibit 402

129

The following quotation summarizes the FAA's entire consideration of alternative mid-continent airports… "A key factor that limits the possibility of airlines using an alternative mid-continent airport is the status of O'Hare as a major international gateway."[75] As will be shown below, if a portion of O'Hare's 2002 TAF forecast growth in connecting traffic is shifted to other mid-continent hubs, O'Hare's ratio of local O&D passengers to connecting enplaned passengers would increase to only 61:39 by 2018[76]. This ratio is virtually the same as eight major international gateway hubs recorded in the year ended June 30, 2004 (Exhibit 400). To suggest, or infer, that shifting a portion of O'Hare's future connecting traffic to other airports would undermine its stature and

[75] FAA, O'Hare Modernization Draft Environmental Impact Statement, p. C-29, January 2005.

[76] The ratio from the 2002 TAF is 54:46.

71

| Comment | Response |
|---|---|
| 129 continued | The commenter provides *CH Exhibit 402* as an example of airports that have potential capacity to handle traffic demand at ORD. The data presented in *CH Exhibit 402* are an oversimplification of the issues addressed in the EIS.<br><br>As we have stated, O'Hare is important to the National Airspace System because of its significant origin-destination traffic, historic function as a connecting hub, and one of the most important international gateways. This combination of circumstances makes the airport unique and provides significant benefits to both hub carriers and others who serve O'Hare. In the FAA's judgment it is unlikely that the principal carriers at O'Hare would either attempt or be successful in serving this demand by spreading operations over multiple mid-continent airports such as those listed in *CH Exhibit 402*.<br><br>Even though the FAA considers there is no likelihood that future O'Hare demand would be spread among some of the airports listed in *CH Exhibit 402*, it is also worth passing mention that of the 13 "mid-continent" facilities identified therein, Atlanta, Charlotte, Newark, Dulles, Philadelphia and Pittsburgh do not satisfy either the layman or the cartographers understanding of a mid-continent location.<br><br>Further, the FAA notes that CH, co-authored a study in July 2002 entitled *The National Impact of Civil Aviation.* The list of airports provided in *CH Exhibit 402* includes many airports highlighted in the 2002 CH report as "needing capacity improvement" to ensure U.S. economic well-being. |
| 130 | FAA believes that connecting traffic is critical to the future development of the international gateway at ORD, and in fact has been a key factor in the historical development of the international gateway at ORD. FAA agrees that the loss of some connecting traffic would not necessarily "undermine" the status of ORD as an international gateway, but this amount of "some" is not enough to eliminate the need for improvements at ORD. The continued development of international airline alliances is further evidence of the need to consolidate international gateway service at major hubs such as ORD.<br><br>Continued on the following page. |

competitive viability as an international gateway is unfounded, devoid of any sensible research, and highly irresponsible.

Both United and American have been on the public record for the last nine years stating in regard to O'Hare capacity issue…"The airlines have the ability to route connecting passengers through other hubs thus accommodating local passengers or increase in local demand. Local passengers have the priority."[77] 130

The FAA also contends that it would need new authority to "provide control over airline service patterns at O'Hare."[78] The fact is that the FAA has influenced and indeed controlled airline services for many years. At Reagan Washington National the FAA limited air carrier slots, invoked arbitrary perimeter rules[79], administered strict nighttime curfews on jet operations, and even prohibited four-engine jets in the 1960's and 1970's[80]. At LaGuardia and JFK the FAA has used slot limits to effect efficient use of capacity by the airlines. The FAA has sanctioned nighttime curfews imposed at other airports. On several occasions since the 1970's the FAA has conducted studies, or inquiries, into the potential use of differential landing fees by time of day as a strategy for improving efficient use of limited airport capacity, while at the same time reducing peak-hour congestion and delay. Even the NPRM released on March 25, 2005 that proposes extending the current O'Hare arrival constraints until 2008 is full of statements that demonstrate that the FAA does believe that it has control of airline services. One of these statements is as follows… "As discussed above, Arrival Authorizations are not property

[77] See Exhibit 404.

[78] FAA, Ibid, p. C-29.

[79] The perimeter rules were used to balance airline services at DCA, IAD and BWI, and to protect the long haul services at IAD and BWI.

[80] As an administrative, not safety, matter.

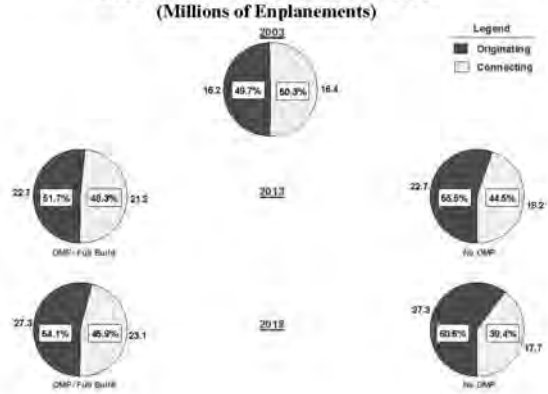
72

| Comment | Response |
|---|---|
| 130 continued | *CH Exhibit 400*<br>The commenter refers to a potential "reasonable" reduction in the share of connecting passengers at ORD, in relation to "eight major international gateway hubs" as documented on commenter's *CH Exhibit 400*. The one airport that is most directly comparable as a major inland international gateway, ATL, has a connecting share larger than ORD today. This is an indication that a large connecting share is required to support an international gateway at an inland airport (as opposed to coastal airports, such as MIA, JFK, LAX, which are historically significant international gateways due to their "first-landing" positions in the United States). |
| 131 | As a matter of law, the FAA disagrees with the commenter's assertion that the activities ascribed to it constitute the authority to direct carriers to utilize airports with available capacity. |

rights but are temporary operating privileges. As such, **they remain subject to FAA control**." (emphasis added)[81]

In addition to the NAS benefits of an FAA policy supporting the use of other connecting hubs, such a policy would not be detrimental to the Chicago region.[82] In fact, even at the DEIS's constrained operations of 974,000, ORD can accommodate all the unconstrained local passengers through 2018. If this were to occur, 61% of enplanements would be originating and 39% would be connecting, compared to an approximately equal distribution in 2002 (Exhibit 403 and Chart 4-2). Some existing hubs and international gateways that have over 60% local originating enplanements include LAX, SFO, JFK, EWR, IAD, PHX, and PHL (Exhibit 400).

**Chart 4-2**
**CURRENT ORD CAPACITY IS SUFFICIENT TO HANDLE THE 2002 TAF GROWTH IN LOCAL O&D PASSENGERS WHILE MAINTAINING A REASONABLE CONNECTING RATIO**
**(Millions of Enplanements)**




Source: Exhibit 403.

[81] FAA, NPRM, 14 CFR Part 93: Congestion and Delay Reduction at Chicago O'Hare International Airport, March 25, 2005.

[82] Local passengers spend more money in the Chicago region and provide a much greater economic benefit to Chicago than do connecting passengers who do not leave the airport concourse.

73

| Comment | Response |
|---|---|
| 131 | Please see the response to this comment on the previous page. |
| 132 | The commenter has asserted that an alternative ORD forecast with local originating passengers equivalent to the EIS unconstrained forecast and connecting passengers significantly lower than the EIS unconstrained forecast would be an appropriate outcome for ORD, as summarized in *CH Chart 4-2*. The commenter's alternative forecast is further addressed in the comments on *CH Exhibit 403*, below.<br><br>The commenter has asserted that a higher share of local originating enplanements at ORD would not be inconsistent with the experience at some other existing hubs and international gateways, referring to data presented in *CH Exhibit 400*. Specific examples cited by the commenter are mostly coastal hubs that do not serve as transcontinental hubs in the same way as ORD (because of their geographical locations)—LAX, SFO, JFK, EWR, IAD. The commenter has not cited the other major hub most comparable to ORD in size and role—ATL. According to the commenter's data in *CH Exhibit 400,* ATL has a local share of 35%, which is less than the 43% share reported for ORD, and far less than the 61% share offered by the commenter as "reasonable" for an alternative forecast. FAA does not agree with the commenter's assertion that ORD could serve its current role (which is similar to the role served by ATL), with such a dramatic reduction in connecting passenger activity.<br><br>*CH Exhibit 403*<br>*CH Exhibit 403* presents an "adjusted constrained" forecast for ORD, with originating passengers equivalent to the 2002 TAF and connecting passengers reduced so that total enplanements are equivalent to the EIS constrained forecast. It should be noted that the indicated source—"Leigh Fisher Associates"—is not correct. Leigh Fisher Associates assisted FAA in preparing the summaries of unconstrained and constrained forecasts reported in the DEIS, but Leigh Fisher Associates had no involvement in the commenter's "adjusted constrained" forecast.<br><br>The commenter's "adjusted constrained" forecast would not result in ORD satisfying the purpose and need for the proposed action. The commenter's "adjusted constrained" forecast is an alternative forecast representing reduced activity at ORD relative to the unconstrained demand forecast adopted for the EIS. This is contrary to the commenter's earlier arguments that the EIS forecast understates the future demand at ORD. |

The FAA also supported its conclusions by arguing that Chicago's hub guarantees that it will have many passengers into the future. It is a simple fact that connecting passengers are largely[83] indifferent as to where they connect as long as they get to their destination in a comparable total trip time, and at a very comparable price. Many other mid-continent airports have excellent strategic locations for transporting passengers who connect at O'Hare (Exhibit 402). 132

**4.3.1 The FAA Failed To Analyze Thoroughly The Ability Of Airlines To Adjust Aircraft Size**

As Herb Gardner and Bill Hood of United Airlines and American Airlines wrote in a June 22, 1996 letter... "Capacity at a hub airport is defined in terms of available aircraft seats, not flights. The myth that Chicago airports are nearing capacity has been proffered by uninformed individuals who lack a basic understanding of the aviation industry's economics and operational methods. Blind acceptance of their definition of airport capacity can be very costly and will cause mortal damage to Illinois' economy[84]." These words are equally true today. The FAA failed to perform a detailed analysis of the factor that really determines capacity; namely **seats**. 133

While the FAA did pay lip service to the possibility of the airlines increasing their average aircraft size at O'Hare, it inappropriately discarded this alternative. As shown in Section 3.4 the cost of the OMP will cause a decrease in the unconstrained enplanements by approximately 4.5 million passengers in 2013. In the likely event that air carriers at O'Hare would increase their aircraft size if ORD was constrained to

[83] Many passengers prefer to avoid connecting at O'Hare due to weather in the winter and its size (potential walking distance).

[84] Exhibit 404.

74

| Comment | Response |
|---|---|
| 132 | Please see the response to this comment on the previous page. |
| 133 | Again, the Agency's response to this comment must be understood within the environment of the federal government's continued adherence to a deregulated airline industry. Unlike the days when a federal agency could dictate rates, routes, and services among all points served by commercial air transportation, the Congress has expressly determined to leave those decisions to the marketplace. Thus any response regarding the FAA's alleged failure to address the specific equipment employed by air carriers on particular routes must be understood in the context described above.<br><br>Even so, the FAA did study the predicted behavior of the carriers with respect to likely increases in aircraft size in response to capacity constraints. As reported in **Appendix B** of the EIS, in conjunction with a constrained operating environment, it was assumed that the following types of fleet mix adjustments would be made: (1) up-gauge aircraft to absorb additional traffic, as opposed to adding additional frequencies, in popular O-D and longer-haul markets, (2) consolidate small-capacity regional/commuter aircraft in strong O-D markets into a smaller number of higher-capacity mainline jet flights, and (3) reduce the number of flights operated by regional partners in connecting markets with limited O-D traffic generation potential.<br><br>The FAA's assessment was based on an analysis of marketplace conditions, current and future airline fleet mix composition, relative market-pair size, and other factors that affect airline service decisions. The FAA does not agree with the alternative analytical construct offered by the commenter. The commenter's assumed alternative aircraft size appears to be calculated to produced the desired conclusions rather than generated on the basis of analysis of airline industry and market conditions.<br><br>As discussed in **Chapter 2** of the EIS, the inability to efficiently accommodate expected future growth at O'Hare would have a significant adverse impact upon the region. Not only would travelers to and from O'Hare suffer a higher level of delay than most other users of the NAS, but also flights to smaller markets currently served are likely to be eliminated by market forces operating under the present operational constraints. In addition, it is possible that the Agency's policy of continuing to promote competition in the nation's third largest market could be impeded by extraordinary levels of delay and limited capacity. Especially in light of the region's projected aeronautical needs, it is vital for both Chicago and the NAS that these delays be reduced. |

974,000 total annual operations[85], then 3.1 to 4.5 million more enplaned passengers would use O'Hare in 2013 without the OMP than with it (Exhibit 405).[86] 134

Campbell-Hill adjusted the constrained forecasts two different ways. The first adjustment calculates the average aircraft size needed to accommodate all forecast unconstrained passengers using the weighted average load factor experience of United and American at ORD (77.7%) during the 12 months ended September 30, 2004 (Exhibit 406). Once the aircraft size reached approximately 127 seats (the 1998 ORD average aircraft size[87]) it was increased by 1% per year beyond that point. All unaccommodated passengers were assumed to be connecting passengers. This adjustment shows clearly that the O'Hare airlines can accommodate all unconstrained enplanements growth through 2013 without the OMP, and the present-day runway configuration can accommodate more passengers every year from 2007 to 2018 than if the OMP is built (Exhibit 407 and Chart 4-3).

Campbell-Hill's second analysis adjusted the constrained forecast by using the load factor from the DEIS unconstrained forecast and it allowed the average aircraft size to increase to 127 seats per operation (and then increasing 1% each year thereafter). Using this adjustment, O'Hare would not lose any unconstrained connecting passengers from the forecast until 2012 (Exhibit 408). This adjustment, like the first adjustment above, allows O'Hare to accommodate more enplanements every year from 2007 to 2018 than if the OMP is built (Chart 4-3).[88]

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[85] In fact, American Airlines has already increased its average aircraft seat size by 7% since March 2003 (before the FAA scheduling orders). See Exhibit 102.

[86] This analysis includes the negative impact on the TAF enplanements forecast due to the $20 incremental increase in ORD costs per enplanement.

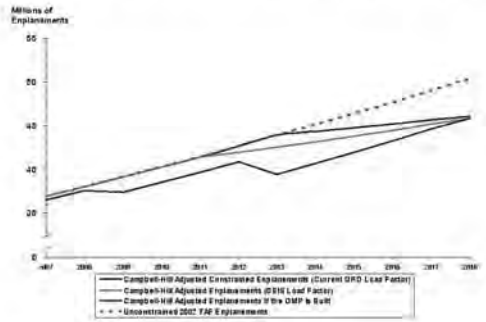
[87] See Exhibit 100, page 2.

[88] In the OMP build scenario Campbell-Hill has reduced the TAF enplanements for 2007 and beyond to reflect the significant increase in cost/fare per enplanement.

75

| Comment | Response |
|---|---|
| 133 | *CH Exhibit 404*<br>*CH Exhibit 404* is a letter from American and United dated January 22, 1996. FAA believes that the specific facts cited in the letter are dated, as the letter is now over 9 years old. FAA does agree that the utilization of aircraft capacity (available seats) is a key consideration in evaluating the need for airport improvements. This factor has been considered in the development of the unconstrained forecast used for the EIS, and in preparing the sensitivity analysis reported in **Appendix R** of the DEIS. |
| 134 | As discussed above in response to comment 133, the Agency did analyze the likely consequence of carrier's fleet mix adjustments and the consequences of such at O'Hare.<br><br>*CH Exhibit 405*<br>CH Exhibit 405 does not contain any data (that are apparent) that relate to fleet mix or average aircraft size. Thus, FAA can only conclude that *CH Exhibit 405* does not provide information that supports the arguments in this comment, and therefore the arguments are not supported. Moreover, the data in *CH Exhibit 405* are based on data in other *CH Exhibits* that FAA considers unpersuasive. |
| 135 | The commenter has offered an alternative unconstrained demand forecast scenario which is explained in the following comments throughout the remainder of this section. FAA does not agree with the assumptions and conclusions of this analysis.<br><br>CH has made a "first adjustment" to the constrained forecast by making assumptions about aircraft size required to accommodate ORD demand. The conclusion is that "O'Hare airlines can accommodate all unconstrained enplanements growth through 2013 without the OMP, and the present-day runway configuration can accommodate more passengers every year from 2007 to 2018 than if the OMP is built." This comment is supported by *CH Exhibits 406* and *407*, and more specific responses are provided in relation to *CH Exhibits 406* and *407*, below.<br><br>*CH Exhibit 406* shows a calculation of load factors for United and American at ORD for the 12 months ended September 30, 2004. FAA has not verified the data in *CH Exhibit 406*, but does not believe it to be in error.<br><br>Continued on the following page. |

**Chart 4-3**
**CAMPBELL-HILL ADJUSTED ENPLANEMENTS ARE HIGHER THAN O'HARE ENPLANEMENTS WOULD BE IF THE OMP IS BUILT**




Sources: Exhibits 405, 407 and 408.

135

### 4.4 Congestion Management Is In The Public Interest

Given the economic and environmental costs of unbridled expansion of any particular airport within a system of airports, it is reasonable to balance expansion using mechanisms for allocating scarce resources that produce efficient utilization of both the single airport as well as the system within which it operates. This is not the same as telling the airlines where they can fly and what planes they must operate. In the DEIS report[89] the FAA did very little analysis of alternative management options (both administrative and market-based). What it did perform was a simplistic and hypothetical "upgauging" calculation to show that with 9.5% more passengers per operation in 2018 there could be fewer flight frequencies. The FAA then concluded that congestion

[89] See FAA, O'Hare Modernization Draft Environmental Impact Statement, pages 3-23 and Appendix E, pages E-12 through E-16, January 2005.

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| Comment | Response |
|---|---|
| 135 continued | *CH Exhibit 407* has the title "If the airlines increase aircraft size to 1998 levels and experience current load factors O'Hare will not lose any passengers until 2014". The *CH Exhibit 407* presents a table of data intended to support the assertion of the title of the *CH Exhibit*. FAA believes that the underlying assertions should not be considered "most likely" as outlined below.<br><br>FAA does not believe that the airlines would decide in 2005 (or 2014) to suddenly change their fleet mix to replicate the historic fleet mix from 1998. FAA is not aware of any particular significance that airlines at ORD or elsewhere have attached to the 1998 fleet mix. FAA is more comfortable with the fleet mix assumptions that have been used in the EIS, which are based on an analysis of aircraft orders and likely aircraft types that airlines will be using in future years. FAA believes that a forecast of future aircraft operations should be related to an assessment of future aircraft types.<br><br>The 1998 fleet mix is not representative of current conditions—The commenter has suggested that it would be appropriate to use the 1998 fleet mix, as opposed to a current or future fleet mix. There have been many changes in the airline industry since 1998, including deployment of regional jets. It is unlikely that the 1998 fleet mix at any airport, including ORD, would be an accurate representation of either the current or future fleet mix. Many aircraft that were used by airlines in 1998 have been retired.<br><br>*CH Appendix E* of the commenter's document makes reference to "limited fleet size" for American (*CH Appendix E, page E-2*) and United (*CH Appendix F, page F-2*). FAA agrees that the fleets of American and United are limited, which therefore limits the ability to immediately revert to an average aircraft size and fleet mix that was experienced in 1998.<br>These realities are reinforced by the recognition that many of the aircraft in use in 1998 have been retired and that fleet mix decisions in today's market are based upon a variety of considerations including fuel economy, crew costs, landing fees, and market characteristics.<br><br>Continued on the following page. |
| 136 | The FAA disagrees with the commenter's opinions regarding FAA's consideration of congestion management. FAA believes that it adequately considered the alternative of congestion management. The analysis of congestion management is presented in **Chapter 3** and **Section E.1.2.3, Appendix E** of the EIS.<br><br>Also see response to comment 138 of *Karaganis-Cohn's April 6, 2005* comments on the DEIS, on page U.4-454. |

| Comment | Response |
|---|---|
| 135 continued | The commenter's "second adjustment" is related to load factor. However, the main basis for the conclusion offered by the commenter is related to the assumption regarding average aircraft size, or fleet mix. The commenter's conclusion after the second adjustment is very similar to the conclusion after the first adjustment—this is because both conclusions ("first adjustment" and "second adjustment") are substantially related to the assumption regarding average aircraft size, or fleet mix.<br>The commenter offers *CH Exhibit 408* as support for the "second adjustment"—responses to this *CH Exhibit* are provided below.<br><br>*CH Exhibit 408* has the title "If the airlines increase aircraft size to 1998 levels and experience DEIS load factors O'Hare will not lose any passengers until 2012". *CH Exhibit 408* is different from *CH Exhibit 407* in only minor ways (assumed load factors), and the conclusions reached by the commenter are very similar. The primary factor involved in *CH Exhibit 408* is the assumption that airlines would decide to adopt the 1998 fleet mix, which is the same primary assumption used for *CH Exhibit 407*. The response to this *CH Exhibit* is therefore the same as the response provided for *CH Exhibit 407*, above. |

management, by itself, would not meet the purpose and need (satisfy the unconstrained demand forecast)[90].

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Campbell-Hill's analysis shows that if average aircraft size is "managed" by employing restrictions that effect a return to 127 seats (as it was in 1998), plus 1% per year, and if average load factor then rises to 77.7% (as it was for American and United combined last year[91]), then total enplanements at 974,000 total operations would be 43.9 million.[92] This would occur in 2013. If all of the 2002 TAF local O&D is accommodated, as the airlines would seek to do, the only unaccommodated demand by 2018 would be 4.3 million connecting passengers, or 8.5% of the total 46.1 million unconstrained forecast enplanements (Exhibit 407). That is to say, from this congestion management scheme alone, O'Hare's present capacity is sufficient to handle all but 8.5% of the FAA's forecast 2018 enplanements. The unaccommodated 4.3 million connecting passengers can easily be handled at other mid-continent hubs where plenty of excess airport capacity exists.

The expenditure of $21.1 billion at O'Hare cannot possibly be justified by the City's competitive instinct to attract a few million additional connecting passengers who would provide little, if any, economic benefit to Chicago and would be diverted from other connecting hubs in any event. In fact, it has already been shown in Section 3.4 that the OMP cost of $20 per enplaned passenger would cause a reduction of 4.5 million enplanements[93], and so the traffic benefits of the OMP compared to a sensible scheme of congestion management is actually **negative** in the year 2018.

Reasonable programs of congestion management can work fairly and effectively by themselves, or in combination with other strategies including greater use of alternative

[90] FAA, Ibid., page E-16.

[91] Twelve months ended September 30, 2004.

[92] See Exhibit 407.

[93] Due to the price elasticity effect.

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| Comment | Response |
|---|---|
| 136 | Please see the response to this comment on page U.4-591. |
| 137 | The CH analysis of the potential benefits of congestion management are based entirely on an assumption that airlines would, for some reason, change their fleet mix to "mirror" the fleet mix that was in place in 1998. FAA does not consider this to be a credible analysis of congestion management. FAA believes that airlines have evolved their fleets, and will continue to do so, in relation to market conditions and newer generation aircraft.<br><br>CH also asserts that their congestion management alternative would result in all O-D traffic being accommodated, with unaccommodated connecting traffic flowing to other hubs. The FAA has already responded to this concept in *CH Section 4.3.1*, in response to comments 133 through 135, where the FAA describes in considerable detail the likely consequences of such a change in a fleet mix to the markets served by ORD.<br><br>This would not satisfy the purpose and need, which is to accommodate the unconstrained demand at ORD. Further, FAA does not agree that it is possible to "segment" traffic away from ORD and maintain the ORD hub. This is contrary to the concept of consolidating passenger demand at a hub. Without connecting feed, there would be insufficient traffic to support certain routes at ORD, and this would result in reduced service to the local market. |

airports. This is the "blended" solution with the least cost, the least disruption, the least environment harm, and the greatest benefit/cost relationship. The FAA has simply avoided objective empirical analysis of such a solution. 137

**4.5 The FAA's Analysis of Alternatives For Los Angeles Was Regionally Balanced And Produced A Reasonable Result**

The biased analysis of alternatives for ORD contrasts sharply with the more reasonable and comprehensive process used by the FAA in the EIS for Los Angeles International Airport.[94] The preferred LAX alternative was based on a truly regional perspective that produced a rational balance of runway expansion, changing airline practices, and broader use of regional airports. The EIS concludes that LAX can maintain and enhance its status as an international gateway by more efficiently handling a limited number of flights (the 1996 level), rather than by trying to force-feed traffic expansion that alternative airports could handle. Specific aspects of the LAX process that should have been included in the ORD EIS process are:

- The analysis employs a truly regional approach that measures the need to accommodate flights at LAX by comparing regional demand to the aggregate regional capacity of **all** available airports. In Chicago, only ORD is considered as if it was a single-airport system unaffected and unaided by others in the region.
- The selected LAX development alternative avoids over-costly and destructive runway expansion by recognizing that LAX's roles as the region's international gateway and primary domestic service airport can be enhanced by limiting the growth in domestic flights that are best accommodated at developing regional airports. This rational conclusion is based on an acceptance of a reasonable forecast of development for both other airports and airline practices. The FAA did not avoid realities in the EIS, just because it cannot control the development with its own policies. In fact, the EIS bases

[94] FAA, Final Environmental Impact Statement: Los Angeles International Airport Proposed Master Plan Improvements, January 2005.

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| Comment | Response |
|---|---|
| 137 | Please see the response to this comment on the previous page. |
| 138 | In response to this comment the FAA observes that each EIS that it prepares for major airport improvement proposals is consistent with all other EISs in so far as they must all comply with the statute, the CEQ regulations, and the Agency's internal guidance for NEPA compliance. However, such consistency does not mandate a "cookie-cutter" approach wherein each EIS must replicate other documents prepared by the Agency. Indeed, the FAA believes that it can best satisfy the letter and spirit of its environmental observations by tailoring its environmental analysis to the unique circumstances contained in that specific proposal. Accordingly, the FAA's EIS for LAX is deliberately different in some respects from this or other FAA NEPA documents.<br><br>The LAX EIS has been cited as a comparable for the O'Hare EIS, in relation to the use of a "regional solution" for aviation demand. The LAX EIS is not directly comparable to the O'Hare OMP EIS, for the following reasons:<br>1. The airport systems in the Los Angeles region and the Chicago region are different,<br>2. The roles of LAX and ORD are different, and<br>3. The sponsor requests in each case are different.<br><br>Each of these points is discussed below.<br><br>**THE AIRPORT SYSTEMS ARE DIFFERENT**<br>The airport systems in the Los Angeles region and the Chicago region are different, particularly with respect to (1) the location and spread of population in relation to airports, and (2) the share of originating vs. connecting passenger traffic.<br><br>**Geographic Spread of Population**<br>In the Los Angeles region, population is spread over wide geographic areas, making it easier for secondary airports to serve the regional aviation demand. In the Chicago region, population is much more concentrated, making the role of the primary airport, O'Hare, more important.<br><br>**Exhibits 3-1** through **3-6** in **Chapter 3** of the EIS shows the distribution of population in relation to airport locations.<br><br>Continued on the following page. |

the reduction of flights on an assumption that **airlines in the future will have to choose which passengers it will serve at LAX.**

- The flight traffic projected for LAX, after project completion, is 20% less than the unconstrained forecast with the residual operations assumed to be handled at other airports. The passenger forecast for the development alternative ("Alternative D") is approximately the same as the "No Project" alternative with no loss in the satisfaction of regional demand. This analysis was not predicated on a false goal of trying to handle as many flights as possible via the primary airport, but rather the EIS sought to efficiently handled a reasonable number of flights that **should** move by that airport.
- A stated goal of the LAX EIS is that new investments in capacity should be efficient and cost-effective, and maximize the return on existing infrastructure capital. The alternatives analysis focuses on making optimal use of the existing infrastructure at LAX so it can expand international capabilities for the region, rather than trying to create the largest possible airport without regard to cost. This is particularly true when other regional airport expansion can handle more cost-effectively some of the traffic that could be forced to LAX.
- A critical element of the EIS's process towards these conclusions was a **revised forecast** by a regional organization that replaced the single airport trend forecast (that implicitly requires future growth in flight operations) with a regional forecast anticipating a **shift in patterns** for LAX.
- The evaluation of the development projects considered the disruptions and impacts of construction. These are ignored by the FAA and the City in the case of O'Hare.
- The delay/capacity modeling was based on the SIMMOD model which incorporates many reasonable elements that are excluded from the ORD TAAM modeling. These include (1) a better representation of bad weather conditions involving cancellations, (2) flow control programs, and (3) a typical IFR "design" day rather than a worse case full-IFR day.

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| Comment | Response |
|---|---|
| 138 continued | As shown on **Exhibit 3-3**, the population (and, therefore, the business activity) in the Los Angeles region is geographically diverse. There are significant "clusters" of population in suburban areas, helping support the development of air service at secondary airports such as SNA (Orange County-John Wayne), ONT (Ontario), BUR (Hollywood-Burbank), and LGB (Long Beach). While many of these secondary airports are constrained by a variety of conditions (physical constraints, noise regulations, etc.), the dispersion of population away from LAX makes it easier to contemplate the general concept of the use of secondary airports. There are decommissioned Air Force bases and other facilities that could serve regional demand in the future. There may also be airports developed that do not yet exist—the key point is that with the relative dispersion of population and business activity, a regional solution is more practical.<br><br>As shown on **Exhibit 3-4**, the population (and therefore the business activity) is much more focused on the main city in the Chicago region. As a result, air traffic demand is much more focused on the main airport serving the main city—Chicago O'Hare. Chicago's Midway Airport is convenient to the main focus of population and business activity, but this airport does not offer the potential capacity to accommodate significant future growth in regional activity. Other airports in the region (e.g., Rockford) can accommodate a certain amount of demand, but these airports are not as conveniently located to the center of activity, and they do not benefit from the same "sprawl" to outlying areas that characterizes the situation in the Los Angeles region.<br><br>**Originating vs. Connecting Passengers**<br>In the Los Angeles region, the share of originating passengers is higher than in the Chicago region. Specifically, the Los Angeles region's share of originating passengers is approximately 84% versus the Chicago region's share of originating passengers which is 55%. The Los Angeles region is on the western coast of the United States, which results in it naturally serving more as an origin-destination point of service. The Chicago region is in the middle of the United States, which results in it serving more connecting passengers, with a commensurate greater role in the national transportation system.<br><br>Continued on the following page. |

- The LAX EIS not only evaluates the adequacy and capacity of the runways, but also **explicitly** deals with terminal space, parking, ground transit, rental car facilities, cargo buildings and other ancillary requirements.

In conclusion, whereas the ORD DEIS uses the alternatives analysis to limit possibilities and justify pre-ordained conclusions, the LAX EIS responded to regional interests that called **"the analysis of alternatives the heart of the EIS"**[95]. This mandate recognized the importance of:

- "[To]Rigorously explore and objectively evaluate all reasonable alternatives, including alternatives not within the jurisdiction of the federal agency …"
- "[To] Devote substantial treatment to each alternative considered in detail, **including the no action alternative**."
- "Reasonable alternatives" are those that are "practical or feasible from a technical and economic standpoint."
- "… alternatives that fail to satisfy the basic project objectives may be excluded …"

The FAA did not avoid realities in the LAX EIS by conjuring up a spurious claim (made in the OMP DEIS here) that FAA cannot control development with the Agency's own policies. 138

**4.6 The FAA Needs to Examine and Implement "Blended Alternatives"**

It is obvious from the discussion of the delay and capacity problems with the full OMP that OMP runs out of capacity shortly after it opens. Of necessity, the rapidly growing delay levels under OMP will require the imposition of capacity management controls at O'Hare even with full OMP in place. The rise in delays to unacceptable levels under OMP also triggers the need to use other airports to accommodate the unsatisfied traffic demand that cannot be accommodated by OMP once it reaches unacceptable levels of delay. Therefore it is indisputable that even with OMP, FAA will have to employ

[95] FAA, Final Environmental Impact Statement: Los Angeles International Airport Proposed Master Plan Improvements, Section 3, January 2005.

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| Comment | Response |
|---|---|
| 138 continued | **THE ROLES OF LAX AND ORD ARE DIFFERENT**<br>The roles of the primary airports in each region—LAX (in the Los Angeles region) and ORD (in the Chicago region)—are different.<br><br>LAX serves primarily origin-destination passengers which make up approximately 78% of the total enplaned passengers. ORD has a much larger share of connecting passengers than LAX which make up approximately 51% of the total enplaned passengers.<br><br>Because LAX serves primarily originating passengers, it is easier to develop a plan that involves spreading future activity to other airports in the Los Angeles region. Originating passengers are primarily interested in accessing the region, and a multitude of airports in the Los Angeles region can offer this service.<br><br>ORD is a major national connecting hub, and this role is not as easily spread to other airports in the Chicago region. Airlines have demonstrated through their strategic actions and service developments that hub operations must be focused on a single airport with a large local market. This is due to the competitive nature of hubs. ORD competes with other major hubs such as DEN and DFW for connecting traffic, both domestic and international. Without a substantial critical mass of air service at ORD, the connecting hub airlines serving ORD would not be competitive in terms of the frequency of connections and the availability of attractive fares.<br><br>Continued on the following page. |
| 139 | In **Chapter 3** and **Appendix E,** the FAA carefully evaluated a Blended Alternative which included the use of other airports, congestion management, and limited airfield development. The Blended Alternative did not, however, pass the secondary screening criteria. In response to this comment and others like it, the FAA has evaluated other commenter's proposals, including various "blended alternatives", in a new **Section 3.6** in **Chapter 3.** |

| Comment | Response |
|---|---|
| 138 *continued* | **THE SPONSOR REQUESTS ARE DIFFERENT**<br>Most importantly, the sponsor requests in connection with the LAX EIS and the ORD OMP EIS are different. These differences are consistent with the differences in the airport roles and airport system characteristics described above.<br><br>For LAX, the sponsor determined that it might be possible for other airports in the region to accommodate demand forecast for LAX, and did not request approval for airport improvements required to accommodate the unconstrained demand forecast for LAX. This was a reasonable determination, given the unique characteristics of the Los Angeles region, as described above. That is, with LAX serving primarily origin-destination traffic, it is reasonable to expect that a sufficient amount of future demand could be accommodated at other regional airports without materially adversely affecting the ability to accommodate forecast demand.<br><br>For ORD, the sponsor determined that it would be necessary to increase capacity at O'Hare in order to meet regional demand needs. This was a reasonable determination, given the role of O'Hare in the regional and national air transportation system. That is, with O'Hare serving as one of the major connecting hubs and international gateways in the national transportation system, it is not practical to assume that this activity could be easily "spread" to other airports in the region, despite the availability of capacity.<br><br>**SUMMARY**<br>In summary, the underlying demographic and air service conditions in the Los Angeles region and the Chicago region are substantially different, and this is consistent with the differing conclusions in the respective EIS requests for LAX and ORD, as follows:<br>1. The Los Angeles region has a much more geographically diverse population and economic base than the Chicago region, making it easier to contemplate using secondary airports in outlying areas.<br>2. The Los Angeles area airports serve primarily originating passengers, in comparison to the Chicago area airports, again making it easier, in the Los Angeles case, to contemplate the use of secondary airports.<br>3. The role of LAX is much different from ORD, with the result that forecast traffic at LAX is more easily "spread" to secondary airports in the region.<br>4. The sponsor requests for airport development at LAX and ORD are not the same, which is substantially related to the points noted above. |

some version of a "blended" alternative — *e.g.*, a mix of congestion management and the use of other airports — to accommodate the forecast demand. 139

In short, every alternative now before FAA — from the exiting airport to Phase I to the full OMP — requires some blended alternative of congestion management and the use of other airports. 140

| Comment | Response |
|---|---|
| 139 | Please see the response to this comment on page U.4-597. |
| 140 | FAA agrees that every alternative for capacity expansion at ORD needs to also consider the potential benefits of other actions. The EIS presents detailed consideration of such alternative actions. FAA has concluded that, even with the benefits of such alternative actions, OMP is the preferred alternative. |

## 5.0 SIGNIFICANT RISK ASSESSMENT AND THE LOSS OF A HUB CARRIER

### 5.1 Introduction

In its DEIS report, Appendix R, the FAA concludes that the loss of a hub carrier (United or American) at O'Hare would have a relatively insignificant effect on the report's assessments and conclusions, or on the need for the OMP. The FAA has asserted this conclusion by virtue of a series of unsupported assumptions, all of which are completely lacking in empirical foundation or analysis. The fact is that the loss, or significant reduction in service by either United or American, would dramatically alter conclusions about the need for the OMP. Additional capacity at O'Hare would not be needed for at least 20 years. And in light of the distinct possibility that United will not survive as a large hub carrier at O'Hare, and that we will know this outcome soon, the rational and responsible fiduciary decision would be for the FAA to wait a year or two before approving any part of the OMP.

The FAA has based its assumptions and conclusion upon a single reference to the recovery of traffic and operations at Atlanta after the demise of Eastern Airlines nearly 15 years ago. In this regard it is useful to note that the 1990's was a decade of rapid growth in Atlanta. According to MapInfo Corp., the Atlanta Core Based Statistical Area population increased by 51.7% from 1990 to 2004. Chicago's population is forecast to increase by only 3.5% from 2004 to 2009; and from 1990 to 2004 it grew by just 14.3%.[96]

During the late 1980's and early 1990's U.S. legacy carriers were in the process of adding new hubs and strengthening existing hubs. At that time the threat from low cost carriers was insignificant and it played no part in the strategic planning of large legacy airlines. The large carriers were in reasonable financial condition and could finance new hub development in the early to mid-1990's.

During the past ten years the trends have reversed in significant part. Many airline hubs have been dismantled, including American's hubs at Raleigh/Durham, Nashville, and San Jose (twice), Delta Air Lines' hub at Dallas/Ft. Worth, US Airways'

[96] MapInfo Corp.

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| Comment | Response |
|---|---|
| 141 | This section is an introductory section, and specific comments are responded to in the following sub-sections.<br><br>The FAA points out that *CH Section 5.0* is based on *CH Appendices E* and *F*. The FAA has reviewed these appendices and does not agree with the assumptions provided by CH nor does the FAA agree with the conclusions drawn from these assumptions. In large measure, the two appendices appear to be interchangeable, addressing consequences of a hypothetical failure of United (*CH Appendix E*) or American (*CH Appendix F*). Certainly, the reaction of the other air carriers to the loss of United or American could be similar but not *as similar* as the depiction in the *CH Appendices*. Despite the large amount of interchangeable text in *CH Appendices E* and *F*, the Agency thinks that an identical outcome to the liquidation of either carrier is highly unlikely. In addition, the FAA believes that the specificity of the assumptions contained therein is unrealistic and therefore suspect. In other words, the FAA believes it would be impossible to predict with specificity the exact consequences that would occur under these hypothetical scenarios. Nonetheless, the FAA has carefully reviewed the scenarios offered and still believes that the analysis contained in EIS **Appendix R** is the only credible projection on this issue.<br><br>The credibility of the analysis contained in the *CH Appendices* is further challenged because where *CH Appendices E* and *F* differ, there is no basis given for the differences. For example, on page U.4-799 under the scenario in which United fails, the commenter assumed that Air Canada would "reduce frequencies by one daily to YOW, YUL, and YYZ," whereas on page U.4-813, under the scenario in which American fails, CH assumed Air Canada would "add one daily frequency to YOW, YUL, and YYZ."<br><br>With regard to the CH's criticism of the FAA for the use of Atlanta as an instructive example of the consequences when a hub carrier dissolves, the Agency finds such criticism unpersuasive. The FAA notes that like Atlanta, O'Hare is the most significant airport within its respective region. Specifically, O'Hare, like Atlanta, has a strong origin-destination market, significant connecting activity, and strong international service. If other air carriers can figure out how to make money in the O'Hare market given the loss of a hubbing carrier at O'Hare, the FAA is confident that they will surely do so. |

| Comment | Response |
|---|---|
| 141 | Please see the response to this comment on the previous page. |
| 142 | Please see the response to this comment on the following page. |

hub at BWI, TWA's hub at JFK, and Continental's hub at Denver. Furthermore, significant dehubbing has occurred at St. Louis (American Airlines), Memphis (Northwest), and Pittsburgh (US Airways). Many other mini-hubs by smaller and medium sized airlines have also been eliminated (e.g. America West at Columbus). The ever-increasing competitive pressures exerted by the low cost carriers is wrecking havoc with the economic viability of legacy carrier hub structures throughout the domestic industry. These competitive forces will continue to heighten over the foreseeable future, especially with higher fuel prices.

The hub and spoke system is the most expensive way to transport a passenger from Point A (origin) to Point B (final destination). Connecting at Point C incurs the cost of two take-offs and landings and additional miles of flying. High fuel costs make the hub system especially vulnerable.

As a consequence, instead of assuming away the potential risk to the OMP of the potential loss of a hub carrier at O'Hare, the FAA should have conducted an informed and responsible analysis of the prospective impacts of such a loss. This analysis could have included a survey of knowledgeable aviation experts on Wall Street and elsewhere, in addition to enlightened economic analysis by the FAA's staff. The FAA chose to avoid this difficult question because it would seriously undermine the credibility of any decision to proceed with the OMP at this time. In light of this failing by the FAA, Campbell-Hill has examined the likely changes that would take place in airline traffic and schedules at O'Hare in the event that United or American were to fail or substantially diminish their hub operation. 141

**5.2 Competitive Responses To A United Failure/Downsizing At O'Hare**

In the event that United fails or significantly downsizes its hub, American would be strengthened very significantly as the remaining hub carrier. No other airline would challenge American at O'Hare, certainly not for supremacy or equality as a second hub carrier. The other carriers are far too weak financially to mount a serious attack on American; and besides, a strategy of strengthening their own hubs in other cities would be a more profitable use of assets. The major competitive reaction by incumbent carriers, other than American, would be to compete aggressively against American for United's

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connecting traffic (e.g. Syracuse-Los Angeles traffic, via O'Hare/ Philadelphia/ Pittsburgh/ Detroit/ Minneapolis/ Cincinnati/ Atlanta/ Newark, etc). 142

With American as the remaining hub carrier it would enjoy a monopoly in approximately 126 Chicago non-stop markets (Table 5-1). This would permit American to rationalize significantly the combined flight schedule operated by United and American today, as well as the Chicago local fare structure. It is entirely reasonable to expect that overall frequencies will decline at O'Hare and that fares will rise, especially for the Chicago local O&D traffic. The increase in fares will have a further dampening effect on traffic (using the FAA's -1.2 price elasticity coefficient). In regard to schedule rationalization, American Airlines (with a limited aircraft fleet at any time) will consolidate United's schedules with its own, attempting to use larger aircraft wherever possible, and to move connecting traffic on existing flights over other hubs (e.g. DFW). It will also forego (through pricing tactics) a lot of low yield connecting passengers. For example, in a market that has 8 flight per day by American and 10 flights per day by United currently, it is reasonable to expect that American by itself would operate 10 to 14 trips a day.

In regard to O'Hare markets that are served by domestic carriers other than American, as well as foreign carriers, the competitive responses would be similar. That is, there will be capacity and frequency rationalization, use of larger aircraft, and efforts to increase fares. 143

In Appendix E Campbell-Hill presents the methodology and results of its analysis along with detailed statements of the analytical assumptions underlying this study. As shown in Chart 5-1 below, it may be concluded from this analysis that if United fails, total operations at O'Hare will not surpass year 2003 actual operations until 2025, and the revised 2023 operations (919,173) will be 28% below the DEIS forecast. 144

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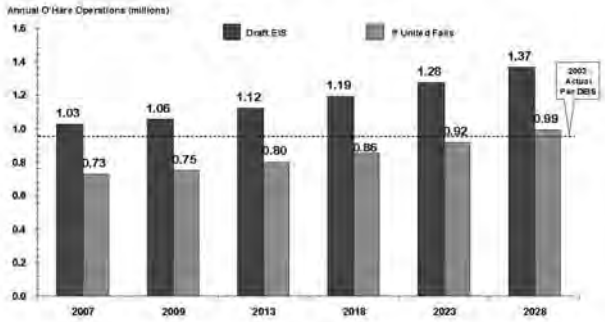
| Comment | Response |
|---|---|
| 142 | FAA does not believe that is possible to conclude with the certainty of the commenter that no other airline would seek to enter the ORD market in the event of a failure of United Airlines (UA). In addition, FAA does not believe that a complete "challenge" by another airline would be required to result in a substantially similar result in future traffic at ORD. American itself could substantially increase service at ORD, which would be a scenario similar to what happened at ATL—the other major system hub most comparable to ORD—after Eastern Airlines discontinued its hub. The EIS **Appendix R** contains a discussion of the potential impact of the loss of a hubbing airline at ORD. |
| 143 | The commenter suggests that a UA failure or downsizing at ORD would result in: (1) a monopoly in 126 markets by AA, (2) decline in frequencies at ORD, (3) increase in fares at ORD, and (4) a reduction in activity at ORD.<br><br>FAA agrees that the loss of a hubbing carrier at ORD would likely result in reduced activity at ORD, and this possible alternative has been presented in **Appendix R** of the DEIS.<br><br>FAA does not agree with the specific conclusions offered by the commenter. FAA finds that the conclusions reached by the commenter are not credible, given the high level of specificity inherent in the commenter's assumptions. Additional response to this comment is provided in the review and response to *CH Appendix E*, beginning on page U.4-794.<br><br>*CH Exhibit 500*<br>*CH Exhibit 500* is listed as a source for *CH Chart 5-1*, presented on page U.4-603. The source note for *CH Exhibit 500* indicates that *CH Exhibit 500* is based on "Campbell-Hill proprietary analysis". FAA cannot comment on proprietary analysis that is not disclosed or explained. FAA can comment that it does not agree with the conclusions presented in *CH Exhibit 500.* |
| 144 | *CH Appendix E*<br>*CH Appendix E* is offered by the commenter to support the assertions in the this section of their comments. FAA's response to *CH Appendix E* is provided beginning on page U.4-794.<br><br>Continued on the following page. |

**Chart 5-1**
**TOTAL O'HARE OPERATIONS WILL NOT EQUAL 2003 LEVELS UNTIL 2025 IF UNITED FAILS OR REDUCES SIGNIFICANTLY ITS O'HARE OPERATIONS**



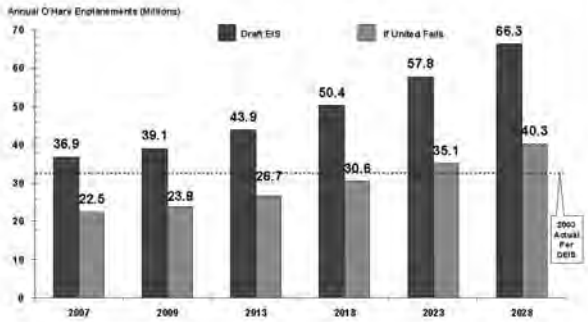

Source: Exhibit 500.

Correspondingly, the Campbell-Hill study shows in Chart 5-2 that total enplanements (absent United Airlines) will not return to 2003 actual levels until the year 2021, and the adjusted 2023 enplanements will be 39% below the DEIS forecast.

85

| Comment | Response |
|---|---|
| 144 continued | *CH Exhibit 501*<br>*CH Exhibit 501* is listed as a source for *CH Chart 5-2*, which is presented on page U.4-604. The source for *CH Exhibit 501* is noted as "Leigh Fisher Associates". FAA can confirm that Leigh Fisher Associates did not prepare *CH Exhibit 501.* It is not clear who prepared *CH Exhibit 501.*<br><br>Additional source notes for *CH Exhibit 501* refer to *CH Appendix E.* FAA's response to *CH Appendix E* (and therefore *CH Exhibit 501*) are presented below in the review and response to *CH Appendix E.* |

**Chart 5-2**
**TOTAL O'HARE ENPLANEMENTS WILL NOT EQUAL 2003 LEVELS UNTIL 2021 IF UNITED FAILS OR REDUCES SIGNIFICANTLY ITS O'HARE OPERATIONS**




Source: Exhibit 501.

Exhibits E-1 through E-3 in Appendix E provide all of the detailed analytical assumptions underlying the analysis and some of the key findings and impacts. Exhibits 500 and 501 present the summary of the Campbell-Hill adjustments to the DEIS forecasts of operations and enplanements respectively. Exhibits E-4 and E-5 in Appendix E provide detailed back-up to the analytical computations.

Table 5-1 below summarizes other significant changes that would result from a United failure.

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**Table 5-1**
**SUMMARY IMPACTS OF THE LOSS OF UNITED AT O'HARE**
**(Based upon CY2003 Traffic and March 2005 Schedules)**

| | With United | Without United | Change |
|---|---|---|---|
| 1. Total ORD operations (2003) | 960,500[1/] | 674,757 | -285,743 |
| Total ORD operations (2018) | 1,194,000[1/] | 855,371 | -338,629 |
| 2. Total enplanements (2003) | 32.6 Mil[1/] | 19.8 Mil | -12.8 Mil |
| Total enplanements (2018) | 50.4 Mil[1/] | 30.6 Mil | -19.8 Mil |
| 3. American Airlines monopoly routes | 22 | 126 | +104 |
| 4. Average domestic ORD fare (one-way) | $146.09 | $167.38 | +$21.29 |

[1/] DEIS, Appendix B

Source: Exhibits 500 and 501, and Appendix E.

Campbell-Hill believes this analysis is founded upon conservative and reasonable estimates with respect to competitive reactions to a failure by United. Furthermore, a failure or significant downsizing by American, in combination with survival and reorganization by United, would produce approximately the same results regarding reduced forecasts of operations and enplanements relative to the DEIS forecasts (Section 5.4 below). 144

**5.3 Highlights Of United's Current Financial Posture** 145

A critical question is: What are the chances that United will fail within the next year or two? Exhibits 502 through 509 are indicative of the precarious nature of United's financial viability, and as such, they help to answer this question. As shown in Exhibit 502, United's net losses began in 2001 and they accelerated downward to a level exceeding $4 billion for the 12-months ended June 2003. Since that time, when labor and debt concessions took hold as a result of its Chapter 11 reorganization efforts, United's

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| Comment | Response |
|---|---|
| 144 | Please see the response to this comment on page U.4-602. |
| 145 | For purposes of the EIS, FAA has not assigned any probability to the success or failure of individual airlines. FAA's analysis, including FAA's forecasts used for the TAF, are based on an analysis of the market, and the attractiveness of ORD as a hub. **Appendix R** of the DEIS includes an analysis of the potential alternative outcomes if one of the two airlines operating a hub at ORD (such as United) were to significantly reduce or discontinue service at ORD. FAA believes that the analysis in **Appendix R** sufficiently considers this potential, and that the commenter's analysis does not present any new information that would invalidate the analysis in the DEIS.<br><br>*CH Exhibits 502 through 509*<br>*CH Exhibits 502* through *509* are presented by the commenter as evidence of "the precarious nature of United's financial viability". FAA agrees that United has been recently experiencing financial difficulty, but does not agree that this means that it is certain that United will fail as an airline or eliminate the ORD hub. FAA believes that the commenter's data have demonstrated United's recent financial difficulties, but have not conclusively proven that United will fail as an airline or will eliminate the ORD hub.<br><br>**Appendix R** of the DEIS presents an analysis of the potential for the reduction or elimination of hub operations by one of the two major airlines currently operating a hub at ORD. |

| Comment | Response |
|---|---|
| 145 | Please see the response to this comment on the previous page. |

net losses have been mitigated somewhat, although they still continue at levels well in excess of $200 million per month in early 2005.

United has obtained more than $5 billion of total concessions (excluding recent pension plan relief) since it filed for Chapter 11 protection in December 2002 (Exhibits 503-505). Nevertheless, since the year ended March 30, 2001 United's total operating expense (excluding interest expense and other non-operating items) has consistently exceeded its total operating revenue (Exhibit 506). Since the year ended June, 2002 United's operating cost per available seat-mile has been very close to its yield per revenue passenger-mile, indicating that its breakeven load factor has been near or above 100% for the past three years (Exhibit 507). Including interest expense, United's breakeven load factor is running at, or above, 100% (Exhibit 508).

Exhibit 509 compares United's operating cost per available seat-mile in domestic operations (CASM) to the domestic unit costs of American and three low cost carriers, namely Southwest, JetBlue, and AirTran. Notwithstanding all of the financial relief obtained by United through the Chapter 11 bankruptcy process, its unit costs have remained very close to American's, and in fact, during 2004 United's unit costs increased while American's decreased. During the early bankruptcy process United made several attempts to benchmark itself against Southwest Airlines and possibly other low cost carriers. As shown in Exhibit 509, United has made no headway in reducing its costs relative to Southwest, or to JetBlue and AirTran. A significant differential of approximately 55% exists relative to Southwest and 100% relative to JetBlue.

Due to the persistence of high fuel costs, which appear to have eroded the benefits of its Chapter 11 financial concessions, United has been unable to achieve a cost structure competitive with low cost carriers and some of the other legacy carriers. Its recent continuing losses and cash position have required United to obtain waivers from the DIP lenders' covenants.[97] Many industry experts wonder how much longer United can continue these financial losses. Without the prospects of a significant turnaround in the near future, Campbell-Hill believes there is at least a 50% chance that United will

[97] Aviation Daily, January 28, 2005, page 2.

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significantly downsize its operations or cease entirely, and that this would occur within the next 12 to 24 months. 145

**5.4 Competitive Responses To An American Airlines Failure/Downsizing** 146

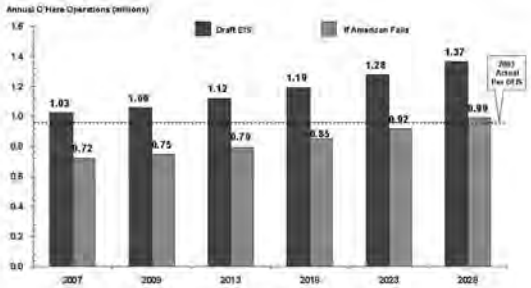
If American should fail, or downsize significantly at O'Hare, the competitive reactions and consequences for the OMP are very similar to the case of a United failure (Section 5.2 above). Using the same basic algorithms and analytical assumptions, it is clear that the current O'Hare capacity and runways will be satisfactory for the next 20 years.

If American fails, total O'Hare operations will not surpass 2003 actual operations until 2027 (Chart 5-3), and total enplanements will not recover to 2003 levels until 2017 (Chart 5-4).

89

| Comment | Response |
|---|---|
| 145 | Please see the response to this comment on page U.4-605. |
| 146 | FAA does not believe that is possible to conclude with the certainty of the commenter that no other airline would seek to enter the ORD market in the event of a failure of American Airlines. The EIS **Appendix R** contains a discussion of the potential impact of the loss of a hubbing airline at ORD.<br><br>Also see response to comments made in *CH Appendix F,* beginning on page U.4-808. |

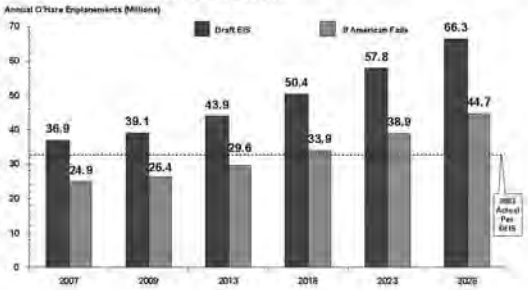
**Chart 5-3**
**TOTAL O'HARE OPERATIONS WILL NOT EQUAL 2003 LEVELS UNTIL 2027 IF AMERICAN FAILS OR REDUCES SIGNIFICANTLY ITS O'HARE OPERATIONS**




Source: Exhibit 510.

Total O'Hare enplanements will not return to the 2003 level until 2017 (Chart 5-4).

**Chart 5-4**
**TOTAL O'HARE ENPLANEMENTS WILL NOT EQUAL 2003 LEVELS UNTIL 2017 IF AMERICAN FAILS OR REDUCES SIGNIFICANTLY ITS O'HARE OPERATIONS**




Source: Exhibit 511.

The summary of Campbell-Hill's adjusted forecasts of operations and enplanements is shown in Exhibits 510 and 511 respectively. The detailed analysis is contained in Appendix F. 146

**5.5 Conclusion**

Given the significant and realistic probability that United, as we know it today, will not survive; and, given that the OMP would not be required for at least 20 years if United fails, the responsible position that must be adopted by the FAA is to delay the irreversible decision to proceed with a $21+ billion investment program at O'Hare, since the outcome of United's attempt at reorganization should be known within the next 12 to 24 months. The economic cost of delaying the decision by a year or two is zero. The City's recently submitted Benefit-Cost Analysis shows the same benefit-cost ratio whether construction is delayed five years or whether it proceeds on schedule.[98]

The enormous risk that confronts GARB investors due to the overhang of United's uncertain future adds further evidence that the OMP is not financeable at this time. 147

[98] See City of Chicago, Multi-Year Committee of Airport Improvement Program Grant in Aid Funding, March 1, 2004, updated February 2005, page iv. Campbell-Hill disagrees strongly with the City's benefit-cost study and that will be the subject of a later report.

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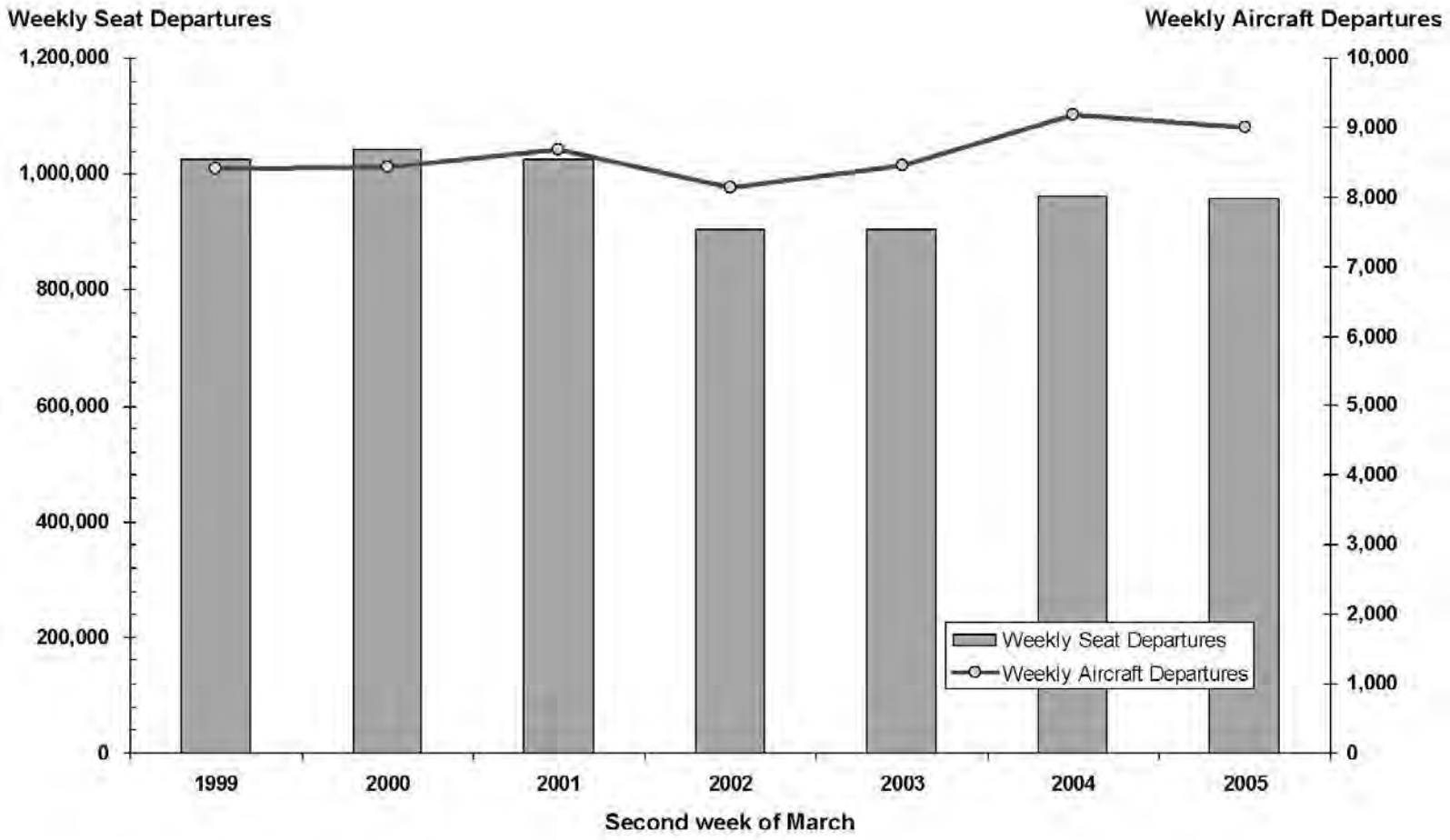
| Comment | Response |
|---|---|
| 146 | *CH Exhibit 510*<br><br>*CH Exhibit 510* is offered by the commenter to support a conclusion that OMP will not be needed if American Airlines fails or significantly reduces operations at ORD. This is further supported by source notes referring to *CH Appendix F*. Therefore, more specific responses are offered to the comments within *CH Appendix F*, beginning on page U.4-808.<br><br>The overall source note for *CH Exhibit 501* refers to "Campbell-Hill Aviation Group proprietary analysis". FAA cannot comment on proprietary analysis that has not been included or disclosed in the comment document.<br><br>FAA can comment that it disagrees with the conclusions offered by the commenter. In particular, FAA does not agree with the conclusion that "If American fails, O'Hare operations will not surpass 2003 actual levels until 2027". The commenter has provided a spreadsheet which contains numbers supporting this conclusion, but does not offer the details and assumptions behind the "proprietary analysis" used to arrive at this conclusion. FAA believes that the ORD hub is not dependent on any one airline. FAA further believes that the decision by a single airline to discontinue or reduce service at ORD would not change the activity levels at ORD as drastically as suggested by the commenter. **Appendix R** contains the analysis performed by FAA of the potential loss of a hubbing airline at ORD. |
| 147 | The conclusions are based on the commenter's assertions from earlier sections. Therefore, the FAA's responses to the conclusions are contained in the responses in each section, above. In summary, FAA disagrees the commenter's assertions, for the reasons stated in the responses to specific comments above. |

# EXHIBITS

Exhibit 100
Page 1 of 3

# TOTAL WEEKLY CAPACITY HAS DECLINED AT O'HARE SINCE 1999
## (All Airlines)




Source: Official Airline Guide, Max Edition.

Exhibit 100
Page 2 of 3

## TOTAL WEEKLY CAPACITY HAS DECLINED AT O'HARE SINCE 1999
## (All Airlines)

| Year | Average Aircraft Size (Seats) |
|---|---|
| 1998 | 127 |
| 1999 | 122 |
| 2000 | 123 |
| 2001 | 118 |
| 2002 | 111 |
| 2003 | 107 |
| 2004 | 105 |
| 2005 | 106 |

Exhibit 100
Page 3 of 3

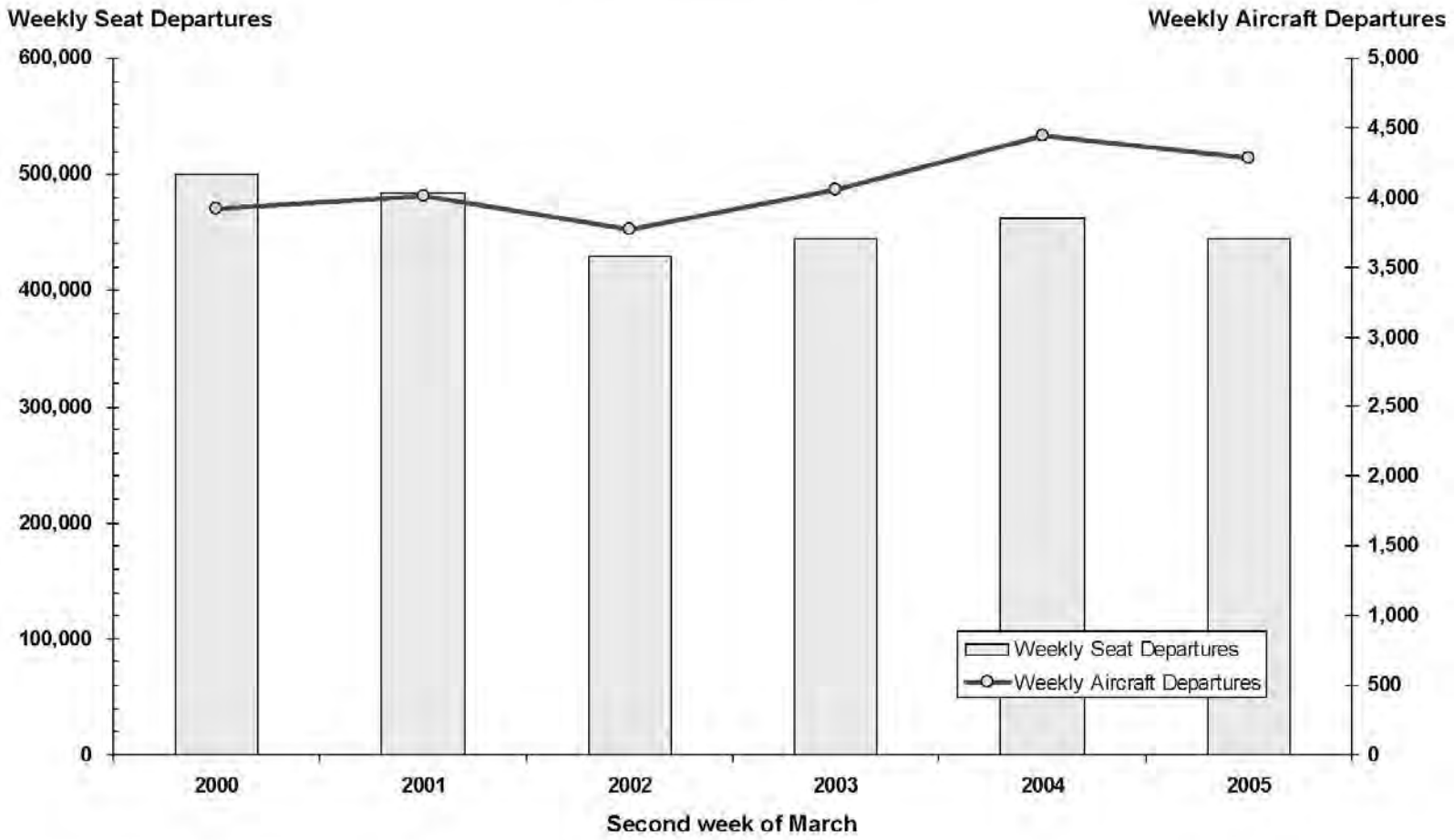
# TOTAL WEEKLY CAPACITY HAS DECLINED AT O'HARE SINCE 1999
## (All Airlines)

| | Weekly | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Domestic Departures | | International Departures | | Total Departures | | Average Seats Per Departure | | |
| Week of | Flights | Seats | Flights | Seats | Flights | Seats | Domestic | International | Total |
| March 8-14, 1999 | 7,727 | 895,054 | 686 | 128,855 | 8,413 | 1,023,909 | 115.8 | 187.8 | 121.7 |
| March 6-12, 2000 | 7,685 | 899,257 | 747 | 141,044 | 8,432 | 1,040,301 | 117.0 | 188.8 | 123.4 |
| March 5-11, 2001 | 7,901 | 881,782 | 784 | 143,725 | 8,685 | 1,025,507 | 111.6 | 183.3 | 118.1 |
| March 4-10, 2002 | 7,495 | 792,854 | 639 | 111,737 | 8,134 | 904,591 | 105.8 | 174.9 | 111.2 |
| March 10-16, 2003 | 7,728 | 782,465 | 717 | 123,043 | 8,445 | 905,508 | 101.3 | 171.6 | 107.2 |
| March 8-14, 2004 | 8,423 | 829,049 | 761 | 132,826 | 9,184 | 961,875 | 98.4 | 174.5 | 104.7 |
| March 7-13, 2005 | 8,171 | 816,186 | 834 | 141,166 | 9,005 | 957,352 | 99.9 | 169.3 | 106.3 |

Source: Official Airline Guide, schedules for the week of April 6-12, 1998 (April 1998 Max edition), schedules for the week of March 8-14, 1999 (March 1999 Max edition), schedules for the week of March 6-12, 2000 (March 2000 Max edition), schedules for the week of March 5-11, 2001 (March 2001 Max edition), schedules for the week of March 4-10, 2002 (March 2002 Max edition), schedules for the week of March 10-16, 2003 (March 2003 Max edition), schedules for the week of March 8-14, 2004 (March 2004 Max edition), schedules for the week of March 7-13, 2005 (January 2005 Max edition).

Exhibit 101
Page 1 of 2

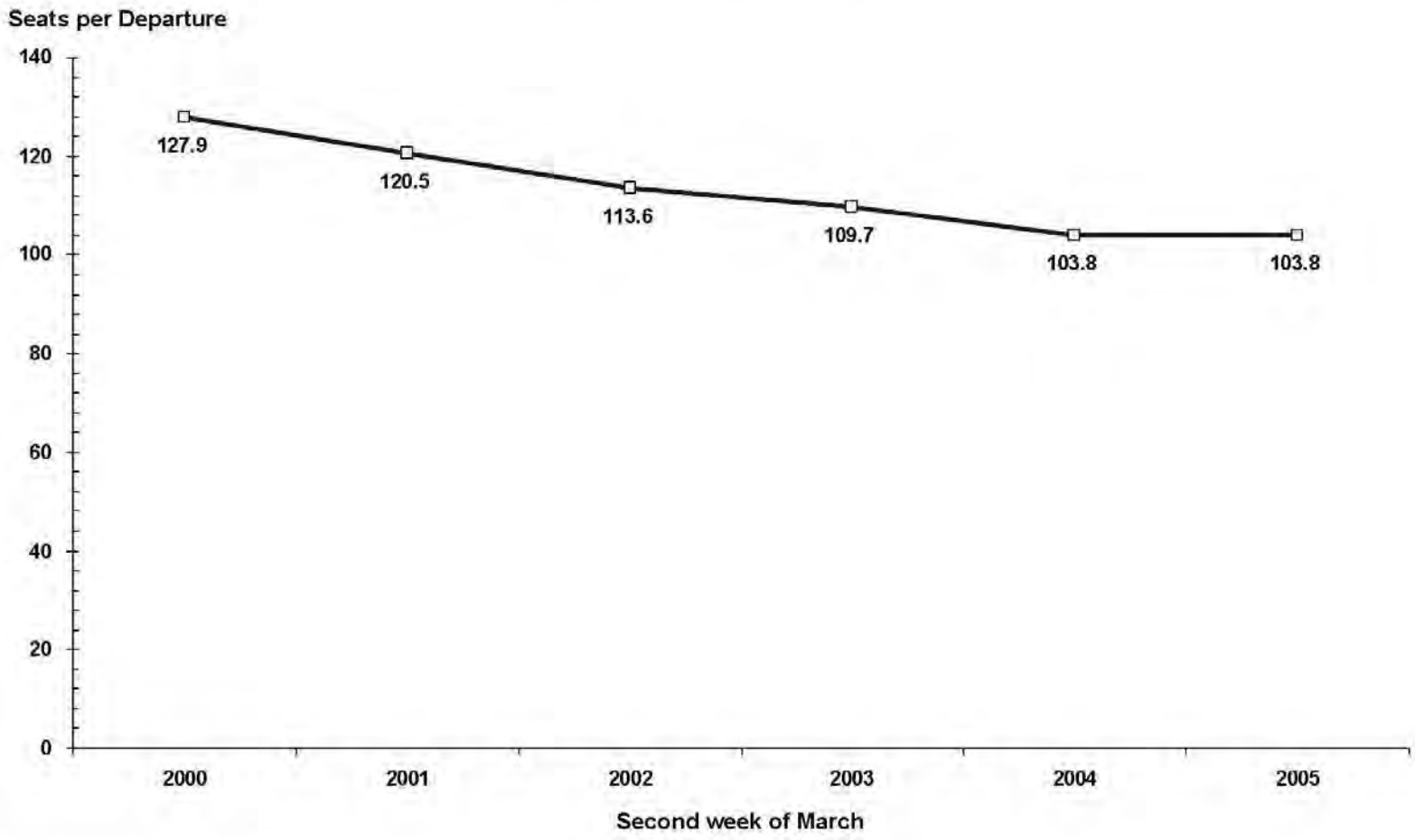
## UNITED'S WEEKLY CAPACITY AT O'HARE HAS DECLINED AND ITS AVERAGE AIRCRAFT SIZE HAS DROPPED BY 19% SINCE 2000
(System Operations in March)




Source: Official Airline Guide, Max Edition.

Exhibit 101
Page 2 of 2

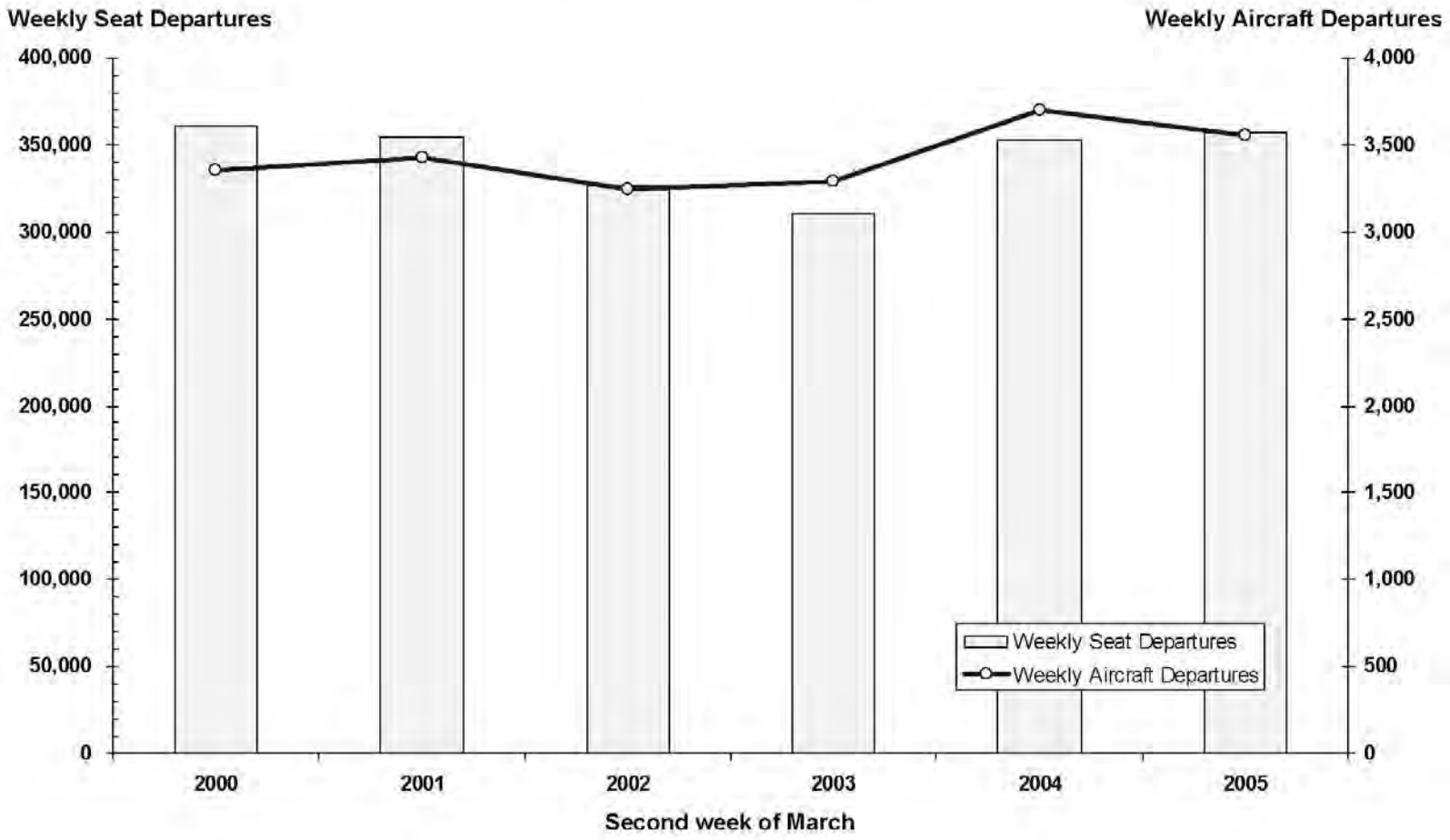
## UNITED'S WEEKLY CAPACITY AT O'HARE HAS DECLINED AND ITS AVERAGE AIRCRAFT SIZE HAS DROPPED BY 19% SINCE 2000
(System Operations in March)




Source: Official Airline Guide, Max Edition.

Exhibit 102
Page 1 of 2

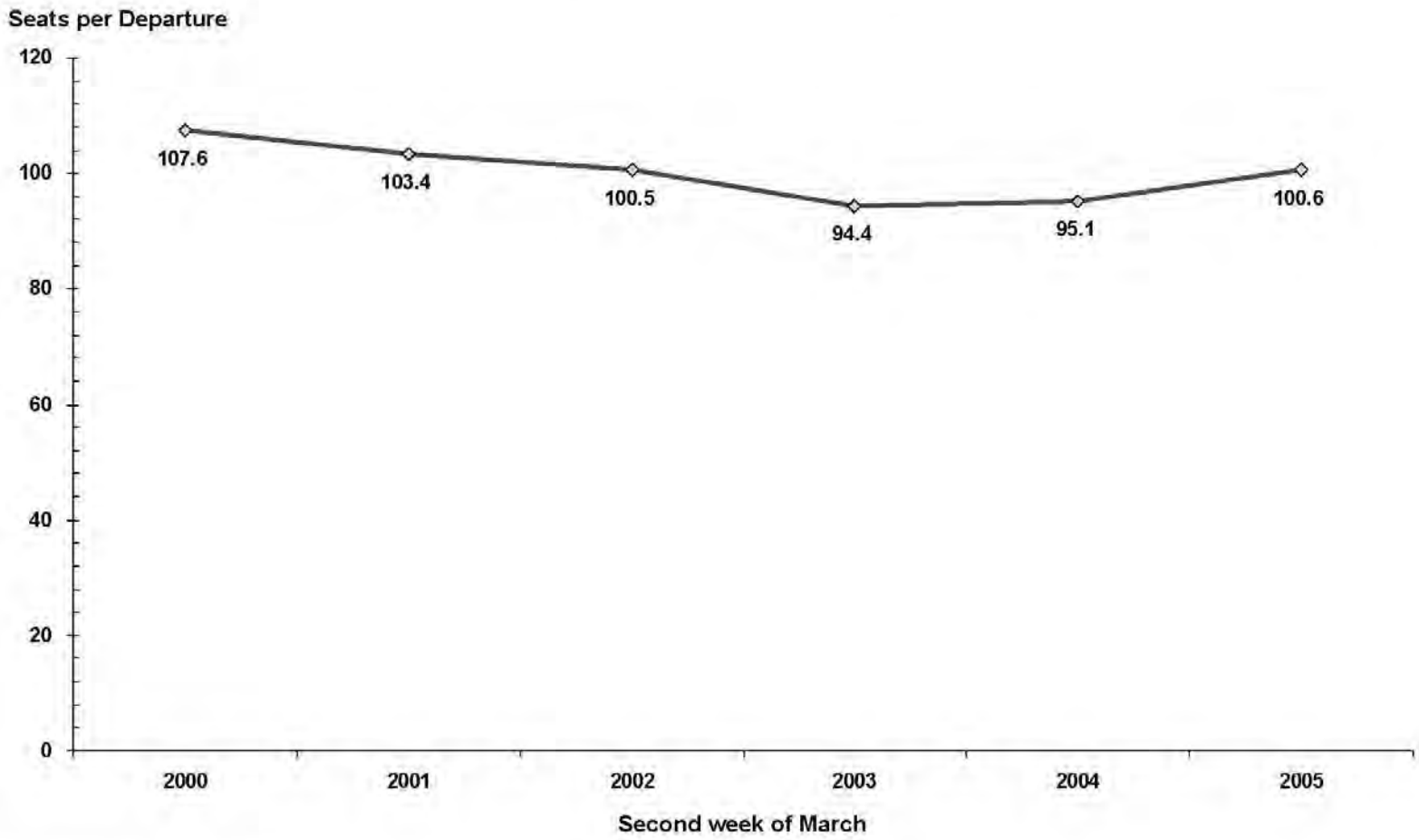
## AMERICAN'S WEEKLY CAPACITY AT O'HARE HAS DECLINED AND ITS AVERAGE AIRCRAFT SIZE HAS DROPPED BY 7% SINCE 2000
(System Operations in March)




Source: Official Airline Guide, Max Edition.

Exhibit 102
Page 2 of 2

## AMERICAN'S WEEKLY CAPACITY AT O'HARE HAS DECLINED AND ITS AVERAGE AIRCRAFT SIZE HAS DROPPED BY 7% SINCE 2000
(System Operations in March)

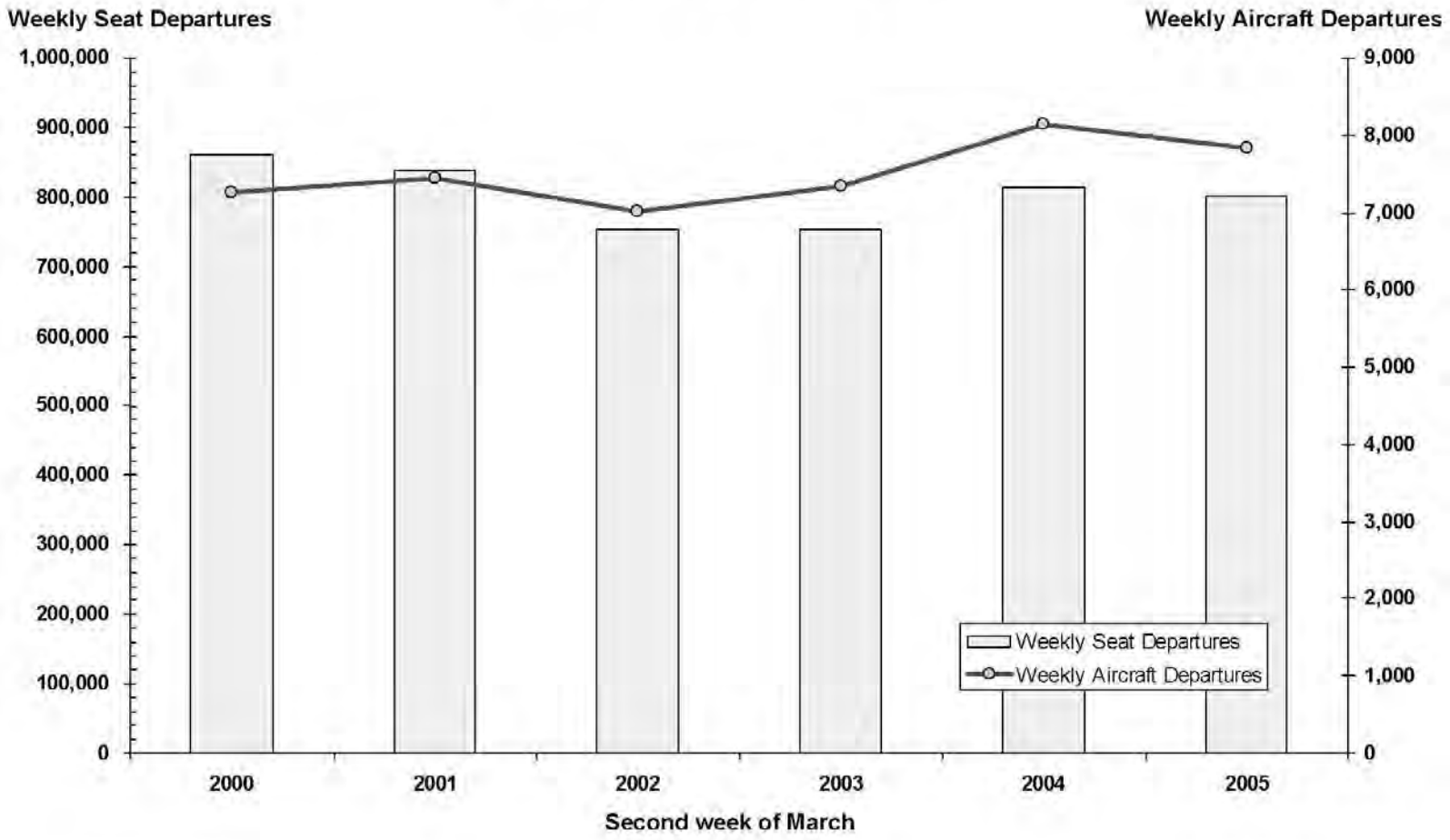



Source: Official Airline Guide, Max Edition.

Exhibit 103
Page 1 of 2

# THE COMBINED WEEKLY CAPACITY OF AMERICAN AND UNITED AIRLINES AT O'HARE HAS DECLINED SINCE 2000 AND THEIR AIRCRAFT SIZE HAS DROPPED BY 16%

(System Operations in March)

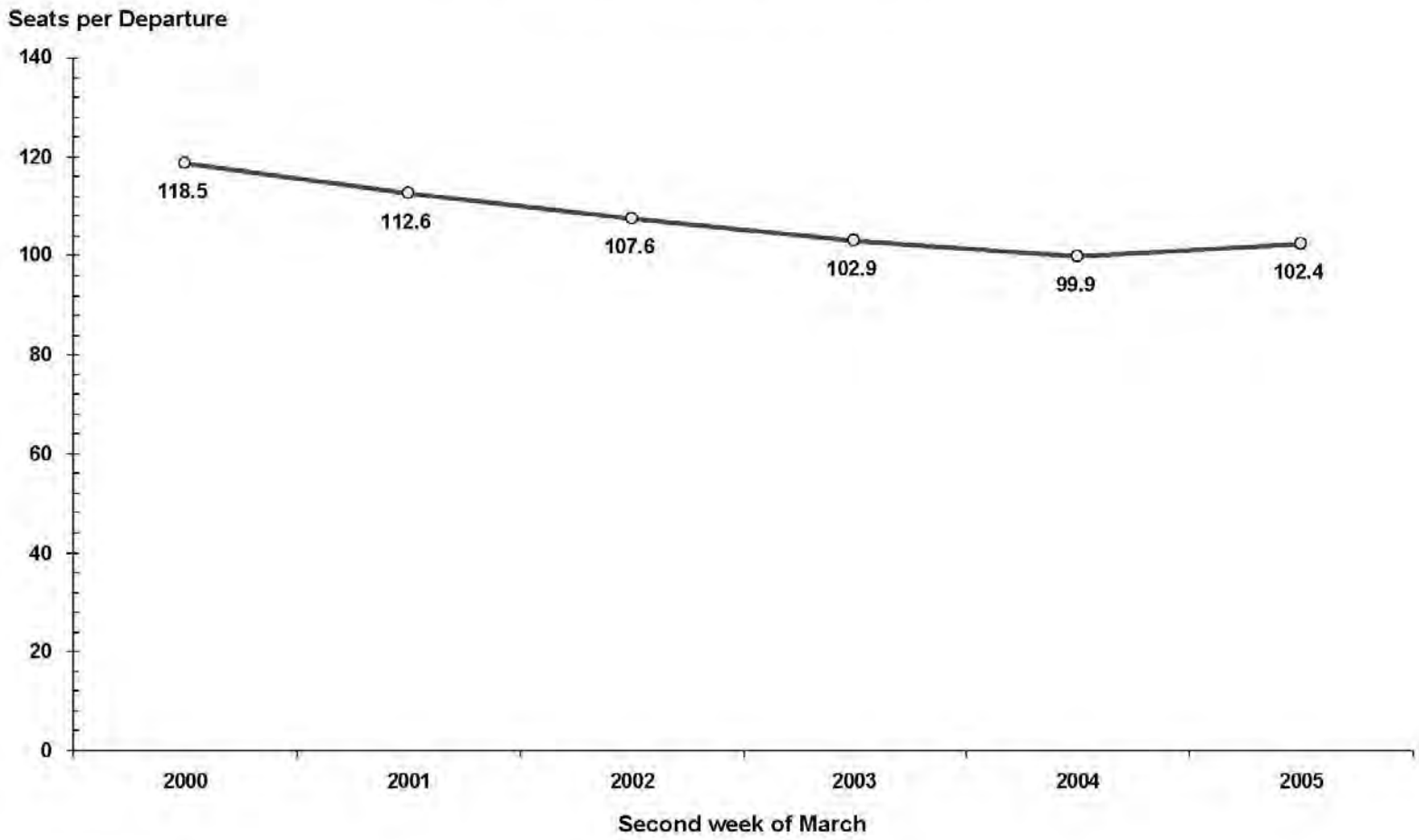



Source: Exhibits 101 and 102.

Exhibit 103
Page 2 of 2

## THE COMBINED WEEKLY CAPACITY OF AMERICAN AND UNITED AIRLINES AT O'HARE HAS DECLINED SINCE 2000 AND THEIR AIRCRAFT SIZE HAS DROPPED BY 16%

(System Operations in March)




Source: Exhibits 101 and 102.

Exhibit 104
Page 1 of 4

## ORD 2003 TAF COMPARED TO 2002 TAF
## (Enplanements)

| Fiscal Year | Enplanements | | | |
|---|---|---|---|---|
| | 2002 TAF | 2003 TAF | Difference | % Difference |
| 1992 | 29,737,701 | 29,737,701 | 0 | 0.00% |
| 1993 | 30,329,179 | 30,329,179 | 0 | 0.00% |
| 1994 | 30,920,837 | 30,920,837 | 0 | 0.00% |
| 1995 | 31,611,635 | 31,611,635 | 0 | 0.00% |
| 1996 | 32,058,869 | 32,058,869 | 0 | 0.00% |
| 1997 | 32,653,838 | 32,653,838 | 0 | 0.00% |
| 1998 | 34,275,979 | 34,275,979 | 0 | 0.00% |
| 1999 | 34,339,327 | 34,339,327 | 0 | 0.00% |
| 2000 | 34,386,718 | 34,386,718 | 0 | 0.00% |
| 2001 | 32,861,463 | 32,861,353 | -110 | 0.00% |
| 2002 | 31,026,878 | 31,036,583 | 9,705 | 0.03% |
| 2003 | **32,279,532** | **32,717,166** | **437,634** | **1.36%** |
| 2004 | **33,355,660** | **36,299,801** | **2,944,141** | **8.83%** |
| 2005 | **34,436,637** | **38,553,984** | **4,117,347** | **11.96%** |
| 2006 | **35,482,484** | **40,016,916** | **4,534,432** | **12.78%** |
| 2007 | **36,538,578** | **41,176,513** | **4,637,935** | **12.69%** |
| 2008 | **37,616,027** | **42,365,388** | **4,749,361** | **12.63%** |
| 2009 | **38,707,538** | **43,574,089** | **4,866,551** | **12.57%** |
| 2010 | **39,838,460** | **44,809,921** | **4,971,461** | **12.48%** |
| 2011 | **41,009,473** | **46,014,868** | **5,005,395** | **12.21%** |
| 2012 | **42,193,590** | **47,302,742** | **5,109,152** | **12.11%** |
| 2013 | **43,396,118** | **48,596,213** | **5,200,095** | **11.98%** |
| 2014 | **44,595,908** | **49,932,756** | **5,336,848** | **11.97%** |
| 2015 | **45,847,959** | **51,284,709** | **5,436,750** | **11.86%** |
| 2016 | **47,128,724** | **52,701,547** | **5,572,823** | **11.82%** |
| 2017 | **48,432,974** | **54,090,880** | **5,657,906** | **11.68%** |
| 2018 | **49,759,252** | **55,503,487** | **5,744,235** | **11.54%** |
| 2019 | **51,067,731** | **56,948,834** | **5,881,103** | **11.52%** |
| 2020 | **52,404,871** | **58,395,018** | **5,990,147** | **11.43%** |

**Bold = Forecast**

Exhibit 104
Page 2 of 4

## ORD 2003 TAF COMPARED TO 2002 TAF
## (Enplanements)

| | Enplanements | | | | | |
|---|---|---|---|---|---|---|
| Fiscal Year | 2002 TAF | 2003 TAF | 2002 TAF Annual %Growth | 2003 TAF Annual % Growth | 2002 TAF Annual Growth | 2003 TAF Annual Growth |
| 1992 | 29,737,701 | 29,737,701 | | | | |
| 1993 | 30,329,179 | 30,329,179 | 2.0% | 2.0% | 591,478 | 591,478 |
| 1994 | 30,920,837 | 30,920,837 | 2.0% | 2.0% | 591,658 | 591,658 |
| 1995 | 31,611,635 | 31,611,635 | 2.2% | 2.2% | 690,798 | 690,798 |
| 1996 | 32,058,869 | 32,058,869 | 1.4% | 1.4% | 447,234 | 447,234 |
| 1997 | 32,653,838 | 32,653,838 | 1.9% | 1.9% | 594,969 | 594,969 |
| 1998 | 34,275,979 | 34,275,979 | 5.0% | 5.0% | 1,622,141 | 1,622,141 |
| 1999 | 34,339,327 | 34,339,327 | 0.2% | 0.2% | 63,348 | 63,348 |
| 2000 | 34,386,718 | 34,386,718 | 0.1% | 0.1% | 47,391 | 47,391 |
| 2001 | 32,861,463 | 32,861,353 | -4.4% | -4.4% | -1,525,255 | -1,525,365 |
| 2002 | **31,026,878** | 31,036,583 | **-5.6%** | -5.6% | **-1,834,585** | -1,824,770 |
| 2003 | **32,279,532** | **32,717,166** | **4.0%** | **5.4%** | **1,252,654** | **1,680,583** |
| 2004 | **33,355,660** | **36,299,801** | **3.3%** | **11.0%** | **1,076,128** | **3,582,635** |
| 2005 | **34,436,637** | **38,553,984** | **3.2%** | **6.2%** | **1,080,977** | **2,254,183** |
| 2006 | **35,482,484** | **40,016,916** | **3.0%** | **3.8%** | **1,045,847** | **1,462,932** |
| 2007 | **36,538,578** | **41,176,513** | **3.0%** | **2.9%** | **1,056,094** | **1,159,597** |
| 2008 | **37,616,027** | **42,365,388** | **2.9%** | **2.9%** | **1,077,449** | **1,188,875** |
| 2009 | **38,707,538** | **43,574,089** | **2.9%** | **2.9%** | **1,091,511** | **1,208,701** |
| 2010 | **39,838,460** | **44,809,921** | **2.9%** | **2.8%** | **1,130,922** | **1,235,832** |
| 2011 | **41,009,473** | **46,014,868** | **2.9%** | **2.7%** | **1,171,013** | **1,204,947** |
| 2012 | **42,193,590** | **47,302,742** | **2.9%** | **2.8%** | **1,184,117** | **1,287,874** |
| 2013 | **43,396,118** | **48,596,213** | **2.9%** | **2.7%** | **1,202,528** | **1,293,471** |
| 2014 | **44,595,908** | **49,932,756** | **2.8%** | **2.8%** | **1,199,790** | **1,336,543** |
| 2015 | **45,847,959** | **51,284,709** | **2.8%** | **2.7%** | **1,252,051** | **1,351,953** |
| 2016 | **47,128,724** | **52,701,547** | **2.8%** | **2.8%** | **1,280,765** | **1,416,838** |
| 2017 | **48,432,974** | **54,090,880** | **2.8%** | **2.6%** | **1,304,250** | **1,389,333** |
| 2018 | **49,759,252** | **55,503,487** | **2.7%** | **2.6%** | **1,326,278** | **1,412,607** |
| 2019 | **51,067,731** | **56,948,834** | **2.6%** | **2.6%** | **1,308,479** | **1,445,347** |
| 2020 | **52,404,871** | **58,395,018** | **2.6%** | **2.5%** | **1,337,140** | **1,446,184** |

| | 2002 TAF | 2003 TAF |
|---|---|---|
| Compound Annual Growth Rate 2001-2020 | 2.49% | 3.07% |

**Bold = Forecast**

Exhibit 104
Page 3 of 4

## ORD 2003 TAF COMPARED TO 2002 TAF
## (Operations)

| Fiscal Year | Operations 2002 TAF | 2003 TAF | Difference | % Difference |
|---|---|---|---|---|
| 1992 | 838,093 | 838,093 | 0 | 0.00% |
| 1993 | 851,865 | 851,865 | 0 | 0.00% |
| 1994 | 883,480 | 883,480 | 0 | 0.00% |
| 1995 | 892,330 | 892,330 | 0 | 0.00% |
| 1996 | 909,186 | 909,186 | 0 | 0.00% |
| 1997 | 890,383 | 890,383 | 0 | 0.00% |
| 1998 | 888,333 | 888,333 | 0 | 0.00% |
| 1999 | 898,855 | 898,855 | 0 | 0.00% |
| 2000 | 906,326 | 906,326 | 0 | 0.00% |
| 2001 | 927,896 | 927,896 | 0 | 0.00% |
| 2002 | 901,703 | 901,703 | 0 | 0.00% |
| 2003 | **942,961** | 923,578 | -19,383 | -2.06% |
| 2004 | **956,478** | **1,039,927** | 83,449 | 8.72% |
| 2005 | **974,893** | **1,097,593** | 122,700 | 12.59% |
| 2006 | **990,853** | **1,129,584** | 138,731 | 14.00% |
| 2007 | **1,005,759** | **1,151,961** | 146,202 | 14.54% |
| 2008 | **1,020,212** | **1,169,193** | 148,981 | 14.60% |
| 2009 | **1,035,207** | **1,187,832** | 152,625 | 14.74% |
| 2010 | **1,050,072** | **1,207,471** | 157,399 | 14.99% |
| 2011 | **1,065,814** | **1,225,552** | 159,738 | 14.99% |
| 2012 | **1,081,429** | **1,244,857** | 163,428 | 15.11% |
| 2013 | **1,096,905** | **1,262,988** | 166,083 | 15.14% |
| 2014 | **1,111,865** | **1,281,384** | 169,519 | 15.25% |
| 2015 | **1,126,284** | **1,301,782** | 175,498 | 15.58% |
| 2016 | **1,141,590** | **1,324,051** | 182,461 | 15.98% |
| 2017 | **1,156,013** | **1,345,930** | 189,917 | 16.43% |
| 2018 | **1,170,635** | **1,367,640** | 197,005 | 16.83% |
| 2019 | **1,183,948** | **1,390,503** | 206,555 | 17.45% |
| 2020 | **1,198,192** | **1,414,021** | 215,829 | 18.01% |

**Bold = Forecast**

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## ORD 2003 TAF COMPARED TO 2002 TAF
## (Operations)

| | Operations | | | | | |
|---|---|---|---|---|---|---|
| Fiscal Year | 2002 TAF | 2003 TAF | 2002 TAF Annual %Growth | 2003 TAF Annual % Growth | 2002 TAF Annual Growth | 2003 TAF Annual Growth |
| 1992 | 838,093 | 838,093 | | | | |
| 1993 | 851,865 | 851,865 | 1.6% | 1.6% | 13,772 | 13,772 |
| 1994 | 883,480 | 883,480 | 3.7% | 3.7% | 31,615 | 31,615 |
| 1995 | 892,330 | 892,330 | 1.0% | 1.0% | 8,850 | 8,850 |
| 1996 | 909,186 | 909,186 | 1.9% | 1.9% | 16,856 | 16,856 |
| 1997 | 890,383 | 890,383 | -2.1% | -2.1% | -18,803 | -18,803 |
| 1998 | 888,333 | 888,333 | -0.2% | -0.2% | -2,050 | -2,050 |
| 1999 | 898,855 | 898,855 | 1.2% | 1.2% | 10,522 | 10,522 |
| 2000 | 906,326 | 906,326 | 0.8% | 0.8% | 7,471 | 7,471 |
| 2001 | 927,896 | 927,896 | 2.4% | 2.4% | 21,570 | 21,570 |
| 2002 | 901,703 | 901,703 | -2.8% | -2.8% | -26,193 | -26,193 |
| 2003 | **942,961** | 923,578 | **4.6%** | 2.4% | **41,258** | 21,875 |
| 2004 | **956,478** | **1,039,927** | **1.4%** | **12.6%** | **13,517** | **116,349** |
| 2005 | **974,893** | **1,097,593** | **1.9%** | **5.5%** | **18,415** | **57,666** |
| 2006 | **990,853** | **1,129,584** | **1.6%** | **2.9%** | **15,960** | **31,991** |
| 2007 | **1,005,759** | **1,151,961** | **1.5%** | **2.0%** | **14,906** | **22,377** |
| 2008 | **1,020,212** | **1,169,193** | **1.4%** | **1.5%** | **14,453** | **17,232** |
| 2009 | **1,035,207** | **1,187,832** | **1.5%** | **1.6%** | **14,995** | **18,639** |
| 2010 | **1,050,072** | **1,207,471** | **1.4%** | **1.7%** | **14,865** | **19,639** |
| 2011 | **1,065,814** | **1,225,552** | **1.5%** | **1.5%** | **15,742** | **18,081** |
| 2012 | **1,081,429** | **1,244,857** | **1.5%** | **1.6%** | **15,615** | **19,305** |
| 2013 | **1,096,905** | **1,262,988** | **1.4%** | **1.5%** | **15,476** | **18,131** |
| 2014 | **1,111,865** | **1,281,384** | **1.4%** | **1.5%** | **14,960** | **18,396** |
| 2015 | **1,126,284** | **1,301,782** | **1.3%** | **1.6%** | **14,419** | **20,398** |
| 2016 | **1,141,590** | **1,324,051** | **1.4%** | **1.7%** | **15,306** | **22,269** |
| 2017 | **1,156,013** | **1,345,930** | **1.3%** | **1.7%** | **14,423** | **21,879** |
| 2018 | **1,170,635** | **1,367,640** | **1.3%** | **1.6%** | **14,622** | **21,710** |
| 2019 | **1,183,948** | **1,390,503** | **1.1%** | **1.7%** | **13,313** | **22,863** |
| 2020 | **1,198,192** | **1,414,021** | **1.2%** | **1.7%** | **14,244** | **23,518** |

| | 2002 TAF | 2003 TAF |
|---|---|---|
| Compound Annual Growth Rate 2002-2020 | 1.59% | 2.53% |

**Bold = Forecast**

Sources: Federal Aviation Administration, 2002, 2003 Terminal Area Forecasts

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## ORD 2004 TAF COMPARED TO 2002 TAF
## (Enplanements)

| Fiscal Year | Enplanements | | | |
|---|---|---|---|---|
| | 2004 TAF | 2002 TAF | Difference | % Difference |
| 1992 | 29,737,701 | 29,737,701 | 0 | 0.00% |
| 1993 | 30,329,179 | 30,329,179 | 0 | 0.00% |
| 1994 | 30,920,837 | 30,920,837 | 0 | 0.00% |
| 1995 | 31,611,635 | 31,611,635 | 0 | 0.00% |
| 1996 | 32,058,869 | 32,058,869 | 0 | 0.00% |
| 1997 | 32,653,838 | 32,653,838 | 0 | 0.00% |
| 1998 | 34,275,979 | 34,275,979 | 0 | 0.00% |
| 1999 | 34,339,327 | 34,339,327 | 0 | 0.00% |
| 2000 | 34,386,718 | 34,386,718 | 0 | 0.00% |
| 2001 | 32,861,353 | 32,861,463 | 110 | 0.00% |
| 2002 | 30,943,392 | 31,026,878 | -83,486 | -0.27% |
| 2003 | 32,488,761 | **32,279,532** | 209,229 | 0.65% |
| 2004 | **35,283,104** | **33,355,660** | 1,927,444 | 5.78% |
| 2005 | **35,514,512** | **34,436,637** | 1,077,875 | 3.13% |
| 2006 | **36,560,681** | **35,482,484** | 1,078,197 | 3.04% |
| 2007 | **37,696,446** | **36,538,578** | 1,157,868 | 3.17% |
| 2008 | **38,760,211** | **37,616,027** | 1,144,184 | 3.04% |
| 2009 | **39,841,343** | **38,707,538** | 1,133,805 | 2.93% |
| 2010 | **40,880,131** | **39,838,460** | 1,041,671 | 2.61% |
| 2011 | **41,920,256** | **41,009,473** | 910,783 | 2.22% |
| 2012 | **43,004,093** | **42,193,590** | 810,503 | 1.92% |
| 2013 | **44,131,948** | **43,396,118** | 735,830 | 1.70% |
| 2014 | **45,304,159** | **44,595,908** | 708,251 | 1.59% |
| 2015 | **46,481,208** | **45,847,959** | 633,249 | 1.38% |
| 2016 | **47,696,802** | **47,128,724** | 568,078 | 1.21% |
| 2017 | **48,931,190** | **48,432,974** | 498,216 | 1.03% |
| 2018 | **50,196,123** | **49,759,252** | 436,871 | 0.88% |
| 2019 | **51,451,352** | **51,067,731** | 383,621 | 0.75% |
| 2020 | **52,722,217** | **52,404,871** | 317,346 | 0.61% |

Bold = Forecast

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## ORD 2004 TAF COMPARED TO 2002 TAF
## (Enplanements)

| Fiscal Year | Enplanements 2004 TAF | 2002 TAF | 2004 TAF Annual %Growth | 2002 TAF Annual % Growth | 2004 TAF Annual Growth | 2002 TAF Annual Growth |
|---|---|---|---|---|---|---|
| 1992 | 29,737,701 | 29,737,701 | | | | |
| 1993 | 30,329,179 | 30,329,179 | 2.0% | 2.0% | 591,478 | 591,478 |
| 1994 | 30,920,837 | 30,920,837 | 2.0% | 2.0% | 591,658 | 591,658 |
| 1995 | 31,611,635 | 31,611,635 | 2.2% | 2.2% | 690,798 | 690,798 |
| 1996 | 32,058,869 | 32,058,869 | 1.4% | 1.4% | 447,234 | 447,234 |
| 1997 | 32,653,838 | 32,653,838 | 1.9% | 1.9% | 594,969 | 594,969 |
| 1998 | 34,275,979 | 34,275,979 | 5.0% | 5.0% | 1,622,141 | 1,622,141 |
| 1999 | 34,339,327 | 34,339,327 | 0.2% | 0.2% | 63,348 | 63,348 |
| 2000 | 34,386,718 | 34,386,718 | 0.1% | 0.1% | 47,391 | 47,391 |
| 2001 | 32,861,353 | 32,861,463 | -4.4% | -4.4% | -1,525,365 | -1,525,255 |
| 2002 | 30,943,392 | 31,026,878 | -5.8% | -5.6% | -1,917,961 | -1,834,585 |
| 2003 | 32,488,761 | **32,279,532** | 5.0% | **4.0%** | 1,545,369 | **1,252,654** |
| 2004 | **35,283,104** | **33,355,660** | **8.6%** | **3.3%** | **2,794,343** | **1,076,128** |
| 2005 | **35,514,512** | **34,436,637** | **0.7%** | **3.2%** | **231,408** | **1,080,977** |
| 2006 | **36,560,681** | **35,482,484** | **2.9%** | **3.0%** | **1,046,169** | **1,045,847** |
| 2007 | **37,696,446** | **36,538,578** | **3.1%** | **3.0%** | **1,135,765** | **1,056,094** |
| 2008 | **38,760,211** | **37,616,027** | **2.8%** | **2.9%** | **1,063,765** | **1,077,449** |
| 2009 | **39,841,343** | **38,707,538** | **2.8%** | **2.9%** | **1,081,132** | **1,091,511** |
| 2010 | **40,880,131** | **39,838,460** | **2.6%** | **2.9%** | **1,038,788** | **1,130,922** |
| 2011 | **41,920,256** | **41,009,473** | **2.5%** | **2.9%** | **1,040,125** | **1,171,013** |
| 2012 | **43,004,093** | **42,193,590** | **2.6%** | **2.9%** | **1,083,837** | **1,184,117** |
| 2013 | **44,131,948** | **43,396,118** | **2.6%** | **2.9%** | **1,127,855** | **1,202,528** |
| 2014 | **45,304,159** | **44,595,908** | **2.7%** | **2.8%** | **1,172,211** | **1,199,790** |
| 2015 | **46,481,208** | **45,847,959** | **2.6%** | **2.8%** | **1,177,049** | **1,252,051** |
| 2016 | **47,696,802** | **47,128,724** | **2.6%** | **2.8%** | **1,215,594** | **1,280,765** |
| 2017 | **48,931,190** | **48,432,974** | **2.6%** | **2.8%** | **1,234,388** | **1,304,250** |
| 2018 | **50,196,123** | **49,759,252** | **2.6%** | **2.7%** | **1,264,933** | **1,326,278** |
| 2019 | **51,451,352** | **51,067,731** | **2.5%** | **2.6%** | **1,255,229** | **1,308,479** |
| 2020 | **52,722,217** | **52,404,871** | **2.5%** | **2.6%** | **1,270,865** | **1,337,140** |

| | 2004 TAF | 2003 TAF |
|---|---|---|
| Compound Annual Growth Rate 2001-2020 | 2.52% | 2.49% |

**Bold = Forecast**

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## ORD 2004 TAF COMPARED TO 2002 TAF
## (Operations)

| Fiscal Year | Operations 2004 TAF | 2002 TAF | Difference | % Difference |
|---|---|---|---|---|
| 1992 | 838,093 | 838,093 | 0 | 0.00% |
| 1993 | 851,865 | 851,865 | 0 | 0.00% |
| 1994 | 883,480 | 883,480 | 0 | 0.00% |
| 1995 | 892,330 | 892,330 | 0 | 0.00% |
| 1996 | 909,186 | 909,186 | 0 | 0.00% |
| 1997 | 890,383 | 890,383 | 0 | 0.00% |
| 1998 | 888,333 | 888,333 | 0 | 0.00% |
| 1999 | 898,855 | 898,855 | 0 | 0.00% |
| 2000 | 906,326 | 906,326 | 0 | 0.00% |
| 2001 | 927,896 | 927,896 | 0 | 0.00% |
| 2002 | 901,703 | 901,703 | 0 | 0.00% |
| 2003 | 923,578 | 942,961 | 19,383 | 2.10% |
| 2004 | 989,082 | **956,478** | 32,604 | 3.41% |
| 2005 | **974,712** | **974,893** | -181 | -0.02% |
| 2006 | **1,009,541** | **990,853** | 18,688 | 1.89% |
| 2007 | **1,035,114** | **1,005,759** | 29,355 | 2.92% |
| 2008 | **1,056,429** | **1,020,212** | 36,217 | 3.55% |
| 2009 | **1,076,827** | **1,035,207** | 41,620 | 4.02% |
| 2010 | **1,095,160** | **1,050,072** | 45,088 | 4.29% |
| 2011 | **1,113,514** | **1,065,814** | 47,700 | 4.48% |
| 2012 | **1,132,271** | **1,081,429** | 50,842 | 4.70% |
| 2013 | **1,151,436** | **1,096,905** | 54,531 | 4.97% |
| 2014 | **1,171,540** | **1,111,865** | 59,675 | 5.37% |
| 2015 | **1,191,376** | **1,126,284** | 65,092 | 5.78% |
| 2016 | **1,213,672** | **1,141,590** | 72,082 | 6.31% |
| 2017 | **1,236,390** | **1,156,013** | 80,377 | 6.95% |
| 2018 | **1,258,984** | **1,170,635** | 88,349 | 7.55% |
| 2019 | **1,281,324** | **1,183,948** | 97,376 | 8.22% |
| 2020 | **1,304,171** | **1,198,192** | 105,979 | 8.84% |

**Bold = Forecast**

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## ORD 2004 TAF COMPARED TO 2002 TAF
## (Operations)

| | Operations | | | | | |
|---|---|---|---|---|---|---|
| Fiscal Year | 2004 TAF | 2002 TAF | 2004 TAF Annual %Growth | 2002 TAF Annual % Growth | 2004 TAF Annual Growth | 2002 TAF Annual Growth |
| 1992 | 838,093 | 838,093 | | | | |
| 1993 | 851,865 | 851,865 | 1.6% | 1.6% | 13,772 | 13,772 |
| 1994 | 883,480 | 883,480 | 3.7% | 3.7% | 31,615 | 31,615 |
| 1995 | 892,330 | 892,330 | 1.0% | 1.0% | 8,850 | 8,850 |
| 1996 | 909,186 | 909,186 | 1.9% | 1.9% | 16,856 | 16,856 |
| 1997 | 890,383 | 890,383 | -2.1% | -2.1% | -18,803 | -18,803 |
| 1998 | 888,333 | 888,333 | -0.2% | -0.2% | -2,050 | -2,050 |
| 1999 | 898,855 | 898,855 | 1.2% | 1.2% | 10,522 | 10,522 |
| 2000 | 906,326 | 906,326 | 0.8% | 0.8% | 7,471 | 7,471 |
| 2001 | 927,896 | 927,896 | 2.4% | 2.4% | 21,570 | 21,570 |
| 2002 | 901,703 | 901,703 | -2.8% | -2.8% | -26,193 | -26,193 |
| 2003 | 923,578 | 942,961 | 2.4% | 4.6% | 21,875 | 41,258 |
| 2004 | 989,082 | **956,478** | 7.1% | **1.4%** | 65,504 | **13,517** |
| 2005 | **974,712** | **974,893** | **-1.5%** | **1.9%** | **-14,370** | **18,415** |
| 2006 | **1,009,541** | **990,853** | **3.6%** | **1.6%** | **34,829** | **15,960** |
| 2007 | **1,035,114** | **1,005,759** | **2.5%** | **1.5%** | **25,573** | **14,906** |
| 2008 | **1,056,429** | **1,020,212** | **2.1%** | **1.4%** | **21,315** | **14,453** |
| 2009 | **1,076,827** | **1,035,207** | **1.9%** | **1.5%** | **20,398** | **14,995** |
| 2010 | **1,095,160** | **1,050,072** | **1.7%** | **1.4%** | **18,333** | **14,865** |
| 2011 | **1,113,514** | **1,065,814** | **1.7%** | **1.5%** | **18,354** | **15,742** |
| 2012 | **1,132,271** | **1,081,429** | **1.7%** | **1.5%** | **18,757** | **15,615** |
| 2013 | **1,151,436** | **1,096,905** | **1.7%** | **1.4%** | **19,165** | **15,476** |
| 2014 | **1,171,540** | **1,111,865** | **1.7%** | **1.4%** | **20,104** | **14,960** |
| 2015 | **1,191,376** | **1,126,284** | **1.7%** | **1.3%** | **19,836** | **14,419** |
| 2016 | **1,213,672** | **1,141,590** | **1.9%** | **1.4%** | **22,296** | **15,306** |
| 2017 | **1,236,390** | **1,156,013** | **1.9%** | **1.3%** | **22,718** | **14,423** |
| 2018 | **1,258,984** | **1,170,635** | **1.8%** | **1.3%** | **22,594** | **14,622** |
| 2019 | **1,281,324** | **1,183,948** | **1.8%** | **1.1%** | **22,340** | **13,313** |
| 2020 | **1,304,171** | **1,198,192** | **1.8%** | **1.2%** | **22,847** | **14,244** |

| | 2004 TAF | 2003 TAF |
|---|---|---|
| Compound Annual Growth Rate 2002-2020 | 2.07% | 1.59% |

**Bold = Forecast**

Sources: Federal Aviation Administration, 2004, 2002 Terminal Area Forecasts

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**O'HARE'S DELAYS WOULD RETURN TO CURRENT LEVELS SOON AFTER THE OMP IS COMPLETED**

| Year | Average Annual Operations | Average Delay Minutes per Operation (Annual Basis) | | | | |
|---|---|---|---|---|---|---|
| | | OMP Full Build | | | | OMP Phase I |
| | | DEIS | MP | Adjustment A | Adjustment B | DEIS |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **A. TAF 2002** | | | | | | |
| 2009 | 1,057,200 | 4.2 | 3.8 | 3.8 | 3.6 | 10.7 |
| 2010 | 1,072,706 | 4.3 | 4.0 | 4.0 | 4.0 | 11.4 |
| 2011 | 1,088,438 | 4.5 | 4.2 | 4.3 | 4.4 | 12.2 |
| 2012 | 1,104,402 | 4.7 | 4.4 | 4.6 | 4.8 | 13.1 |
| 2013 | 1,120,600 | 4.9 | 4.7 | 5.0 | 5.3 | 14.1 |
| 2014 | 1,134,910 | 5.1 | 4.9 | 5.3 | 5.6 | 15.0 |
| 2015 | 1,149,402 | 5.3 | 5.2 | 5.6 | 6.4 | 16.0 |
| 2016 | 1,164,080 | 5.5 | 5.5 | 6.0 | 7.0 | 17.0 |
| 2017 | 1,178,945 | 5.7 | 5.8 | 6.4 | 7.7 | **18.2** |
| 2018 | 1,194,000 | 5.9 | 6.1 | 6.9 | 8.4 | 19.4 |
| 2019 | 1,209,247 | 6.1 | 6.4 | 7.3 | *9.3* | 20.7 |
| 2020 | 1,224,689 | 6.4 | 6.8 | 7.6 | 10.2 | 22.2 |
| 2021 | 1,240,328 | 6.6 | 7.1 | 8.4 | 11.2 | 23.7 |
| 2022 | 1,256,167 | 6.8 | 7.5 | *9.0* | 12.4 | 25.4 |
| 2023 | 1,272,208 | 7.2 | 8.0 | 9.6 | 13.7 | 27.3 |
| 2024 | 1,288,454 | 7.5 | 8.4 | 10.3 | ***15.1*** | **29.3** |
| 2025 | 1,304,908 | 7.8 | 8.9 | 11.1 | 16.7 | 31.5 |
| 2026 | 1,321,571 | 8.2 | *9.5* | 11.9 | 18.6 | 33.9 |
| 2027 | 1,338,446 | 8.5 | 10.0 | 12.5 | 20.6 | 36.5 |
| 2028 | 1,355,539 | 8.9 | 10.7 | 13.8 | 22.9 | 39.3 |
| 2029 | 1,372,849 | *9.3* | 11.3 | 14.9 | 25.5 | 42.4 |
| 2030 | 1,390,381 | 9.7 | 12.0 | ***16.1*** | 28.4 | 45.7 |
| *Years to Existing Delay (9.3 mins.)* | | *16* | *13* | *9* | *6* | *0* |
| ***Years to Practical Capacity (15.0 mins.)*** | | **n/a** | **n/a** | **17** | **11** | **5** |
| **B. TAF 2004** | | | | | | |
| 2009 | 1,081,410 | 4.4 | 4.1 | 4.2 | 4.2 | *11.9* |
| 2010 | 1,099,749 | 4.6 | 4.4 | 4.5 | 4.7 | 12.8 |
| 2011 | 1,118,203 | 4.9 | 4.7 | 4.9 | 5.3 | 13.9 |
| 2012 | 1,137,062 | 5.1 | 5.0 | 5.4 | 5.9 | ***15.1*** |
| 2013 | 1,156,462 | 5.4 | 5.3 | 5.8 | 6.7 | 16.5 |
| 2014 | 1,176,499 | 5.6 | 5.7 | 6.4 | 7.6 | 18.0 |
| 2015 | 1,196,950 | 6.0 | 6.1 | 6.9 | 8.6 | 19.8 |
| 2016 | 1,219,352 | 6.3 | 6.8 | 7.7 | *9.9* | 21.7 |
| 2017 | 1,242,039 | 6.7 | 7.2 | 8.4 | 11.3 | 23.9 |
| 2018 | 1,264,569 | 7.1 | 7.6 | *9.3* | 13.0 | 26.4 |
| 2019 | 1,287,036 | 7.5 | 8.4 | 10.3 | **15.0** | 29.1 |
| 2020 | 1,309,902 | 7.9 | *9.1* | 11.3 | 17.3 | 32.2 |
| 2021 | 1,333,174 | 8.4 | 9.9 | 12.6 | 19.9 | 35.6 |
| 2022 | 1,356,859 | 8.9 | 10.7 | 13.9 | 23.1 | 39.5 |
| 2023 | 1,380,966 | *9.5* | 11.7 | ***15.5*** | 26.8 | 43.9 |
| 2024 | 1,405,501 | 10.1 | 12.7 | 17.2 | 31.2 | 48.9 |
| 2025 | 1,430,471 | 10.8 | 13.8 | 19.2 | 36.5 | 54.5 |
| 2026 | 1,455,885 | 11.5 | ***15.1*** | 21.4 | 42.7 | 60.9 |
| 2027 | 1,481,751 | 12.3 | 16.6 | 24.0 | 50.1 | 68.2 |
| 2028 | 1,508,076 | 13.1 | 18.1 | 26.9 | 59.0 | 76.5 |
| 2029 | 1,534,869 | 14.1 | 19.9 | 30.2 | 69.6 | 86.0 |
| 2030 | 1,562,138 | ***15.1*** | 21.9 | 34.0 | 82.4 | 96.9 |
| *Years to Existing Delay (9.3 mins.)* | | *10* | *7* | *5* | *3* | *0* |
| ***Years to Practical Capacity (15.0 mins.)*** | | **17** | **13** | **10** | **6** | **3** |

Exhibit 200
Page 2 of 2

## O'HARE'S DELAYS WOULD RETURN TO CURRENT LEVELS SOON AFTER THE OMP IS COMPLETED

| Year | Average Annual Operations | Average Delay Minutes per Operation (Annual Basis) | | | | |
|---|---|---|---|---|---|---|
| | | OMP Full Build | | | | OMP Phase I |
| | | DEIS | MP | Adjustment A | Adjustment B | DEIS |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **C. TAF 2003** | | | | | | |
| 2009 | 1,192,742 | 5.9 | 6.1 | 6.8 | 8.4 | ***19.3*** |
| 2010 | 1,211,991 | 6.2 | 6.5 | 7.4 | 9.4 | 21.0 |
| 2011 | 1,230,378 | 6.5 | 6.9 | 8.0 | 10.8 | 22.7 |
| 2012 | 1,249,390 | 6.8 | 7.4 | 8.7 | 11.9 | 24.7 |
| 2013 | 1,267,587 | 7.1 | 7.9 | 9.4 | 13.3 | 26.8 |
| 2014 | 1,286,484 | 7.5 | 8.4 | 10.2 | 14.9 | 29.1 |
| 2015 | 1,307,349 | 7.9 | 9.0 | 11.2 | 17.0 | 31.8 |
| 2016 | 1,329,521 | 8.3 | 9.7 | 12.4 | 19.5 | 35.1 |
| 2017 | 1,351,358 | 8.8 | 10.5 | 13.6 | 22.3 | 38.6 |
| 2018 | 1,373,356 | 9.3 | 11.3 | 15.0 | 25.6 | 42.5 |
| 2019 | 1,396,383 | 9.9 | 12.3 | 16.5 | 29.5 | 47.0 |
| 2020 | 1,419,795 | 10.5 | 13.3 | 18.3 | 34.1 | 52.0 |
| 2021 | 1,443,601 | 11.2 | 14.5 | 20.3 | 39.5 | 57.7 |
| 2022 | 1,467,805 | 11.9 | 15.8 | 22.5 | 45.9 | 64.2 |
| 2023 | 1,492,418 | 12.6 | 17.2 | 25.1 | 53.5 | 71.4 |
| 2024 | 1,517,439 | 13.5 | 18.7 | 28.0 | 62.5 | 79.7 |
| 2025 | 1,542,881 | 14.4 | 20.5 | 31.2 | 73.2 | 88.1 |
| 2026 | 1,568,750 | 15.3 | 22.4 | 35.0 | 85.9 | 99.7 |
| 2027 | 1,595,053 | 16.4 | 24.6 | 39.2 | 101.1 | 111.9 |
| 2028 | 1,621,797 | 17.6 | 27.0 | 44.0 | 119.3 | 125.7 |
| 2029 | 1,648,989 | 18.8 | 29.6 | 49.6 | 141.2 | 141.6 |
| 2030 | 1,676,638 | 20.2 | 32.6 | 55.9 | 167.6 | 159.8 |
| *Years to Existing Delay (9.3 mins.)* | | 5 | 2 | 0 | 0 | 0 |
| ***Years to Practical Capacity (15.0 mins.)*** | | 13 | 9 | 5 | 2 | 0 |

(1) CY TAF annual operations.
(2) Delay curve based on DEIS model results for full buildout for 2009, 2013 and 2018.
(3) Delay curve based on master plan model results (Option 5) for PAL0, PAL0+10%, PAL1 and PAL2.
(4) Delay curve based on DEIS model results for full buildout for 2009, 2013 and 2018 plus average annual delay of 16 minutes for TAF03 2018 operations (per Supplement R).
(5) Delay curve based on DEIS model results for full buildout for 2009, 2013 and 2018 plus average annual delay of 15.0 minutes at 1,239,300 annual operations ("Practical capacity").
Practical capacity is derived by comparing the maximum "Peak Operations - Rolling Hour" estimates for the "No Build" and "Full Build-out" runs in the DEIS (29.5% increase based on 272 operations for "Full Build-out" and 210 operations for "No Build") and applying that increase to the derived "Practical Capacity" for No Build using the regression equation.
(6) Delay curve based on DEIS model results for OMP Phase I (Construction Phase II) for 2009, 2013 and 2018.

Exhibit 201
Page 1 of 3

SUMMARY OF TAAM MODEL SIMULATION RESULTS

| Run Set | Forecast | Year | Operations Annual | Operations PMAD | Average Delay Minutes Peak | Average Delay Minutes Annual 1/ | Peak Operations Peak | Peak Operations Annual 1/ |
|---|---|---|---|---|---|---|---|---|
| **A. All-Weather Conditions** | | | | | | | | |
| No Build | | | | | | | | |
| ALPU | TAF01 | 2001 | 911,917 | 2,703 2/ | 9.0 | 8.6 | | |
| ALPU | TAF01 | 2003-4 | 957,513 | 2,829 2/ | 10.7 | 10.3 | | |
| ALPU | TAF01 | 2007-8 | 1,003,109 | 2,973 2/ | 13.8 | 13.2 | | |
| ALPU | TAF01 | 2010-11 | 1,048,705 | 3,107 2/ | 20.8 | 20.0 | 210 | **202** 3/ |
| DEIS | TAF02 | 2002 | 912,018 | 2,648 | 9.7 | **9.3** | 195 | 187 |
| DEIS | TAF02 | 2003 | 960,500 | 2,694 | 15.8 | 15.2 | 198 | 190 |
| DEIS | TAF02 | 2007 | 1,026,300 | 2,898 | 23.7 | 22.8 | 208 | 200 |
| DEIS | TAF02 | 2009 | 1,057,200 | 2,987 | 26.8 | 25.7 | 210 | **202** |
| DEIS | DEIS-CON | 2007 | 973,887 | 2,750 | 16.9 | 16.2 | 202 | 194 |
| DEIS | DEIS-CON | 2009 | 973,887 | 2,750 | 16.5 | 15.8 | 198 | 190 |
| DEIS | DEIS-CON | 2013 | 973,887 | 2,750 | 17.9 | 17.2 | 200 | 192 |
| DEIS | DEIS-CON | 2018 | 973,887 | 2,750 | 17.9 | 17.2 | 198 | 190 |
| OMP | | | | | | | | |
| ALPU | TAF01 | 2001 | 911,917 | 2,741 2/ | 2.6 | 2.5 | | |
| ALPU | TAF01 | 2010-11 | 1,003,109 | 3,016 2/ | 3.1 | 3.0 | | |
| ALPU | TAF01 | 2014 | 1,097,935 | 3,239 2/ | 4.1 | 3.9 | | |
| ALPU | TAF01 | 2030 | 1,314,482 | 3,861 2/ | 10.2 | 9.8 | 268 | 257 3/ |
| POC | TAF01 | 2001 | 911,917 | 2,745 | 3.0 | 2.9 | 210 | 202 |
| POC | TAF01 | 2014 | 1,097,935 | 3,243 | 4.5 | 4.3 | 240 | 230 |
| POC | TAF01 | 2030 | 1,314,482 | 3,864 | 11.2 | 10.8 | 272 | **261** |
| DEIS | TAF02 | 2009 | 1,057,200 | 2,987 | 4.3 | 4.1 | 237 | 228 |
| DEIS | TAF02 | 2013 | 1,120,600 | 3,169 | 5.2 | 5.0 | 249 | 239 |
| DEIS | TAF02 | 2018 | 1,194,000 | 3,374 | 6.1 | 5.9 | 262 | 252 |
| Construction Phase I | | | | | | | | |
| DEIS | TAF02 | 2007 | 1,026,300 | 2,898 | 16.2 | 15.6 | 211 | 203 |
| OMP Phase I | | | | | | | | |
| DEIS | TAF02 | 2007 | 1,026,300 | 2,898 | 9.9 | 9.5 | 223 | 214 |
| DEIS | TAF02 | 2009 | 1,057,200 | 2,987 | 10.8 | 10.4 | 228 | 219 |
| DEIS | TAF02 | 2013 | 1,120,600 | 3,169 | 14.8 | 14.2 | 240 | **230** |

Exhibit 20I
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SUMMARY OF TAAM MODEL SIMULATION RESULTS

| Run Set | Forecast | Year | Operations Annual | Operations PMAD | Average Delay Minutes Peak | Average Delay Minutes Annual 1/ | Peak Operations Peak | Peak Operations Annual 1/ |
|---|---|---|---|---|---|---|---|---|
| **B. IFR Conditions** | | | | | | | | |
| No Build | | | | | | | | |
| ALPU | TAF01 | 2001 | 911,917 | 2,291 2/ | 22.8 | 21.9 | | |
| ALPU | TAF01 | 2003-4 | 957,513 | 2,402 2/ | 26.2 | 25.2 | | |
| ALPU | TAF01 | 2007-8 | 1,003,109 | 2,520 2/ | 32.2 | 30.9 | | |
| ALPU | TAF01 | 2010-11 | 1,048,705 | 2,634 2/ | 39.2 | 37.6 | 175 | **168** 3/ |
| DEIS | TAF02 | 2002 | 912,018 | 2,648 | 50.1 | **48.1** | 166 | **159** |
| DEIS | TAF02 | 2003 | 960,500 | 2,694 | 56.0 | 53.8 | 157 | 151 |
| DEIS | TAF02 | 2007 | 1,026,300 | 2,898 | 75.8 | 72.8 | 161 | 155 |
| DEIS | TAF02 | 2009 | 1,057,200 | 2,987 | 81.3 | 78.0 | 163 | 156 |
| DEIS | DEIS-CON | 2007 | 973,887 | 2,750 | 60.2 | 57.8 | 159 | 153 |
| DEIS | DEIS-CON | 2009 | 973,887 | 2,750 | 58.9 | 56.5 | 159 | 153 |
| DEIS | DEIS-CON | 2013 | 973,887 | 2,750 | 61.3 | 58.8 | 161 | 155 |
| DEIS | DEIS-CON | 2018 | 973,887 | 2,750 | 61.4 | 58.9 | 158 | 152 |
| OMP | | | | | | | | |
| ALPU | TAF01 | 2001 | 911,917 | 2,701 2/ | 7.9 | 7.6 | | |
| ALPU | TAF01 | 2010-11 | 1,003,109 | 2,972 2/ | 10.8 | 10.4 | | |
| ALPU | TAF01 | 2014 | 1,097,935 | 3,201 2/ | 11.7 | 11.2 | | |
| ALPU | TAF01 | 2030 | 1,314,482 | 3,837 2/ | 32.6 | 31.3 | 233 | **224** 3/ |
| POC | TAF01 | 2001 | 911,917 | 2,745 | 6.8 | 6.5 | 204 | 196 |
| POC | TAF01 | 2014 | 1,097,935 | 3,243 | 11.1 | 10.7 | 215 | 206 |
| POC | TAF01 | 2030 | 1,314,482 | 3,864 | 40.6 | 39.0 | 228 | **219** |
| DEIS | TAF02 | 2009 | 1,057,200 | 2,987 | 10.7 | 10.3 | 223 | 214 |
| DEIS | TAF02 | 2013 | 1,120,600 | 3,169 | 16.6 | 15.9 | 229 | 220 |
| DEIS | TAF02 | 2018 | 1,194,000 | 3,374 | 19.8 | 19.0 | 232 | 223 |
| Construction Phase I | | | | | | | | |
| DEIS | TAF02 | 2007 | 1,026,300 | 2,898 | 57.9 | 55.6 | 174 | 167 |
| OMP Phase I | | | | | | | | |
| DEIS | TAF02 | 2007 | 1,026,300 | 2,898 | 47.0 | 45.1 | 178 | 171 |
| DEIS | TAF02 | 2009 | 1,057,200 | 2,987 | 52.3 | 50.2 | 181 | **174** |
| DEIS | TAF02 | 2013 | 1,120,600 | 3,169 | 70.2 | 67.4 | 179 | 172 |

Exhibit 201
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SUMMARY OF TAAM MODEL SIMULATION RESULTS

| Run Set | Forecast | Year | Operations Annual | Operations PMAD | Average Delay Minutes Peak | Average Delay Minutes Annual 1/ | Peak Operations Peak | Peak Operations Annual 1/ |
|---|---|---|---|---|---|---|---|---|
| **C. VFR Conditions** | | | | | | | | |
| No Build | | | | | | | | |
| ALPU | TAF01 | 2001 | 911,917 | 2,745 2/ | 7.3 | 7.0 | | |
| ALPU | TAF01 | 2003-4 | 957,513 | 2,873 2/ | 8.9 | 8.5 | | |
| ALPU | TAF01 | 2007-8 | 1,003,109 | 3,020 2/ | 11.9 | 11.4 | | |
| ALPU | TAF01 | 2010-11 | 1,048,705 | 3,156 2/ | 18.2 | 17.5 | 214 | 205 3/ |
| DEIS | TAF02 | 2002 | 912,018 | 2,648 | 7.1 | **6.8** | 197 | 189 |
| DEIS | TAF02 | 2003 | 960,500 | 2,694 | 11.7 | 11.2 | 202 | 194 |
| DEIS | TAF02 | 2007 | 1,026,300 | 2,898 | 18.3 | 17.6 | 212 | 204 |
| DEIS | TAF02 | 2009 | 1,057,200 | 2,987 | 21.2 | 20.4 | 215 | **206** |
| DEIS | DEIS-CON | 2007 | 973,887 | 2,750 | 12.5 | 12.0 | 206 | 198 |
| DEIS | DEIS-CON | 2009 | 973,887 | 2,750 | 12.2 | 11.7 | 202 | 194 |
| DEIS | DEIS-CON | 2013 | 973,887 | 2,750 | 13.4 | 12.9 | 204 | 196 |
| DEIS | DEIS-CON | 2018 | 973,887 | 2,750 | 13.4 | 12.9 | 202 | 194 |
| OMP | | | | | | | | |
| ALPU | TAF01 | 2001 | 911,917 | 2,745 2/ | 2.1 | 2.0 | | |
| ALPU | TAF01 | 2010-11 | 1,003,109 | 3,020 2/ | 2.4 | 2.3 | | |
| ALPU | TAF01 | 2014 | 1,097,935 | 3,243 2/ | 3.3 | 3.2 | | |
| ALPU | TAF01 | 2030 | 1,314,482 | 3,864 2/ | 7.9 | 7.6 | 271 | 260 3/ |
| POC | TAF01 | 2001 | 911,917 | 2,745 | 2.6 | 2.5 | 212 | 204 |
| POC | TAF01 | 2014 | 1,097,935 | 3,243 | 3.8 | 3.6 | 241 | 231 |
| POC | TAF01 | 2030 | 1,314,482 | 3,864 | 8.0 | 7.7 | 278 | **267** |
| DEIS | TAF02 | 2009 | 1,057,200 | 2,987 | 3.7 | 3.6 | 238 | 228 |
| DEIS | TAF02 | 2013 | 1,120,600 | 3,169 | 4.1 | 3.9 | 251 | 241 |
| DEIS | TAF02 | 2018 | 1,194,000 | 3,374 | 4.7 | 4.5 | 265 | 254 |
| Construction Phase I | | | | | | | | |
| DEIS | TAF02 | 2007 | 1,026,300 | 2,898 | 11.9 | 11.4 | 215 | 206 |
| OMP Phase I | | | | | | | | |
| DEIS | TAF02 | 2007 | 1,026,300 | 2,898 | 6.1 | 5.9 | 227 | 218 |
| DEIS | TAF02 | 2009 | 1,057,200 | 2,987 | 6.5 | 6.2 | 233 | 224 |
| DEIS | TAF02 | 2013 | 1,120,600 | 3,169 | 9.2 | 8.8 | 246 | **236** |

1/ Annual values estimated at 96% of peak value.
2/ These runs included Category II/III model runs at lower operations. PMAD operations are based on a weighted average.
3/ These were the only throughput rates provided for these runs and it was assumed they applied to the maximum operations run.

Sources
ALPU Airline Layout Plan Update (January 2003)
POC Runway 12/30 Proof-of-Concept Evaluation (September 11, 2003)
DEIS OMP Simulation Data Package

Note: Average delay minutes were derived from a weighting of model results and may differ from weighted average in reports.

Source: Appendix C

Exhibit 202
Page 1 of 2

THE OMP FULL BUILD-OUT DELAY CURVE SHOWS EXCESSIVE DELAYS IMMEDIATELY

A. Based on 2003 TAF and Campbell-Hill Adjustments

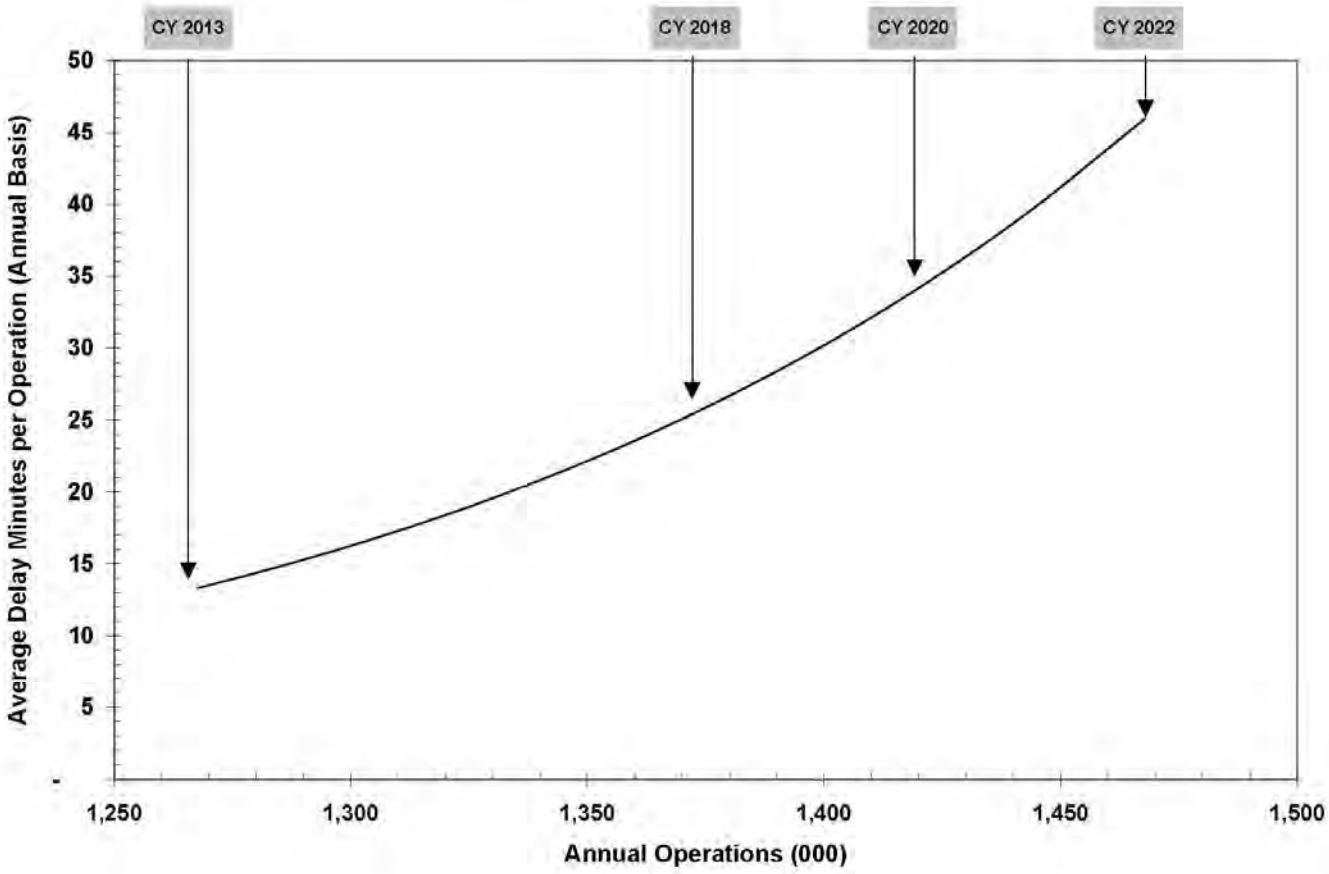

Exhibit 202
Page 2 of 2

THE OMP FULL BUILD-OUT DELAY CURVE SHOWS EXCESSIVE DELAYS IMMEDIATELY

B. Based on 2004 TAF and Campbell-Hill Adjustments

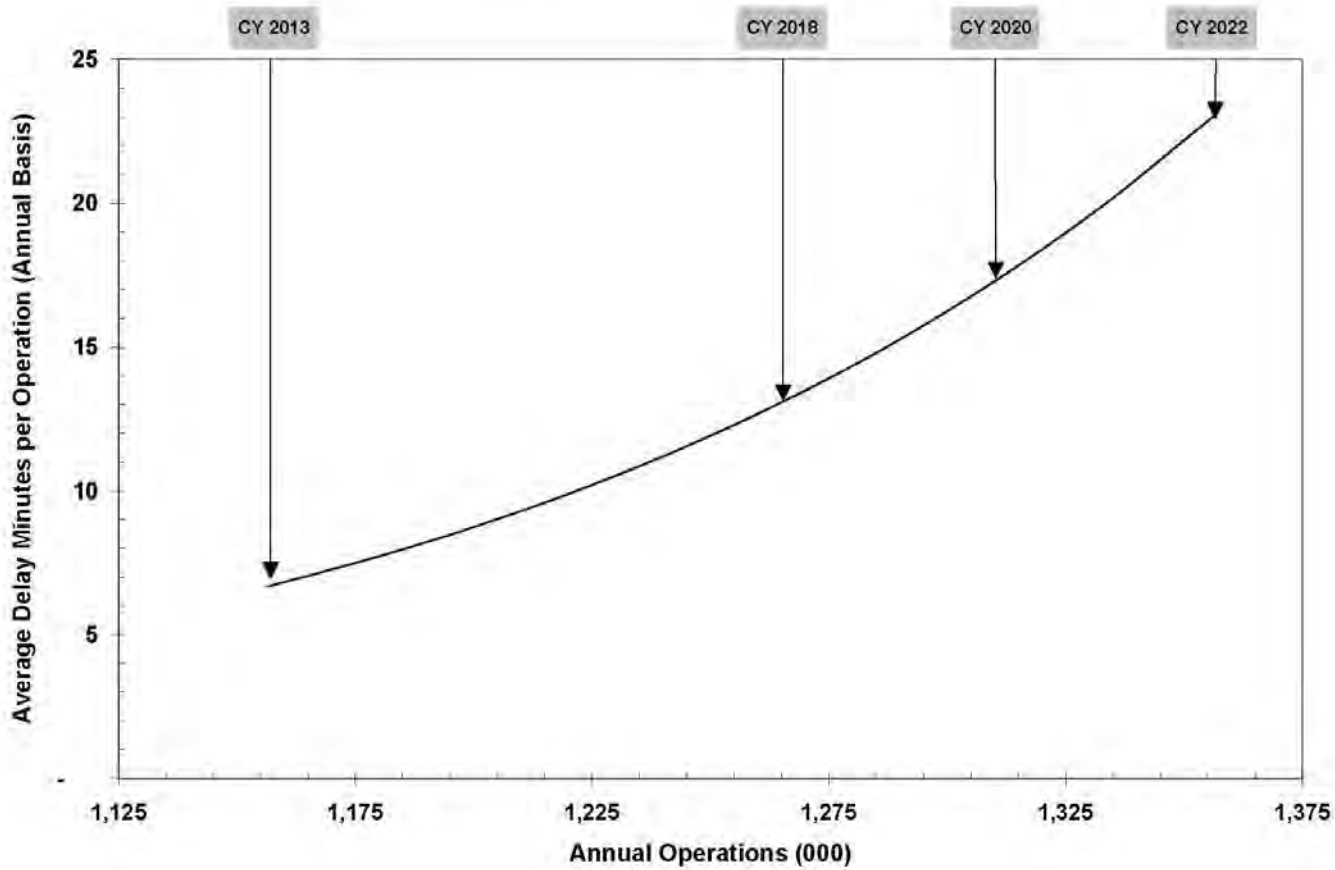

Exhibit 300
Page 1 of 1

## THE ENTIRE OMP WILL COST OVER $21 BILLION EXCLUDING THE WESTERN ACCESS SYSTEM
### (Millions of 2004 Dollars)

| Row | | Using 2002 TAF Forecast | | Using 2003 TAF Forecast | | Using 2004 TAF Forecast | |
|---|---|---|---|---|---|---|---|
| | | Cost | Percent of Total Adjusted Cost | Cost | Percent of Total Adjusted Cost | Cost | Percent of Total Adjusted Cost |
| 1 | DEIS OMP Capital Cost[1] | $14,192 | 67.3% | $14,192 | 67.5% | $14,192 | 67.4% |
| 2 | Less: City's Adjustment[2] | $7 | 0.0% | $7 | 0.0% | $7 | 0.0% |
| 3 | Less: City's Contingency[3] | $564 | 2.7% | $564 | 2.7% | $564 | 2.7% |
| 4 | OMP Capital Cost Prior to Markups[4] | $13,621 | 64.6% | $13,621 | 64.8% | $13,621 | 64.7% |
| 5 | City's Contingency[3,5] | $564 | 2.7% | $564 | 2.7% | $564 | 2.7% |
| 6 | Campbell-Hill's Contingency (additional)[5] | $3,196 | 15.2% | $3,196 | 15.2% | $3,196 | 15.2% |
| 7 | OMP Capital Cost With Contingency[6] | $17,380 | 82.5% | $17,380 | 82.7% | $17,380 | 82.5% |
| 8 | Capitalized Interest (GARB and Third Party Debt Service)[7] | $3,271 | 15.5% | $3,271 | 15.6% | $3,271 | 15.5% |
| 9 | Capitalized Interest (PFC Debt Service)[8] | $424 | 2.0% | $369 | 1.8% | $413 | 2.0% |
| 10 | Total Capitalized Interest[9] | $3,695 | 17.5% | $3,640 | 17.3% | $3,684 | 17.5% |
| 11 | **Total Adjusted OMP Cost[10]** | **$21,075** | 100.0% | **$21,019** | 100.0% | **$21,064** | 100.0% |
| | Western Access System[11] | $3,000 | | $3,000 | | $3,000 | |

1/ FAA, O'hare Modernization Draft Environmental Impact Statement p. ES-42, January 2005

2/ This adjustment is due to the fact that the World Gateway Program costs from City of Chicago, Request for Letter of Intent to Provide A Multi-Year Commitment of Airport Improvement Program Grant-In-Aid Funding Table E-1, February 2005 are in 2001 dollars. When these 2001 dollar costs are converted to 2004 dollar costs using the annual inflation rate of 2.4% from the DEIS at page ES-42, the costs are $7 million lower than the FAA's cost estimate that converted the World Gateway Program costs to 2004 dollars based on 1999 costs.

3/ City of Chicago, Request for Letter of Intent to Provide A Multi-Year Commitment of Airport Improvement Program Grant-In-Aid Funding Table E-1, (February 2005)

4/ Row 1- Row 2- Row 3

5/ The City's contingency of 4.14% of the total cost is unrealistically low. A more realistic contingency is 27.6%, which is the average transportation infrastructure project cost overrun from Flyvbjerg, Bent, Mette Skamris Hol and Soren Buhl, American Planning Association, Journal of the American Planning Association, Summer 2002, Vol.68, Iss. 3, p.279. See Exhibit 302 for the percent contingency calculation.

6/ Row 4+ Row 5+ Row 6 and Exhibit 320

7/ Exhibit 301

8/ Exhibit 301

9/ Row 8+ Row 9

10/ Row 7+ Row 10

11/ Hilkevitch, John, The Chicago Tribune, "O'Hare Plan Seeks U.S. Funds: $300 Million Eyed to Help Expansion", (March 24, 2004)

Exhibit 301
Page 1 of 1

## CONSIDERING CAPITALIZED INTEREST INCREASES THE TOTAL CAPITAL COST OF THE OMP BY $3.7 BILLION

| | Using 2002 TAF Enplanements | | Using 2003 TAF Enplanements | | Using 2004 TAF Enplanements | |
|---|---|---|---|---|---|---|
| | Capitalized Interest Expense (In Millions of 2004 Dollars) | Percent of Total | Capitalized Interest Expense (In Millions of 2004 Dollars) | Percent of Total | Capitalized Interest Expense (In Millions of 2004 Dollars) | Percent of Total |
| GARB and Third Party Financing Capitalized Interest OMP[1] | $1,512 | 40.9% | $1,512 | 41.6% | $1,512 | 41.1% |
| CIP[1] | $729 | 19.7% | $729 | 20.0% | $729 | 19.8% |
| WGP[1] | $1,030 | 27.9% | $1,030 | 28.3% | $1,030 | 28.0% |
| GARB and Third Party Financing Capitalized Interest Total | $3,271 | 88.5% | $3,271 | 89.9% | $3,271 | 88.8% |
| PFC Capitalized Interest[2] (With Demand Reduced Due To Costs of the OMP) | $424 | 11.5% | $369 | 10.1% | $413 | 11.2% |
| **Total Capitalized Interest** | **$3,695** | **100.0%** | **$3,640** | **100.0%** | **$3,684** | **100.0%** |
| PFC Capitalized Interest[3] (Without Demand Reduced Due To Costs of the OMP) | $413 | | $357 | | $402 | |

1/ From Exhibit 321
2/ From Exhibit 306, pages 3-5, Row 3 (total additional airport interest expense)
3/ From Exhibit 307, pages 3-5, Row 3 (total additional airport interest expense)

Exhibit 302
Page 1 of 1

## OMP FINANCING REQUIREMENTS AFTER CAMPBELL-HILL CAPITAL COST ADJUSTMENTS
### (In Millions of 2004 Dollars)

| Column | | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|---|
| | | FAA AIP Grants | | PFC's | | | | |
| Row | | Entitlement | Discretionary | Pay As You Go | Bond Funds | Airport Revenue Bonds | Third Party Financing | Total |
| 1 | Entire OMP[1] | $86 | $889 | $172 | $1,723 | $5,084 | $862 | $8,617 |
| | | 1.0% | 8.0% | 2.0% | 20.0% | 59.0% | 10.0% | 100.0% |
| 2 | CIP[2] | $0 | $303 | $555 | $1,514 | $2,725 | $0 | $5,097 |
| | | 0.0% | 5.9% | 10.9% | 29.7% | 53.5% | 0.0% | 100.0% |
| 3 | WGP[3] | $0 | $0 | $0 | $0 | $2,859 | $807 | $3,666 |
| | | 0.0% | 0.0% | 0.0% | 0.0% | 78.0% | 22.0% | 100.0% |
| 4 | Total Capital Cost Without Capitalized Interest[4] | $86 | $992 | $727 | $3,237 | $10,669 | $1,668 | $17,380 |
| | | 0.5% | 5.7% | 4.2% | 18.6% | 61.4% | 9.6% | 100.0% |
| 5 | Capitalized Interest (2002 TAF)[5] | | | | | 3,195 | 500 | $3,695 |
| | | | | | | 86.5% | 13.5% | 100.0% |
| 6 | **Total Capital Cost[6]** | **$86** | **$992** | **$727** | **$3,237** | **$13,864** | **$2,168** | **$21,075** |
| | | **0.4%** | **4.7%** | **3.5%** | **15.4%** | **65.8%** | **10.3%** | **100.0%** |
| 7 | Master Plan Phase 1[7] | $21 | $247 | $181 | $804 | $2,651 | $414 | $4,318 |
| | | 0.5% | 5.7% | 4.2% | 18.6% | 61.4% | 9.6% | 100.0% |

1/ Total OMP + Total City Contingency from Exhibit 322. The funding was distributed by source of capital based on page ES-43 of the DEIS.

2/ Total CIP from Exhibit 322. The funding was distributed by source of capital based on page ES-43 of the DEIS (Adjustments were made to make the percentages equal 100%).

3/ Total WGP from Exhibit 322. The funding was distributed by source of capital based on page ES-43 of the DEIS.

4/ Row 1 + Row 2 + Row 3.

5/ From Exhibit 300.

6/ Row 4 + Row 5.

7/ Master Plan Phase 1 definitions from City of Chicago, Request for Letter of Intent to Provide A Multi-Year Commitment of Airport Improvement Program Grant-in-Aid Funding. Table E-1, February 2005. Costs from Exhibit 322. The funding distribution is the same as total capital cost without capitalized interest. This row is used to calculate the interest on PFC backed bonds from Phase 1 in Exhibits 306 and 307.

Exhibit 303
Page 1 of 1

## THE OMP FINANCING PLAN IN THE DEIS
## (In Millions of 2004 Dollars)

| Column | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | FAA AIP Grants | | PFC's | | | | |
| | Entitlement | Discretionary | Pay As You Go | Bond Funds | Airport Revenue Bonds | Third Party Financing | Total |
| Entire OMP[1] | $71 | $567 | $142 | $1,417 | $4,181 | $709 | $7,087 |
| | 1.0% | 8.0% | 2.0% | 20.0% | 59.0% | 10.0% | 100.0% |
| CIP[2] | $0 | $245 | $450 | $1,226 | $2,207 | $0 | $4,128 |
| | 0.0% | 5.9% | 10.9% | 29.7% | 53.5% | 0.0% | 100.0% |
| WGP[1] | $0 | $0 | $0 | $0 | $2,322 | $655 | $2,977 |
| | 0.0% | 0.0% | 0.0% | 0.0% | 78.0% | 22.0% | 100.0% |
| **Total Capital Cost** | **$71** | **$812** | **$591** | **$2,644** | **$8,710** | **$1,364** | **$14,192** |
| | **0.5%** | **5.7%** | **4.2%** | **18.6%** | **61.4%** | **9.6%** | **100.0%** |
| Master Plan Phase 1[3] | $19 | $217 | $158 | $706 | $2,327 | $364 | $3,791 |
| | 0.5% | 5.7% | 4.2% | 18.6% | 61.4% | 9.6% | 100.0% |

1/ From FAA, O'hare Modernization Draft Environmental Impact Statement p. ES-42-43, January 2005.

2/ From FAA, O'hare Modernization Draft Environmental Impact Statement p. ES-42-43, January 2005. The percentages were adjusted to sum to 100%.

3/ Calculated to determine how much of Phase 1 funds need to be raised by PFC Bonds. From City of ChicagoRequest for Letter of Intent to Provide A Multi-Year Commitment of Airport Improvement Program Grant-In-Aid Funding Table E-1, (February 2005). Capital costs were converted to 2004 dollars by Campbell-Hill using an inflation rate of 2.4% per year per page ES-42 of the DEIS. The funding distribution was assumed to be the same as the Total Capital Cost. This row is used to calculate the interest on PFC backed bonds from Phase 1 in Exhibit 305.

Exhibit 304
Page 1 of 1

## THE PROJECTED AIP DISCRETIONARY FUNDS NEEDED WOULD CONSUME 20% OF THE AVAILABLE FUNDS FOR ALL U.S. AIRPORTS
## (In Millions of 2004 Dollars)

| | DEIS Costs[1] | Adjusted Costs[2] |
|---|---|---|
| Projected OMP AIP Discretionary Funds | $812 | $992 |
| Estimated AIP Discretionary Funds[3] | $5,000 | $5,000 |
| Percentage of Total AIP Discretionary Funds | 16.2% | 19.8% |

1/ Exhibit 303

2/ Exhibit 302

3/ $500 million per year x 10 years

Exhibit 305
Page 1 of 3

## PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER USING THE FAA'S COSTS FROM THE DEIS

### A. PFC Revenue Shortfall Using the 2002 TAF

| Column | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Calendar Year | 2002 TAF PFC Revenue (Millions of 2004 Dollars)[1] | Existing PFC Debt Service (Millions of 2004 Dollars)[2] | PFCs Available for New Debt Service (Millions of 2004 Dollars)[3] | Interest On OMP Bonds Backed By PFCs (Millions of 2004 Dollars)[4] | OMP Pay As You Go PFC Financing (Millions of 2004 Dollars)[5] | PFC Revenue Shortfall (Millions of 2004 Dollars)[6] |
| 2005 | $129 | $71 | $58 | $35 | $74 | $51 |
| 2006 | $133 | $69 | $64 | $35 | $74 | $46 |
| 2007 | $137 | $68 | $70 | $35 | $74 | $40 |
| 2008 | $141 | $66 | $75 | $132 | $74 | $131 |
| 2009 | $146 | $64 | $81 | $132 | $74 | $125 |
| 2010 | $150 | $63 | $87 | $132 | $74 | $119 |
| 2011 | $154 | $61 | $93 | $132 | $74 | $113 |
| 2012 | $159 | $60 | $99 | $132 | $74 | $108 |
| 2013 | $163 | $59 | $105 | $132 | $0 | $28 |
| 2014 | $168 | $46 | $122 | $132 | $0 | $10 |
| 2015 | $172 | $45 | $128 | $132 | $0 | $5 |
| 2016 | $177 | $44 | $133 | $132 | $0 | -$1 |
| 2017 | $182 | $43 | $139 | $132 | $0 | -$7 |
| 2018 | $187 | $42 | $146 | $132 | $0 | -$13 |
| Total | $2,198 | $801 | $1,398 | $1,560 | $591 | $753 |

| | | |
|---|---|---|
| 1 | Extra City Will Have to Borrow[7] | $733 |
| 2 | Annual Additional Airport Interest Expense[8] | $37 |
| 3 | Total Additional Airport Interest Expense[9] | $293 |
| 4 | Annual Airline Capitalized Interest Payment (Beyond 2012)[10] | $15 |

1/ From Exhibit 307, Page 1, Column F

2/ From Exhibit 307, Page 2, Column B

3/ Column A - Column B

4/ Assumes that $706 million in PFC bonds (Master Plan Phase 1 PFC backed bonds from Exhibit 303, Column D) are issued in 2005 and the remaining $1,937 million in PFC bonds are issued in 2006. The assumed interest rate is 5% and all bonds were assumed to have maturities of 30 years. See Exhibit 303, Column D

5/ From Exhibit 302. It is assumed that the same amount of pay as you go PFC financing will be utilized every year during the construction period (2005-2012)

6/ Column E+ Column D - Column C

7/ PFC Shortfall from 2005-2012 ( the construction period in which the airlines do not pay for the unfinished OMP assets).

8/ Extra City Will Have to Borrow x 5% interest rate per year

9/ Annual Additional Airport Interest Expense x 8 years

10/ Interest Expense over the 8 years x 5% interest rate per year.

Exhibit 305
Page 2 of 3

## PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER USING THE FAA'S COSTS FROM THE DEIS

### B. PFC Revenue Shortfall Using the 2003 TAF

| Column | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Calendar Year | 2003 TAF PFC Revenue (Millions of 2004 Dollars)[1] | Existing PFC Debt Service (Millions of 2004 Dollars)[2] | PFCs Available for New Debt Service (Millions of 2004 Dollars)[3] | Interest On OMP Bonds Backed By PFCs (Millions of 2004 Dollars)[4] | OMP Pay As You Go PFC Financing (Millions of 2004 Dollars)[5] | PFC Revenue Shortfall (Millions of 2004 Dollars)[6] |
| 2005 | $145 | $71 | $74 | $35 | $74 | $36 |
| 2006 | $150 | $69 | $80 | $35 | $74 | $29 |
| 2007 | $154 | $68 | $86 | $35 | $74 | $23 |
| 2008 | $159 | $66 | $93 | $132 | $74 | $114 |
| 2009 | $163 | $64 | $99 | $132 | $74 | $107 |
| 2010 | $168 | $63 | $105 | $132 | $74 | $101 |
| 2011 | $172 | $61 | $111 | $132 | $74 | $95 |
| 2012 | $177 | $60 | $117 | $132 | $74 | $89 |
| 2013 | $182 | $59 | $123 | $132 | $0 | $9 |
| 2014 | $187 | $46 | $141 | $132 | $0 | -$9 |
| 2015 | $192 | $45 | $147 | $132 | $0 | -$15 |
| 2016 | $197 | $44 | $153 | $132 | $0 | -$21 |
| 2017 | $202 | $43 | $160 | $132 | $0 | -$27 |
| 2018 | $208 | $42 | $166 | $132 | $0 | -$34 |
| Total | $2,455 | $801 | $1,655 | $1,560 | $591 | $496 |

| | | |
|---|---|---|
| 1 | Extra City Will Have to Borrow[7] | $594 |
| 2 | Annual Additional Airport Interest Expense[8] | $30 |
| 3 | Total Additional Airport Interest Expense[9] | $238 |
| 4 | Annual Airline Capitalized Interest Payment (Beyond 2012)[10] | $12 |

1/ From Exhibit 307, Page 1, Column F

2/ From Exhibit 307, Page 2, Column B

3/ Column A - Column B

4/ Assumes that $706 million in PFC bonds (Master Plan Phase I PFC backed bonds from Exhibit 303, Column D) are issued in 2005 and the remaining $1,937 million in PFC bonds are issued in 2008. The assumed interest rate is 5% and all bonds were assuming to have maturities of 30 years. See Exhibit 303, Column D.

5/ From Exhibit 303. It is assumed that the same amount of pay as you go PFC financing will be utilized every year during the construction period (2005-2012)

6/ Column E+ Column D - Column C

7/ PFC Shortfall from 2005-2012 ( the construction period in which the airlines do not pay for the unfinished OMP assets).

8/ Extra City Will Have to Borrow x 5% interest rate per year

9/ Annual Additional Airport Interest Expense x 8 years

10/ Interest Expense over the 8 years x 5% interest rate per year

Exhibit 305
Page 3 of 3

## PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER USING THE FAA'S COSTS FROM THE DEIS

### C. PFC Revenue Shortfall Using the 2004 TAF

| Column | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Calendar Year | 2004 TAF PFC Revenue (Millions of 2004 Dollars)[1] | Existing PFC Debt Service (Millions of 2004 Dollars)[2] | PFCs Available for New Debt Service (Millions of 2004 Dollars)[3] | Interest On OMP Bonds Backed By PFCs (Millions of 2004 Dollars)[4] | OMP Pay As You Go PFC Financing (Millions of 2004 Dollars)[5] | PFC Revenue Shortfall (Millions of 2004 Dollars)[6] |
| 2005 | $133 | $71 | $62 | $35 | $74 | $47 |
| 2006 | $137 | $69 | $68 | $35 | $74 | $42 |
| 2007 | $141 | $68 | $73 | $35 | $74 | $36 |
| 2008 | $145 | $66 | $79 | $132 | $74 | $127 |
| 2009 | $149 | $64 | $85 | $132 | $74 | $121 |
| 2010 | $153 | $63 | $90 | $132 | $74 | $116 |
| 2011 | $157 | $61 | $95 | $132 | $74 | $111 |
| 2012 | $161 | $60 | $101 | $132 | $74 | $105 |
| 2013 | $165 | $59 | $107 | $132 | $0 | $26 |
| 2014 | $169 | $46 | $124 | $132 | $0 | $9 |
| 2015 | $174 | $45 | $129 | $132 | $0 | $3 |
| 2016 | $178 | $44 | $135 | $132 | $0 | -$3 |
| 2017 | $183 | $43 | $140 | $132 | $0 | -$8 |
| 2018 | $188 | $42 | $146 | $132 | $0 | -$14 |
| Total | $2,234 | $801 | $1,433 | $1,560 | $591 | $718 |

| | | |
|---|---|---|
| 1 | Extra City Will Have to Borrow[7] | $705 |
| 2 | Annual Additional Airport Interest Expense[8] | $35 |
| 3 | Total Additional Airport Interest Expense[9] | $282 |
| 4 | Annual Airline Capitalized Interest Payment (Beyond 2012)[10] | $14 |

1/ From Exhibit 307, Page 1, Column I

2/ From Exhibit 307, Page 2, Column B

3/ Column A - Column B

4/ Assumes that $706 million in PFC bonds (Master Plan Phase I PFC backed bonds from Exhibit 303, Column D) are issued in 2005 and the remaining $1,937 million in PFC bonds are issued in 2008. The assumed interest rate is 5% and all bonds were assumed to have maturities of 30 years. See Exhibit 303, Column D.

5/ From Exhibit 303. It is assumed that the same amount of pay as you go PFC financing will be utilized every year during the construction period (2005-2012)

6/ Column E+ Column D - Column C

7/ PFC Shortfall from 2005-2012 ( the construction period in which the airlines do not pay for the unfinished OMP assets).

8/ Extra City Will Have to Borrow x 5% interest rate per year

9/ Annual Additional Airport Interest Expense x 8 years

10/ Interest Expense over the 8 years x 5% interest rate per year

Exhibit 306
Page 1 of 5

## PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER AFTER DEATH SPIRAL ROUND 1

### A. PFC Revenue Forecast

| Column | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| | ORD PFC Revenues (2002 CY TAF) | | | ORD PFC Revenues (2003 CY TAF) | | | ORD PFC Revenues (2004 CY TAF) | | |
| Calendar Year | Adjusted Enplanements[1] | Eligible Enplanements[2] | PFC Revenue (Millions of 2004 Dollars)[3] | Adjusted Enplanements[1] | Eligible Enplanements[2] | PFC Revenue (Millions of 2004 Dollars)[3] | Adjusted Enplanements[1] | Eligible Enplanements[2] | PFC Revenue (Millions of 2004 Dollars)[3] |
| 2005 | 34,898,477 | 29,179,737 | $139 | 38,919,717 | 32,731,482 | $145 | 35,776,054 | 30,087,662 | $133 |
| 2006 | 35,798,961 | 30,106,926 | $133 | 40,306,815 | 33,898,032 | $150 | 36,844,622 | 30,986,327 | $137 |
| 2007 | 36,517,299 | 30,711,049 | $136 | 41,047,512 | 34,520,958 | $153 | 37,536,559 | 31,568,246 | $140 |
| 2008 | 37,601,012 | 31,622,451 | $140 | 42,240,822 | 35,524,531 | $157 | 38,604,137 | 32,468,079 | $144 |
| 2009 | 37,476,326 | 31,517,590 | $139 | 42,202,906 | 35,492,644 | $157 | 38,426,729 | 32,316,879 | $143 |
| 2010 | 38,603,374 | 32,465,438 | $143 | 43,426,669 | 36,521,828 | $161 | 39,461,507 | 33,187,127 | $147 |
| 2011 | 39,768,805 | 33,445,565 | $148 | 44,648,058 | 37,549,017 | $166 | 40,508,247 | 34,067,436 | $151 |
| 2012 | 40,974,169 | 34,459,278 | $152 | 45,933,014 | 38,629,665 | $171 | 41,599,759 | 34,984,558 | $155 |
| 2013 | 39,872,199 | 33,532,520 | $148 | 44,957,982 | 37,808,663 | $167 | 40,382,803 | 33,970,347 | $150 |
| 2014 | 41,144,401 | 34,602,441 | $153 | 46,368,776 | 38,998,140 | $172 | 41,631,105 | 35,011,759 | $155 |
| 2015 | 42,402,877 | 35,660,819 | $158 | 47,751,582 | 40,159,081 | $178 | 42,827,792 | 36,018,173 | $159 |
| 2016 | 43,704,710 | 36,755,661 | $163 | 49,177,298 | 41,358,108 | $183 | 44,059,014 | 37,053,630 | $164 |
| 2017 | 45,051,618 | 37,888,411 | $167 | 50,588,558 | 42,544,977 | $188 | 45,312,765 | 38,108,036 | $168 |
| 2018 | 46,253,891 | 38,899,522 | $173 | 51,831,087 | 43,589,944 | $193 | 46,396,155 | 39,019,166 | $173 |

1/ Exhibit 318, Page 1, Column P

2/ The 2003 percentage of PFC eligible enplanements (84.1%). From Deloitte & Touche: The City of Chicago, Illinois: Chicago O'Hare International Airport: Basic Financial Statements for the Years Ended December 31, 2003 and 2002, p.49

3/ Eligible Enplanements x $4.42 ($4.50 PFC - $0.08 airline collection fee)

4/ Exhibit 326, Page 2, Column P

5/ Exhibit 326, Page 3, Column P

Exhibit 306
Page 2 of 5

# PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER AFTER DEATH SPIRAL ROUND 1

## B. Existing PFC Debt Service Commitment

| Column | A | B |
|---|---|---|
| | Existing PFC Debt Service Commitment[1] | |
| Calendar Year | (Millions of Future Dollars) | (Millions of 2004 Dollars)[2] |
| 2005 | $73 | $71 |
| 2006 | $73 | $69 |
| 2007 | $73 | $68 |
| 2008 | $73 | $66 |
| 2009[3] | $73 | $64 |
| 2010[3] | $73 | $63 |
| 2011[3] | $73 | $61 |
| 2012[3] | $73 | $60 |
| 2013[3] | $73 | $59 |
| 2014[4] | $58 | $46 |
| 2015[4] | $58 | $45 |
| 2016[4] | $58 | $44 |
| 2017[4] | $58 | $43 |
| 2018[4] | $58 | $42 |
| **Total** | **$944** | **$801** |

1/ Excludes debt service on bonds that have not been issued and debt service after 2018.

2/ Annual inflation rate of 2.4% per the DEIS at page ES-42.

3/ 2009-2013 PFC debt service ($362,638,530/5 years).

4/ 2014-2018 PFC debt service ($290,816,179/5 years).

Source: Deloitte & Touche, The City of Chicago, Illinois: Chicago O'Hare International Airport, Basic Financial Statements for the Years Ended December 31, 2003 and 2002.

Exhibit 306
Page 3 of 5

## PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER AFTER DEATH SPIRAL ROUND 1

### C. 2002 TAF PFC Revenue Shortfall

| Column | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Calendar Year | Post Death Spiral Round 1 PFC Revenue (Millions of 2004 Dollars)[1] | Existing PFC Debt Service (Millions of 2004 Dollars)[2] | PFCs Available for New Debt Service (Millions of 2004 Dollars)[3] | Interest On OMP Bonds Backed By PFCs (Millions of 2004 Dollars)[4] | OMP Pay As You Go PFC Financing (Millions of 2004 Dollars)[5] | PFC Revenue Shortfall (Millions of 2004 Dollars)[6] |
| 2005 | $129 | $71 | $58 | $40 | $91 | $73 |
| 2006 | $133 | $69 | $64 | $40 | $91 | $67 |
| 2007 | $136 | $68 | $68 | $40 | $91 | $63 |
| 2008 | $140 | $66 | $74 | $162 | $91 | $179 |
| 2009 | $139 | $64 | $75 | $162 | $91 | $178 |
| 2010 | $143 | $63 | $81 | $162 | $91 | $172 |
| 2011 | $148 | $61 | $86 | $162 | $91 | $166 |
| 2012 | $152 | $60 | $92 | $162 | $91 | $160 |
| 2013 | $148 | $59 | $90 | $162 | $0 | $72 |
| 2014 | $153 | $46 | $107 | $162 | $0 | $55 |
| 2015 | $158 | $45 | $113 | $162 | $0 | $49 |
| 2016 | $162 | $44 | $118 | $162 | $0 | $43 |
| 2017 | $167 | $43 | $125 | $162 | $0 | $37 |
| 2018 | $172 | $42 | $130 | $162 | $0 | $32 |
| Total | $2,091 | $601 | $1,281 | $1,901 | $727 | $1,346 |

| | | |
|---|---|---|
| 1 | Extra City Will Have to Borrow[7] | $1,060 |
| 2 | Annual Additional Airport Interest Expense[8] | $53 |
| 3 | Total Additional Airport Interest Expense[9] | $424 |
| 4 | Annual Airline Capitalized Interest Payment (Beyond 2012)[10] | $21 |

1/ From Page 1, Column C

2/ From Page 2, Column B

3/ Column A - Column B

4/ Assumes that $804 million of PFC bonds (Master Plan Phase 1 PFC backed bonds from Exhibit 302, Column D) are issued in 2005 and the remaining $2,493 million of PFC bonds are issued in 2006. The assumed interest rate is 5% and all bonds were assumed to have maturities of 30 years. See Exhibit 302, Column D.

5/ From Exhibit 302. It is assumed that the same amount of pay as you go PFC financing will be utilized every year during the construction period (2005-2012). From Column F.

6/ Column D+ Column E – Column C

7/ PFC shortfall from 2005-2012 ( the construction period in which the airlines do not pay for the unfinished OMP assets)

8/ Extra city will have to borrow (Line 1) x 5% interest rate per year

9/ Annual additional airport interest expense x 8 years

10/ Interest expense over the 8 years x 5% interest rate per year

Exhibit 306
Page 4 of 5

## PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER AFTER DEATH SPIRAL ROUND 1

### D. 2003 TAF PFC Revenue Shortfall

| Column | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Calendar Year | Post Death Spiral Round 1 PFC Revenue (Millions of 2004 Dollars)[1] | Existing PFC Debt Service (Millions of 2004 Dollars)[2] | PFCs Available for New Debt Service (Millions of 2004 Dollars)[3] | Interest On OMP Bonds Backed By PFCs (Millions of 2004 Dollars)[4] | OMP Pay As You Go PFC Financing (Millions of 2004 Dollars)[5] | PFC Revenue Shortfall (Millions of 2004 Dollars)[6] |
| 2005 | $145 | $71 | $74 | $40 | $91 | $58 |
| 2006 | $150 | $69 | $80 | $40 | $91 | $51 |
| 2007 | $153 | $68 | $85 | $40 | $91 | $46 |
| 2008 | $157 | $66 | $91 | $162 | $91 | $162 |
| 2009 | $157 | $64 | $92 | $162 | $91 | $160 |
| 2010 | $161 | $63 | $99 | $162 | $91 | $154 |
| 2011 | $166 | $61 | $105 | $162 | $91 | $148 |
| 2012 | $171 | $60 | $111 | $162 | $91 | $142 |
| 2013 | $167 | $59 | $109 | $162 | $0 | $53 |
| 2014 | $172 | $46 | $126 | $162 | $0 | $35 |
| 2015 | $178 | $45 | $133 | $162 | $0 | $29 |
| 2016 | $183 | $44 | $139 | $162 | $0 | $23 |
| 2017 | $188 | $43 | $145 | $162 | $0 | $17 |
| 2018 | $193 | $42 | $151 | $162 | $0 | $11 |
| Total | $2,340 | $601 | $1,539 | $1,901 | $727 | $1,090 |

| | | |
|---|---|---|
| 1 | Extra City Will Have to Borrow[7] | $921 |
| 2 | Annual Additional Airport Interest Expense[8] | $46 |
| 3 | Total Additional Airport Interest Expense[9] | $369 |
| 4 | Annual Airline Capitalized Interest Payment (Beyond 2012)[10] | $18 |

1/ From Page 1, Column F

2/ From Page 2, Column B

3/ Column A - Column B

4/ Assumes that $804 million of PFC bonds (Master Plan Phase 1 PFC backed bonds from Exhibit 302, Column D) are issued in 2005 and the remaining $2,493 million of PFC bonds are issued in 2006. The assumed interest rate is 5% and all bonds were assumed to have maturities of 30 years. See Exhibit 302, Column D.

5/ From Exhibit 302. It is assumed that the same amount of pay as you go PFC financing will be utilized every year during the construction period (2008-2012). From Column F.

6/ Column D+ Column E – Column C

7/ PFC shortfall from 2005-2012 ( the construction period in which the airlines do not pay for the unfinished OMP assets)

8/ Extra city will have to borrow (Line 1) x 5% interest rate per year

9/ Annual additional airport interest expense x 8 years

10/ Interest expense over the 8 years x 5% interest rate per year

Exhibit 306
Page 5 of 5

## PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER AFTER DEATH SPIRAL ROUND 1

### E. 2004 TAF PFC Revenue Shortfall

| Column | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Calendar Year | Post Death Spiral Round 1 PFC Revenue (Millions of 2004 Dollars)[1] | Existing PFC Debt Service (Millions of 2004 Dollars)[2] | PFCs Available for New Debt Service (Millions of 2004 Dollars)[3] | Interest On OMP Bonds Backed By PFCs (Millions of 2004 Dollars)[4] | OMP Pay As You Go PFC Financing (Millions of 2004 Dollars)[5] | PFC Revenue Shortfall (Millions of 2004 Dollars)[6] |
| 2005 | $133 | $71 | $62 | $40 | $91 | $69 |
| 2006 | $137 | $69 | $68 | $40 | $91 | $64 |
| 2007 | $140 | $68 | $72 | $40 | $91 | $59 |
| 2008 | $144 | $66 | $77 | $162 | $91 | $175 |
| 2009 | $143 | $64 | $78 | $162 | $91 | $174 |
| 2010 | $147 | $63 | $84 | $162 | $91 | $169 |
| 2011 | $151 | $61 | $89 | $162 | $91 | $164 |
| 2012 | $155 | $60 | $95 | $162 | $91 | $158 |
| 2013 | $150 | $59 | $92 | $162 | $0 | $70 |
| 2014 | $155 | $46 | $109 | $162 | $0 | $53 |
| 2015 | $159 | $45 | $114 | $162 | $0 | $47 |
| 2016 | $164 | $44 | $120 | $162 | $0 | $42 |
| 2017 | $168 | $43 | $126 | $162 | $0 | $36 |
| 2018 | $172 | $42 | $131 | $162 | $0 | $31 |
| Total | $2,115 | $601 | $1,316 | $1,901 | $727 | $1,313 |

| | | |
|---|---|---|
| 1 | Extra City Will Have to Borrow[7] | $1,033 |
| 2 | Annual Additional Airport Interest Expense[8] | $52 |
| 3 | Total Additional Airport Interest Expense[9] | $413 |
| 4 | Annual Airline Capitalized Interest Payment (Beyond 2012)[10] | $21 |

1/ From Page 1, Column I

2/ From Page 2, Column B

3/ Column A - Column B

4/ Assumes that $804 million of PFC bonds (Master Plan Phase 1 PFC backed bonds from Exhibit 302, Column D) are issued in 2005 and the remaining $2,493 million of PFC bonds are issued in 2006. The assumed interest rate is 5% and all bonds were assumed to have maturities of 30 years. See Exhibit 302, Column D.

5/ From Exhibit 302. It is assumed that the same amount of pay as you go PFC financing will be utilized every year during the construction period (2005-2012). From Column F.

6/ Column D+ Column E – Column C

7/ PFC shortfall from 2005-2012 ( the construction period in which the airlines do not pay for the unfinished OMP assets)

8/ Extra city will have to borrow (Line 1) x 5% interest rate per year

9/ Annual additional airport interest expense x 8 years

10/ Interest expense over the 8 years x 5% interest rate per year

Exhibit 307
Page 1 of 5

## INITIAL ORD PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER

### A. PFC Revenue Forecast Using 2002/2003/2004 TAF's

| Column | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| | ORD PFC Revenues (2002 CY TAF) | | | ORD PFC Revenues (2003 CY TAF) | | | ORD PFC Revenues (2004 CY TAF) | | |
| Calendar Year | Enplanements[1] | Eligible Enplanements[2] | PFC Revenue (Millions of 2004 Dollars)[3] | Enplanements[4] | Eligible Enplanements[2] | PFC Revenue (Millions of 2004 Dollars)[3] | Enplanements[5] | Eligible Enplanements[2] | PFC Revenue (Millions of 2004 Dollars)[3] |
| 2003 Actual[6] | | | $128 | | | $128 | | | $128 |
| 2004 | 33,633,731 | 28,285,968 | $125 | 36,863,347 | 31,002,075 | $137 | 35,340,956 | 29,721,744 | $131 |
| 2005 | 34,696,477 | 29,179,737 | $129 | 38,919,717 | 32,731,482 | $145 | 35,776,054 | 30,087,662 | $133 |
| 2006 | 35,798,961 | 30,106,926 | $133 | 40,306,815 | 33,898,032 | $150 | 36,844,622 | 30,986,327 | $137 |
| 2007 | 36,943,000 | 31,069,063 | $137 | 41,473,732 | 34,879,408 | $154 | 37,962,387 | 31,926,368 | $141 |
| 2008 | 38,027,250 | 31,980,917 | $141 | 42,667,563 | 35,883,421 | $159 | 39,030,494 | 32,824,645 | $145 |
| 2009 | 39,149,000 | 32,924,309 | $146 | 43,883,047 | 36,905,843 | $163 | 40,101,040 | 33,724,975 | $149 |
| 2010 | 40,280,622 | 33,876,003 | $150 | 45,111,156 | 37,938,484 | $168 | 41,140,162 | 34,598,876 | $153 |
| 2011 | 41,450,618 | 34,859,970 | $154 | 46,336,837 | 38,969,279 | $172 | 42,191,215 | 35,482,812 | $157 |
| 2012 | 42,660,538 | 35,877,512 | $159 | 47,626,110 | 40,053,558 | $177 | 43,286,057 | 36,403,574 | $161 |
| 2013 | 43,912,000 | 36,929,992 | $163 | 48,930,349 | 41,150,423 | $182 | 44,425,001 | 37,361,426 | $165 |
| 2014 | 45,119,418 | 37,945,431 | $168 | 50,270,744 | 42,277,696 | $187 | 45,598,421 | 38,348,272 | $169 |
| 2015 | 46,367,492 | 38,995,061 | $172 | 51,638,919 | 43,428,330 | $192 | 46,785,107 | 39,346,275 | $174 |
| 2016 | 47,657,820 | 40,080,227 | $177 | 53,048,880 | 44,614,108 | $197 | 48,005,399 | 40,372,541 | $178 |
| 2017 | 48,992,074 | 41,202,334 | $182 | 54,444,032 | 45,787,431 | $202 | 49,247,423 | 41,417,083 | $183 |
| 2018 | 50,372,000 | 42,362,852 | $187 | 55,864,924 | 46,982,317 | $208 | 50,509,930 | 42,478,851 | $188 |

Note: Numbers exclude the decrease in passengers that results from the cost of the CMP.

1/ From Leigh Fisher Associates, Summary of Annual Enplaned Passengers ORD EIS Forecasts, October 26, 2004

2/ The 2003 percentage of PFC eligible enplanements (94.1%). From Deloitte & Touche, The City of Chicago, Illinois: Chicago O'Hare International Airport: Basic Financial Statements for the Years Ended December 31, 2003 and 2002, p.49

3/ Eligible Enplanements x $4.42 ($4.50 PFC - $0.08 airline collection fee).

4/ From FAA, 2003 Terminal Area Forecast.
Fiscal years were converted to calendar years using Ricondo and Associates methodology ($CY\ Enplanements_{(year\ 0)} = 0.75\ FY\ Enplanements_{(year\ 0)} + 0.25\ FY\ Enplanements_{(year\ 1)}$).

5/ From FAA, 2004 Terminal Area Forecast.
Fiscal years were converted to calendar years using Ricondo and Associates methodology ($CY\ Enplanements_{(year\ 0)} = 0.75\ FY\ Enplanements_{(year\ 0)} + 0.25\ FY\ Enplanements_{(year\ 1)}$).

6/ From Deloitte & Touche, The City of Chicago, Illinois: Chicago O'Hare International Airport: Basic Financial Statements for the Years Ended December 31, 2003 and 2002, p.49

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## INITIAL ORD PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER

### B. Existing PFC Debt Service Commitment

| Column | A | B |
|---|---|---|
| | Existing PFC Debt Service Commitment[1] | |
| Calendar Year | (Millions of Future Dollars) | (Millions of 2004 Dollars)[2] |
| 2005 | $73 | $71 |
| 2006 | $73 | $69 |
| 2007 | $73 | $68 |
| 2008 | $73 | $66 |
| 2009[3] | $73 | $64 |
| 2010[3] | $73 | $63 |
| 2011[3] | $73 | $61 |
| 2012[3] | $73 | $60 |
| 2013[3] | $73 | $59 |
| 2014[4] | $58 | $46 |
| 2015[4] | $58 | $45 |
| 2016[4] | $58 | $44 |
| 2017[4] | $58 | $43 |
| 2018[4] | $58 | $42 |
| **Total** | **$944** | **$801** |

1/ Excludes debt service on bonds that have not been issued and debt service after 2018.

2/ Annual inflation rate of 2.4% per the DEIS at page ES-42.

3/ 2009-2013 PFC debt service ($362,638,530/5 years).

4/ 2014-2018 PFC debt service ($290,816,179/5 years).

Source: Deloitte & Touche, The City of Chicago, Illinois: Chicago O'Hare International Airport, Basic Financial Statements for the Years Ended December 31, 2003 and 2002.

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## INITIAL ORD PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER

### C. PFC Revenue Shortfall Using the 2002 TAF

| Column | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Calendar Year | 2002 TAF PFC Revenue (Millions of 2004 Dollars)[1] | Existing PFC Debt Service (Millions of 2004 Dollars)[2] | PFCs Available for New Debt Service (Millions of 2004 Dollars)[3] | Interest On OMP Bonds Backed By PFCs Based on Campbell-Hill Adjusted Costs (Millions of 2004 Dollars)[4] | OMP Pay As You Go PFC Financing (Millions of 2004 Dollars)[5] | PFC Revenue Shortfall (Millions of 2004 Dollars)[6] |
| 2005 | $129 | $71 | $58 | $40 | $91 | $73 |
| 2006 | $133 | $69 | $64 | $40 | $91 | $67 |
| 2007 | $137 | $68 | $70 | $40 | $91 | $62 |
| 2008 | $141 | $66 | $75 | $162 | $91 | $178 |
| 2009 | $146 | $64 | $81 | $162 | $91 | $172 |
| 2010 | $150 | $63 | $87 | $162 | $91 | $166 |
| 2011 | $154 | $61 | $93 | $162 | $91 | $160 |
| 2012 | $159 | $60 | $99 | $162 | $91 | $154 |
| 2013 | $163 | $59 | $105 | $162 | $0 | $57 |
| 2014 | $168 | $46 | $122 | $162 | $0 | $40 |
| 2015 | $172 | $45 | $128 | $162 | $0 | $34 |
| 2016 | $177 | $44 | $133 | $162 | $0 | $28 |
| 2017 | $182 | $43 | $139 | $162 | $0 | $22 |
| 2018 | $187 | $42 | $146 | $162 | $0 | $16 |
| Total | $2,198 | $601 | $1,398 | $1,901 | $727 | $1,231 |

| | | |
|---|---|---|
| 1 | Extra City Will Have to Borrow[7] | $1,032 |
| 2 | Annual Additional Airport Interest Expense[8] | $52 |
| 3 | Total Additional Airport Interest Expense[9] | $413 |
| 4 | Annual Airline Capitalized Interest Payment (Beyond 2012)[10] | $21 |

1/ From Page 1, Column C

2/ From Page 3, Column B

3/ Column A - Column B

4/ Assumes that $804 million of PFC bonds (Master Plan Phase 1 PFC backed bonds from Exhibit 302, Column D) are issued in 2005 and the remaining $2,433 million of PFC bonds are issued in 2008. The assumed interest rate is 5% and all bonds were assumed to have maturities of 30 years. See Exhibit 302, Column D

5/ From Exhibit 302. It is assumed that the same amount of pay as you go PFC financing will be utilized every year during the construction period (2005-2012). From Column F

6/ Column D + Column E - Column C

7/ PFC shortfall from 2005-2012 ( the construction period in which the airlines do not pay for the unfinished OMP assets)

8/ Extra city will have to borrow (Line 1) x 5% interest rate per year

9/ Annual additional airport interest expense x 8 years

10/ Interest expense over the 8 years x 5% interest rate per year

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## INITIAL ORD PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER

### D. PFC Revenue Shortfall Using the 2003 TAF

| Column | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Calendar Year | 2003 TAF PFC Revenue (Millions of 2004 Dollars)[1] | Existing PFC Debt Service (Millions of 2004 Dollars)[2] | PFCs Available for New Debt Service (Millions of 2004 Dollars)[3] | Interest On OMP Bonds Backed By PFCs Based on Campbell-Hill Adjusted Costs (Millions of 2004 Dollars)[4] | OMP Pay As You Go PFC Financing (Millions of 2004 Dollars)[5] | PFC Revenue Shortfall (Millions of 2004 Dollars)[6] |
| 2005 | $145 | $71 | $74 | $40 | $91 | $58 |
| 2006 | $150 | $69 | $80 | $40 | $91 | $51 |
| 2007 | $154 | $68 | $86 | $40 | $91 | $45 |
| 2008 | $159 | $66 | $93 | $162 | $91 | $160 |
| 2009 | $163 | $64 | $99 | $162 | $91 | $154 |
| 2010 | $168 | $63 | $105 | $162 | $91 | $148 |
| 2011 | $172 | $61 | $111 | $162 | $91 | $142 |
| 2012 | $177 | $60 | $117 | $162 | $91 | $136 |
| 2013 | $182 | $59 | $123 | $162 | $0 | $39 |
| 2014 | $187 | $46 | $141 | $162 | $0 | $21 |
| 2015 | $192 | $45 | $147 | $162 | $0 | $16 |
| 2016 | $197 | $44 | $153 | $162 | $0 | $8 |
| 2017 | $202 | $43 | $160 | $162 | $0 | $2 |
| 2018 | $208 | $42 | $166 | $162 | $0 | -$4 |
| Total | $2,455 | $801 | $1,655 | $1,901 | $727 | $974 |

| | | |
|---|---|---|
| 1 | Extra City Will Have to Borrow[7] | $893 |
| 2 | Annual Additional Airport Interest Expense[8] | $45 |
| 3 | Total Additional Airport Interest Expense[9] | $357 |
| 4 | Annual Airline Capitalized Interest Payment (Beyond 2012)[10] | $18 |

1/ From Page 1, Column F

2/ From Page 3, Column B

3/ Column A - Column B

4/ Assumes that $804 million of PFC bonds (Master Plan Phase 1 PFC backed bonds from Exhibit 302, Column D) are issued in 2005 and the remaining $2,433 million of PFC bonds are issued in 2008. The assumed interest rate is 5% and all bonds were assumed to have maturities of 30 years. See Exhibit 302, Column D

5/ From Exhibit 302. It is assumed that the same amount of pay as you go PFC financing will be utilized every year during the construction period (2005-2012). From Column F

6/ Column D + Column E - Column C

7/ PFC shortfall from 2005-2012 ( the construction period in which the airlines do not pay for the unfinished OMP assets)

8/ Extra city will have to borrow (Line 1) x 5% interest rate per year

9/ Annual additional airport interest expense x 8 years

10/ Interest expense over the 8 years x 5% interest rate per year

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## INITIAL ORD PFC SHORTFALL AT THE CURRENT RATE OF $4.50 PER ENPLANED PASSENGER

### E. PFC Revenue Shortfall Using the 2004 TAF

| Column | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Calendar Year | 2004 TAF PFC Revenue (Millions of 2004 Dollars)[1] | Existing PFC Debt Service (Millions of 2004 Dollars)[2] | PFCs Available for New Debt Service (Millions of 2004 Dollars)[3] | Interest On OMP Bonds Backed By PFCs Based on Campbell-Hill Adjusted Costs (Millions of 2004 Dollars)[4] | OMP Pay As You Go PFC Financing (Millions of 2004 Dollars)[5] | PFC Revenue Shortfall (Millions of 2004 Dollars)[6] |
| 2005 | $133 | $71 | $62 | $40 | $91 | $69 |
| 2006 | $137 | $69 | $68 | $40 | $91 | $64 |
| 2007 | $141 | $68 | $73 | $40 | $91 | $58 |
| 2008 | $145 | $66 | $79 | $162 | $91 | $174 |
| 2009 | $149 | $64 | $85 | $162 | $91 | $168 |
| 2010 | $153 | $63 | $90 | $162 | $91 | $163 |
| 2011 | $157 | $61 | $95 | $162 | $91 | $157 |
| 2012 | $161 | $60 | $101 | $162 | $91 | $152 |
| 2013 | $165 | $59 | $107 | $162 | $0 | $55 |
| 2014 | $169 | $46 | $124 | $162 | $0 | $38 |
| 2015 | $174 | $45 | $129 | $162 | $0 | $33 |
| 2016 | $178 | $44 | $135 | $162 | $0 | $27 |
| 2017 | $183 | $43 | $140 | $162 | $0 | $22 |
| 2018 | $188 | $42 | $146 | $162 | $0 | $16 |
| Total | $2,234 | $601 | $1,433 | $1,901 | $727 | $1,196 |

| | | |
|---|---|---|
| 1 | Extra City Will Have to Borrow[7] | $1,005 |
| 2 | Annual Additional Airport Interest Expense[8] | $50 |
| 3 | Total Additional Airport Interest Expense[9] | $402 |
| 4 | Annual Airline Capitalized Interest Payment (Beyond 2012)[10] | $20 |

1/ From Page 1, Column I

2/ From Page 3, Column B

3/ Column A - Column B

4/ Assumes that $904 million of PFC bonds (Master Plan Phase 1 PFC backed bonds from Exhibit 302, Column D) are issued in 2005 and the remaining $2,433 million of PFC bonds are issued in 2008. The assumed interest rate is 5% and all bonds were assumed to have maturities of 30 years. See Exhibit 302, Column D

5/ From Exhibit 302. It is assumed that the same amount of pay as you go PFC financing will be utilized every year during the construction period (2005-2012). From Column F.

6/ Column D + Column E - Column C

7/ PFC shortfall from 2005-2012 ( the construction period in which the airlines do not pay for the unfinished OMP assets)

8/ Extra city will have to borrow (Line 1) x 5% interest rate per year

9/ Annual additional airport interest expense x 8 years

10/ Interest expense over the 8 years x 5% interest rate per year

Exhibit 308
Page 1 of 1

## OUTSTANDING REVENUE BONDS ISSUED TO PAY FOR OMP PROJECTS AS OF DECEMBER 31, 2004 REPRESENT LESS THAN 2% OF THE TOTAL OMP COSTS
## (In Millions of 2004 Dollars)

| Bond Issue | Total Revenue Bonds Issued | Amount to Be Applied to OMP Projects | Percent to Be Applied to OMP Projects |
|---|---|---|---|
| Series 2003A-C | $986 | $290 | 29.5% |
| Series 2003D-E | $149 | $49 | 33.1% |
| **Total** | **$1,136** | **$340** | **29.9%** |

| | Adjusted By Campbell-Hill Based on 2002 TAF | FAA DEIS Report |
|---|---|---|
| OMP Total Capital Cost | **$21,075** | **$14,192** |
| Percentage of OMP Total Funding from Bonds Already Issued | **1.6%** | **2.4%** |

Sources: City of Chicago, Official Statement for Series 2003A-C Third Lien Revenue Bonds, p.7, August 2003; City of Chicago, Official Statement for Series 2003D-F Third Lien Revenue Bonds, p.8, November 2003; FAA, O'Hare Modernization Draft Environmental Impact Statement, Chapter 1, Pages 1-44-45, January 2005; The City of Chicago, ORD Master Plan, VII-23-25; Exhibit 300.

Exhibit 309
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## EVEN WITHOUT THE MODERNIZATION PROGRAM O'HARE HAS THE THIRD HIGHEST INTEREST EXPENSE PER ENPLANED PASSENGER AMONG THE 10 LARGEST U.S. AIRPORTS

| Rank | Airport | FY 2003 Interest Expense | FY 2003 Enplanements | Interest Expense per Enplanement |
|---|---|---|---|---|
| 1 | DEN | $204,364,075 | 17,979,726 | $11.37 |
| 2 | LAS | $87,831,046 | 16,214,657 | $5.42 |
| **3** | **ORD** | **$174,349,191** | **32,919,611** | **$5.30** |
| 4 | MSP | $59,104,813 | 16,043,692 | $3.68 |
| 5 | IAH | $44,937,674 | 15,690,146 | $2.86 |
| 6 | DFW | $64,602,000 | 24,601,707 | $2.63 |
| 7 | JFK | $40,260,000 | 15,681,194 | $2.57 |
| 8 | PHX | $37,169,000 | 17,556,207 | $2.12 |
| 9 | ATL[1] | $78,415,000 | 38,852,007 | $2.02 |
| 10 | LAX | $19,496,997 | 26,149,249 | $0.75 |
| | | $810,529,796 | 221,688,196 | $3.66 |

1/ ATL interest expense is from its 2003 Annual Report because the FAA data are incorrect.

Sources: U.S. DOT T-100 data, for years ended December 2003, September 2003 and June 2003, via Data Base Products; FAA, Compliance Activity Tracking System, Form 127, http://cats.crownci.com/reports/reports.cfm.

Exhibit 310
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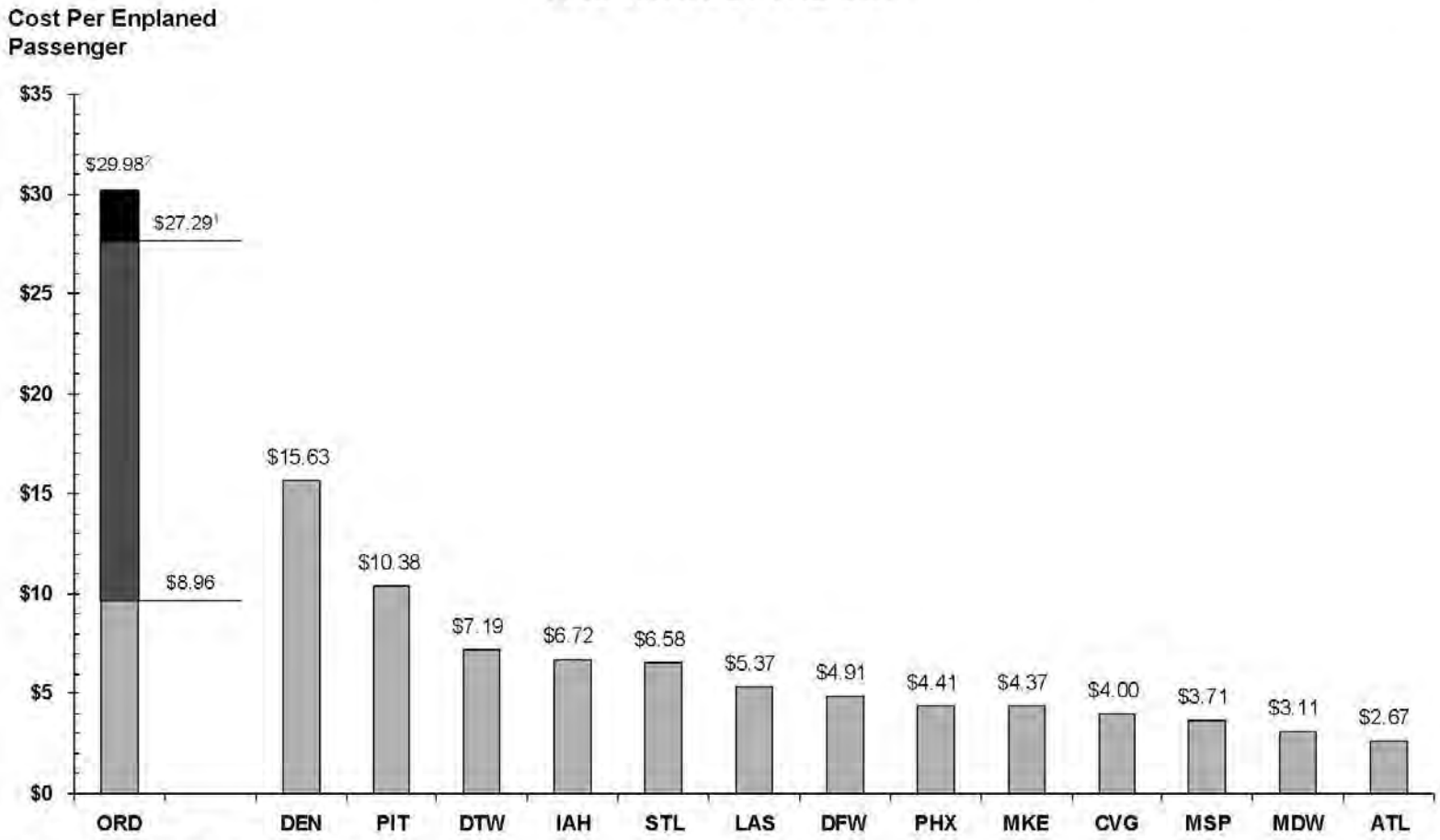
## ORD AIRPORT COST PER ENPLANED PASSENGER COMPARED TO OTHER COMPETING HUBS WITH AND WITHOUT THE OMP




1/ ORD Cost when OMP opens (Exhibit 325)
2/ ORD Cost after the "death spiral" traffic adjustment (Exhibit 316)

Note: ATL cost per enplanement is from its 2003 Annual Report because the FAA data are incorrect.

Source: FAA, Compliance Activity Tracking System, Form 127, http://cats.crownci.com/reports/reports.cfm; U.S. DOT T-100 data, for years ended December 2003, September 2003 and June 2003, via Data Base Products.

Exhibit 311
Page 1 of 2

## ONLY 7 OF THE 60 AIRPORTS SERVED BY SOUTHWEST AIRLINES HAD COSTS OVER $9.00 PER ENPLANED PASSENGER IN 2003

| Cost per Enplanement Rank | Airport | Fiscal Year | Total Enplaned Passengers[1] for the Fiscal Year | Passenger Landing Fees | Terminal/International Arrival Area Rental or Other Charges | Total Passenger Landing and Arrival Fees | Terminal Plus Landing Fees per Enplaned Passenger |
|---|---|---|---|---|---|---|---|
| 1 | SDF | 30-Jun | 1,658,594 | $23,015,786 | $6,082,062 | $29,097,848 | $17.54 |
| 2 | PDX | 30-Jun | 5,929,232 | $24,449,517 | $54,171,200 | $78,620,717 | $13.26 |
| 3 | ONT | 30-Jun | 3,051,624 | $11,304,610 | $26,582,423 | $37,887,033 | $12.42 |
| 4 | PHL | 30-Jun | 11,298,284 | $49,718,299 | $74,900,382 | $124,618,681 | $11.03 |
| 5 | CLE | 31-Dec | 5,011,940 | $31,370,270 | $23,549,088 | $54,919,358 | $10.96 |
| 6 | SEA | 31-Dec | 13,068,573 | $83,159,369 | $42,621,871 | $125,781,240 | $9.62 |
| 7 | MSY | 31-Dec | 4,640,102 | $26,638,827 | $16,439,893 | $43,078,720 | $9.28 |
| 8 | AUS | 30-Sep | 3,157,961 | $16,715,190 | $11,082,865 | $27,798,055 | $8.80 |
| 9 | ALB | 31-Dec | 1,405,343 | $5,710,182 | $6,034,518 | $11,744,700 | $8.36 |
| 10 | TUL | 30-Jun | 1,335,277 | $5,715,745 | $5,215,101 | $10,930,846 | $8.19 |
| 11 | ABQ | 30-Jun | 2,888,283 | $10,299,330 | $13,087,729 | $23,387,059 | $8.10 |
| 12 | IND | 31-Dec | 3,670,518 | $16,404,968 | $12,947,656 | $29,352,624 | $8.00 |
| 13 | SNA | 30-Jun | 4,024,263 | $10,016,484 | $20,948,110 | $30,964,594 | $7.69 |
| 14 | BHM | 30-Jun | 1,365,009 | $7,308,392 | $2,823,360 | $10,131,752 | $7.42 |
| 15 | BUF | 31-Mar | 1,900,110 | $8,108,995 | $5,642,787 | $13,751,782 | $7.24 |
| 16 | DTW | 30-Sep | 15,629,949 | $82,293,613 | $30,158,202 | $112,451,815 | $7.19 |
| 17 | LAX | 30-Jun | 26,149,249 | $119,802,036 | $57,031,545 | $176,833,581 | $6.76 |
| 18 | IAH | 30-Jun | 15,690,146 | $36,180,501 | $69,248,493 | $105,428,994 | $6.72 |
| 19 | STL | 30-Jun | 11,293,282 | $49,573,310 | $24,700,587 | $74,273,897 | $6.58 |
| 20 | BNA | 30-Jun | 3,903,185 | $10,152,623 | $14,763,370 | $24,915,993 | $6.38 |
| 21 | OMA | 31-Dec | 1,782,801 | $5,265,003 | $6,082,826 | $11,347,829 | $6.37 |
| 22 | TUS | 30-Sep | 1,708,236 | $3,005,040 | $7,613,626 | $10,618,666 | $6.22 |
| 23 | ELP | 31-Aug | 1,413,411 | $3,447,550 | $5,337,404 | $8,784,954 | $6.22 |
| 24 | HOU | 30-Jun | 3,696,961 | $12,530,770 | $10,298,357 | $22,829,127 | $6.18 |
| 25 | MCO | 30-Sep | 13,101,057 | $26,561,000 | $53,461,000 | $80,022,000 | $6.11 |
| 26 | CMH | 31-Dec | 3,049,279 | $10,007,218 | $8,388,883 | $18,396,101 | $6.03 |
| 27 | MHT | 30-Jun | 1,656,709 | $4,924,094 | $4,982,862 | $9,906,956 | $5.98 |
| 28 | BDL | 30-Jun | 3,099,476 | $12,090,842 | $6,254,918 | $18,345,760 | $5.92 |
| 29 | JAX | 30-Sep | 2,409,249 | $6,471,340 | $7,462,791 | $13,934,131 | $5.78 |
| 30 | JAN | 30-Sep | 605,888 | $2,234,341 | $1,256,461 | $3,490,802 | $5.76 |
| 31 | PBI | 30-Sep | 2,921,432 | $3,263,127 | $13,248,454 | $16,511,581 | $5.65 |
| 32 | PVD | 30-Jun | 2,570,282 | $7,098,461 | $6,998,867 | $14,097,328 | $5.48 |
| 33 | LAS | 30-Jun | 16,214,657 | $27,619,402 | $59,517,827 | $87,137,229 | $5.37 |
| 34 | TPA | 30-Sep | 7,614,611 | $9,057,482 | $31,256,447 | $40,313,929 | $5.29 |

Exhibit 311
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## ONLY 7 OF THE 60 AIRPORTS SERVED BY SOUTHWEST AIRLINES HAD COSTS OVER $9.00 PER ENPLANED PASSENGER IN 2003

| Cost per Enplanement Rank | Airport | Fiscal Year | Total Enplaned Passengers[1] for the Fiscal Year | Passenger Landing Fees | Terminal/International Arrival Area Rental or Other Charges | Total Passenger Landing and Arrival Fees | Terminal Plus Landing Fees per Enplaned Passenger |
|---|---|---|---|---|---|---|---|
| 35 | SJC | 30-Jun | 5,073,829 | $11,629,700 | $14,407,944 | $26,037,644 | $5.13 |
| 36 | LIT | 31-Dec | 1,059,994 | $2,560,501 | $2,823,007 | $5,383,508 | $5.08 |
| 37 | SLC | 30-Jun | 8,540,906 | $18,153,076 | $23,805,732 | $41,958,808 | $4.91 |
| 38 | SAN | 30-Jun | 7,380,092 | $17,483,590 | $18,728,883 | $36,212,473 | $4.91 |
| 39 | SAT | 30-Sep | 3,121,583 | $5,190,254 | $10,012,112 | $15,202,366 | $4.87 |
| 40 | RDU | 31-Mar | 3,948,759 | $8,483,896 | $10,723,693 | $19,207,589 | $4.86 |
| 41 | CRP | 31-Jul | 361,107 | $617,138 | $1,120,435 | $1,737,573 | $4.81 |
| 42 | AMA | 30-Sep | 384,829 | $313,707 | $1,503,890 | $1,817,597 | $4.72 |
| 43 | BWI | 30-Jun | 9,221,887 | $20,480,270 | $22,254,821 | $42,735,091 | $4.63 |
| 44 | HRL | 30-Sep | 392,733 | $451,943 | $1,367,059 | $1,819,002 | $4.63 |
| 45 | OAK | 30-Jun | 6,424,870 | $14,050,610 | $15,032,716 | $29,083,326 | $4.53 |
| 46 | RNO | 30-Jun | 2,154,847 | $4,932,784 | $4,763,969 | $9,696,753 | $4.50 |
| 47 | PHX | 30-Jun | 17,556,207 | $29,907,287 | $47,527,112 | $77,434,399 | $4.41 |
| 48 | SMF | 30-Jun | 4,262,594 | $8,122,734 | $10,070,678 | $18,193,412 | $4.27 |
| 49 | ISP | 31-Dec | 939,839 | $1,581,092 | $2,415,289 | $3,996,381 | $4.25 |
| 50 | GEG | 31-Dec | 1,372,840 | $2,525,223 | $3,170,463 | $5,695,686 | $4.15 |
| 51 | FLL | 30-Sep | 8,408,190 | $11,556,000 | $22,324,000 | $33,880,000 | $4.03 |
| 52 | OKC | 30-Jun | 1,528,985 | $4,257,115 | $1,642,491 | $5,899,606 | $3.86 |
| 53 | LBB | 30-Sep | 504,916 | $724,227 | $1,132,789 | $1,857,016 | $3.68 |
| 54 | MCI | 30-Apr | 4,960,049 | $9,635,966 | $7,536,895 | $17,172,861 | $3.46 |
| 55 | MAF | 30-Sep | 399,334 | $423,330 | $837,334 | $1,260,664 | $3.16 |
| 56 | BOI | 30-Sep | 1,372,434 | $2,891,376 | $1,427,654 | $4,319,030 | $3.15 |
| 57 | ORF | 30-Jun | 1,664,339 | $2,282,477 | $2,934,823 | $5,217,300 | $3.13 |
| **58** | **MDW** | **31-Dec** | **8,683,955** | **$14,523,969** | **$12,519,495** | **$27,043,464** | **$3.11** |
| 59 | BUR | 30-Jun | 2,345,441 | $2,790,334 | $1,669,301 | $4,459,635 | $1.90 |
| 60 | DAL | 30-Sep | 2,783,787 | $1,663,954 | $2,860,099 | $4,524,053 | $1.63 |

1/ Domestic plus international.

Source: U.S. DOT, T-100 Data, via Data Base Products; FAA CATS Data, http://cats.crownci.com (accessed on February 2, 2005); and Official Airline Guide, schedules for the week of March 7-13, 2005 (February 2005 Max Edition).

Exhibit 312
Page 1 of 1

## CURRENT ORD DEBT SERVICE FOR EXISTING GENERAL AIRPORT REVENUE BOND OBLIGATIONS: 2005-2034[1]
## (In Millions of Dollars)

| | Embedded Obligations As of December 31, 2003: | | |
|---|---|---|---|
| | Principal | Interest | Total |
| First Lien Revenue Bonds | $264 | $123 | $387 |
| Second Lien Revenue Bonds | $1,328 | $503 | $1,830 |
| Third Lien Revenue Bonds | $1,626 | $1,890 | $3,516 |
| **Total** | **$3,218** | **$2,515** | **$5,734** |

1/ Does not include debt service on future bonds that have not been issued.

Source: Deloitte & Touche, The City of Chicago, Illinois: Chicago O'Hare International Airport, Basic Financial Statements for the Years Ended December 31, 2003 and 2002.

Exhibit 313
Page 1 of 1

## THE PROPOSED FINANCING PLAN WOULD INCREASE OMP DEBT TO 5 TIMES THE HIGHEST DEBT LEVEL FOR ANY U.S. AIRPORT

| | 2013 Total Bond Debt |
|---|---|
| ORD After OMP Using Realistic Costs (Millions of 2004 Dollars)[1] | $20,004 |
| ORD After OMP Using DEIS Costs (Millions of 2004 Dollars)[2] | $14,256 |

| Rank | Airport | FY 2003 Total Bond Debt (Millions of Dollars)[3] |
|---|---|---|
| 1 | SFO | $4,271 |
| 2 | ORD | $4,036 |
| 3 | DFW | $3,969 |
| 4 | DEN | $3,863 |
| 5 | MIA | $2,849 |
| 6 | SEA | $2,303 |
| 7 | IAH | $1,768 |
| 8 | LAS | $1,721 |
| 9 | MSP | $1,684 |
| 10 | ATL | $1,676 |
| 11 | DTW | $1,612 |
| 12 | IAD | $1,368 |
| 13 | MCO | $1,341 |
| 14 | BOS | $1,218 |
| 15 | PHL | $1,129 |
| 16 | MDW | $1,123 |
| 17 | CLE | $962 |
| 18 | DCA | $959 |
| 19 | STL | $958 |
| 20 | HNL | $870 |

1/ (Exhibit 302, Column D) + (Exhibit 302, Column E) + (Exhibit 323, page 2, Row 14)
2/ (Exhibit 302, Column D) + (Exhibit 302, Column E) + (Exhibit 323, page 2, Row 14)
3/ From FAA, Compliance Activity Tracking System, Form 127, http://cats.crownci.com/reports/reports.cfm.

Exhibit 31H
Page 1 of 1

**FORECAST INCREASE IN INCREMENTAL COST PER ENPLANEMENT CAUSED BY THE OMP AFTER DEATH SPIRAL ROUND 1**
**(In 2004 Dollars)**

| Column | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| | 2002 CY TAF | | | 2003 CY TAF | | | 2004 CY TAF | | |
| | Incremental Cost per Enplanement Before Death Spiral Round 1[1] | Incremental Cost per Enplanement After Death Spiral Round 1[2] | Increase in Incremental Cost per Enplanement | Incremental Cost per Enplanement Before Death Spiral Round 1[3] | Incremental Cost per Enplanement After Death Spiral Round 1[2] | Increase in Incremental Cost per Enplanement | Incremental Cost per Enplanement Before Death Spiral Round 1[4] | Incremental Cost per Enplanement After Death Spiral Round 1[2] | Increase in Incremental Cost per Enplanement |
| 2005 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| 2006 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| 2007 | $2.05 | $2.07 | $0.02 | $1.82 | $1.84 | $0.02 | $1.99 | $2.01 | $0.02 |
| 2008 | $1.99 | $2.01 | $0.02 | $1.77 | $1.79 | $0.02 | $1.94 | $1.96 | $0.02 |
| 2009 | $7.81 | $8.16 | $0.35 | $6.87 | $7.26 | $0.28 | $7.63 | $7.96 | $0.33 |
| 2010 | $7.59 | $7.92 | $0.33 | $6.78 | $7.04 | $0.26 | $7.43 | $7.76 | $0.32 |
| 2011 | $7.38 | $7.69 | $0.31 | $6.60 | $6.85 | $0.25 | $7.26 | $7.56 | $0.30 |
| 2012 | $7.17 | $7.46 | $0.30 | $6.42 | $6.66 | $0.24 | $7.07 | $7.35 | $0.29 |
| **2013** | **$17.58** | **$19.75** | **$2.17** | **$15.34** | **$17.03** | **$1.70** | **$17.32** | **$19.43** | **$2.11** |
| 2014 | $16.72 | $18.72 | $1.99 | $14.58 | $16.13 | $1.55 | $16.50 | $18.44 | $1.94 |
| 2015 | $16.15 | $18.03 | $1.87 | $14.07 | $15.53 | $1.46 | $15.98 | $17.80 | $1.83 |
| 2016 | $15.59 | $17.35 | $1.76 | $13.58 | $14.95 | $1.37 | $15.44 | $17.17 | $1.73 |
| 2017 | $15.06 | $16.70 | $1.65 | $13.12 | $14.41 | $1.29 | $14.94 | $16.57 | $1.63 |
| 2018 | $15.29 | $16.99 | $1.70 | $12.96 | $14.70 | $1.34 | $15.22 | $16.91 | $1.69 |

1) From Exhibit 32A, Column A

2) Calculated from Exhibit 31B: ((Column D + Column E) x 1,000,000) / A.
This is conservative because it assumes that the only incremental cost increase comes from debt service.

3) From Exhibit 32A, Column B

4) From Exhibit 32A, Column C

Exhibit 315
Page 1 of 1

## CURRENT AVERAGE ONE-WAY ORD FARES
## (Year Ended September 30, 2004)

| | Originating | | | Connecting | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | Domestic | International | Total | Domestic | International | Total | Domestic | International | Total |
| Revenue | $1,803,797,532 | $586,058,713 | $2,389,856,245 | $2,459,430,757 | $3,018,352,201 | $5,477,782,957 | $4,263,228,289 | $3,604,410,914 | $7,867,639,203 |
| Enplanements | 12,680,010 | 1,346,389 | 14,026,399 | 14,658,760 | 5,197,454 | 19,856,214 | 27,338,770 | 6,543,843 | 33,882,613 |
| Average Fare | $142.26 | $435.28 | $170.38 | $167.78 | $580.74 | $275.87 | $155.94 | $550.81 | $232.20 |

Source: U.S. DOT, Origin-Destination Passenger Survey, via Data Base Products

Exhibit 31b
Page 1 of 2

## IF THE OMP IS BUILT THE COST PER ENPLANEMENT AT ORD WILL INCREASE TO $30 AFTER THE FIRST ROUND OF THE DEATH SPIRAL EFFECT
(In 2004 Dollars)

| Column: | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | 2002 TAF Enplanements After Death Spiral Round 1[1] | O+M Costs[2] (Millions of 2004 Dollars) | Existing GARB Debt Service[3] (Millions of 2004 Dollars) | OMP Debt Service[4] (Millions of 2004 Dollars) | PFC Shortfall Paid By the Airlines[5] (Millions of 2004 Dollars) | Total Airline Requirement[6] (Millions of 2004 Dollars) | Cost per Enplanement[7] (2004 Dollars) |
| 2005 | 34,698,477 | $140 | $204 | $0 | $0 | $344 | $9.91 |
| 2006 | 35,798,961 | $144 | $224 | $0 | $0 | $368 | $10.27 |
| 2007 | 36,517,299 | $149 | $238 | $76 | $0 | $463 | $12.67 |
| 2008 | 37,601,012 | $156 | $239 | $76 | $0 | $471 | $12.51 |
| 2009 | 37,476,328 | $159 | $238 | $306 | $0 | $703 | $18.75 |
| 2010 | 38,603,374 | $166 | $227 | $306 | $0 | $700 | $18.12 |
| 2011 | 39,768,805 | $174 | $222 | $306 | $0 | $702 | $17.66 |
| 2012 | 40,974,169 | $183 | $217 | $306 | $0 | $706 | $17.23 |
| **2013** | **39,872,199** | **$183** | **$225** | **$694** | **$93** | **$1,195** | **$29.96** |
| 2014 | 41,144,401 | $194 | $220 | $694 | $76 | $1,184 | $28.77 |
| 2015 | 42,402,877 | $206 | $209 | $694 | $70 | $1,179 | $27.81 |
| 2016 | 43,704,710 | $218 | $185 | $694 | $64 | $1,161 | $26.57 |
| 2017 | 45,051,818 | $231 | $192 | $694 | $58 | $1,175 | $26.08 |
| 2018 | 46,253,691 | $244 | $187 | $733 | $53 | $1,216 | $26.30 |

| | 2003 TAF Enplanements After Death Spiral Round 1[8] | O+M Costs[2] (Millions of 2004 Dollars) | Existing GARB Debt Service[3] (Millions of 2004 Dollars) | OMP Debt Service[4] (Millions of 2004 Dollars) | PFC Shortfall Paid By the Airlines[9] (Millions of 2004 Dollars) | Total Airline Requirement[6] (Millions of 2004 Dollars) | Cost per Enplanement[7] (2004 Dollars) |
|---|---|---|---|---|---|---|---|
| 2005 | 38,919,717 | $157 | $204 | $0 | $0 | $361 | $9.27 |
| 2006 | 40,306,815 | $162 | $224 | $0 | $0 | $386 | $9.57 |
| 2007 | 41,047,512 | $168 | $238 | $76 | $0 | $481 | $11.72 |
| 2008 | 42,240,822 | $176 | $239 | $76 | $0 | $490 | $11.60 |
| 2009 | 42,202,906 | $179 | $238 | $306 | $0 | $723 | $17.12 |
| 2010 | 43,426,869 | $187 | $227 | $306 | $0 | $720 | $16.59 |
| 2011 | 44,646,056 | $196 | $222 | $306 | $0 | $724 | $16.21 |
| 2012 | 45,933,014 | $205 | $217 | $306 | $0 | $728 | $15.85 |
| **2013** | **44,957,982** | **$206** | **$225** | **$694** | **$72** | **$1,197** | **$26.63** |
| 2014 | 46,366,776 | $219 | $220 | $694 | $54 | $1,186 | $25.58 |
| 2015 | 47,751,582 | $232 | $209 | $694 | $48 | $1,182 | $24.76 |
| 2016 | 49,177,298 | $245 | $185 | $694 | $41 | $1,165 | $23.70 |
| 2017 | 50,588,558 | $259 | $192 | $694 | $35 | $1,180 | $23.33 |
| 2018 | 51,831,087 | $273 | $187 | $733 | $29 | $1,222 | $23.58 |

| | 2004 TAF Enplanements After Death Spiral Round 1[10] | O+M Costs[2] (Millions of 2004 Dollars) | Existing GARB Debt Service[3] (Millions of 2004 Dollars) | OMP Debt Service[4] (Millions of 2004 Dollars) | PFC Shortfall Paid By the Airlines[11] (Millions of 2004 Dollars) | Total Airline Requirement[6] (Millions of 2004 Dollars) | Cost per Enplanement[7] (2004 Dollars) |
|---|---|---|---|---|---|---|---|
| 2005 | 35,776,054 | $145 | $204 | $0 | $0 | $348 | $9.73 |
| 2006 | 36,844,622 | $148 | $224 | $0 | $0 | $372 | $10.09 |
| 2007 | 37,536,559 | $153 | $238 | $76 | $0 | $467 | $12.44 |
| 2008 | 38,604,137 | $161 | $239 | $76 | $0 | $475 | $12.30 |
| 2009 | 38,426,729 | $163 | $238 | $306 | $0 | $707 | $18.39 |
| 2010 | 39,461,507 | $170 | $227 | $306 | $0 | $703 | $17.82 |
| 2011 | 40,508,247 | $178 | $222 | $306 | $0 | $705 | $17.41 |
| 2012 | 41,598,759 | $186 | $217 | $306 | $0 | $709 | $17.04 |
| **2013** | **40,392,903** | **$195** | **$225** | **$694** | **$91** | **$1,195** | **$29.59** |
| 2014 | 41,831,105 | $196 | $220 | $694 | $74 | $1,184 | $28.43 |
| 2015 | 42,827,792 | $208 | $209 | $694 | $68 | $1,179 | $27.53 |
| 2016 | 44,059,014 | $220 | $185 | $694 | $63 | $1,161 | $26.35 |
| 2017 | 45,312,765 | $232 | $192 | $694 | $57 | $1,175 | $25.93 |
| 2018 | 46,396,165 | $245 | $187 | $733 | $52 | $1,216 | $26.21 |

Exhibit 31G
Page 2 of 2

## IF THE OMP IS BUILT THE COST PER ENPLANEMENT AT ORD WILL INCREASE TO $30 AFTER THE FIRST ROUND OF THE DEATH SPIRAL EFFECT
(In 2004 Dollars)

1/ From Exhibit 31B, Page 1, Column P

2/ From Exhibit 32G, Column B

3/ From Exhibit 32G, Column C

4/ From Exhibit 32G, Column D

5/ From Exhibit 30G, page 3. PFC shortfall paid by the airlines is calculated by adding the annual airline capitalized interest payment (Row 4) to the PFC revenue shortfall for years after the construction period. This was done because the airlines do not pay for projects in construction.

6/ Column B + Column C + Column D + Column E

7/(Column F x 1,000,000)/ Column A

8/ From Exhibit 31B, Page 2, Column P

9/ From Exhibit 30G, page 4. PFC shortfall paid by the airlines is calculated by adding the annual airline capitalized interest payment (Row 4) to the PFC revenue shortfall for years after the construction period. This was done because the airlines do not pay for projects in construction.

10/ From Exhibit 31B, Page 3, Column P

11/ From Exhibit 30G, page 5. PFC shortfall paid by the airlines is calculated by adding the annual airline capitalized interest payment (Row 4) to the PFC revenue shortfall for years after the construction period. This was done because the airlines do not pay for projects in construction.

Exhibit 317
Page 1 of 2

## O'HARE ENPLANEMENTS WILL DECREASE BY BETWEEN 4.4 AND 4.5 MILLION IN 2013 IF THE OMP IS BUILT DUE TO THE LARGE INCREASE IN AIRPORT COST PER PASSENGER

| Column | A | B | C | D | E |
|---|---|---|---|---|---|
| | 2002 TAF Enplanements | | | | |
| Calendar Year | 2002 TAF Enplanements[1] | Enplanements Lost In Death Spiral Round 1[2] | Enplanements Lost In Death Spiral Round 2[3] | Total Enplanements Lost from the OMP[4] | Adjusted Enplanements If the OMP Is Built[5] |
| 2005 | 34,696,477 | 0 | 0 | 0 | 34,696,477 |
| 2006 | 35,798,961 | 0 | 0 | 0 | 35,798,961 |
| 2007 | 36,943,000 | -425,701 | -4,907 | -430,607 | 36,512,393 |
| 2008 | 38,027,250 | -426,238 | -4,779 | -431,017 | 37,596,233 |
| 2009 | 39,149,000 | -1,672,674 | -71,437 | -1,744,111 | 37,404,889 |
| 2010 | 40,280,622 | -1,677,248 | -69,815 | -1,747,063 | 38,533,559 |
| 2011 | 41,450,618 | -1,681,813 | -68,218 | -1,750,031 | 39,700,587 |
| 2012 | 42,660,538 | -1,686,369 | -66,647 | -1,753,016 | 40,907,522 |
| **2013** | **43,912,000** | **-4,039,801** | **-449,759** | **-4,489,560** | **39,422,440** |
| 2014 | 45,119,418 | -3,975,017 | -428,032 | -4,403,049 | 40,716,369 |
| 2015 | 46,367,492 | -3,964,615 | -417,293 | -4,381,908 | 41,985,584 |
| 2016 | 47,657,820 | -3,953,110 | -406,625 | -4,359,736 | 43,298,084 |
| 2017 | 48,992,074 | -3,940,456 | -396,033 | -4,336,489 | 44,655,585 |
| 2018 | 50,372,000 | -4,118,109 | -419,168 | -4,537,277 | 45,834,723 |

| | 2003 TAF Enplanements | | | | |
|---|---|---|---|---|---|
| Calendar Year | 2003 TAF Enplanements[6] | Enplanements Lost In Death Spiral Round 1[7] | Enplanements Lost In Death Spiral Round 2[8] | Total Enplanements Lost from the OMP[4] | Adjusted Enplanements If the OMP Is Built[5] |
| 2005 | 38,919,717 | 0 | 0 | 0 | 38,919,717 |
| 2006 | 40,306,815 | 0 | 0 | 0 | 40,306,815 |
| 2007 | 41,473,732 | -426,219 | -4,381 | -430,601 | 41,043,131 |
| 2008 | 42,667,563 | -426,741 | -4,269 | -431,010 | 42,236,553 |
| 2009 | 43,883,047 | -1,680,141 | -64,315 | -1,744,456 | 42,138,591 |
| 2010 | 45,111,158 | -1,684,489 | -62,891 | -1,747,380 | 43,363,777 |
| 2011 | 46,336,837 | -1,688,779 | -61,542 | -1,750,321 | 44,586,515 |
| 2012 | 47,626,110 | -1,693,096 | -60,185 | -1,753,282 | 45,872,828 |
| **2013** | **48,930,349** | **-3,972,367** | **-401,333** | **-4,373,700** | **44,556,649** |
| 2014 | 50,270,744 | -3,901,969 | -381,132 | -4,283,101 | 45,987,643 |
| 2015 | 51,638,919 | -3,887,336 | -371,173 | -4,258,509 | 47,380,409 |
| 2016 | 53,048,880 | -3,871,582 | -361,322 | -4,232,904 | 48,815,976 |
| 2017 | 54,444,032 | -3,855,474 | -351,986 | -4,207,460 | 50,236,572 |
| 2018 | 55,864,824 | -4,033,737 | -373,708 | -4,407,445 | 51,457,379 |

Exhibit 317
Page 2 of 2

## O'HARE ENPLANEMENTS WILL DECREASE BY BETWEEN 4.4 AND 4.5 MILLION IN 2013 IF THE OMP IS BUILT DUE TO THE LARGE INCREASE IN AIRPORT COST PER PASSENGER

| Column | A | B | C | D | E |
|---|---|---|---|---|---|
| | 2004 TAF Enplanements | | | | |
| Calendar Year | 2004 TAF Enplanements[9] | Enplanements Lost In Death Spiral Round 1[10] | Enplanements Lost In Death Spiral Round 2[11] | Total Enplanements Lost from the OMP[4] | Adjusted Enplanements If the OMP Is Built[5] |
| 2005 | 35,776,054 | 0 | 0 | 0 | 35,776,054 |
| 2006 | 36,844,622 | 0 | 0 | 0 | 36,844,622 |
| 2007 | 37,962,387 | -425,828 | -4,778 | -430,606 | 37,531,782 |
| 2008 | 39,030,494 | -426,357 | -4,659 | -431,016 | 38,599,478 |
| 2009 | 40,101,040 | -1,674,311 | -69,882 | -1,744,193 | 38,356,847 |
| 2010 | 41,140,162 | -1,678,656 | -68,474 | -1,747,130 | 39,393,033 |
| 2011 | 42,191,215 | -1,682,968 | -67,115 | -1,750,083 | 40,441,132 |
| 2012 | 43,286,057 | -1,687,298 | -65,758 | -1,753,056 | 41,533,001 |
| **2013** | **44,425,001** | **-4,032,198** | **-444,189** | **-4,476,387** | **39,948,614** |
| 2014 | 45,598,421 | -3,967,316 | -423,071 | -4,390,387 | 41,208,034 |
| 2015 | 46,785,107 | -3,957,314 | -413,058 | -4,370,373 | 42,414,734 |
| 2016 | 48,005,399 | -3,946,385 | -403,146 | -4,349,531 | 43,655,868 |
| 2017 | 49,247,423 | -3,934,658 | -393,442 | -4,328,099 | 44,919,324 |
| 2018 | 50,509,930 | -4,113,775 | -417,516 | -4,531,291 | 45,978,639 |

1/ From Exhibit 318, page 1, Column O

2/ From Exhibit 318, page 1, Column Q

3/ From Exhibit 319 page 1, Column Q

4/ Column B + Column C

5/ Column A + Column D. The total is conservative because it includes only two rounds of the death spiral effect.

6/ From Exhibit 318, page 2, Column O

7/ From Exhibit 318, page 2, Column Q

8/ From Exhibit 319 page 2, Column Q

9/ From Exhibit 318, page 3, Column O

10/ From Exhibit 318, page 3, Column Q

11/ From Exhibit 319 page 3, Column Q

Exhibit 11A
Page 1 of 4

## DEATH SPIRAL ROUND 1 ENPLANEMENTS

### A. 2002 TAF Enplanements

| Column | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | Originating Fare [1] | OMP Required Fare Increase [2] | Adjusted Fare [3] | Elasticity [4] | 2002 TAF Originating Enplanements [5] | Adjusted Originating Enplanements [6] | Originating Enplanements Lost Due to OMP Cost [7] |
| FY 2004 | $170.39 | | | | | | |
| CY 2005 | $170.39 | $0.00 | $170.39 | -1.2 | 17,772,804 | 17,772,804 | 0 |
| CY 2006 | $170.39 | $0.00 | $170.39 | -1.2 | 17,842,416 | 17,842,416 | 0 |
| CY 2007 | $170.39 | $2.05 | $172.43 | -1.2 | 18,434,500 | 18,172,240 | -262,260 |
| CY 2008 | $170.39 | $1.99 | $172.37 | -1.2 | 18,052,245 | 18,788,827 | -263,418 |
| CY 2009 | $170.39 | $7.81 | $178.19 | -1.2 | 19,692,000 | 18,660,541 | -1,031,459 |
| CY 2010 | $170.39 | $7.59 | $177.98 | -1.2 | 20,400,539 | 19,360,584 | -1,039,955 |
| CY 2011 | $170.39 | $7.36 | $177.76 | -1.2 | 21,137,594 | 20,089,098 | -1,048,496 |
| CY 2012 | $170.39 | $7.17 | $177.56 | -1.2 | 21,904,461 | 20,847,378 | -1,057,083 |
| **CY 2013** | **$170.39** | **$17.58** | **$187.96** | **-1.2** | **22,702,500** | **20,178,251** | **-2,524,249** |
| CY 2014 | $170.39 | $16.73 | $187.11 | -1.2 | 23,642,750 | 21,039,511 | -2,603,239 |
| CY 2015 | $170.39 | $16.15 | $186.54 | -1.2 | 24,416,319 | 21,900,798 | -2,515,521 |
| CY 2016 | $170.39 | $15.59 | $185.98 | -1.2 | 25,324,628 | 22,797,709 | -2,526,919 |
| CY 2017 | $170.39 | $15.05 | $185.43 | -1.2 | 26,269,169 | 23,731,784 | -2,537,385 |
| CY 2018 | $170.39 | $15.26 | $185.66 | -1.2 | 27,251,500 | 24,591,850 | -2,659,650 |

| | H | I | J | K | L | M | N |
|---|---|---|---|---|---|---|---|
| | Connecting Fare [1] | OMP Required Fare Increase [2] | Adjusted Fare [3] | Elasticity [4] | 2002 TAF Connecting Enplanements [5] | Adjusted Connecting Enplanements [8] | Connecting Enplanements Lost Due to OMP Cost [10] |
| FY 2004 | $275.87 | | | | | | |
| CY 2005 | $275.87 | $0.00 | $275.87 | -1.2 | 17,423,873 | 17,423,873 | 0 |
| CY 2006 | $275.87 | $0.00 | $275.87 | -1.2 | 17,958,545 | 17,958,545 | 0 |
| CY 2007 | $275.87 | $2.05 | $277.92 | -1.2 | 18,508,500 | 18,345,059 | -163,441 |
| CY 2008 | $275.87 | $1.99 | $277.86 | -1.2 | 18,975,005 | 18,812,185 | -162,820 |
| CY 2009 | $275.87 | $7.81 | $283.68 | -1.2 | 19,457,000 | 18,815,786 | -641,214 |
| CY 2010 | $275.87 | $7.59 | $283.47 | -1.2 | 19,980,083 | 19,242,791 | -837,292 |
| CY 2011 | $275.87 | $7.36 | $283.25 | -1.2 | 20,513,024 | 19,679,708 | -833,316 |
| CY 2012 | $275.87 | $7.17 | $283.04 | -1.2 | 20,756,077 | 20,126,791 | -629,286 |
| **CY 2013** | **$275.87** | **$17.58** | **$293.45** | **-1.2** | **21,209,500** | **19,693,948** | **-1,515,552** |
| CY 2014 | $275.87 | $16.73 | $292.60 | -1.2 | 21,576,669 | 20,104,890 | 1,471,779 |
| CY 2015 | $275.87 | $16.15 | $292.03 | -1.2 | 21,951,173 | 20,502,079 | 1,449,094 |
| CY 2016 | $275.87 | $15.59 | $291.47 | -1.2 | 22,333,192 | 20,907,001 | -1,426,191 |
| CY 2017 | $275.87 | $15.05 | $290.92 | -1.2 | 22,722,805 | 21,319,838 | 1,403,072 |
| CY 2018 | $275.87 | $15.26 | $291.15 | -1.2 | 23,120,500 | 21,671,940 | 1,449,560 |

| | O | P | Q | R |
|---|---|---|---|---|
| | Total Enplanements [11] | Adjusted Total Enplanements [12] | Total Enplanements Lost Due to OMP Cost [13] | Percent [14] |
| CY 2005 | 34,696,477 | 34,696,477 | 0 | 0.00% |
| CY 2006 | 35,799,961 | 35,799,961 | 0 | 0.00% |
| CY 2007 | 36,943,000 | 36,517,299 | -425,701 | -1.15% |
| CY 2008 | 38,027,250 | 37,601,012 | -426,238 | -1.12% |
| CY 2009 | 39,149,000 | 37,476,326 | -1,672,674 | -4.27% |
| CY 2010 | 40,280,622 | 38,603,374 | -1,677,248 | -4.16% |
| CY 2011 | 41,450,619 | 39,769,805 | -1,681,813 | -4.06% |
| CY 2012 | 42,660,538 | 40,874,169 | -1,786,369 | -3.95% |
| **CY 2013** | **43,912,000** | **39,872,199** | **-4,039,801** | **-9.20%** |
| CY 2014 | 45,119,419 | 41,144,401 | -3,975,017 | -8.81% |
| CY 2015 | 46,367,492 | 42,402,677 | -3,964,815 | -8.55% |
| CY 2016 | 47,657,820 | 43,704,710 | -3,953,110 | -8.29% |
| CY 2017 | 48,992,074 | 45,051,618 | -3,940,456 | -8.04% |
| CY 2018 | 50,372,000 | 46,253,891 | -4,118,109 | -8.18% |

Exhibit 91B
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## DEATH SPIRAL ROUND 1 ENPLANEMENTS

### B. 2003 TAF Enplanements

| Column | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | Originating Fare [1] | OMP Required Fare Increase [15] | Adjusted Fare [3] | Elasticity [4] | 2003 TAF Originating Enplanements [16] | Adjusted Originating Enplanements [6] | Originating Enplanements Lost Due to OMP Cost [7] |
| FY 2004 | $170.38 | | | | | | |
| CY 2005 | $170.38 | $0.00 | $170.38 | -1.2 | 19,375,242 | 19,375,242 | 0 |
| CY 2006 | $170.38 | $0.00 | $170.38 | -1.2 | 20,089,157 | 20,089,157 | 0 |
| CY 2007 | $170.38 | $1.82 | $172.21 | -1.2 | 20,695,329 | 20,432,594 | -262,734 |
| CY 2008 | $170.38 | $1.77 | $172.15 | -1.2 | 21,377,114 | 21,113,333 | -263,782 |
| CY 2009 | $170.38 | $6.97 | $177.35 | -1.2 | 22,073,232 | 21,036,402 | -1,036,830 |
| CY 2010 | $170.38 | $6.78 | $177.16 | -1.2 | 22,847,014 | 21,801,828 | -1,045,186 |
| CY 2011 | $170.38 | $6.60 | $176.98 | -1.2 | 23,629,304 | 22,575,755 | -1,053,548 |
| CY 2012 | $170.38 | $6.42 | $176.80 | -1.2 | 24,454,081 | 23,392,100 | -1,061,981 |
| **CY 2013** | **$170.38** | **$15.34** | **$185.72** | **-1.2** | **25,296,986** | **22,810,505** | **-2,486,480** |
| CY 2014 | $170.38 | $14.58 | $184.96 | -1.2 | 26,230,648 | 23,769,284 | -2,461,364 |
| CY 2015 | $170.38 | $14.07 | $184.45 | -1.2 | 27,182,161 | 24,721,693 | -2,470,468 |
| CY 2016 | $170.38 | $13.58 | $183.96 | -1.2 | 28,189,354 | 25,710,718 | -2,478,636 |
| CY 2017 | $170.38 | $13.12 | $183.50 | -1.2 | 29,192,466 | 26,706,151 | -2,486,315 |
| CY 2018 | $170.38 | $12.38 | $182.75 | -1.2 | 30,229,145 | 27,604,521 | -2,618,624 |

| | H | I | J | K | L | M | N |
|---|---|---|---|---|---|---|---|
| | Connecting Fare [1] | OMP Required Fare Increase [15] | Adjusted Fare [3] | Elasticity [4] | 2003 TAF Connecting Enplanements [16] | Adjusted Connecting Enplanements [8] | Connecting Enplanements Lost Due to OMP Cost [10] |
| FY 2004 | $275.87 | | | | | | |
| CY 2005 | $275.87 | $0.00 | $275.87 | -1.2 | 19,544,475 | 19,544,475 | 0 |
| CY 2006 | $275.87 | $0.00 | $275.87 | -1.2 | 20,217,658 | 20,217,658 | 0 |
| CY 2007 | $275.87 | $1.82 | $277.70 | -1.2 | 20,778,404 | 20,614,818 | -163,586 |
| CY 2008 | $275.87 | $1.77 | $277.64 | -1.2 | 21,290,449 | 21,127,488 | -162,960 |
| CY 2009 | $275.87 | $6.97 | $282.84 | -1.2 | 21,909,815 | 21,166,504 | -843,311 |
| CY 2010 | $275.87 | $6.78 | $282.65 | -1.2 | 22,284,144 | 21,624,840 | -839,304 |
| CY 2011 | $275.87 | $6.60 | $282.47 | -1.2 | 22,707,533 | 22,072,303 | -635,231 |
| CY 2012 | $275.87 | $6.42 | $282.29 | -1.2 | 23,172,028 | 22,540,914 | -631,115 |
| **CY 2013** | **$275.87** | **$15.34** | **$291.21** | **-1.2** | **23,633,363** | **22,147,476** | **-1,485,887** |
| CY 2014 | $275.87 | $14.58 | $290.45 | -1.2 | 24,040,098 | 22,599,493 | 1,440,605 |
| CY 2015 | $275.87 | $14.07 | $289.94 | -1.2 | 24,446,758 | 23,029,890 | 1,416,868 |
| CY 2016 | $275.87 | $13.58 | $289.45 | -1.2 | 24,858,528 | 23,466,582 | -1,392,945 |
| CY 2017 | $275.87 | $13.12 | $288.99 | -1.2 | 25,251,565 | 23,882,407 | 1,369,159 |
| CY 2018 | $275.87 | $12.38 | $288.24 | -1.2 | 25,641,679 | 24,228,566 | 1,413,113 |

| | O | P | Q | R |
|---|---|---|---|---|
| | Total Enplanements [11] | Adjusted Total Enplanements [12] | Total Enplanements Lost Due to OMP Cost [13] | Percent [14] |
| CY 2005 | 38,919,717 | 38,919,717 | 0 | 0.00% |
| CY 2006 | 40,306,815 | 40,306,815 | 0 | 0.00% |
| CY 2007 | 41,473,732 | 41,047,512 | -426,219 | -1.02% |
| CY 2008 | 42,667,563 | 42,240,822 | -426,741 | -1.00% |
| CY 2009 | 43,883,047 | 42,202,906 | -1,680,141 | -3.83% |
| CY 2010 | 45,111,158 | 43,426,669 | -1,684,489 | -3.73% |
| CY 2011 | 46,336,837 | 44,648,058 | -1,688,779 | -3.64% |
| CY 2012 | 47,626,110 | 45,933,014 | -1,693,096 | -3.55% |
| **CY 2013** | **48,930,349** | **44,957,982** | **-3,972,367** | **-8.12%** |
| CY 2014 | 50,270,744 | 46,369,770 | -3,901,969 | -7.76% |
| CY 2015 | 51,628,918 | 47,751,582 | -3,877,336 | -7.51% |
| CY 2016 | 53,048,880 | 49,177,298 | -3,871,582 | -7.30% |
| CY 2017 | 54,444,032 | 50,588,558 | -3,855,474 | -7.08% |
| CY 2018 | 55,864,824 | 51,831,087 | -4,033,737 | -7.22% |

Exhibit 11B
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## DEATH SPIRAL ROUND 1 ENPLANEMENTS

### C. 2004 TAF Enplanements

| Column | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | Originating Fare [1] | OMP Required Fare Increase [17] | Adjusted Fare [3] | Elasticity [4] | 2004 TAF Originating Enplanements [16] | Adjusted Originating Enplanements [6] | Originating Enplanements Lost Due to OMP Cost [7] |
| FY 2004 | $170.39 | | | | | | |
| CY 2005 | $170.39 | $0.00 | $170.39 | -1.2 | 17,810,245 | 17,810,245 | 0 |
| CY 2006 | $170.39 | $0.00 | $170.39 | -1.2 | 18,363,580 | 18,363,580 | 0 |
| CY 2007 | $170.39 | $1.98 | $172.37 | -1.2 | 18,943,173 | 18,680,821 | -262,352 |
| CY 2008 | $170.39 | $1.94 | $172.32 | -1.2 | 19,554,866 | 19,291,362 | -263,504 |
| CY 2009 | $170.39 | $7.63 | $178.01 | -1.2 | 20,170,877 | 19,138,241 | -1,032,637 |
| CY 2010 | $170.39 | $7.43 | $177.82 | -1.2 | 20,835,862 | 19,794,890 | -1,040,972 |
| CY 2011 | $170.39 | $7.25 | $177.63 | -1.2 | 21,515,259 | 20,465,925 | -1,049,334 |
| CY 2012 | $170.39 | $7.07 | $177.45 | -1.2 | 22,225,646 | 21,167,886 | -1,057,759 |
| **CY 2013** | **$170.39** | **$17.32** | **$187.70** | **-1.2** | **22,967,721** | **20,447,717** | **-2,520,004** |
| CY 2014 | $170.39 | $16.50 | $186.88 | -1.2 | 23,792,888 | 21,293,890 | -2,498,828 |
| CY 2015 | $170.39 | $15.96 | $186.35 | -1.2 | 24,638,228 | 22,124,974 | -2,511,254 |
| CY 2016 | $170.39 | $15.44 | $185.83 | -1.2 | 25,509,326 | 22,966,415 | -2,522,911 |
| CY 2017 | $170.39 | $14.94 | $185.32 | -1.2 | 26,408,085 | 23,872,227 | -2,533,858 |
| CY 2018 | $170.39 | $15.22 | $185.60 | -1.2 | 27,326,121 | 24,659,256 | -2,666,865 |

| | H | I | J | K | L | M | N |
|---|---|---|---|---|---|---|---|
| | Connecting Fare [1] | OMP Required Fare Increase [17] | Adjusted Fare [3] | Elasticity [4] | 2004 TAF Connecting Enplanements [16] | Adjusted Connecting Enplanements [6] | Connecting Enplanements Lost Due to OMP Cost [10] |
| FY 2004 | $275.87 | | | | | | |
| CY 2005 | $275.87 | $0.00 | $275.87 | -1.2 | 17,965,809 | 17,965,809 | 0 |
| CY 2006 | $275.87 | $0.00 | $275.87 | -1.2 | 18,481,042 | 18,481,042 | 0 |
| CY 2007 | $275.87 | $1.99 | $277.86 | -1.2 | 19,018,215 | 18,855,738 | -162,476 |
| CY 2008 | $275.87 | $1.94 | $277.81 | -1.2 | 19,475,608 | 19,312,755 | -162,853 |
| CY 2009 | $275.87 | $7.63 | $283.50 | -1.2 | 19,930,163 | 19,288,488 | -641,675 |
| CY 2010 | $275.87 | $7.43 | $283.31 | -1.2 | 20,304,300 | 19,666,616 | -637,684 |
| CY 2011 | $275.87 | $7.25 | $283.12 | -1.2 | 20,676,956 | 20,047,322 | -633,634 |
| CY 2012 | $275.87 | $7.07 | $282.94 | -1.2 | 21,060,417 | 20,430,878 | -629,539 |
| **CY 2013** | **$275.87** | **$17.32** | **$293.19** | **-1.2** | **21,457,279** | **19,945,086** | **-1,512,193** |
| CY 2014 | $275.87 | $16.50 | $292.37 | -1.2 | 21,805,733 | 20,337,245 | 1,468,488 |
| CY 2015 | $275.87 | $15.96 | $291.84 | -1.2 | 22,148,879 | 20,702,818 | -1,446,061 |
| CY 2016 | $275.87 | $15.44 | $291.32 | -1.2 | 22,498,073 | 21,072,598 | -1,425,475 |
| CY 2017 | $275.87 | $14.94 | $290.81 | -1.2 | 22,841,338 | 21,440,538 | 1,400,799 |
| CY 2018 | $275.87 | $15.22 | $291.09 | -1.2 | 23,193,809 | 21,736,898 | 1,446,911 |

| | O | P | Q | R |
|---|---|---|---|---|
| | Total Enplanements [11] | Adjusted Total Enplanements [12] | Total Enplanements Lost Due to OMP Cost [13] | Percent [14] |
| CY 2005 | 35,776,054 | 35,776,054 | 0 | 0.00% |
| CY 2006 | 36,844,622 | 36,844,622 | 0 | 0.00% |
| CY 2007 | 37,962,387 | 37,536,559 | -425,828 | -1.12% |
| CY 2008 | 39,030,494 | 38,604,137 | -426,357 | -1.09% |
| CY 2009 | 40,101,040 | 39,426,729 | -1,674,311 | -4.18% |
| CY 2010 | 41,140,162 | 39,461,507 | -1,678,656 | -4.08% |
| CY 2011 | 42,191,215 | 40,508,247 | -1,682,968 | -3.99% |
| CY 2012 | 43,286,057 | 41,586,759 | -1,687,298 | -3.90% |
| **CY 2013** | **44,425,001** | **40,392,803** | **-4,032,198** | **-9.08%** |
| CY 2014 | 45,599,421 | 41,631,105 | -3,967,316 | -8.70% |
| CY 2015 | 46,785,187 | 42,827,792 | -3,957,314 | -8.46% |
| CY 2016 | 48,005,399 | 44,059,014 | -3,946,385 | -8.22% |
| CY 2017 | 49,247,423 | 45,312,765 | -3,934,658 | -7.99% |
| CY 2018 | 50,509,930 | 46,396,155 | -4,113,775 | -8.14% |

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## DEATH SPIRAL ROUND 1 ENPLANEMENTS

### D. Footnotes

1/ From Exhibit 315

2/ Increase in incremental cost per enplanement from Exhibit 324, Column A.

3/ A+ B

4/ Elasticity = -1.2 from FAA Airport Cost Benefit Analysis Guidance, p. C-8, (December 1999).

5/ From Leigh Fisher Associates, Summary of Annual Enplaned Passengers ORD EIS Forecasts, (October 26, 2004).

6/ {E x [A x (1-D) + C x (1+D)]} / [A x (1+D) + C x (1-D)]

7/ F-E

8/ H+ I

9/ {L x [H x (1-K) + J x (1+K)]} / [H x (1+K) + J x (1-K)]

10/ M-L

11/ E+L

12/ F+M

13/ P-O

14/ Q/ O

15/ Increase in incremental cost per enplanement from Exhibit 324, Column B.

16/ Total enplanements are from Exhibit 307, page 1, Column D. The distribution of enplanements between domestic and connecting passengers was assumed to be the same as the 2002 TAF from Leigh Fisher Associates, Summary of Annual Enplaned Passengers ORD EIS Forecasts, October 26, 2004.

17/ Increase in incremental cost per enplanement from OLD Exhibit 324, Column C.

18/ Total enplanements are from Exhibit 307, page 1, Column G. The distribution of enplanements between domestic and connecting passengers was assumed to be the same as the 2002 TAF from Leigh Fisher Associates, Summary of Annual Enplaned Passengers ORD EIS Forecasts, October 26, 2004.

Exhibit 31B
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## DEATH SPIRAL ROUND 2 ENPLANEMENTS

### A. 2002 TAF Enplanements

| Column | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | Originating Fare[1] | OMP Required Fare Increase[2] | Adjusted Fare[3] | Elasticity[4] | Originating Enplanements After Death Spiral Round 1[5] | Adjusted Originating Enplanements[6] | Originating Enplanements Lost Due to OMP Cost[7] |
| CY 2005 | $170.38 | $0.00 | $170.38 | -1.2 | 17,272,804 | 17,272,804 | 0 |
| CY 2006 | $170.38 | $0.00 | $170.38 | -1.2 | 17,842,418 | 17,842,418 | 0 |
| CY 2007 | $172.43 | $0.02 | $172.45 | -1.2 | 18,172,240 | 18,169,223 | 3,017 |
| CY 2008 | $172.37 | $0.02 | $172.39 | -1.2 | 19,788,827 | 19,785,879 | 2,948 |
| CY 2009 | $178.18 | $0.35 | $178.54 | -1.2 | 19,660,541 | 19,616,818 | -43,723 |
| CY 2010 | $177.98 | $0.33 | $178.31 | -1.2 | 18,360,584 | 18,317,608 | -42,976 |
| CY 2011 | $177.76 | $0.31 | $178.07 | -1.2 | 20,089,098 | 20,046,863 | -42,235 |
| CY 2012 | $177.55 | $0.30 | $177.85 | -1.2 | 20,847,378 | 20,805,880 | -41,498 |
| **CY 2013** | **$187.96** | **$2.17** | **$190.13** | **-1.2** | **20,178,251** | **19,901,983** | **-276,268** |
| CY 2014 | $187.11 | $1.99 | $189.10 | -1.2 | 21,039,611 | 20,774,249 | -265,261 |
| CY 2015 | $186.54 | $1.87 | $188.41 | -1.2 | 21,900,799 | 21,640,046 | -260,753 |
| CY 2016 | $185.98 | $1.76 | $187.74 | -1.2 | 22,797,709 | 22,541,542 | -256,167 |
| CY 2017 | $185.43 | $1.65 | $187.08 | -1.2 | 23,731,784 | 23,480,277 | -251,507 |
| CY 2018 | $185.89 | $1.70 | $187.37 | -1.2 | 24,581,050 | 24,313,981 | -267,070 |

| | H | I | J | K | L | M | N |
|---|---|---|---|---|---|---|---|
| | Connecting Fare[8] | OMP Required Fare Increase[2] | Adjusted Fare[3] | Elasticity[9] | Connecting Enplanements After Death Spiral Round 1[10] | Adjusted Connecting Enplanements[11] | Connecting Enplanements Lost Due to OMP Cost[12] |
| CY 2005 | $275.87 | $0.00 | $275.87 | -1.2 | 17,423,673 | 17,423,673 | 0 |
| CY 2006 | $275.87 | $0.00 | $275.87 | -1.2 | 17,966,545 | 17,966,545 | 0 |
| CY 2007 | $277.92 | $0.02 | $277.94 | -1.2 | 18,345,059 | 18,343,170 | -1,890 |
| CY 2008 | $277.88 | $0.02 | $277.89 | -1.2 | 18,812,185 | 18,810,354 | -1,831 |
| CY 2009 | $283.68 | $0.35 | $284.03 | -1.2 | 18,815,788 | 18,788,071 | -27,715 |
| CY 2010 | $283.47 | $0.33 | $283.80 | -1.2 | 19,242,791 | 19,215,952 | -26,839 |
| CY 2011 | $283.25 | $0.31 | $283.56 | -1.2 | 18,879,708 | 18,853,724 | -25,984 |
| CY 2012 | $283.04 | $0.30 | $283.34 | -1.2 | 20,126,791 | 20,101,642 | -25,149 |
| **CY 2013** | **$293.45** | **$2.17** | **$295.62** | **-1.2** | **19,693,948** | **19,520,457** | **-173,491** |
| CY 2014 | $292.80 | $1.99 | $294.79 | -1.2 | 20,104,890 | 19,942,119 | -162,771 |
| CY 2015 | $292.03 | $1.87 | $293.90 | -1.2 | 20,502,079 | 20,345,539 | -156,540 |
| CY 2016 | $291.47 | $1.76 | $293.23 | -1.2 | 20,907,001 | 20,756,542 | -150,458 |
| CY 2017 | $290.92 | $1.65 | $292.57 | -1.2 | 21,319,833 | 21,175,308 | -144,525 |
| CY 2018 | $291.15 | $1.70 | $292.85 | -1.2 | 21,671,940 | 21,520,742 | -151,198 |

| | O | P | Q | R |
|---|---|---|---|---|
| | Total Enplanements[13] | Adjusted Total Enplanements[14] | Total Enplanements Lost Due to OMP Cost[15] | Percent[16] |
| CY 2005 | 34,696,477 | 34,696,477 | 0 | 0.00% |
| CY 2006 | 35,798,961 | 35,798,961 | 0 | 0.00% |
| CY 2007 | 36,517,298 | 36,512,393 | -4,907 | -0.01% |
| CY 2008 | 37,601,012 | 37,596,233 | -4,779 | -0.01% |
| CY 2009 | 37,476,329 | 37,404,889 | -71,437 | -0.19% |
| CY 2010 | 38,603,374 | 38,533,559 | -69,815 | -0.18% |
| CY 2011 | 39,769,805 | 39,700,587 | -69,218 | -0.17% |
| CY 2012 | 40,974,169 | 40,905,522 | -68,647 | -0.16% |
| **CY 2013** | **39,872,199** | **39,422,440** | **-449,759** | **-1.13%** |
| CY 2014 | 41,144,401 | 40,715,369 | -429,032 | -1.04% |
| CY 2015 | 42,402,877 | 41,985,584 | -417,293 | -0.98% |
| CY 2016 | 43,704,710 | 43,298,884 | -405,825 | -0.93% |
| CY 2017 | 45,051,618 | 44,655,585 | -396,033 | -0.88% |
| CY 2018 | 46,253,891 | 45,834,723 | -419,168 | -0.91% |

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## DEATH SPIRAL ROUND 2 ENPLANEMENTS

### B. 2003 TAF Enplanements

| Column | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | Originating Fare[17] | OMP Required Fare Increase[18] | Adjusted Fare[19] | Elasticity[4] | Originating Enplanements After Death Spiral Round 1[20] | Adjusted Originating Enplanements[21] | Originating Enplanements Lost Due to OMP Cost[22] |
| CY 2005 | $170.38 | $0.00 | $170.38 | -1.2 | 18,375,242 | 18,375,242 | 0 |
| CY 2006 | $170.38 | $0.00 | $170.38 | -1.2 | 20,089,157 | 20,089,157 | 0 |
| CY 2007 | $172.21 | $0.02 | $172.23 | -1.2 | 20,432,694 | 20,429,999 | -2,695 |
| CY 2008 | $172.15 | $0.02 | $172.17 | -1.2 | 21,113,393 | 21,110,698 | -2,694 |
| CY 2009 | $177.35 | $0.28 | $177.63 | -1.2 | 21,036,402 | 20,996,977 | -39,425 |
| CY 2010 | $177.18 | $0.26 | $177.43 | -1.2 | 21,801,829 | 21,763,057 | -38,772 |
| CY 2011 | $176.98 | $0.25 | $177.23 | -1.2 | 22,575,756 | 22,537,600 | -38,156 |
| CY 2012 | $176.80 | $0.24 | $177.04 | -1.2 | 23,392,100 | 23,354,575 | -37,526 |
| **CY 2013** | **$185.72** | **$1.70** | **$187.42** | **-1.2** | **22,810,505** | **22,562,992** | **-247,514** |
| CY 2014 | $184.96 | $1.55 | $186.51 | -1.2 | 23,769,294 | 23,532,195 | -237,099 |
| CY 2015 | $184.45 | $1.46 | $185.91 | -1.2 | 24,721,893 | 24,489,910 | -232,783 |
| CY 2016 | $183.96 | $1.37 | $185.33 | -1.2 | 25,710,716 | 25,482,293 | -228,423 |
| CY 2017 | $183.50 | $1.29 | $184.79 | -1.2 | 26,705,151 | 26,481,875 | -224,276 |
| CY 2018 | $183.75 | $1.34 | $185.09 | -1.2 | 27,804,521 | 27,564,836 | -239,685 |

| | H | I | J | K | L | M | N |
|---|---|---|---|---|---|---|---|
| | Connecting Fare[23] | OMP Required Fare Increase[18] | Adjusted Fare[19] | Elasticity[4] | Connecting Enplanements After Death Spiral Round 1[24] | Adjusted Connecting Enplanements[25] | Connecting Enplanements Lost Due to OMP Cost[26] |
| CY 2005 | $275.87 | $0.00 | $275.87 | -1.2 | 19,544,475 | 19,544,475 | 0 |
| CY 2006 | $275.87 | $0.00 | $275.87 | -1.2 | 20,217,658 | 20,217,658 | 0 |
| CY 2007 | $277.70 | $0.02 | $277.71 | -1.2 | 20,614,818 | 20,613,132 | -1,686 |
| CY 2008 | $277.64 | $0.02 | $277.66 | -1.2 | 21,127,488 | 21,125,855 | -1,635 |
| CY 2009 | $282.84 | $0.28 | $283.12 | -1.2 | 21,186,504 | 21,141,614 | -24,890 |
| CY 2010 | $282.66 | $0.26 | $282.92 | -1.2 | 21,624,840 | 21,600,721 | -24,119 |
| CY 2011 | $282.47 | $0.25 | $282.72 | -1.2 | 22,072,302 | 22,048,915 | -23,387 |
| CY 2012 | $282.29 | $0.24 | $282.53 | -1.2 | 22,540,814 | 22,518,254 | -22,560 |
| **CY 2013** | **$291.21** | **$1.70** | **$292.91** | **-1.2** | **22,147,476** | **21,993,657** | **-153,819** |
| CY 2014 | $290.45 | $1.55 | $292.00 | -1.2 | 22,599,492 | 22,455,458 | -144,034 |
| CY 2015 | $289.94 | $1.46 | $291.40 | -1.2 | 23,029,889 | 22,891,499 | -138,390 |
| CY 2016 | $289.45 | $1.37 | $290.82 | -1.2 | 23,468,582 | 23,333,684 | -132,898 |
| CY 2017 | $288.99 | $1.29 | $290.28 | -1.2 | 23,882,407 | 23,754,697 | -127,710 |
| CY 2018 | $288.24 | $1.34 | $290.58 | -1.2 | 24,226,566 | 24,092,543 | -134,024 |

| | O | P | Q | R |
|---|---|---|---|---|
| | Total Enplanements[27] | Adjusted Total Enplanements[28] | Total Enplanements Lost Due to OMP Cost[29] | Percent[30] |
| CY 2005 | 38,919,717 | 38,919,717 | 0 | 0.00% |
| CY 2006 | 40,306,815 | 40,306,815 | 0 | 0.00% |
| CY 2007 | 41,047,512 | 41,043,131 | -4,381 | -0.01% |
| CY 2008 | 42,240,822 | 42,236,553 | -4,269 | -0.01% |
| CY 2009 | 42,202,906 | 42,138,591 | -64,315 | -0.15% |
| CY 2010 | 43,426,669 | 43,363,777 | -62,891 | -0.14% |
| CY 2011 | 44,646,058 | 44,585,515 | -61,542 | -0.14% |
| CY 2012 | 45,933,014 | 45,872,878 | -60,185 | -0.13% |
| **CY 2013** | **44,957,982** | **44,556,649** | **-401,333** | **-0.89%** |
| CY 2014 | 46,368,776 | 45,967,653 | -401,122 | -0.92% |
| CY 2015 | 47,751,582 | 47,380,409 | -371,173 | -0.78% |
| CY 2016 | 49,177,298 | 48,815,976 | -361,322 | -0.73% |
| CY 2017 | 50,588,559 | 50,236,572 | -351,986 | -0.70% |
| CY 2018 | 51,921,097 | 51,457,379 | -373,709 | -0.72% |

Exhibit 5-18
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## DEATH SPIRAL ROUND 2 ENPLANEMENTS

### C. 2004 TAF Enplanements

| Column | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | Originating Fare[22] | OMP Required Fare Increase[23] | Adjusted Fare[3] | Elasticity[4] | Originating Enplanements After Death Spiral Round 1[24] | Adjusted Originating Enplanements[5] | Originating Enplanements Lost Due to OMP Cost[7] |
| CY 2005 | $170.38 | $0.00 | $170.38 | -1.2 | 17,810,245 | 17,810,245 | 0 |
| CY 2006 | $170.38 | $0.00 | $170.38 | -1.2 | 18,363,580 | 18,363,580 | 0 |
| CY 2007 | $172.37 | $0.02 | $172.40 | 1.2 | 19,680,021 | 19,677,893 | -2,638 |
| CY 2008 | $172.32 | $0.02 | $172.34 | 1.2 | 19,291,382 | 19,289,508 | -2,874 |
| CY 2009 | $178.01 | $0.33 | $178.34 | -1.2 | 19,138,241 | 19,095,456 | -42,785 |
| CY 2010 | $177.82 | $0.32 | $178.13 | -1.2 | 19,794,890 | 19,752,727 | -42,163 |
| CY 2011 | $177.63 | $0.30 | $177.93 | -1.2 | 20,465,925 | 20,424,364 | -41,561 |
| CY 2012 | $177.45 | $0.29 | $177.73 | -1.2 | 21,167,880 | 21,126,928 | -40,952 |
| **CY 2013** | **$187.70** | **$2.11** | **$189.82** | **-1.2** | **20,447,717** | **20,174,744** | **-272,973** |
| CY 2014 | $189.98 | $1.84 | $188.82 | 1.2 | 21,293,860 | 21,031,567 | -262,292 |
| CY 2015 | $186.35 | $1.83 | $188.18 | -1.2 | 22,124,974 | 21,866,782 | -258,192 |
| CY 2016 | $185.83 | $1.73 | $187.55 | -1.2 | 22,986,415 | 22,732,374 | -254,041 |
| CY 2017 | $185.32 | $1.63 | $186.95 | -1.2 | 23,872,227 | 23,622,319 | -249,908 |
| CY 2018 | $185.60 | $1.69 | $187.29 | -1.2 | 24,659,250 | 24,392,315 | -266,935 |

| | H | I | J | K | L | M | N |
|---|---|---|---|---|---|---|---|
| | Connecting Fare[24] | OMP Required Fare Increase[23] | Adjusted Fare[3] | Elasticity[4] | Connecting Enplanements After Death Spiral Round 1[25] | Adjusted Connecting Enplanements[5] | Connecting Enplanements Lost Due to OMP Cost[11] |
| CY 2005 | $275.87 | $0.00 | $275.87 | -1.2 | 17,885,888 | 17,885,888 | 0 |
| CY 2006 | $275.87 | $0.00 | $275.87 | -1.2 | 18,481,042 | 18,481,042 | 0 |
| CY 2007 | $277.86 | $0.02 | $277.89 | -1.2 | 18,955,739 | 18,953,899 | -1,840 |
| CY 2008 | $277.81 | $0.02 | $277.83 | 1.2 | 19,312,755 | 19,310,970 | -1,785 |
| CY 2009 | $283.50 | $0.33 | $283.83 | -1.2 | 19,388,488 | 19,361,392 | -27,096 |
| CY 2010 | $283.31 | $0.32 | $283.62 | -1.2 | 19,668,816 | 19,640,505 | -28,311 |
| CY 2011 | $283.12 | $0.30 | $283.42 | -1.2 | 20,042,322 | 20,016,768 | -25,554 |
| CY 2012 | $282.94 | $0.29 | $283.22 | -1.2 | 20,430,878 | 20,406,072 | -24,806 |
| **CY 2013** | **$293.18** | **$2.11** | **$295.31** | **-1.2** | **19,845,086** | **19,673,870** | **-171,216** |
| CY 2014 | $292.37 | $1.84 | $294.31 | 1.2 | 20,307,245 | 20,126,466 | -180,779 |
| CY 2015 | $291.84 | $1.83 | $293.67 | -1.2 | 20,702,818 | 20,547,952 | -154,866 |
| CY 2016 | $291.32 | $1.75 | $293.04 | -1.2 | 21,072,598 | 20,923,494 | -149,104 |
| CY 2017 | $290.81 | $1.63 | $292.44 | -1.2 | 21,440,599 | 21,297,005 | -143,593 |
| CY 2018 | $291.09 | $1.69 | $292.79 | -1.2 | 21,736,889 | 21,586,926 | -149,963 |

| | O | P | Q | R |
|---|---|---|---|---|
| | Total Enplanements[12] | Adjusted Total Enplanements[14] | Total Enplanements Lost Due to OMP Cost[15] | Percent[16] |
| CY 2005 | 35,776,054 | 35,776,054 | 0 | 0.00% |
| CY 2006 | 36,844,622 | 36,844,622 | 0 | 0.00% |
| CY 2007 | 37,536,559 | 37,531,792 | -4,778 | -0.01% |
| CY 2008 | 38,604,137 | 38,599,478 | -4,659 | -0.01% |
| CY 2009 | 38,426,729 | 38,358,847 | -69,882 | -0.18% |
| CY 2010 | 39,461,507 | 39,393,033 | -68,474 | -0.17% |
| CY 2011 | 40,508,247 | 40,441,132 | -67,115 | -0.17% |
| CY 2012 | 41,598,759 | 41,533,001 | -65,758 | -0.16% |
| **CY 2013** | **40,392,803** | **39,948,614** | **-444,189** | **-1.10%** |
| CY 2014 | 41,607,105 | 41,209,034 | -422,071 | 1.02% |
| CY 2015 | 42,827,792 | 42,414,734 | -413,058 | -0.96% |
| CY 2016 | 44,059,014 | 43,655,866 | -403,148 | -0.92% |
| CY 2017 | 45,312,765 | 44,919,324 | -393,442 | -0.87% |
| CY 2018 | 46,396,155 | 45,978,839 | -417,316 | -0.90% |

## DEATH SPIRAL ROUND 2 ENPLANEMENTS

### D. Footnotes

1/ From Exhibit 318, page 1, Column C.

2/ Increase in incremental cost per enplanement from Exhibit 314, Column C.

3/ A+ B

4/ Elasticity = -1.2 from FAA Airport Cost Benefit Analysis Guidance, p. C-6, (December 1999).

5/ From Exhibit 318, page 1, Column F

6/ {E x [A x (1-D) + C x (1+D)]} / [A x (1+D) + C x (1-D)]

7/ F-E

8/ From Exhibit 318, page 1, Column J.

9/ H+ I

10/ From Exhibit 318, page 1, Column M

11/ {L x [H x (1-K) + J x (1+K)]} / [H x (1+K) + J x (1-K)]

12/ M-L

13/ E+L

14/ F+M

15/ P-O

16/ Q/ O

17/ From Exhibit 318, page 2, Column C.

18/ Increase in incremental cost per enplanement from Exhibit 314, Column F.

19/ From Exhibit 318, page 2, Column F

20/ From Exhibit 318, page 2, Column J.

21/ From Exhibit 318, page 2, Column M

22/ From Exhibit 318, page 3, Column C.

23/ Increase in incremental cost per enplanement from Exhibit 314, Column I.

24/ From Exhibit 318, page 3, Column F

25/ From Exhibit 318, page 3, Column J.

26/ From Exhibit 318, page 3, Column M

Exhibit 320
Page 1 of 1

## O'HARE MODERNIZATION PROGRAM CAPITAL COSTS WITH A REALISTIC CONTINGENCY TOTAL OVER $17 BILLION
## (Excluding Capitalized Interest Expense)

| | Capital Costs Without Contingency[1] (In Millions of 2004 Dollars) | | Capital Costs With Contingency[2] (In Millions of 2004 Dollars) | |
|---|---|---|---|---|
| | Costs | Percent of Total | Costs | Percent of Total |
| OMP | $6,523 | 47.9% | $8,617 | 49.6% |
| CIP | $4,128 | 30.3% | $5,097 | 29.3% |
| WGP | $2,969 | 21.8% | $3,666 | 21.1% |
| **Total** | **$13,621** | **100.0%** | **$17,380** | **100.0%** |

1/ From Exhibit 326
2/ From Exhibit 322

Exhibit 32I
Page 1 of 3

## $3.3 BILLION OF CAPITALIZED INTEREST EXPENSE FROM GENERAL AIRPORT REVENUE BONDS AND THIRD PARTY FINANCING WAS IGNORED IN THE FAA'S TOTAL OMP CAPITAL COST ESTIMATE

| Project Name | Capital Cost With 27.6% Contingency (In Millions of 2004 Dollars) | Capitalized Interest (In Millions of 2004 Dollars) | Year of Bond/TRF Issuance | Year Available for Airline Use |
|---|---|---|---|---|
| **O'Hare Modernization Program** | | | | |
| Program-wide Requirements | $77 | $21 | 2001 | 2009 |
| Preliminary Engineering | $58 | $16 | 2001 | 2009 |
| Wetlands mitigation | $32 | $9 | 2001 | 2009 |
| Noise Mitigation (OMP-Phase 1) | $189 | $33 | 2001, 2005 | 2009 |
| NoiseMitigation (OMP-Phase 2) | $106 | $14 | 2008 | 2013 |
| Land Acquisition | $450 | $109 | 2001, 2005 | 2009 |
| Design of Runway 9L-27R | $46 | $10 | 2001 | 2007 |
| Construction of Runway 9L-27R | $681 | $104 | 2001, 2005 | 2007 |
| *Decommission Runway 18-36* | $3 | $0 | N/A | N/A |
| Design of Runway 9C-27C | $39 | $10 | 2005, 2008 | 2013 |
| Construction of Runway 9C-27C | $813 | $140 | 2008 | 2013 |
| Design of Runway 9R Extension | $9 | $2 | 2005, 2008 | 2013 |
| Construction of Runway 9R Extension | $174 | $30 | 2008 | 2013 |
| *Design of Decommissioned Runway 14L-32R* | $0 | $0 | N/A | N/A |
| *Decommission Runway14L-32R* | $2 | $0 | N/A | N/A |
| Design of Runway 10L Extension | $27 | $7 | 2001 | 2009 |
| Construction of Runway 10L Extension | $628 | $127 | 2001, 2005 | 2009 |
| Design of Runway10C-28C | $54 | $15 | 2001 | 2009 |
| Construction of Runway10C-28C | $1,151 | $211 | 2001, 2005 | 2009 |
| Design of Runway10R-28L | $23 | $6 | 2005, 2008 | 2013 |
| Construction of Runway 10R-28L | $461 | $80 | 2008 | 2013 |
| Design for Runway 14R/32L Decommissioning/Taxiway Conversion | $6 | $1 | 2008 | 2013 |
| Construction of Runway 14R/32L Decommissioning/Taxiway Conversion | $140 | $24 | 2008 | 2013 |
| Design of Western Airside Concourse | $43 | $10 | 2001, 2005 | 2009 |
| Construction of Western Airside Concourse | $726 | $100 | 2005 | 2009 |
| Design of Energy Plant | $5 | $1 | 2001 | 2009 |
| Construction of Energy Plant | $73 | $10 | 2005 | 2009 |
| Design of Fuel Storage and Distribution Improvements | $5 | $1 | 2001 | 2009 |
| Construction of Fuel Storage and Distribution Improvements | $76 | $11 | 2005 | 2009 |
| Design of Western Terminal | $79 | $19 | 2005, 2008 | 2013 |
| Construction of WesternTerminal | $1,138 | $196 | 2008 | 2013 |
| Design of Western Parking Facilities | $9 | $2 | 2008 | 2013 |
| Construction of Western Parking Facilities | $134 | $23 | 2008 | 2013 |
| Design of Peoplemover | $22 | $6 | 2001 | 2009 |
| Construction of Peoplemover | | $74 | 2005 | 2009 |
| Design of Maintenance Facility | $1 | $0 | 2001 | 2009 |
| Construction of Maintenance Facility | $16 | $2 | 2005 | 2009 |
| Misc Operations Budget | $26 | $4 | 2005, 2008 | 2009, 2013 |
| City's Land/Environmental Contingency | $240 | $33 | 2005 | 2009 |
| City's Program Contingency | $324 | $50 | 2005, 2008 | 2009, 2013 |
| **OMP Total** | $8,084 | $1,512 | | |
| **Capital Improvement Program** | | | | |
| Airfield Improvements | $1,396 | $199 | 2001, 2005, 2008, 2012, 2017 | 2006, 2009, 2013, 2018, 2023 |
| Terminal Support Improvements | $751 | $107 | 2001, 2005, 2008, 2012, 2017 | 2006, 2009, 2013, 2018, 2023 |
| Terminal Improvements (DT and IT) | $1,596 | $229 | 2001, 2005, 2008, 2012, 2017 | 2006, 2009, 2013, 2018, 2023 |
| H&R Improvements | $385 | $55 | 2001, 2005, 2008, 2012, 2017 | 2006, 2009, 2013, 2018, 2023 |
| Security Improvements | $547 | $79 | 2001, 2005, 2008, 2012, 2017 | 2006, 2009, 2013, 2018, 2023 |
| Fueling Improvements | $371 | $53 | 2001, 2005, 2008, 2012, 2017 | 2006, 2009, 2013, 2018, 2023 |
| *Land Support Improvements* | $4 | $0 | N/A | N/A |
| Noise Mitigation Projects | $46 | $6 | 2001 | 2006 |
| **CIP Total** | $5,097 | $729 | | |
| **World Gateway Program** | | | | |
| Taxiway A/B Relocation | $24 | $5 | 2005 | 2009 |
| T1/T2 Expansion | $10 | $2 | 2001, 2005 | 2009 |
| Concourse K - Allowance | $93 | $19 | 2005 | 2009 |

Exhibit 32I
Page 2 of 3

**$3.3 BILLION OF CAPITALIZED INTEREST EXPENSE FROM GENERAL AIRPORT REVENUE BONDS AND THIRD PARTY FINANCING WAS IGNORED IN THE FAA'S TOTAL OMP CAPITAL COST ESTIMATE**

| Project Name | Capital Cost With 27.6% Contingency (In Millions of 2004 Dollars) | Capitalized Interest (In Millions of 2004 Dollars) | Year of Bond/TPF Issuers | Year Available for Airline Use |
|---|---|---|---|---|
| Terminal 2 - Interior Upgrade | $85 | $12 | 2001, 2005 | 2007 |
| Taxiway November - Facility Relocations | $32 | $6 | 2005 | 2009 |
| Taxiway M | $103 | $26 | 2008 | 2013 |
| Taxiway November - New | $16 | $4 | 2005, 2008 | 2013 |
| Terminal 6 Apron - Support Facility Relocations | $32 | $13 | 2005 | 2013 |
| Terminal 6 Apron - Utility Relocations | $9 | $4 | 2005 | 2013 |
| Terminal 6 - Utility Relocations | $136 | $54 | 2005 | 2013 |
| Terminal 2 - New Concourse - FIS Facilities | $100 | $58 | 2001, 2005 | 2013 |
| Terminal 4 Apron - Support Facility Relocations | $48 | $19 | 2005 | 2013 |
| Terminal 4 - Facility Relocations | $137 | $55 | 2005 | 2013 |
| Terminal 4 - Drainage Control | $0 | $0 | 2005 | 2013 |
| WGP - Airport Wide Off-Site spoil | $24 | $9 | 2001, 2005, 2008 | 2013 |
| Terminal 6 Apron - New [beyond 40 feet] | $42 | $11 | 2005, 2008 | 2013 |
| Terminal 6 Apron - Grading | $4 | $1 | 2005, 2008 | 2013 |
| Terminal 6 Apron - Additional Relocations/Demolitions | $18 | $6 | 2005, 2008 | 2013 |
| Terminal 6 Northern Extension - New Apron/Grading | $38 | $10 | 2008 | 2013 |
| Terminal 6 - New Apron [within 40 feet] | $3 | $1 | 2008 | 2013 |
| Terminal 6 - At-Grade Roadway | $24 | $6 | 2005, 2008 | 2013 |
| Terminal 6 - ATS Facilities | $158 | $41 | 2005, 2008 | 2013 |
| Terminal 6 - Elevated Roadway | $156 | $41 | 2005, 2008 | 2013 |
| Terminal 6 - Parking Structure | $130 | $34 | 2005, 2008 | 2013 |
| Terminal 6 - Pedestrian Bridge to Parking (2) | $19 | $5 | 2005, 2008 | 2013 |
| Terminal 6 - T5 Surface Lot Reconfiguration | $9 | $2 | 2005, 2008 | 2013 |
| Terminal 6 - Temporary Roadway | $1 | $0 | 2005, 2008 | 2013 |
| Terminal 6 - Utilities | $21 | $6 | 2005, 2008 | 2013 |
| Terminal 6 - Terminal 5 Concourse Reconfiguration | $42 | $12 | 2005, 2008 | 2013 |
| Terminal 6 - Special Systems | $67 | $19 | 2005, 2008 | 2013 |
| Terminal 6 - SFRB Defeasance - Northwest | $11 | $3 | 2008 | 2013 |
| Terminal 6 - SFRB Defeasance - Delta | $39 | $10 | 2008 | 2013 |
| Terminal 6 - New Terminal and Concourse Building | $583 | $167 | 2005, 2008 | 2013 |
| Terminal 6 - Loading Bridges and Equipment | $16 | $5 | 2005, 2008 | 2013 |
| Terminal 6 - Landscaping | $2 | $0 | 2008 | 2013 |
| Terminal 6 - Baggage Systems | $48 | $14 | 2005, 2008 | 2013 |
| Terminal 6 - Apron Demolition | $3 | $1 | 2005, 2008 | 2013 |
| Terminal 6 Northern Extension - Baggage Systems | $13 | $3 | 2008 | 2013 |
| Terminal 6 Northern Extension - Loading Bridges and Equipment | $4 | $1 | 2008 | 2013 |
| Terminal 6 Northern Extension - New Concourse | $85 | $21 | 2008 | 2013 |
| Terminal 6 Northern Extension - Special Systems | $11 | $3 | 2008 | 2013 |
| Terminal 6 - Hydrant Fueling and Fuel Pipeline Extension | $9 | $2 | 2005, 2008 | 2013 |
| Terminal 6 - Thermal System Tunnel | $89 | $25 | 2005, 2008 | 2013 |
| Terminal 6 - Realign. Hydrant Fueling gates M208 M21 | $2 | $1 | 2005, 2008 | 2013 |
| Terminal 6 Northern Extension- Hydrant Fueling/Fuel Pipeline Extension | $3 | $1 | 2005, 2008 | 2013 |
| Terminal 2 Apron - New | $0 | $0 | N/A | 2013 |
| Terminal 2 - Utilities and FAA Tower Controls | $0 | $0 | N/A | 2013 |
| Terminal 2 - Special Systems | $0 | $0 | N/A | 2013 |
| Terminal 2 - Rebuild Terminal 2 Airside | $0 | $0 | N/A | 2013 |
| Terminal 2 - New Concourse (Domestic) | $0 | $0 | N/A | 2013 |
| Terminal 2 - Loading Bridges and Equipment | $0 | $0 | N/A | 2013 |
| Terminal 2 - Baggage Systems | $0 | $0 | N/A | 2013 |
| Terminal 2 - Building Demolition | $0 | $0 | N/A | 2013 |
| Terminal 2 - Hydrant Fueling and Fuel Pipeline Extension | $0 | $0 | N/A | 2013 |
| Terminal 4 Apron - New | $51 | $13 | 2008 | 2013 |
| Terminal 4 Apron - Grading | $14 | $3 | 2005, 2008 | 2013 |
| Terminal 4 - At-Grade Roadway | $3 | $1 | 2008 | 2013 |
| Terminal 4 - ATS Facilities | $75 | $19 | 2005, 2008 | 2013 |
| Terminal 4 - Elevated Roadway | $23 | $6 | 2005, 2008 | 2013 |
| Terminal 4 - Elevated Walkway | $7 | $2 | 2008 | 2013 |
| Terminal 4 - Utilities | $35 | $10 | 2005, 2008 | 2013 |

Exhibit 321
Page 3 of 3

## $3.3 BILLION OF CAPITALIZED INTEREST EXPENSE FROM GENERAL AIRPORT REVENUE BONDS AND THIRD PARTY FINANCING WAS IGNORED IN THE FAA'S TOTAL OMP CAPITAL COST ESTIMATE

| Project Name | Capital Cost With 27.6% Contingency (In Millions of 2004 Dollars) | Capitalized Interest (In Millions of 2004 Dollars) | Year of Bond/TPF Issuers | Year Available for Airline Use |
|---|---|---|---|---|
| Terminal 4 - Underground Utility Relocation | $51 | $14 | 2005, 2008 | 2013 |
| Terminal 4 - Underground Baggage Room Expansion | $80 | $20 | 2005, 2008 | 2013 |
| Terminal 4 - Temporary Roadway | $2 | $0 | 2008 | 2013 |
| Terminal 4 - Special Systems | $79 | $20 | 2005, 2008 | 2013 |
| Terminal 4 - New Terminal FIS Facilities | $107 | $27 | 2005, 2008 | 2013 |
| Terminal 4 - New Terminal (Domestic) | $526 | $133 | 2005, 2008 | 2013 |
| Terminal 4 - Loading Bridges and Equipment | $20 | $5 | 2005, 2008 | 2013 |
| Terminal 4 - Landscaping | $0 | $0 | 2008 | 2013 |
| Terminal 4 - Demolition and Site Preparation | $10 | $3 | 2005, 2008 | 2013 |
| Terminal 4 - Concourse L Demolition | $3 | $1 | 2005, 2008 | 2013 |
| Terminal 4 - Baggage Systems | $61 | $15 | 2005, 2008 | 2013 |
| Terminal 4 - Hydrant Fueling and Fuel Pipeline Extension | $10 | $3 | 2005, 2008 | 2013 |
| Total WGP | $3,666 | $1,030 | | |
| Grand Total | $16,847 | $3,271 | | |

Note: Italics = Capitalized interest does not apply to these costs because the airlines will not have to pay for them.

**Capitalized Interest Assumptions**

I. All bonds and third party financing (TPF) instruments have a 5% interest rate yield and a 30-year term

II. Capitalized interest begins to accrue when the bonds/ Third Party Financing instruments are issued and stops accuring when the project is completed.

III. Assumes, in accordance with the City's BCA, that the original OMP schedule is followed.

IV. OMP
- A. 69% will be financed by GARBs and Third Party Financing (Exhibit 306)
- B. Cash needed by the end of 2005 was from bonds/TPF instruments issued in 2001
- C. Cash needed by the end of 2008 was from bonds/TPF instruments issued in 2005
- D. Cash needed by the end of 2012 was from bonds/TPF instruments issued in 2008

V. CIP
- A. 53.5% will be financed by GARBs (Exhibit 306)
- B. Cash needed by the end of 2005 was from bonds issued in 2001
- C. Cash needed by the end of 2008 was from bonds issued in 2005
- D. Cash needed by the end of 2012 was from bonds issued in 2008
- E. Cash needed by the end of 2017 was from bonds issued in 2012
- F. Cash needed by the end of 2022 was from bonds issued in 2017
- G. Projects from prior bond are completed the year of the subsequent bond issue

VI. WGP
- A. 100% will be financed by GARBs and Third Party Financing (Exhibit 306).
- B. Cash needed by the end of 2005 was from bonds/TPF instruments issued in 2001
- C. Cash needed by the end of 2008 was from bonds/TPF instruments issued in 2005
- D. Cash needed by the end of 2012 was from bonds/TPF instruments issued in 2008

Source: Exhibit 322

Exhibit 3.22
Page 1 of 3

## OMP CAPITAL COSTS WITH CAMPBELL-HILL CONTINGENCY[1]
### (Excluding Capitalized Interest Expense)

(In Millions of 2004 Dollars)

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O'Hare Modernization Program** | | | | | | | | | | | | | | | | | | | | | | | |
| Program Wide Requirements | | | | | | | | | | | | | | | | | | | | | | | |
| Program-wide Requirements | $0 | $23 | $29 | $25 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $77 |
| Preliminary Engineering | $0 | $0 | $29 | $20 | $9 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $58 |
| Wetlands mitigation | $0 | $0 | $3 | $30 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $32 |
| Noise Mitigation (OMP-Phase 1) | $0 | $0 | $27 | $27 | $27 | $27 | $27 | $27 | $27 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $186 |
| Noise Mitigation (OMP-Phase 2) | $0 | $0 | $0 | $0 | $0 | | $0 | $0 | $0 | $27 | $27 | $27 | $27 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $106 |
| Land Acquisition | $0 | $42 | $90 | $97 | $109 | $80 | $19 | $13 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $450 |
| Subtotal | $0 | $66 | $176 | $198 | $145 | $106 | $46 | $39 | $27 | $27 | $27 | $27 | $27 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $909 |
| Airfield | | | | | | | | | | | | | | | | | | | | | | | |
| Design of Runway 9L-27R | $0 | $0 | $31 | $15 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $46 |
| Construction of Runway 9L-27R | $0 | $0 | $0 | $151 | $265 | $265 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $681 |
| Decommission Runway 18-36 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 |
| Design of Runway 9C-27C | $0 | $0 | $0 | $0 | $0 | $12 | $16 | $8 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $39 |
| Construction of Runway 9C-27C | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $163 | $326 | $244 | $80 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $813 |
| Design of Runway 9R Extension | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $3 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 |
| Construction of Runway 9R Extension | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $35 | $70 | $70 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $174 |
| Design of Decommissioned Runway 14L-32R | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Decommission Runway 14L-32R | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 |
| Design of Runway 10L Extension | $0 | $0 | $27 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $27 |
| Construction of Runway 10L Extension | $0 | $0 | $0 | $117 | $173 | $194 | $110 | $34 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $628 |
| Design of Runway 10C-28C | $0 | $0 | $27 | $27 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $54 |
| Construction of Runway 10C-28C | $0 | $0 | $0 | $161 | $219 | $145 | $281 | $345 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,151 |
| Design of Runway 10R-28L | $0 | $0 | $0 | $0 | $0 | $0 | $7 | $11 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $23 |
| Construction of Runway 10R-28L | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $46 | $138 | $138 | $138 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $461 |
| Design for Runway 14R/32L Decommissioning/Taxiway Conversion | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $6 |
| Construction of Runway 14R/32L Decommissioning/Taxiway Conversion | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $140 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $140 |
| Subtotal | $0 | $0 | $85 | $471 | $657 | $615 | $415 | $402 | $224 | $502 | $456 | $429 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4,257 |
| Western Terminal Complex | | | | | | | | | | | | | | | | | | | | | | | |
| Design of Western Airside Concourse | $0 | $0 | $0 | $13 | $17 | $13 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $43 |
| Construction of Western Airside Concourse | $0 | $0 | $0 | $0 | $0 | $222 | $288 | $216 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $726 |
| Design of Energy Plant | $0 | $0 | $0 | $2 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $6 |
| Construction of Energy Plant | $0 | $0 | $0 | $0 | $0 | $22 | $44 | $7 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $73 |
| Design of Fuel Storage and Distribution Improvements | $0 | $0 | $0 | $0 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $5 |
| Construction of Fuel Storage and Distribution Improvements | $0 | $0 | $0 | $0 | $0 | $23 | $30 | $23 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $76 |
| Design of Western Terminal | $0 | $0 | $0 | $0 | $0 | $0 | $22 | $29 | $29 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $79 |
| Construction of Western Terminal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $341 | $455 | $228 | $114 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,138 |
| Design of Western Parking Facilities | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $5 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 |
| Construction of Western Parking Facilities | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $54 | $81 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $134 |
| Subtotal | $0 | $0 | $0 | $14 | $26 | $280 | $384 | $275 | $375 | $460 | $281 | $194 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2,289 |
| On-Airport Circulation | | | | | | | | | | | | | | | | | | | | | | | |
| Design of Peoplemover | $0 | $0 | $0 | $11 | $11 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $22 |
| Construction of Peoplemover | $0 | $0 | $0 | $0 | $0 | $213 | $213 | $107 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $533 |
| Design of Maintenance Facility | $0 | $0 | $0 | $0 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 |
| Construction of Maintenance Facility | $0 | $0 | $0 | $0 | $0 | $13 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $16 |
| Subtotal | $0 | $0 | $0 | $11 | $12 | $226 | $216 | $107 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $573 |
| Other Program Costs | | | | | | | | | | | | | | | | | | | | | | | |
| Misc Operations Budget | $0 | $0 | $0 | $0 | $0 | $0 | $13 | $0 | $0 | $0 | $0 | $13 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $26 |
| Total OMP | $0 | $66 | $261 | $695 | $839 | $1,228 | $1,074 | $823 | $625 | $989 | $764 | $663 | $27 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $8,053 |
| **Capital Improvement Program** | | | | | | | | | | | | | | | | | | | | | | | |
| Airfield Improvements | $0 | $0 | $114 | $84 | $95 | $77 | $90 | $46 | $48 | $50 | $52 | $54 | $57 | $59 | $61 | $64 | $67 | $69 | $72 | $75 | $78 | $82 | $1,396 |
| Terminal Support Improvements | $0 | $0 | $45 | $29 | $64 | $61 | $47 | $25 | $26 | $27 | $28 | $29 | $31 | $32 | $33 | $34 | $36 | $37 | $39 | $41 | $42 | $44 | $751 |
| Terminal Improvements (OT and IT) | $0 | $0 | $133 | $131 | $128 | $123 | $11 | $53 | $55 | $57 | $60 | $62 | $65 | $68 | $70 | $73 | $76 | $79 | $83 | $86 | $90 | $93 | $1,596 |
| H&R Improvements | $0 | $0 | $21 | $28 | $45 | $24 | $8 | $13 | $13 | $14 | $14 | $15 | $16 | $16 | $17 | $18 | $18 | $19 | $20 | $21 | $22 | $23 | $385 |

Exhibit 3.22
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## OMP CAPITAL COSTS WITH CAMPBELL-HILL CONTINGENCY[1]
### (Excluding Capitalized Interest Expense)

(In Millions of 2004 Dollars)

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Security Improvements | $0 | $0 | $26 | $44 | $89 | $17 | $4 | $16 | $19 | $20 | $20 | $21 | $22 | $23 | $34 | $25 | $26 | $27 | $28 | $29 | $31 | $32 | $547 |
| Fueling Improvements | $0 | $0 | $8 | $33 | $32 | $32 | $17 | $13 | $13 | $13 | $14 | $14 | $15 | $16 | $16 | $17 | $18 | $18 | $19 | $20 | $21 | $22 | $371 |
| Land Support Improvements | $0 | $0 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4 |
| Noise Mitigation Projects | $0 | $0 | $46 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $46 |
| Total CIP | $0 | $0 | $397 | $349 | $454 | $334 | $178 | $157 | $174 | $192 | $189 | $197 | $205 | $213 | $222 | $231 | $241 | $251 | $261 | $272 | $283 | $295 | $5,097 |
| **World Gateway Program** | | | | | | | | | | | | | | | | | | | | | | | |
| WGP Phase 1 | | | | | | | | | | | | | | | | | | | | | | | |
| Taxiway A/B Relocation | $0 | $0 | $0 | $0 | $0 | $0 | $4 | $20 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $24 |
| T1/T2 Expansion | $0 | $0 | $0 | $0 | $1 | $9 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $10 |
| Concourse K - Allowance | $0 | $0 | $0 | $0 | $0 | $9 | $9 | $75 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $93 |
| Terminal 2 - Interior Upgrade | $0 | $0 | $0 | $0 | $17 | $68 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $85 |
| Taxiway November - Facility Relocations | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $30 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $32 |
| Taxiway M | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $34 | $34 | $34 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $103 |
| Taxiway November - New | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $13 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $16 |
| Subtotal | $0 | $0 | $0 | $0 | $18 | $86 | $16 | $127 | $13 | $34 | $34 | $34 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $363 |
| WGP | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal 6 Apron - Support Facility Relocations | $0 | $0 | $0 | $0 | $0 | $0 | $8 | $23 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $32 |
| Terminal 6 Apron - Utility Relocations | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $8 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 |
| Terminal 6 - Utility Relocations | $0 | $0 | $0 | $0 | $0 | $0 | $16 | $120 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $136 |
| Terminal 2 - New Concourse - FIS Facilities | $0 | $0 | $0 | $36 | $36 | $36 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $109 |
| Terminal 4 Apron - Support Facility Relocations | $0 | $0 | $0 | $0 | $0 | $0 | $8 | $41 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $48 |
| Terminal 4 - Facility Relocations | $0 | $0 | $0 | $0 | $0 | $0 | $21 | $116 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $137 |
| Terminal 4 - Drainage Control | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| WGP - Airport Wide Off-Site spoil | $0 | $0 | $0 | $3 | $3 | $3 | $3 | $3 | $3 | $3 | $3 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $24 |
| Terminal 6 Apron - New [beyond 40 feet] | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $20 | $20 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $42 |
| Terminal 6 Apron - Grading | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $1 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4 |
| Terminal 6 Apron - Additional Relocations/Demolitions | $0 | $0 | $0 | $0 | $0 | $0 | $4 | $5 | $5 | $2 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $18 |
| Terminal 6 Northern Extension - New Apron/Grading | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $24 | $14 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $38 |
| Terminal 6 - New Apron [within 40 feet] | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 |
| Terminal 6 - At-Grade Roadway | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $1 | $8 | $8 | $7 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $24 |
| Terminal 6 - ATS Facilities | $0 | $0 | $0 | $0 | $0 | $0 | $4 | $4 | $33 | $87 | $29 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $158 |
| Terminal 6 - Elevated Roadway | $0 | $0 | $0 | $0 | $0 | $0 | $6 | $4 | $51 | $51 | $44 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $156 |
| Terminal 6 - Parking Structure | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $4 | $49 | $73 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $130 |
| Terminal 6 - Pedestrian Bridge to Parking (2) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $8 | $11 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $19 |
| Terminal 6 - T5 Surface Lot Reconfiguration | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 |
| Terminal 6 - Temporary Roadway | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 |
| Terminal 6 - Utilities | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $5 | $8 | $6 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $21 |
| Terminal 6 - Terminal 5 Concourse Reconfiguration | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $8 | $11 | $15 | $8 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $42 |
| Terminal 6 - Special Systems | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $14 | $19 | $19 | $13 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $67 |
| Terminal 6 - SFRB Defeasance - Northwest | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $11 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $11 |
| Terminal 6 - SFRB Defeasance - Delta | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $39 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $39 |
| Terminal 6 - New Terminal and Concourse Building | $0 | $0 | $0 | $0 | $0 | $0 | $16 | $124 | $169 | $164 | $110 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $583 |
| Terminal 6 - Loading Bridges and Equipment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $5 | $4 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $15 |
| Terminal 6 - Landscaping | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 |
| Terminal 6 - Baggage Systems | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $10 | $14 | $13 | $9 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $48 |
| Terminal 6 - Apron Demolition | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 |
| Terminal 6 Northern Extension - Baggage Systems | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $10 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $13 |
| Terminal 6 Northern Extension - Loading Bridges and Equipment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4 |
| Terminal 6 Northern Extension - New Concourse | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $20 | $64 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $85 |
| Terminal 6 Northern Extension - Special Systems | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $8 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $11 |
| Terminal 6 - Hydrant Fueling and Fuel Pipeline Extension | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 |
| Terminal 6 - Thermal System Tunnel | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $19 | $26 | $25 | $17 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $89 |
| Terminal 6 - Realign Hydrant Fueling gates M20& M21 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 |
| Terminal 6 Northern Extension- Hydrant Fueling/Fuel Pipeline Extension | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 |
| Terminal 2 Apron - New | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Utilities and FAA Tower Controls | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Special Systems | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Rebuild Terminal 2 Airside | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

Exhibit 322
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## OMP CAPITAL COSTS WITH CAMPBELL-HILL CONTINGENCY[1]
### (Excluding Capitalized Interest Expense)

(In Millions of 2004 Dollars)

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Terminal 2 - New Concourse (Domestic) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Loading Bridges and Equipment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Baggage Systems | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Building Demolition | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Hydrant Fueling and Fuel Pipeline Extension | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 4 Apron - New | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $14 | $37 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $51 |
| Terminal 4 Apron - Grading | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $7 | $6 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $14 |
| Terminal 4 - At-Grade Roadway | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $2 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 |
| Terminal 4 - ATS Facilities | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $9 | $42 | $21 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $75 |
| Terminal 4 - Elevated Roadway | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $7 | $11 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $23 |
| Terminal 4 - Elevated Walkway | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $6 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $7 |
| Terminal 4 - Utilities | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $5 | $17 | $13 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $35 |
| Terminal 4 - Underground Utility Relocation | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $7 | $24 | $19 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $51 |
| Terminal 4 - Underground Baggage Room Expansion | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $10 | $30 | $23 | $15 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $80 |
| Terminal 4 - Temporary Roadway | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 |
| Terminal 4 - Special Systems | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $10 | $30 | $23 | $15 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $79 |
| Terminal 4 - New Terminal FIS Facilities | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $13 | $40 | $31 | $20 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $107 |
| Terminal 4 - New Terminal (Domestic) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 | $66 | $199 | $151 | $101 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $526 |
| Terminal 4 - Loading Bridges and Equipment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $8 | $6 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $20 |
| Terminal 4 - Landscaping | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 4 - Demolition and Site Preparation | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $8 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $10 |
| Terminal 4 - Concourse L Demolition | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 |
| Terminal 4 - Baggage Systems | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $8 | $23 | $18 | $12 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $61 |
| Terminal 4 - Hydrant Fueling and Fuel Pipeline Extension | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $10 |
| Subtotal - Other WGP | $0 | $0 | $0 | $39 | $39 | $39 | $99 | $548 | $622 | $957 | $626 | $334 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3,303 |
| Total WGP | $0 | $0 | $0 | $39 | $57 | $125 | $115 | $674 | $635 | $991 | $660 | $368 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3,666 |
| Total Without Contingencies | $0 | $66 | $658 | $1,083 | $1,350 | $1,687 | $1,367 | $1,665 | $1,435 | $2,161 | $1,613 | $1,228 | $232 | $213 | $222 | $231 | $241 | $251 | $261 | $272 | $283 | $295 | $16,816 |
| City's Contingencies | | | | | | | | | | | | | | | | | | | | | | | |
| Land/Environmental Contingency | $0 | $0 | $0 | $0 | $0 | $83 | $83 | $73 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $240 |
| Program Contingency | $0 | $0 | $0 | $0 | $0 | $63 | $55 | $42 | $31 | $55 | $42 | $36 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $324 |
| Total City Contingency | $0 | $0 | $0 | $0 | $0 | $146 | $139 | $115 | $31 | $55 | $42 | $36 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $564 |
| **Total Capital Cost** | **$0** | **$66** | **$658** | **$1,083** | **$1,350** | **$1,833** | **$1,506** | **$1,780** | **$1,467** | **$2,216** | **$1,655** | **$1,264** | **$232** | **$213** | **$222** | **$231** | **$241** | **$251** | **$261** | **$272** | **$283** | **$295** | **$17,380** |

| | | Comments[2] |
|---|---|---|
| City's Percent Contingency | 4.14% | Total City Contingency/ Total (Without Contingencies) |
| Campbell-Hill Percent Contingency (additional) | 23.46% | Total Percent Contingency - City's Percent Contingency |
| Total Percent Contingency | 27.60% | Average transportation infrastructure project cost overrun |

1/ Calculated by multiplying the costs from Exhibit 322 by the Campbell-Hill Percent Contingency (additional) (23.46%).

2/ From Exhibit 326.

Exhibit 323
Page 1 of 2

## EXISTING ORD DEBT REPAID THROUGH 2013

### A. In Millions of Future Dollars

| Row | Column / Year | A First Lein Revenue Bonds | B Second Lein Revenue Bonds | C Third Lien Revenue Bonds | D PFC Revenue Bonds | E Total[2] |
|---|---|---|---|---|---|---|
| 1 | 2004 | $1.9 | $10.5 | $0.0 | $24.7 | $37.0 |
| 2 | 2005 | $4.4 | $33.1 | $2.4 | $26.0 | $66.0 |
| 3 | 2006 | $4.7 | $54.4 | $10.5 | $27.5 | $97.0 |
| 4 | 2007 | $0.0 | $93.9 | $0.5 | $29.0 | $123.4 |
| 5 | 2008 | $0.0 | $105.9 | $0.5 | $30.5 | $136.9 |
| 6 | 2009[1] | $19.0 | $105.9 | $4.5 | $35.8 | $165.2 |
| 7 | 2010[1] | $19.0 | $105.9 | $4.5 | $35.8 | $165.2 |
| 8 | 2011[1] | $19.0 | $105.9 | $4.5 | $35.8 | $165.2 |
| 9 | 2012[1] | $19.0 | $105.9 | $4.5 | $35.8 | $165.2 |
| 10 | 2013[1] | $19.0 | $105.9 | $4.5 | $35.8 | $165.2 |
| 11 | Total | $105.9 | $827.5 | $36.2 | $316.4 | $1,286.0 |

| | | |
|---|---|---|
| 12 | FY 2003 Total ORD Principal[3] | $4,036 |
| 13 | Less: Principal Paid 2004-2013[4] | $1,286 |
| 14 | Principal of existing debt at the end of 2013[5] | $2,750 |

1/ Assumes 2009-2013 debt payment is the same for each year.
2/ Column A + Column B + Column C + Column D
3/ From Exhibit 313
4/ Column E, Row 11
5/ Row 12 - Row 13

Exhibit 323
Page 2 of 2

## EXISTING ORD DEBT REPAID THROUGH 2013

### B. In Millions of 2004 Dollars[1]

| Row | Column / Year | A First Lein Revenue Bonds | B Second Lein Revenue Bonds | C Third Lien Revenue Bonds | D PFC Revenue Bonds | E Total[2] |
|---|---|---|---|---|---|---|
| 1 | 2004 | $1.9 | $10.5 | $0.0 | $24.7 | $37.0 |
| 2 | 2005 | $4.3 | $32.3 | $2.4 | $25.4 | $64.5 |
| 3 | 2006 | $4.4 | $51.9 | $10.0 | $26.2 | $92.5 |
| 4 | 2007 | $0.0 | $87.5 | $0.4 | $27.0 | $114.9 |
| 5 | 2008 | $0.0 | $96.3 | $0.4 | $27.7 | $124.5 |
| 6 | 2009 | $16.9 | $94.1 | $4.0 | $31.8 | $146.7 |
| 7 | 2010 | $16.5 | $91.9 | $3.9 | $31.0 | $143.3 |
| 8 | 2011 | $16.1 | $89.7 | $3.8 | $30.3 | $139.9 |
| 9 | 2012 | $15.7 | $87.6 | $3.7 | $29.6 | $136.6 |
| 10 | 2013 | $15.3 | $85.6 | $3.6 | $28.9 | $133.4 |
| 11 | Total | $91.1 | $727.4 | $32.2 | $282.5 | $1,133.2 |

| | | |
|---|---|---|
| 12 | FY 2003 Total ORD Principal[3] | $4,036 |
| 13 | Less: Principal Paid 2004-2013[4] | $1,133 |
| 14 | Principal of existing debt at the end of 2013[5] | $2,903 |

1/ The future dollars from page 1 were converted to 2004 dollars using an annual inflation rate of 2.4% per DEIS page ES-42.
2/ Column A + Column B + Column C + Column D
3/ From Exhibit 313
4/ Column E, Row 11
5/ Row 12 - Row 13

Sources: From Deloitte & Touche, The City of Chicago, Illinois: Chicago O'Hare International Airport, Basic Financial Statements for the Years Ended December 31, 2003 and 2002, p. 27-28; Exhibit 313

Exhibit 324
Page 1 of 1

## FORECAST INITIAL INCREMENTAL INCREASE IN COST PER ENPLANEMENT CAUSED BY THE OMP
## (In 2004 Dollars)

| Column | A<br>Incremental Cost per Enplanement (2002 TAF)[1] | B<br>Incremental Cost per Enplanement (2003 TAF)[1] | C<br>Incremental Cost per Enplanement (2004 TAF)[1] |
|---|---|---|---|
| 2005 | $0.00 | $0.00 | $0.00 |
| 2006 | $0.00 | $0.00 | $0.00 |
| 2007 | $2.05 | $1.82 | $1.99 |
| 2008 | $1.99 | $1.77 | $1.94 |
| 2009 | $7.81 | $6.97 | $7.63 |
| 2010 | $7.59 | $6.78 | $7.43 |
| 2011 | $7.38 | $6.60 | $7.25 |
| 2012 | $7.17 | $6.42 | $7.07 |
| **2013** | **$17.58** | **$15.34** | **$17.32** |
| 2014 | $16.73 | $14.58 | $16.50 |
| 2015 | $16.15 | $14.07 | $15.96 |
| 2016 | $15.59 | $13.58 | $15.44 |
| 2017 | $15.05 | $13.12 | $14.94 |
| 2018 | $15.28 | $13.36 | $15.22 |

1/ Calculated from Exhibit 325. [(Column D + Column E) x 1,000,000]/ A. This is conservative because it assumes that the only element adding to the cost per enplanement as a result of the OMP is debt service.

Exhibit 325
Page 1 of 2

## IF THE OMP IS BUILT THE COST PER ENPLANEMENT AT ORD WILL INCREASE INITIALLY TO $27 IN 2013
(In 2004 Dollars)

| Column | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | 2002 TAF Enplanements[1] | O+M Costs[2] (Millions of 2004 Dollars) | Existing GARB Debt Service[3] (Millions of 2004 Dollars) | OMP Debt Service[4] (Millions of 2004 Dollars) | PFC Shortfall Paid By The Airlines[5] (Millions of 2004 Dollars) | Total Airline Requirement[6] (Millions of 2004 Dollars) | Cost per Enplanement[7] ( 2004 Dollars) |
| 2005 | 34,696,477 | $140 | $204 | $0 | $0 | $344 | $9.91 |
| 2006 | 35,798,961 | $144 | $224 | $0 | $0 | $368 | $10.27 |
| 2007 | 36,943,000 | $151 | $238 | $76 | $0 | $465 | $12.57 |
| 2008 | 38,027,250 | $158 | $239 | $76 | $0 | $472 | $12.42 |
| 2009 | 39,149,000 | $166 | $238 | $306 | $0 | $710 | $18.13 |
| 2010 | 40,280,622 | $174 | $227 | $306 | $0 | $707 | $17.55 |
| 2011 | 41,450,618 | $182 | $222 | $306 | $0 | $710 | $17.12 |
| 2012 | 42,660,538 | $191 | $217 | $306 | $0 | $714 | $16.73 |
| **2013** | **43,912,000** | **$202** | **$225** | **$694** | **$78** | **$1,198** | **$27.29** |
| 2014 | 45,119,418 | $213 | $220 | $694 | $61 | $1,187 | $26.31 |
| 2015 | 46,367,492 | $225 | $209 | $694 | $55 | $1,183 | $25.51 |
| 2016 | 47,657,820 | $238 | $185 | $694 | $49 | $1,166 | $24.46 |
| 2017 | 48,992,074 | $251 | $192 | $694 | $43 | $1,180 | $24.09 |
| 2018 | 50,372,000 | $266 | $187 | $733 | $37 | $1,222 | $24.26 |

| | 2003 TAF Enplanements[8] | O+M Costs[2] (Millions of 2004 Dollars) | Existing GARB Debt Service[3] (Millions of 2004 Dollars) | OMP Debt Service[4] (Millions of 2004 Dollars) | PFC Shortfall Paid By The Airlines[5] (Millions of 2004 Dollars) | Total Airline Requirement[6] (Millions of 2004 Dollars) | Cost per Enplanement[7] ( 2004 Dollars) |
|---|---|---|---|---|---|---|---|
| 2005 | 38,919,717 | $140 | $204 | $0 | $0 | $344 | $8.84 |
| 2006 | 40,306,815 | $144 | $224 | $0 | $0 | $368 | $9.12 |
| 2007 | 41,473,732 | $151 | $238 | $76 | $0 | $465 | $11.20 |
| 2008 | 42,667,563 | $158 | $239 | $76 | $0 | $472 | $11.07 |
| 2009 | 43,883,047 | $166 | $238 | $306 | $0 | $710 | $16.17 |
| 2010 | 45,111,156 | $174 | $227 | $306 | $0 | $707 | $15.67 |
| 2011 | 46,336,837 | $182 | $222 | $306 | $0 | $710 | $15.31 |
| 2012 | 47,626,110 | $191 | $217 | $306 | $0 | $714 | $14.98 |
| **2013** | **48,930,349** | **$202** | **$225** | **$694** | **$56** | **$1,177** | **$24.06** |
| 2014 | 50,270,744 | $213 | $220 | $694 | $39 | $1,165 | $23.18 |
| 2015 | 51,638,919 | $225 | $209 | $694 | $33 | $1,161 | $22.48 |
| 2016 | 53,048,880 | $238 | $185 | $694 | $26 | $1,143 | $21.54 |
| 2017 | 54,444,032 | $251 | $192 | $694 | $20 | $1,157 | $21.25 |
| 2018 | 55,864,824 | $266 | $187 | $733 | $14 | $1,199 | $21.46 |

| | 2004 TAF Enplanements[10] | O+M Costs[2] (Millions of 2004 Dollars) | Existing GARB Debt Service[3] (Millions of 2004 Dollars) | OMP Debt Service[4] (Millions of 2004 Dollars) | PFC Shortfall Paid By The Airlines[5] (Millions of 2004 Dollars) | Total Airline Requirement[6] (Millions of 2004 Dollars) | Cost per Enplanement[7] ( 2004 Dollars) |
|---|---|---|---|---|---|---|---|
| 2005 | 35,776,054 | $140 | $204 | $0 | $0 | $344 | $9.61 |
| 2006 | 36,844,622 | $144 | $224 | $0 | $0 | $368 | $9.98 |
| 2007 | 37,962,387 | $151 | $238 | $76 | $0 | $465 | $12.24 |
| 2008 | 39,030,494 | $158 | $239 | $76 | $0 | $472 | $12.10 |
| 2009 | 40,101,040 | $166 | $238 | $306 | $0 | $710 | $17.70 |
| 2010 | 41,140,162 | $174 | $227 | $306 | $0 | $707 | $17.18 |
| 2011 | 42,191,216 | $182 | $222 | $306 | $0 | $710 | $16.82 |
| 2012 | 43,286,057 | $191 | $217 | $306 | $0 | $714 | $16.48 |
| **2013** | **44,425,001** | **$202** | **$225** | **$694** | **$75** | **$1,196** | **$26.92** |
| 2014 | 45,598,421 | $213 | $220 | $694 | $58 | $1,185 | $25.98 |
| 2015 | 46,785,107 | $225 | $209 | $694 | $53 | $1,181 | $25.24 |
| 2016 | 48,005,399 | $238 | $185 | $694 | $47 | $1,164 | $24.24 |
| 2017 | 49,247,423 | $251 | $192 | $694 | $42 | $1,179 | $23.93 |
| 2018 | 50,509,930 | $266 | $187 | $733 | $36 | $1,221 | $24.18 |

Exhibit 325
Page 2 of 2

## IF THE OMP IS BUILT THE COST PER ENPLANEMENT AT ORD WILL INCREASE INITIALLY TO $27 IN 2013
## (In 2004 Dollars)

Note: Numbers exclude the decrease in passengers that results from the cost of the OMP.

1/ From Exhibit 307, page 1, Column A

2/ Column A x OSM airline requirement per enplanement from Exhibit 321

3/ From Exhibit 328, Column B

4/ From Exhibit 329, Column A. Includes both third party financing and GARBS.

5/ From Exhibit 307, page 3. PFC shortfall paid by the airlines is calculated by adding the annual airline capitalized interest payment (Row 4) to the PFC revenue shortfall for years after the construction period. This was done because the airlines do not pay for projects in construction.

6/ Column B + Column C + Column D + Column E

7/ (Column F x 1,000,000)/ Column A

8/ From Exhibit 307, page 1, Column D

9/ From Exhibit 307, page 4. PFC shortfall paid by the airlines is calculated by adding the annual airline capitalized interest payment (Row 4) to the PFC revenue shortfall for years after the construction period. This was done because the airlines do not pay for projects in construction.

10/ From Exhibit 307, page 1, Column G

11/ From Exhibit 307, page 5. PFC shortfall paid by the airlines is calculated by adding the annual airline capitalized interest payment (Row 4) to the PFC revenue shortfall for years after the construction period. This was done because the airlines do not pay for projects in construction.

Exhibit 3-26
Page 1 of 3

## OMP CAPITAL COSTS WITHOUT CAMPBELL-HILL CONTINGENCY
### (Excluding Capitalized Interest Expense)

(In Millions of 2004 Dollars)

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **O'Hare Modernization Program** | | | | | | | | | | | | | | | | | | | | | | | |
| Program-Wide Requirements | | | | | | | | | | | | | | | | | | | | | | | |
| Program-wide Requirements | $0 | $19 | $23 | $21 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $83 |
| Preliminary Engineering | $0 | $0 | $23 | $16 | $7 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $47 |
| Wetlands mitigation | $0 | $0 | $2 | $24 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $26 |
| Noise Mitigation (OMP Phase 1) | $0 | $0 | $21 | $21 | $21 | $21 | $21 | $21 | $21 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $150 |
| Noise Mitigation (OMP Phase 2) | $0 | $0 | $0 | $0 | $0 | | $0 | $0 | $0 | $21 | $21 | $21 | $21 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $86 |
| Land Acquisition | $0 | $34 | $72 | $78 | $89 | $65 | $16 | $10 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $364 |
| Subtotal | $0 | $53 | $143 | $161 | $117 | $86 | $37 | $32 | $21 | $21 | $21 | $21 | $21 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $736 |
| Airfield | | | | | | | | | | | | | | | | | | | | | | | |
| Design of Runway 9L-27R | $0 | $0 | $25 | $13 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $38 |
| Construction of Runway 9L-27R | $0 | $0 | $0 | $123 | $214 | $214 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $551 |
| Decommission Runway 18-36 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 |
| Design of Runway 9C-27C | $0 | $0 | $0 | $0 | $0 | $10 | $13 | $6 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $32 |
| Construction of Runway 9C-27C | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $132 | $264 | $198 | $65 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $658 |
| Design of Runway 9R Extension | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $3 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $7 |
| Construction of Runway 9R Extension | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $28 | $56 | $56 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $141 |
| Design of Decommissioned Runway 14L-32R | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Decommission Runway 14L-32R | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 |
| Design of Runway 10L Extension | $0 | $0 | $22 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $22 |
| Construction of Runway 10L Extension | $0 | $0 | $0 | $95 | $140 | $157 | $99 | $28 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $500 |
| Design of Runway 10C-28C | $0 | $0 | $22 | $22 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $44 |
| Construction of Runway 10C-28C | $0 | $0 | $0 | $130 | $178 | $117 | $227 | $280 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $932 |
| Design of Runway 10R-28L | $0 | $0 | $0 | $0 | $0 | $0 | $6 | $9 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $18 |
| Construction of Runway 10R-28L | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $37 | $112 | $112 | $112 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $374 |
| Design for Runway 14R/32L Decommissioning/Taxiway Conversion | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $5 |
| Construction of Runway 14R/32L Decommissioning/Taxiway Conversion | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $113 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $113 |
| Subtotal-Airfield | $0 | $0 | $69 | $382 | $532 | $498 | $336 | $326 | $181 | $407 | $369 | $348 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3,449 |
| Western Terminal Complex | | | | | | | | | | | | | | | | | | | | | | | |
| Design of Western Airside Concourse | $0 | $0 | $0 | $10 | $14 | $10 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $35 |
| Construction of Western Airside Concourse | $0 | $0 | $0 | $0 | $0 | $180 | $233 | $175 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $588 |
| Design of Energy Plant | $0 | $0 | $0 | $1 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4 |
| Construction of Energy Plant | $0 | $0 | $0 | $0 | $0 | $18 | $35 | $6 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $60 |
| Design of Fuel Storage and Distribution Improvements | $0 | $0 | $0 | $0 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4 |
| Construction of Fuel Storage and Distribution Improvements | $0 | $0 | $0 | $0 | $0 | $19 | $25 | $19 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $62 |
| Design of Western Terminal | $0 | $0 | $0 | $0 | $0 | $0 | $17 | $23 | $23 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $84 |
| Construction of Western Terminal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $277 | $369 | $184 | $92 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $922 |
| Design of Western Parking Facilities | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $7 |
| Construction of Western Parking Facilities | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $43 | $65 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $109 |
| Subtotal | $0 | $0 | $0 | $12 | $21 | $227 | $311 | $223 | $304 | $372 | $228 | $157 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,854 |
| On-Airport Circulation | | | | | | | | | | | | | | | | | | | | | | | |
| Design of Peoplemover | $0 | $0 | $0 | $9 | $9 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $18 |
| Construction of Peoplemover | $0 | $0 | $0 | $0 | $0 | $173 | $172 | $86 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $432 |
| Design of Maintenance Facility | $0 | $0 | $0 | $0 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 |
| Construction of Maintenance Facility | $0 | $0 | $0 | $0 | $0 | $11 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $13 |
| Subtotal | $0 | $0 | $0 | $9 | $10 | $183 | $175 | $86 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $464 |
| Other Program Costs | | | | | | | | | | | | | | | | | | | | | | | |
| Misc Operations Budget | $0 | $0 | $0 | $0 | $0 | $0 | $10 | $0 | $0 | $0 | $0 | $10 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $21 |
| OMP Totals | $0 | $53 | $212 | $563 | $680 | $995 | $870 | $667 | $507 | $901 | $618 | $537 | $21 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $6,523 |
| **Capital Improvement Program** | | | | | | | | | | | | | | | | | | | | | | | |
| Airfield Improvements | $0 | $0 | $92 | $68 | $77 | $62 | $73 | $38 | $39 | $41 | $42 | $44 | $46 | $48 | $50 | $52 | $54 | $56 | $59 | $61 | $63 | $66 | $1,131 |
| Terminal Support Improvements | $0 | $0 | $36 | $24 | $52 | $50 | $38 | $20 | $21 | $22 | $23 | $24 | $25 | $26 | $27 | $28 | $29 | $30 | $32 | $33 | $34 | $36 | $608 |
| Terminal Improvements (DT and IT) | $0 | $0 | $108 | $108 | $104 | $99 | $9 | $45 | $45 | $47 | $48 | $50 | $53 | $55 | $57 | $59 | $62 | $64 | $67 | $70 | $73 | $76 | $1,293 |
| H&R Improvements | $0 | $0 | $17 | $23 | $37 | $20 | $7 | $10 | $11 | $11 | $12 | $12 | $13 | $13 | $14 | $14 | $15 | $16 | $16 | $17 | $18 | $18 | $312 |
| Security Improvements | $0 | $0 | $21 | $36 | $72 | $14 | $4 | $15 | $15 | $16 | $17 | $17 | $19 | $19 | $20 | $20 | $21 | $22 | $23 | $24 | $25 | $26 | $443 |

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## OMP CAPITAL COSTS WITHOUT CAMPBELL-HILL CONTINGENCY
### (Excluding Capitalized Interest Expense)

(In Millions of 2004 Dollars)

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fueling Improvements | $0 | $0 | $7 | $26 | $26 | $26 | $14 | $10 | $10 | $11 | $11 | $12 | $12 | $13 | $13 | $14 | $14 | $15 | $16 | $16 | $17 | $18 | $301 |
| Land Support Improvements | $0 | $0 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 |
| Noise Mitigation Projects | $0 | $0 | $37 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $37 |
| Total 20-Year CIP | $0 | $0 | $321 | $282 | $368 | $270 | $144 | $136 | $141 | $147 | $153 | $159 | $166 | $173 | $180 | $187 | $195 | $203 | $212 | $220 | $230 | $239 | $4,128 |
| **World Gateway Program** | | | | | | | | | | | | | | | | | | | | | | | |
| WGP Phase 1 | | | | | | | | | | | | | | | | | | | | | | | |
| Taxiway A/B Relocation | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $16 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $19 |
| T1/T2 Expansion | $0 | $0 | $0 | $0 | $1 | $7 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $8 |
| Concourse K - Allowance | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $60 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $75 |
| Terminal 2 - Interior Upgrade | $0 | $0 | $0 | $0 | $14 | $55 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $89 |
| Taxiway November - Facility Relocations | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $24 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $26 |
| Taxiway M | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $28 | $28 | $28 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $83 |
| Taxiway November - New | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $11 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $13 |
| Subtotal - WGP Phase 1 | $0 | $0 | $0 | $0 | $15 | $70 | $13 | $103 | $11 | $28 | $28 | $28 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $294 |
| WGP | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal 6 Apron - Support Facility Relocations | $0 | $0 | $0 | $0 | $0 | $0 | $7 | $19 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $26 |
| Terminal 6 Apron - Utility Relocations | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $7 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $8 |
| Terminal 6 - Utility Relocations | $0 | $0 | $0 | $0 | $0 | $0 | $13 | $97 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $110 |
| Terminal 2 - New Concourse - IRS Facilities | $0 | $0 | $0 | $29 | $29 | $29 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $88 |
| Terminal 4 Apron - Support Facility Relocations | $0 | $0 | $0 | $0 | $0 | $0 | $6 | $33 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $39 |
| Terminal 4 - Facility Relocations | $0 | $0 | $0 | $0 | $0 | $0 | $17 | $94 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $111 |
| Terminal 4 - Drainage Control | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| WGP - Airport Wide Off-Site spoil | $0 | $0 | $0 | $2 | $2 | $2 | $2 | $2 | $2 | $2 | $2 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $19 |
| Terminal 6 Apron - New [beyond 40 feet] | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $16 | $16 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $34 |
| Terminal 6 Apron - Grading | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $1 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4 |
| Terminal 6 Apron - Additional Relocations/Demolitions | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $4 | $4 | $2 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $15 |
| Terminal 6 Northern Extension - New Apron/Grading | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $19 | $11 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $31 |
| Terminal 6 - New Apron [within 40 feet] | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 |
| Terminal 6 - At Grade Roadway | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $1 | $6 | $6 | $6 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $20 |
| Terminal 6 - ATS Facilities | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $3 | $27 | $70 | $24 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $128 |
| Terminal 6 - Elevated Roadway | $0 | $0 | $0 | $0 | $0 | $0 | $5 | $8 | $42 | $42 | $36 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $127 |
| Terminal 6 - Parking Structure | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $4 | $40 | $59 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $105 |
| Terminal 6 - Pedestrian Bridge to Parking (2) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $6 | $9 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $16 |
| Terminal 6 - T5 Surface Lot Reconfiguration | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $8 |
| Terminal 6 - Temporary Roadway | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 |
| Terminal 6 - Utilities | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4 | $5 | $5 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $17 |
| Terminal 6 - Terminal 5 Concourse Reconfiguration | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $6 | $9 | $12 | $6 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $34 |
| Terminal 6 - Special Systems | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $11 | $16 | $15 | $10 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $54 |
| Terminal 6 - SFRB Defeasance - Northwest | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 |
| Terminal 6 - SFRB Defeasance - Delta | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $31 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $31 |
| Terminal 6 - New Terminal and Concourse Building | $0 | $0 | $0 | $0 | $0 | $0 | $13 | $100 | $137 | $133 | $89 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $473 |
| Terminal 6 - Loading Bridges and Equipment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $4 | $4 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $13 |
| Terminal 6 - Landscaping | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 |
| Terminal 6 - Baggage Systems | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $8 | $11 | $11 | $7 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $39 |
| Terminal 6 - Apron Demolition | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 |
| Terminal 6 Northern Extension - Baggage Systems | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $8 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $10 |
| Terminal 6 Northern Extension - Loading Bridges and Equipment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 |
| Terminal 6 Northern Extension - New Concourse | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $16 | $52 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $69 |
| Terminal 6 Northern Extension - Special Systems | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $6 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 |
| Terminal 6 - Hydrant Fueling and Fuel Pipeline Extension | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $7 |
| Terminal 6 - Thermal System Tunnel | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $15 | $21 | $20 | $14 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $72 |
| Terminal 6 - Realign Hydrant Fueling gates M208, M21 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 |
| Terminal 6 Northern Extension- Hydrant Fueling/Fuel Pipeline Extension | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 |
| Terminal 2 Apron - New | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Utilities and FAA Tower Controls | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Special Systems | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Rebuild Terminal 2 Airside | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - New Concourse (Domestic) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Loading Bridges and Equipment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Baggage Systems | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

Exhibit 3.26
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## OMP CAPITAL COSTS WITHOUT CAMPBELL-HILL CONTINGENCY
### (Excluding Capitalized Interest Expense)

(In Millions of 2004 Dollars)

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Terminal 2 - Building Demolition | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 2 - Hydrant Fueling and Fuel Pipeline Extension | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 4 Apron - New | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $12 | $30 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $44 |
| Terminal 4 Apron - Grading | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $6 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $11 |
| Terminal 4 - At-Grade Roadway | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $1 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 |
| Terminal 4 - ATS Facilities | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $8 | $34 | $17 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $60 |
| Terminal 4 - Elevated Roadway | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $6 | $9 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $18 |
| Terminal 4 - Elevated Walkway | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $6 |
| Terminal 4 - Utilities | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4 | $14 | $11 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $29 |
| Terminal 4 - Underground Utility Relocation | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $6 | $20 | $15 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $41 |
| Terminal 4 - Underground Baggage Room Expansion | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $8 | $25 | $19 | $12 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $65 |
| Terminal 4 - Temporary Roadway | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 |
| Terminal 4 - Special Systems | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $8 | $24 | $18 | $12 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $64 |
| Terminal 4 - New Terminal FIS Facilities | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $11 | $33 | $25 | $17 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $87 |
| Terminal 4 - New Terminal (Domestic) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $7 | $64 | $161 | $122 | $82 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $426 |
| Terminal 4 - Loading Bridges and Equipment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $6 | $5 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $17 |
| Terminal 4 - Landscaping | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Terminal 4 - Demolition and Site Preparation | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $7 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $8 |
| Terminal 4 - Concourse L Demolition | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 |
| Terminal 4 - Baggage Systems | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $6 | $19 | $14 | $9 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $50 |
| Terminal 4 - Hydrant Fueling and Fuel Pipeline Extension | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $7 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $8 |
| Subtotal - Other WGP | $0 | $0 | $0 | $32 | $32 | $32 | $91 | $444 | $504 | $775 | $507 | $271 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2,676 |
| WGP Total | $0 | $0 | $0 | $32 | $46 | $102 | $93 | $546 | $515 | $863 | $535 | $298 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2,969 |
| Total (Without Contingencies) | $0 | $53 | $533 | $877 | $1,094 | $1,367 | $1,107 | $1,349 | $1,162 | $1,751 | $1,307 | $995 | $188 | $173 | $180 | $187 | $195 | $203 | $212 | $220 | $230 | $239 | $13,621 |
| City's Contingencies | | | | | | | | | | | | | | | | | | | | | | | |
| Land/Environmental Contingency | $0 | $0 | $0 | $0 | $0 | $83 | $83 | $73 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $240 |
| Program Contingency | $0 | $0 | $0 | $0 | $0 | $63 | $55 | $42 | $31 | $55 | $42 | $36 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $334 |
| Total City Contingency | $0 | $0 | $0 | $0 | $0 | $146 | $139 | $115 | $31 | $55 | $42 | $36 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $584 |
| **Total With City's Contingencies** | **$0** | **$53** | **$533** | **$877** | **$1,094** | **$1,513** | **$1,246** | **$1,463** | **$1,194** | **$1,805** | **$1,348** | **$1,030** | **$188** | **$173** | **$180** | **$187** | **$195** | **$203** | **$212** | **$220** | **$230** | **$239** | **$14,184** |

| | | Comments |
|---|---|---|
| City's Percent Contingency | 4.14% | Total City Contingency/ Total (Without Contingencies) |
| Campbell-Hill Percent Contingency (additional) | 23.46% | Total Percent Contingency - City's Percent Contingency |
| Total Percent Contingency | 27.60% | Average transportation infrastructure project cost overrun[1] |

1) From Flyvbjerg, Bent, Mette Skamris Holland Soren Buhl, American Planning Association Journal of the American Planning Association, Summer 2002 Vol. 68, No. 3, p 279

Source: City of Chicago, Request for Letter of Intent to Provide a Multi-Year Commitment of Airport Improvement Program Grant-In-Aid Funding? slide 5-1 and Table F-1, (February 2005)

Exhibit 327
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## PROJECTED AIRLINE O&M REQUIREMENT PER ENPLANEMENT AT O'HARE

| Row | Column | A<br>2003 | B<br>2004 | C<br>2005 | D<br>2006 | E<br>2007 | F<br>2012 | G<br>2022 |
|---|---|---|---|---|---|---|---|---|
| 1 | O&M Expenses less Land Support Area Expenses[1] | $321,851,000 | $332,751,000 | $353,438,000 | $372,054,000 | $397,278,000 | $546,600,000 | $1,054,688,000 |
| 2 | Non-Airline Revenues[2] | $161,942,000 | $167,541,000 | $192,703,000 | $204,202,000 | $217,403,000 | $295,839,000 | $537,090,000 |
| 3 | Airline Requirement for O&M Expenses[3] | $159,909,000 | $165,210,000 | $160,735,000 | $167,852,000 | $179,875,000 | $250,761,000 | $517,598,000 |
| 4 | Enplaned Passengers[4] | 32,628,000 | 37,735,000 | 38,825,000 | 39,914,000 | 41,003,000 | 46,450,000 | 57,356,000 |
| 5 | Airline O&M Requirement per Enplanement (Future Dollars)[5] | $4.90 | $4.38 | $4.14 | $4.21 | $4.39 | $5.40 | $9.02 |
| 6 | Airline O&M Requirement per Enplanement (2004 Dollars)[6] | $4.79 | $4.38 | $4.04 | $4.01 | $4.09 | $4.47 | $5.89 |

| | Projected Annual O&M Requirement per Enplanement (2004 Dollars) | Comment |
|---|---|---|
| 2005 | $4.04 | Column C, Row 6 |
| 2006 | $4.01 | Column D, Row 6 |
| 2007 | $4.09 | Column E, Row 6 |
| 2008 | $4.16 | Grown by the Compound Annual rate between 2007 and 2012 of 1.8% |
| 2009 | $4.23 | Grown by the Compound Annual rate between 2007 and 2012 of 1.8% |
| 2010 | $4.31 | Grown by the Compound Annual rate between 2007 and 2012 of 1.8% |
| 2011 | $4.39 | Grown by the Compound Annual rate between 2007 and 2012 of 1.8% |
| 2012 | $4.47 | Column F, Row 6 |
| 2013 | $4.59 | Grown by the Compound Annual rate between 2012 and 2022 of 2.8% |
| 2014 | $4.72 | Grown by the Compound Annual rate between 2012 and 2022 of 2.8% |
| 2015 | $4.85 | Grown by the Compound Annual rate between 2012 and 2022 of 2.8% |
| 2016 | $4.99 | Grown by the Compound Annual rate between 2012 and 2022 of 2.8% |
| 2017 | $5.13 | Grown by the Compound Annual rate between 2012 and 2022 of 2.8% |
| 2018 | $5.27 | Grown by the Compound Annual rate between 2012 and 2022 of 2.8% |

1/ From City of Chicago, Master Plan, Pages VII-32
2/ From City of Chicago, Master Plan, Pages VII-33
3/ Row 1 - Row 2
4 From City of Chicago, Master Plan, Pages VII-34
5/ Row 3 / Row 2
6/ Row 5 converted to 2004 dollars using annual inflation rate of 2.4% per DEIS-p. ES-42

Source: City of Chicago, Master Plan, Pages VII-32, VII-33 and VII-34, February 2004

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## EXISTING GARB DEBT SERVICE
## (2005-2018)

| Column | A | B |
|---|---|---|
| | Existing General Airport Revenue Bond Debt Service Commitment[1] | |
| Calendar Year | (Millions of Future Dollars) | (Millions of 2004 Dollars)[2] |
| 2005 | $209 | $204 |
| 2006 | $235 | $224 |
| 2007 | $256 | $238 |
| 2008 | $262 | $239 |
| 2009 | $268 | $238 |
| 2010 | $262 | $227 |
| 2011 | $262 | $222 |
| 2012 | $263 | $217 |
| 2013 | $278 | $225 |
| 2014 | $278 | $220 |
| 2015 | $271 | $209 |
| 2016 | $246 | $185 |
| 2017 | $261 | $192 |
| 2018 | $261 | $187 |
| **Total** | **$3,611** | **$3,026** |

1/ Excludes debt service on bonds that have not been issued and debt service after 2018.

2/ Annual inflation rate of 2.4% per the DEIS at page ES-42.

Source: From Deloitte & Touche, The City of Chicago, Illinois: Chicago O'Hare International Airport, Basic Financial Statements for the Years Ended December 31, 2003 and 2002, p. 40.

Exhibit 329
Page 1 of 1

## ADJUSTED AIRLINE PAYMENT SCHEDULE OF THE GENERAL AIRPORT REVENUE BOND AND THIRD PARTY DEBT SERVICE AS A RESULT OF THE OMP (2005-2018)

| Column | A | B | C | D | E |
|---|---|---|---|---|---|
| | Total OMP Debt Service With Campbell-Hill Adjustments (Millions of 2004 Dollars)[1] | Debt Service for Projects Available for Use in 2007 (Millions of 2004 Dollars)[2] | Debt Service for Projects Available for Use in 2009 (Millions of 2004 Dollars)[3] | Debt Service for Projects Available for Use in 2013 (Millions of 2004 Dollars)[4] | Debt Service for Projects Available for Use in 2018 (Millions of 2004 Dollars)[5] |
| 2005 | $0 | $0 | $0 | $0 | $0 |
| 2006 | $0 | $0 | $0 | $0 | $0 |
| 2007 | $76 | $76 | $0 | $0 | $0 |
| 2008 | $76 | $76 | $0 | $0 | $0 |
| 2009 | $306 | $76 | $230 | $0 | $0 |
| 2010 | $306 | $76 | $230 | $0 | $0 |
| 2011 | $306 | $76 | $230 | $0 | $0 |
| 2012 | $306 | $76 | $230 | $0 | $0 |
| 2013 | $694 | $76 | $230 | $388 | $0 |
| 2014 | $694 | $76 | $230 | $388 | $0 |
| 2015 | $694 | $76 | $230 | $388 | $0 |
| 2016 | $694 | $76 | $230 | $388 | $0 |
| 2017 | $694 | $76 | $230 | $388 | $0 |
| 2018 | $733 | $76 | $230 | $388 | $39 |

Note: Assumes a 5% interest rate and 30 year maturity on all bonds and TPF from Exhibit 330.

1/ Column B + Column C + Column D + Column E

2/ Exhibit 330, Column H, Row 1

3/ Exhibit 330, Column H, Row 2

4/ Exhibit 330, Column H, Row 3

5/ Exhibit 330, Column H, Row 4

Exhibit 33(i)
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**ADJUSTED AIRLINE BACKED GENERAL AIRPORT REVENUE BOND AND THIRD PARTY FINANCING FROM THE OMP**
**(In Millions of 2004 Dollars)**

| Column / Project Name | A Capital Cost With 27.8% Contingency[1] | B Capitalized Interest[2] | C Debt/TPF (Excluding Capitalized Interest)[3] | D Total Debt/TPF[4] | E Year Available for Airline Use |
|---|---|---|---|---|---|
| **O'Hare Modernization Program** | | | | | |
| Program-wide Requirements | $77 | $21 | $53 | $75 | 2009 |
| Preliminary Engineering | $50 | $16 | $40 | $56 | 2009 |
| Wetlands mitigation | $32 | $9 | $23 | $31 | 2009 |
| Noise Mitigation (OMP-Phase 1) | $188 | $33 | $128 | $161 | 2009 |
| NoiseMitigation (OMP-Phase 2) | $106 | $14 | $73 | $87 | 2013 |
| Land Acquisition | $450 | $109 | $310 | $419 | 2009 |
| Design of Runway 9L-27R | $46 | $10 | $32 | $42 | 2007 |
| Construction of Runway 9L-27R | $681 | $104 | $470 | $574 | 2007 |
| Design of Runway 9C-27C | $39 | $10 | $27 | $38 | 2013 |
| Construction of Runway 9C-27C | $813 | $140 | $561 | $701 | 2013 |
| Design of Runway 9R Extension | $9 | $2 | $6 | $8 | 2013 |
| Construction of Runway 9R Extension | $174 | $30 | $120 | $150 | 2013 |
| Design of Runway 10L Extension | $27 | $7 | $19 | $26 | 2009 |
| Construction of Runway 10L Extension | $629 | $127 | $433 | $560 | 2009 |
| Design of Runway10C-28C | $54 | $15 | $37 | $52 | 2009 |
| Construction of Runway10C-28C | $1,151 | $211 | $794 | $1,005 | 2009 |
| Design of Runway10R-28L | $23 | $6 | $16 | $22 | 2013 |
| Construction of Runway 10R-28L | $461 | $80 | $318 | $398 | 2013 |
| Design for Runway 14R/32L Decommissioning/Taxiway Conversion | $6 | $1 | $4 | $6 | 2013 |
| Construction of Runway 14R/32L Decommissioning/Taxiway Conversion | $140 | $24 | $96 | $120 | 2013 |
| Design of Western Airside Concourse | $43 | $10 | $30 | $40 | 2009 |
| Construction of Western Airside Concourse | $726 | $100 | $501 | $601 | 2009 |
| Design of Energy Plant | $5 | $1 | $4 | $5 | 2009 |
| Construction of Energy Plant | $73 | $10 | $51 | $61 | 2009 |
| Design of Fuel Storage and Distribution Improvements | $5 | $1 | $3 | $5 | 2009 |
| Construction of Fuel Storage and Distribution Improvements | $76 | $11 | $53 | $63 | 2009 |
| Design of Western Terminal | $79 | $19 | $55 | $73 | 2013 |
| Construction of Western Terminal | $1,138 | $196 | $785 | $982 | 2013 |
| Design of Western Parking Facilities | $9 | $2 | $6 | $8 | 2013 |
| Construction of Western Parking Facilities | $134 | $23 | $93 | $116 | 2013 |
| Design of Peoplemover | $22 | $6 | $15 | $22 | 2009 |
| Construction of Peoplemover | $533 | $74 | $368 | $441 | 2009 |
| Design of Maintenance Facility | $1 | $0 | $1 | $1 | 2009 |
| Construction of Maintenance Facility | $16 | $2 | $11 | $14 | 2009 |
| Misc Operations Budget Bond Series 2005 | $13 | $2 | $9 | $11 | 2009 |
| Misc Operations Budget Bond Series 2008 | $13 | $2 | $9 | $11 | 2013 |
| City's Land/Environmental Contingency | $240 | $33 | $165 | $199 | 2009 |
| City's Program Contingency Bond Series 2005 | $160 | $22 | $110 | $133 | 2009 |
| City's Program Contingency Bond Series 2008 | $164 | $28 | $113 | $141 | 2013 |
| **OMP Total** | $8,812 | $1,512 | $5,942 | $7,455 | |
| **Capital Improvement Program** | | | | | |
| Airfield Improvements Bond Series 2001 | $293 | $39 | $157 | $196 | 2007 |
| Airfield Improvements Bond Series 2005 | $213 | $23 | $114 | $137 | 2009 |
| Airfield Improvements Bond Series 2008 | $205 | $27 | $110 | $137 | 2013 |
| Airfield Improvements Bond Series 2012 | $306 | $49 | $165 | $214 | 2018 |
| Airfield Improvements Bond Series 2017 | $377 | $60 | $202 | $262 | 2023 |
| Terminal Support Improvements Bond Series 2001 | $139 | $19 | $74 | $93 | 2007 |
| Terminal Support Improvements Bond Series 2005 | $133 | $14 | $71 | $86 | 2009 |
| Terminal Support Improvements Bond Series 2008 | $110 | $15 | $59 | $74 | 2013 |
| Terminal Support Improvements Bond Series 2012 | $166 | $27 | $89 | $115 | 2018 |
| Terminal Support Improvements Bond Series 2017 | $203 | $33 | $108 | $141 | 2023 |
| Terminal Improvements (DT and IT) Bond Series 2001 | $392 | $52 | $209 | $262 | 2007 |
| Terminal Improvements (DT and IT) Bond Series 2005 | $187 | $20 | $100 | $120 | 2009 |
| Terminal Improvements (DT and IT) Bond Series 2008 | $235 | $31 | $125 | $157 | 2013 |
| Terminal Improvements (DT and IT) Bond Series 2012 | $352 | $56 | $188 | $245 | 2018 |
| Terminal Improvements (DT and IT) Bond Series 2017 | $431 | $69 | $230 | $300 | 2023 |
| H&R Improvements Bond Series 2001 | $94 | $13 | $51 | $65 | 2007 |
| H&R Improvements Bond Series 2005 | $45 | $5 | $24 | $29 | 2009 |

Exhibit 33(i)
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**ADJUSTED AIRLINE BACKED GENERAL AIRPORT REVENUE BOND AND THIRD PARTY FINANCING FROM THE OMP**
**(In Millions of 2004 Dollars)**

| Column<br>Project Name | A<br>Capital Cost With 27.6% Contingency[1] | B<br>Capitalized Interest[2] | C<br>Debt/TPF (Excluding Capitalized Interest)[3] | D<br>Total Debt/TPF[4] | E<br>Year Available for Airline Use |
|---|---|---|---|---|---|
| H&R Improvements Bond Series 2008 | $57 | $8 | $30 | $38 | 2013 |
| H&R Improvements Bond Series 2012 | $85 | $14 | $45 | $59 | 2018 |
| H&R Improvements Bond Series 2017 | $104 | $17 | $55 | $72 | 2023 |
| Security Improvements Bond Series 2001 | $159 | $21 | $85 | $106 | 2007 |
| Security Improvements Bond Series 2005 | $39 | $4 | $21 | $25 | 2009 |
| Security Improvements Bond Series 2008 | $80 | $11 | $43 | $54 | 2013 |
| Security Improvements Bond Series 2012 | $121 | $19 | $64 | $84 | 2018 |
| Security Improvements Bond Series 2017 | $145 | $24 | $79 | $103 | 2023 |
| Fueling Improvements Bond Series 2001 | $73 | $10 | $39 | $49 | 2007 |
| Fueling Improvements Bond Series 2005 | $62 | $7 | $33 | $40 | 2009 |
| Fueling Improvements Bond Series 2008 | $55 | $7 | $29 | $36 | 2013 |
| Fueling Improvements Bond Series 2012 | $82 | $13 | $44 | $57 | 2018 |
| Fueling Improvements Bond Series 2017 | $100 | $16 | $54 | $70 | 2023 |
| Noise Mitigation Projects | $46 | $6 | $25 | $31 | 2007 |
| **CIP Total** | $5,093 | $729 | $2,723 | $3,452 | |
| | | | | | |
| **World Gateway Program** | | | | | |
| Taxiway A/B Relocation | $24 | $5 | $24 | $29 | 2009 |
| T1/T2 Expansion | $10 | $2 | $10 | $12 | 2009 |
| Concourse K - Allowance | $93 | $19 | $93 | $112 | 2009 |
| Terminal 2 - Interior Upgrade | $85 | $12 | $85 | $97 | 2007 |
| Taxiway November - Facility Relocations | $32 | $6 | $32 | $38 | 2009 |
| Taxiway M | $102 | $26 | $102 | $128 | 2013 |
| Taxiway November - New | $16 | $4 | $16 | $21 | 2013 |
| Terminal 6 Apron - Support Facility Relocations | $32 | $13 | $32 | $44 | 2013 |
| Terminal 6 Apron - Utility Relocations | $9 | $4 | $9 | $13 | 2013 |
| Terminal 6 - Utility Relocations | $136 | $54 | $136 | $190 | 2013 |
| Terminal 2 - New Concourse - RS Facilities | $109 | $58 | $109 | $167 | 2013 |
| Terminal 4 Apron - Support Facility Relocations | $48 | $19 | $48 | $67 | 2013 |
| Terminal 4 - Facility Relocations | $137 | $56 | $137 | $192 | 2013 |
| Terminal 4 - Drainage Control | $0 | $0 | $0 | $0 | 2013 |
| WGP - Airport Wide Off-Site spoil | $24 | $9 | $24 | $32 | 2013 |
| Terminal 6 Apron - New [beyond 40 feet] | $42 | $11 | $42 | $53 | 2013 |
| Terminal 6 Apron - Grading | $4 | $1 | $4 | $6 | 2013 |
| Terminal 6 Apron - Additional Relocations/Demolitions | $10 | $6 | $10 | $24 | 2013 |
| Terminal 6 Northern Extension - New Apron/Grading | $38 | $10 | $38 | $48 | 2013 |
| Terminal 6 - New Apron [within 40 feet] | $3 | $1 | $3 | $4 | 2013 |
| Terminal 6 - At-Grade Roadway | $24 | $6 | $24 | $30 | 2013 |
| Terminal 6 - ATS Facilities | $158 | $41 | $158 | $198 | 2013 |
| Terminal 6 - Elevated Roadway | $156 | $41 | $156 | $197 | 2013 |
| Terminal 6 - Parking Structure | $130 | $34 | $130 | $163 | 2013 |
| Terminal 6 - Pedestrian Bridge to Parking (2) | $19 | $5 | $19 | $24 | 2013 |
| Terminal 6 - T5 Surface Lot Reconfiguration | $9 | $2 | $9 | $12 | 2013 |
| Terminal 6 - Temporary Roadway | $1 | $0 | $1 | $1 | 2013 |
| Terminal 6 - Utilities | $21 | $6 | $21 | $27 | 2013 |
| Terminal 6 - Terminal 5 Concourse Reconfiguration | $42 | $12 | $42 | $54 | 2013 |
| Terminal 6 - Special Systems | $67 | $19 | $67 | $86 | 2013 |
| Terminal 6 - SFRB Defeasance - Northwest | $11 | $3 | $11 | $13 | 2013 |
| Terminal 6 - SFRB Defeasance - Delta | $39 | $10 | $39 | $48 | 2013 |
| Terminal 6 - New Terminal and Concourse Building | $583 | $167 | $583 | $750 | 2013 |
| Terminal 6 - Loading Bridges and Equipment | $16 | $5 | $16 | $20 | 2013 |
| Terminal 6 - Landscaping | $2 | $0 | $2 | $2 | 2013 |
| Terminal 6 - Baggage Systems | $48 | $14 | $48 | $61 | 2013 |
| Terminal 6 - Apron Demolition | $3 | $1 | $3 | $4 | 2013 |
| Terminal 6 Northern Extension - Baggage Systems | $13 | $3 | $13 | $16 | 2013 |
| Terminal 6 Northern Extension - Loading Bridges and Equipment | $4 | $1 | $4 | $5 | 2013 |
| Terminal 6 Northern Extension - New Concourse | $85 | $21 | $85 | $107 | 2013 |
| Terminal 6 Northern Extension - Special Systems | $11 | $3 | $11 | $13 | 2013 |
| Terminal 6 - Hydrant Fueling and Fuel Pipeline Extension | $9 | $2 | $9 | $11 | 2013 |
| Terminal 6 - Thermal System Tunnel | $89 | $25 | $89 | $115 | 2013 |
| Terminal 6 - Realign. Hydrant Fueling gates M20/ M21 | $2 | $1 | $2 | $3 | 2013 |
| Terminal 6 Northern Extension- Hydrant Fueling/Fuel Pipeline Extension | $3 | $1 | $3 | $4 | 2013 |

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**ADJUSTED AIRLINE BACKED GENERAL AIRPORT REVENUE BOND AND THIRD PARTY FINANCING FROM THE OMP**
**(In Millions of 2004 Dollars)**

| Column | A | B | C | D | E |
|---|---|---|---|---|---|
| Project Name | Capital Cost With 27.6% Contingency[1] | Capitalized Interest[2] | Debt/TPF (Excluding Capitalized Interest)[3] | Total Debt/TPF[4] | Year Available for Airline Use |
| Terminal 2 Apron - New | $0 | $0 | $0 | $0 | 2013 |
| Terminal 2 - Utilities and FAA Tower Controls | $0 | $0 | $0 | $0 | 2013 |
| Terminal 2 - Special Systems | $0 | $0 | $0 | $0 | 2013 |
| Terminal 2 - Rebuild Terminal 2 Airside | $0 | $0 | $0 | $0 | 2013 |
| Terminal 2 - New Concourse (Domestic) | $0 | $0 | $0 | $0 | 2013 |
| Terminal 2 - Loading Bridges and Equipment | $0 | $0 | $0 | $0 | 2013 |
| Terminal 2 - Baggage Systems | $0 | $0 | $0 | $0 | 2013 |
| Terminal 2 - Building Demolition | $0 | $0 | $0 | $0 | 2013 |
| Terminal 2 - Hydrant Fueling and Fuel Pipeline Extension | $0 | $0 | $0 | $0 | 2013 |
| Terminal 4 Apron - New | $51 | $13 | $51 | $64 | 2013 |
| Terminal 4 Apron - Grading | $14 | $3 | $14 | $17 | 2013 |
| Terminal 4 - At-Grade Roadway | $3 | $1 | $3 | $4 | 2013 |
| Terminal 4 - ATS Facilities | $75 | $19 | $75 | $93 | 2013 |
| Terminal 4 - Elevated Roadway | $23 | $6 | $23 | $29 | 2013 |
| Terminal 4 - Elevated Walkway | $7 | $2 | $7 | $9 | 2013 |
| Terminal 4 - Utilities | $35 | $10 | $35 | $45 | 2013 |
| Terminal 4 - Underground Utility Relocation | $51 | $14 | $51 | $64 | 2013 |
| Terminal 4 - Underground Baggage Room Expansion | $80 | $20 | $80 | $101 | 2013 |
| Terminal 4 - Temporary Roadway | $2 | $0 | $2 | $2 | 2013 |
| Terminal 4 - Special Systems | $79 | $20 | $79 | $99 | 2013 |
| Terminal 4 - New Terminal FIS Facilities | $107 | $27 | $107 | $134 | 2013 |
| Terminal 4 - New Terminal (Domestic) | $526 | $133 | $526 | $659 | 2013 |
| Terminal 4 - Loading Bridges and Equipment | $20 | $5 | $20 | $26 | 2013 |
| Terminal 4 - Landscaping | $0 | $0 | $0 | $0 | 2013 |
| Terminal 4 - Demolition and Site Preparation | $10 | $3 | $10 | $13 | 2013 |
| Terminal 4 - Concourse L Demolition | $3 | $1 | $3 | $4 | 2013 |
| Terminal 4 - Baggage Systems | $61 | $15 | $61 | $77 | 2013 |
| Terminal 4 - Hydrant Fueling and Fuel Pipeline Extension | $10 | $3 | $10 | $13 | 2013 |
| Total WGP | $3,666 | $1,030 | $3,666 | $4,696 | |
| **Grand Total** | **$17,371** | **$3,271** | **$12,331** | **$15,602** | |

| Column | F | G | H |
|---|---|---|---|
| Row | Year Available for Airline Use | Total Debt/TPF (Millions of 2004 Dollars) | Annual Interest[5] (Millions of 2004 Dollars) |
| 1 | 2007 | $1,512 | $75.6 |
| 2 | 2009 | $4,605 | $230.2 |
| 3 | 2013 | $7,764 | $388.2 |
| 4 | 2018 | $774 | $38.7 |
| 5 | 2023 | $947 | $47.4 |
| | | $15,602 | |

Note: Excludes Land Support Costs because airlines do not pay for these costs.

1) From Exhibit 327
2) From Exhibit 321
3) Total Capital Cost x % of OARB and Third Party Financing (Exhibit 302)
4) Column C + Column B
5) Assumes a 5% interest rate and 30 year maturity on all bonds and TPF

Exhibit 400
Page 1 of 1

## AN OVERVIEW OF U.S. HUBS AND OTHER LARGE AIRPORTS
## (YE June 30, 2004)

| Airport | Outbound Local O&D Passengers | Enplaned Passengers | Percent Share[1] Local / Connecting Passengers |
|---|---|---|---|
| ATL | 13,199,750 | 38,098,597 | 35% / 65% |
| BNA | 3,470,470 | 3,903,185 | 89% / 11% |
| BOS | 9,906,440 | 10,878,385 | 91% / 9% |
| BWI | 8,356,420 | 9,221,887 | 91% / 9% |
| CLE | 3,538,850 | 4,941,580 | 72% / 28% |
| CLT | 3,063,920 | 10,886,964 | 28% / 72% |
| CVG | 2,312,060 | 10,296,909 | 22% / 78% |
| DCA | 6,328,660 | 6,405,213 | 99% / 1% |
| DEN | 9,933,900 | 17,074,992 | 58% / 42% |
| DFW | 10,209,930 | 24,372,889 | 42% / 58% |
| DTW | 7,244,680 | 15,495,472 | 47% / 53% |
| EWR | 10,420,430 | 14,309,806 | 73% / 27% |
| HOU | 2,871,500 | 3,696,961 | 78% / 22% |
| IAD | 5,109,130 | 7,588,691 | 67% / 33% |
| IAH | 6,365,850 | 15,690,146 | 41% / 59% |
| JFK | 9,845,090 | 14,993,261 | 66% / 34% |
| LAS | 15,063,990 | 16,214,657 | 93% / 7% |
| LAX | 16,673,340 | 26,149,249 | 64% / 36% |
| LGA | 10,811,730 | 10,899,863 | 99% / 1% |
| MCI | 4,501,920 | 4,859,528 | 93% / 7% |
| **MDW** | **6,300,200** | **8,261,980** | **76% / 24%** |
| MEM | 1,997,720 | 5,254,692 | 38% / 62% |
| MIA | 6,189,240 | 13,995,943 | 44% / 56% |
| MKE | 2,739,730 | 2,813,575 | 97% / 3% |
| MSP | 7,381,200 | 15,629,296 | 47% / 53% |
| OAK | 6,315,150 | 6,424,870 | 98% / 2% |
| ORD | 13,718,460 | 32,190,425 | 43% / 57% |
| PHL | 7,576,630 | 11,298,284 | 67% / 33% |
| PHX | 11,145,980 | 17,556,207 | 63% / 37% |
| PIT | 3,489,800 | 7,424,711 | 47% / 53% |
| SEA | 9,746,980 | 12,925,907 | 75% / 25% |
| SFO | 9,193,060 | 13,996,643 | 66% / 34% |
| SJC | 4,799,740 | 5,073,829 | 95% / 5% |
| SLC | 4,875,410 | 8,540,906 | 57% / 43% |
| STL | 4,895,580 | 11,293,282 | 43% / 57% |

Note: Included are both domestic and international passengers, as well as commuter passengers.

Source: U.S. DOT, T-100 Data, and O&D Data, via Data Base Products.

Exhibit 401
Page 1 of 1

## COMPOSITION OF THE FAA'S TAF ENPLANED PASSENGERS

### A. 2002 CY TAF

| | 2002 | Forecast 2003 | 2007 | 2009 | 2013 | 2018 |
|---|---|---|---|---|---|---|
| Local O&D Passengers | 15,956,000 | 16,197,000 | 19,434,500 | 19,692,000 | 22,702,500 | 27,251,500 |
| Connecting Passengers | 15,754,512 | 16,412,000 | 18,508,500 | 19,457,000 | 21,209,500 | 23,120,500 |
| Total Enplanements | 31,710,512 | 32,609,000 | 36,943,000 | 39,149,000 | 43,912,000 | 50,372,000 |
| % Local / Connecting | 50.3% / 49.7% | 49.7%/ 50.3% | 49.9% / 50.1% | 50.3%/ 49.7% | 51.7%/ 48.3% | 54.1% / 45.9% |

### B. 2003 CY TAF[1,2]

| | 2002 | Forecast 2003 | 2007 | 2009 | 2013 | 2018 |
|---|---|---|---|---|---|---|
| Local O&D Passengers | 15,956,000 | 16,695,603 | 20,695,328 | 22,073,232 | 25,296,986 | 30,223,145 |
| Connecting Passengers | 15,754,512 | 16,917,222 | 20,778,404 | 21,809,815 | 23,633,363 | 25,641,679 |
| Total Enplanements | 31,710,512 | 33,612,825 | 41,473,732 | 43,883,047 | 48,930,349 | 55,864,824 |
| % Local / Connecting | 50.3% / 49.7% | 49.7%/ 50.3% | 49.9% / 50.1% | 50.3%/ 49.7% | 51.7%/ 48.3% | 54.1% / 45.9% |

### B. 2004 CY TAF[1,2]

| | 2002 | Forecast 2003 | 2007 | 2009 | 2013 | 2018 |
|---|---|---|---|---|---|---|
| Local O&D Passengers | 15,956,000 | 16,484,267 | 18,943,173 | 20,170,877 | 22,967,721 | 27,326,121 |
| Connecting Passengers | 15,754,512 | 16,703,080 | 19,019,215 | 19,930,163 | 21,457,279 | 23,183,809 |
| Total Enplanements | 31,710,512 | 33,187,347 | 37,962,387 | 40,101,040 | 44,425,001 | 50,509,930 |
| % Local / Connecting | 50.3% / 49.7% | 49.7%/ 50.3% | 49.9% / 50.1% | 50.3%/ 49.7% | 51.7%/ 48.3% | 54.1% / 45.9% |

1/ The distribution of enplanements between domestic and connecting passengers was assumed to be the same as the 2002 TAF. These are not supplied seperately by the FAA in the 2003 or 2004 TAF.

2/ Fiscal years were converted to calendar years using Ricondo and Associates methodology (CY Enplanements$_{(yr=0)}$ = 0.75 FY Enplanements$_{(yr=0)}$ + 0.25 FY Enplanements$_{(yr=1)}$).

Sources: Exhibit 403, FAA, 2003 and 2004 Terminal Area Forecasts.

Chart 402

Page 1 of 2

## MANY HUBS THAT ARE SIMILAR TO ORD IN TERMS OF FEED-POTENTIAL HAVE SUFFICIENT CAPACITY TO HANDLE A SIGNIFICANT PORTION OF O'HARE'S CONNECTING TRAFFIC

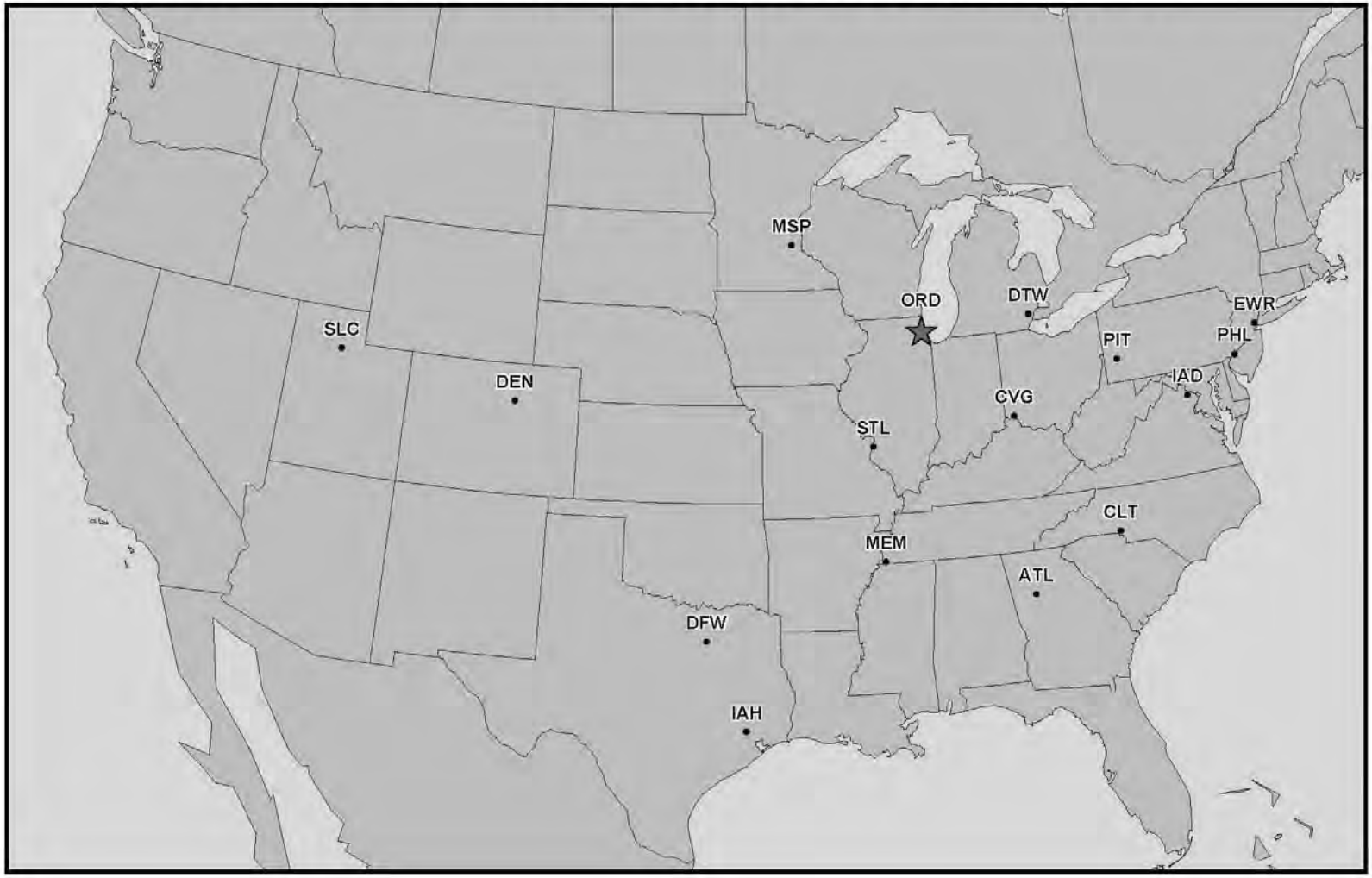


Exhibit 402

Page 2 of 2

## MANY HUBS THAT ARE SIMILAR TO ORD IN TERMS OF FEED-POTENTIAL HAVE SUFFICIENT CAPACITY TO HANDLE A SIGNIFICANT PORTION OF O'HARE'S CONNECTING TRAFFIC

| Airport | Average Annual Capacity | Actual Operations | Capacity Utilization |
|---|---|---|---|
| ATL | 985,829 | 964,793 | 98% |
| CLT | 700,691 | 467,676 | 67% |
| CVG | 663,433 | 515,851 | 78% |
| DEN | 1,153,856 | 566,525 | 49% |
| DFW | 1,451,477 | 813,542 | 56% |
| DTW | 981,887 | 522,641 | 53% |
| EWR | 466,032 | 440,437 | 95% |
| IAH | 710,518 | 521,098 | 73% |
| IAD | 715,473 | 502,519 | 70% |
| MEM | 875,644 | 381,036 | 44% |
| MSP | 633,458 | 540,727 | 85% |
| PHL | 592,505 | 475,741 | 80% |
| PIT | 840,905 | 336,346 | 40% |
| SLC | 700,608 | 413,246 | 59% |
| STL | 564,171 | 289,707 | 51% |

Source: FAA Airport Capacity Benchmark Report 2004; and FAA OPSNET

Exhibit 40J
Page 1 of 1

## ALL FORECAST UNCONSTRAINED ORIGINATING ENPLANEMENTS CAN BE ACCOMMODATED WITH 974,000 TOTAL ANNUAL OPERATIONS

Unconstrained

| | Enplanements | | | % of Enplanements | | |
|---|---|---|---|---|---|---|
| Year | Originating | Connecting | Total | Originating | Connecting | Total |
| 2002 | 15,956,000 | 15,754,512 | 31,710,512 | 50.32% | 49.68% | 100.00% |
| 2003 | 16,197,000 | 16,412,000 | 32,609,000 | 49.67% | 50.33% | 100.00% |
| 2004 | 16,724,652 | 16,909,079 | 33,633,731 | 49.73% | 50.27% | 100.00% |
| 2005 | 17,272,804 | 17,423,673 | 34,696,477 | 49.78% | 50.22% | 100.00% |
| 2006 | 17,842,416 | 17,956,545 | 35,798,961 | 49.84% | 50.16% | 100.00% |
| 2007 | 18,434,500 | 18,508,500 | 36,943,000 | 49.90% | 50.10% | 100.00% |
| 2008 | 19,052,245 | 18,975,005 | 38,027,250 | 50.10% | 49.90% | 100.00% |
| 2009 | 19,692,000 | 19,457,000 | 39,149,000 | 50.30% | 49.70% | 100.00% |
| 2010 | 20,400,539 | 19,880,083 | 40,280,622 | 50.65% | 49.35% | 100.00% |
| 2011 | 21,137,594 | 20,313,024 | 41,450,618 | 50.99% | 49.01% | 100.00% |
| 2012 | 21,904,461 | 20,756,077 | 42,660,538 | 51.35% | 48.65% | 100.00% |
| 2013 | 22,702,500 | 21,209,500 | 43,912,000 | 51.70% | 48.30% | 100.00% |
| 2014 | 23,542,750 | 21,576,668 | 45,119,418 | 52.18% | 47.82% | 100.00% |
| 2015 | 24,416,319 | 21,951,173 | 46,367,492 | 52.66% | 47.34% | 100.00% |
| 2016 | 25,324,628 | 22,333,192 | 47,657,820 | 53.14% | 46.86% | 100.00% |
| 2017 | 26,269,169 | 22,722,905 | 48,992,074 | 53.62% | 46.38% | 100.00% |
| 2018 | 27,251,500 | 23,120,500 | 50,372,000 | 54.10% | 45.90% | 100.00% |

Constrained

| | Enplanements | | | % of Enplanements | | |
|---|---|---|---|---|---|---|
| Year | Originating | Connecting | Total | Originating | Connecting | Total |
| 2002 | 15,956,000 | 15,754,512 | 31,710,512 | 50.32% | 49.68% | 100.00% |
| 2003 | 16,197,000 | 16,412,000 | 32,609,000 | 49.67% | 50.33% | 100.00% |
| 2004 | 16,724,652 | 16,909,079 | 33,633,731 | 49.73% | 50.27% | 100.00% |
| 2005 | 17,272,804 | 17,423,673 | 34,696,477 | 49.78% | 50.22% | 100.00% |
| 2006 | 17,842,416 | 17,956,545 | 35,798,961 | 49.84% | 50.16% | 100.00% |
| **2007** | **18,404,500** | **17,815,000** | **36,219,500** | **50.81%** | **49.19%** | **100.00%** |
| **2008** | **18,877,007** | **18,079,660** | **36,956,667** | **51.08%** | **48.92%** | **100.00%** |
| **2009** | **19,364,500** | **18,353,000** | **37,717,500** | **51.34%** | **48.66%** | **100.00%** |
| **2010** | **19,872,510** | **18,609,053** | **38,481,563** | **51.64%** | **48.36%** | **100.00%** |
| **2011** | **20,397,923** | **18,869,584** | **39,267,507** | **51.95%** | **48.05%** | **100.00%** |
| **2012** | **20,941,491** | **19,134,698** | **40,076,189** | **52.25%** | **47.75%** | **100.00%** |
| **2013** | **21,504,000** | **19,404,500** | **40,908,500** | **52.57%** | **47.43%** | **100.00%** |
| **2014** | **22,121,290** | **19,559,403** | **41,680,693** | **53.07%** | **46.93%** | **100.00%** |
| **2015** | **22,756,546** | **19,716,075** | **42,472,621** | **53.58%** | **46.42%** | **100.00%** |
| **2016** | **23,410,299** | **19,874,547** | **43,284,846** | **54.08%** | **45.92%** | **100.00%** |
| **2017** | **24,083,095** | **20,034,845** | **44,117,940** | **54.59%** | **45.41%** | **100.00%** |
| **2018** | **24,775,500** | **20,197,000** | **44,972,500** | **55.09%** | **44.91%** | **100.00%** |

Adjusted Constrained

| | Enplanements | | | % of Enplanements | | |
|---|---|---|---|---|---|---|
| Year | Originating | Connecting | Total | Originating | Connecting | Total |
| 2002 | 15,956,000 | 15,754,512 | 31,710,512 | 50.32% | 49.68% | 100.00% |
| 2003 | 16,197,000 | 16,412,000 | 32,609,000 | 49.67% | 50.33% | 100.00% |
| 2004 | 16,724,652 | 16,909,079 | 33,633,731 | 49.73% | 50.27% | 100.00% |
| 2005 | 17,272,804 | 17,423,673 | 34,696,477 | 49.78% | 50.22% | 100.00% |
| 2006 | 17,842,416 | 17,956,545 | 35,798,961 | 49.84% | 50.16% | 100.00% |
| **2007** | **18,434,500** | **17,785,000** | **36,219,500** | **50.90%** | **49.10%** | **100.00%** |
| **2008** | **19,052,245** | **17,904,422** | **36,956,667** | **51.55%** | **48.45%** | **100.00%** |
| **2009** | **19,692,000** | **18,025,500** | **37,717,500** | **52.21%** | **47.79%** | **100.00%** |
| **2010** | **20,400,539** | **18,081,024** | **38,481,563** | **53.01%** | **46.99%** | **100.00%** |
| **2011** | **21,137,594** | **18,129,913** | **39,267,507** | **53.83%** | **46.17%** | **100.00%** |
| **2012** | **21,904,461** | **18,171,728** | **40,076,189** | **54.66%** | **45.34%** | **100.00%** |
| **2013** | **22,702,500** | **18,206,000** | **40,908,500** | **55.50%** | **44.50%** | **100.00%** |
| **2014** | **23,542,750** | **18,137,943** | **41,680,693** | **56.48%** | **43.52%** | **100.00%** |
| **2015** | **24,416,319** | **18,056,302** | **42,472,621** | **57.49%** | **42.51%** | **100.00%** |
| **2016** | **25,324,628** | **17,960,218** | **43,284,846** | **58.51%** | **41.49%** | **100.00%** |
| **2017** | **26,269,169** | **17,848,771** | **44,117,940** | **59.54%** | **40.46%** | **100.00%** |
| **2018** | **27,251,500** | **17,721,000** | **44,972,500** | **60.60%** | **39.40%** | **100.00%** |

Build = Constrained at 974,000 Operations per the FAA in the DEIS

1/ Adjusted by accommodating all the originating passengers from the unconstrained forecast.

Source: Leigh Fisher Associates, Summary of Annual Enplaned Passengers ORD EIS Forecasts, (October 26, 2004)

UNITED AIRLINES

Exhibit 404
Page 1 of 1

January 22, 1996

Laurie Stone
President
Greater O'Hare Assoc. of Industry & Commerce
1050 Busse Road, Suite 100
Bensenville, IL 60106

Dear Laurie Stone:

Over the past several years, much discussion and debate has taken place concerning where a new airport for metropolitan Chicago should be built, not whether it is actually needed. The assumption upon which the third airport debate has been centered is the myth that O'Hare Airport is at or near capacity.

Capacity at a hub airport is defined in terms of available aircraft seats, not flights. The myth that Chicago airports are nearing capacity has been proffered by uninformed groups and individuals who lack a basic understanding of the aviation industry's economics and operational methods. Blind acceptance of their definition of airport capacity can be very costly and will cause mortal damage to Illinois' economy.

Although O'Hare is the largest and most successful hub airport in the world, about 45% of O'Hare's 66 million annual passengers have Chicago as their point of origin or destination (local passengers). The remaining 55% are connecting to other planes destined for other places. The airlines have the ability to route connecting passengers through other hubs thus accommodating local passengers or increase in local demand. Local passengers have the priority. Additionally, last year, planes taking off from O'Hare had almost 37,000,000 unused seats available for local passengers.

**In reality, the Chicago Metropolitan area will not need a new airport for decades.**

We would like to remind you that the sixteen major airlines in the United States are opposed to a new airport. In a letter to Gov. Jim Edgar on January 17, 1995, we stated:

> "The airlines and their passengers and shippers have invested huge amounts -- measured in billions of dollars -- at O'Hare and Midway. We cannot afford to either abandon or underutilize these investments . . . Thus, the creation of another airport at Peotone will impose substantial and unnecessary costs on Illinois taxpayers without any commensurate benefit."

Sincerely,

Herb Gardner
United Airlines

Bill Hood
American Airlines

MJ 1336

Exhibit 405
Page 1 of 1

**FEWER PASSENGERS WILL USE O'HARE IN 2018 IF THE OMP IS BUILT THAN IF OPERATIONS ARE CONSTRAINED AT 974,000**
**(Based on the 2002 TAF)**

| Row | | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Campbell-Hill Adjusted Constrained Enplanements (Current ORD Load Factor)[1] | 36,943,000 | 38,027,250 | 39,149,000 | 40,280,622 | 41,450,616 | 42,660,536 | 43,912,000 | 44,337,032 | 44,768,329 | 45,206,981 | 45,650,076 | 46,100,708 |
| 2 | Adjusted Enplanements If the OMP Is Built[2] | 36,512,393 | 37,596,233 | 37,404,889 | 38,533,559 | 39,700,587 | 40,907,522 | 39,422,440 | 40,716,369 | 41,985,584 | 43,298,084 | 44,655,585 | 45,834,723 |
| 3 | Difference[3] | 430,607 | 431,017 | 1,744,111 | 1,747,063 | 1,750,031 | 1,753,016 | 4,489,560 | 3,620,663 | 2,782,745 | 1,907,896 | 994,491 | 265,985 |

| Row | | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | Campbell-Hill Adjusted Constrained Enplanements (DEIS Load Factor)[4] | 36,943,000 | 38,027,250 | 39,149,000 | 40,280,622 | 41,450,616 | 41,983,758 | 42,532,233 | 43,176,681 | 43,833,001 | 44,501,423 | 45,182,161 | 45,875,515 |
| 5 | Adjusted Enplanements If the OMP Is Built[2] | 36,512,393 | 37,596,233 | 37,404,889 | 38,533,559 | 39,700,587 | 40,907,522 | 39,422,440 | 40,716,369 | 41,985,584 | 43,298,084 | 44,655,585 | 45,834,723 |
| 6 | Difference[5] | 430,607 | 431,017 | 1,744,111 | 1,747,063 | 1,750,031 | 1,076,237 | 3,109,792 | 2,460,312 | 1,847,417 | 1,203,339 | 526,596 | 40,793 |

1/ From Exhibit 401, Row 8

2/ Includes the decrease in passengers due to the increase in fares caused by the OMP. See Exhibit 320, Column E

3/ Row 1 - Row 2

4/ From Exhibit 402, Row 8

5/ Row 4 - Row 5

Exhibit 406
Page 1 of 1

## LOAD FACTOR FOR UNITED AND AMERICAN AT ORD

| | 12 Months Ended September 30, 2004 | Seat Departures | % Departures |
|---|---|---|---|
| American | 76.6% | 13,770,824 | 42.7% |
| United | 78.5% | 18,509,753 | 57.3% |
| Total | 77.7% | 32,280,577 | |

Source: U.S. DOT T-100 data, for year ended September 30, 2004, via Data Base Products.

Exhibit 407
Page 1 of 1

## IF THE AIRLINES INCREASE AIRCRAFT SIZE TO 1998 LEVELS AND EXPERIENCE CURRENT LOAD FACTORS O'HARE WILL NOT LOSE ANY PASSENGERS UNTIL 2014

| Row | | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DEIS Constrained Air Carrier Passenger Operations[1] | 607,200 | 611,137 | 615,100 | 620,479 | 625,905 | 631,379 | 636,900 | 639,538 | 642,187 | 644,847 | 647,518 | 650,200 |
| 2 | DEIS Constrained Commuter Passenger Operations[1] | 297,900 | 292,959 | 288,100 | 281,796 | 275,630 | 269,599 | 263,700 | 260,776 | 257,884 | 255,025 | 252,197 | 249,400 |
| 3 | Total DEIS Constrained Passenger Operations[2] | 905,100 | 904,096 | 903,200 | 902,275 | 901,535 | 900,978 | 900,600 | 900,314 | 900,071 | 899,872 | 899,715 | 899,600 |
| 4 | Total DEIS Constrained Passenger Departures[3] | 452,550 | 452,048 | 451,600 | 451,138 | 450,768 | 450,489 | 450,300 | 450,157 | 450,036 | 449,936 | 449,857 | 449,800 |
| 5 | Load Factor[4] | 77.7% | 77.7% | 77.7% | 77.7% | 77.7% | 77.7% | 77.7% | 77.7% | 77.7% | 77.7% | 77.7% | 77.7% |
| 6 | DEIS Unconstrained Enplanements[5] | 36,943,000 | 38,027,250 | 39,149,000 | 40,280,622 | 41,450,618 | 42,660,538 | 43,912,000 | 45,119,418 | 46,367,492 | 47,657,820 | 48,992,074 | 50,372,000 |
| 7 | Aircraft Size Needed to Accommodate DEIS Unconstrained Enplanements (Seats)[6] | 105 | 108 | 112 | 115 | 118 | 122 | 126 | 127 | 128 | 129 | 131 | 132 |
| 8 | Campbell-Hill Adjusted Constrained Enplanements[7] | 36,943,000 | 38,027,250 | 39,149,000 | 40,280,622 | 41,450,618 | 42,660,538 | 43,912,000 | 44,337,032 | 44,768,329 | 45,205,981 | 45,650,076 | 46,100,708 |
| 9 | Unaccomodated Connecting Enplanements[8] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 782,386 | 1,599,163 | 2,451,839 | 3,341,998 | 4,271,292 |
| 10 | Percent Unaccomodated[9] | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 1.7% | 3.4% | 5.1% | 6.8% | 8.5% |

1/ 2007, 2009, 2013 and 2018 operations from FAA, O'Hare Modernization Draft Environmental Impact Statement, p. B-30, (January 2005). The operations from the years in between were calculated using compound annual growth rates.

2/ Row 1 + Row 2

3/ Row 3 /2

4/ Weighted Average Load Factor of United and American Departures for the 12 Months Ended September 2004. Exhibit 403

5/ Leigh Fisher Associates, Summary of Annual Enplaned Passengers ORD EIS Forecasts, (October 26, 2004).

6/ Row 6/ Row 5 / Row 4
Aircraft size assumed to grow only 1% annually once it reaches approximately the April 1998 aircraft size of 127 seats (2013)

7/ Row 4 x Row 5 x Row 7

8/ Row 8 - Row 6

9/ Row 9 / Row 6

Exhibit 408
Page 1 of 1

## IF THE AIRLINES INCREASE AIRCRAFT SIZE TO 1998 LEVELS AND EXPERIENCE DEIS LOAD FACTORS O'HARE WILL NOT LOSE ANY PASSENGERS UNTIL 2012

| Row | | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DEIS Constrained Air Carrier Passenger Operations[1] | 607,200 | 611,137 | 615,100 | 620,479 | 625,905 | 631,379 | 636,900 | 639,538 | 642,187 | 644,847 | 647,518 | 650,200 |
| 2 | DEIS Constrained Commuter Passenger Operations[1] | 297,900 | 292,959 | 288,100 | 281,796 | 275,630 | 269,599 | 263,700 | 260,776 | 257,884 | 255,025 | 252,197 | 249,400 |
| 3 | Total DEIS Constrained Passenger Operations[2] | 905,100 | 904,096 | 903,200 | 902,275 | 901,535 | 900,978 | 900,600 | 900,314 | 900,071 | 899,872 | 899,715 | 899,600 |
| 4 | Total DEIS Constrained Passenger Departures[3] | 452,550 | 452,048 | 451,600 | 451,138 | 450,768 | 450,489 | 450,300 | 450,157 | 450,036 | 449,936 | 449,857 | 449,800 |
| 5 | Load Factor[4] | 71% | 71% | 72% | 72% | 72% | 73% | 73% | 73% | 74% | 74% | 75% | 75% |
| 6 | DEIS Unconstrained Enplanements[5] | 36,943,000 | 38,027,250 | 39,149,000 | 40,280,622 | 41,450,618 | 42,660,539 | 43,912,000 | 45,119,418 | 46,367,492 | 47,657,820 | 48,992,074 | 50,372,000 |
| 7 | Aircraft Size Needed to Accommodate DEIS Unconstrained Enplanements (Seats)[6] | 115 | 118 | 120 | 124 | 127 | 128 | 129 | 131 | 132 | 133 | 135 | 136 |
| 8 | Campbell-Hill Adjusted Constrained Enplanements[7] | 36,943,000 | 38,027,250 | 39,149,000 | 40,280,622 | 41,450,618 | 41,983,758 | 42,532,233 | 43,176,681 | 43,833,001 | 44,501,423 | 45,182,181 | 45,875,515 |
| 9 | Unaccomodated Connecting Enplanements[8] | 0 | 0 | 0 | 0 | 0 | 676,780 | 1,379,767 | 1,942,737 | 2,534,491 | 3,156,397 | 3,809,893 | 4,496,485 |
| 10 | Percent Unaccomodated[9] | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 1.6% | 3.1% | 4.3% | 5.5% | 6.6% | 7.8% | 8.9% |

1/ 2007, 2009, 2013 and 2018 operations from FAA, O'Hare Modernization Draft Environmental Impact Statement, p. B-30, (January 2005). The operations from the years in between were calculated using compound annual growth rates.

2/ Row 1 + Row 2

3/ Row 3 / 2

4/ 2007, 2009, 2013 and 2018 load factors from FAA, O'Hare Modernization Draft Environmental Impact Statement, p. B-13, (January 2005). The load factors from the years in between were calculated using compound annual growth rates

5/ Leigh Fisher Associates, Summary of Annual Enplaned Passengers ORD EIS Forecasts, (October 26, 2004)

6/ Row 6/ Row 5 / Row 4
Aircraft Size assumed to grow only 1% annually once it reaches approximately the April 1998 aircraft size of 127 seats (2011)

7/ Row 4 x Row 5 x Row 7

## CHICAGO WILL NOT NEED THE OMP IF UNITED FAILS OR REDUCES SIGNIFICANTLY ITS O'HARE OPERATIONS

Exhibit 500
Page 1 of 1

**Aircraft Operations Forecast Based on Draft EIS**

| | 2003 | 2007 | Δ (%) | 2009 | Δ (%) | 2013 | Δ (%) | 2018 | Δ (%) | 2023 | Δ (%)[4] | 2028 | Δ (%)[4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Air Carrier | | | | | | | | | | | | | |
| Passenger airlines | | | | | | | | | | | | | |
| Domestic | 519,600 | 531,200 | 2.2% | 540,400 | 1.7% | 561,200 | 3.8% | 591,800 | 5.5% | 624,068 | 5.5% | 658,096 | 5.5% |
| International | 74,400 | 93,400 | 25.5% | 102,200 | 9.4% | 120,600 | 18.0% | 145,200 | 20.4% | 174,818 | 20.4% | 210,477 | 20.4% |
| **Subtotal** | 594,000 | 624,600 | 5.2% | 642,600 | 2.9% | 681,800 | 6.1% | 737,000 | 8.1% | 798,886 | 8.4% | 868,574 | 8.7% |
| Cargo airlines | 20,800 | 21,700 | 4.3% | 22,100 | 1.8% | 22,900 | 3.6% | 24,100 | 5.2% | 25,363 | 5.2% | 26,692 | 5.2% |
| **Subtotal** | **614,800** | **646,300** | 5.1% | **664,700** | 2.8% | **704,700** | 6.0% | **761,100** | 8.0% | **824,249** | 8.3% | **895,266** | 8.6% |
| Commuter/air taxi | | | | | | | | | | | | | |
| Passenger airlines | 303,400 | 332,800 | 9.7% | 343,800 | 3.3% | 365,400 | 6.3% | 382,600 | 4.7% | 400,610 | 4.7% | 419,467 | 4.7% |
| Other | 17,400 | 20,800 | 19.5% | 21,500 | 3.4% | 21,600 | 0.5% | 19,200 | -11.1% | 17,067 | -11.1% | 15,170 | -11.1% |
| **Subtotal** | **320,800** | **353,600** | 10.2% | **365,300** | 3.3% | **387,000** | 5.9% | **401,800** | 3.8% | **417,676** | 4.0% | **434,637** | 4.1% |
| General Aviation | 24,700 | 26,200 | 6.1% | 27,000 | 3.1% | 28,700 | 6.3% | 30,900 | 7.7% | 33,269 | 7.7% | 35,819 | 7.7% |
| Military | 200 | 200 | 0.0% | 200 | 0.0% | 200 | 0.0% | 200 | 0.0% | 200 | 0.0% | 200 | 0.0% |
| **Total** | **960,500** | **1,026,300** | 6.9% | **1,057,200** | 3.0% | **1,120,600** | 6.0% | **1,194,000** | 6.6% | **1,275,394** | 6.8% | **1,365,922** | 7.1% |
| **Adjustments** | | | | | | | | | | | | | |
| Incremental American[2] | 155,177 | 162,908 | 5.0% [1] | 166,716 | 2.3% [1] | 174,711 | 4.8% [1] | 183,724 | 5.2% [1] | 193,201 | 5.2% [1] | 203,168 | 5.2% [1] |
| Eliminate United Operations[2] | (449,680) | (472,082) | 5.0% [1] | (483,119) | 2.3% [1] | (506,286) | 4.8% [1] | (532,404) | 5.2% [1] | (559,868) | 5.2% [1] | (588,750) | 5.2% [1] |
| Incremental Other Domestic[3] | 9,177 | 9,634 | 5.0% [1] | 9,860 | 2.3% [1] | 10,332 | 4.8% [1] | 10,865 | 5.2% [1] | 11,426 | 5.2% [1] | 12,015 | 5.2% [1] |
| Incremental Foreign Flag[3] | (417) | (524) | 25.5% [5] | (573) | 9.4% [5] | (676) | 18.0% [5] | (814) | 20.4% [5] | (980) | 20.4% [5] | (1,180) | 20.4% [5] |
| **Adjusted Total** | **674,757** | **726,236** | | **750,084** | | **798,681** | | **855,371** | | **919,173** | | **991,175** | |
| **Difference** | **(285,743)** | **(300,064)** | | **(307,116)** | | **(321,919)** | | **(338,629)** | | **(356,221)** | | **(374,747)** | |
| | **-29.7%** | **-29.2%** | | **-29.0%** | | **-28.7%** | | **-28.4%** | | **-27.9%** | | **-27.4%** | |

**If United fails, O'Hare operations will not surpass 2003 actual levels until 2025.**

1/ Blended growth rate for domestic passenger air carriers and passenger commuter/air taxi airlines.
2/ Source: Appendix E, Exhibit E-4.
3/ Source: Appendix E, Exhibit E-5.
4/ 2013-2018 growth rate assumed to continue through 2028.
5/ Growth rate for international passenger air carriers.
Source: Campbell-Hill Aviation Group proprietary analysis and Draft EIS, Appendix B, Table B-6: Additional Forecast Detail - Unconstrained Annual Demand.

## ENPLANEMENTS AT O'HARE WILL DECLINE BY 39% IF UNITED FAILS OR REDUCES SIGNIFICANTLY ITS O'HARE OPERATIONS

Exhibit 501
Page 1 of 1

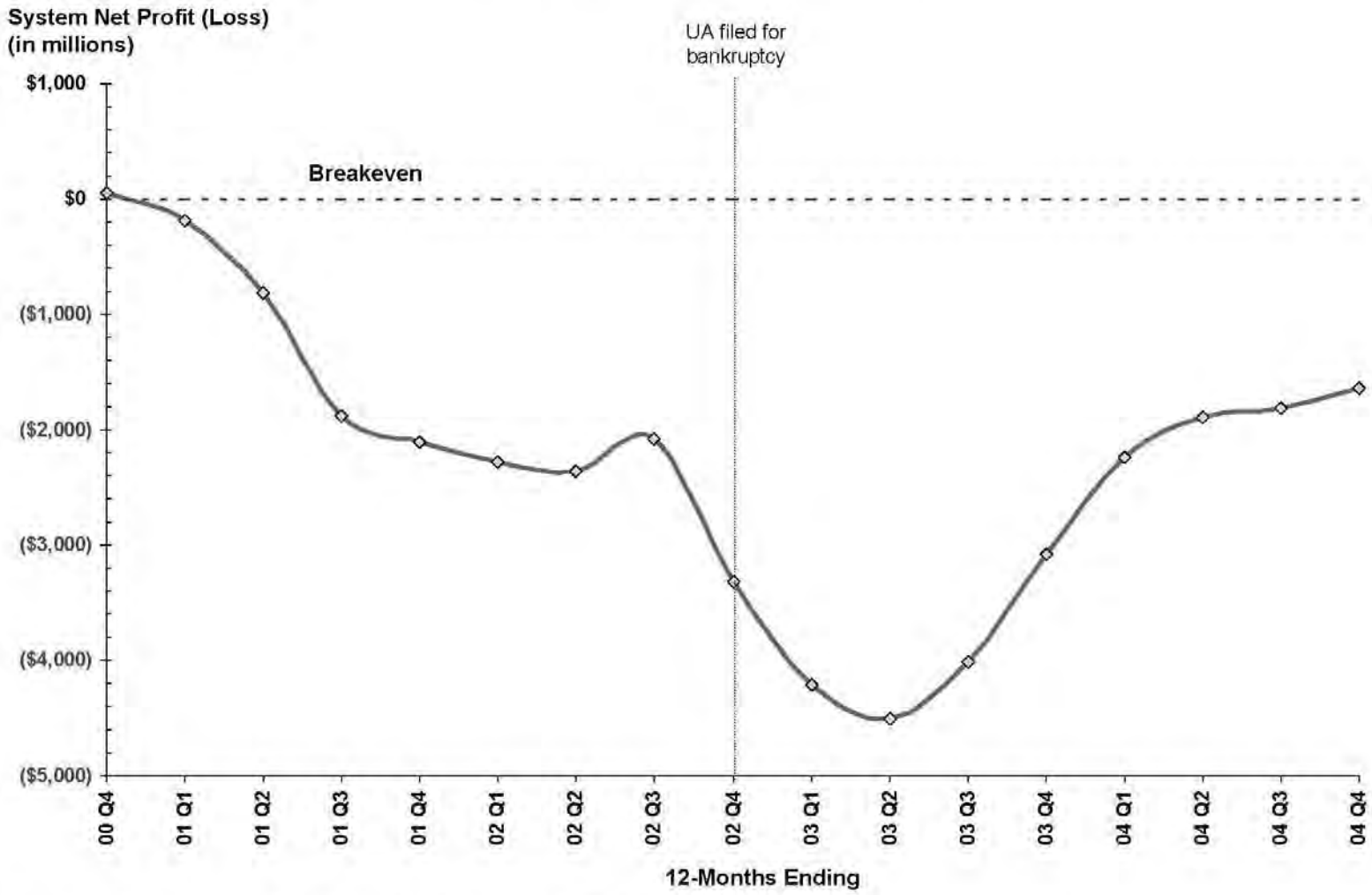
**Enplanements Forecast Based on Draft EIS**

| | 2003 | 2007 | Δ (%) | 2009 | Δ (%) | 2013 | Δ (%) | 2018 | Δ (%)[4] | 2023 | Δ (%)[4] | 2028 | Δ (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total (Status Quo)** | 32,609,000 | 36,943,000 | 13.3% | 39,149,000 | 6.0% | 43,912,000 | 12.2% | 50,372,000 | 14.7% | 57,782,346 | 14.7% | 66,282,846 | 14.7% |
| **Adjustment to Eliminate United Enplanements[1]** | (16,564,888) | (18,766,495) | 13.3% | (19,887,110) | 6.0% | (22,306,644) | 12.2% | (25,588,228) | 14.7% | (29,352,573) | 14.7% | (33,670,701) | 14.7% |
| Actual American Enplanements[1] | 11,326,902 | 12,832,338 | 13.3% | 13,598,604 | 6.0% | 15,253,056 | 12.2% | 17,496,970 | 14.7% | 20,070,991 | 14.7% | 23,023,683 | 14.7% |
| American Onboard Passengers if United Fails[2] | 14,731,950 | 16,689,946 | 13.3% | 17,686,563 | 6.0% | 19,838,370 | 12.2% | 22,756,840 | 14.7% | 26,104,654 | 14.7% | 29,944,972 | 14.7% |
| Enplanement/Onboard Factor for American at O'Hare[1] | 99.62% | 99.62% | | 99.62% | | 99.62% | | 99.62% | | 99.62% | | 99.62% | |
| American Enplanements if United Fails | 14,675,733 | 16,626,257 | | 17,619,071 | | 19,762,667 | | 22,670,000 | | 26,005,038 | | 29,830,702 | |
| **Incremental American Enplanements if United Fails** | 3,348,832 | 3,793,918 | | 4,020,467 | | 4,509,611 | | 5,173,030 | | 5,934,047 | | 6,807,019 | |
| **Other Airline Incremental Domestic Enplanements[3]** | 311,274 | 352,645 | 13.3% | 373,703 | 6.0% | 419,169 | 12.2% | 480,834 | 14.7% | 551,571 | 14.7% | 632,714 | 14.7% |
| **Incremental Foreign Flag Enplanements[3]** | 114,756 | 130,008 | 13.3% | 137,772 | 6.0% | 154,533 | 12.2% | 177,267 | 14.7% | 203,346 | 14.7% | 233,260 | 14.7% |
| **Adjusted Total Enplanements** | 19,818,975 | 22,453,077 | | 23,793,831 | | 26,688,670 | | 30,614,964 | | 35,118,736 | | 40,285,138 | |
| **Difference (Reduction)** | (12,790,025) -39.2% | (14,489,923) -39.2% | | (15,355,169) -39.2% | | (17,223,330) -39.2% | | (19,757,096) -39.2% | | (22,663,610) -39.2% | | (25,997,708) -39.2% | |

1/ Source: U.S. DOT, T-100 data for year ended December 31, 2003 via Data Base Products, Inc.
2/ Source: Appendix E, Exhibit E-4.
3/ Source: Appendix E, Exhibit E-5.
4/ 2013-2018 growth rate assumed to continue through 2028.
Source: Leigh Fisher Associates, Summary of Enplaned Passengers ORD EIS Forecasts (October 26, 2004).

Exhibit 502
Page 1 of 2

## UNITED AIRLINES' NET PROFIT (LOSS)




Source: Page 2 for all time periods, except for CY 2004. The source for the latter is UA's web site.

Exhibit 502
Page 2 of 2

## UNITED AIRLINES SELECTED FORM 41 PROFIT AND LOSS DATA
(System)

| | System | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Year & Quarter | 7199.0 Total Operating Exp. | 4999.0 Total Operating Revenue | 7999.0 Operating Profit/Loss | 9899.0 Net Income | 5145.1 FO- AC Fuel | z320.0 ASM's - Sch. + NonSch.(000's) | CASM (¢) | CASM (¢) Less Fuel |
| 2000 1 | $ 4,245,798,000 | $ (4,532,976,000) | $ (287,178,000) | $ 81,090,000 | $ 491,465,000 | 42,526,128 | 9.98 | 8.83 |
| 2000 2 | 4,446,401,000 | (5,097,939,000) | (651,538,000) | (330,840,000) | 538,390,000 | 44,075,854 | 10.09 | 8.87 |
| 2000 3 | 4,945,291,000 | (4,915,785,000) | 29,506,000 | 111,143,000 | 613,944,000 | 45,049,916 | 10.96 | 9.61 |
| 2000 4 | 4,952,962,000 | (4,784,580,000) | 168,382,000 | 86,983,000 | 669,250,000 | 43,840,632 | 11.30 | 9.77 |
| 2001 1 | 4,845,800,000 | (4,417,662,000) | 428,138,000 | 321,398,000 | 619,921,000 | 42,094,684 | 11.51 | 10.04 |
| 2001 2 | 5,003,020,000 | (4,648,239,000) | 354,781,000 | 293,716,000 | 656,854,000 | 44,691,908 | 11.19 | 9.72 |
| 2001 3 | 6,157,567,000 | (4,096,978,000) | 2,060,589,000 | 1,179,220,000 | 616,094,000 | 43,022,259 | 14.31 | 12.88 |
| 2001 4 | 3,824,082,000 | (2,924,490,000) | 899,592,000 | 315,875,000 | 434,690,000 | 35,041,577 | 10.91 | 9.67 |
| 2002 1 | 3,901,509,000 | (3,195,591,000) | 705,918,000 | 495,902,000 | 365,317,000 | 34,211,153 | 11.40 | 10.34 |
| 2002 2 | 4,241,439,000 | (3,706,075,000) | 535,364,000 | 363,252,000 | 436,599,000 | 37,541,272 | 11.30 | 10.14 |
| 2002 3 | 4,343,665,000 | (3,644,641,000) | 699,024,000 | 911,319,000 | 500,317,000 | 39,860,347 | 10.90 | 9.64 |
| 2002 4 | 4,450,798,000 | (3,369,294,000) | 1,081,504,000 | 1,555,308,000 | 489,551,000 | 37,216,901 | 11.96 | 10.64 |
| 2003 1 | 3,976,389,000 | (3,107,212,000) | 869,177,000 | 1,385,987,000 | 535,535,000 | 34,633,077 | 11.48 | 9.94 |
| 2003 2 | 3,469,676,000 | (3,034,759,000) | 434,917,000 | 654,689,000 | 421,973,000 | 32,066,701 | 10.82 | 9.50 |
| 2003 3 | 3,749,397,000 | (3,757,353,000) | (7,956,000) | 415,641,000 | 477,869,000 | 35,247,858 | 10.64 | 9.28 |
| 2003 4 | 3,756,016,000 | (3,498,405,000) | 257,611,000 | 629,909,000 | 503,761,000 | 34,618,550 | 10.85 | 9.39 |
| 2004 1 | 3,930,345,000 | (3,625,990,000) | 304,355,000 | 542,747,000 | 566,193,000 | 34,912,510 | 11.26 | 9.64 |
| 2004 2 | 4,019,084,000 | (3,962,484,000) | 56,600,000 | 302,661,000 | 652,300,000 | 36,228,997 | 11.09 | 9.29 |
| 2004 3 | 4,376,573,000 | (4,225,309,000) | 151,264,000 | 337,586,000 | 760,702,000 | 38,180,400 | 11.46 | 9.47 |
| ***12 Month Moving Totals/Averages*** | | | | | | | | |
| 2000 4 | 18,590,452,000 | (19,331,280,000) | (740,828,000) | (51,624,000) | 2,313,049,000 | 175,492,530 | 10.59 | 9.28 |
| 2001 1 | 19,190,454,000 | (19,215,966,000) | (25,512,000) | 188,684,000 | 2,441,505,000 | 175,061,066 | 10.96 | 9.57 |
| 2001 2 | 19,747,073,000 | (18,766,266,000) | 980,807,000 | 813,240,000 | 2,559,969,000 | 175,677,120 | 11.24 | 9.78 |
| 2001 3 | 20,959,349,000 | (17,947,459,000) | 3,011,890,000 | 1,881,317,000 | 2,562,119,000 | 173,649,463 | 12.07 | 10.59 |
| 2001 4 | 19,830,469,000 | (16,087,369,000) | 3,743,100,000 | 2,110,209,000 | 2,327,559,000 | 164,850,408 | 12.03 | 10.62 |
| 2002 1 | 18,886,178,000 | (14,865,298,000) | 4,020,880,000 | 2,284,713,000 | 2,072,955,000 | 156,966,897 | 12.03 | 10.71 |
| 2002 2 | 18,124,597,000 | (13,923,134,000) | 4,201,463,000 | 2,354,249,000 | 1,852,700,000 | 149,816,261 | 12.10 | 10.86 |
| 2002 3 | 16,310,695,000 | (13,470,797,000) | 2,839,898,000 | 2,086,348,000 | 1,736,923,000 | 148,654,349 | 11.12 | 9.94 |
| 2002 4 | 16,937,411,000 | (13,915,601,000) | 3,021,810,000 | 3,325,781,000 | 1,791,784,000 | 148,829,673 | 11.38 | 10.18 |
| 2003 1 | 17,012,291,000 | (13,827,222,000) | 3,185,069,000 | 4,215,866,000 | 1,962,002,000 | 149,251,597 | 11.40 | 10.08 |
| 2003 2 | 16,240,528,000 | (13,155,906,000) | 3,084,622,000 | 4,507,303,000 | 1,947,376,000 | 143,777,026 | 11.30 | 9.94 |
| 2003 3 | 15,646,260,000 | (13,268,618,000) | 2,377,642,000 | 4,011,625,000 | 1,924,928,000 | 139,164,337 | 11.24 | 9.86 |
| 2003 4 | 14,951,478,000 | (13,397,729,000) | 1,553,749,000 | 3,086,226,000 | 1,939,138,000 | 136,565,986 | 10.95 | 9.53 |
| 2004 1 | 14,905,434,000 | (13,916,507,000) | 988,927,000 | 2,242,986,000 | 1,969,796,000 | 136,845,419 | 10.89 | 9.45 |
| 2004 2 | 15,454,842,000 | (14,844,232,000) | 610,610,000 | 1,890,958,000 | 2,200,123,000 | 141,007,715 | 10.96 | 9.40 |
| 2004 3 | 16,082,018,000 | (15,312,188,000) | 769,830,000 | 1,812,903,000 | 2,482,956,000 | 143,940,457 | 11.17 | 9.45 |

Source: U.S. DOT Form 41 data via Data Base Products.

Exhibit 503
Page 1 of 1

# CONCESSIONS EXCLUDING ELIMINATION/REDUCTION OF PENSION PLANS ACHIEVED BY UNITED AIRLINES

| | | |
|---|---|---|
| • **Total labor concessions:** | | **$2,871 million** |
| – **Concessions approved on April 30, 2003:** | **$2,560 million** | |
| – **Concessions approved on January 31, 2005:** | **$311 million**[1] | |
| • **Total other concessions:** | | **$2,400 million** |
| – **Productivity improvements and airport leases:** | **$1,500 million** | |
| – **Renegotiated aircraft leasing contracts** | **$900 million** | |
| • **All concessions:** | | **$5,271 million** |
| • **Pension relief guaranteed March 2005:** | | **$2.1 billion**[2] |

1/ "The rulings move United a step closer to achieving the *USD$725 million* (emphasis supplied) in annual labor savings it says it needs to exit Chapter 11." Reuters, February 1, 2005, Judge Approves United Pay Cuts.
2/ "The Pension Benefit Guaranty Corporation said it would guarantee payment of an estimated USD$2.1 billion in benefits out of the plan's USD$2.9 billion shortfall." Reuters, March 11, 2005, US Agency To Assume United Airlines Pension Plan.

Source: Exhibits 504 and 505.

Exhibit 504
Page 1 of 1

## IN ADDITION TO THE $2.56 BILLION IN ANNUAL CONCESSIONS THAT UNITED HAS ALREADY OBTAINED FROM ITS LABOR FORCE, THE CARRIER CLAIMS IT NEEDS AN ADDITIONAL $725 MILLION IN ANNUAL LABOR SAVINGS IN ORDER TO EXIT BANKRUPTCY

| Concessions (millions, $) | Time Basis | Source of Concession | Date of Court Approval | Comments | News Source |
|---|---|---|---|---|---|
| *Part of the drive for the additional $725 million* | | | | | |
| 180.00 | annual | Pilots (ALPA) | 31-Jan-05 | | http://news.airwise.com/story/view/1107198920.html |
| 131.00 | annual | Flight attendants (AFA) | 31-Jan-05 | | http://news.airwise.com/story/view/1107198920.html |
| 21.00 | over the next 4 months | Mechanics (AMFA) | 31-Jan-05 | Rejected by the union | http://news.airwise.com/story/view/1106942028.html |
| 332.00 | | | | | |
| *Part of the previous drive* | | | | | |
| 1,100.00 | annual (2003-2008) | Pilots (ALPA) | 30-Apr-03 | | http://www.pd-ual.com/Downloads/MotiontoApproveFiled4302003.pdf |
| 445.00 | annual (2003-2008) | Mechanics (IAM 141) | 30-Apr-03 | | http://www.pd-ual.com/Downloads/MotiontoApproveFiled4302003.pdf |
| 347.00 | annual (2003-2008) | Mechanics (IAM 141M) | 30-Apr-03 | | http://www.pd-ual.com/Downloads/MotiontoApproveFiled4302003.pdf |
| 334.00 | annual (2003-2008) | Salaried and management employees | 30-Apr-03 | | http://www.pd-ual.com/Downloads/MotiontoApproveFiled4302003.pdf |
| 302.00 | annual (2003-2008) | Flight attendants (AFA) | 30-Apr-03 | | http://www.pd-ual.com/Downloads/MotiontoApproveFiled4302003.pdf |
| 4.50 | annual (2003-2008) | Flight controllers (PAFCA) | 30-Apr-03 | | http://www.pd-ual.com/Downloads/MotiontoApproveFiled4302003.pdf |
| 0.56 | annual (2003-2008) | Transport workers (TWU) | 30-Apr-03 | | http://www.pd-ual.com/Downloads/MotiontoApproveFiled4302003.pdf |
| 27.00 | annual (2003-2008) | Other | 30-Apr-03 | | http://www.pd-ual.com/Downloads/MotiontoApproveFiled4302003.pdf |
| 2,560.06 | | | | | |

Exhibit 505
Page 1 of 1

## NON-LABOR CONCESSIONS MADE TO UNITED AIRLINES

| Concessions (millions, $) | Time Basis | Source of Concession | News Source |
|---|---|---|---|
| $1,500.0 | annual | Productivity improvements, outsourcing and revised airport leases | The San Francisco Chronicle, December 14, 2003 |
| $900.0 | annual | Renegotiated aircraft leasing contracts | The San Francisco Chronicle, December 14, 2003 |
| $2,400.0 | | | |

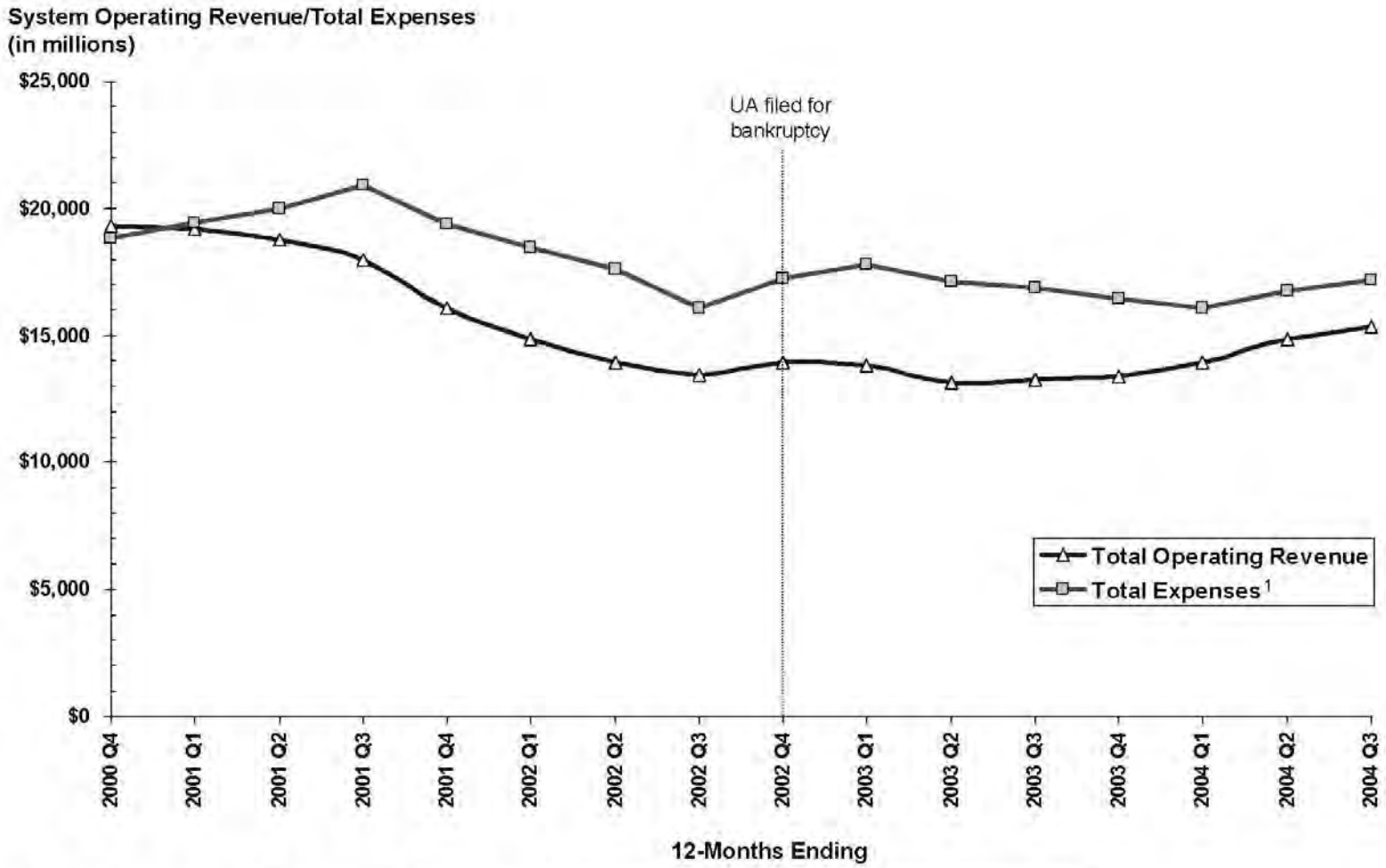
*The relationships of the following concessions to the above-mentioned figures have not been established by research:*

a) "United has cut aircraft expanses about $500 million a year by signing new leases with some creditors and rejecting some planes."--Rocky Mountain News, December 15, 2004

b) "A deal between United and banks that provided $1.3 billion in loans to help the company through the bankruptcy process will reduce the interest rate to 8.5% from 9.5%, according to the May 7 court filing."--Chicago Tribune, May 14, 2004

Exhibit 506
Page 1 of 1

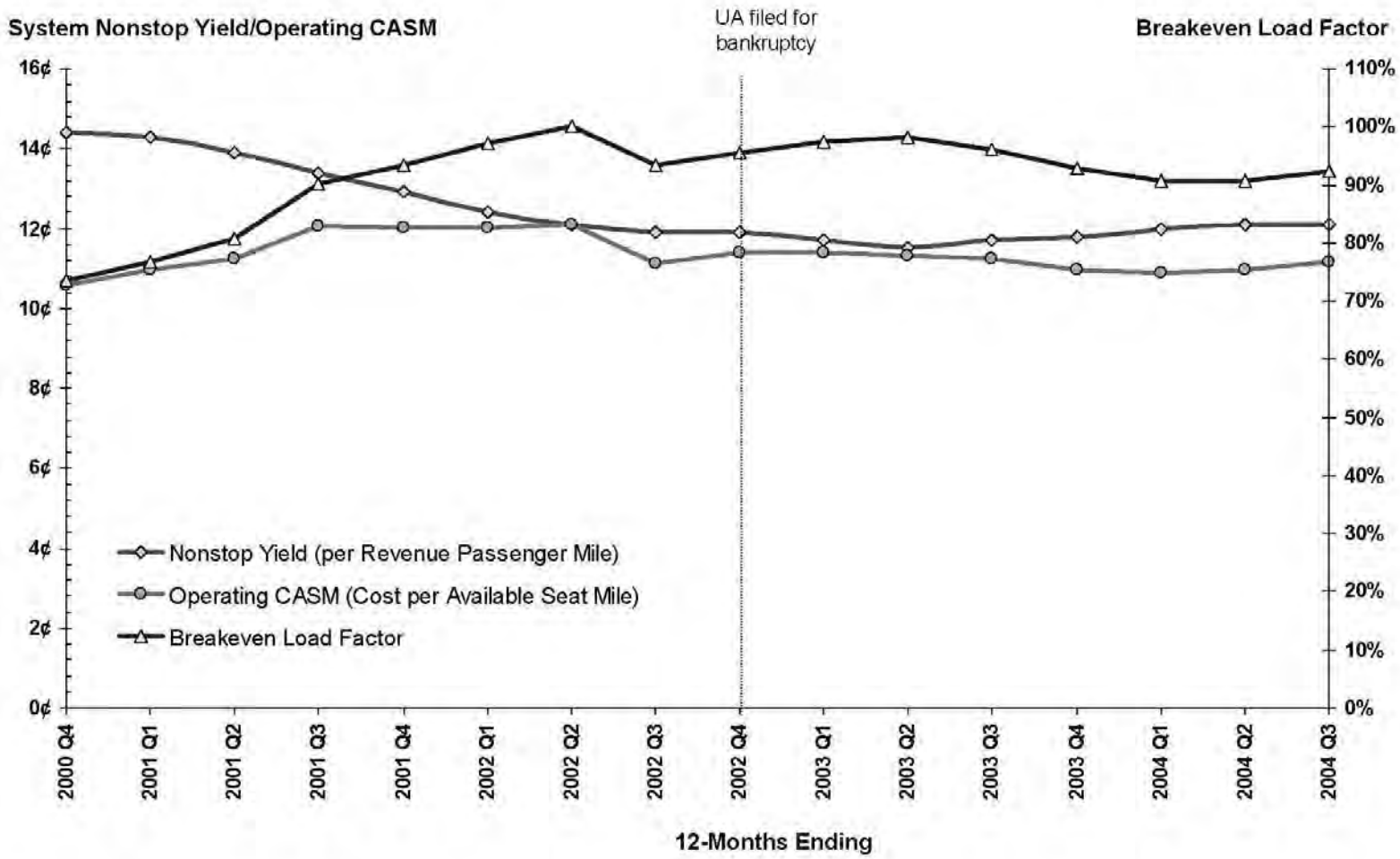
# UNITED AIRLINES' OPERATING REVENUE AND TOTAL EXPENSES




1/ Accounts 8182.0 Nonop-Interest Expense Other, 8181.0 Nonop-Interest on LTD and Capital leases and 8189.0 Other Income and Expense-Net.
Source: Untied Airlines' Form-41 reports, accessed through Data Base Products.

Exhibit 507
Page 1 of 2

## AT UNITED AIRLINES' YIELDS AND OPERATING CASM, ITS BREAKEVEN LOAD FACTOR IS CLOSE TO 100%




Source: Exhibits 502 and page 2 of this exhibit.

Exhibit 507
Page 2 of 2

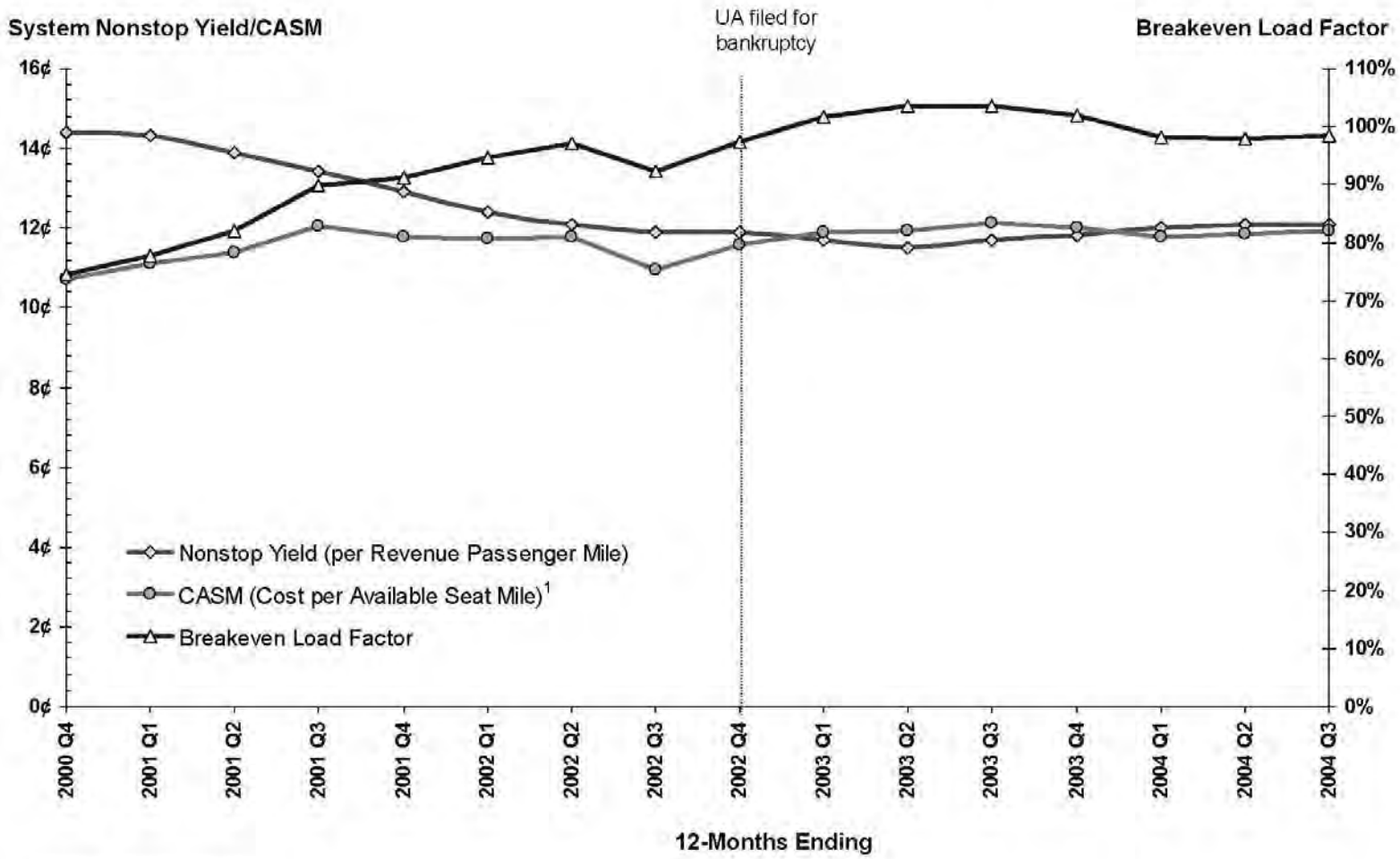
## AT UNITED AIRLINES' YIELDS AND OPERATING CASM, ITS BREAKEVEN LOAD FACTOR IS CLOSE TO 100%

| | United System Domestic and International | | | | |
|---|---|---|---|---|---|
| | | | | Nonstop Yield (¢) | |
| Year And Quarter | Total O&D Passengers | Fared O&D Passengers | Total O&D Revenue | All Passengers | Fared Passengers |
| 2000 1 | 15,027,110 | 13,991,830 | 4,142,139,597 | 14.8 | 16.2 |
| 2000 2 | 16,700,430 | 15,324,290 | 4,699,736,518 | 14.5 | 16.0 |
| 2000 3 | 15,808,500 | 14,322,780 | 4,558,440,692 | 14.3 | 16.0 |
| 2000 4 | 15,554,330 | 14,370,340 | 4,225,840,328 | 13.9 | 15.4 |
| 2001 1 | 14,184,820 | 13,096,290 | 4,006,241,410 | 14.5 | 15.9 |
| 2001 2 | 15,913,160 | 14,510,820 | 4,172,819,092 | 13.1 | 14.5 |
| 2001 3 | 14,703,850 | 13,259,190 | 3,692,293,673 | 12.3 | 13.8 |
| 2001 4 | 11,811,600 | 10,679,250 | 2,700,866,162 | 11.5 | 12.9 |
| 2002 1 | 11,525,820 | 10,468,750 | 2,962,094,941 | 12.4 | 13.8 |
| 2002 2 | 13,164,970 | 11,905,750 | 3,346,505,137 | 12.2 | 13.5 |
| 2002 3 | 14,033,070 | 12,617,290 | 3,383,775,193 | 11.7 | 13.1 |
| 2002 4 | 13,021,960 | 11,779,830 | 3,008,841,932 | 11.3 | 12.5 |
| 2003 1 | 11,965,390 | 10,794,160 | 2,770,818,058 | 11.6 | 12.9 |
| 2003 2 | 12,947,970 | 11,551,780 | 2,849,104,070 | 11.4 | 12.9 |
| 2003 3 | 13,747,670 | 12,305,280 | 3,428,790,691 | 12.2 | 13.7 |
| 2003 4 | 13,375,830 | 12,185,390 | 3,271,461,554 | 12.1 | 13.2 |
| 2004 1 | 12,887,150 | 11,897,230 | 3,209,779,917 | 12.4 | 13.4 |
| 2004 2 | 15,254,710 | 14,132,830 | 3,629,406,664 | 11.9 | 12.9 |
| 2004 3 | 15,984,720 | 14,704,170 | 3,718,604,362 | 11.9 | 13.0 |
| ***12 Month Moving Totals/Averages*** | | | | | |
| 2000 4 | 63,090,370 | 58,009,240 | 17,626,157,135 | 14.4 | 15.9 |
| 2001 1 | 62,248,080 | 57,113,700 | 17,490,258,948 | 14.3 | 15.8 |
| 2001 2 | 61,460,810 | 56,300,230 | 16,963,341,522 | 13.9 | 15.4 |
| 2001 3 | 60,356,160 | 55,236,640 | 16,097,194,503 | 13.4 | 14.9 |
| 2001 4 | 56,613,430 | 51,545,550 | 14,572,220,337 | 12.9 | 14.3 |
| 2002 1 | 53,954,430 | 48,918,010 | 13,528,073,868 | 12.4 | 13.8 |
| 2002 2 | 51,206,240 | 46,312,940 | 12,701,759,913 | 12.1 | 13.5 |
| 2002 3 | 50,535,460 | 45,671,040 | 12,393,241,433 | 11.9 | 13.3 |
| 2002 4 | 51,745,820 | 46,771,620 | 12,701,217,203 | 11.9 | 13.2 |
| 2003 1 | 52,185,390 | 47,097,030 | 12,509,940,320 | 11.7 | 13.0 |
| 2003 2 | 51,968,390 | 46,743,060 | 12,012,539,253 | 11.5 | 12.9 |
| 2003 3 | 51,682,990 | 46,431,050 | 12,057,554,751 | 11.7 | 13.0 |
| 2003 4 | 52,036,860 | 46,836,610 | 12,320,174,373 | 11.8 | 13.2 |
| 2004 1 | 52,958,620 | 47,939,680 | 12,759,136,232 | 12.0 | 13.3 |
| 2004 2 | 55,265,360 | 50,520,730 | 13,539,438,826 | 12.1 | 13.3 |
| 2004 3 | 57,502,410 | 52,919,620 | 13,829,252,497 | 12.1 | 13.1 |

Source: U.S. DOT Form 41 data via Data Base Products.

Exhibit 508
Page 1 of 1

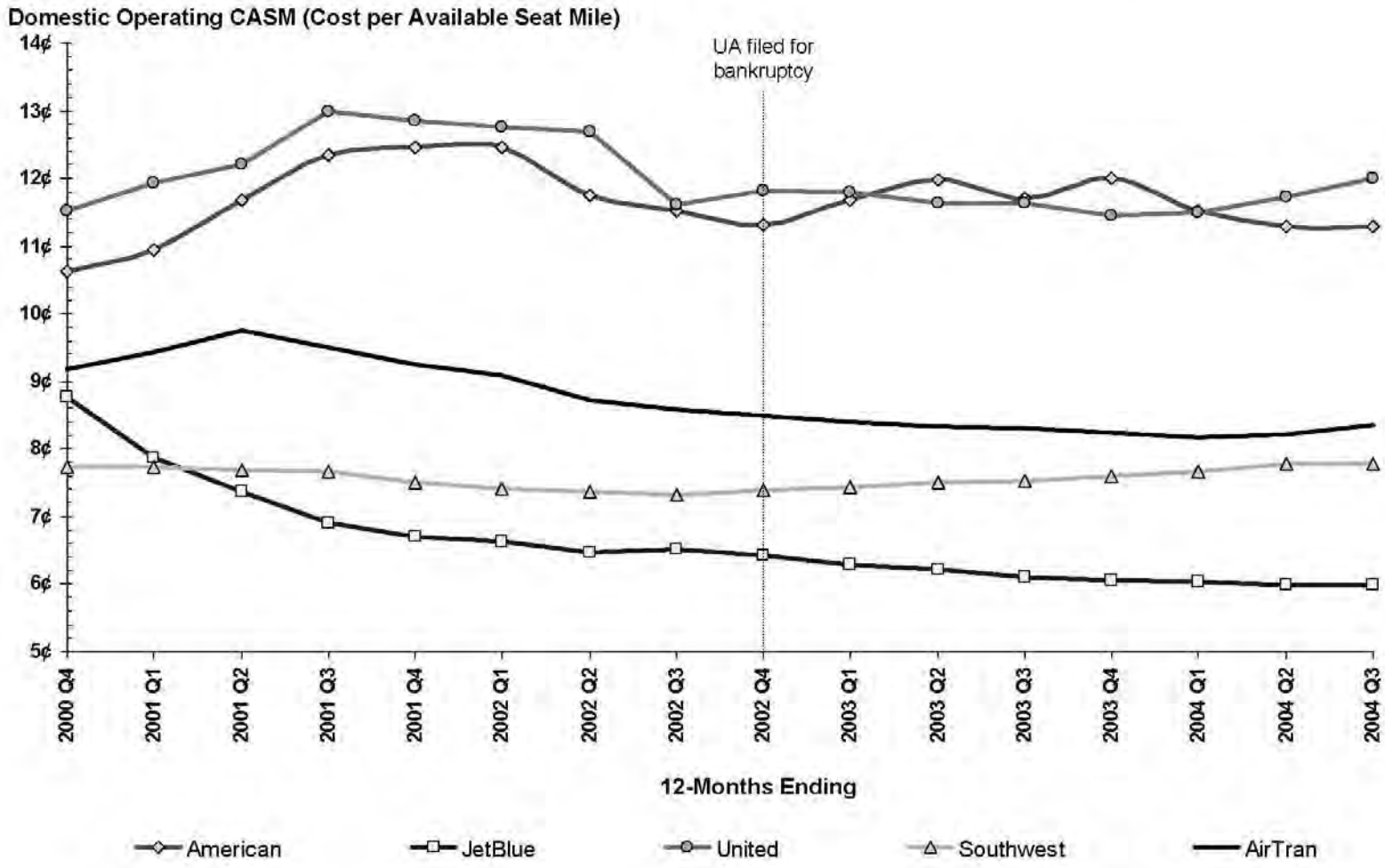
## AT UNITED AIRLINES' YIELDS AND TOTAL CASM, ITS BREAKEVEN LOAD FACTOR IS SOMETIMES ABOVE 100%




1/ Includes interest expenses.
Source: Exhibits 502 and 507.

Exhibit 509
Page 1 of 1

# DOMESTIC OPERATING CASM COMPARISON FOR SELECTED CARRIERS




Source: U.S. DOT, Form-41 Data, via Data Base Products, Inc.

## CHICAGO WILL NOT NEED THE OMP IF AMERICAN FAILS OR REDUCES SIGNIFICANTLY ITS O'HARE OPERATIONS

Exhibit 510
Page 1 of 1

**Aircraft Operations Forecast Based on Draft EIS**

| | 2003 | 2007 | Δ (%) | 2009 | Δ (%) | 2013 | Δ (%) | 2018 | Δ (%) | 2023 | Δ (%)[4] | 2028 | Δ (%)[4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Air Carrier | | | | | | | | | | | | | |
| Passenger airlines | | | | | | | | | | | | | |
| Domestic | 519,600 | 531,200 | 2.2% | 540,400 | 1.7% | 561,200 | 3.8% | 591,800 | 5.5% | 624,068 | 5.5% | 658,096 | 5.5% |
| International | 74,400 | 93,400 | 25.5% | 102,200 | 9.4% | 120,600 | 18.0% | 145,200 | 20.4% | 174,818 | 20.4% | 210,477 | 20.4% |
| **Subtotal** | 594,000 | 624,600 | 5.2% | 642,600 | 2.9% | 681,800 | 6.1% | 737,000 | 8.1% | 798,886 | 8.4% | 868,574 | 8.7% |
| Cargo airlines | 20,900 | 21,700 | 4.3% | 22,100 | 1.8% | 22,900 | 3.6% | 24,100 | 5.2% | 25,363 | 5.2% | 26,692 | 5.2% |
| **Subtotal** | **614,800** | **646,300** | 5.1% | **664,700** | 2.8% | **704,700** | 6.0% | **761,100** | 8.0% | **824,249** | 8.3% | **895,266** | 8.6% |
| Commuter/air taxi | | | | | | | | | | | | | |
| Passenger airlines | 303,400 | 332,800 | 9.7% | 343,800 | 3.3% | 365,400 | 6.3% | 382,600 | 4.7% | 400,610 | 4.7% | 419,467 | 4.7% |
| Other | 17,400 | 20,800 | 19.5% | 21,500 | 3.4% | 21,600 | 0.5% | 19,200 | -11.1% | 17,067 | -11.1% | 15,170 | -11.1% |
| **Subtotal** | **320,800** | **353,600** | 10.2% | **365,300** | 3.3% | **387,000** | 5.9% | **401,800** | 3.8% | **417,676** | 4.0% | **434,637** | 4.1% |
| General Aviation | 24,700 | 26,200 | 6.1% | 27,000 | 3.1% | 28,700 | 6.3% | 30,900 | 7.7% | 33,269 | 7.7% | 35,819 | 7.7% |
| Military | 200 | 200 | 0.0% | 200 | 0.0% | 200 | 0.0% | 200 | 0.0% | 200 | 0.0% | 200 | 0.0% |
| **Total** | **960,500** | **1,026,300** | 6.9% | **1,057,200** | 3.0% | **1,120,600** | 6.0% | **1,194,000** | 6.6% | **1,275,394** | 6.8% | **1,365,922** | 7.1% |
| **Adjustments** | | | | | | | | | | | | | |
| Incremental United[2] | 75,597 | 79,363 | 5.0%[1] | 81,218 | 2.3%[1] | 85,113 | 4.8%[1] | 89,504 | 5.2%[1] | 94,121 | 5.2%[1] | 98,976 | 5.2%[1] |
| Eliminate American Operations[2] | (373,656) | (392,270) | 5.0%[1] | (401,442) | 2.3%[1] | (420,692) | 4.8%[1] | (442,394) | 5.2%[1] | (465,215) | 5.2%[1] | (489,214) | 5.2%[1] |
| Incremental Other Domestic[1] | 3,024 | 3,175 | 5.0%[1] | 3,249 | 2.3%[1] | 3,405 | 4.8%[1] | 3,581 | 5.2%[1] | 3,765 | 5.2%[1] | 3,960 | 5.2%[1] |
| Incremental Foreign Flag[3] | 3,275 | 4,111 | 25.5%[5] | 4,498 | 9.4%[5] | 5,308 | 18.0%[5] | 6,391 | 20.4%[5] | 7,694 | 20.4%[5] | 9,264 | 20.4%[5] |
| **Adjusted Total** | **668,740** | **720,678** | | **744,724** | | **793,734** | | **851,081** | | **915,759** | | **988,907** | |
| **Difference** | **(291,760)** | **(305,622)** | | **(312,476)** | | **(326,866)** | | **(342,919)** | | **(359,635)** | | **(377,015)** | |
| | **-30.4%** | **-29.8%** | | **-29.6%** | | **-29.2%** | | **-28.7%** | | **-28.2%** | | **-27.6%** | |

**If American fails, O'Hare operations will not surpass 2003 actual levels until 2027.**

1/ Blended growth rate for domestic passenger air carriers and passenger commuter/air taxi airlines.
2/ Source: Appendix F, Exhibit F-4.
3/ Source: Appendix F, Exhibit F-5.
4/ 2013-2018 growth rate assumed to continue through 2028.
5/ Growth rate for international passenger air carriers.
Source: Campbell-Hill Aviation Group proprietary analysis and Draft EIS, Appendix B, Table B-6: Additional Forecast Detail - Unconstrained Annual Demand.

## ENPLANEMENTS AT O'HARE WILL FALL OVER 30% IF AMERICAN FAILS OR REDUCES SIGNIFICANTLY ITS O'HARE OPERATIONS

Exhibit 511
Page 1 of 1

**Enplanements Forecast Based on Draft EIS**

| | 2003 | 2007 | Δ (%) | 2009 | Δ (%) | 2013 | Δ (%) | 2018 | Δ (%)[4] | 2023 | Δ (%)[4] | 2028 | Δ (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total (Status Quo)** | **32,609,000** | **36,943,000** | **13.3%** | **39,149,000** | **6.0%** | **43,912,000** | **12.2%** | **50,372,000** | **14.7%** | **57,782,346** | **14.7%** | **66,282,846** | **14.7%** |
| **Adjustment to Eliminate American Enplanements[1]** | **(11,326,902)** | **(12,832,338)** | **13.3%** | **(13,598,604)** | **6.0%** | **(15,253,056)** | **12.2%** | **(17,496,970)** | **14.7%** | **(20,070,991)** | **14.7%** | **(23,023,683)** | **14.7%** |
| Actual United Enplanements[1] | 16,564,888 | 18,766,495 | 13.3% | 19,887,110 | 6.0% | 22,306,644 | 12.2% | 25,588,228 | 14.7% | 29,352,573 | 14.7% | 33,670,701 | 14.7% |
| United Onboard Passengers if American Fails[2] | 17,346,011 | 19,651,436 | 13.3% | 20,824,694 | 6.0% | 23,358,522 | 12.2% | 26,794,850 | 14.7% | 30,736,705 | 14.7% | 35,258,456 | 14.7% |
| Enplanement/Onboard Factor for United at O'Hare[1] | 98.65% | 98.65% | | 98.65% | | 98.65% | | 98.65% | | 98.65% | | 98.65% | |
| United Enplanements if American Fails | 17,111,840 | 19,386,142 | | 20,543,758 | | 23,043,182 | | 26,433,120 | | 30,321,759 | | 34,782,466 | |
| **Incremental United Enplanements if American Fails** | **546,952** | **619,647** | | **656,648** | | **736,538** | | **844,892** | | **969,186** | | **1,111,765** | |
| **Other Airline Incremental Domestic Enplanements[3]** | **9,269** | **10,501** | **13.3%** | **11,128** | **6.0%** | **12,481** | **12.2%** | **14,318** | **14.7%** | **16,424** | **14.7%** | **18,840** | **14.7%** |
| **Incremental Foreign Flag Enplanements[3]** | **129,549** | **146,767** | **13.3%** | **155,531** | **6.0%** | **174,453** | **12.2%** | **200,118** | **14.7%** | **229,558** | **14.7%** | **263,328** | **14.7%** |
| **Adjusted Total Enplanements** | **21,967,868** | **24,887,576** | | **26,373,703** | | **29,582,417** | | **33,934,358** | | **38,926,523** | | **44,653,097** | |
| **Difference (Reduction)** | **(10,641,132)**<br>**-32.6%** | **(12,055,424)**<br>**-32.6%** | | **(12,775,297)**<br>**-32.6%** | | **(14,329,583)**<br>**-32.6%** | | **(16,437,642)**<br>**-32.6%** | | **(18,855,824)**<br>**-32.6%** | | **(21,629,749)**<br>**-32.6%** | |

1/ Source: U.S. DOT, T-100 data for year ended December 31, 2003 via Data Base Products, Inc.
2/ Source: Appendix F, Exhibit F-4.
3/ Source: Appendix F, Exhibit F-5.
4/ 2013-2018 growth rate assumed to continue through 2028.
Source: Leigh Fisher Associates, Summary of Enplaned Passengers ORD EIS Forecasts (October 26, 2004).

# APPENDICES

## APPENDIX A

## QUALIFICATIONS AND RESUMES

THE CAMPBELL-HILL AVIATION GROUP, INC.
Aviation and Economic Research Consultants

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THE
CAMPBELL-HILL
AVIATION GROUP, INC
Aviation and Economic Research Consultants

## PROFESSIONAL SERVICES AND QUALIFICATIONS

SERVING:

Airports and Airport Authorities
International and Domestic Passenger Airlines
Integrated Express Carriers
Industry Trade Associations
Aircraft Manufacturers
Travel Companies
Legal Profession
Financial Institutions
Regulatory Agencies
Government Planning and Policy Agencies

700 North Fairfax Street • Suite 300
Alexandria, Virginia 22314
Tel: 703-836-1283 • Fax: 703-836-5607
e-mail: chag@air-econ.com

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## WHO WE ARE

The Campbell-Hill Aviation Group, Inc. (Campbell-Hill) is a privately-owned U.S. consulting firm providing a wide range of services to the aviation industry. Campbell-Hill's client base includes passenger airlines, all-cargo carriers, airports, industry associations, and city, state, and federal government agencies. Campbell-Hill is located in the Washington, D.C. area, which provides ready access to U.S. government agencies, law firms, leading transportation and public policy research centers.

The Campbell-Hill Aviation Group was formed by **Dr. Brian M. Campbell** in 1993, as the successor to the aviation practice of Leeper, Cambridge & Campbell, Inc. (LCC) of which Dr. Campbell was a co-founder and Chairman. Dr. Campbell has been engaged in aviation consulting continuously since 1982.

Dr. Campbell began his aviation consulting career in 1968 with Simat, Helliesen & Eichner, Inc. (SH&E) and is an expert in airline economics, planning and forecasting, and the measurement of the economic impacts of air services on local and regional economies. He was a co-founder of two start-up airlines and has consulted to many others. He also is an industry leader in the air cargo/air express sector and in the evaluation of the financial impacts of noise and emissions regulations on the owners and operators of commercial aircraft, as well as on national and regional economies. Dr. Campbell's broad background as an entrepreneur, airline executive, and respected advisor to the aviation industry is an invaluable resource for Campbell-Hill clients.

**Mr. Dean B. Hill** (President) brings 27 years of airline experience to the firm from Delta Air Lines, where he gained extensive operating expertise in all facets of airline planning, marketing, and analysis. Mr. Hill has particular skill in route and marketing strategy, hub development, acquisition evaluation, code-sharing and carrier alliances, and regulatory affairs. At his retirement from Delta, Mr. Hill was Director of International Route Development. Mr. Hill offers Campbell-Hill clients an important understanding of the aviation industry from an airline perspective.

**Mr. Rex Edwards** (Consulting Associate) brings more than 25 years of transportation research and consulting experience to Campbell-Hill projects. His strengths as an economist, statistician and transportation database expert benefit the firm's clients in both passenger and air cargo/express systems analysis and forecasting. Mr. Edwards manages the firm's aviation economic impact studies for airports and he has analyzed FAA flight operations and delay databases for a landmark study in 2001.

The firm has a highly qualified team including three other senior full-time experienced aviation economists.

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**Mr. Patrick M. Swift** (Research Director) has a broad, hands-on background in the planning and operation of small and start-up airlines. Mr. Swift advises clients on a range of planning issues, including domestic and international slot procurement and management, CRS management, aircraft scheduling, and airline pricing. He is an expert in managing and analyzing large aviation and economic databases.

**Mr. Kevin Schorr** (Research Director) specializes in creating and delivering air service presentations for airport clients of all sizes. He also has experience with airport use and lease agreements, rates and charges methodologies, schedule analysis, and route planning. Before joining Campbell-Hill, Mr. Schorr spent 2½ years with PA Consulting Group, Inc. in Washington, DC and prior to that, he was Director – Domestic Strategies and Alliances for Trans World Airlines (TWA). His responsibilities at TWA included the implementation of the alliance with America West, international route planning, schedule planning, and other codeshare planning activities.

**Mr. Todd Schroder** (Research Director) has eight years of experience in aircraft marketing and fleet planning. He is an expert in market research, including fleet planning studies, regional airline industry forecasting, and strategic planning. Mr. Schroder's extensive technical abilities include database development and geographical, industrial, and demographic information systems.

Supporting the firm's research projects are three full-time economic analysts.

**Azer Ibadov** (Senior Research Analyst) Mr. Ibadov has a B.B.A in International Management from Pace University and an M.B.A. in International Finance from American University. Mr. Ibadov joined Campbell-Hill in 1999 and currently specializes in statistical and database analysis and research.

**James Lundy** (Research Analyst) Mr. Lundy has a B.B.A. in Finance from James Madison University. Joining the firm in 2003, Mr. Lundy specializes in statistical and database analysis and research.

The firm's computer systems employ state-of-the-art graphics software, communications packages, and modern database management and statistical packages that include traditional regression and other multivariate techniques. The firm has access to all U.S. Department of Transportation and Department of Commerce traffic and financial databases.

The Campbell-Hill Aviation Group maintains close working affiliations with a broad base of other aviation marketing, airport planning, and economic and financial service companies from which additional resources are readily available. In addition, Campbell-Hill has excellent working relationships with numerous regulatory attorneys, and transportation professors and researchers at several leading universities.

The firm is 100% employee owned and managed.



## WHAT WE DO

The Campbell-Hill Aviation Group specializes in providing a wide range of consulting services to the aviation industry. Campbell-Hill's client base includes passenger airlines, integrated air express carriers, all-cargo carriers, airports, and financial institutions. Campbell-Hill's engagements are divided approximately equally between the private sector, and various levels of government and airport organizations.

A major portion of our engagements involves problem diagnosis, opportunity specification, forecasts and analyses of decision alternatives, strategic recommendations, and follow-up evaluations. Other significant aspects of our private sector practice include regulatory issues (e.g., international route development and regulatory cases, aircraft noise and emissions policy, and government aviation competition policy development), long-range planning (e.g., aircraft fleets), litigation support, and marketing strategy.

## PRIMARY CONSULTING SERVICES

### INTERNATIONAL AVIATION

Airline and Airport Advocacy and Representation
Carrier Alliances and Code-sharing Evaluation and Negotiation
Traffic Analysis and Forecasting • Environmental Policy Analysis
Financial and Economic Impact Studies
Government Regulatory Policy Analysis
Bilateral Representation and Strategy

### AIR SERVICE DEVELOPMENT

Marketing Strategy • Service Opportunity Studies
Competitive Service Analysis • Marketing Programs for Airports
Air Service Plans and Presentations • Industry Monitoring Services
Traffic, Revenue, and Profit/Loss Forecasts
Multiple Airport Traffic Assignment Modeling

## PRIMARY CONSULTING SERVICES

### ECONOMIC AND FINANCIAL ANALYSIS

Feasibility Studies • Corporate Valuation Studies • Preparation of Business Plan
Litigation Support • Economic, Financial, and Traffic Forecasting • Arbitration Opinions
Impact Analysis of Environmental Initiatives • Due Diligence Evaluations

### STRATEGIC PLANNING

Merger and Acquisition Analysis • Analysis of Industry Issues
Alliance Strategy Simulation Modeling • Route Strategy and Traffic Flow Analysis
Public Policy Analysis and Advocacy Papers

### AIR CARGO STUDIES

Commodity Flow Analysis • Hub Location Analysis • Mode-Split Modeling
All - Cargo Service Studies • Economic Impact Studies • Carrier Presentations

### REGULATORY SERVICES

Route Case Preparation/Presentation • Strategy Development
Expert Testimony • Aircraft Noise Policy Evaluation
Merger Case Analysis and Support (DOT, DOJ, FTC, Congress)
Regulatory Accounting and Reporting

### RESOURCE PLANNING

Schedule Evaluation • Fleet Planning • Financial Forecasting
Airline Alliance Evaluation • Restructuring Studies • Airline Merger Evaluation
Aircraft Evaluation

### SURVEY RESEARCH

Travel and Tourism • Airlines and Forwarders
Business Firms • Cargo Shippers

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## SELECTED CLIENTS

### U.S. FEDERAL GOVERNMENT

Department of Transportation • Federal Aviation Administration

### FOREIGN GOVERNMENTS

Government of Canada • Government of Taiwan

### STATE AND LOCAL GOVERNMENTS

City of Calgary, Alberta • City of Edmonton, Alberta
City of Harlingen, Texas • City of Kansas City, Missouri
City of Memphis, Tennessee • City of San Jose, California
Commonwealth of Virginia • County of Milwaukee, Wisconsin
Province of Alberta • State of Connecticut • State of Hawaii
State of Maryland • State of New York • State of North Carolina
Province of Prince Edward Island

### AUTHORITIES, REGIONAL COMMISSIONS, AND TASK FORCES

Austin - Bergstrom International Airport • BWI Airport
Berlin Brandenburg Flughafen • Bradley International Airport
Fresno Yosemite International Airport • General Mitchell International Airport
Greater Peoria Airport Authority • Lehigh - Valley International Airport
Metropolitan Washington Airport Authority • Munich Airport Authority
Pittsburgh International Airport • Port of Oakland • Port of Portland
Raleigh/Durham Airport Authority • Reno/Tahoe International Airport
Washington Airports Task Force • Washington Metropolitan Council of Governments

### ASSOCIATIONS

Air Transport Association of America • Canadian Consumers' Association
Cargo Airline Association • Regional Airline Association

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## SELECTED CLIENTS

### MANUFACTURERS

Boeing Corporation • Lockheed Aircraft Company • McDonnell Douglas Corporation

### AIRLINES

Airborne Express • American Airlines • Atlantic Coast Airlines • BAX Global
Canada 3000 • Canadian Airlines • Continental Airlines • Delta Air Lines
DHL • Emery/CF Air Freight • Evergreen International Aviation
Federal Express Corporation • Gemini Air Cargo • Legend Airlines
Midway Airlines • Northwest Airlines • PeopleExpress • Polar Air Cargo
Royal Aviation, Ltd. • Royal Jordanian Airlines • Scandinavian Airlines System
Southern Air Transport • Southwest Airlines • United Airlines
United Parcel Service • Viacão Aerea Sao Paulo (VASP)

### ENGINEERS

Howard Needles Tammen & Bergendoff • Kimley Horn

### LAW FIRMS

Bagileo, Silverberg & Goldman • Ball, Janik • Condon & Forsyth • Crowell & Moring
Davis Polk & Wardwell • Hewes, Gelband, Lambert & Dann, PC
Hogan & Hartson • Hopkins & Sutter • Kirkland & Ellis
McGuire, Woods, Battle & Boothe • Morgan, Lewis & Bockius
Nobbs, Woods & Clark • O'Melveny & Myers • Preston, Gates, Ellis & Rouvelas Meads
Seamon, Wasko & Ozment • ShawPittman • Steptoe & Johnson
Sutherland, Asbill & Brennan • Tory, Tory, Deslauriers & Binnington
Ungarretti & Harris • Verner, Liipfert, Bernhard, McPherson & Hand
Winston & Strawn • Winthrop, Stimson, Putnam & Roberts
• Zuckert, Scoutt & Rasenberger

### OTHER

GE Capital Aviation Service, Inc. • Hiller Investment Group
International Utilities • UNC Resources

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## TYPICAL ASSIGNMENTS

### FOR AIRLINE CLIENTS

- Analyzed economic potential for expanded air services at hub cities
- Assessed government aviation initiatives and prepared advocacy papers
- Evaluated feasibility of hub locations for several new scheduled carriers
- Developed models to assess the economic and financial impacts of new noise and emissions stringencies
- Evaluated airline mergers and/or alliance potential for traffic, fleet, and labor efficiencies
- Analyzed carrier business plans and provided litigation support in bankruptcy case
- Evaluated competitors' marketing, pricing, and scheduling strategies
- Investigated numerous markets for passenger and cargo charter airlines
- Evaluated "down-sized" business plans for carrier operating in Chapter 11
- Assessed tour operator and charter market potentials for both scheduled and non-scheduled airlines, and for a major hotel corporation
- Assisted airline in the valuation of bankrupt carrier route authority
- Collected and evaluated data on the U.S. domestic business travel market
- Evaluated airlines under going concern, asset-based, and liquidation methods
- Raised venture capital for new start-ups and small takeover candidates
- Raised debt and lease financing for new entrant carriers
- Prepared applications and exhibits for Section 419 subsidy applications
- Prepared exhibits and testimony and appeared as expert witnesses in approximately 125 CAB/DOT adversarial cases
- Participated in attempted takeover of a U.S. domestic airline and advised on reorientation of airline operations, fleet, and marketing strategies
- Analyzed cargo and passenger traffic to support the establishment of a new overseas commuter airline
- Evaluated and negotiated alternative airport facilities leases on behalf of scheduled airlines
- Prepared performance review materials for contract cargo airlines
- Developed proposals and presentations on behalf of large contract carrier airlines for new route segments and whole systems of air express companies
- Prepared government pricing proposals for contract airlines
- Negotiated the sale of two commuter airlines
- Negotiated joint fare agreements for commuter air carriers
- Prepared country specific analysis for carrier use in bilateral negotiations
- Analyzed cargo and mail profitability under various methods of cost allocation and developed tactics for increasing profitability

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## TYPICAL ASSIGNMENTS

### FOR AIRLINE CLIENTS

- Developed and implemented segment profit and loss models
- Designed carrier internal accounting and budgeting systems
- Developed new operating plan for refinancing proposals
- Installed interim transition management and new operating plans under four-month contract for scheduled helicopter turnaround situation
- Negotiated new and used aircraft purchase agreements, along with maintenance, spare parts, and training support services
- Forecast future aircraft values under alternative assumptions regarding fuel prices, interest rates, and traffic growth
- Evaluated economics of new generation aircraft under alternative assumptions regarding fleet size and mix of planes
- Assisted carriers with government bids and proposals (e.g., Military Airlift Command, Logair, and U.S. Postal Service procurement)

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## TYPICAL ASSIGNMENTS

### FOR AIRPORT CLIENTS

- Prepared strategic marketing plans
- Prepared more than 100 airline service presentations. Supported the City of San Jose by preparing economic exhibits and testimony in DOT route case to obtain nonstop service to Tokyo
- Assisted BWI Airport in becoming the focal point of US Airways MetroJet low-fare operation
- Supported State of Connecticut in obtaining low-fare service from MetroJet, Southwest and America West at Bradley International Airport
- Supported seven cities in obtaining nonstop service to Toronto
- Assisted Portland, Oregon in obtaining authority to two additional points in Japan and becoming the first and only U.S. mainland gateway with authority to four cities in Japan
- Served as a major subcontractor for the North Carolina Air Cargo System Plan, and evaluated the potential for a global air cargo industrial complex ("Global TransPark")
- Helped Dulles to secure nonstop service to Zurich from Swissair
- Assisted Dulles in obtaining service from Delta Express
- Identified air freight development problems and opportunities at BWI Airport for Maryland Department of Transportation
- Served the Washington Dulles Parties by preparing economic exhibits and testimony (written and oral) in DOT route cases to obtain nonstop service to England, the former Soviet Union, and Italy
- Guided Raleigh/Durham Airport in securing nonstop service to London
- Forecast passenger and scheduled commercial flight distributions between the three Washington metropolitan area airports (BWI, IAD, and DCA) and performed similar studies in other multi-airport regions
- Prepared strategy analysis for airport client seeking to strengthen relations with hub carrier
- Assisted City of Harlingen in its successful efforts to obtain International Gateway status in the U.S.-Mexico All-Cargo Service Proceeding
- Prepared due diligence report for a city considering extending credit to important but financially weak tenant airline
- Analyzed scheduled passenger and cargo service deficiencies and prepared strategic plans for City of Calgary, Alberta, Canada

A-11

## TYPICAL ASSIGNMENTS

### FOR AIRPORT CLIENTS

- Worked with the Metropolitan New York Transportation Authority to develop a two-stage master plan forecast for Steward Airport
- Developed air cargo/express service improvement strategies and carrier presentations for Greater Peoria Airport Authority
- Guided Reno through service transitions resulting from the acquisition of its hub carrier by a major airline

A-12

## TYPICAL ASSIGNMENTS

### REGULATORY ACTIVITIES/POLICY ISSUES

- Analyzed opportunities and strategies for regulatory case participation
- Created economic exhibits and written and oral testimony in more than 125 aviation cases, including routes, rates, mergers, service evaluation, industry performance, and airline subsidy representing airlines, civic parties, federal government parties, and consumer associations
- Presented evaluation of the effects of major code-sharing alliances on U.S. markets and industry participants
- Prepared economic forecasts in support of international bilateral route negotiations on behalf of U.S. and foreign air carriers
- Represented cities and airlines in U.S. international bilateral route negotiations
- Evaluated economic benefits of the U.S. all-cargo industry in support of legislative proposals regarding the need for a uniform national aircraft noise policy, and a reasonable program to transition from Stage 2 to Stage 3 aircraft fleets
- Developed comprehensive study of the financial impacts on the world's airlines of new noise and emission standards proposed by ICAO
- Participated in Congressional hearings on transportation issues
- Presented written and oral testimony in Canadian Parliamentary hearings on aviation policy
- Prepared major analysis of proposed new airline industry competition rules
- Created regulatory and public relations material for a proposed major carrier alliance and for a major proposed airline merger
- Participated in numerous presentations to the DOT, DOJ and before European Community antitrust authorities regarding proposed immunized carrier alliances.

A-13

## BRIAN M. CAMPBELL

### CHAIRMAN

PROFESSIONAL EXPERIENCE

Dr. Campbell's thirty-seven year career has been heavily concentrated in the economic elements of commercial air transportation. After graduating from the Columbia University Graduate School of Business Administration in 1968, he was employed for seven years by Simat, Helliesen & Eichner, Inc., a transportation consulting firm. Prior to his resignation from that firm in 1975, he held the position of Vice President of the Washington office.

Between 1976 and 1982, Dr. Campbell was co-founder and senior executive of two new-entrant (post-U.S. deregulation) airlines, with primary responsibilities for planning and finance. The first of these new companies was Midway Airlines, Inc., where he held the position of Vice President of Finance and Administration from 1977 to 1980. After resigning from Midway, Dr. Campbell formed Air Chicago, Inc. and served as its Chairman and Chief Executive Officer through the planning and initial capitalization period.

Dr. Campbell returned to the consulting profession in 1982, and from 1987 until December 1993 he was a founding member of Leeper, Cambridge & Campbell, Inc. He held the position of President from 1991 to 1993. On January 1, 1994 he formed The Campbell-Hill Aviation Group, Inc.

Dr. Campbell's particular expertise is in the economic analysis of aviation issues and opportunities. This includes financial, marketing, planning, and operations aspects of airlines, airports, and equipment manufacturers. Dr. Campbell's experience is well developed from both the research and executive viewpoints. He has served numerous clients in problem diagnosis, specification and analysis of alternative courses of action, development of strategic action plans, and implementation procedures and controls.

Throughout his career, Dr. Campbell has developed various analytical models and procedures for a broad variety of clients in all major sectors of the industry. For instance, in his airport economic forecasting practice, he led the development of the only comprehensive airport activity and passenger forecasting model that realistically accounts



for inter-airport competition within a single region, such as New York/Newark, Washington/Baltimore, and San Francisco/Oakland. He also has developed and implemented detailed costing, budgeting, and financial forecasting models for airlines.

Dr Campbell's aviation expertise includes extensive consulting in air cargo and air express operations. He directed the firm's research and analysis for the Global Transpark (GTP) in North Carolina and he works closely with the creator of the GTP concept on opportunities for applying the system in other parts of the U.S. and elsewhere in the world. Currently he directs the firm's consulting services for Federal Express as well as for other air cargo and air express carriers.

Dr. Campbell has significant experience assisting airports in their air service development and marketing programs. The firm regularly serves eight U.S. airports in this fashion.

As a consultant, Dr. Campbell has appeared as an expert witness in more than 75 adversarial proceedings before regulatory boards or commissions, representing private as well as government and non-profit organizations. This cross section of cases includes routes, fares, mergers, initial certification, and industry performance evaluations. The majority of these case appearances were before the U.S. Civil Aeronautics Board and the U.S. Department of Transportation, and several occurred before the Canadian Transport Commission and the European Commission.

As a senior airline executive, Dr. Campbell raised millions of dollars of venture capital and several times that amount for lease and debt financing of used aircraft. He has managed an SEC registration for a public stock offering by a new-entrant airline; negotiated and successfully concluded purchase agreements for new and used flight equipment, spare parts inventories, training services, and airport and maintenance facilities; and managed the finance and accounting, purchase/stores, planning and administration department of new operating carriers.

AREAS OF SPECIALIZATION

- Route system development and market planning
- Litigation support and expert testimony
- Airport planning (economic forecasting and air service marketing issues)

- Financial and economic impact analysis of environmental regulations
- Aircraft evaluations and fleet planning
- Marketing, sales, promotion, advertising, and pricing strategies
- Demand forecasting (passenger, property, activity/operations)
- Proforma financial statements and measures of performance
- Corporate organization structure and planning
- Development and preparation of business plans for targeted purposes
- Presentations to financial institutions and boards of directors
- Financial services (equity and debt)
- Merger and acquisition analyses, recommendations, and integration plans
- Small community air service problems and plans for improvements
- Federal and local airport and airways policy issues
- Airport access, capacity, and noise regulation

EDUCATION

Bachelor of Commerce, McGill University

M.B.A., University of Western Ontario

Ph.D. Business Administration, Columbia University



**DEAN B. HILL**

**PRESIDENT**

PROFESSIONAL EXPERIENCE

Mr. Hill joined The Campbell-Hill Aviation Group in 1994 after 27 years of service at Delta Air Lines. He has made a successful transition from the airline sector to aviation consulting by offering his extensive airline experience to Campbell-Hill's clients. Mr. Hill designs and directs most of the firm's air service presentations for airport clients dealing with a wide range of airline targets and service objectives. For example, Mr. Hill prepared and delivered comprehensive route, scheduling, and marketing plans to several low-fare carriers that have led to the inauguration of daily low-fare flights at the client airport. He assisted another airport client in obtaining new international air service to Japan, and still another in obtaining new transatlantic service.

Mr. Hill is exceptionally qualified to deal with airline clients because he knows firsthand how they function and make route and scheduling decisions. He works easily with airport clients to fulfill their air service requirements because he is familiar with the airports' target markets, the airlines, and because he has years of experience in making route decisions at Delta. Using his legal background, Mr. Hill also works with the legal community, providing a bridge between the legal/regulatory world and the business side of airlines and airports.

Mr. Hill began his aviation career with Delta Air Lines in 1967. Between 1968 and 1981 he was part of Delta's Economic Research Department where his primary responsibilities included the planning, preparation, and sponsorship of Delta's route cases before the Civil Aeronautics Board. Mr. Hill appeared or participated, normally as Delta's chief economic witness, in every Delta route case from 1974 through 1994.

With the phase-out of airline regulation beginning in 1978, Mr. Hill was assigned the responsibility of planning the transition of Delta's route structure into the deregulated environment. His work led to the expansion of Delta's hubs at Atlanta, Dallas/Fort Worth, Cincinnati and, later, Salt Lake City. Early in the 1980's, Mr. Hill designed the comprehensive computer route model that would drive Delta's route planning for almost two decades.

As Delta's domestic hub structure matured, Mr. Hill was instrumental in extending Delta into the international arena, first from Atlanta and then from new gateways at Portland and Cincinnati. During this time Mr. Hill was heavily involved in Delta's acquisition of Western Airlines and Pan American Airways' European routes and the shuttle.

In early 1990's, Mr. Hill was again on the leading edge of route development as he led Delta's evolution into international airline alliances. He personally negotiated code-share agreements with nine airlines covering 34 routes between 1992 and 1994.

AREAS OF SPECIALIZATION

- Strategic planning for airports and airlines
- Airline alliance strategies
- Regulatory affairs (e.g. DOT, DOJ, European Commission)
- Route planning and analysis
- Air service presentation for airports
- Economic analysis of aviation issues
- Fleet planning
- Merger and acquisition analysis
- Analysis of industry issues
- Route strategies
- Code-sharing evaluation and negotiation
- Litigation support and expert testimony

EDUCATION

A.B. Political Science, Stanford University

J.D. Law, University of Kansas

Admitted to law practice in Kansas and Georgia



## REX J. EDWARDS

### CONSULTING ASSOCIATE

PROFESSIONAL EXPERIENCE

Mr. Edwards has worked extensively with Dr. Campbell since 1987. He assists the firm in the analysis and modeling of aviation systems. He has developed databases and analytical methods for estimating regional demand and supply patterns for several airport market studies. In addition, Mr. Edwards has developed economic impact methodologies for several FAA funding applications, and analyses of U.S. aviation competition issues. He also provided analysis of the potential impact of passenger carrier mergers on market competition. Mr. Edwards has worked extensively in analyzing new cargo airports in the U.S. and overseas, including feasibility and economic impact analysis.

He produces an annual database of current and forecast air trade flows by market, commodity type, and U.S. state of origin/destination, and supplies extracts of these data for airport market analysis, aviation bilateral negotiations, and DOT route case proceedings. In a recent analysis of Asian air policy, Mr. Edwards designed and applied a model for estimating air trade flows and the impact of air rights liberalization on economic development in China and Hong Kong. Mr. Edwards is a developer and programmer of software for transportation costing, systems modeling, and database management.

Mr. Edwards has 20 years of experience as a transportation and trade economist and researcher. Before joining Campbell-Hill as a consulting associate, Mr. Edwards was the vice president and a founding partner of Leeper, Cambridge & Campbell, Inc. Previously, he worked at several transportation and engineering firms, including Phillips Cartner & Co., Simat International, Exploration Services, and Simat, Helliesen & Eichner, Inc.

AREAS OF SPECIALIZATION

- Forecasting/modeling of transportation systems, facilities, technologies and services
- Software programming for transportation costing/database management
- Industrial level economic trade analysis
- International trade analysis by mode of transport, and by origin/destination
- Market feasibility studies
- Transportation demand forecasting

EDUCATION

B.A., Mathematics and Economics, College of William and Mary



**JAMES LUNDY**

**SENIOR ANALYST**

PROFESSIONAL EXPERIENCE

Mr. Lundy joined Campbell-Hill in June of 2003. During the course of his employment, he has worked on projects ranging from air service presentations to economic impact studies. He has provided research and analysis that has been used in expert witness testimony, including testimony in the DHL Citizenship Case before the United States Department of Transportation. Mr. Lundy's financial analysis was utilized in a presentation that played a vital role in the November 2004 repeal of the amendment to Florida's constitution that would have created a financially infeasible high-speed rail system. In addition, Mr. Lundy helped develop the statistical models that are currently used to determine intra Alaska bush mail rates for Part 121 carriers.

AREAS OF SPECIALIZATION

- Financial Research and Analysis
- Aviation Research
- Econometric Analysis
- Database and Statistical Analysis

EDUCATION

Mr. Lundy graduated Magna Cum Laude with a B.B.A. degree in Finance and a minor in Economics from James Madison University. He was awarded the Outstanding Student in Finance award for his graduating class with a 3.95 cumulative Finance grade point average and a 3.88 overall grade point average.

## KEVIN SCHORR

### RESEARCH DIRECTOR

PROFESSIONAL EXPERIENCE

Mr. Schorr joined Campbell-Hill in February of 2004. His work focuses on analytical interpretation of aviation issues including forecasting airport traffic and operations, and air service development.

Previously, Mr. Schorr has held several different positions which have exposed him to many aspects of the commercial aviation industry. He was a project engineer for Morse Diesel International on the Terminal One construction project at JFK International Airport. In addition to performing a variety of engineering tasks, Mr. Schorr was responsible for managing all construction drawings and samples for this multi-million dollar project.

For his Master's thesis, he developed a linear programming model that evaluated the assignment of regional jets to TWA's St. Louis hub operation. Mr. Schorr also held an internship with TWA's strategic alliances department where his responsibilities included financial and strategic evaluation of potential codeshare partners. After spending a year as a supply chain consultant with Ernst & Young LLP, Mr. Schorr became the Director – Domestic Strategies and Alliances for TWA. In this capacity, he played a key role in the implementation of the airline's alliance with America West Airlines, including negotiation of the codeshare agreement itself. Mr. Schorr's duties also included international route planning, schedule planning and analysis, and other strategic planning activities.

For the 2½ years prior to joining Campbell-Hill, Mr. Schorr was a consultant in the transport practice of PA Consulting Group, Inc. He participated in many different projects, including analysis of hub and spoke network economics, competitive scheduling analysis, airport traffic and operations forecasting, air service presentations, use and lease agreement negotiations, rates and charges methodologies, airport traffic forecasting, and airline route profitability systems.



AREAS OF SPECIALIZATION

- Demand forecasting (passenger, property, activity/operations)
- Economic analysis of airline hub and spoke networks
- Economic analysis of industry issues
- Route planning and analysis
- Airline alliance strategies
- Use and lease agreements (rates and charges methodologies)
- Air service presentations
- Airport marketing and incentive programs

EDUCATION

B.S. Civil Engineering, Washington University

M.S. Civil Engineering, Washington University

M.B.A., Washington University

## PATRICK M. SWIFT

### RESEARCH DIRECTOR

PROFESSIONAL EXPERIENCE

Mr. Swift joined Campbell-Hill in April of 1996. During his tenure with the firm, Mr. Swift has performed extensive traffic and revenue analysis for both passenger and cargo markets. He also has prepared airline schedule simulations for proposed markets and airline networks. Mr. Swift is an expert in large database management and manipulation, often dealing with U.S. passenger traffic and revenue data as well as global airline schedules. He has created several proprietary models that are in regular use by the firm.

Additionally, Mr. Swift has assisted Dr. Campbell and Mr. Fred Zusman, creators of the MADAM model, in enhancing the model to assist Metropolitan Washington Airports Authority in analyzing slot DCA perimeter rule changes during the McCain hearings. Those improvements are part of the MADAM model today.

Previously, Mr. Swift spent 10 years in the airline sector, where he developed many unique skills. He was co-founder of the second Midway Airlines and co-author of the company's business plan. In the planning of the start-up he dealt with schedules, route planning, strategy, fares and tariffs, slot management, and revenue forecasting and management. Previously, Mr. Swift was a co-founder, co-owner and Vice President of Aviation Fuels Services Company, where he specialized in the enhanced procurement and cost reduction of petroleum products. Mr. Swift acted as Director of Planning/Schedules/Stations at Jet Express, which later became Midway Airlines.

AREAS OF SPECIALIZATION

- Model Development and programming
- Computer reservations systems
- Yield management systems
- Planning
- Operations



- Scheduling
- Pricing

EDUCATION

B.S. Aeronautical Studies, Embry-Riddle Aeronautical University

## APPENDIX B

## ANALYSIS OF ORD DELAY DATA AND THE CAUSES OF DELAY

### B.1 Summary

Delays at O'Hare have existed for many years despite the introduction of the High Density Rule (HDR) slot constraints in 1969. Although the recent increase in delays experienced at ORD have been used to support the need for OMP, there is no evidence that runway expansion will cure the delay problems, particularly if increased runway capacity merely translates into more flights for the same number of passengers, and hence, the airport returns to the same delay problems at a greatly increased cost of operation and high passenger fares.

In Section A-5 of the DEIS, the FAA provides a range of statistics measuring delays at ORD, but at no point is there any analysis of what causes delay and, in particular, whether runway capacity will eliminate delay other than theoretically in a model. The following sections of this appendix examine historical patterns of delay, the apparent randomness of delay in relation to operating levels (and hence to runway capacity), and the factors that drive delay levels (mostly weather) and which may not be susceptible to alleviation solely through additional runway capacity. B1

### B.2 Overview of Delay Databases

The FAA and the airline industry have developed and modified delay measurement techniques over many years, seeking to develop statistics that would be useful both to track delay patterns, and to associate delays with their causes whether it be congestion, weather, or other factors. The following summarizes the databases used for this analysis.

#### B.2.1 ASPM Database

The ASPM dataset produced by the FAA is the latest in a series of databases that attempt to provide more detail in terms of both the stage of flight where delay occurs (gate in/out, airborne, taxi) and the cause. The ASPM merges data from a variety of sources including the airlines, air traffic control, and benchmark measures developed by the FAA to assign delays by flight stage.

B-1

| Comment | Response |
|---|---|
| B1 | The FAA responses provided in *CH Appendix B* must be viewed in context against the CH central assertion that "at no point is there any analysis of what causes delay and, in particular, whether runway capacity will eliminate delay other than theoretically in a model." The FAA disputes both of the points in this assertion.<br><br>Regarding the first point—that "at no point is there any analysis of what causes delay"—in **Chapter 2** of the EIS, the FAA provides an overview of aircraft delays including a description of several delay metrics and data sources. **Chapter 2** dedicates several sections to a discussion of several factors that are important causes of delay at ORD. This discussion includes **Section 2.1.5.3,** which explicitly acknowledges that poor weather conditions—and the associated losses of airfield capacity associated with such conditions—are a major cause of delay at ORD. The results of TAAM simulation modeling presented in **Appendix D** of the EIS clearly show the substantial reductions in delays associated with poor weather—or IFR—conditions attributable to Build Alternatives carried through secondary screening (i.e., Alternatives C, D and G). The substantial reductions in IFR delays attributable to these alternatives stems in large part from the reduced runway interactions facilitated by the parallel runway operating configurations that characterize these alternatives. These parallel runway operating configurations were designed specifically to enable simultaneous parallel operations in all weather conditions.<br><br>For example, Alternative C will enable controllers to maintain three simultaneous independent arrivals streams to be maintained in virtually all weather conditions. In addition, in this alternative, departures will be able to use up to three non-intersecting and dedicated departure runways, enhancing departure capacity.. In contrast, the existing airfield can only serve two independent arrivals and must rely on intersecting and mixed use runways to accommodate departures.<br><br>Regarding the second point—that "at no point…is there any analysis of whether [increasing] runway capacity will eliminate delay other than theoretically in a model", the FAA has long recognized that increasing airfield and airspace capacity is a primary way to reduce delays at airports. Whether capacity increases are focused narrowly on poor weather conditions or poorly performing operating configurations or broadly focused on all weather conditions, the principal is the same—increasing the number of operations an airport can accommodate over a given time period will reduce the likelihood that operations will incur delays.<br><br>Continued on the following page. |

Detailed data was downloaded from the FAA APO on-line data system (http://www.apo.data.faa.gov) using the "quarter-hour" statistics for the period January 2000 to December 2004[1]. This data source was used to derive detailed "Excess Travel Time Delay" estimates that identify the following components of delay:

Departure Delay

- Gate Delays based on origin airport
- Excess Taxi Out Time (i.e., above estimated "normal" taxi times)
- Gate Delays ("ETMS Hold Delay") based on delays at destination airport (excluded from origin airport's delay calculations).

Arrival Delay

- Airborne Delay
- Taxi In Delay
- Gate Delays ("ETMS Hold Delay") at origin airport based on delays at destination airport (included in destination airport's delay calculations)

Excess travel time delay can be measured relative to the flight schedule, or to the flight plan, and it is derived by dividing total delay minutes for the airport and time period by the number of operations for which delay measures are available.[2] The "flight plan" delays used in the DEIS (Table A-6 of the DEIS) were used in most of the analyses and monthly statistics for IFR and All-Weather operations (on a quarter-hour basis) are summarized in Exhibit B-1 herein.

The data analysis included the following manipulations and definitions:

- IFR Definition: The data include fields identifying airfield visibility (measured in miles) and cloud ceiling (measured in hundreds of feet). Both fields were character fields and included some fractional values that were converted to numeric values.

[1] Additional data is available in summary form on-line for CY 1998 and CY 1999, but it was not available in a downloadable detailed format.
[2] For the five year period, delay statistics were available for 95% of the operations as reported in the FAA's ETMS data system.

B-2

| Comment | Response |
|---|---|
| B1 continued | Interestingly, the commenter acknowledges the inverse relationship between delay and capacity themselves when acknowledging that delay and capacity have an inverse and asymptotic relationship in *CH Section 2.0* of this report.<br><br>Historically, FAA has responded to delay problems with capacity enhancement projects. For example, delay problems were addressed at ATL, MCO, PHX, MIA, STL, DFW, and DEN with the construction of capital improvement projects (e.g., new runways and supporting infrastructure. In short, adding and reorienting runways to reduce runway interactions and provide additional arrival or departure runways are very common and effective ways to reduce delays.<br><br>In order to develop comparative estimates of the extent to which various development would address delay problems at ORD, TAAM—an industry-leading simulation model--was used. A model was used precisely because it is otherwise impossible to evaluate infrastructure and operational procedures that do not exist today. Historical data, such as ASPM cannot be used to conduct this type of "what if" analysis.<br><br>As explained in greater detail below and in the EIS, TAAM simulation experiments developed for the EIS were prepared in a thorough and professional manner, using assumptions that accurately reflected real-world data regarding air traffic rules, flight procedures, runway and taxiway usage, and airfield and airspace interactions. TAAM experiments were carefully calibrated to ensure that peak-period runway flow rates were reasonable—or in the case of the existing airfield—matched existing levels. These experiments also underwent significant validation efforts with active air traffic and ground controllers from the O'Hare Airport Traffic Control Tower, the Chicago-O'Hare Terminal Radar Approach Control (TRACON), and Chicago Air Route Traffic Control Center (Center). These efforts produced average annual delay results for the existing airfield that reasonably approximated historical delay statistics—as measured using the FAA Aviation System Performance Metrics (ASPM) database.<br><br>In summary, the EIS articulates (1) the causes of delay at ORD and (2) the extent to which proposed airfield and airspace improvements will address delays. Furthermore, the FAA experiences at several other large hub airports indicates that—when possible—additional and reconfigured runways that increase airfield capacity can greatly reduce delays at congested airports.<br><br>Continued on the following page. |

Both fields had blank or zero values, but analysis of delays and the FAA's own IFR designation indicated that these were non-IFR conditions. The IFR (or IMC) designation used in this report is comparable to that used in the DEIS: cloud ceiling less than 1,000 feet or visibility less than three statute miles. The IFR designation was applied at the detailed "quarter-hour" level in all cases, except for the analysis based on a characterization of entire days in terms of their IFR or severe weather conditions.

- "Restricted Weather Conditions" Definition: Analysis of the ASPM data indicated significant periods of high delays that did not correlate with the visibility and cloud ceiling definition used in the DEIS, probably due to wind or snow conditions. The definition of "restricted weather conditions" (as applied to individual days) was expanded to include cancellations using the higher value of the IFR share of peak hours and the cancellation rates relative to total operations.
- Total Operations: The ASPM database provides a number of measures of operations in addition to the count of operations with delay data. Analysis indicated that the ETMS count was the most consistent over time, and that it was used to represent actual operations for a particular time period.

In addition to the detailed "excess travel time" delay data, analysis was also performed using the online summary data that covered a longer time frame (back to 1998) and was more easily compared to the OPSNET and BTS data in terms of "delays over 15 minutes".[3] The following measures were analyzed and compared to the other data sets:

- Arrival and departure flight delays measured against the flight schedule,
- Arrival and departure flight delays measured against the flight plan.

Note that this set of ASPM data does not account for, or allocate, delays caused by holds at destination airports. Monthly and annual averages are summarized in Exhibit B-2.

[3] The detailed data measures total "excess travel time" delay, but does not provide detail that permits analysis of the distribution of delay levels (i.e., over 15 minutes).

B-3

| Comment | Response |
|---|---|
| B1 continued | In response to the commenter's statement that *CH Appendix B* "examine historical patterns of delay", the FAA asserts that in many cases the commenter distorts historical delay statistics specifically to arrive at the commenter's pre-conceived and inaccurate conclusion that delay and demand (or operational levels in the commenter's parlance) are unrelated.<br><br>In particular, the commenter consistently fails to account for historical flight cancellations and normalize for year-to-year and month-to-month variances in weather conditions in his examinations. These failures lead the commenter to erroneously interpret causal factors associated with delay. An example of such erroneous interpretations appears in *CH Chart B-6*, where the commenter plots daily operations levels versus historical average delays per operation. This plot shows that days with lower levels of recorded operations have generally higher delays. Rather than interpreting this trend appropriately and recognizing that days with significantly reduced levels of operations are likely indicative of poor weather days with high delays and accordingly high levels of flight cancellations, the commenter concludes that this relationship supports the assertion that there is not an observable relationship between operations levels and delays. CH makes similar erroneous conclusions regarding other charts including *CH Charts B-2, B-3, B-4, and B-7*--which fail to normalize for variance in weather conditions; and *CH Charts B-5 and B-8*—which fail to account cancellations on high delay days.<br><br>Finally, throughout *CH Appendix B*, the commenter claims that in the modeling effort performed for the DEIS, operations levels were the only causal variable that the FAA considered. This assertion is absolutely false. The FAA explicitly considered the effects of weather conditions, runway use configurations, flight scheduling patterns, and aircraft fleet mixes on the performance of the existing airfield and modeled airfield development alternatives. The way in which these factors were taken into consideration in the modeling effort is clearly delineated in **Appendix D** of the EIS and associated simulation data packages referenced therein. |
| B2 | The FAA concurs that meteorological conditions other than ceiling and visibility can limit the capacity of ORD and result in high delays. As noted by the commenter, a key additional factor is winds at ORD, which can force controllers to use lower capacity runway use configurations. The runway development alternatives under consideration in the DEIS were developed in part to "equalize" the capacity of all of ORD's primary runway use configurations to mitigate such delays. Severe precipitation events on the other hand are generally associated with reduced ceiling and visibility conditions. |

### B.2.2 FAA OPSNET Database

For many years delays have been measured in the OPSNET data set using air traffic control data that match actual arrival and departure times to those provided in the flight plan. OPSNET "delays" are limited to flights that arrive or depart more than 15 minutes late, and it implicitly assumes all other flights are on-time (zero delay minutes). The OPSNET data also provide information on cause of delay and the distribution of delay by type of aircraft. There are three relevant measures of delay reported in OPSNET:

- Average delay for flights over 15 minutes delayed
- Average delay for all flights[4]
- Delayed flights per 1,000 total operations

Monthly statistics are summarized in Exhibit B-2 with annual data back to 1990 shown in Exhibit B-3.

### B.2.3 U.S. DOT Airline On-Time Delay Database

A data source that is comparable to OPSNET has existed for many years and is based on data reported to the U.S. Department of Transportation (DOT), Bureau of Transportation Statistics (BTS) by the top 19 U.S. air carriers (those with at least one percent of total domestic scheduled passenger revenues). This BTS on-time dataset is also measured in terms of delays in excess of 15 minutes. It is used to produce detailed consumer information on flight reliability by carrier, airport, and routing. Summary annual statistics from 1997 to 2004 and monthly statistics from June 2003 to December 2004 are shown in Exhibit B-4.

### B.2.4 Shortcomings of Delay Databases

It is important to note that all of the data systems have flaws, are not directly comparable to each other, and may not be comparable to themselves over time. Of particular note are the following concerns:

[4] Total delay minutes (counting only delays over 15 minutes) divided by total operations.

- For many years, delays were only measured if they exceeded 15 minutes. All other flights deemed to be "on-time" (zero minutes of delay). The ASPM system now measures shorter delays, giving the appearance of increased incidence of delay and increased average minutes of delay. This change may not be represented in the other databases. B3

- The detailed ASPM data used in the DEIS measure delays for late flights, but they do not give credit for early flights.[5] This biases the analysis by measuring relatively small delays that result from general variability in flight operations. B4

- Any delays based on flight schedules ignore carrier strategies to minimize delay by both schedule padding and publishing competitive flight times that may not be achievable under average conditions. B5

- Delays that are caused by weather are difficult to measure and attribute accurately to different airports, since there is no way to adjust for runway closures and route diversions that are unrelated to runway capacity. B6

- Actual data is only available for certain operations, and it may be estimated for others. B7

**B.3 Historical Delay Patterns at ORD**

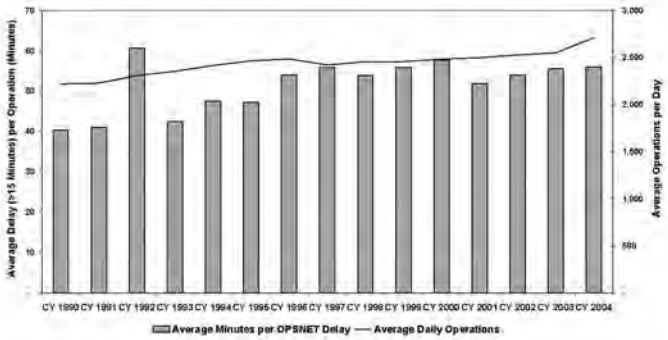
Historical delays have been relatively stable over a long-term period, although highly variable due to weather and market conditions. As shown in Chart B-1 (and Exhibit B-3), OPSNET delays (over 15 minutes) averaged 56 minutes per delay based on an average of 2,712 operations per day in CY 2004. The average delay increased 2.4% per year from 1990 to 2004 as operations increased 1.4%. Average delays actually declined, dropping slightly from 2000 to 2004, yet operations increased 2.2% per year.

[5] Data on early flights is available in summary form on-line, but was not included in the DEIS.

B-5

| Comment | Response |
|---|---|
| B3 | The FAA concurs with the commenter's assessment that older delay databases developed by the FAA and the US Department of Transportation, specifically to OPSNET and Aviation Service Quality Performance (ASQP) databases do not account for aircraft delays unless such delays exceed 15 minutes. Because these databases ignore delays of less than 15 minutes, they have a tendency to skew the interpretation of delay, particularly in comparison to delay results produced by simulation models, which generally measure delay in terms of excess travel time, absent minimum delay thresholds. Two more advanced FAA delay databases-the Consolidated Operations and Delay Analysis System (CODAS) and Aviation System Performance Metrics (ASPM) were developed in part to address the shortcomings associated with the minimum delay thresholds inherent in OPSNET and ASQP data.<br><br>The FAA disagrees with the commenter's characterization of ASPM data as "giving the appearance of increased incidence of delay and increased average minutes of delay". Rather, the FAA asserts that ASPM provides more accurate and refined depiction of the delays incurred by airlines and other users of the National Air Transportation System than other available delay databases. |
| B4 | FAA agrees with this characterization of ASPM data. It should be noted that in the EIS, the FAA used average annual delays calculated through the TAAM modeling, not ASPM delays. The FAA presents ASPM delay data, as well as other delay metrics, in the EIS for discussion and comparative purposes only. Delays measured using TAAM represent excess travel time incurred by simulated flight operations and are not subject to distorting effects associated with measuring delays relative to flight schedules such as schedule padding and "early arrivals" that take place when airlines do not encounter delays as severe as those used in the development of the schedule pads. |
| B5 | For the EIS, the FAA used average annual delays calculated through the TAAM modeling, not delays based on flight schedules. Moreover, ASPM data presented in the DEIS for comparative purposes present delays relative to flight plans rather than flight schedules in an attempt to minimize the distorting scheduling factors noted by the commenter. |
| B6 | Comment noted. For the EIS, the FAA used average annual delays calculated through the TAAM modeling, not any of the published delay metrics. |
| B7 | Comment noted. For the EIS, the FAA used average annual delays calculated through the TAAM modeling, not any of the published delay metrics. |

**Chart B-1**
**AVERAGE DELAYS (15+ MINS.) VS. OPERATIONS VOLUME (OPSNET)**
**(Annual Average: CY 1990 TO CY 2004)**




Source: Exhibit B-3

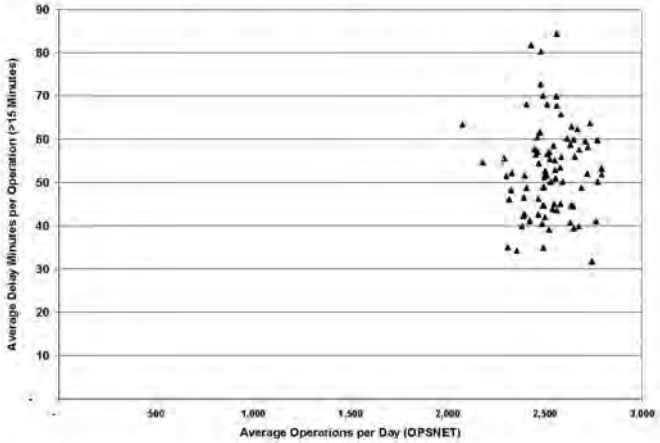
B8

| Comment | Response |
|---|---|
| B8 | The FAA agrees with the commenter that day-to-day variances in weather conditions, changes in airline scheduling patterns, and other factors contribute to day-to-day and month-to-month variations in delays, especially at a highly-congested airport that is nearing capacity like ORD. At such airports, relatively small variations in weather or scheduling practices can cause substantial delays. |

B-6

As shown in Chart B-2, the monthly average of OPSNET delay shows no clear correlation to operating levels.

**Chart B-2**
**AVERAGE DELAY COMPARED TO AVERAGE OPERATIONS (OPSNET)**
**(Monthly Averages: January 1998 To December 2004)**




Source: Exhibit B-2

B9

| Comment | Response |
|---|---|
| B9 | As explained previously, the FAA believes that the commenter's conclusion that OPSNET data show no clear correlation to operating levels is due to (1) the failure to take into consideration historical flight cancellations and (2) the failure to properly account for the effect that wind and weather conditions have on delay occurrence from month-to-month. Nevertheless these data, as well as the OPSNET data presented in the DEIS, do indicate that ORD currently ranks among the top five most delayed airport in the U.S. |

B-7

The seemingly random nature of delays is also observed in Chart B-3 that shows relatively stable operations and highly variable delay.

**Chart B-3**
**AVERAGE OPSNET DELAYS (15+ MINUTE) VS. AVERAGE DAILY OPERATIONS**
**(Monthly Average: January 1998 To December 2004)**

Source: Exhibit B-2

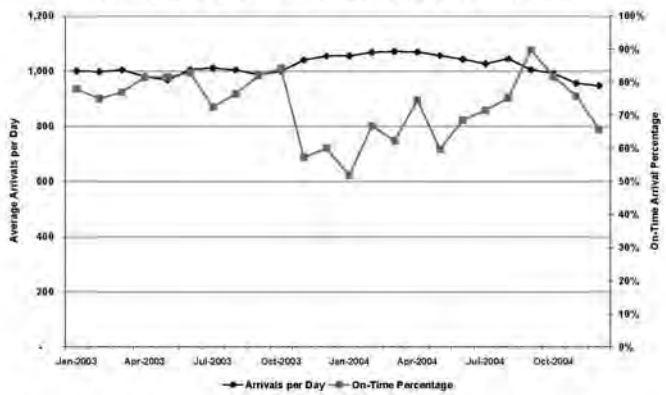
B10

B-8

| Comment | Response |
|---|---|
| B10 | As noted in response to comment B1, the FAA believes that the commenter makes inappropriate conclusions regarding the role that increasing operations levels have on delays through the use of *CH Charts B-1, B-2, B-3, B-4, B-5, B-6, B-7, B-8, B-9 and B-10.*<br><br>To properly assess the role that increasing operational levels play in driving delays, the commenter should have (1) segmented the delay data by weather condition to eliminate the confounding effects associated with day-to-day and month-to-month variations in weather conditions, and (2) presented (or at a minimum acknowledged) flight cancellations, especially on poor weather days. In the latter case, the failure to properly account for cancellations in the evaluation of the relationship between ASPM operations levels and delays results in the commenter concluding counter-intuitively that higher average delays occur on days with lower daily activity levels. In reality, many of the days with low ASPM-reported activity levels had such low activity levels because poor weather conditions or adverse winds necessitated flight cancellations due to capacity constraints and associated high delays. |

The U.S. DOT BTS data also show a relatively random relationship between delays and operations. The monthly patterns over the last two years show that the on-time percentage declined significantly in late 2003 with a relatively small increase in operations (Chart B-4). It should be noted that the on-time percentage remained low after the first FAA-initiated scheduling order in March 2004; it improved in September 2004; and then it declined through December 2004 despite the initiation of the second scheduling order that limited operations at O'Hare.

**Chart B-4**
**ON-TIME ARRIVALS VS. ARRIVAL VOLUME AT ORD (BTS DATA)**
**Monthly Averages: January 2003 Through December 2004**




Source: Exhibit B-4

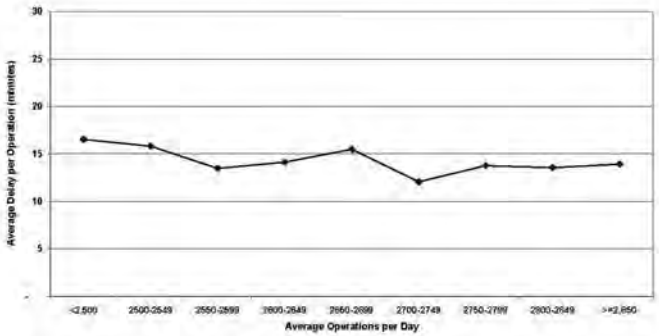
B11



| Comment | Response |
|---|---|
| B11 | Airline on-time performance data—as is measured done in the BTS ASQP database referenced in *CH Chart B-4*—generally distorts the true operational deficiencies associated with airport and airspace systems. This is because such data are inherently confounded with airline scheduling and marketing decisions—including the "padding" of scheduled times by airline to account for expected delay, unrealistic scheduling of operations at the same time, and other factors. Because of these confounds, it is difficult to use such data to establish reliable relationships between operations levels and delays. However, BTS data are useful for comparing airports to one another , as was accomplished in the EIS. These comparisons, described in **Table 2-1** of the EIS clearly indicate that ORD ranks among the five most delayed airports in the U.S. |

A similar pattern is evident in the ASPM data, as shown in Chart B-5. For all days in the CY 2000 to CY 2004 period, average delay is the same for days with high levels of operations as it is for days with low levels of operations.[6] In fact, the average delay was least for days having more than 2,500 operations.

**Chart B-5**
**AVERAGE DELAY BY OPERATIONS LEVEL CY 2000-2004**




Source: Exhibit B-5

B12

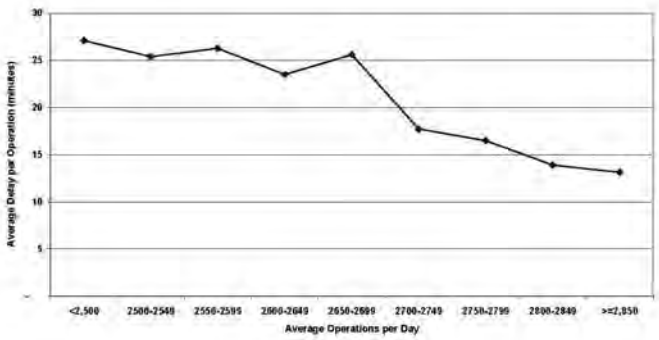
[6] The daily operations counts are based on ETMS data.

B-10

| Comment | Response |
|---|---|
| B12 | As explained previously, the FAA believes that the commenter's conclusion that ASPM data show no clear correlation to operating levels is due to (1) the failure to take into consideration historical flight cancellations and (2) the failure to properly account for the effect that wind and weather conditions have on delay occurrence from month-to-month. Nevertheless these data, as well as the OPSNET data presented in the DEIS, do indicate that ORD currently ranks among the top five most delayed airports in the U.S. |

This pattern is even more pronounced for the last year as shown in Chart B-6. Average delay in 2004 appears to be negatively correlated with operating levels.

**Chart B-6**
**AVERAGE DELAY BY OPERATIONS LEVEL CY 2004**




Source: Exhibit B-5

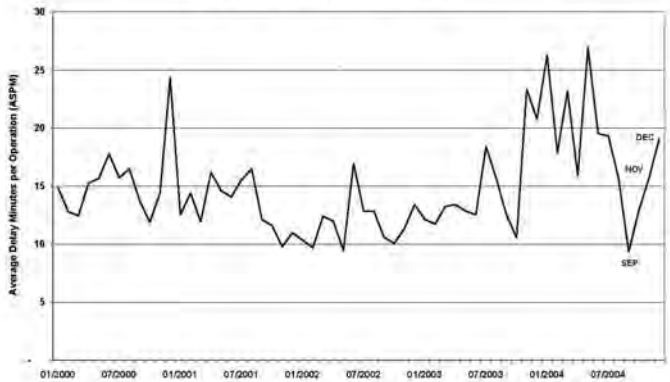
B13

| Comment | Response |
|---|---|
| B13 | *CH Chart B-6* most provides the clearest indication of the commenter's erroneous interpretations of ASPM delay data. Here, the commenter asserts that "average delay in 2004 appears to be negatively correlated with operating levels." This observation is due in large part to the fact that the ASPM-reported operations levels shown in the chart reflect only those operations that were actually flown. No accounting is made for those flights that were cancelled—which occurs most frequently on days when wind, weather, or other factors reduce airport capacity, resulting in high delays and associated flight cancellations. |

B-11

Much like the OPSNET and the BTS data, the ASPM data show a pattern of delay that is highly variable, even during periods with relatively stable levels of operations. As shown in Chart B-7, average monthly delays varied between 10 and 25 minutes from 2000 until the end of 2003 when they increased significantly, but not uniformly.

**Chart B-7**
**AVERAGE EXCESS TRAVEL TIME DELAY (ASPM)**
**(Monthly Averages 2000-2004)**



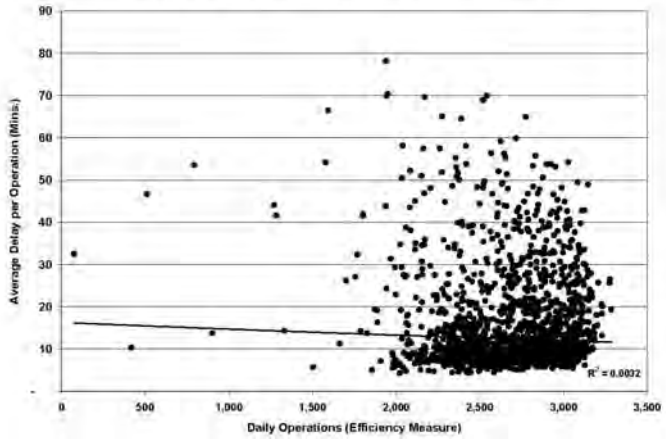

Source: Exhibit B-1

Delays declined in September 2004 prior to the recent scheduling order, and increased after the order went into effect on November 1. Operating levels are not the primary driver of delays at ORD. This is clearly evident by comparing average daily delays to operating levels for the five-year period 2000 to 2004 (Chart B-8). As shown, there is virtually no direct correlation ($R^2$=0.003) between delays and operating levels.

B-12

| Comment | Response |
|---|---|
| B14 | As with the other charts presented in *CH Appendix B*, *CH Charts B-7* and *B-8* fail to isolate the effects of operating levels on delay from other key delay drivers, including weather conditions, runway use configurations, and airline scheduling changes. As a result, the FAA believes that *CH Charts B-7 and B-8* do not provide sufficient basis to conclude increasing operational levels contribute to increasing delays, all else being equal.<br><br>The FAA partially agrees with the commenter's assertion that operating levels are not the primary drive of delays at ORD. As acknowledged in the DEIS that there are a variety of important drivers of delay at ORD. As explained in previous comments these drivers include the occurrence of poor weather conditions, adverse wind conditions that force air traffic controllers to rely on lower capacity configurations, airline scheduling practices, aircraft fleet mixes, air traffic control rules and flight procedures, and operating levels.<br><br>All of these factors were taken into consideration in the evaluation of alternatives in the DEIS, including in the TAAM airfield and airspace simulations.<br><br>The data presented in *CH Chart B-8* appear to be incorrect. This is because the daily operations at ORD have not exceeded 3,000 operations at any point between January 2000 and December 2004. |

**Chart B-8**
**AVERAGE "EXCESS TRAVEL TIME" DELAY VS. DAILY OPERATIONS (ASPM DATA)**
**(Daily Averages for January 2000 to December 2004)**




Source: FAA, ASPM database

B14

## B.4 Factors Determining Delay Levels

Despite a long section on historical delays at ORD in the DEIS report, the FAA makes no attempt to identify or explain the causes of delay. It simply assumed that delay can be eliminated by adding runway capacity. This may work in the TAAM model, but it misrepresents the real world by a significant degree. A better understanding of the delay problems at ORD would have led to a more reasonable and balanced approach to solving delays, other than the FAA's one-dimensional, simplistic and erroneous theoretical solution produced by a model.

B15

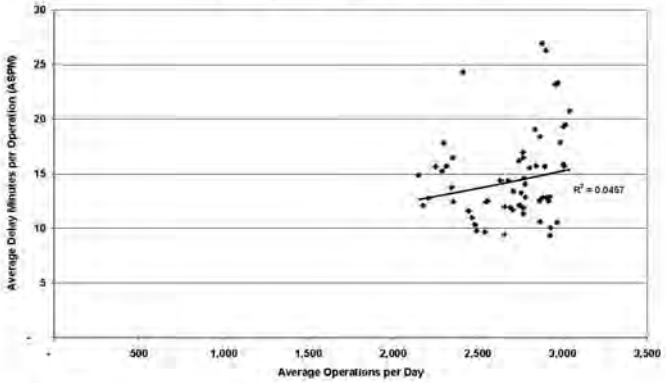
The primary assumption of the TAAM modeling is that with general operating categories (VFR and IFR conditions), operating level is the primary determinant of delay. The data do not support this theory; and in fact, it is abundantly apparent that there are significant factors affecting delay other than the capacity of the runways. As shown in Chart B-9, monthly average

B-13

| Comment | Response |
|---|---|
| B14 | Please see the response on the previous page. |
| B15 | The FAA respectfully disagrees with the CH assertion that FAA does not understand the delay problems at O'Hare. The FAA presents various contributors to delays at O'Hare in **Section 2.1.5** of **Chapter 2** and following subsections. Specifically, the FAA attributes current delays to the existing airfield layout, adverse weather conditions, existing airspace limitations and peak period congestion. The Build Alternatives would minimize the delays attributable to the existing causes. Constructing parallel runways would reduce the dependency on arriving and departing aircraft due to crossing runways. The commenter's basic argument set is focused on operating levels. While this is important, the runway configurations at the present-day O'Hare limit its ability to serve demand. This was clearly explained in **Chapter 2, Section 2.1.5.1.** In addition, parallel runways would allow for up to three independent arrival runways during poor weather conditions whereas the existing layout only allows for two independent runways. The extra capacity created by new pavements and reduced dependencies would significantly reduce delays as demonstrated by the TAAM simulation model results. A description of the TAAM modeling and the results of the modeling effort can be found in **Appendix D** of the EIS. |

delays (as measured by ASPM) from 2000 to 2004 have no correlation to the average monthly operations (or PMAD as used in the TAAM model).

**Chart B-9**
**AVERAGE EXCESS TRAVEL TIME DELAY (All Weather)**
**(Monthly Averages 2000-2004)**




Source: Exhibit B-1

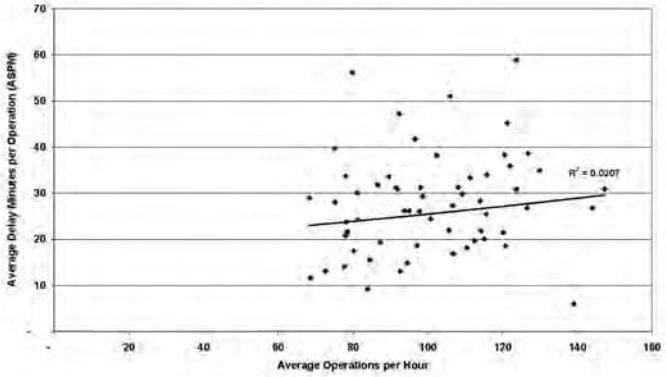
B16

Perhaps the correlation only exists for the IFR and VFR conditions separately. As shown in Charts B-10 and B-11, this is equally untrue. There is no apparent correlation in either case.

| Comment | Response |
|---|---|
| B16 | The commenter is correct to note that many factors contribute to average delays. As stated above, the FAA presents various contributors to delays at O'Hare in **Chapter 2, Section 2.1.5** and following subsections. Key among these factors are weather conditions at the Airport, runway use configurations air traffic controllers are able to use, airline scheduling practices, aircraft fleet mix, and daily operational demands. All of these factors were taken into consideration in the evaluation of alternatives in the DEIS, including in the TAAM airfield and airspace simulations.<br><br>The data presented in *CH Chart B-9* appear to be incorrect. This is because the average daily operations recorded in ASPM for ORD have not exceeded 2,800 operations at any point between January 2000 and December 2004. |

B-14

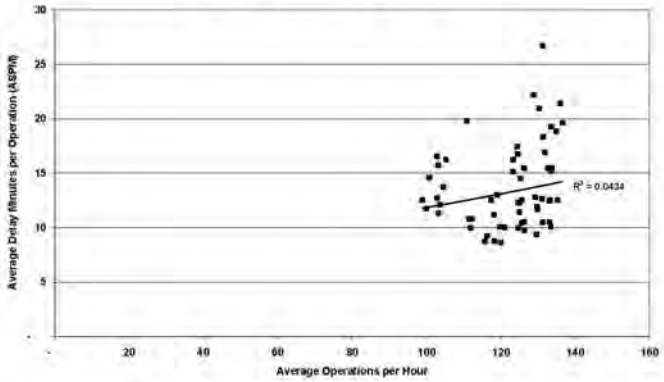
**Chart B-10**
**AVERAGE EXCESS TRAVEL TIME DELAY (IFR CONDITIONS)**
**(Monthly Averages 2000-2004)**




Source: Exhibit B-1

B-15

**Chart B-11**
**AVERAGE EXCESS TRAVEL TIME DELAY (VFR CONDITIONS)**
**(Monthly Averages 2000-2004)**




B17

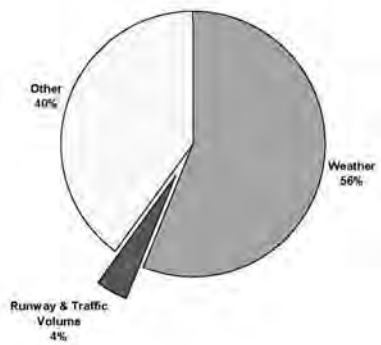
Source: Exhibit B-1

| Comment | Response |
|---|---|
| B17 | There are many variables that contribute to the calculation of average daily delays including day to day and month to month variations in weather conditions, wind conditions, and airline scheduling patterns. The simulation analyses conducted using TAAM was intended to capture long-term trends in these conditions rather than the short-term variability in said conditions that is represented in *CH Charts B-10 and B-11.* As noted previously, the simulation analyses for the EIS utilizing a standard industry accepted methodology with input and guidance from FAA's Air Traffic group and others discussed in **Appendix D** of the EIS. |

B-16

The reason for these empirical findings should be obvious because it is evident in the FAA's ASPM data attributing delays to various causes. As shown in Chart B-12, weather accounted for 56% of all delay hours at ORD in CY 2004, while runways and other volume-related causes accounted for just 4%.

**Chart B-12**
**DISTRIBUTION OF ORD FLIGHT DELAY HOURS BY CAUSE (CY 2004)**




Source: Exhibit B-6

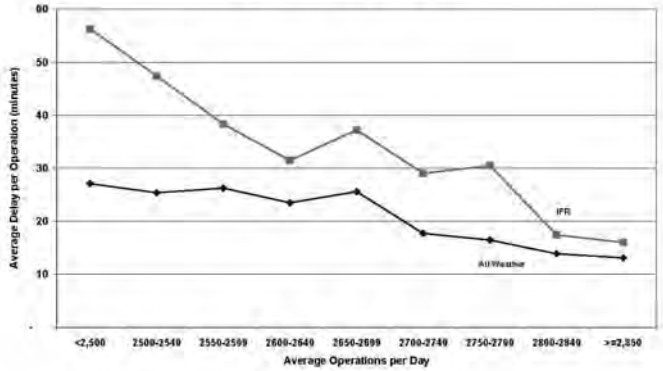
B18

This critical finding is also evident in the ASPM delay data, as shown in Chart B-13. The counter-intuitive downward slope of the delay line relative to operating levels is driven by the delays occurring during IFR conditions.

B-17

| Comment | Response |
|---|---|
| B18 | ORD's existing airfield runway configuration—which relies on complex, intersecting runway use configurations to achieve maximum capacity exacerbates the effects of poor weather conditions on airfield capacity as higher capacity intersecting runway use configurations cannot be used when poor weather affects the airport.<br><br>In contrast, the Build Alternatives (C, D and G) would provide simplified parallel runway operating configurations that are less prone to capacity loss when during periods poor weather conditions. For example, when the existing Airport is experiencing good weather, arrivals are routed to three independent runways. When weather minima are reduced, the Airport is limited to two independent arrival runways. With any of the Build Alternatives, the Airport can maintain three independent arrival runways, even during reduced weather minima. For additional detail, see **Appendix D**.<br><br>Consequently, as indicated in TAAM simulation results, each of the Build Alternatives would reduce the adverse operational effects that adverse weather conditions have on ORD.<br><br>It is also important to note that the commenter appears to mischaracterize the meaning of the term "runway and traffic volume" as it is applied in ASPM. In particular, the commenter attempts to claim that the build alternatives proposed in the DEIS only address runway and traffic volume delays. This is incorrect. Delays attributable to airport capacity deficiencies can manifest themselves in any of the categories presented in *CH Chart B-12*. For instance, delays that result from poor weather or lower capacity operating configurations required due to wind conditions would likely be classified as being weather-related. On the other hand delays attributed to the cause "runway" are typically associated rare events—namely runway closures for maintenance or other reasons and cannot be interpreted to encompass all delays caused by runway capacity deficiencies. Similarly, delays associated with "volume" are typically associated with excessive air traffic volume in the airspace (e.g., overloading of specific airspace routes into and out of ORD) and are not necessarily indicative of runway capacity deficiencies. The alternatives developed in the DEIS have been proposed to address all of these delay causes. |

**Chart B-13**
**AVERAGE DELAY BY OPERATIONS LEVEL (ASPM)**
**All Weather Vs. IFR (CY 2004)**




Source: Exhibit B-5

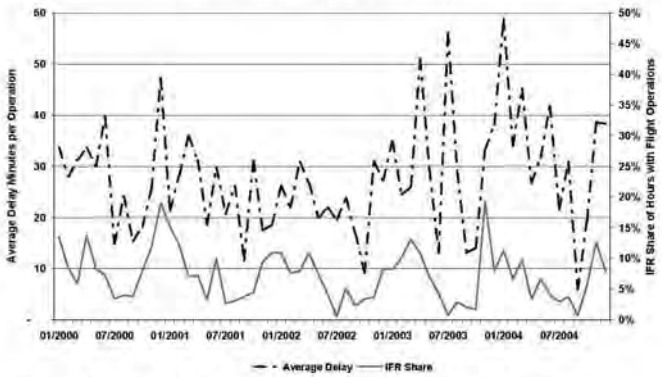
B19

IFR conditions (and the severity and frequency of those conditions) dictate the environment in which ORD operates, an environment that was not fully or accurately modeled in the DEIS. As shown in Chart B-14, the variability in average delays over the last five years matches the variability in IFR conditions.

B-18

| Comment | Response |
|---|---|
| B19 | The commenter misinterprets the data presented in *CH Chart B-13* in a manner similar to their misinterpretations of data presented in Chart B-6. In particular, the commenter observes that higher delays are observed on days that have fewer operations and concludes from this that operations and delays exhibit a counterintuitive, inverse relationship (i.e., delays decline as operations increase). As noted previously, the more compelling reason for this trend is the fact that the ASPM-reported operations levels shown in the chart reflect only those operations that were actually flown. No accounting is made for those flights that were cancelled—which occurs most frequently on days when wind, weather, or other factors reduce airport capacity, resulting in high delays and associated flight cancellations. |

**Chart B-14**
**AVERAGE EXCESS TRAVEL TIME: IFR DELAY VS. FREQUENCY OF IFR CONDITIONS**
**(Monthly Averages 2000-2004)**




Source: FAA, ASPM database

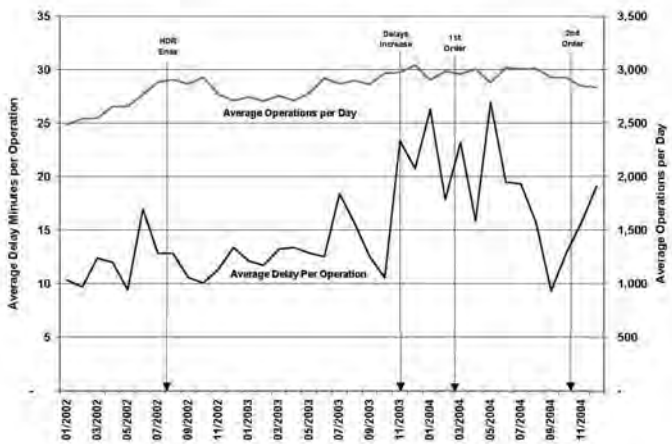
B20

The folly of trying to attribute delays solely to operating levels can also be shown by the actual patterns at ORD over the last three years (Chart B-15). During 2002, operating levels (as measured by daily averages) increased as the HDR restrictions were lifted. Delays increased initially, but then they declined to early 2002 levels for most of 2003. At the end of 2003, there was a period of bad weather and airline disruptions that generated a large increase in delays. These delays were not based on any real increase in operations. The first scheduling order went into effect in March 2004, but delays soon increased with no real change in operations. Delays then declined significantly in September 2004, but increased again when the most recent order went into effect in November 2004.

B-19

| Comment | Response |
|---|---|
| B20 | The FAA disagrees with the commenter stating that the IFR conditions were not fully or accurately modeled in the EIS. The FAA utilized a standard industry accepted methodology for the EIS. **Appendix D, Section D.2.3** discusses a nine-step process followed by FAA in setting up the model. Step #2 dealt specifically with wind and weather, and is outlined below.<br><br>Analysis of wind and weather conditions were conducted to determine annual percent occurrences of major runway operating configurations and weather conditions, as well as to determine which of these operating configurations and weather conditions warranted modeling.<br><br>The operational analyses of various weather conditions using TAAM necessarily required that analysts categorize real-world variations in weather conditions. Such assumptions are absolutely necessary to produce a manageable and meaningful simulation experimental design. Categorizing weather conditions into typical good weather and poor weather conditions permitted major operational differences among proposed alternatives to be assessed. This assessment clearly indicated that the build alternatives modeled using TAAM—particularly the preferred alternative (Alternative C)—would substantially reduce delays in both good weather conditions and poor weather conditions, while simultaneously accommodating substantially higher levels of aircraft operations.<br><br>As with numerous other charts presented in this appendix, the commenter's interpretation of the data presented *CH Chart B-14* ignores the flight cancellations that actually occurred on the days shown in the graphic and thus provides and incomplete and uninterpretable relationship between the severity of poor weather-related operational impacts and the duration of poor weather conditions. |

**Chart B-15**
**AVERAGE EXCESS TRAVEL TIME DELAY**
**AND AVERAGE DAILY OPERATIONS**
**(Monthly Averages 2002-2004)**




Source: Exhibit B-1

B21

In conclusion, the TAAM modeling is based on a flawed understanding of delay at ORD. Therefore the results for both the No Build and OMP scenarios are highly suspicious and error-prone, and they cannot be relied upon in any way to reach conclusions about the need, veracity, or economic efficiency of the proposed OMP.

B22

B-20

| Comment | Response |
|---|---|
| B21 | The FAA absolutely disagrees with the commenter's assertion that DEIS operational analyses sought to attribute delays at ORD to a single causal factor—aircraft operations. As stated above, the FAA presents various contributors to delays at O'Hare in **Chapter 2, Section 2.1.5** and following subsections. Key among these factors are weather conditions, runway use configurations air traffic controllers are able to use, airline scheduling practices, aircraft fleet mix, and daily operational demands. All of these factors were taken into consideration in the evaluation of alternatives in the DEIS, including in the TAAM airfield and airspace simulations.<br><br>As with numerous other charts presented in this appendix, the commenter's interpretation of the data presented *CH Chart B-15* ignores the flight cancellations that actually occurred on the days shown in the graphic and thus provides and incomplete and uninterpretable relationship between the severity of poor weather-related operational impacts and the duration of poor weather conditions.<br><br>Furthermore, the data presented in *CH Chart B-15* appear to be incorrect as the daily operations at ORD have not exceeded 3,000 operations at any point between January 2000 and December 2004. |
| B22 | The FAA cannot accept the commenter's conclusion, which is itself based on a flawed interpretation of historical delay data, as has been described in detail in prior comments. In fact, the TAAM modeling performed for the EIS considered a wide range factors that contribute to delays at ORD, including weather conditions, runway use configurations, airline scheduling practices, aircraft fleet mix, and daily operational demands. The manner in which these factors were taken into consideration is described in **Appendix D** of the EIS and in greater detail in TAAM data packages that are referenced therein.<br><br>The FAA established a team to review all assumptions and results of the simulation modeling. TAAM is the FAA Air Traffic Organization's tool of choice for simulation studies conducted in support of national airspace redesign efforts and is currently being used in other complex environmental and planning efforts in the country, including studies at Philadelphia, Fort Lauderdale, John F. Kennedy international airports.<br><br>The FAA employed a state-of-the-art, industry-accepted process for the simulation effort. Based on the scope and breadth of the modeling effort, the FAA believes that this analysis is unprecedented for any simulation analysis ever conducted for any single airport project. The FAA Air Traffic work group invested approximately 1,400 hours reviewing the assumptions, draft results, animations, and final results. In addition, the FAA and FAA's Third Party Contractor invested approximately 1,250 hours validating the results thereto. This level of effort resulted in the most comprehensive analysis from a modeling and review level of effort perspective ever conducted for a single airport. The FAA is confident in the accuracy and reliability of the TAAM simulation analysis. |

Exhibit B-1
Page 1 of 2

## ASPM EXCESS TRAVEL TIME DELAY

(Monthly Averages for January 2000 to December 2004)

| | All-Weather Operations | | | IFR Operations 2/ | | | |
|---|---|---|---|---|---|---|---|
| | Delay Minutes | Total Operations 1/ | Delay Minutes/ Operation | Delay Minutes | Total Operations 1/ | Delay Minutes/ Operation | % of Total Hours |
| 2000 January | 990,378 | 66,618 | 14.9 | 248,772 | 7,377 | 33.7 | 14% |
| 2000 February | 819,542 | 64,103 | 12.8 | 117,957 | 4,209 | 28 | 9% |
| 2000 March | 908,469 | 73,044 | 12.4 | 127,205 | 4,071 | 31.2 | 6% |
| 2000 April | 1,048,931 | 68,702 | 15.3 | 282,314 | 8,399 | 33.6 | 14% |
| 2000 May | 1,092,595 | 69,766 | 15.7 | 142,849 | 4,753 | 30.1 | 8% |
| 2000 June | 1,227,215 | 69,002 | 17.8 | 148,260 | 3,732 | 39.7 | 7% |
| 2000 July | 1,127,560 | 71,796 | 15.7 | 33,750 | 2,269 | 14.9 | 3% |
| 2000 August | 1,202,121 | 72,953 | 16.5 | 55,243 | 2,275 | 24.3 | 4% |
| 2000 September | 968,937 | 70,391 | 13.8 | 34,093 | 2,197 | 15.5 | 4% |
| 2000 October | 900,657 | 75,738 | 11.9 | 98,287 | 5,406 | 18.2 | 8% |
| 2000 November | 1,026,507 | 71,342 | 14.4 | 206,171 | 8,096 | 25.5 | 12% |
| 2000 December | 1,586,443 | 65,220 | 24.3 | 507,211 | 10,738 | 47.2 | 19% |
| 2000 Total | 12,899,355 | 838,675 | 15.4 | 2,002,110 | 63,522 | 31.5 | 9% |
| 2001 January | 893,054 | 71,316 | 12.5 | 247,644 | 11,558 | 21.4 | 15% |
| 2001 February | 933,761 | 64,916 | 14.4 | 219,871 | 7,776 | 28.3 | 12% |
| 2001 March | 879,603 | 73,814 | 11.9 | 195,114 | 5,432 | 35.9 | 7% |
| 2001 April | 1,168,310 | 72,183 | 16.2 | 145,648 | 4,655 | 31.3 | 7% |
| 2001 May | 1,107,190 | 75,820 | 14.6 | 36,660 | 1,969 | 18.6 | 3% |
| 2001 June | 1,026,453 | 72,986 | 14.1 | 192,909 | 6,465 | 29.8 | 10% |
| 2001 July | 1,206,605 | 77,612 | 15.5 | 29,501 | 1,415 | 20.6 | 3% |
| 2001 August | 1,287,094 | 78,183 | 16.5 | 51,025 | 1,946 | 26.2 | 3% |
| 2001 September | 695,838 | 57,470 | 12.1 | 17,245 | 1,479 | 11.7 | 4% |
| 2001 October | 779,865 | 67,321 | 11.6 | 80,183 | 2,571 | 31.2 | 4% |
| 2001 November | 643,236 | 65,726 | 9.8 | 79,390 | 4,540 | 17.5 | 9% |
| 2001 December | 740,249 | 67,447 | 11 | 149,536 | 8,037 | 18.6 | 11% |
| 2001 Total | 11,361,258 | 844,794 | 13.4 | 1,444,725 | 57,843 | 25 | 7% |
| 2002 January | 700,535 | 67,745 | 10.3 | 164,468 | 6,281 | 26.2 | 11% |
| 2002 February | 608,259 | 62,742 | 9.7 | 96,034 | 4,364 | 22 | 8% |
| 2002 March | 859,271 | 69,267 | 12.4 | 133,724 | 4,322 | 30.9 | 8% |
| 2002 April | 841,717 | 70,266 | 12 | 213,543 | 7,982 | 26.8 | 11% |
| 2002 May | 688,600 | 72,923 | 9.4 | 105,645 | 5,265 | 20.1 | 7% |
| 2002 June | 1,231,323 | 72,594 | 17 | 60,518 | 2,766 | 21.9 | 4% |
| 2002 July | 1,002,154 | 78,167 | 12.8 | 7,252 | 368 | 19.7 | 1% |
| 2002 August | 1,006,897 | 78,492 | 12.8 | 59,018 | 2,483 | 23.8 | 5% |
| 2002 September | 791,763 | 74,710 | 10.6 | 24,385 | 1,444 | 16.9 | 2% |
| 2002 October | 792,538 | 78,737 | 10.1 | 15,979 | 1,738 | 9.2 | 3% |
| 2002 November | 816,067 | 71,943 | 11.3 | 100,045 | 3,231 | 31 | 4% |
| 2002 December | 977,950 | 73,020 | 13.4 | 147,295 | 5,389 | 27.3 | 8% |
| 2002 Total | 10,317,074 | 870,606 | 11.9 | 1,127,906 | 45,633 | 24.7 | 6% |

Exhibit B-1
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## ASPM EXCESS TRAVEL TIME DELAY

(Monthly Averages for January 2000 to December 2004)

| | All-Weather Operations | | | IFR Operations 2/ | | | |
|---|---|---|---|---|---|---|---|
| | Delay Minutes | Total Operations 1/ | Delay Minutes/ Operation | Delay Minutes | Total Operations 1/ | Delay Minutes/ Operation | % of Total Hours |
| 2003 January | 885,198 | 72,996 | 12.1 | 223,001 | 6,380 | 35 | 8% |
| 2003 February | 758,810 | 64,754 | 11.7 | 133,476 | 5,464 | 24.4 | 10% |
| 2003 March | 962,762 | 72,703 | 13.2 | 204,443 | 7,850 | 26 | 13% |
| 2003 April | 923,439 | 68,918 | 13.4 | 312,962 | 6,131 | 51 | 11% |
| 2003 May | 924,968 | 71,954 | 12.9 | 116,382 | 3,968 | 29.3 | 7% |
| 2003 June | 922,707 | 73,680 | 12.5 | 29,949 | 2,288 | 13.1 | 4% |
| 2003 July | 1,377,830 | 74,864 | 18.4 | 8,254 | 147 | 56.1 | 1% |
| 2003 August | 1,189,481 | 75,913 | 15.7 | 37,026 | 1,278 | 29 | 3% |
| 2003 September | 912,523 | 72,747 | 12.5 | 11,241 | 857 | 13.1 | 2% |
| 2003 October | 837,880 | 79,445 | 10.5 | 11,813 | 838 | 14.1 | 2% |
| 2003 November | 1,795,179 | 76,904 | 23.3 | 418,462 | 12,562 | 33.3 | 19% |
| 2003 December | 1,698,496 | 81,790 | 20.8 | 194,002 | 5,074 | 38.2 | 8% |
| 2003 Total | 13,189,275 | 886,668 | 14.9 | 1,701,011 | 52,837 | 32.2 | 7% |
| 2004 January | 2,046,068 | 77,821 | 26.3 | 513,542 | 8,716 | 58.9 | 11% |
| 2004 February | 1,377,352 | 77,064 | 17.9 | 149,915 | 4,408 | 34 | 7% |
| 2004 March | 1,908,536 | 82,264 | 23.2 | 344,444 | 7,619 | 45.2 | 10% |
| 2004 April | 1,288,423 | 81,162 | 15.9 | 81,873 | 3,056 | 26.8 | 3% |
| 2004 May | 2,151,819 | 79,916 | 26.9 | 116,039 | 3,645 | 31.8 | 7% |
| 2004 June | 1,594,877 | 81,772 | 19.5 | 99,698 | 2,386 | 41.8 | 4% |
| 2004 July | 1,625,433 | 84,119 | 19.3 | 35,297 | 1,629 | 21.7 | 3% |
| 2004 August | 1,331,589 | 84,863 | 15.7 | 87,659 | 2,841 | 30.9 | 4% |
| 2004 September | 747,959 | 80,102 | 9.3 | 3,492 | 589 | 5.9 | 1% |
| 2004 October | 1,073,709 | 83,315 | 12.9 | 62,133 | 3,206 | 19.4 | 6% |
| 2004 November | 1,221,242 | 77,686 | 15.7 | 385,852 | 9,982 | 38.7 | 13% |
| 2004 December | 1,523,745 | 79,835 | 19.1 | 242,818 | 6,337 | 38.3 | 8% |
| 2004 Total | 17,890,751 | 969,919 | 18.4 | 2,122,762 | 54,414 | 39 | 6% |
| 4-Year Total | 65,657,712 | 4,410,662 | 14.9 | 8,398,514 | 274,249 | 30.6 | 7% |

1/ Operations for which delay data is available
2/ IFR definition = Cloud ceiling < 1,000 feet or visibility < 3 miles as measured in 15-minute increments.

Source: FAA, ASPM database

Exhibit B-2
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COMPARISON OF ORD ASPM AND OPSNET DELAY DATA
(January 1998 to December 2004)

| | Average Daily Operations | | | ASPM | ASPM vs. Schedule | | | | ASPM vs. Flight Plan | | | | ASPM | OPSNET | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ASPM | OPSNET | ASPM/ | Cancellation | Average Delay (mins.) 1/ | | | On-Time | Average Delay (mins.) 1/ | | | On-Time | Sched. Vs. | Avg Delay (mins.) | | Delays/ | Delays by Cause (%) | |
| | Scheduled | Actual | OPSNET | Share | <15 Min. | >15 Mins. | All | Pct. | <15 Min. | >15 Mins. | All | Pct. | FP Delay | >15 Mins. | All 2/ | Ops (000) | Weather | Runway |
| 1/98-12/04 | 2,493 | 2,527 | 99% | 3% | 6.0 | 56.2 | 18.3 | 76% | 6.0 | 45.8 | 14.5 | 78% | 126% | 55.2 | 3.5 | 63.2 | 80% | 4% |
| CY 1998 | 2,369 | 2,458 | 96% | 2% | 4.1 | 52.7 | 15.2 | 78% | 4.1 | 43.3 | 12.4 | 80% | 123% | 53.9 | 1.7 | 32.0 | 88% | 2% |
| CY 1999 | 2,435 | 2,458 | 99% | 4% | 4.8 | 55.3 | 18.2 | 75% | 4.8 | 45.6 | 14.8 | 77% | 123% | 55.8 | 3.1 | 54.8 | 74% | 1% |
| CY 2000 | 2,506 | 2,484 | 101% | 5% | 6.0 | 57.1 | 23.0 | 68% | 6.0 | 45.8 | 17.8 | 72% | 129% | 57.7 | 3.7 | 63.3 | 78% | 4% |
| CY 2001 | 2,549 | 2,498 | 102% | 5% | 5.0 | 55.1 | 17.8 | 76% | 5.0 | 44.2 | 13.9 | 79% | 128% | 51.9 | 3.1 | 59.5 | 78% | 7% |
| CY 2002 | 2,452 | 2,528 | 97% | 2% | 4.3 | 53.0 | 13.9 | 81% | 4.3 | 43.3 | 11.2 | 83% | 124% | 54.1 | 3.1 | 57.6 | 76% | 4% |
| CY 2003 | 2,488 | 2,552 | 97% | 2% | 5.1 | 55.5 | 16.7 | 78% | 5.1 | 47.0 | 13.7 | 80% | 121% | 55.5 | 4.1 | 74.3 | 80% | 4% |
| CY 2004 | 2,654 | 2,712 | 98% | 3% | 7.3 | 61.5 | 22.5 | 72% | 7.3 | 49.5 | 17.5 | 75% | 129% | 56.0 | 5.4 | 97.1 | 85% | 3% |
| Dec-04 | 2,576 | 2,630 | 98% | 3% | 6.8 | 61.3 | 25.5 | 66% | 6.8 | 48.1 | 19.3 | 69% | 133% | 58.8 | 4.5 | 75.8 | 91% | 1% |
| Nov-04 | 2,566 | 2,654 | 97% | 2% | 5.2 | 62.1 | 18.4 | 77% | 5.6 | 49.2 | 14.0 | 80% | 131% | 56.0 | 4.2 | 74.8 | 81% | 9% |
| Oct-04 | 2,646 | 2,762 | 96% | 1% | 5.6 | 50.6 | 13.9 | 81% | 5.6 | 41.6 | 11.4 | 84% | 122% | 41.1 | 2.6 | 64.1 | 81% | 3% |
| Sep-04 | 2,635 | 2,743 | 96% | 2% | 4.4 | 50.9 | 10.0 | 88% | 4.4 | 39.4 | 8.0 | 89% | 125% | 31.7 | 1.2 | 36.6 | 54% | 6% |
| Aug-04 | 2,723 | 2,792 | 98% | 3% | 7.1 | 63.1 | 20.8 | 76% | 7.1 | 48.7 | 15.5 | 79% | 134% | 51.8 | 4.2 | 81.4 | 87% | 2% |
| Jul-04 | 2,719 | 2,770 | 98% | 3% | 8.9 | 66.6 | 25.0 | 72% | 8.9 | 52.6 | 19.0 | 76% | 132% | 59.8 | 6.1 | 101.7 | 79% | 2% |
| Jun-04 | 2,708 | 2,792 | 97% | 3% | 8.8 | 58.3 | 24.0 | 69% | 9.8 | 47.2 | 18.6 | 74% | 129% | 53.2 | 6.2 | 117.2 | 78% | 3% |
| May-04 | 2,651 | 2,638 | 101% | 6% | 12.7 | 72.9 | 33.8 | 65% | 12.7 | 58.9 | 26.0 | 70% | 130% | 62.9 | 11.2 | 177.3 | 89% | 4% |
| Apr-04 | 2,659 | 2,773 | 96% | 1% | 6.1 | 52.9 | 17.2 | 76% | 6.1 | 44.3 | 14.0 | 79% | 123% | 50.2 | 5.2 | 104.2 | 89% | 2% |
| Mar-04 | 2,657 | 2,709 | 98% | 3% | 8.3 | 66.3 | 28.1 | 66% | 8.3 | 53.8 | 21.7 | 70% | 129% | 59.5 | 8.5 | 142.9 | 89% | 3% |
| Feb-04 | 2,666 | 2,719 | 98% | 3% | 6.9 | 51.4 | 20.6 | 69% | 6.9 | 42.8 | 16.6 | 72% | 124% | 52.0 | 4.3 | 81.9 | 87% | 6% |
| Jan-04 | 2,643 | 2,563 | 103% | 8% | 9.3 | 66.2 | 33.2 | 58% | 9.3 | 54.4 | 26.1 | 62% | 127% | 67.7 | 7.2 | 106.7 | 90% | 1% |
| Dec-03 | 2,635 | 2,690 | 98% | 3% | 8.3 | 52.1 | 24.2 | 64% | 8.3 | 44.1 | 19.9 | 67% | 122% | 48.8 | 6.0 | 122.3 | 77% | 2% |
| Nov-03 | 2,596 | 2,615 | 99% | 4% | 7.9 | 59.8 | 26.7 | 64% | 7.9 | 51.1 | 21.7 | 67% | 123% | 60.1 | 9.2 | 152.6 | 79% | 6% |
| Oct-03 | 2,505 | 2,632 | 95% | 1% | 4.7 | 45.0 | 11.0 | 84% | 4.7 | 37.9 | 9.3 | 86% | 118% | 40.7 | 1.6 | 39.7 | 49% | 20% |
| Sep-03 | 2,477 | 2,580 | 96% | 2% | 5.4 | 48.5 | 12.6 | 83% | 5.4 | 42.7 | 11.0 | 85% | 115% | 45.0 | 2.9 | 65.2 | 67% | 3% |
| Aug-03 | 2,527 | 2,584 | 98% | 3% | 6.8 | 63.7 | 18.8 | 79% | 6.8 | 53.1 | 15.3 | 81% | 123% | 65.7 | 5.5 | 84.2 | 86% | 2% |
| Jul-03 | 2,516 | 2,560 | 98% | 3% | 7.8 | 66.9 | 22.2 | 76% | 7.8 | 56.5 | 18.1 | 78% | 123% | 69.9 | 6.5 | 93.4 | 88% | 1% |
| Jun-03 | 2,472 | 2,591 | 95% | 1% | 5.4 | 50.2 | 13.0 | 83% | 5.4 | 43.2 | 11.1 | 85% | 117% | 50.1 | 3.3 | 65.1 | 85% | 2% |
| May-03 | 2,371 | 2,470 | 96% | 1% | 5.0 | 54.5 | 13.6 | 83% | 5.0 | 46.9 | 11.3 | 85% | 120% | 54.4 | 3.3 | 60.6 | 84% | 1% |
| Apr-03 | 2,474 | 2,447 | 101% | 2% | 4.5 | 61.2 | 13.7 | 84% | 4.5 | 52.2 | 11.4 | 85% | 120% | 57.7 | 3.7 | 63.6 | 85% | 1% |
| Mar-03 | 2,438 | 2,496 | 98% | 3% | 4.9 | 54.8 | 14.7 | 80% | 4.9 | 46.3 | 12.1 | 82% | 122% | 51.2 | 3.3 | 64.2 | 86% | 7% |
| Feb-03 | 2,425 | 2,455 | 99% | 4% | 4.1 | 53.2 | 14.2 | 79% | 4.1 | 43.5 | 11.3 | 82% | 126% | 56.4 | 1.8 | 32.5 | 88% | 0% |
| Jan-03 | 2,413 | 2,495 | 97% | 2% | 4.6 | 49.9 | 13.5 | 80% | 4.6 | 41.0 | 11.0 | 82% | 123% | 49.0 | 1.9 | 38.9 | 74% | 8% |
| Dec-02 | 2,419 | 2,475 | 98% | 2% | 4.8 | 59.8 | 16.7 | 78% | 4.8 | 48.1 | 13.1 | 81% | 127% | 61.6 | 3.0 | 48.2 | 75% | 8% |
| Nov-02 | 2,441 | 2,530 | 96% | 1% | 4.3 | 52.8 | 12.7 | 83% | 4.3 | 43.7 | 10.3 | 85% | 123% | 50.1 | 2.5 | 49.2 | 69% | 1% |
| Oct-02 | 2,557 | 2,676 | 96% | 1% | 4.6 | 45.8 | 10.3 | 86% | 4.6 | 38.9 | 8.8 | 88% | 117% | 39.8 | 2.2 | 55.4 | 47% | 4% |
| Sep-02 | 2,535 | 2,636 | 96% | 1% | 4.6 | 50.8 | 10.9 | 86% | 4.6 | 41.5 | 9.0 | 88% | 121% | 44.7 | 2.9 | 64.3 | 77% | 3% |
| Aug-02 | 2,611 | 2,668 | 98% | 3% | 5.5 | 58.9 | 15.8 | 81% | 5.5 | 47.0 | 12.1 | 84% | 130% | 62.4 | 4.3 | 68.9 | 83% | 2% |
| Jul-02 | 2,591 | 2,677 | 97% | 2% | 5.8 | 53.0 | 15.4 | 80% | 5.8 | 43.6 | 12.5 | 82% | 123% | 57.6 | 4.0 | 68.9 | 89% | 3% |
| Jun-02 | 2,554 | 2,561 | 100% | 4% | 6.9 | 68.1 | 21.9 | 75% | 6.9 | 54.6 | 16.9 | 78% | 130% | 84.4 | 6.3 | 98.8 | 90% | 2% |
| May-02 | 2,417 | 2,521 | 96% | 1% | 4.4 | 44.3 | 10.8 | 84% | 4.4 | 37.0 | 9.0 | 86% | 119% | 39.1 | 1.8 | 46.4 | 84% | 2% |
| Apr-02 | 2,403 | 2,495 | 96% | 2% | 4.9 | 48.1 | 13.6 | 80% | 4.9 | 40.6 | 11.2 | 82% | 122% | 44.7 | 3.0 | 67.0 | 80% | 1% |
| Mar-02 | 2,299 | 2,389 | 96% | 3% | 5.3 | 51.0 | 15.6 | 78% | 5.3 | 41.5 | 12.5 | 80% | 125% | 42.2 | 2.0 | 47.0 | 65% | 11% |
| Feb-02 | 2,296 | 2,383 | 96% | 1% | 4.0 | 43.6 | 10.6 | 83% | 4.0 | 36.6 | 8.9 | 85% | 119% | 39.8 | 1.4 | 34.4 | 64% | 13% |
| Jan-02 | 2,285 | 2,317 | 99% | 3% | 4.0 | 48.0 | 12.6 | 80% | 4.0 | 38.9 | 10.1 | 82% | 126% | 46.1 | 1.7 | 36.5 | 67% | 4% |
| Dec-01 | 2,238 | 2,311 | 97% | 2% | 4.9 | 45.2 | 14.1 | 77% | 4.9 | 36.1 | 11.1 | 80% | 127% | 35.0 | 1.5 | 42.0 | 67% | 6% |
| Nov-01 | 2,250 | 2,357 | 95% | 1% | 4.7 | 42.0 | 11.4 | 82% | 4.7 | 33.8 | 9.4 | 84% | 122% | 34.2 | 1.1 | 32.4 | 73% | 5% |
| Oct-01 | 2,584 | 2,327 | 111% | 2% | 5.0 | 52.7 | 14.4 | 80% | 5.0 | 41.8 | 11.2 | 83% | 128% | 48.2 | 1.9 | 40.4 | 72% | 2% |
| Sep-01 | 2,694 | 2,077 | 130% | 19% | 5.6 | 56.7 | 16.2 | 79% | 5.6 | 44.4 | 12.5 | 82% | 130% | 63.4 | 2.3 | 36.5 | 90% | 0% |
| Aug-01 | 2,737 | 2,733 | 100% | 5% | 8.0 | 63.7 | 23.2 | 73% | 8.0 | 50.1 | 17.6 | 76% | 132% | 63.6 | 5.2 | 81.8 | 85% | 7% |
| Jul-01 | 2,698 | 2,721 | 99% | 4% | 7.4 | 59.6 | 21.6 | 73% | 7.4 | 47.1 | 16.4 | 77% | 131% | 58.2 | 4.5 | 77.9 | 79% | 11% |
| Jun-01 | 2,645 | 2,648 | 100% | 5% | 6.7 | 59.2 | 20.0 | 75% | 6.7 | 47.4 | 15.5 | 78% | 129% | 59.9 | 4.2 | 69.3 | 83% | 2% |
| May-01 | 2,606 | 2,646 | 99% | 3% | 6.5 | 54.9 | 18.4 | 75% | 6.5 | 45.2 | 14.6 | 79% | 126% | 44.5 | 3.8 | 85.7 | 67% | 10% |

Exhibit B-2
Page 2 of 2

COMPARISON OF ORD ASPM AND OPSNET DELAY DATA
(January 1998 to December 2004)

| | Average Daily Operations | | | ASPM | ASPM vs. Schedule | | | | ASPM vs. Flight Plan | | | | ASPM | OPSNET | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ASPM | OPSNET | ASPM/ | Cancellation | Average Delay (mins.) 1/ | | | On-Time | Average Delay (mins.) 1/ | | | On-Time | Sched. Vs. | Avg Delay (mins.) | | Delays/ | Delays by Cause (%) | |
| | Scheduled | Actual | OPSNET | Share | <15 Min. | >15 Mins. | All | Pct. | <15 Min. | >15 Mins. | All | Pct. | FP Delay | >15 Mins. | All 2/ | Ops (000) | Weather | Runway |
| Apr-01 | 2,569 | 2,584 | 99% | 5% | 6.4 | 64.9 | 22.2 | 73% | 6.4 | 50.9 | 16.6 | 77% | 133% | 55.9 | 4.7 | 83.2 | 85% | 9% |
| Mar-01 | 2,525 | 2,563 | 99% | 4% | 4.9 | 51.5 | 15.4 | 77% | 4.9 | 42.0 | 12.2 | 80% | 126% | 43.5 | 1.9 | 43.0 | 73% | 18% |
| Feb-01 | 2,521 | 2,502 | 101% | 6% | 5.8 | 54.5 | 19.0 | 73% | 5.8 | 44.8 | 15.1 | 76% | 126% | 52.7 | 3.0 | 56.3 | 82% | 7% |
| Jan-01 | 2,515 | 2,501 | 101% | 6% | 5.3 | 47.0 | 16.0 | 74% | 5.3 | 39.3 | 13.2 | 77% | 122% | 41.9 | 2.1 | 50.4 | 78% | 5% |
| Dec-00 | 2,508 | 2,291 | 109% | 13% | 10.1 | 64.1 | 36.6 | 51% | 10.1 | 50.6 | 27.4 | 56% | 134% | 55.6 | 4.3 | 77.3 | 95% | 2% |
| Nov-00 | 2,535 | 2,579 | 98% | 4% | 5.7 | 51.1 | 19.2 | 70% | 5.7 | 42.4 | 15.3 | 73% | 125% | 53.4 | 2.5 | 45.9 | 85% | 2% |
| Oct-00 | 2,591 | 2,649 | 98% | 4% | 5.8 | 45.5 | 15.2 | 77% | 5.8 | 38.2 | 12.4 | 78% | 122% | 39.3 | 2.1 | 54.3 | 49% | 1% |
| Sep-00 | 2,536 | 2,551 | 99% | 5% | 7.4 | 56.0 | 18.8 | 77% | 7.4 | 43.7 | 14.5 | 80% | 129% | 55.1 | 2.6 | 47.8 | 73% | 3% |
| Aug-00 | 2,585 | 2,553 | 101% | 5% | 9.9 | 59.2 | 29.9 | 59% | 9.9 | 47.0 | 22.5 | 64% | 133% | 52.9 | 4.3 | 82.0 | 68% | 13% |
| Jul-00 | 2,536 | 2,512 | 101% | 5% | 9.1 | 62.5 | 30.8 | 59% | 9.1 | 48.9 | 22.8 | 64% | 135% | 68.1 | 6.6 | 97.3 | 84% | 6% |
| Jun-00 | 2,548 | 2,491 | 102% | 6% | 9.8 | 61.8 | 29.0 | 63% | 9.8 | 48.6 | 22.0 | 67% | 132% | 70.0 | 4.6 | 66.3 | 80% | 2% |
| May-00 | 2,478 | 2,429 | 102% | 6% | 7.9 | 62.5 | 23.6 | 71% | 7.9 | 48.1 | 17.7 | 75% | 133% | 81.7 | 5.7 | 69.6 | 84% | 3% |
| Apr-00 | 2,469 | 2,474 | 100% | 4% | 6.2 | 59.8 | 21.2 | 72% | 6.2 | 48.4 | 16.6 | 75% | 128% | 61.5 | 3.7 | 59.5 | 84% | 0% |
| Mar-00 | 2,462 | 2,548 | 97% | 2% | 5.4 | 49.5 | 15.8 | 77% | 5.4 | 41.2 | 13.0 | 79% | 121% | 45.0 | 2.4 | 53.8 | 78% | 6% |
| Feb-00 | 2,437 | 2,396 | 102% | 5% | 5.4 | 49.5 | 17.0 | 74% | 5.4 | 41.1 | 13.9 | 76% | 122% | 42.6 | 2.3 | 55.0 | 76% | 4% |
| Jan-00 | 2,387 | 2,330 | 102% | 5% | 5.9 | 51.5 | 19.6 | 70% | 5.9 | 43.9 | 16.3 | 72% | 121% | 52.2 | 2.6 | 50.2 | 84% | 2% |
| Dec-99 | 2,381 | 2,397 | 99% | 3% | 5.7 | 51.2 | 19.5 | 70% | 5.7 | 43.3 | 16.1 | 72% | 121% | 51.7 | 2.4 | 47.0 | 78% | 3% |
| Nov-99 | 2,401 | 2,492 | 96% | 1% | 4.4 | 44.3 | 11.6 | 82% | 4.4 | 37.2 | 9.8 | 83% | 118% | 34.9 | 1.1 | 32.8 | 62% | 1% |
| Oct-99 | 2,454 | 2,541 | 97% | 2% | 4.8 | 45.3 | 12.8 | 80% | 4.8 | 38.0 | 10.8 | 82% | 118% | 43.9 | 1.3 | 30.1 | 51% | 2% |
| Sep-99 | 2,435 | 2,510 | 97% | 3% | 4.6 | 47.5 | 12.1 | 83% | 4.6 | 40.1 | 10.1 | 84% | 119% | 51.6 | 1.7 | 32.0 | 61% | 1% |
| Aug-99 | 2,503 | 2,555 | 98% | 3% | 5.4 | 52.1 | 16.1 | 77% | 5.4 | 42.8 | 13.0 | 79% | 123% | 50.9 | 2.5 | 49.6 | 78% | 3% |
| Jul-99 | 2,477 | 2,480 | 100% | 4% | 8.0 | 59.7 | 22.7 | 71% | 8.0 | 46.8 | 17.6 | 74% | 129% | 80.2 | 6.0 | 75.2 | 73% | 1% |
| Jun-99 | 2,487 | 2,479 | 100% | 5% | 7.9 | 66.1 | 24.3 | 72% | 7.9 | 51.5 | 18.5 | 75% | 131% | 72.7 | 5.5 | 75.6 | 88% | 0% |
| May-99 | 2,426 | 2,462 | 99% | 4% | 7.2 | 56.3 | 20.2 | 74% | 7.2 | 48.1 | 16.8 | 76% | 120% | 60.4 | 5.6 | 92.4 | 79% | 0% |
| Apr-99 | 2,452 | 2,489 | 99% | 3% | 7.0 | 59.4 | 21.8 | 72% | 7.0 | 50.1 | 18.1 | 74% | 120% | 44.6 | 4.4 | 97.8 | 62% | 0% |
| Mar-99 | 2,456 | 2,493 | 99% | 4% | 4.7 | 56.4 | 15.4 | 79% | 4.7 | 46.4 | 12.6 | 81% | 123% | 48.8 | 1.4 | 27.8 | 68% | 0% |
| Feb-99 | 2,411 | 2,422 | 100% | 5% | 4.5 | 51.6 | 14.4 | 79% | 4.5 | 42.6 | 11.9 | 81% | 122% | 41.1 | 1.7 | 41.5 | 75% | 2% |
| Jan-99 | 2,333 | 2,181 | 107% | 9% | 7.7 | 61.9 | 28.8 | 61% | 7.7 | 51.3 | 23.1 | 64% | 125% | 54.6 | 3.1 | 56.5 | 90% | 2% |
| Dec-98 | 2,363 | 2,467 | 96% | 1% | 4.5 | 49.5 | 14.7 | 77% | 4.5 | 40.4 | 11.9 | 79% | 123% | 42.5 | 0.7 | 16.3 | 65% | 0% |
| Nov-98 | 2,373 | 2,467 | 96% | 2% | 3.9 | 48.7 | 11.2 | 84% | 3.9 | 40.8 | 9.5 | 85% | 118% | 46.1 | 1.0 | 22.6 | 67% | 0% |
| Oct-98 | 2,432 | 2,546 | 96% | 2% | 5.1 | 53.7 | 15.1 | 80% | 5.1 | 44.2 | 12.4 | 81% | 121% | 58.4 | 2.0 | 34.6 | 95% | 0% |
| Sep-98 | 2,410 | 2,523 | 96% | 2% | 5.1 | 53.5 | 15.0 | 79% | 5.1 | 44.1 | 12.3 | 81% | 122% | 57.0 | 1.8 | 32.0 | 77% | 16% |
| Aug-98 | 2,434 | 2,513 | 97% | 3% | 5.8 | 59.9 | 18.9 | 76% | 5.8 | 47.7 | 14.9 | 78% | 127% | 56.5 | 2.5 | 43.9 | 89% | 1% |
| Jul-98 | 2,413 | 2,526 | 96% | 2% | 4.8 | 50.6 | 14.4 | 79% | 4.8 | 40.7 | 11.5 | 81% | 125% | 55.4 | 1.5 | 27.2 | 96% | 0% |
| Jun-98 | 2,396 | 2,465 | 97% | 3% | 7.1 | 54.6 | 20.8 | 71% | 7.1 | 44.9 | 18.7 | 74% | 125% | 57.1 | 2.7 | 47.1 | 97% | 0% |
| May-98 | 2,330 | 2,407 | 97% | 2% | 5.4 | 56.8 | 17.4 | 77% | 5.4 | 45.8 | 13.8 | 79% | 125% | 68.0 | 2.6 | 38.3 | 95% | 0% |
| Apr-98 | 2,343 | 2,487 | 94% | 1% | 4.1 | 46.8 | 11.6 | 82% | 4.1 | 38.2 | 9.6 | 84% | 122% | 40.5 | 0.7 | 16.2 | 90% | 0% |
| Mar-98 | 2,333 | 2,393 | 97% | 3% | 4.7 | 50.5 | 15.5 | 76% | 4.7 | 42.9 | 13.1 | 78% | 119% | 46.5 | 2.0 | 43.4 | 94% | 0% |
| Feb-98 | 2,318 | 2,406 | 96% | 2% | 3.5 | 50.6 | 11.9 | 82% | 3.5 | 43.3 | 10.1 | 83% | 118% | 48.7 | 1.3 | 26.4 | 90% | 4% |
| Jan-98 | 2,284 | 2,301 | 99% | 4% | 4.7 | 53.0 | 16.3 | 76% | 4.7 | 44.4 | 13.4 | 78% | 122% | 51.5 | 1.9 | 36.1 | 92% | 0% |

1/ Average delay based on gate arrival and departure times without regard to ATC ground holds (as reported in standard ASPM reports as "Gate Arrival (Departure) Delay".
2/ OPSNET only captures delays exceeding 15 minutes, so the weighted average for "All" operations does not correspond to ASPM average delay that includes all delays.

Source: FAA, ASPM and OPSNET databases.

Exhibit B-3
Page 1 of 1

SUMMARY OF OPSNET DELAY AND OPERATIONS DATA
(CY 1998 to CY 2004)

| | Operations per Day | Avg Delay (mins.) >15 Mins | Avg Delay (mins.) All 1/ | On-Time Pct. | By Cause Weather Share | By Cause Runway Share | Delays/ 1000's of Operations |
|---|---|---|---|---|---|---|---|
| CY 1990 | 2,220 | 40.3 | 2.6 | 94% | 54% | 1% | 64.5 |
| CY 1991 | 2,229 | 41.0 | 2.0 | 95% | 68% | 0% | 47.7 |
| CY 1992 | 2,309 | 60.6 | 2.7 | 95% | 66% | 1% | 45.3 |
| CY 1993 | 2,354 | 42.5 | 2.0 | 95% | 75% | 2% | 47.4 |
| CY 1994 | 2,417 | 47.5 | 1.3 | 97% | 81% | 1% | 26.8 |
| CY 1995 | 2,467 | 47.3 | 1.5 | 97% | 87% | 2% | 30.9 |
| CY 1996 | 2,485 | 54.0 | 1.9 | 97% | 87% | 1% | 34.4 |
| CY 1997 | 2,421 | 55.8 | 1.3 | 98% | 85% | 2% | 23.4 |
| CY 1998 | 2,458 | 53.9 | 1.7 | 97% | 88% | 2% | 32.0 |
| CY 1999 | 2,458 | 55.8 | 3.1 | 95% | 74% | 1% | 54.8 |
| CY 2000 | 2,484 | 57.7 | 3.7 | 94% | 78% | 4% | 63.3 |
| CY 2001 | 2,498 | 51.9 | 3.1 | 94% | 78% | 7% | 59.5 |
| CY 2002 | 2,528 | 54.1 | 3.1 | 94% | 76% | 4% | 57.6 |
| CY 2003 | 2,552 | 55.5 | 4.1 | 93% | 80% | 4% | 74.3 |
| CY 2004 | 2,712 | 56.0 | 5.4 | 90% | 85% | 3% | 97.1 |
| CY1990-2004 Growth | 1.4% | 2.4% | 5.4% | | | | 3.0% |
| CY2000-2004 Growth | 2.2% | -0.7% | 10.5% | | | | 11.3% |

1/ Total Delay Time >15 Minutes divides by total operations; excludes delays less than 15 minutes.

Source: FAA, OPSNET databases.

Exhibit B-4
Page 1 of 1

BTS On-Time Arrival Data
(Monthly January 2003-December 2004)

| Time Period | Ontime Arrivals | Ontime (%) | Arrival Delays | Delayed (%) | Flights Cancelled | Cancelled (%) | Flights Diverted | Flight Operations | Average per Day |
|---|---|---|---|---|---|---|---|---|---|
| Jan-2003 | 24,158 | 77.9% | 6,192 | 20.0% | 645 | 2.1% | 19 | 31,014 | 1,000 |
| Feb-2003 | 20,968 | 75.0% | 5,768 | 20.6% | 1,195 | 4.3% | 20 | 27,951 | 998 |
| Mar-2003 | 23,964 | 77.0% | 6,117 | 19.6% | 998 | 3.2% | 63 | 31,142 | 1,005 |
| Apr-2003 | 23,976 | 81.5% | 4,614 | 15.7% | 783 | 2.7% | 62 | 29,435 | 981 |
| May-2003 | 24,490 | 81.7% | 4,988 | 16.6% | 461 | 1.5% | 55 | 29,994 | 968 |
| Jun-2003 | 24,997 | 82.8% | 4,899 | 16.2% | 261 | 0.9% | 38 | 30,195 | 1,007 |
| Jul-2003 | 22,693 | 72.4% | 7,259 | 23.2% | 1,258 | 4.0% | 135 | 31,345 | 1,011 |
| Aug-2003 | 23,806 | 76.5% | 6,236 | 20.0% | 941 | 3.0% | 138 | 31,121 | 1,004 |
| Sep-2003 | 24,285 | 81.9% | 4,889 | 16.5% | 433 | 1.5% | 31 | 29,638 | 988 |
| Oct-2003 | 26,086 | 84.2% | 4,564 | 14.7% | 324 | 1.1% | 16 | 30,990 | 1,000 |
| Nov-2003 | 17,869 | 57.3% | 11,857 | 38.0% | 1,403 | 4.5% | 77 | 31,206 | 1,040 |
| Dec-2003 | 19,638 | 60.1% | 12,012 | 36.7% | 1,034 | 3.2% | 12 | 32,696 | 1,055 |
| Jan-2004 | 16,939 | 51.8% | 13,072 | 40.0% | 2,652 | 8.1% | 52 | 32,715 | 1,055 |
| Feb-2004 | 20,707 | 66.9% | 9,260 | 29.9% | 984 | 3.2% | 19 | 30,970 | 1,068 |
| Mar-2004 | 20,676 | 62.3% | 11,414 | 34.4% | 1,085 | 3.3% | 42 | 33,217 | 1,072 |
| Apr-2004 | 23,928 | 74.6% | 7,690 | 24.0% | 456 | 1.4% | 17 | 32,091 | 1,070 |
| May-2004 | 19,588 | 59.8% | 10,964 | 33.5% | 1,968 | 6.0% | 236 | 32,756 | 1,057 |
| Jun-2004 | 21,453 | 68.5% | 8,969 | 28.6% | 849 | 2.7% | 37 | 31,298 | 1,043 |
| Jul-2004 | 22,767 | 71.5% | 7,917 | 24.9% | 1,037 | 3.3% | 110 | 31,831 | 1,027 |
| Aug-2004 | 24,356 | 75.2% | 7,092 | 21.9% | 907 | 2.8% | 43 | 32,398 | 1,045 |
| Sep-2004 | 27,065 | 89.8% | 2,528 | 8.4% | 539 | 1.8% | 19 | 30,151 | 1,005 |
| Oct-2004 | 25,100 | 81.6% | 5,183 | 16.9% | 442 | 1.4% | 19 | 30,744 | 992 |
| Nov-2004 | 21,736 | 75.8% | 6,246 | 21.8% | 666 | 2.3% | 29 | 28,677 | 956 |
| Dec-2004 | 19,296 | 65.7% | 9,043 | 30.8% | 994 | 3.4% | 25 | 29,358 | 947 |

Source: USDOT, Bureau of Transportation Statistics, On-Time Delay Database

Exhibit B-5
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**DISTRIBUTION OF DAILY OPERATIONS AND DELAY FOR ORD**

| | Actual Operations (ETMS+B140-Based) per Day Range | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | <2,500 | 2500-2549 | 2550-2599 | 2600-2649 | 2650-2699 | 2700-2749 | 2750-2799 | 2800-2849 | >=2,850 | Grand Total |
| CY 2000 | | | | | | | | | | |
| **All Weather** | | | | | | | | | | |
| Number of Days | 168 | 31 | 41 | 65 | 32 | 23 | 6 | - | - | 366 |
| Number of Hours | 3,726 | 696 | 939 | 1,493 | 744 | 534 | 139 | - | - | 8,270 |
| Total Operations (Efficiency-Based) | 379,429 | 78,298 | 105,641 | 170,592 | 85,670 | 62,627 | 16,604 | - | - | 898,861 |
| Average per Day | 2,259 | 2,526 | 2,577 | 2,624 | 2,677 | 2,723 | 2,767 | - | - | 2,456 |
| Average per Hour | 102 | 113 | 113 | 114 | 115 | 117 | 119 | - | - | 109 |
| Total Delay Hours | 111,514 | 16,728 | 22,917 | 33,839 | 16,358 | 10,825 | 2,808 | - | - | 214,989 |
| Operations with Delay Data | 353,686 | 73,191 | 98,633 | 159,446 | 79,837 | 58,471 | 15,411 | - | - | 838,675 |
| Average Mins Per Operation | 18.9 | 13.7 | 13.9 | 12.7 | 12.3 | 11.1 | 10.9 | - | - | 15.4 |
| **IFR Conditions** | | | | | | | | | | |
| Number of Hours | 506 | 54 | 74 | 72 | 22 | 9 | 3 | - | - | 739 |
| % of All Weather Total | 14% | 8% | 8% | 5% | 3% | 2% | 2% | 0% | 0% | 9% |
| Total Operations (Efficiency-Based) | 42,941 | 5,605 | 6,597 | 7,200 | 2,105 | 1,011 | 347 | - | - | 65,806 |
| % of All Weather Total | 11% | 7% | 6% | 4% | 2% | 2% | 2% | 0% | 0% | 7% |
| Average per Hour | 85 | 104 | 90 | 100 | 96 | 116 | 116 | - | - | 89 |
| Total Delay Hours | 25,551 | 1,973 | 2,289 | 2,626 | 615 | 238 | 77 | - | - | 33,369 |
| % of All Weather Total | 23% | 12% | 10% | 8% | 4% | 2% | 3% | 0% | 0% | 16% |
| Operations with Delay Data | 41,193 | 5,423 | 6,487 | 7,020 | 2,045 | 989 | 365 | - | - | 63,522 |
| Average Mins Per Operation | 37.2 | 21.8 | 21.2 | 22.4 | 18.1 | 14.4 | 12.6 | - | - | 31.5 |

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**DISTRIBUTION OF DAILY OPERATIONS AND DELAY FOR ORD**

| | Actual Operations (ETMS+B140-Based) per Day Range | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | <2,500 | 2500-2549 | 2550-2599 | 2600-2649 | 2650-2699 | 2700-2749 | 2750-2799 | 2800-2849 | >=2,850 | Grand Total |
| CY 2001 | | | | | | | | | | |
| **All Weather** | | | | | | | | | | |
| Number of Days | 184 | 18 | 36 | 33 | 37 | 25 | 16 | 13 | 2 | 364 |
| Number of Hours | 4,022 | 401 | 799 | 749 | 842 | 572 | 364 | 300 | 47 | 8,096 |
| Total Operations | 417,947 | 45,437 | 92,800 | 86,625 | 99,160 | 67,979 | 44,472 | 36,626 | 5,806 | 896,852 |
| Average per Day | 2,271 | 2,524 | 2,578 | 2,625 | 2,680 | 2,719 | 2,780 | 2,817 | 2,903 | 2,464 |
| Average per Hour | 104 | 113 | 116 | 116 | 118 | 119 | 122 | 122 | 123 | 111 |
| Total Delay Hours | 94,569 | 13,152 | 19,690 | 14,589 | 21,834 | 10,776 | 7,701 | 5,837 | 1,205 | 189,354 |
| Operations with Delay Data | 394,672 | 42,635 | 87,300 | 81,701 | 93,210 | 64,023 | 41,779 | 34,236 | 5,238 | 844,794 |
| Average Mins Per Operation | 14.4 | 18.5 | 13.5 | 10.7 | 14.1 | 10.1 | 11.1 | 10.2 | 13.8 | 13.4 |
| **IFR Conditions** | | | | | | | | | | |
| Number of Hours | 460 | 17 | 31 | 27 | 37 | 7 | 13 | 10 | 1 | 602 |
| % of All Weather Total | 11% | 4% | 4% | 4% | 4% | 1% | 4% | 3% | 2% | 7% |
| Total Operations | 44,806 | 1,859 | 3,625 | 2,420 | 3,389 | 335 | 708 | 996 | 67 | 58,205 |
| % of All Weather Total | 11% | 4% | 4% | 3% | 3% | 0% | 2% | 3% | 1% | 6% |
| Average per Hour | 97 | 111 | 119 | 89 | 92 | 52 | 56 | 97 | 89 | 97 |
| Total Delay Hours | 20,058 | 1,001 | 820 | 598 | 901 | 323 | 195 | 179 | 4 | 24,079 |
| % of All Weather Total | 21% | 8% | 4% | 4% | 4% | 3% | 3% | 3% | 0% | 13% |
| Operations with Delay Data | 44,239 | 1,734 | 3,638 | 2,521 | 3,382 | 487 | 821 | 1,009 | 12 | 57,843 |
| Average Mins Per Operation | 27.2 | 34.6 | 13.5 | 14.2 | 16.0 | 39.8 | 14.3 | 10.6 | 21.7 | 25.0 |

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**DISTRIBUTION OF DAILY OPERATIONS AND DELAY FOR ORD**

| | Actual Operations (ETMS+B140-Based) per Day Range | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | <2,500 | 2500-2549 | 2550-2599 | 2600-2649 | 2650-2699 | 2700-2749 | 2750-2799 | 2800-2849 | >=2,850 | Grand Total |
| CY 2002 | | | | | | | | | | |
| **All Weather** | | | | | | | | | | |
| Number of Days | 166 | 29 | 38 | 31 | 23 | 37 | 34 | 7 | - | 365 |
| Number of Hours | 3,607 | 639 | 842 | 684 | 518 | 830 | 774 | 159 | - | 8,053 |
| Total Operations | 384,856 | 73,309 | 97,839 | 81,435 | 61,502 | 100,876 | 94,119 | 19,685 | - | 913,621 |
| Average per Day | 2,318 | 2,528 | 2,575 | 2,627 | 2,674 | 2,726 | 2,768 | 2,812 | - | 2,503 |
| Average per Hour | 107 | 115 | 116 | 119 | 119 | 122 | 122 | 124 | - | 113 |
| Total Delay Hours | 74,736 | 17,465 | 16,395 | 16,093 | 13,164 | 16,366 | 14,219 | 3,514 | - | 171,951 |
| Operations with Delay Data | 366,506 | 69,670 | 93,060 | 77,581 | 58,597 | 96,600 | 89,873 | 18,719 | - | 870,606 |
| Average Mins Per Operation | 12.2 | 15.0 | 10.6 | 12.4 | 13.5 | 10.2 | 9.5 | 11.3 | - | 11.9 |
| **IFR Conditions** | | | | | | | | | | |
| Number of Hours | 326 | 42 | 36 | 10 | 13 | 31 | 23 | 4 | - | 485 |
| % of All Weather Total | 9% | 6% | 4% | 1% | 2% | 4% | 3% | 2% | 0% | 6% |
| Total Operations | 29,844 | 4,156 | 4,512 | 1,000 | 1,559 | 2,895 | 1,619 | 222 | - | 45,807 |
| % of All Weather Total | 8% | 6% | 5% | 1% | 3% | 3% | 2% | 1% | 0% | 5% |
| Average per Hour | 92 | 100 | 124 | 98 | 122 | 93 | 70 | 63 | - | 95 |
| Total Delay Hours | 13,616 | 1,480 | 1,512 | 385 | 774 | 758 | 256 | 17 | - | 18,798 |
| % of All Weather Total | 18% | 8% | 9% | 2% | 6% | 5% | 2% | 0% | 0% | 11% |
| Operations with Delay Data | 29,553 | 4,085 | 4,431 | 1,040 | 1,758 | 2,918 | 1,624 | 224 | - | 45,633 |
| Average Mins Per Operation | 27.6 | 21.7 | 20.5 | 22.2 | 26.4 | 15.6 | 9.5 | 4.5 | - | 24.7 |

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**DISTRIBUTION OF DAILY OPERATIONS AND DELAY FOR ORD**

| | Actual Operations (ETMS+B140-Based) per Day Range | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | <2,500 | 2500-2549 | 2550-2599 | 2600-2649 | 2650-2699 | 2700-2749 | 2750-2799 | 2800-2849 | >=2,850 | Grand Total |
| CY 2003 | | | | | | | | | | |
| **All Weather** | | | | | | | | | | |
| Number of Days | 136 | 39 | 54 | 43 | 40 | 24 | 10 | 13 | 6 | 365 |
| Number of Hours | 2,933 | 867 | 1,196 | 955 | 891 | 545 | 229 | 297 | 139 | 8,050 |
| Total Operations | 317,216 | 98,692 | 139,042 | 112,836 | 107,311 | 65,259 | 27,798 | 36,776 | 17,195 | 922,125 |
| Average per Day | 2,332 | 2,531 | 2,575 | 2,624 | 2,683 | 2,719 | 2,780 | 2,829 | 2,866 | 2,526 |
| Average per Hour | 108 | 114 | 116 | 118 | 121 | 120 | 122 | 124 | 123 | 115 |
| Total Delay Hours | 88,928 | 20,157 | 26,053 | 26,709 | 22,120 | 11,397 | 8,964 | 9,268 | 6,225 | 219,821 |
| Operations with Delay Data | 304,347 | 94,890 | 133,480 | 108,130 | 102,995 | 63,016 | 27,083 | 35,968 | 16,759 | 886,668 |
| Average Mins Per Operation | 17.5 | 12.7 | 11.7 | 14.8 | 12.9 | 10.9 | 19.9 | 15.5 | 22.3 | 14.9 |
| **IFR Conditions** | | | | | | | | | | |
| Number of Hours | 363 | 47 | 42 | 70 | 39 | 22 | 3 | 3 | 2 | 591 |
| % of All Weather Total | 12% | 5% | 4% | 7% | 4% | 4% | 1% | 1% | 2% | 7% |
| Total Operations | 34,930 | 3,936 | 2,991 | 6,362 | 3,053 | 1,374 | 315 | 125 | 21 | 53,107 |
| % of All Weather Total | 11% | 4% | 2% | 6% | 3% | 2% | 1% | 0% | 0% | 6% |
| Average per Hour | 96 | 83 | 71 | 91 | 78 | 64 | 126 | 38 | 9 | 90 |
| Total Delay Hours | 21,115 | 1,955 | 1,134 | 3,061 | 614 | 297 | 161 | 10 | 2 | 28,350 |
| % of All Weather Total | 24% | 10% | 4% | 11% | 3% | 3% | 2% | 0% | 0% | 13% |
| Operations with Delay Data | 34,690 | 4,098 | 3,024 | 6,196 | 3,065 | 1,460 | 222 | 68 | 14 | 52,837 |
| Average Mins Per Operation | 36.5 | 28.6 | 22.5 | 29.6 | 12.0 | 12.2 | 43.5 | 9.0 | 9.7 | 32.2 |

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**DISTRIBUTION OF DAILY OPERATIONS AND DELAY FOR ORD**

| | Actual Operations (ETMS+B140-Based) per Day Range | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | <2,500 | 2500-2549 | 2550-2599 | 2600-2649 | 2650-2699 | 2700-2749 | 2750-2799 | 2800-2849 | >=2,850 | Grand Total |
| CY 2004 | | | | | | | | | | |
| **All Weather** | | | | | | | | | | |
| Number of Days | 51 | 16 | 14 | 23 | 29 | 29 | 50 | 92 | 62 | 366 |
| Number of Hours | 1,149 | 357 | 315 | 524 | 653 | 659 | 1,141 | 2,091 | 1,417 | 8,306 |
| Total Operations | 120,067 | 40,454 | 36,080 | 60,414 | 77,577 | 79,040 | 138,940 | 259,823 | 178,515 | 990,910 |
| Average per Day | 2,354 | 2,528 | 2,577 | 2,627 | 2,675 | 2,726 | 2,779 | 2,824 | 2,879 | 2,707 |
| Average per Hour | 104 | 113 | 115 | 115 | 119 | 120 | 122 | 124 | 126 | 119 |
| Total Delay Hours | 53,129 | 16,798 | 15,430 | 23,166 | 32,517 | 22,897 | 37,378 | 58,797 | 38,068 | 298,179 |
| Operations with Delay Data | 117,647 | 39,699 | 35,242 | 59,171 | 76,225 | 77,558 | 136,114 | 254,068 | 174,195 | 969,919 |
| Average Mins Per Operation | 27.1 | 25.4 | 26.3 | 23.5 | 25.6 | 17.7 | 16.5 | 13.9 | 13.1 | 18.4 |
| **IFR Conditions** | | | | | | | | | | |
| Number of Hours | 168 | 30 | 37 | 17 | 85 | 57 | 36 | 76 | 18 | 523 |
| % of All Weather Total | 15% | 8% | 12% | 3% | 13% | 9% | 3% | 4% | 1% | 6% |
| Total Operations | 15,325 | 3,207 | 3,677 | 1,272 | 9,334 | 6,412 | 4,294 | 7,312 | 1,259 | 52,092 |
| % of All Weather Total | 13% | 8% | 10% | 2% | 12% | 8% | 3% | 3% | 1% | 5% |
| Average per Hour | 91 | 107 | 101 | 76 | 110 | 112 | 118 | 97 | 70 | 100 |
| Total Delay Hours | 15,776 | 2,576 | 2,552 | 645 | 5,918 | 3,150 | 2,305 | 2,126 | 331 | 35,379 |
| % of All Weather Total | 30% | 15% | 17% | 3% | 18% | 14% | 6% | 4% | 1% | 12% |
| Operations with Delay Data | 16,801 | 3,260 | 3,992 | 1,229 | 9,534 | 6,509 | 4,536 | 7,311 | 1,242 | 54,414 |
| Average Mins Per Operation | 56.3 | 47.4 | 38.4 | 31.5 | 37.2 | 29.0 | 30.5 | 17.4 | 16.0 | 39.0 |

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**DISTRIBUTION OF DAILY OPERATIONS AND DELAY FOR ORD**

| | Actual Operations (ETMS+B140-Based) per Day Range | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | <2,500 | 2500-2549 | 2550-2599 | 2600-2649 | 2650-2699 | 2700-2749 | 2750-2799 | 2800-2849 | >=2,850 | Grand Total |
| January 2000 to December 2004 | | | | | | | | | | |
| **All Weather** | | | | | | | | | | |
| Number of Days | 705 | 133 | 183 | 195 | 161 | 138 | 116 | 125 | 70 | 1,826 |
| Number of Hours | 15,437 | 2,960 | 4,090 | 4,406 | 3,647 | 3,140 | 2,646 | 2,847 | 1,604 | 40,774 |
| Total Operations | 1,619,515 | 336,190 | 471,402 | 511,902 | 431,220 | 375,781 | 321,933 | 352,910 | 201,516 | 4,622,369 |
| Average per Day | 2,297 | 2,528 | 2,576 | 2,625 | 2,678 | 2,723 | 2,775 | 2,823 | 2,879 | 2,531 |
| Average per Hour | 105 | 114 | 115 | 116 | 118 | 120 | 122 | 124 | 126 | 113 |
| Total Delay Hours | 422,876 | 84,301 | 100,485 | 114,395 | 105,991 | 72,261 | 71,071 | 77,416 | 45,498 | 1,094,295 |
| Operations with Delay Data | 1,536,858 | 320,085 | 447,715 | 486,029 | 410,864 | 359,668 | 310,260 | 342,991 | 196,192 | 4,410,662 |
| Average Mins Per Operation | 16.5 | 15.8 | 13.5 | 14.1 | 15.5 | 12.1 | 13.7 | 13.5 | 13.9 | 14.9 |
| **IFR Conditions** | | | | | | | | | | |
| Number of Hours | 1,823 | 189 | 219 | 196 | 196 | 125 | 78 | 93 | 21 | 2,939 |
| % of All Weather Total | 12% | 6% | 5% | 4% | 5% | 4% | 3% | 3% | 1% | 7% |
| Total Operations | 167,846 | 18,763 | 21,402 | 18,254 | 19,440 | 12,027 | 7,283 | 8,655 | 1,347 | 275,017 |
| % of All Weather Total | 10% | 6% | 5% | 4% | 5% | 3% | 2% | 2% | 1% | 6% |
| Average per Hour | 92 | 99 | 98 | 93 | 99 | 96 | 94 | 93 | 64 | 94 |
| Total Delay Hours | 96,116 | 8,985 | 8,308 | 7,314 | 8,822 | 4,767 | 2,994 | 2,331 | 338 | 139,975 |
| % of All Weather Total | 23% | 11% | 8% | 6% | 8% | 7% | 4% | 3% | 1% | 13% |
| Operations with Delay Data | 166,476 | 18,600 | 21,572 | 18,006 | 19,784 | 12,363 | 7,568 | 8,612 | 1,268 | 274,249 |
| Average Mins Per Operation | 34.6 | 29.0 | 23.1 | 24.4 | 26.8 | 23.1 | 23.7 | 16.2 | 16.0 | 30.6 |

Source: FAA ASPM Data

Exhibit B-6
Page 1 of 1

DISTRIBUTION OF ORD FLIGHT DELAYS AND CANCELLATIONS BY CAUSE
(Calendar Year 2004)

| | Delay Hours | | Number of Delayed Flights | |
|---|---|---|---|---|
| | Total All Causes | % of Total | Total All Causes | % of Total |
| Weather (ASQP) | 2,962 | 3% | 2,265 | 2% |
| Weather (NAS OPSNET) | 57,355 | 53% | 50,871 | 51% |
| Weather - Total | 60,317 | 56% | 53,136 | 53% |
| Runway | 560 | 1% | 975 | 1% |
| Volume | 3,659 | 3% | 6,999 | 7% |
| | 4,219 | 4% | 7,974 | 8% |
| Carrier | 14,663 | 14% | 12,350 | 12% |
| Late Arrival (based on prior delay) | 27,169 | 25% | 23,730 | 24% |
| Equipment | 497 | 0% | 751 | 1% |
| All Other | 868 | 1% | 1,425 | 1% |
| | 43,198 | 40% | 38,256 | 38% |
| Total - All Causes | 107,734 | 100% | 99,368 | 100% |

Source: FAA, ASPM data system ("Causality" section)

APPENDIX C

ANALYSIS OF THE TAAM MODEL RESULTS

**C.1 Overview**

The following sections describe the model results developed using the TAAM model for O'Hare including adjustments made by Campbell-Hill to correct for obvious flaws in the modeling. C1

**C.2 TAAM Model Results** C2

The TAAM model was used to estimate average delay for various airfield alternatives in several study efforts. All of the TAAM modeling includes the following general procedures:

- The model runs were based on a combination of operations forecasts for a single day in the peak month (Peak Month Average Day, or PMAD operations). All PMAD estimates are based on annual operations converted to the peak month's (August) share that is then divided by 31 days.

- For every runway "experiment (designated as IFR or VFR[1] conditions) within the specified sample of "representative" runway configurations, the model was run several times (11 runs for the DEIS). This produced an average PMAD delay (in minutes per operation), as well as "number of peak operations-rolling hour" – a value that measures the maximum number of operations processed in any consecutive 60-minute period.[2]

- The PMAD-based delays were run for a limited number of "available" runway configurations that were supposed to represent all possibilities for IFR or VFR conditions. A weighted average of peak month delay (and peak hourly operations) was derived using a fixed distribution determined outside of the model.

[1] Weather conditions were designated as IFR/VFR or IMC/VMC – both with the same meaning.
[2] This information was not available for all of the TAAM model runs.

C-1

| Comment | Response |
|---|---|
| C1 | The FAA respectfully disagrees with the comment that there are "obvious flaws in the modeling." As described in greater detail in the following responses, the modeling of EIS development alternatives using the Total Airspace and Airport Modeller (TAAM) was conducted by experienced professional simulation analysts working directly with of an Air Traffic Working Group composed of experienced air traffic and ground controllers from the Chicago O'Hare Tower, Chicago O'Hare TRACON (C90), and Chicago Center (ZAU), the FAA Airports Division, and the FAA's third party contractor (TPC). The modeling effort incorporated industry-standard analysis techniques and the TAAM simulation experimental design, input data, preliminary model runs, and final model results were thoroughly reviewed by the Air Traffic Working Group.<br><br>In contrast, the CH reviewers that have made this comment do not appear to have any simulation modeling experience, whether with TAAM or other leading airfield-airspace simulation models (at least such experience is not indicated in the curriculum vitarum for CH reviewers that is provided in CH report). This apparent lack of experience is underscored by the commenter's statements that they did not attempt to run TAAM independently as part of their review efforts, even though detailed model input files were made available to them by the FAA.<br><br>The commenter should understand that the purpose of the TAAM simulation analysis was to facilitate an understanding of the major operational capabilities of various proposed development alternatives and provide a more credible, operationally-driven basis for inputs to noise and air quality modeling. The purpose ***was not*** to replicate day-to-day operations taking into consideration all possible runway use configurations, weather conditions, and daily airline scheduling patterns. This being so, it was necessary for the simulation team to use a representative simulation experimental design and associated input assumptions that enabled the major operational characteristics of the no action and build alternatives to be evaluated. |
| C2 | The description and exhibit appear to be a restatement of the modeling assumptions reported in **Appendix D, Simulation Modeling** of the EIS. The description provided in *CH Section C.2* oversimplifies the manner in which various weather conditions were modeled, as for certain runway use configurations it was necessary to model more than 2 typical weather<br><br>Continued on the following page. |

- Model delay results were "annualized" in the DEIS by multiplying both average delay and peak operations by 96% for a reason unexplained (e.g., the 9.3 minutes in 2002 was based on 9.7 minutes as modeled for a single day in August.)[3]

The delay and operating results are shown in Exhibit C-1. The years shown are relative to the forecast used in the model runs and they cannot be compared one with another. The specific runs are discussed in Sections B.2.1 through B.2.3 below.

C.2.1 DEIS - No Build and OMP (Construction Phase I, Operational Phase I and Full Build-out)

The model runs shown include the base year 2002 runs with the pre-2003 operating conditions, the base year 2003 runs (with adjustments to separations, etc.), runs for 2007 and 2009 using the 2002 TAF unconstrained forecast, and runs for 2007, 2009, 2013 and 2018 using the constrained forecast. The OMP runs in the DEIS used the 2002 TAF forecasts for the various phases of implementation: Construction Phase I (2007), OMP Phase I (2007, 2009, and 2013) and Full Build-out (2009, 2013 and 2018). The runs that are inappropriate for the OMP implementation schedule (e.g., OMP Phase I will not exist in 2007 and cease to exist in 2013) were requested by the FAA in order to generate delay curves, although there was no request for a Full Build-out (FBO) run at a high level of operations. (Source: OMP Simulation Data Packages available online at http://www.agl.faa.gov/omp/eistechsim/TechSim.htm, various dates[4]).

[3] The results are presented in a confusing manner, in that the peak month average delay is identified as "annual". In some cases, it was difficult to determine in the reports which of the two delay numbers (and other statistics) were being presented.

[4] The DEIS model runs are presented in an inconsistent and confusing manner. Experiment runs were easier to understand than the "base" runs. In some cases, the results presented in the report differ from the detailed data packages, typically due to confusion between annual and peak month values. Campbell-Hill has attempted to develop a consistent and comparable set of data for all of the model runs.

C-2

| Comment | Response |
|---|---|
| C2 | conditions to adequately represent the operational characteristics of a particular runway configuration. For example, Alternative C was modeled in the EIS in a "good" VFR condition (i.e., VFR-1), a "marginal" VFR condition (i.e., VFR-2), and an IFR condition. These conditions were defined in direct consultation with FAA air traffic specialists from the Chicago O'Hare ATCT and Chicago TRACON because of these individuals' unique expert knowledge regarding O'Hare operations.<br><br>The commenter also states that a limited number of operational conditions and runway use configurations were simulated. FAA concurs with this assessment. It is standard practice in simulation analyses such as those conducted for the EIS to simulate selected operating configurations and weather conditions, as needed, to accurately capture the operational characteristics of the airfield system being simulated. The operating configurations and weather conditions simulated in the EIS simulation analysis—referred to collectively as the "simulation experimental design"—were selected carefully and methodically using 10 years of historical data regarding wind and weather conditions observed at O'Hare. Preliminary experimental designs were thoroughly reviewed by an Air Traffic Working Group mentioned in Comment C-1 to verify their appropriateness.<br><br>As indicated in the TAAM data packages (www.agl.faa.gov/OMP) incorporated by reference into the EIS, weather conditions and operating configurations that were not modeled generally occur less than 5% of time annually. In the annualization process, the percent occurrence of these non-modeled weather conditions and operating configurations were assigned to modeled weather conditions and operating configurations that most closely approximated the operational characteristics of the non-modeled configurations. FAA would like to refer the commenter to the OMP Simulation Data Packages, which provide a detailed explanation of the rationale, methodology, and source data that were used to develop the TAAM experimental design and calculate annualized delay estimates from TAAM output data.<br><br>As noted by the commenter, delay estimates for peak month, average day (PMAD) activity levels were converted into average annual delay estimates by multiplying the PMAD estimates by a factor of 0.96 and then weighting the resulting estimates by the estimated annual percent occurrence of weather conditions and operating configurations. The 0.96 factor was used to account for the fact that PMAD activity levels were approximately 4% higher than average daily demand levels. Use of this factor, which is explained in detail in the TAAM data packages, is a standard industry practice and is consistent with the methodology applied by the FAA Technical Center itself. Failure to apply this correction factor would result in the overstatement of annual delays for all alternatives, including the no action alternative.<br><br>Comment continued on the following page |

C.2.2 January 2003 Ricondo Study (Airside Layout Plan Update) No Build and OMP ("Option 5")

These OMP runs correspond to the following operating levels relative to the 2001 TAF: PAL0 (2001), PAL0+10% (2010-11 estimated), PAL1 (2014), and PAL2 (2030). This report includes the original "No Build" runs with the TAAM model using CY 2001 operations (PAL0) and slightly higher versions of operations (PAL0+5%, +10% and +15%) because the results at PAL1 and PAL2 showed excessive delays. The January 2003 Ricondo runs provided the only application that used different operating levels for different runway experiments, in this case testing the Category II/III runway with lower operations. The weighted average IFR PMAD was calculated using the delay weighting distributions. The peak throughput rates were not associated with a particular model run, so it was assumed that the values apply to the highest level of operations run. (Source: Airline Layout Plan Update, Airside Simulation Analysis, O'Hare Modernization Program (Draft), Ricondo & Associates, Inc. (January 2003), Table VI-1 and Appendix C).

C.2.3 Runway 12/30 Proof-of-Concept Evaluation - OMP ("Option 5A")

These runs correspond to the same operating levels as the January 2003 Ricondo modeling, excluding the "PAL0 +10%" runs. (Source: Runway 12/30 Proof-of-Concept Evaluation (Executive Summary), Preliminary Draft, Ricondo & Associates, Inc. (September 1, 2003), Table 3-12).

C2

**C.3 TAAM Model Delay Curves**

Based on the TAAM model results, Campbell-Hill estimated delay curves for All Weather, VFR and IFR conditions using a simple regression fit to the following functional form:

$$\text{AVERAGE ANNUAL DELAY MINUTES} = a * e^{\text{ANNUAL OPERATIONS} * b}$$

The delay curves were derived for each set of runs that had at least three data points (excluding the DEIS unconstrained runs for "No Build" that have no value to this analysis). Note that the delay curve developed from the "No Build" runs in the DEIS excluded the 2002

C-3

| Comment | Response |
|---|---|
| C2 continued | The data referenced in *CH Sections C.2.2, and C.2.3* was not prepared for or used in the EIS and is not a warranted basis for evaluating the alternatives considered in the EIS. All other TAAM delay data--which were prepared specifically for the EIS—are comparable.<br><br>In response to the commenter's observation that the FAA did not request TAAM simulations of the "full build out at a high level of operations", such a request was unnecessary as sufficient data were already available to develop a delay curve for the full build out of the OMP through the planning horizon considered in the EIS (i.e., full-build out plus 5 years).<br><br>FAA respectfully disagrees with the commenter's assertion in Footnote 4 that this data was "presented in an inconsistent and confusing manner." The FAA believes that the OMP Simulation Data Packages were presented in the most logical, organized manner possible. In addition, FAA staff has provided technical assistance when requested and will continue to do so. |
| C3 | Delay curves for airports are complex functions dependent upon many variables. More importantly, the TAAM simulations were designed to apply specific assumptions about the characteristics of the demand being simulated (e.g., a specific mix of aircraft types and the peaking pattern that are forecast to change significantly over time) which are different for different demand levels. This fact alone invalidates any such regression analysis, which generally requires an assumption of using independent and identically distributed random variables. The commenter has attempted to simplify this complex relationship into a simple exponential equation.<br><br>In reality, capacity delay curves are all convex functions and the relative shapes of the curves can be affected by the choice of the scales for the horizontal and vertical axes, i.e., the shapes of all three curves could be changed to look like the curve in *CH Chart 2-3*, which has dimensionless (unscaled) axes, by simply changing the scale of the horizontal and/or vertical axes. The exponential relationship suggested by the commenter is a gross oversimplification of the relationship between delay and capacity. Further, the relationship suggested by the commenter does not even match 2 of the 3 data points on the delay curve, the very source of the suggested regression. This demonstrates inherent problems with the relationship suggested by the commenter. Therefore, the flawed equations for a "proper delay curve" are strictly the creation of the commenter and are not endorsed by FAA.<br><br>The determination of a delay curve relies upon a myriad of input variables. These variables that affect the delay curve included airfield geometry, aircraft<br><br>Continued on the following page. |

run based on the DEIS assumption that operating rules were significantly and permanently changed in 2003.[5]

The derived equations are presented in Exhibit C-2. This exhibit also includes the Campbell-Hill adjustments of the DEIS OMP Full Build-out Curve based on the following: C3

**C.4 Campbell-Hill Delay Curve: Adjustment A (Based on 2003 TAF "Sensitivity" Analysis).**

Although the DEIS contains no runs that represent high levels of operations, the impact of the 2003 TAF forecasts are dealt with cursorily in Appendix R (at page R-11). It is estimated that average delays of 13-16 minutes would result for the 2003 TAF operating level of 1.4 million operations in CY 2018. The curve generated by combining the "low level" model runs (2009-2018 in the DEIS) with this estimate (using 16.0 minutes of annual all-weather delay at 1.4 million operations) yields the curve shown in Exhibit C-2 as "Adjustment A". C4

**C.5 Campbell-Hill Delay Curve: Adjustment B (Based on Capacity Comparison)**

A regression-based extrapolation of the DEIS model output for the OMP produces a relative capacity increase over current conditions that is neither reasonable nor reflected in the maximum peak operations generated by the OMP modeling itself. By comparing the peak throughput rates between the DEIS's "No Build" and Proof-of-Concept's OMP results (using the highest value obtained with the TAAM modeling), a more reasonable increase of 29.5% is derived. Based on the "No Build" delay curve, the OMP airfield would generate 15 minutes of average annual all-weather delay (FAA's notional delay limit) at 957,000 annual operations. Based on the capacity comparison, the OMP would generate similar delays at 1,239,000 annual operations (957,000 x 1.295). Combining this high level delay measurement with the low-level DEIS runs generates the curve shown as Adjustment B in Exhibit C-2. C5

[5] Various procedures for aircraft landings and takeoffs changed at ORD in 2003, and the "Plan B (Modified)" runway option was eliminated as well. It is unclear from the results whether the increase in modeled delay for 2003 was based on these changes, or upon the increase in operations. This is another source of confusion in the DEIS modeling. C6

C-4

| Comment | Response |
|---|---|
| C3 continued | fleet mix airspace configuration, FAA operational procedures, pilot behavior, and airline scheduling. The 8-runway configurations of O'Hare contemplated in the Build Alternatives result in a complex delay-capacity relationship that is much more sophisticated than the commenter has attempted to portray. For these reasons, the FAA chose to use industry-leading computer simulation technology, namely TAAM, which does take into account many of these complexities, to analyze the proposed airfield and airspace improvements. Therefore, the FAA rejects the commenter's entire methodology of extrapolating and adjusting the DEIS delay curves and the assertion that the TAAM model results and associated delay curves are indicative of "bias" or have "unreasonably low slopes".<br><br>The commenter's extrapolation of IFR delay data, which are representative of a full day occurrence of IFR conditions is inappropriate. These IFR delays were estimated for a full day occurrence solely for (1) comparative purposes among modeled alternatives and (2) for use in delay annualization efforts. Using these delay results for other purposes, particularly comparison to historical IFR delay statistics that reflect different durations of IFR conditions is wholly inappropriate. |
| C4 | The delay curve and curve adjustment developed by the commenter in *CH Exhibit C-2* has no merit in the analysis and evaluation of proposed alternatives. The FAA's response to *CH Section C.3* describes how this commenter-generated exhibit ignores fundamental principles associated with regression analysis applied to a complex delay curve. The inherent shortcomings are reflected in how poorly the commenter's delay curve extrapolation accommodates the data points developed in the EIS.<br><br>As stated previously, each of the numerous TAAM simulations was designed to apply specific assumptions about the characteristics of the demand being simulated, which are different for different demand scenarios (e.g., the specific mix of aircraft types and the peaking pattern that are forecast to change over time). Therefore, one cannot explain the variation of aircraft delay as a function of the number of aircraft operations alone as the commenter has done. Therefore, the FAA rejects the commenter's entire methodology for extrapolating and adjusting the DEIS delay curves and rejects the assertion that the TAAM model results and associated delay curves are indicative of "bias" or have "unreasonably low slopes." It is also noted the delay curve the commenter has labeled "DEIS" is not reflective of the delay curve for Alternative C shown in **Appendix D, Simulation Modeling, Figure D-7**. The delay curve contained in the DEIS is not extended beyond 1.2 million annual operations, and extrapolating this curve using the flawed methodology used by the commenter is not appropriate. |
| C5 | Please see the following page for the response to this comment. |

Exhibit C-1
Page 1 of 7

**DETAILED TAAM MODEL RESULTS**

| | 2001 | 2003-4 | 2007-8 | 2010-11 |
|---|---|---|---|---|
| **A. January 2003 Ricondo: No Build (Jan. 2003)** | | | | |
| Operations | PAL0 | PAL0+5% | PAL0+10% | PAL0+15% |
| Annual (TAF 2001/Constrained) | 911,917 | 957,513 | 1,003,109 | 1,048,705 |
| Peak-Month (August) | 85,095 | 89,063 | 93,605 | 97,836 |
| Share of Annual | 9.3% | 9.3% | 9.3% | 9.3% |
| Peak-Month Average Day as Modeled (PMAD) | | | | |
| VMC/IMC1 | **2,745** | **2,873** | **3,020** | **3,156** |
| Share of Annual | 0.301% | 0.300% | 0.301% | 0.301% |
| IMC2 PMAD | 1,933 | 2,030 | 2,126 | 2,222 |
| IFR Weighted Average | **2,291** | **2,402** | **2,520** | **2,634** |
| Total Weighted Average | **2,703** | **2,829** | **2,973** | **3,107** |
| Distribution of Occurrence | | | | |
| Plan X (V) | 42.8% | 42.8% | 42.8% | 42.8% |
| Plan W (V) | 30.8% | 30.8% | 30.8% | 30.8% |
| Plan B (V) | 4.4% | 4.4% | 4.4% | 4.4% |
| Plan B Modified (V) | 12.7% | 12.7% | 12.7% | 12.7% |
| Parallel 27s (I) | 4.1% | 4.1% | 4.1% | 4.1% |
| Parallel 9s (I) | 5.2% | 5.2% | 5.2% | 5.2% |
| IFR Share | 9.3% | 9.3% | 9.3% | 9.3% |
| Average PMAD Delay (minutes per operation) | | | | |
| Plan X (V) | 6.9 | 8.4 | 12.2 | 19.6 |
| Plan W (V) | 6.6 | 8.5 | 9.5 | 13.9 |
| Plan B (V) | 16.9 | 16.9 | 25.2 | 34.3 |
| Plan B Modified (V) | 8.7 | 10.3 | 12.5 | 23.3 |
| Parallel 27s (I) | **38.2** | 43.8 | 55.3 | 66.2 |
| Parallel 14s (I) | 10.6 | 12.3 | 13.9 | 17.9 |
| VFR PMAD (Annual Basis) | 2,745 | 2,873 | 3,020 | 3,156 |
| VFR Average Delay (Mins.) | 7.3 | 8.9 | 11.9 | 18.2 |
| Peak Operations (Rolling Hour) | | | | 214 |
| IFR PMAD (Annual Basis) | 2,291 | 2,402 | 2,520 | 2,634 |
| IFR Average Delay (Mins.) | 22.8 | 26.2 | 32.2 | 39.2 |
| Peak Operations (Rolling Hour) | | | | 175 |
| All Weather PMAD | 2,703 | 2,829 | 2,973 | 3,107 |
| All Weather Average Delay (Mins.) | **9.0** | **10.7** | **13.8** | **20.8** |
| Peak Operations (Rolling Hour) - Weighted Average | | | | **210.4** |
| Plan X (V) | | | | 216.0 |
| Plan W (V) | | | | 213.0 |
| Plan B (V) | | | | 206.0 |
| Plan B Modified (V) | | | | 213.0 |
| Parallel 27s (I) | | | | 183.0 |
| Parallel 14s (I) | | | | 168.0 |

C7

| Comment | Response |
|---|---|
| C5 | The modeling contained in the EIS is based upon carefully selected input parameters. The delay curve suggested by the commenter (*CH Exhibit C-2*) deviates significantly from the EIS simulation modeling results. The FAA rejects the commenter's recommendation to perform analysis using this delay curve (Adjustment B) since it is predicated on 1) out-of-date model results, 2) unjustified adjustments to those results, and 3) a mischaracterization of the delay curve (See preceding responses). The commenter has justified this deviation from the EIS simulation modeling results based merely on their hypothesis about extrapolating the delay curve to activity levels forecast to occur beyond the EIS study period. As stated previously, each of the TAAM simulations was designed to apply specific assumptions about the characteristics of the demand being simulated, which are different for different demand scenarios (e.g., the specific mix of aircraft types and the peaking pattern that are forecast to change over time). Therefore, one cannot explain the variation of aircraft delay as a function of the number of aircraft operations alone as the commenter has done. Therefore, the FAA rejects the commenter's methodology for extrapolating and adjusting the DEIS delay curves and rejects the assertion that the TAAM model results and associated delay curves are indicative of "bias" or have "unreasonably low slopes." For these reasons, neither the suggested evaluation methodology, nor the CH Adjustment B delay curve, substantiates revisions to the EIS. |
| C6 | Addressing points raised in Footnote 5, the TAAM modeling prepared for the EIS did take into consideration changes in airfield operating configurations that took place in 2003, including elimination of the Plan B (Modified) operating configuration, as well as early 2004. Increases in delays estimated for the No Action airfield configuration in 2002 and 2003 were caused primarily by differences in the weather percent occurrences applied to each of these sets of TAAM experiments in the annualization process. The 2002 experiments, which were performed primarily for model validation purposes, were annualized using actual 2002 weather data. The 2003 experiments, which were used to develop No Action delay curves, were annualized using weather percent occurrences that reflect a broader, more representative 10-year sample of weather data. |
| C7 | As mentioned previously in Comment C2, the delay data presented in Sections A, D, and E of *CH Exhibit C-1* were developed by Ricondo and Associates independently of the EIS process. These results were developed using assumptions different than those used in the EIS and, consequently, are incomparable TAAM results produced for the EIS. |

Exhibit C-1
Page 2 of 7

## DETAILED TAAM MODEL RESULTS

| | 2002 | 2003 | 2007 | 2009 |
|---|---|---|---|---|
| **B. DEIS: No Build (Unconstrained)** | | | | |
| Operations | | | | |
| Annual (TAF 2001/Constrained) | 912,018 | 960,500 | 1,026,300 | 1,057,200 |
| Peak-Month (August) | 82,088 | 83,514 | 89,838 | 92,597 |
| Share of Annual | 9.0% | 8.7% | 8.8% | 8.8% |
| Peak-Month Average Day as Modeled (PMAD) | | | | |
| VFR | **2,648** | **2,694** | **2,898** | **2,987** |
| Share of Annual | 0.290% | 0.280% | 0.282% | 0.283% |
| IFR Weighted Average | **2,648** | **2,694** | **2,898** | **2,987** |
| Total Weighted Average | **2,648** | **2,694** | **2,898** | **2,987** |
| Distribution of Occurrence | | | | |
| Plan X (V) | 36.4% | 27.0% | 27.0% | 27.0% |
| Plan W (V) | 41.5% | 46.6% | 46.6% | 46.6% |
| Plan B (V) | 11.8% | 17.1% | 17.1% | 17.1% |
| Plan B Modified (V) | 4.3% | | | |
| Parallel 27s (I) | 3.8% | 6.0% | 6.0% | 6.0% |
| Parallel 9s (I) | 2.2% | 3.3% | 3.3% | 3.3% |
| IFR Share | 6.0% | 9.3% | 9.3% | 9.3% |
| Average PMAD Delay (minutes per operation) | | | | |
| Plan X (V) | 5.2 | 9.9 | 16.3 | 19.5 |
| Plan W (V) | 5.5 | 7.7 | 12.9 | 14.8 |
| Plan B (V) | 16.5 | 25.4 | 36.3 | 41.2 |
| Plan B Modified (V) | 12.9 | | | |
| Parallel 27s (I) | 36.8 | 45.0 | 60.7 | 65.2 |
| Parallel 14s (I) | 73.2 | 76.1 | 103.3 | 110.6 |
| VFR PMAD (Annual Basis) | 2,648 | 2,694 | 2,898 | 2,987 |
| VFR Average Delay (Mins.) | 7.1 | 11.7 | 18.3 | 21.2 |
| Peak Operations (Rolling Hour) | 197 | **202** | **212** | **215** |
| IFR PMAD (Annual Basis) | 2,648 | 2,694 | 2,898 | 2,987 |
| IFR Average Delay (Mins.) | 50.1 | 56.0 | 75.8 | 81.3 |
| Peak Operations (Rolling Hour) | 166 | **157** | **161** | **163** |
| All Weather PMAD | 2,648 | 2,694 | 2,898 | 2,987 |
| All Weather Average Delay (Mins.) | **9.7** | **15.8** | **23.7** | **26.8** |
| Peak Operations (Rolling Hour) - Weighted Average | **195** | **198** | **208** | **210** |
| Plan X (V) | 199 | 206 | 217 | 219 |
| Plan W (V) | 200 | 205 | 218 | 221 |
| Plan B (V) | 181 | 188 | 190 | 193 |
| Plan B Modified (V) | 193 | | | |
| Parallel 27s (I) | 173 | 163 | 168 | 171 |
| Parallel 14s (I) | 153 | 147 | 149 | 149 |

Exhibit C-1
Page 3 of 7

## DETAILED TAAM MODEL RESULTS

| | 2007 | 2009 | 2013 | 2018 |
|---|---|---|---|---|
| **C. DEIS: No Build (Constrained)** | | | | |
| Operations | | | | |
| Annual (TAF 2001/Constrained) | 973,887 | 973,887 | 973,887 | 973,887 |
| Peak-Month (August) | 85,250 | 85,250 | 85,250 | 85,250 |
| Share of Annual | 8.8% | 8.8% | 8.8% | 8.8% |
| Peak-Month Average Day as Modeled (PMAD) | | | | |
| VFR | **2,750** | **2,750** | **2,750** | **2,750** |
| Share of Annual | 0.282% | 0.282% | 0.282% | 0.282% |
| IFR Weighted Average | **2,750** | **2,750** | **2,750** | **2,750** |
| Total Weighted Average | **2,750** | **2,750** | **2,750** | **2,750** |
| Distribution of Occurrence | | | | |
| Plan X (V) | 27.0% | 27.0% | 27.0% | 27.0% |
| Plan W (V) | 46.6% | 46.6% | 46.6% | 46.6% |
| Plan B (V) | 17.1% | 17.1% | 17.1% | 17.1% |
| Plan B Modified (V) | | | | |
| Parallel 27s (I) | 6.0% | 6.0% | 6.0% | 6.0% |
| Parallel 9s (I) | 3.3% | 3.3% | 3.3% | 3.3% |
| IFR Share | 9.3% | 9.3% | 9.3% | 9.3% |
| Average PMAD Delay (minutes per operation) | | | | |
| Plan X (V) | 10.4 | 9.8 | 10.4 | 10.2 |
| Plan W (V) | 8.2 | 8.1 | 8.9 | 8.8 |
| Plan B (V) | 27.3 | 27.1 | 30.6 | 31.0 |
| Plan B Modified (V) | | | | |
| Parallel 27s (I) | 48.2 | 46.1 | 48.7 | 48.9 |
| Parallel 14s (I) | 82.1 | 82.1 | 84.3 | 84.0 |
| VFR PMAD (Annual Basis) | 2,750 | 2,750 | 2,750 | 2,750 |
| VFR Average Delay (Mins.) | 12.5 | 12.2 | 13.4 | 13.4 |
| Peak Operations (Rolling Hour) | **206** | **202** | **204** | **202** |
| IFR PMAD (Annual Basis) | 2,750 | 2,750 | 2,750 | 2,750 |
| IFR Average Delay (Mins.) | 60.2 | 58.9 | 61.3 | 61.4 |
| Peak Operations (Rolling Hour) | **159** | **159** | **161** | **158** |
| All Weather PMAD | 2,750 | 2,750 | 2,750 | 2,750 |
| All Weather Average Delay (Mins.) | **16.9** | **16.5** | **17.9** | **17.9** |
| Peak Operations (Rolling Hour) - Weighted Average | **202** | **198** | **200** | **198** |
| Plan X (V) | 212 | 209 | 211 | 208 |
| Plan W (V) | 210 | 204 | 207 | 205 |
| Plan B (V) | 188 | 188 | 186 | 185 |
| Parallel 27s (I) | 165 | 165 | 168 | 163 |
| Parallel 14s (I) | 148 | 147 | 148 | 149 |

Exhibit C-1
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## DETAILED TAAM MODEL RESULTS

| D. January 2003 Ricondo: OMP | 2001 | 2010-11 | 2014 | 2030 |
|---|---|---|---|---|
| | OPTION 5 PAL0 | PAL0+10% | PAL1 | PAL2 |
| Operations | | | | |
| Annual (TAF 2001/Constrained) | 911,917 | 1,003,109 | 1,097,935 | 1,314,482 |
| Peak-Month (August) | 85,095 | 93,620 | 100,533 | 119,784 |
| Share of Annual | 9.3% | 9.3% | 9.2% | 9.1% |
| Peak-Month Average Day as Modeled (PMAD) | | | | |
| VMC/IMC1 | **2,745** | **3,020** | **3,243** | **3,864** |
| Share of Annual | 0.301% | 0.301% | 0.295% | 0.294% |
| IMC2 | 1,933 | 2,126 | 2,462 | 3,362 |
| Share of VMC/IMC1 | 70.4% | 70.4% | 75.9% | 87.0% |
| IFR Weighted Average | **2,701** | **2,972** | **3,201** | **3,837** |
| Total Weighted Average | **2,741** | **3,016** | **3,239** | **3,861** |
| Distribution of Occurrence | | | | |
| Parallel 9s (V) | 32.2% | 32.2% | 32.2% | 32.2% |
| Parallel 27s (V) | 58.5% | 58.5% | 58.5% | 58.5% |
| Parallel 9s (IMC1) | 4.8% | 4.8% | 4.8% | 4.8% |
| Parallel 27s (IMC1) | 4.0% | 4.0% | 4.0% | 4.0% |
| Parallel 9s (IMC2) | 0.5% | 0.5% | 0.5% | 0.5% |
| IFR Share | 9.3% | 9.3% | 9.3% | 9.3% |
| Average PMAD Delay (minutes per operation) | | | | |
| Parallel 9s (V) | 1.8 | 2.1 | 3.1 | 6.7 |
| Parallel 27s (V) | 2.2 | 2.5 | 3.4 | 8.6 |
| Parallel 9s (IMC1) | 7.2 | 9.8 | 13.0 | 32.5 |
| Parallel 27s (IMC1) | 9.4 | 13.0 | 10.9 | 34.4 |
| Parallel 9s (IMC2) | 3.1 | 3.5 | 6.5 | 19.2 |
| VFR PMAD (Annual Basis) | 2,745 | 3,020 | 3,243 | 3,864 |
| VFR Average Delay (Mins.) | 2.1 | 2.4 | 3.3 | 7.9 |
| Peak Operations (Rolling Hour) | | | | **271** |
| IFR PMAD (Annual Basis) | 2,701 | 2,972 | 3,201 | 3,837 |
| IFR Average Delay (Mins.) | 7.9 | 10.8 | 11.7 | 32.6 |
| Peak Operations (Rolling Hour) | | | | **233** |
| All Weather PMAD | 2,741 | 3,016 | 3,239 | 3,861 |
| All Weather Average Delay (Mins.) | **2.6** | **3.1** | **4.1** | **10.2** |
| Peak Operations (Rolling Hour) - Weighted Average | | | | **268** |
| Parallel 9s (V) | | | | 274 |
| Parallel 27s (V) | | | | 270 |
| Parallel 9s (IMC1) | | | | 234 |
| Parallel 27s (IMC1) | | | | 232 |
| Parallel 9s (IMC2) | | | | n/a |

C7

Exhibit C-1
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## DETAILED TAAM MODEL RESULTS

| E. September 2003 Proof-of-Concept: OMP | 2001 | 2014 | 2030 |
|---|---|---|---|
| | OPTION 5 PAL0 | PAL0+10% | PAL1 |
| Operations | | | |
| Annual (TAF 2001/Constrained) | 911,917 | 1,097,935 | 1,314,482 |
| Peak-Month (August) | 85,095 | 100,533 | 119,784 |
| Share of Annual | 9.3% | 9.2% | 9.1% |
| Peak-Month Average Day as Modeled (PMAD) | | | |
| VFR | **2,745** | **3,243** | **3,864** |
| Share of Annual | 0.301% | 0.295% | 0.294% |
| IFR Weighted Average | **2,745** | **3,243** | **3,864** |
| Total Weighted Average | **2,745** | **3,243** | **3,864** |
| Distribution of Occurrence | | | |
| Parallel 9s (VFR1) | 20.1% | 20.1% | 20.1% |
| Parallel 9s (VFR2) | 15.3% | 15.3% | 15.3% |
| Parallel 27s (VFR1) | 33.9% | 33.9% | 33.9% |
| Parallel 27s (VFR1) | 21.4% | 21.4% | 21.4% |
| Parallel 9s (IFR) | 5.7% | 5.7% | 5.7% |
| Parallel 27s (IFR) | 3.6% | 3.6% | 3.6% |
| IFR Share | 9.3% | 9.3% | 9.3% |
| Average PMAD Delay (minutes per operation) - Table | | | |
| Parallel 9s (VFR1) | 2.2 | 3.9 | 8.8 |
| Parallel 9s (VFR2) | 2.3 | 3.9 | 9.2 |
| Parallel 27s (VFR1) | 2.9 | 3.6 | 6.9 |
| Parallel 27s (VFR1) | 3.0 | 4.2 | 8.7 |
| Parallel 9s (IFR) | 6.8 | 11.3 | 38.6 |
| Parallel 27s (IFR) | 6.7 | 10.9 | 43.7 |
| VFR PMAD (Annual Basis) | 2,745 | 3,243 | 3,864 |
| VFR Average Delay (Mins.) | 2.6 | 3.8 | 8.0 |
| Peak Operations (Rolling Hour) | 212 | 241 | 278 |
| IFR PMAD (Annual Basis) | 2,745 | 3,243 | 3,864 |
| IFR Average Delay (Mins.) | 6.8 | 11.1 | 40.6 |
| Peak Operations (Rolling Hour) | 204 | 215 | 228 |
| All Weather PMAD | 2,745 | 3,243 | 3,864 |
| All Weather Average Delay (Mins.) | **3.0** | **4.5** | **11.2** |
| Peak Operations (Rolling Hour) - Weighted Average | **210.2** | **240.5** | **271.6** |
| Parallel 9s (VFR1) | 218.0 | 246.0 | 277.0 |
| Parallel 9s (VFR2) | 213.0 | 242.0 | 266.0 |
| Parallel 27s (VFR1) | 207.0 | 238.0 | 284.0 |
| Parallel 27s (VFR2) | 209.0 | 249.0 | 270.0 |
| Parallel 9s (IFR) | 204.0 | 224.0 | 230.0 |
| Parallel 27s (IFR) | 203.0 | 202.0 | 225.0 |

C7

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## DETAILED TAAM MODEL RESULTS

| | Con. Phase II 2007 | Con. Phase II 2009 | Con. Phase II 2013 | | Con. Phase I 2007 |
|---|---|---|---|---|---|
| **F. DEIS: OMP Phase I (Unconstrained)** | | | | | |
| Operations | | | | | |
| Annual (TAF 2001/Constrained) | 1,026,300 | 1,057,200 | 1,120,600 | | 1,026,300 |
| Peak-Month (August) | 89,838 | 92,597 | 98,239 | | 89,838 |
| Share of Annual | 8.8% | 8.8% | 8.8% | | 8.8% |
| Peak-Month Average Day as Modeled (PMAD) | | | | | |
| VFR | **2,898** | **2,987** | **3,169** | | **2,898** |
| Share of Annual | 0.282% | 0.283% | 0.283% | | 0.282% |
| IFR Weighted Average | **2,898** | **2,987** | **3,169** | | **2,898** |
| Total Weighted Average | **2,898** | **2,987** | **3,169** | | **2,898** |
| Distribution of Occurrence | | | | | |
| VFR-3 Parallel 9s | 17.9% | 17.9% | 17.9% | Plan X (V) | 23.1% |
| VFR-4 Parallel 9s | 5.2% | 5.2% | 5.2% | P27's (V) | 57.0% |
| VFR Parallel 27s | 67.6% | 67.6% | 67.6% | Plan B (V) | 10.6% |
| IFR Parallel 27s | 4.8% | 4.8% | 4.8% | P27's (I) | 6.0% |
| IFR Parallel 9s | 4.5% | 4.5% | 4.5% | P14's (I) | 3.3% |
| IFR Share | 9.3% | 9.3% | 9.3% | | 9.3% |
| Average PMAD Delay (minutes per operation) | | | | | |
| VFR-3 Parallel 9s | 8.7 | 9.4 | 15.3 | Plan X (V) | 16.1 |
| VFR-4 Parallel 9s | 13.7 | 13.7 | 22.6 | P27's (V) | 5.8 |
| VFR Parallel 27s | 4.8 | 5.2 | 6.5 | Plan B (V) | 35.5 |
| IFR Parallel 27s | 25.8 | 30.2 | 46.2 | P27's (I) | 31.8 |
| IFR Parallel 9s | 69.8 | 75.8 | 95.8 | P14's (I) | 105.4 |
| VFR PMAD (Annual Basis) | 2,898 | 2,987 | 3,169 | | 2,898 |
| VFR Average Delay (Mins.) | 6.1 | 6.5 | 9.2 | | 11.9 |
| Peak Operations (Rolling Hour) | **227** | **233** | **246** | | **215** |
| IFR PMAD (Annual Basis) | 2,898 | 2,987 | 3,169 | | 2,898 |
| IFR Average Delay (Mins.) | 47.0 | 52.3 | 70.2 | | 57.9 |
| Peak Operations (Rolling Hour) | **178** | **181** | **179** | | **174** |
| All Weather PMAD | 2,898 | 2,987 | 3,169 | | 2,898 |
| All Weather Average Delay (Mins.) | **9.9** | **10.8** | **14.8** | | **16.2** |
| Peak Operations (Rolling Hour) - Weighted Average | **223** | **228** | **240** | | **211** |
| VFR-3 Parallel 9s | 219 | 225 | 235 | Plan X (V) | 217 |
| VFR-4 Parallel 9s | 211 | 217 | 215 | P27's (V) | 218 |
| VFR Parallel 27s | 231 | 236 | 251 | Plan B (V) | 192 |
| IFR Parallel 27s | 194 | 196 | 192 | P27's (I) | 187 |
| IFR Parallel 9s | 161 | 165 | 165 | P14's (I) | 149 |

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## DETAILED TAAM MODEL RESULTS

| | 2009 | 2013 | 2018 |
|---|---|---|---|
| **G. DEIS: Full Buildout** | | | |
| Operations | | | |
| Annual (TAF 2001/Constrained) | 1,057,200 | 1,120,600 | 1,194,000 |
| Peak-Month (August) | 92,597 | 98,239 | 104,594 |
| Share of Annual | 8.8% | 8.8% | 8.8% |
| Peak-Month Average Day as Modeled (PMAD) | | | |
| VFR | **2,987** | **3,169** | **3,374** |
| Share of Annual | 0.283% | 0.283% | 0.283% |
| IFR Weighted Average | **2,987** | **3,169** | **3,374** |
| Total Weighted Average | **2,987** | **3,169** | **3,374** |
| Distribution of Occurrence | | | |
| VFR-1 Parallel 9s | 12.6% | 12.6% | 12.6% |
| VFR-2 Parallel 9s | 10.6% | 10.6% | 10.6% |
| VFR-1 Parallel 27s | 41.4% | 41.4% | 41.4% |
| VFR-2 Parallel 27s | 26.1% | 26.1% | 26.1% |
| IFR Parallel 9s | 4.5% | 4.5% | 4.5% |
| IFR Parallel 27s | 4.8% | 4.8% | 4.8% |
| IFR Share | 9.3% | 9.3% | 9.3% |
| Average PMAD Delay (minutes per operation) | | | |
| VFR-1 Parallel 9s | 3.3 | 3.7 | 4.2 |
| VFR-2 Parallel 9s | 3.5 | 4.2 | 4.6 |
| VFR-1 Parallel 27s | 3.8 | 4.1 | 4.7 |
| VFR-2 Parallel 27s | 3.7 | 4.2 | 5.0 |
| IFR Parallel 9s | 11.9 | 17.2 | 20.8 |
| IFR Parallel 27s | 9.5 | 16.0 | 18.8 |
| VFR PMAD (Annual Basis) | 2,987 | 3,169 | 3,374 |
| VFR Average Delay (Mins.) | 3.7 | 4.1 | 4.7 |
| Peak Operations (Rolling Hour) | **238** | **251** | **265** |
| IFR PMAD (Annual Basis) | 2,987 | 3,169 | 3,374 |
| IFR Average Delay (Mins.) | 10.7 | 16.6 | 19.8 |
| Peak Operations (Rolling Hour) | **223** | **229** | **232** |
| All Weather PMAD | 2,987 | 3,169 | 3,374 |
| All Weather Average Delay (Mins.) | **4.3** | **5.2** | **6.1** |
| Peak Operations (Rolling Hour) - Weighted Average | **237** | **249** | **262** |
| Plan X (V) | 229 | 250 | 260 |
| Plan W (V) | 227 | 240 | 261 |
| Plan B (V) | 244 | 258 | 272 |
| Plan B Modified (V) | 238 | 245 | 259 |
| Parallel 27s (I) | 219 | 225 | 233 |
| Parallel 14s (I) | 226 | 233 | 232 |

Exhibit C-2
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TAAM MODELING DELAY CURVES

| | Delay Curve Equations 1/ | | |
|---|---|---|---|
| | All-Weather | IFR | VFR |
| No Build | | | |
| January 2003 Ricondo | 0.03224 x exp (OPS x 0.00607) | 0.55089 x exp (OPS x 0.00402) | 0.01546 x exp (OPS x 0.00665) |
| DEIS 2/ | 0.07244 x exp (OPS x 0.00557) | 1.19633 x exp (OPS x 0.00397) | 0.02802 x exp (OPS x 0.00625) |
| OMP Phase I | | | |
| DEIS | 0.10526 x exp (OPS x 0.00437) | 0.53424 x exp (OPS x 0.00431) | 0.05467 x exp (OPS x 0.00452) |
| OMP Full Build-out | | | |
| January 2003 Ricondo | 0.09515 x exp (OPS x 0.00348) | 0.29833 x exp (OPS x 0.00348) | 0.08131 x exp (OPS x 0.00341) |
| Proof-of-Concept | 0.13236 x exp (OPS x 0.00330) | 0.09729 x exp (OPS x 0.00448) | 0.18317 x exp (OPS x 0.00281) |
| DEIS | 0.28252 x exp (OPS x 0.00255) | 0.09888 x exp (OPS x 0.00444) | 0.55583 x exp (OPS x 0.00175) |
| Campbell-Hill Adjustment A | 0.03812 x exp (OPS x 0.00435) | | |
| Campbell-Hill Adjustment B | 0.00515 x exp (OPS x 0.00620) | | |

1/ Delay Curve based on regressions using the following function: AVERAGE ANNUAL DELAY MINUTES = $a \times e^{\text{ANNUAL OPERATIONS} \times b}$
2/ DEIS "No Build" runs are based on 2003, 2007 and 2009 with unconstrained forecast.

Source: Exhibit B-1 and Campbell-Hill analysis

C8

| Comment | Response |
|---|---|
| C8 | As noted in response to comments C5, the delay curve specifications presented in *CH Exhibit C-2* deviates significantly from the EIS simulation modeling results. The FAA rejects the commenter's recommendation to perform analysis using this delay curve since it is predicated on 1) out-of-date model results, 2) unjustified adjustments to those results, and 3) a mathematical mischaracterization of the delay curve (See preceding responses). The commenter has justified this deviation from the EIS simulation modeling results based merely on their hypothesis about extrapolating the delay curve to activity levels forecast to occur beyond the EIS study period.<br><br>Furthermore, as noted in response to comment C3, the commenter's extrapolation of IFR delay data, which are representative of a full day occurrence of IFR conditions is inappropriate. These IFR delays were estimated for a full day occurrence solely for (1) comparative purposes among modeled alternatives and (2) for use in delay annualization efforts. Using these delay results for other purposes, particularly comparison to historical IFR delay statistics that reflect different durations of IFR conditions is wholly inappropriate. |

APPENDIX D

ANALYSIS OF THE DEIS MODELING FLAWS

**D.1 Overview**

The DEIS simulation analysis is based upon flawed assumptions and an inappropriate application of the TAAM model, yielding erroneous results and misleading conclusions for both the OMP and the No Build scenarios. Problems with the modeling can be summarized as follows:

- The DEIS modeling assumptions are unrealistic, over-simplified and not representative of real world conditions, and they ignore more realistic standards incorporated in previous FAA modeling for O'Hare. D1
- The DEIS model experiments of the OMP were limited to low traffic levels that can not produce (by calibration) a legitimate delay curve by the FAA's own guidelines for simulating new runway projects. D2
- The DEIS results for the OMP scenario produce delay estimates that do not follow the FAA's own delay curve standards and imply capacity increases that are unreasonable and unsupported by the modeling results. D3
- The DEIS model results for the "No Build" scenario were never validated. They do not reflect actual delays, relative delays, or even relative changes in delays. In fact, the model results bear no resemblance to actual FAA data on historical delays. D4
- The DEIS failed to recognize that the level of operations is not the sole determinant of delay. In fact, the FAA's data show that "volume" is only 4% of the cause of delay, while "weather" is 56% of delay occurrence and "other" factors are 40%. No simplistic single-cause (independent variable) model can overcome this reality. D5
- The DEIS' inaccurate and overly simplistic representation of bad weather conditions overstated IFR delays in the No Build scenario by: (1) simulating weather conditions (i.e., full day of IFR) that rarely occur, and (2) ignoring cancellations that reduce flight operations in the real world and should not be counted as delayed flights. D6

D-1

| Comment | Response |
|---|---|
| D1 | The FAA employed a state-of-the-art, industry-accepted process for the simulation effort. The Total Airspace and Airport Modeller (TAAM) was selected over SIMMOD and other industry accepted models for use in this project primarily because TAAM provided modeling capabilities that SIMMOD does not provide. These capabilities include (1) flexible definition of prioritized runway and taxiway usage rules, facilitating more realistic simulation of complex, demand-responsive runway, taxiway, and airspace movements, (2) the ability to display graphically display model animations while the simulation is being developed, facilitating direct and real-time review of simulation models by air traffic controllers and other subject matter experts, and (3) more accurate modeling of runway crossings, aircraft pushbacks, and terminal-area congestion more accurately than other available airfield and airspace models. These capabilities—particularly the capability to more accurately model aircraft congestion on the ground-- were viewed as essential to developing a reliable comparative assessments of the various airfield alternatives evaluated in the EIS.<br><br>Based on the scope and breadth of the modeling effort, the FAA believes that this analysis is unprecedented for any simulation analysis ever conducted for any single airport project. The FAA Air Traffic work group invested approximately 1,400 hours reviewing the assumptions, draft results, animations, and final results. In addition, the FAA and FAA's Third Party Contractor also invested approximately 1,250 hours validating the results thereto. This level of effort resulted in the most comprehensive analysis from a modeling and review level of effort perspective ever conducted for a single airport. The FAA is confident in the accuracy and reliability of the model. Please see **Appendix D, Simulation Modeling** for a detailed description of the process and results.<br><br>In the course of the modeling effort, the FAA's EIS simulation team developed detailed assumptions for over 100 individual TAAM experiments. These assumptions—which were based on current real-world operational data and input from experienced ground and air traffic controllers—included airspace routes, runway assignment rules, taxiway routings, flight procedures, arrival/departure sequencing techniques, weather and wind conditions, and air traffic control separation rules. See **Attachment D-1, Sample Excerpts from TAAM Simulation Data Package 2018 With Project** in **Appendix D.** |
| D2 | FAA respectfully disagrees with the CH comment. The FAA modeled at least 3 different activity levels for each series of TAAM experiments. Each activity level was based on a representative year from the 2002 FAA Terminal Area Forecast. Delays rise exponentially with an increase in demand to create a standard Demand/Delay curve. The Demand/Delay Continued on the following page. |

- The DEIS also overestimated all-weather delay in the No Build scenario by over-weighting the already over-stated IFR delays in the annualized calculations. D7

The main report (Section 2.0) discusses model flaws that directly affect the ability to evaluate the OMP under the DEIS purpose and need requirements including:

- the failure to model high level of flight operations (Section 2.4.1); and
- the failure to produce delay curves that meet FAA standards (Section 2.4.2). D8

Appendix B gives a general overview of historical delays at ORD, examining the over-simplified assumption of the DEIS modeling that runway capacity and utilization is the dominating factor in determining historical, current and, hence, future delays. This appendix examines other problems with the modeling that directly affect the estimates for the "No Build" scenario, as well as bringing into question the overall modeling techniques and assumptions. D9

**D.2 General Overview of TAAM Modeling**

Simulation modeling of airport delay and capacity involves the following key elements:

- Specification of the model in terms of representing physical infrastructure (airfield, terminals, airspace), demand (flight schedule, aircraft mix) and the mathematical/heuristic relationships that relate one with the other;
- Calibration of the model in terms of developing and specifying data to represent the "operation" of the airfield, and fitting the general form of the model to those data;
- Validation of the model by comparing results to actual (known) historical delay and capacity measurements; and
- Application of the model in terms of predicting delays over a reasonable and representative operating time frame with a series of model runs.

The DEIS provided limited detail and insight into the specification and calibration (if done) of the TAAM model, other than to indicate that the simulations were reviewed by a team of experts (primarily by air traffic control experts) to assure that operating procedures were reasonable. There is no discussion of any validation of the model, whereby the model's results were tested to see if it produced reasonable results – a major flaw considering the absolute results

D-2

| Comment | Response |
|---|---|
| D2 continued | curve for Alternative C (the preferred alternative) is relatively flat even at the 2018 forecast demand level. This is due to the fact that the demand has not been forecasted to grow enough to reach the point on the Demand/Delay curve where delays would grow exponentially. See **Section D.8 Delay Comparison** in **Appendix D, Simulation Modeling** for a graphic depiction of the Demand/Delay curves.<br><br>In addition, the FAA does not understand the commenter's use of the term "calibration" in this comment. Calibration generally refers to a process in which the results of simulation models of existing conditions are compared with actual performance metrics observed in the real world. Calibration is undertaken to ensure that the simulation model reasonably represents the real-world system it has been developed to represent. Calibration exercises cannot effectively be performed for future "what if" scenarios, such as future demand levels and runway use configurations. |
| D3 | The FAA disagrees with the commenter's assertion that the delay curves developed in the EIS are inconsistent with FAA standards. As explained in the responses to the commenter's Appendix C, the delay curves developed in this exercise were developed in accordance with industry-accepted methods. Further FAA believes these curves appropriately represent the delay reductions that various Build Alternatives would provide relative to the No Action Alternative. |
| D4 | The commenter's assertion that the TAAM models of the No Action Alternative were not validated is incorrect. The FAA invested a considerable amount of time during the development of the existing airfield assumptions to closely match what actually happens on the airfield. This ensured that results of the existing airfield modeling were as representative as possible. TAAM models of the No Action case were first *calibrated* by comparing simulated runway throughput rates for modeled runway use configurations against historical flow rate data. The No Action models were then *validated* through an extensive review process with the Air Traffic Working Group convened for the EIS. Furthermore, as explained in early responses to the commenter's Appendix B, TAAM modeling of the No Action case performed for the EIS did produce average annual delay estimates that agree reasonably well with historically observed delays at ORD. |
| D5 | As mentioned in several prior responses, the commenter's assertion that simulation analyses conducted in the EIS "failed to recognize that the level of operations is not the sole determinant of delay" is absolutely incorrect and seems to indicate the commenter's fundamental lack of understanding of how TAAM simulations—simulation models in general—are developed. The FAA explicitly incorporated the very significant effects that weather conditions, wind conditions, flight schedules, and aircraft fleet mix have on the performance of various alternatives considered in the EIS.<br>Continued on the following page. |

were accepted by the FAA as predicted values. Similarly, the "application" process used a limited number of unrepresentative and biased operating scenario runs to reflect a highly variable real-world environment, thereby producing unreasonable results. D10

In addition to failing to fully understand or explore the true causes of delays at ORD, the DEIS modeling is extremely confusing and leaves a number of questions unanswered. Although Campbell-Hill did not have the ability to run the TAAM model with the City/FAA data files, or even have full access to the modeling inputs and results, the following summarizes some of the key flaws in the modeling process, most of which bias the results in favor of the proposed OMP. D11

**D.3 DEIS Modeling of The Existing Airfield ("No Build") Produces Irrational and Inconsistent Results With No Validation to the Real World**

The entire OMP justification in the DEIS is based on an assumption that the TAAM modeling accurately predicts flight delay for the various airfield alternatives, in particular the "No Build" existing airfield and Alternative C (OMP Full Build-out). And yet, there is no discussion of any validation of the model's results to existing delay patterns, either in terms of absolute or relative delay averages.

Upon examination it is clear that the analytical results bare no relationship to reality. The results were simply tailored to support the City's preferred alternative. The TAAM model results produced in both the DEIS and the "Airport Layout Plan Update" (January 2003 Ricondo simulation analysis) do not reflect actual delays, relative delays, or even relative changes in delays for the "No Build" scenario. Consequently the OMP modeling has no validity and the results cannot be relied on in the FAA's approval process.

Chart D-1 and Exhibit D-1 compare average annual delay from the modeling results to actual ASPM delays for the period 2001 to 2003. In the original January 2003 Ricondo simulation modeling based on 2001 operations, actual delays exceeded the all-weather average by **56%:** 79% for VFR conditions and 14% for IFR conditions.[1] In the DEIS runs based on 2002 operations, all-weather average delay seems to improve relative to actual delays, although it is still understated by 27%. The comparison of model results to actual delays was much worse for IFR conditions, and continues to be far off the mark for VFR conditions as well. Actual IFR

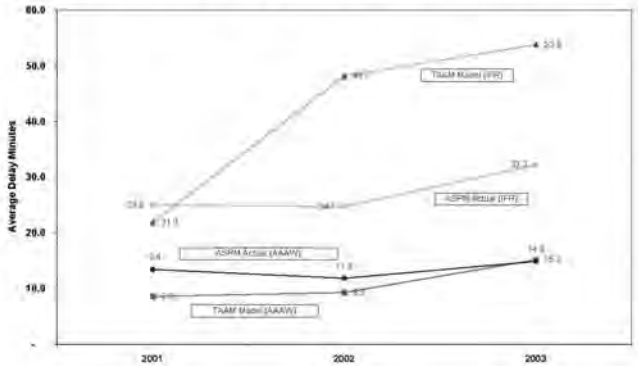
[1] The ASPM data were derived from data downloaded from the FAA website. The methodology used for this dataset is summarized in Appendix B.

D-3

| Comment | Response |
|---|---|
| D5 continued | How these factors were incorporated into the modeling effort is explained in detail in **Appendix D** of the EIS and the TAAM data packages referenced therein. In the EIS, the FAA presents average annual delay statistics measure using TAAM relative to operational levels as a way of depicting the comparative operational performance of the various Build Alternatives versus the No Action Alternative. This presentation by no means implies that TAAM is a "single-cause" model.<br><br>The commenter is correct to note that there are many variables that contribute to the overall delay at any Airport. It is also known that weather is the single most significant cause of delay around the US and at O'Hare. One of the most limiting facets of the existing airport is the fact that when weather conditions are poor (approximately 9 % of the year) the airport is limited to two arrival runways compared to three arrival runways during good weather conditions (approximately 91% of the year). One of the primary benefits of the preferred alternative is that it allows for three arrival runways during all weather conditions eliminating this discrepancy between good weather and poor weather conditions. |
| D6 | We agree with the commenter's observation that in TAAM IFR model runs it was assumed that; (1) IFR conditions would persist for the full simulation day and (2) that no flights would be cancelled. Although these assumptions do represent simplifications of how IFR conditions occur on a day-to-day basis, they are consistent with industry-standard modeling practices. Accordingly we categorically disagree with the commenter's assertion that these assumptions resulted in inaccurate or overly simplistic results. Several comments below—notably D19, D20, and D21—provide more extensive explanations regarding why these assumptions were appropriate. In addition, the decisionmaker is aware of the nature and performance of the model. |
| D7 | The FAA evaluated 10-years of historical weather data in determining the weighting of both VFR and IFR conditions. During that period of time, approximately 9% of the hourly observations were IFR. The FAA weighted the good weather and poor weather operating results using annualization methodology. For example, similar methodologies have been utilized within EISs for Washington–Dulles, Philadelphia, Lambert – St. Louis, and Phoenix Sky Harbor international airports. |
| D8 | FAA responses to *CH Section 2.0* are contained in the preceding pages. |
| D9 | FAA responses to *CH Appendix B* are contained in the preceding pages. |
| D10 | Simulation analysis necessarily require that assumptions be made regarding the operating configurations, weather conditions, and other operational characteristics that are modeled in order to produce a manageable simulation experimental design. The assumptions used in the TAAM analysis are consistent with standard industry practice, and FAA considers them to be appropriate and representative of conditions at ORD. Continued on the following page. |

delay in 2002 was 49% lower than the DEIS modeled result, while the VFR actual average was 63% higher. Compared to 2001, the model results had all-weather delay increasing 8% while in reality average delay declined by 12%. The DEIS model produced IFR delays in 2002 that were more than double the 2001 results, yet in reality there was virtually no change in delay as shown by the actual data.

**Chart D-1**
**AVERAGE ANNUAL DELAY (IFR AND ALL-WEATHER)**
**TAAM Model vs. ASPM Actual Estimates (2001-2003)**




Source: Exhibit D-1

The DEIS model results for 2003 are particularly problematic. The modeled IFR and VFR delays are nowhere close to the actual values in the underlying FAA data. The TAAM results show IFR delay increasing 12% to almost 54 minutes per operation, while in reality, the actual delay was 43% lower than the model estimate, despite an increase of 32% over 2002 actual delays. In the VFR analysis, actual delays were 23% more than the modeled delays.

Overall, the TAAM modeling effort completely failed to measure accurately the real conditions that caused the increase in delays by the end of 2003, but rather it produced a series of anomalous results that do not reflect either IFR or VFR patterns of delay (Exhibit D-1). Between the 2001 and the 2003 model runs, the DEIS model estimates of average all-weather delays increased by 77%, although actual delays increased by just 11%. The modeling indicated that

D-4

| Comment | Response |
|---|---|
| D10 continued | The FAA understands that modeling results are not an exact replication of airport operations, nor are they intended to be. Rather modeling is utilized to provide the decision maker with information necessary to evaluate the projected operational performance of alternatives.<br><br>The FAA respectfully disagrees with commenter's assertion that the model was not validated. More than 100 simulation experiments prepared for this assignment were thoroughly reviewed by FAA experts – including: Air Traffic Representatives, Airports Division, and Third Party Contractor simulation experts. Validation efforts were conducted on every simulation model prepared for the EIS. These efforts focused on whether simulation models produced expected runway throughput rates and reasonable average annual delay estimates. The efficacy of these efforts is indicated by the reasonably close relationship between average annual "excess travel time" delays empirically determined from ASPM and delays estimated in TAAM. |
| D11 | The FAA does not understand why Campbell-Hill was not able to run the TAAM model. The FAA used a commercially available version of the TAAM model for the EIS operational analysis. The TAAM data inputs to the model were posted on the FAA's publicly available website (www.agl.faa.gov/omp) beginning approximately seven months prior to the release of the DEIS. In addition, TAAM data input and output files were provided to Mr. Joseph Karaganis, of the law firm of Karaganis, White and Magel, on computer disks beginning approximately nine months prior to the DEIS release. The TAAM input files were provided in an electronic format that would enable outside interested parties to re-run the original inputs, or to adjust assumptions and re-run the model. FAA notes that comment C2 acknowledges that the OMP Simulation Data Packages are available online on the FAA's website.<br><br>FAA respectfully disagrees with the commenter's assertion that this data is "extremely confusing and leaves a number of questions unanswered." The FAA believes that the OMP Simulation Data Packages were presented in the most logical, organized manner possible. |
| D12 | FAA is responsible for the preparation of this EIS. During development of the DEIS, FAA determined that simulation modeling based on updated forecasts (2002 TAF) and airfield operational procedures should be completed. This accounts for differences identified by the commenter between the EIS TAAM model results, the January 2003 Ricondo Simulation Analysis (which utilized the 2001 TAF), and the Ricondo Runway 12/30 "Proof-of-Concept" Evaluation (2001 TAF).<br><br>Continued on the following page. |
| D13 | Please see the following page for the response to this comment. |

IFR delays increased by 146%, yet actual delays increased only 29%. Similarly, actual VFR delays increased just 9%, compared to the modeled results that show a 59% increase. D13

The DEIS describes a calibration of the model, but at no time does it relate the model results to actual delays. In fact, the only attempt to validate the use of TAAM at ORD is contained in a very limited application for the January 2003 Ricondo simulation analysis that produced highly questionable results. D14

The January 2003 Ricondo validation[2] of the DEIS model was attempted for just one VFR and one IFR "day" in 2001. The first oddity is that the written report discusses this attempted evaluation in terms of throughput rates and taxi in/out times, but not delay which is the primary focus of the whole analysis. Perhaps it is because the IFR runs did not produce results that could be compared to actual results. (There is no detailed discussion of it in the report.) In the results shown in Appendix C of the January 2003 Ricondo simulation analysis, the VFR calibration (for Plan X in 2001) resulted in average delay of 6.9 minutes, the exact same delay presented as the results for Plan X in 2001 (i.e., representative of actual annual delay comparable to the forecast years). However, the average VFR delay for 2001 was 12.6 minutes based on ASPM – an 83% difference compared to the calibrated value. This is certainly no validation of the model for VFR conditions. D15

In contrast, the IFR "calibration" (for Category I IFR using Parallel 27 runways) produced average delay of 7.1 minutes[3]. Unlike the VFR runs, the IFR modeled delay of 7.1 minutes is vastly different from the annual model delay of 38.2 minutes presented for 2001, and both delay estimates differ from the actual average delays of 25.0 minutes from ASPM data! Despite inferences that the model results were validated for use in the DEIS, there is no evidence that the model's delay estimates were ever compared and evaluated relative to actual delays, either for VFR or IFR conditions. D16

[2] The validation of the TAAM model results is described in the January 2003 Ricondo simulation analysis as the "calibration" runs.
[3] January 15, 2001, although the ASPM average for that day was 19 minutes in the ASPM data.

D-5

| Comment | Response |
|---|---|
| D12 | The comparisons presented in *CH Chart D-1* are based on a mixture of model results from several generations of modeling. Only two of the sets of results (2002 and 2003) were prepared for the EIS with assumptions developed by Air Traffic and other FAA and Third Party Contractor simulation experts. Accordingly, FAA does not find the comparisons presented in *CH Chart D-1* to be valid.<br><br>The FAA notes that the table shows that the average annual delays from ASPM and TAAM are reasonably comparable were both years modeled in the EIS (2002 and 2003). The commenter's chart is also drawn to highlight the commenter's disagreement with the way FAA modeled and annualized IFR conditions. FAA modeled IFR conditions in order to produce annualized delay estimates that would have value in the alternatives evaluation process. In these IFR model runs it was assumed that (1) IFR conditions would persist for the full simulation day and (2) that no flights would be cancelled. As explained in subsequent responses D18, D19, and D20, these assumptions are industry standard modeling practices and their effects were accounted for in the annualization process. Furthermore, the assumption that no flights would be cancelled enabled FAA to implicitly capture the adverse operational consequences associated with cancelled flights as explained in greater detail in responses D19 and D20.<br><br>On the other hand, the ASPM data presented by the commenter for IFR conditions do not account for the delay or other adverse operational consequences resulting from flights that were actually cancelled or diverted in IFR conditions. This fact alone prevents direct comparison of the TAAM IFR results with ASPM IFR delay statistics. Furthermore, the FAA asserts that comparisons of ASPM and TAAM model average annual delay results show reasonable agreement between the two data sources. |
| D13 | Please refer to comment D12 for reasons why is inappropriate to compare the 2001 data set with 2002 and 2003 data sets. |
| D14 | FAA disagrees with the commenter's assertion that the TAAM model was not validated and refers the commenter to comment D-10. Furthermore, as described in comment D-12 TAAM model runs performed for the EIS did produce average annual delay estimates that are reasonably comparable with ASPM data for both 2002 and 2003 No Action simulation runs. |
| D15 | Please see the following page for the response to this comment. |
| D16 | Please see the following page for the response to this comment. |

**D.4 The Modeling Fails To Accurately and Reasonably Model Bad Weather Conditions**

Although the DEIS contains a significant amount of historical data on delays at ORD, there is almost no analysis of what causes delay and, in particular, whether runway capacity at ORD can eliminate delay. As indicated by both industry and FAA statistics (see Appendix B of this report), delays at ORD have fluctuated for many years during periods of relatively stable operating levels. While the various delay measures produced by the FAA, and others, may not accurately portray delay problems, they all show a pattern of variability that cannot be explained by operating levels, thereby refuting the notion that runway expansion will reduce delays.

A better understanding of the delay problems at ORD would have led to a more reasonable approach to solving delay, rather than the FAA's one-dimensional, simplistic and erroneous theoretical solution that it contrived by using the TAAM model. The FAA's own data indicate that weather conditions accounted for over 50% of all delay hours at ORD in CY 2004, while runways and volume-related causes accounted for just 4% (with the remainder caused by other factors).[4] D17

A key simplification of the modeling is the representation of bad weather conditions by a single day's operation, assuming a full day of IFR conditions, thereby creating extraordinary delays that may never occur in the real world. This is an unreasonable assumption because IFR conditions, particularly severe conditions during thunderstorms or high winds, generally last for a short period of time on any particular day. Typically there are short periods of high delays, often caused by runway closings.

In fact, the vast majority of IFR operations occur during relatively mild IFR conditions. Over the period from 2000 to 2004 (as shown in Exhibit D-2), 27% of all operations at ORD occurred during restricted weather days (defined as days with more than 5% of IFR conditions during peak hours, or days with more than a 5% cancellation rate[5]). Of these, only 2.9% were days that consisted of restricted conditions for more than 90% of the peak period.

The "severe weather" days modeled to represent IFR conditions at ORD accounted for less than one percent of the total annual operations over the 2000 to 2004 period. ASPM "quarter-hour data" identified just 13 days in the years 2000 to 2004 where IFR conditions

[4] Appendix B, Chart B-16

[5] Analysis of the ASPM data indicated significant periods of high delays that did not correlate with the visibility and cloud ceiling definition used in the DEIS, probably due to wind conditions or short periods of dangerous flying weather. The definition of "restricted weather conditions" was expanded in this analysis to include cancellations using the higher value of the IFR share of peak hours and the cancellation rates relative to total operations.

D-6

| Comment | Response |
|---|---|
| D15 | The commenter provides a critique of an analysis that has been superseded by the simulation modeling conducted for the EIS. The TAAM experiments in question were used by the Airport Sponsor in support of their Master Planning effort. For the EIS, the FAA directed, oversaw, reviewed and approved a separate analysis conducted by the City of Chicago. The FAA analysis included a revised set of operating assumptions based on the most current data available at the time and also included a switch in forecast operations from the 2001 Terminal Area Forecast (TAF) to the 2002 TAF.<br><br>The FAA did perform its own calibration effort on the TAAM models developed for the EIS. This calibration effort focused specifically on the comparison of rolling hourly and peak period runway throughput data to historical throughputs observed at ORD. In the course of this calibration effort, several modeling assumptions—most notably in-trail separations in VFR conditions—had to be adjusted to produce realistic runway throughputs. Although average annual delay was not a performance metric used in the calibration effort—primarily due to the fact that historical average annual delay estimates exclude the adverse operational consequences associated with flight cancellations—the FAA did find that average annual delay estimates for the No Action Alternative to be reasonably comparable to average annual delay estimates recorded in ASPM for the 2002 and 2003 demand levels.<br><br>In addition, the TAAM models developed for the EIS were *validated* by the FAA Air Traffic Working Group, which thoroughly reviewed TAAM inputs, preliminary model outputs, and animations before approving individual TAAM experiments for final "production" runs. |
| D16 | The commenter provides a critique of an analysis that has been superseded by the simulation modeling conducted for the EIS. The TAAM experiments in question were used by the Airport Sponsor in support of their Master Planning effort. For the EIS, the FAA directed, oversaw, reviewed and approved a separate analysis conducted by the City of Chicago. The FAA analysis included a revised set of operating assumptions based on the most current data available at the time and also included a switch in forecast operations from the 2001 Terminal Area Forecast (TAF) to the 2002 TAF. TAAM model calibration and validation efforts were conducted as part of the EIS modeling effort as explained in Comment D16. |
| D17 | As noted in prior comments, the CH analysis of delays presented in *CH Appendix B* is flawed--ignoring a variety of key indicators of airfield operational performance that are contained in historical delay databases<br><br>Continued on the following page. |

pertained for all of the peak period from 7 a.m. to 10 p.m. This accounted for just 0.7% of the total 1,827 days in this period. The operations occurring on these 13 days accounted for just 0.6% of total peak period operations for the five-year period, although the DEIS applied the high modeled delays to over 9% of annual operations making no accommodation for weather severity.

In reality, the modeled delay for these "full IFR" days (used to represent all IFR operations) does not even come close to actual delays for these limited number of days based on the ASPM data. Actual peak hour operations for the 13 days in question averaged just 39 minutes of average delay which is 22% less than the 50.1 minutes of IFR delay produced by the DEIS modeling for 2002 (and 30% less than the 2003 estimate). This is partially due to the DEIS modeling not accounting for reduced operations during severe weather due to cancellations. The 13 "full IFR" days averaged 126 operations per peak hour compared to an overall average of 156 operations (a 21% difference). By forcing the full level of good weather operations through an IFR-constrained airfield, average delays are substantially overstated in the DEIS. D18

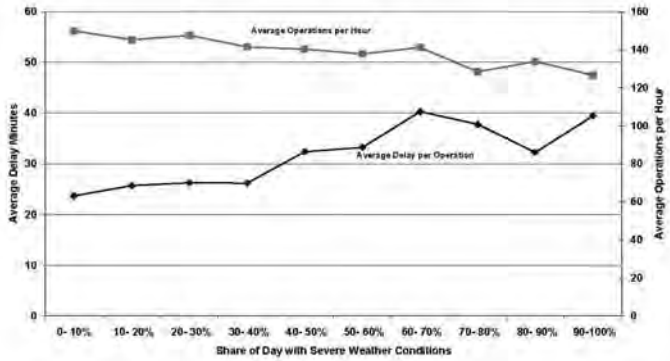
A comparison of operations and delays during IFR conditions also indicates another flaw in the modeling assumptions. As shown in Chart D-2, the volume of hourly operations declines as the severity of conditions increases, again reflecting the reality that both scheduled and non-scheduled operations are cancelled on the worst weather days. In fact, from 2000 to 2004 restricted weather days averaged 145 operations per hour during peak periods, compared to 154 operations in all-weather conditions. The most severe weather days (over 90% IFR) averaged just 122 operations per hour, 20% lower than the all-weather average.

The IFR modeling should have reflected the lower level of operations, particularly as it greatly affects real delays. As shown in Chart D-2, the decrease in operations for the worst weather days lessens the impact of decreased capacity. For days where severe weather occurs for up to 40% of the peak period, average delays are relatively stable at 25-30 minutes per operation, about twice the all-weather average. Even for the severest days, the average delays are only 60% more than average IFR delay, and less than three times the all-weather average. The DEIS modeling mischaracterizes IFR operations and greatly overstates the No Build delays.

D-7

| Comment | Response |
|---|---|
| D17 | like ASPM and thus presenting an incomplete picture of the airfield capacity constraints at ORD. For example, in CH analyses of historical operational data presented in *CH Appendix B*, almost no mention is made of the number of flight cancellations and diversions that occur at ORD annually due to insufficient runway capacity, whether caused by adverse weather conditions or other factors. Such cancellations, which do not contribute to the delay metrics tracked in ASPM, contribute to the appearance that delay levels have been constant over the last several years.<br><br>The TAAM analysis, on the other hand, implicitly accounts for the adverse operational impacts associated with flight cancellations by modeling the delays that these cancelled flights would have caused had they flown.<br><br>As mentioned in several other responses, the FAA agrees with the commenter's assertion that the delays at airports result from a variety of factors. These include weather conditions, runway and airspace interactions, taxiway congestion, and airline scheduling practices, among others. All of the aforementioned factors are explicitly accounted for in TAAM. For example, in the TAAM modeling effort, a variety of weather conditions were simulated to reflect the primary weather conditions that impact capacity at ORD. Similarly, a variety of runway use configurations were simulated to capture the effect that the various operating configurations have on airfield capacity. The breadth and depth of the operational assumptions that drive TAAM model outputs were extensively documented in TAAM data packages that the FAA posted on its OM EIS website (www.agl.faa.gov/OMP).<br><br>Accordingly, the FAA finds the commenter's characterization of the TAAM modeling effort as "one-dimensional, simplistic, and erroneous" to be absolutely incorrect.<br><br>It is notable that the TAAM analysis, as well as the commenter's own interpretation and presentation of TAAM data (see *CH Chart D1* for example), clearly indicates the disproportionate impact that poor weather conditions have on airfield performance. |
| D18 | Please see the following page for the response to this comment. |

**Chart D-2**
**AVERAGE DELAY VS. AVERAGE HOURLY OPERATIONS: RESTRICTED CONDITION DAYS**
**(January 2000 to December 2004)**




Source: Exhibit D-2

D19

The impact of failing to incorporate the real-world conditions where severe weather leads to flight cancellations is reflected in the results produced for one of the DEIS "No Build" IFR scenarios, as summarized in Exhibit D-3 (for Baseline 2002 using Parallel 9 runways). As shown in this exhibit, the 2,648 operations designated for the airport are all "completed" in the model, despite some flights being delayed over five hours. It is unreasonable to assume that these flights would not be cancelled, in contrast to what was assumed in the January 2003 Ricondo modeling. The resulting delays are understandably high based on this "no-cancellation" assumption. The average delay is 59 minutes per operation, but 60 percent of the operations experience delays of 15 minutes or less (or no "significant" delay by the FAA's own standards). More than half of all delay in the model occurs for flights that are delayed by more than three hours, a small fraction of which might actually operate in the real world.

Using a very conservative assumption that flights delayed more than two hours would be cancelled (and recognizing that value would differ depending on whether is was a high or low

D-8

| Comment | Response |
|---|---|
| D18 | The FAA utilized a standard industry accepted modeling methodology for this study. While it is true that it is uncertain when poor weather conditions are going to strike or for how long they are going to last, for modeling purposes the FAA assumed poor weather conditions lasting for a 24 hour duration. This assumption was utilized for all operating configurations for all alternatives evaluated. It is a matter of standard industry practice to use the 24 hour duration in this regard. In fact, identical methodologies were used in the ORD simulation studies cited by the commenter in Appendix D, including the CTAP, the WGP, and the Delay Task Force. Such assumptions are used to produce a manageable simulation experimental design rather than one in which a multiplicity of possible weather scenarios must be examined.<br><br>As mentioned previously in response D12, FAA modeled IFR conditions in order to produce annualized delay estimates that had value for use in the alternatives evaluation process. In these IFR model runs it was assumed that (1) IFR conditions would persist for the full simulation day and (2) that no flights would be cancelled. These assumptions are consistent with typical modeling practice and their effects were accounted for in the annualization process. Furthermore, the modeling assumption that presumed all flights would be operated enabled FAA to account for the operational consequences associated both with flights actually conducted and those that may have been cancelled for a variety of reasons. The reasons are explained further in responses D19 and D20 below. |
| D19 | The FAA agrees with the commenter that, in part due to the losses of runway and airspace capacity that take place when poor weather conditions affect ORD, airlines cancel flights that would otherwise incur significant delays. However, the FAA also asserts that flight cancellations are generally indicative of airfield or airspace capacity deficiencies in poor weather conditions. This is certainly the case at ORD, where complex intersecting runway use configurations that controllers currently rely on accommodate operational demands in good weather conditions cannot be used efficiently in poor weather conditions. As a result, when poor weather conditions affect ORD, controllers are forced to rely on less efficient runway use configurations with lower capacity. Flight cancellations and high delays typically result.<br><br>The commenter appears to imply that flight cancellations do not impose adverse operational consequences on airlines and passengers using ORD, which is untrue. FAA completely disagrees with this characterization of cancellations. Furthermore, cancellations are extremely disruptive to airline operations, especially at a major hub airport like ORD where such cancellations have substantial ripple effects throughout the National Airspace System.<br><br>Continued on the following page. |

frequency market), 2,020 flights, or 76% of the total flights, would have actually operated.[6] At this lower level of operations, 80% of the total delay would be eliminated yielding an average delay of 16 minutes, not 59 minutes. This average delay estimate is 73% lower than the estimate used in the DEIS to represent IFR operations at ORD. **The DEIS contains a gross and biased overstatement of the delay problem.** D20

Considering that a primary focus of the OMP is to deal with IFR delays, the failure to produce accurate IFR results is so problematic that it undercuts all confidence the FAA should place in the model for decision-making purposes. This problem is compounded by the fact that the "All Weather" delay is based on a weighting that overstates IFR conditions for both 2001 and 2003. It is not known why the IFR/VFR weighting differs from the actual ASPM data, since this evidence was not released to the public. Nevertheless, using the same 15-minute dataset, Table D-1 shows that the IFR share of "time periods" exceeds the actual share for each of the base year runs.

**TABLE D-1**
**TAAM IFR WEIGHTING COMPARED TO ASPM SHARES BASED ON "TIME PERIODS"**

| | TAAM | Actual | Difference |
|---|---|---|---|
| CY 2001 | 9.3% | 7.4% | 25.1% |
| CY 2002 | 6.0% | 6.0% | -0.3% |
| CY 2003 | 9.3% | 7.3% | 26.7% |

Source: Exhibit D-1

It should be noted that the model shares yield a 27% higher weighting of IFR delay than would the actual shares in 2003, increasing the effect of high IFR delays under the "No Build" scenario in the DEIS.

The use of "the share of time periods" to weight the average delay per operation creates an additional bias, as it cannot be assumed that the distribution of IFR time is the same as the

[6] Note that this percentage is higher than the assumption used in the January 2003 Ricondo simulation analysis modeling for both the No Build and OMP scenarios, but lower than the 80% share compared to overall average operations in 2004 for severe weather days).

D-9

| Comment | Response |
|---|---|
| D19 continued | FAA assumed no cancellations in TAAM because, for example, it is difficult to predict with accuracy how individual airlines will choose to cancel flights in response to a particular poor weather condition. As a result, the effects of cancellations were addressed in all TAAM experiments by simulating a full flight schedule in every TAAM experiment. With this methodology, the operational impacts of flights that would have been cancelled are captured in the form of delays, which can easily be compared across a range of alternatives. Also, it is difficult to effectively quantify the "value" of an average cancellation, given the variety of factors that can affect this value, including how effectively passengers can be re-accommodated on other flights, how quickly airlines can get aircraft that have been subjected to cancellation rescheduled; and how the effects of flight cancellations ripple through the National Airspace System.<br><br>This methodology which is consistent with industry standards has been used in numerous similar analyses conducted by the FAA and the industry as a whole, including analyses that supported EISs for runway projects at Philadelphia, San Francisco, and Lambert-St. Louis international airports. |
| D20 | The commenter's assertion that the "DEIS contains a gross and biased overstatement of the delay problem" at ORD is based on the assumption that flights that are cancelled because of runway capacity reductions related to poor weather conditions have no adverse operational consequences. As explained in Comment D20, this is an inaccurate interpretation. In fact, flight cancellations do have substantial adverse operational consequences and are extremely disruptive to passengers and the airlines, especially at a major hub airport like ORD.<br><br>The commenter's position appears to be that it is acceptable to cancel any number of flights necessary to keep the IFR delay reasonable. For example, the commenter appears to think that the FAA has no obligation to try to improve IFR capacity at any airport because the airlines will cancel flights when delays become unacceptable. This assertion ignores basic operational tenants and FAA's mission to promote safe and efficient operation of the National Airspace System.<br><br>In order to fully characterize the operational performance of the No Action and Build Alternatives, it was essential to capture the operational consequences associated with cancellations in the TAAM modeling effort. However, to do so is difficult to do reliably and consistently (see Comment D19). Recognizing these issues, the FAA chose instead to simulate all scheduled flights in all weather conditions and runway use<br><br>Continued on the following page. |

distribution of operations, which is the statistic that should be used for the weighting. In fact, the actual share of operations is even lower than the actual share of time periods, as shown in Table D-2 below: D21

**TABLE D-2**
**TAAM IFR WEIGHTING COMPARED TO ASPM SHARES BASED ON "OPERATIONS"**

| | TAAM | Actual | Difference |
|---|---|---|---|
| CY 2001 | 9.3% | 6.5% | 43.3% |
| CY 2002 | 6.0% | 5.0% | 19.7% |
| CY 2003 | 9.3% | 5.8% | 61.5% |

Source: Exhibit D-1

Consequently, the weight given to the IFR model results is 61% higher than the value that should be used to generate "per operations" average delay estimates for 2003. Campbell-Hill believes this bias extends to the full year modeling of the "No Build" case, and it thereby results in a significant overstatement of the delay benefits from the OMP. Using the more appropriate weighting for IFR share of 5.8% in 2003, results in a 10% decrease in "modeled" all-weather delay if the model results are properly interpreted. D22

In conclusion, **the DEIS overestimated average delays for a non-representative set of IFR conditions and then over-weighted the results in the average all-weather delay estimates.** This produced an enormous overstatement of delay in the FAA analysis. D23

**D.5 The DEIS Model Results Are Highly Dependent On Over-Simplified Assumptions**

The DEIS model was premised on the use of very limited runs of a peak day which were then extrapolated to create annual estimates without any validation, or verification, that those selective short term experiences can be reasonably applied over the full year period. This highly over-simplified modeling undermines further the validity of the TAAM modeling. For example, the TAAM modeling used the peak month of August 2002 to determine the relationship between weather and delays, applied that relationship on an annual basis, and then retained that

D-10

| Comment | Response |
|---|---|
| D20 continued | configurations, thus implicitly capturing the operational effect of cancelled flights in terms of the delays that these flights would incur and cause if they were flown. Doing so facilitated straightforward apples-to-apples comparisons of the No Action and various Build Alternatives.<br><br>At the same time, the FAA recognizes that if the No Action Alternative is retained, there would be high levels of cancellations in the future and correspondingly lower levels of delays in comparison to the TAAM results. Build Alternatives, on the other hand, would likely result in delays similar to those measured using TAAM, but would operate in poor weather conditions and lower capacity operating configurations with much lower levels of cancellations. |
| D21 | To reflect long term historical trends in weather conditions in the annualization process, the FAA developed the percent occurrences of weather conditions using a ten-year sample of weather observations compiled at ORD by the National Weather Service. These data, specifically Surface Airways Hourly data (TD-3280), are commercially available from the National Climatic Data Center in Asheville, North Carolina. The percent occurrences of specific weather conditions reported in the DEIS reflect the average occurrence of these conditions over a 10-year period from 1991 to 2000. Characterization of the percent occurrences of weather conditions in this manner is highly appropriate for long range planning and is an industry-standard analysis methodology. Descriptions of how these percent occurrences of weather conditions were developed are provided in **Appendix D** of the EIS and the TAAM data packages referenced therein.<br><br>The analysis of TD-3280 data indicate that from 1991 to 2000, IFR conditions—defined by the FAA as conditions in which cloud ceiling was lower than 1,000 feet above ground level or visibility was less than 3 statute miles—occurred approximately 9.3% of the time.<br><br>Continued on the following page. |
| D22 | The FAA disagrees with this assertion for reasons described in response to comment D21. |
| D23 | The FAA disagrees with this assertion for reasons described in response to comments D20 and D21. |

relationship throughout the forecast year. In fact, there is no consistency in the relationship between August and annual patterns. D24

Relying on a model that uses a single peak month upon which to base a $21+ billion investment is reckless to say the least, particularly since there is no evidence provided in the DEIS that the August 2002 "peak month" is either representative of long-term trends, or even short-term seasonal peaking. As shown in Exhibit D-4, operating patterns for the designated peak month (August 2002) were relatively similar to the annual patterns for 2002 in terms of average delay, but not in terms of IFR conditions. Moreover, August 2002 accounted for just 7% of the annual hours under IFR conditions (as measured in 15-minute increments) compared to 9% of VFR-condition hours. August 2002 accounted for just 5% of the operations, as well as 5% of delays occurring during IFR conditions. D25

The problem with using a single historical month is shown by the changes that occurred between 2002 and 2004. Whereas average delay in August 2002 was 8% higher than the annual average (presumably the reason for the "annual" adjustment[7]), August 2004's average delay was 15% lower than the 2004 annual average. While annual frequency of IFR conditions were relatively stable between the two years, IFR operating conditions were even less prevalent for August 2004 than in 2002. August 2004's share of annual IFR delay hours was only 4%. The increase in average delay on an annual basis is also not reflected proportionately in the peak month. While average delay increased 56% between CY 2002 and CY 2004, peak month delay increased only 22%. The limited modeling environment based on arbitrary assumptions (like a single day for a single historical month) differs from modeling of a far wider range of conditions in the Los Angeles EIS and other capacity analyses[8]. D26

The arbitrary nature of the OMP analysis is shown by the many changes in runway use for the TAAM modeling in this and previous studies. There have been three sets of models run for the OMP including the January 2003 Ricondo simulation analysis, the September 2003 Proof-of-Concept analysis, and the DEIS. The January 2003 Ricondo modeling was also

[7] "Annual" average delays and other model results were calculated by multiplying the peak month values by 96% with no explanation. If this adjustment was based on August 2002, the actual ratio should have been 92%., yielding a lower annualized delay estimate for the "No Build" scenario.

[8] For example, the FAA used a MITRE model in estimating the impact of the proposed scheduling agreement at ORD in 2003. As cited in Appendix C of the City's recent Benefit-Cost Analysis (footnote 21, page 17), "The resulting delay measures are sensitive to a number of factors; therefore the model was run one hundred times for each weekday from November 2003 to May 2004 to account for stochastic variations".

D-11

| Comment | Response |
|---|---|
| D21 continued | The FAA believe that the differences observed by the commenter between weather data presented in ASPM and the TD-3280 data used in the DEIS stem from (1) the commenter's use of only three years of weather data, (2) presentation of these three years of data year-by-year, rather than averaged over all three years in the sample, and finally (3) differences that may exist between the definition of IFR conditions assumed by the commenter and the definition of IFR conditions used by the FAA in the DEIS.<br><br>Furthermore, the FAA believes it is inappropriate for the commenter to characterize the third column of *CH Table D2* as "actual" percent occurrence of IFR conditions, when this column appears to be the commenter's own interpretation of ASPM data. |
| D24 | The FAA evaluated the preferred alternative by modeling six primary operations configurations that would be used, based on an analysis of 10-years of historical weather data, a preponderance of the time. This included very good weather conditions (ceiling and visibility of greater than 5,500 feet and 10 statute miles, respectively), good weather conditions (ceiling and visibility of greater than 1,000 feet and 3 statute miles, respectively) and poor weather conditions (ceiling or visibility less than 1,000 feet and 3 statute miles). Each operating configuration was run 11 times to evaluate the impact of model input variables.<br><br>The level of activity utilized for the TAAM modeling was a peak month average weekday. Results of the modeling were then factored to represent average annual delays. For both the constrained and unconstrained forecasts, the FAA applied a factor (96%) to reduce the average annual delays based on the peak month average schedule to achieve average annual day results.<br><br>Use of existing peak month, average day flight schedules as the basis for flight schedule development in simulation modeling exercises is a long-standing industry practice that has been used in numerous similar simulation analyses conducted by the FAA's Technical Center, Airports, and consultants, and other industry professionals. |
| D25 | The August 2002 traffic distribution was the best, most current information available when the modeling began and thus is believed to be the best assumption to use for modeling purposes. This process followed by the FAA is a standard industry accepted methodology.<br><br>Continued on the following page. |
| D26 | Please see the following page for the response to this comment. |

referenced in the OMP Letter of Intent (LOI) draft in March 2004, despite the fact that the September 2003 Proof-of-Concept modeling was more recent. D27

As shown in Table D-3, the distribution between IFR and VFR conditions are constant for all runs, but the use of different runways in producing the weighted delay averages shifted significantly. For example, the Parallel 27 runways were assumed to handle 37.5% of overall operations in the January 2003 Ricondo analysis, 41.1% in the September 2003 Proof-of-Concept analysis, and 37.5% in the March 2004 LOI before falling to 27.7% in the final DEIS. The Parallel 9 runways were assumed to be the most utilized configuration for IFR conditions in the January 2003 Ricondo analysis, and even more so in the September 2003 Proof-of-Concept analysis, before finally being overtaken by the Parallel 27 runways in the DEIS. At no time is there a clear explanation for why these modeling changes occurred, but it brings into question whether assumptions were changed to produce a desired result.

**Table D-3**
**INCONSISTENT WEIGHTINGS USED FOR OMP MODELING**

| | Ricondo Jan. 2003 | Proof-Of-Concept Sep. 2003 | Letter Of Intent Mar. 2004 | DEIS Jan. 2005 |
|---|---|---|---|---|
| VFR Conditions | | | | |
| Parallel 9's | 32.2% | 35.4% | 32.2% | 23.2% |
| Parallel 27's | 58.5% | 55.3% | 58.5% | 67.5% |
| | 90.7% | 90.7% | 90.7% | 90.7% |
| IFR Conditions | | | | |
| Parallel 9's | 5.3% | 5.7% | 5.3% | 4.5% |
| Parallel 27's | 4.0% | 3.6% | 4.0% | 4.8% |
| | 9.3% | 9.3% | 9.3% | 9.3% |
| All Weather | | | | |
| Parallel 9's | 37.5% | 41.1% | 37.5% | 27.7% |
| Parallel 27's | 62.5% | 58.9% | 62.5% | 72.3% |
| | 100.0% | 100.0% | 100.0% | 100.0% |

D28

Source: Appendix C

D-12

| Comment | Response |
|---|---|
| D25 continued | Average IFR weather occurrences are based on 10-years of actual historical weather data, not individual months. If a long term monthly occurrence of historical IFR conditions analysis were conducted on Chicago weather data, the results would indicate that the preponderance of IFR conditions would occur between the months of October and March. Typically, the occurrence of IFR conditions is less frequent during the summer months. Therefore, the correlation of August 2002 weather conditions to the TAAM modeling conducted in the EIS is not relevant. |
| D26 | Average IFR weather occurrences are based on 10-years of actual historical weather data, not individual months. If a long term monthly occurrence of historical IFR conditions analysis were conducted on Chicago weather data, the results would indicate that the preponderance of IFR conditions would occur between the months of October and March. Typically, the occurrence of IFR conditions is less frequent during the summer months. Therefore, the correlation of August 2002 weather conditions to the TAAM modeling conducted in the EIS is not relevant. This process followed by the FAA is a standard industry accepted methodology.<br><br>The adjustment factor that the commenter notes in this paragraph and Footnote 7 was applied to adjust delay estimates for average day, peak month conditions—as estimated directly using TAAM—to average annual delay estimates in the annualization process. This value—96%--represents the approximate ratio of average daily operations to average day, peak month operations for future simulated demand levels (i.e., demand years 2007, 2009, 2013, and 2018).<br><br>The commenter's suggestion that multiple flight schedules should have been simulated to account for a broad range of flight schedule patterns would not materially change the conclusions of the analysis—namely that the various Build Alternatives that were modeled would significantly reduce delays associated with the No Action airfield while simultaneously allowing ORD to accommodate substantially greater levels of activity. Although consideration of such alternative flight schedules may be useful in other more narrowly focused studies, such as evaluations of the benefits of schedule changes themselves as references by the commenter in Footnote 8—such evaluations were not necessary to understand the substantial operational benefits that proposed build actions would produce. Moreover, such analyses would have required added significant additional time and effort to an already substantial simulation effort, without contributing significant additional information to the question of whether the No Action and various Build Alternatives would meet the purpose and need for the project. |
| D27 | Please see the following page for the response to this comment. |
| D28 | Please see the following page for the response to this comment. |

D29

**D.6 The "Constrained" Forecast Incorrectly and Arbitrarily Applies An Inappropriate Peak Month Limit Over An Entire Year**

In some cases, the modeling assumptions (and interpretive use of the results) indicate a bias towards analytical simplicity as opposed to forecasting accuracy. As an example, the DEIS analysis of the "No Build" scenario uses a "constrained" forecast that limits operations and passenger flows based on the projected high delays for the peak traffic month. Without regard to whether it is appropriate to constrain passengers when airlines can utilize larger aircraft, the extrapolation of this peak month constraint to an annual constraint makes no sense. This assumption understates the capacity of the existing airfield and also ignores real-world adjustments that airlines make to deal with peak conditions.

The DEIS "constrained" forecast only makes sense if there is no seasonal peaking of demand. The methodology used in creating this forecast estimates the level of daily operations that could be sustained, on average, for the peak month (August) at 2,750 operations based on the assumption that operations beyond this limit would generate delays that exceed a "maximum" delay of 15-17 minutes. The annualized constrained forecast is then estimated at 974,000 operations, assuming that constrained peak month operations (31 x 2,750) would continue to have the exact same share of annual operations. This is illogical! Under the correct application of the DEIS method, operations in non-peak months would continue to increase until each month's daily average reached 2,750 operations, yielding 1,003,000 operations as the constraint, a small but significant bias.

In reality, it is far more likely that at the point operations are constrained for a peak month, carriers will immediately begin using larger aircraft to handle peak seasons and ultimately throughout the year. There is absolutely no rational or empirical basis for constraining passenger growth, even assuming operations might need to be limited.

The use of 2,750 operations as a daily constraint is also arbitrary and does not reflect reality. As shown in Exhibit D-5, a substantial number of annual days in 2004 (204 out of 366 or 56%) handled more than 2,750 operations, including almost two entire months that handled over 2,850 operations each. **These "high volume" days accounted for 58% of the annual operations, but only 45% of the delay hours. In fact, average delay declined as the average daily operations increased over the 2,750 "limit".** In 2004, the 62 days having over 2,850 or more operations averaged 13.1 minutes of delay compared to 24.3 minutes for days with less

D-13

| Comment | Response |
|---|---|
| D27 | The commenter is correct to note that there have been various modeling efforts conducted for the O'Hare Modernization proposal. |
| D28 | FAA is responsible for the preparation of this EIS. During development of the DEIS, FAA determined that simulation modeling based on updated forecasts (2002 TAF) and airfield operational procedures should be completed. This accounts for differences identified by the commenter between the EIS TAAM model results, the January 2003 Ricondo Simulation Analysis (which utilized the 2001 TAF), and the Ricondo Runway 12/30 "Proof-of-Concept" Evaluation (2001 TAF). The comparisons presented in Chart D-3 are based on a mixture of assumptions from several generations of analysis. Accordingly, FAA only considers one set of percent occurrences to be applicable - (DEIS Jan. 2005).<br><br>The City of Chicago calculated the east versus west flow percentages for the Ricondo 2003, Proof of Concept September 2003, and their Letter of Intent March 2004 simulation analyses. For the DEIS, the FAA performed a wind and weather analysis of ten years of historical weather data in conjunction with proposed runways to be used in each proposed operating configuration.<br><br>FAA believes that a clear explanation of why the FAA TAAM analysis was used in the EIS development is provided in Appendix D and TAAM data packages. The rational for the operating configurations utilized in the TAAM analysis is contained in the TAAM data packages. The values developed for this EIS took in consideration the findings from the TAAM analysis that indicated the parallel 27 operating configuration would perform more efficiently than the parallel 9 operating configuration. It was the consensus the FAA Air Traffic working group, FAA Airports Division representative, and FAA's TPC that air traffic would maximize the use of more efficient parallel 27 configuration to the extent that wind and weather conditions permitted. This rationale and the simulation results that support it are presented in Appendix D of the DEIS and the TAAM data packages referenced therein. |
| D29 | The FAA concurs with the commenter that the capping of the forecast levels of operations in the No Action TAAM runs was done very simplistically. The FAA also accepts the commenter's assertions that in response to excessively high delay levels, various airlines may decide to serve ORD with larger aircraft, attempt to reschedule flights at off-peak times, seek to provide service in the Chicago region at other airports, or cancel flights entirely. However, as it is difficult to predict such airline actions with confidence, rather than attempt create the illusion of accuracy with a complex capping methodology, the FAA opted for a much simpler method. The choice of this simple method was a conscious one, reflecting the fact that only gross estimates of the effects of capping were needed in the EIS.<br>Continued on the following page. |

than 2,750 operations (Exhibit D-5). These results indicate not only that the underlying premise of the modeling is wrong (i.e., operation levels versus runway capacity is the sole determinant of delay), but they also demonstrate that the 2,750 "constraint" is meaningless, self-serving, and designed to promote the OMP. The Campbell-Hill results also support the theory that weather is the primary determinant of delays, even at lower operating levels. D29

**D.7 The Selection Of The TAAM Model To Replace SIMMOD Is Never Explained And Appears To Be Based On A Desire To Produce A Pre-Determined Set of Results**

The selection of the TAAM model to analyze the OMP, and a few carefully selected variations, is suspicious considering that the SIMMOD model had been used for many years at ORD including the recent FAA application in regard to the World Gateway Program. There is no explanation for this change and a comparison of results suggests that the TAAM modeling is not reliable in terms of either the "No Build" or the OMP scenarios. D30

The SIMMOD modeling used for the World Gateway Program (WGP)[9] does provide some clues as to why it may have been discarded for the OMP analysis, including:

1. The report concludes that the need for the WGP and its benefits are "independent of runway projects or other delay reduction measures," and the City would build the WGP "**whether or not new runways ... occur**" (p. 1-3). "Much of delay savings occur [from] airline flight schedule delay ... reducing this delay by providing efficient gate facilities ... reduces congestion ... throughout the system" (p 3-11). The SIMMOD modeling shows significant delay reductions (from 18 minutes to 9 minutes) **just from the terminals**. Why then was a terminal-only scenario not modeled for the DEIS? D31

2. The WGP "will enable airlines to use larger, quieter, and more efficient aircraft to process ... an increasing number of passengers, **without corresponding increases in operations**." (p. 3-11). "The WGP [will]... re-establish .. [balance] between ... airfield and associated facilities. ... will reduce taxiway congestion ... enable

[9] City of Chicago, Department of Aviation , Request for Federal Funding Commitment, Letter of Intent: In support of the World Gateway Program, Chicago O'Hare International Airport, February 28, 2002

D-14

| Comment | Response |
|---|---|
| D29 continued | The primary reason that demand capping was applied to the No Action Alternative was to prevent the overestimation of baseline environmental impacts (i.e., those associated with the No Action Alternative). Without capping, average annual delays would rise to excessively high levels, causing more substantial air quality impacts due to increased aircraft emissions. At the same time, without capping, more operations would occur at ORD, increasing noise and air quality impacts. With application of demand cap at a level of 974,000 annual operations—albeit via a simplistic methodology—a more realistic assessment of No Action environmental impacts was possible. Of course, the reduced level of environmental impacts associated with the No Action Alternative caused by application of the demand cap correspondingly increased relative environmental impacts associated with all of the Build Alternatives, a conservative approach. In fact, because this approach tends to overstate potential environmental impacts associated with Build Alternatives, it actually tends to promote the No Action Alternative rather than Build Alternatives, in contrast to the commenter's allegations.<br><br>It is also worthy of note that in the capped schedule, it was assumed that average aircraft size, measured in terms of seats per departure was assumed to increase slightly.<br><br>In addition, the commenter's assertion that days with high volumes of traffic are generally associated with lower delays appears to suffer from the same erroneous interpretation of historical delay data. As discussed at length in the responses to the commenter's *CH Appendix B*, the data presented by the commenter ignore that fact days with the highest delays also tend to be days with the highest levels of cancellations, which in turn reduces operations levels reported in ASPM. As such, it is impossible to reliably assess the relationship between operations and adverse operational consequences—which include delays and cancellations—as the commenter has attempted to do.<br><br>As a final note, the FAA believes that regardless of whether capping methodology is applied, the No Action Alternative will still be incapable of meeting the purpose and need for the project. The fact that capping was necessary at all in the No Action case provides a clear indication of this. |
| D30 | Please see the following page for response. |
| D31 | Please see the following page for response. |

airlines to use their largest and most efficient aircraft to minimize ... operations" (p. 3-15). Why was the potential use of larger aircraft to reduce delays not considered in the DEIS, although it was used to justify the WGP? D32

In an apparent pattern, the SIMMOD modeling was used to sell terminal investment as "delay-reducing" with no runway expansion, and therefore the same model could not be used to promote runways as the sole source of delay reduction in selling the OMP. D33

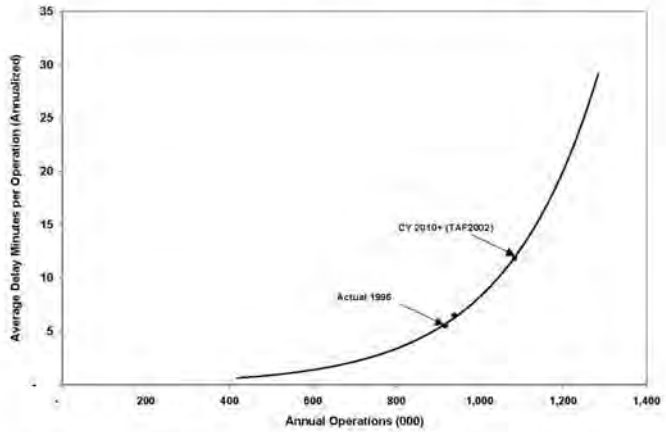
SIMMOD was also used to model the impact of the Chicago Terminal Airspace Project (CTAP) as part of its EIS process. The modeling estimates "No Action" average delay of 11.9 minutes in 2010 at 1.08 million operations (see Chart D-3).[10] This level of operations is equivalent to CY 2010 in the 2002 TAF. The SIMMOD-modeled average delay is 40% of the 30 minutes of average delay that can be estimated using the DEIS "No Build" delay curve. **Perhaps the SIMMOD model was not used because it did not produce "No Build" delays that are high enough to justify the OMP.** D34

[10] The "peak" delays were converted to an annual basis by multiplying by 96%, similar to the DEIS method.

D-15

| Comment | Response |
|---|---|
| D30 | The commenter correctly notes that various other models have been historically used at O'Hare. For the first two O'Hare Delay Task Force efforts (1976 & 1991) the AIRSIM & GATESIM model were used. For the City's O'Hare Airport Layout Plan Update modeling effort, the Chicago Terminal Area Project (CTAP), and World Gateway Program (WGP) analyses conducted in the 1990s, SIMMOD was used. The 2002 O'Hare Delay Task force utilized the FAA's ADSIM model. Finally, in 2002 the modeling effort to refine the Terminal 6 proposed development used TAAM.<br><br>Models are continuously developed and refined. At the beginning of any planning/environmental analyses a computer simulation model must be selected to use to calculate the operational benefits as well as to use the results in other environmental analyses. Each models strengths and weaknesses must be evaluated in the selection of that model. After considering all factors, the FAA selected the TAAM model for this analysis. Please see response to comments D1 above and D35 below for a description of the reasons why TAAM was used in the EIS. |
| D31 | In response to this comment, please see **Chapter 1, Section 1.2.4.2** of the EIS for a discussion of the World Gateway Program. |
| D32 | Forecasts of aviation activity drive the facility planning requirements for future periods of time. In addition to the number of forecast operations, fleet mix trends by the Airport users also contribute to the number and type of facilities required. For the World Gateway Program, the 1998 forecast developed for the planning horizon estimated 982,500 total annual operations for the year 2012. For the O'Hare Modernization EIS, the FAA is using the 2002 Terminal Area Forecast which forecasts approximately 1,194,000 total annual operations for the year 2018. This is approximately a twenty percent increase in forecast operations.<br><br>In addition, the industry trend towards larger aircraft has not materialized in the industry as a whole or at O'Hare itself. The frequency of use of the Regional Jet (RJ) has far exceeded all O'Hare forecasts prepared during the late 1990s. Currently, approximately 40% of the total operations at the Airport are RJ aircraft. Due to the cost of aircraft, airlines cannot modify their fleets over short periods of time. Thus, increasing the fleet size of the aircraft operating at the Airport would not be able to accommodate the operations demand forecast at the Airport rendering this potential alternative unrealistic. |
| D33 | Please see the following page for response to this comment. |
| D34 | Please see the following page for response to this comment. |

**Chart D-3**
**CTAP DELAY CURVES (from SIMMOD Modeling)**




Source: Draft Environmental Impact Statement (DEIS) for the Chicago Terminal Airspace Project (CTAP)

The DEIS methodology is also suspicious in that a different set of assumptions was used in the past for TAAM modeling at ORD. In the IFR modeling performed for the January 2003 Ricondo simulation analysis, there were two IFR scenarios modeled.[11] One scenario, designated as "Category I", reflected moderately bad weather conditions that affected the use of runways but did not result in significant cancellations. The other IFR scenario was designated as "Category II/III" representing severe weather conditions that affected both runway selection and operation levels. This was reflected in the use of a PMAD level that was approximately 70% of the level used for the other weather conditions.[12]

At this reduced level of operations, the average modeled delays ranged from 10.6 minutes for 2001, to 17.9 minutes at the highest level of operations run, and well below the 65 to 111

[11] Ricondo & Associates, Airport Layout Plan Update, Airside Simulation Analysis. Appendix C, January 2003.

[12] This PMAD level is lower than the 80% comparison between average operations for "severe weather" days versus all-weather days shown above.

D-16

| Comment | Response |
|---|---|
| D33 | At the beginning of any planning/environmental analyses a computer simulation model must be selected to use to calculate the operational benefits as well as to use the results in other environmental analyses. Each models strengths and weaknesses must be evaluated in the selection of that model. After considering all factors, the FAA selected the TAAM model for this analysis. Please see response D35 below for a detailed listing of the factors describing the selection of TAAM over other available simulation models. |
| D34 | TAAM was selected over SIMMOD and other industry accepted models for use in this project primarily because TAAM provided modeling capabilities that SIMMOD does not provide. These capabilities include (1) flexible definition of prioritized runway and taxiway usage rules, facilitating more realistic simulation of complex, demand-responsive runway, taxiway, and airspace movements, (2) the ability to display graphically display model animations while the simulation is being developed, facilitating direct and real-time review of simulation models by air traffic controllers and other subject matter experts, and (3) more accurate modeling of runway crossings, aircraft pushbacks, and terminal-area congestion more accurately than other available airfield and airspace models. These capabilities—particularly the capability to more accurately model aircraft congestion on the ground-- were viewed as essential to developing a reliable comparative assessments of the various airfield alternatives evaluated in the OMP EIS.<br><br>TAAM, which was developed in the late-1990s, had not been widely used in the United States prior to 2000, which may explain why TAAM was not used in prior ORD simulation studies. In contrast, the SIMMOD modeling engine has not undergone significant enhancements since early 1990s. It is notable that TAAM has been the simulation model selected used by the FAA's Air Traffic Organization and its contractors in ongoing National Airspace Redesign (NAR) efforts. Our understanding is that TAAM was selected for use in these efforts over SIMMOD and other models for the same reason that TAAM was selected for use in the OMP effort—namely that TAAM provided capabilities that SIMMOD and other simulation models did not provide that were essential to effectively evaluating NAR improvements. |
| D35 | Please see the following page for the response to this comment. |

minute delays produced by the DEIS modeling for the "No Build" IFR scenarios using unconstrained 2018 operations. It is important to note that this same "bad weather" PMAD was used for the Option 5 "OMP" runs of the January 2003 Ricondo analysis, again reflecting the "reality" that severe weather results in lower operations regardless of runway capacity. By assuming that the full "peak" operations occur during all IFR conditions, the DEIS modeling overstates IFR delays for the "No Build" scenario, and therefore overstates the benefits of OMP. D35

**D.8 DEIS Model Results Should Not Be Used To Support OMP**

The myriad flaws in the DEIS modeling leads to erroneous results and conclusions. The simulations are based upon faulty data inputs, contrived and highly limited operating conditions, and they do not produce results that are consistent with standard FAA delay curve metrics, historical delay measurements, or other models used by the FAA and the City to perform ORD simulations. D36

D-17

| Comment | Response |
|---|---|
| D35 | As mentioned previously in response to comment D12, FAA modeled IFR conditions with the ultimate goal of producing annualized delay estimates that could be used by decision makers in the alternatives evaluation process. In these IFR model runs it was assumed that 1) IFR conditions would persist for the full simulation day and 2) that no flights would be cancelled. These assumptions are consistent with typical modeling practice and their effects were accounted for in the annualization process. Furthermore, the modeling assumption that presumed all flights would be operated enabled FAA to account for the operational consequences associated both with flights actually conducted and those that may have been cancelled for a variety of reasons.<br><br>The FAA also disagrees with the characterization that "severe weather results in lower operations regardless of runway capacity." A large part of ORD's "delay problem" stems from the fact that poor weather operating configurations at ORD provide levels of capacity that are far below those provided in good weather conditions. The differences in good weather and poor weather capacity at ORD is driven in no small part by the complex, intersecting runway use configurations that ORD air traffic controllers must rely on to achieve maximum capacity. As explained in the DEIS and the TAAM data packages, many of these complex configurations cannot be used effectively in poor weather conditions—or provide significantly reduced capacity—due to air traffic rules that ensure safe separations are maintained between aircraft. The OMP (Alternative C) airfield reduces many of the complex intersecting runway interactions, enabling the capacity of poor weather configurations to approach the capacity of good weather configurations and addressing the "bad weather" capacity losses that occur today at ORD, resulting in high numbers of flight cancellations and delays. |
| D36 | The FAA does not agree with the commenter's conclusion for this EIS, the FAA employed an industry standard and accepted modeling methodology. The FAA established a review team that was comprised of FAA air traffic controller staff, the FAA's Third Party Contractor, and the FAA's Airports Division. The Air Traffic workgroup invested approximately 1,400 hours in the review of assumptions, draft results, animations, and final results of the analyses. In addition, the FAA's Third Party Contractor and FAA Airports Division invested a combined total of approximately 1,250 hours validating the results. Based on the scope and breadth of the modeling effort, the FAA believes that this TAAM analyses is unprecedented for any single airport and produced the most reliable, and accurate representative results possible for each of the alternatives evaluated. |

Exhibit D-1
Page 1 of 1

**COMPARISON OF TAAM MODEL RESULTS WITH ACTUAL ASPM DELAY**
**(2001 - 2003)**

| | 2001 | 2002 | 2001-02 Increase | 2003 | 2002-03 Increase | 2001-03 Increase |
|---|---|---|---|---|---|---|
| Average Delay per Operations | | | | | | |
| All-Weather | | | | | | |
| TAAM Model | 8.6 | 9.3 | 8% | 15.2 | 63% | 77% |
| ASPM Actual | 13.4 | 11.9 | -12% | 14.9 | 26% | 11% |
| ASPM vs. TAAM | 56% | 27% | | -2% | | |
| IFR | | | | | | |
| TAAM Model | 21.9 | 48.1 | 120% | 53.8 | 12% | 146% |
| ASPM Actual | 25.0 | 24.7 | -1% | 32.2 | 30% | 29% |
| ASPM vs. TAAM | 14% | -49% | | -40% | | |
| VFR | | | | | | |
| TAAM Model | 7.1 | 6.8 | -3% | 11.2 | 65% | 59% |
| ASPM Actual | 12.6 | 11.1 | -12% | 13.8 | 24% | 9% |
| ASPM vs. TAAM | 79% | 63% | | 23% | | |
| IFR Allocation | | | | | | |
| IFR Share of Operating Hours | | | | | | |
| TAAM Model | 9.3% | 6.0% | | 9.3% | | |
| ASPM Actual | 7.4% | 6.0% | | 7.3% | | |
| ASPM vs. TAAM | -20% | 0% | | -21% | | |
| IFR Share of Operations | | | | | | |
| TAAM Model 1/ | 9.3% | 6.0% | | 9.3% | | |
| ASPM Actual | **6.5%** | **5.0%** | | **5.8%** | | |
| ASPM vs. TAAM | -30% | -16% | | -38% | | |
| Average Delays Based on Actual IFR Weighting | | | | | | |
| All-Weather | | | | | | |
| TAAM Model (Adjusted) 2/ | 8.0 | 8.9 | 11% | 13.7 | 54% | 71% |
| Percentage Difference with TAAM Weighting | -7% | -4% | | -10% | | |

1/ Based on weighting of results: average delay per operation assumes same share as share of time periods.
2/ Weighted modeled IFR and VFR results based on actual IFR share of total operations from ASPM data.

Source: Exhibits 201 and Appendix B.

Exhibit D-2
Page 1 of 1

DELAYS AND OPERATING PATTERNS FOR RESTRICTED WEATHER DAYS
(January 2000 - December 2004)

| Share of Peak Hours In Restricted Conditions | Peak-Hour Operations | Operations per Hour | Delay Hours | Average Delay Minutes |
|---|---|---|---|---|
| 5-10% | 433,974 | 150 | 167,859 | 23.7 |
| 10-20% | 285,464 | 145 | 120,146 | 25.7 |
| 20-30% | 121,744 | 148 | 52,032 | 26.3 |
| 30-40% | 84,884 | 141 | 35,914 | 26.2 |
| 40-50% | 50,508 | 140 | 27,020 | 32.4 |
| 50-60% | 43,406 | 138 | 23,848 | 33.2 |
| 60-70% | 31,765 | 141 | 21,488 | 40.3 |
| 70-80% | 19,264 | 128 | 12,071 | 37.8 |
| 80-90% | 24,080 | 134 | 12,702 | 32.3 |
| 90-100% | 39,887 | 127 | 26,097 | 39.5 |
| Total - Restricted Weather | 1,134,976 | 145 | 499,178 | 26.9 |
| Over 90% Share of Total | 3.5% | 87% | 5.2% | |
| Total - All Weather | 4,164,081 | 154 | 1,042,895 | 15.5 |
| Severe Share of Total | 27% | 94% | 48% | 174% |
| Over 90% Share of Total | 1.0% | | 2.5% | |

Restricted Condition Days = IFR Share of Peak Hours >5% or >5% Cancellation Rate

Peak Hours = 7 a.m. to 10 p.m.

Note: Excludes September 2001 data and periods with over 235 operations per hour

Source: FAA ASPM Data

Exhibit D-3
Page 1 of 1

**TAAM MODEL RESULTS FOR**
**NO BUILD: EXPERIMENT #6 (Parallel 9's in IFR)**

| Delay Range (Minutes) | Total Flights | % of Total | Delay Minutes | % of Total | Delay per Flight |
|---|---|---|---|---|---|
| 0 | 196 | 7% | - | 0% | - |
| 0-15 | 1,393 | 53% | 4,922 | 3% | 4 |
| 15-30 | 91 | 3% | 1,891 | 1% | 21 |
| 30-45 | 59 | 2% | 2,167 | 1% | 37 |
| 45-60 | 60 | 2% | 3,157 | 2% | 53 |
| 60-75 | 54 | 2% | 3,605 | 2% | 67 |
| 75-90 | 61 | 2% | 5,014 | 3% | 82 |
| 90-105 | 50 | 2% | 4,900 | 3% | 98 |
| 105-120 | 56 | 2% | 6,314 | 4% | 113 |
| 120-135 | 70 | 3% | 8,942 | 6% | 128 |
| 135-150 | 67 | 3% | 9,534 | 6% | 142 |
| 150-165 | 58 | 2% | 9,199 | 6% | 159 |
| 165-180 | 59 | 2% | 10,130 | 6% | 172 |
| 180-195 | 64 | 2% | 11,956 | 8% | 187 |
| 195-210 | 72 | 3% | 14,574 | 9% | 202 |
| 210-225 | 51 | 2% | 11,121 | 7% | 218 |
| 225-240 | 53 | 2% | 12,291 | 8% | 232 |
| 240-255 | 48 | 2% | 11,879 | 8% | 247 |
| 255-270 | 32 | 1% | 8,399 | 5% | 262 |
| 270-285 | 22 | 1% | 6,086 | 4% | 277 |
| 285-300 | 15 | 1% | 4,386 | 3% | 292 |
| 300-315 | 9 | 0% | 2,741 | 2% | 305 |
| 315-345 | 2 | 0% | 687 | 0% | 343 |
| 345-375 | 6 | 0% | 2,167 | 1% | 361 |
| | 2,648 | 100% | 156,061 | 100% | 59 |
| <15 Mins | 1,589 | 60% | 4,922 | 3% | 3 |
| >15 Mins | 1,059 | 40% | 151,139 | 97% | 143 |
| Over 3 hours | 374 | 14% | 86,286 | 55% | 231 |
| Flights with <2 Hours of Delay | 2,020 | 76% | 31,970 | 20% | 16 |
| Net Reduction in Delays | | | | | -73% |

Source: TAAM Data for Noise and Air Quality Analyses
Baseline 2002. (KORD_EIS_EXP6.sum file)

Exhibit D-4
Page 1 of 1

**DISTRIBUTION OF DELAY BY TAAM OPERATING DEFINITIONS**
**(August/CY 2002 and 2004)**

| | August | | | | | | | Calendar Year | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | IFR | Share of Annual | VFR | Share of Annual | Total | Share of Annual | IFR Share | IFR | VFR | Total | IFR Share |
| **2002** | | | | | | | | | | | |
| Total Hours | 36 | 7% | 656 | 9% | 692 | 9% | 5% | 485 | 7,568 | 8,053 | 6% |
| Aircraft Operations (Efficiency-Based) | 2,797 | 5% | 87,291 | 9% | 90,088 | 9% | 3% | 51,521 | 944,144 | 995,665 | 5% |
| Average per Hour | 78 | 74% | 133 | 107% | 130 | 105% | 60% | 106 | 125 | 124 | 86% |
| Delay Hours | 984 | 5% | 15,798 | 10% | 16,782 | 10% | 6% | 18,798 | 153,153 | 171,951 | 11% |
| Aircraft Operations (with Measured Delay) | 2,483 | 5% | 76,009 | 9% | 78,492 | 9% | 3% | 45,633 | 824,973 | 870,606 | 5% |
| Average Delay per Operation | 24 | 96% | 12 | 112% | 13 | 108% | 185% | 25 | 11 | 12 | 209% |
| **2004** | | | | | | | | | | | |
| Total Hours | 26 | 5% | 675 | 9% | 701 | 8% | 4% | 523 | 7,783 | 8,306 | 6% |
| Aircraft Operations (Efficiency-Based) | 3,248 | 5% | 90,090 | 9% | 93,338 | 9% | 3% | 59,957 | 1,016,642 | 1,076,599 | 6% |
| Average per Hour | 124 | 108% | 134 | 102% | 133 | 103% | 93% | 115 | 131 | 130 | 88% |
| Delay Hours | 1,461 | 4% | 20,732 | 8% | 22,193 | 7% | 7% | 35,379 | 262,800 | 298,179 | 12% |
| Aircraft Operations (with Measured Delay) | 2,841 | 5% | 82,022 | 9% | 84,863 | 9% | 3% | 54,414 | 915,505 | 969,919 | 6% |
| Average Delay per Operation | 31 | 79% | 15 | 88% | 16 | 85% | 197% | 39 | 17 | 18 | 211% |
| **2002-2004 Percent Change** | | | | | | | | | | | |
| Aircraft Operations | 16.1% | | 3.2% | | 3.6% | | | 16.4% | 7.7% | 8.1% | |
| Average Delay | 29.8% | | 21.6% | | 22.3% | | | 57.8% | 54.6% | 55.7% | |

Note: IFR definition based on TAAM Model.

Source: Exhibit 802

Exhibit D-5
Page 1 of 1

**DISTRIBUTION OF DAILY OPERATIONS AND DELAY FOR ORD**
**(12 Months Ending December 30, 2004)**

| | Operations per Day Range | | | | | |
|---|---|---|---|---|---|---|
| | <2,750 | 2750-2799 | 2800-2849 | >=2,850 | Grand Total | >2,750 % of Total |
| Number of Days | 162 | 50 | 92 | 62 | 366 | 56% |
| Actual Operations | 413,632 | 138,940 | 259,823 | 178,515 | 990,910 | 58% |
| Average per Day | 2,553 | 2,779 | 2,824 | 2,879 | 2,707 | |
| Total Delay Hours 1/ | 163,936 | 37,378 | 58,797 | 38,068 | 298,179 | 45% |
| Operations with Delay Data | 405,542 | 136,114 | 254,068 | 174,195 | 969,919 | 58% |
| Average Delay Minutes | 24.3 | 16.5 | 13.9 | 13.1 | 18.4 | |
| Average Delay for >=2,750 Operations per Day | | | | | | 14.3 |

1/ Delay data is only available for some operations

Note: Operations ranges are based on counts used for efficiency measurements

Source: ASPM data

## APPENDIX E

### ANALYSIS OF COMPETITIVE RESPONSE TO A PROSPECTIVE FAILURE BY UNITED AT O'HARE

The purpose of this analysis is to quantify the reaction of American, other U.S. legacy carriers, and foreign flag carriers to a potential failure or significant reduction in operations by United at O'Hare (ORD). For this analysis it is assumed that all airlines would adjust capacity and pricing rationally, and that basic economic principles drive scheduling decisions. It was further assumed that all current alliance groupings would remain intact. Detailed assumptions are described in Exhibits E-1 and E-2. Some of the major results are listed in Exhibit E-3.

Schedule data was utilized for all carriers providing service in all American and United markets for the week of March 7, 2005.[1] Markets were categorized by the following four benchmarks:

1. Does American serve the market from ORD?
2. Does United serve the market from ORD?
3. Does Southwest serve the market from Chicago-Midway (MDW)?
4. Will American have a monopoly position in the market assuming United ceases all service?

These four qualifiers dictated how much fares would likely rise in each market and how American would adjust its capacity after United discontinues service.

In markets served by Southwest from MDW, and where American has a monopoly at ORD, once United ceases service, fares are estimated to increase by 15%. Assuming a price elasticity of -1.2[2], total traffic in the market would decrease by 18%. In markets served by Southwest from MDW and where American has competition at ORD, fares are expected to increase by 10%; and total traffic would decrease by 12%. If American has a monopoly at ORD and Southwest does not serve it from MDW, fares are expected to increase by 20% and total traffic would decrease by 24%. If American has competition at ORD and the market is not

[1] This analysis of prospective changes at ORD that would be occasioned by a cessation (or major reduction) of United's operations is based upon a cross-sectional analysis of recent historical data.

[2] The current FAA benchmark value.

E-1

| Comment | Response |
|---|---|
| E1 | As noted in response to comment 141 on page U.4-600, the FAA has reviewed both *CH Appendices E and F* and does not agree with the assumptions provided by therein nor does the FAA agree with the conclusions drawn from these assumptions. In large measure, the two appendices appear to be interchangeable, addressing consequences of a hypothetical failure of United (*CH Appendix E*) or American (*CH Appendix F*).<br><br>With regard to *CH Appendix E and F*, the FAA is not persuaded that the methodology employed by the commenter or the conclusions drawn by CH are valid. CH draws sweeping conclusions from limited and highly selective materials and assumptions. For instance, the frequency of Air India service to Europe, Delta seasonal service to Myrtle Beach, and other similar, essentially insignificant, comparisons are not an appropriate basis for drawing the conclusions presented. Moreover, some are simply wrong. CH asserts that with United's demise Air Canada would reduce frequencies in the Chicago-Toronto market. The absence of six daily operations by United in such a competitive market is more likely to spur an increase, rather than a decrease, in Air Canada operations.<br><br>In addition, the commenter has noted that schedule data for March 7, 2005, were used as the basis for analysis. *CH Appendix E Footnote 1* states that the analysis is "based upon a cross-sectional analysis of recent historical data." The FAA notes that this appendix does not include a presentation of cross-sectional analysis of historical data. In earlier comments, the commenter has suggested that 1998 is a relevant data point in the history of ORD (e.g., in suggesting that airlines should return to the fleet mix used in 1998).<br><br>Also, in *CH Appendix E*, the commenter has developed assumptions regarding the increase in fares in markets at ORD, following the assumed failure of United at ORD. No basis is offered for the assumed increase in fares—such as empirical data for similar markets under similar conditions. The FAA finds that these assumptions lack support and credibility; therefore, the conclusions drawn from the assumptions are considered invalid.<br><br>Continued on the following page. |

served by Southwest at MDW, then fares are expected to increase by 15% and total traffic would decrease by 18%.

Each market was analyzed to estimate American's projected onboard traffic after United ceases service and the results are shown in Exhibit E-4. For all markets, it was assumed that American would retain all of its current onboard traffic. In markets with competition, it was assumed that American would gain 50% of United's local O&D traffic for calendar year 2003 as well as some incremental connecting traffic. The incremental connecting traffic was computed by applying an 80/20 local connecting ratio to the 50% of United's local O&D traffic that American gains[3]. In monopoly markets, it was assumed that American would gain all of United's local O&D traffic and some incremental connecting traffic. This incremental connecting traffic was also estimated by applying an 80/20 local connecting ratio to the local O&D traffic that American gains when United would cease operations. Onboard traffic in each market was then reduced based on the level of fare increases and price elasticity, as indicated above.

Once the onboard traffic in each market was computed, daily departures by aircraft type were estimated using American's current fleet composition. For this analysis the following assumptions were made:

- All markets served by American but not United would at a minimum remain at frequency and capacity levels scheduled for the week of March 7, 2005;
- All markets served by United but not American would be assumed by American with at least the same frequency and comparable capacity levels as United provided in the market during the week of March 7, 2005 (given American's fleet mix and aircraft deployment);
- In Hawaii markets served by both carriers, American would add United's frequencies (Honolulu increases from two to three daily departures and Maui increases by on, to two daily departures);
- A maximum of eighteen daily departures were assumed for any market;

[3] Given the wide range of competitive connecting services at other hub airports and given American's limited fleet size, it is reasonable to assume that at most, American would obtain this modest amount of United's connecting passengers.

E-2

| Comment | Response |
|---|---|
| E1 continued | Finally, the FAA has conducted sensitivity analysis to acknowledge the possibility of a range of future outcomes, including the potential loss of a hubbing carrier at ORD, presented in **Appendix R** of the EIS. The FAA has taken CH's analysis into consideration, however, the FAA prefers its own analysis in **Appendix R.**<br><br>Also, see the response to *CH Section 5.0*, specifically, the response to comment 141 on page U.4-600.<br><br>*CH footnote 3*<br>In *CH footnote 3*, the commenter has referred to "American's limited fleet size." FAA agrees that American has limitations in the use of its fleet. This footnote contradicts the commenter's earlier assertion that airlines at ORD could (and would) immediately return to the fleet mix deployed in 1998.<br><br>*CH Exhibits E-1 and E-2*<br>The commenter indicates that *CH Exhibits E-1 and E-2* contain detailed assumptions supporting the conclusions in *CH Appendix E.* FAA finds that the *CH Exhibits E-1 and E-2* contains a series of bullet-point statements that lack any documentation that could give credibility to such assumptions. The FAA notes that the questions at hand, regarding a potential failure of United and the results at O'Hare, are very complex, and relate to numerous future events and strategic decisions that cannot be known with certainty in advance—certainly not the certainty assigned by the commenter.<br><br>*CH Exhibit E-3*<br>The commenter indicates that *CH Exhibit E-3* contains major results of the analysis contained in *CH Appendix E.* As noted previously, the FAA disagrees with the assumptions made by CH in this analysis, and therefore disagrees with the analysis' results and conclusions.<br><br>*CH Exhibit E-4*<br>The commenter has provided *CH Exhibit E-4* as the analysis supporting the assumptions regarding American's response to United's failure at ORD. The FAA notes that a detailed listing of markets is presented, but no evidence supporting the assumptions regarding each market. Without further support and analysis, FAA does not accept this *CH Exhibit E-4* as a reasonable alternative to either (1) the forecast presented in the EIS, or (2) the sensitivity analysis presented in the EIS. |

- In markets with American service already, if traffic is lower after adjusting for higher fares, American would at least retain its current frequency levels; and,
- A load factor goal of low to mid-70's was conservatively used as a guideline in larger markets (markets with greater than 500,000 annual onboard passengers after adjustment for fare increase).

Based on this analysis, American would increase daily departures from ORD by 212, from 512 to 724. American's outbound daily seats would increase by 42%, from 50,715 to 72,161 (Exhibit E-4). American would have 126 monopoly non-stop routes at ORD, an increase of 104 from the 22 monopoly routes prior to United's service cessation.

The foreign flag carriers analyzed include Air Canada, Air France, British Airways, Japan Airlines, Air Jamaica, KLM, Lufthansa, Air India and Mexicana. The following assumptions were made regarding foreign carrier response to a potential United failure:

- Air India would not increase service to Frankfurt or London (Heathrow);
- Lufthansa would no longer publish connections to United at ORD and therefore would not add capacity to Frankfurt. American would add one daily frequency with a Boeing 767-300 to Frankfurt;
- Air Canada would no longer publish connections to United at ORD, and therefore it would reduce frequencies by one daily to Montreal, Ottawa and Toronto. American would add one daily frequency in each market;
- If an international market is not served by American but has service by United, American would assume United's frequency levels with appropriate aircraft and there would be no foreign flag response (applies to KLM service to Amsterdam and Air Jamaica service to Montego Bay);
- Average aircraft size was held constant at March 2005 levels; and,
- Load factor was held constant at actual 2003 levels for calculating foreign flag onboard and enplaned traffic.

The results of this analysis are shown in Exhibit E-5. Foreign flag daily departures would decrease by 0.6 from 22.9 to 22.3, although outbound daily seats would increase by 11% - from

E-3

| Comment | Response |
|---|---|
| E1 continued | *CH Exhibit E-5*<br>The commenter has provided *CH Exhibit E-5* to present the results of the *CH Appendix E* analysis. The FAA notes that *CH Exhibit E-5* is a compilation of the assumptions and data presented in the earlier *CH Appendix E* exhibits. Because the earlier *CH Appendix E* exhibits do not have appropriate supporting information and analysis, FAA does not accept the conclusions reported in *CH Exhibit E-5*. |

3,815 to 4,222. Average aircraft size for these carriers would increase by 22 seats, from 167 to 189 seats.

The legacy carriers analyzed include Continental, Delta, Northwest and US Airways. The following assumptions were made for legacy carrier response:

- Delta would not change seasonal service to Myrtle Beach;
- Average aircraft size was held constant at March 2005 levels;

Since all legacy carrier markets have competition with American, it was assumed that each legacy carrier would gain 50% of United's local O&D traffic for calendar year 2003 as well as some incremental connecting traffic. The incremental connecting traffic was computed by applying an 80/20 local connecting ratio to the 50% of United's local O&D traffic that the legacy carrier would gain. Total onboard traffic was computed by adding each carrier's calendar year 2003 onboard traffic to the local and connecting traffic it would gain from United's withdrawal of ORD services. Onboard traffic numbers were also adjusted for fare increases similar to the adjustment made to American's post-United onboard traffic. Additional frequencies were then allocated to each legacy carrier to accommodate the increase in traffic. Frequencies were held constant at March 2005 levels when traffic levels declined slightly due to higher fares (elasticity effect).

The results of this analysis are shown in Exhibit E-5. Daily departures of the legacy carriers, other than United and American, would increase by 12.6, from 85.4 to 98.0. Daily seat departures would increase by 13%, from 9,300 to 10,514, and onboard traffic would increase by 15%.

In summary, if United fails, total annual operations (for the base year 2003) would decrease by 29.7%, from 960,500 to 674,757, as shown in Exhibit 500[1]. Due to this loss in operations from United's failure, O'Hare operations will not surpass 2003 actual levels until 2025 (Chart 5-1)[4]. Similarly, total enplanements would decrease by 39.2% to approximately 19.8 million from 32.6 million, as shown in Exhibit 501[4]. Therefore, total O'Hare enplanements will not equal 2003 levels until 2021 (Chart 5-2)[4]. Furthermore, the average domestic ORD fare would increase by $21.29 (or 14.6%) from $146.09 to $167.38. E2

[4] Section 5.0 of this report.

E-4

| Comment | Response |
|---|---|
| E2 | Relying upon the analysis that the FAA has identified as lacking support and credibility (see response to comment immediately above), the commenter asserts that United's failure would reduce O'Hare operations by 29.7% for base year 2003. Regardless of the many flaws in the commenter's analysis, the conclusion it draws is wholly untenable. United's demise would not depress O'Hare traffic by 29.7% for every year from now on until 2025. Instead, as shown in **Appendix R** of the EIS, the demise of a hubbing carrier in a market such as O'Hare is likely to produce a slight, temporary decline in traffic, followed by a return to historic levels. Stated differently, as a robust local market with convenient hubbing and international service potential, Chicago is simply too large and potentially profitable to expect any significant diminution in forecast traffic several years after a carrier's demise. As such, FAA projections for traffic levels in 2018 are not likely to be affected if a Chicago hub carrier disappears. |

Exhibit E-1
Page 1 of 1

## ASSUMPTIONS FOR ANALYSIS OF AMERICAN'S REACTION TO UNITED'S FAILURE OR SIGNIFICANT REDUCTION OF O'HARE OPERATIONS

- Alliance groupings (Oneworld, SkyTeam & Star) remain constant
- AA retains all current AA onboard traffic
- In markets with competition, AA gains 50% of current UA local O&D traffic and incremental connecting traffic based on a 80/20 local/connect split
- In monopoly markets, AA will provide capacity for all of UA's local O&D and some connecting traffic. The resultant incremental traffic to AA will be 80/20 local/connect split for current UA traffic
- In markets served by WN from Midway and AA has monopoly at ORD, fares increase by 15% → total traffic decreases by 18%
- In markets served by WN from Midway and AA has competition at ORD, fares increase by 10% → total traffic decreases by 12%
- If market is not served by WN and AA has monopoly at ORD, fares increase by 20% → total traffic decreases by 24%
- If market is not served by WN and AA has competition at ORD, fares increase by 15% → total traffic decreases by 18%
- All markets served by AA but not UA will remain at current frequency and capacity levels
- All markets served by UA but not AA will be picked-up by AA with at least the same frequency and comparable capacity as UA provided in the market (given AA fleet mix and deployment)
- In Hawaii markets served by both, AA adds UA frequencies (HNL 2 → 3, OGG 1 → 2)
- All AA markets served with a mix of ERD (44 seats), ERJ (50), CR7 (70), MD80 (129), B738 (142), B757 (188), B763 (210) and B777 (223) equipment
- Maximum of 18 daily frequencies allocated to any market
- In markets currently served by AA, if post-UA traffic is lower after adjustments for higher fares, AA will at a minimum retain its current frequency levels
- Load factor goal of low to mid-70's was conservatively used as a guideline in larger markets (post-UA onboard passengers > 500,000)

Exhibit E-2
Page 1 of 1

## ASSUMPTIONS FOR ANALYSIS OF OTHER AIRLINES' REACTIONS TO UNITED'S FAILURE OR SIGNIFICANT REDUCTION OF O'HARE OPERATIONS

- In markets served by legacy carriers, they will gain 50% of current UA local O&D traffic and incremental connecting traffic based on a 80/20 local/connect split
- Legacy carriers include CO, DL, NW and US
- Foreign flag carriers include AC, AF, BA, JL, JM, KL, LH, AI, and MX
- AI does not increase service to FRA or LHR
- LH will no longer publish connections to any airline at ORD and therefore will not add capacity to FRA. AA will add one daily frequency with a Boeing 767-300 to FRA.
- AC will no longer publish connections to any airline at ORD and therefore will reduce frequencies by one daily to YOW, YUL and YYZ. AA adds one daily frequency in each market.
- If an international market is not served by AA but has UA service, AA will assume UA frequencies with appropriate aircraft and no foreign flag response (AMS & MBJ)
- DL does not change seasonal MYR service
- Average aircraft size was held constant at actual March 2005 levels for analysis of foreign flag and legacy carriers
- Load factor was held constant at actual 2003 levels for calculating foreign flag onboard and enplaned traffic
- Foreign flag and legacy carrier response is summarized in Exhibit Q-5

Exhibit E-3
Page 1 of 1

## UNITED'S FAILURE OR SIGNIFICANT REDUCTION OF O'HARE OPERATIONS WILL RAISE FARES AND GIVE AMERICAN A MONOPOLY ON MOST OF ITS ROUTES

(Results of Campbell-Hill Analysis)

- American's monopoly routes increase by 103 (+448%) from 23 to 126
- Total annual operations decrease by 285,742 (-29.7%) from 960,500 to 674,757
- Average aircraft size will decrease by 0.96 seats (-0.9%) from 106.2 to 105.3
- American's average aircraft size will increase by 0.5 seats (+0.5%) from 99.1 to 99.6
- The average domestic ORD fare would increase by $21.29 (+14.6%) from $146.09 to $167.38

## ANALYSIS OF AMERICAN'S REACTION TO UNITED'S FAILURE AT O'HARE

Exhibit E-4
Page 1 of 4

| COLUMN | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Status Quo Capacity[1] | | | | | | | | | | | | | | | |
| ORD to | AA Daily ORD Depts | AA Daily Outbound Seats | AA Avg Aircraft Size | UA Daily ORD Depts | UA Daily Outbound Seats | UA Avg Aircraft Size | AA Serve at ORD? | UA Serve at ORD? | WN Serve at MDW? | Post-UA Monopoly for AA at ORD? | Total AA Onboard Passengers[2] | Total UA Single Coupon Passengers[2] | Incremental UA Connecting Traffic (80/20)[3] | Total Base Onboard Traffic[4] | Fare Increase | Traffic Decrease ($@ e_p$=-1.2) |
| ABE | - | - | - | 4.0 | 200 | 50.0 | N | Y | N | Y | - | 37,160 | 5,200 | 46,450 | 20% | 24% |
| ABQ | 2.0 | 258 | 129.0 | 2.0 | 140 | 70.0 | Y | Y | Y | Y | 138,517 | 180 | 45 | 138,742 | 15% | 18% |
| ACA | 0.7 | 90 | 129.0 | - | - | - | Y | N | N | Y | 6,264 | | | 6,264 | 20% | 24% |
| ALB | 4.0 | 176 | 44.0 | 6.0 | 471 | 78.5 | Y | Y | N | Y | 160,862 | 69,320 | 17,330 | 187,312 | 20% | 24% |
| AMS | - | - | - | 1.0 | 214 | 214.0 | N | Y | N | N | - | 20,244 | 5,061 | 25,305 | 15% | 18% |
| ATL | 6.7 | 688 | 103.9 | 6.9 | 852 | 124.2 | Y | Y | N | N | 909,574 | 250,920 | 62,730 | 457,399 | 15% | 18% |
| ATW | - | - | - | 5.7 | 470 | 82.3 | N | Y | N | Y | - | 23,880 | 5,970 | 29,850 | 20% | 24% |
| AUA | - | - | - | 1.0 | 153 | 153.0 | N | Y | N | Y | - | 6,410 | 1,603 | 8,013 | 20% | 24% |
| AUS | 5.9 | 756 | 129.0 | 5.9 | 267 | 53.4 | Y | Y | N | Y | 331,184 | 60,690 | 15,173 | 407,057 | 20% | 24% |
| AVP | - | - | - | 2.0 | 100 | 50.0 | N | Y | N | Y | - | 19,460 | 4,865 | 24,325 | 20% | 24% |
| AZO | 3.9 | 192 | 49.8 | 3.0 | 150 | 50.0 | Y | Y | N | Y | 76,782 | 8,760 | 2,190 | 87,712 | 20% | 24% |
| BDL | 3.9 | 511 | 132.4 | 6.9 | 765 | 111.5 | Y | Y | Y | Y | 335,856 | 151,570 | 37,893 | 526,319 | 15% | 18% |
| BHM | - | - | - | 3.0 | 150 | 50.0 | N | Y | Y | Y | - | 32,500 | 8,075 | 40,375 | 15% | 18% |
| BMI | 4.0 | 200 | 50.0 | 3.9 | 193 | 50.0 | Y | Y | N | Y | 13,977 | 6,590 | 1,648 | 22,115 | 20% | 24% |
| BNA | 8.0 | 622 | 77.8 | 6.0 | 300 | 50.0 | Y | Y | Y | Y | 255,407 | 72,300 | 18,075 | 345,782 | 15% | 18% |
| BOI | - | - | - | 1.0 | 120 | 119.9 | N | Y | N | Y | - | 25,320 | 6,330 | 31,650 | 20% | 24% |
| BOS | 9.4 | 1,240 | 131.6 | 9.7 | 1,312 | 135.0 | Y | Y | N | Y | 652,880 | 365,800 | 91,450 | 1,110,130 | 20% | 24% |
| BRU | 1.0 | 210 | 210.0 | - | - | - | Y | N | N | Y | 105,614 | | - | 105,614 | 20% | 24% |
| BTV | - | - | - | 4.0 | 257 | 64.3 | N | Y | N | Y | - | 41,710 | 10,428 | 52,138 | 20% | 24% |
| BUF | 6.1 | 301 | 49.0 | 8.0 | 437 | 72.9 | Y | Y | N | Y | 173,523 | 81,900 | 20,475 | 275,898 | 20% | 24% |
| BWI | 3.9 | 498 | 129.0 | 6.0 | 848 | 141.5 | Y | Y | Y | Y | 265,795 | 264,070 | 66,018 | 595,973 | 15% | 18% |
| CAE | - | - | - | 3.0 | 150 | 50.0 | N | Y | N | Y | - | 42,260 | 10,565 | 52,825 | 20% | 24% |
| CAK | - | - | - | 3.0 | 150 | 50.0 | N | Y | N | Y | - | 32,490 | 8,123 | 40,613 | 20% | 24% |
| CDG | 1.0 | 210 | 210.0 | 1.0 | 214 | 214.0 | Y | Y | N | N | 114,484 | 33,154 | 8,289 | 155,927 | 15% | 18% |
| CHA | 2.9 | 134 | 47.0 | - | - | - | Y | N | N | Y | 37,195 | | - | 37,195 | 20% | 24% |
| CHS | - | - | - | 4.1 | 207 | 50.0 | N | Y | N | Y | - | 53,570 | 13,393 | 66,963 | 20% | 24% |
| CID | 6.9 | 333 | 48.6 | 7.0 | 479 | 68.5 | Y | Y | N | Y | 126,521 | 38,440 | 9,610 | 177,571 | 20% | 24% |
| CLE | 7.9 | 470 | 59.9 | 7.0 | 810 | 115.7 | Y | Y | Y | N | 184,189 | 164,830 | 41,208 | 287,208 | 10% | 12% |
| CLT | 4.0 | 199 | 49.8 | 6.0 | 597 | 99.4 | Y | Y | N | N | 57,217 | 107,620 | 26,905 | 134,480 | 15% | 18% |
| CMH | 8.6 | 554 | 64.7 | 6.9 | 614 | 89.5 | Y | Y | Y | Y | 223,854 | 167,090 | 41,773 | 432,717 | 15% | 18% |
| CMI | 6.9 | 337 | 49.1 | - | - | - | Y | N | N | Y | 104,421 | | - | 104,421 | 20% | 24% |
| COS | - | - | - | 4.0 | 251 | 62.8 | N | Y | N | Y | - | 54,380 | 13,595 | 67,975 | 20% | 24% |
| CRW | - | - | - | 2.0 | 100 | 50.0 | N | Y | N | Y | - | 19,130 | 4,783 | 23,913 | 20% | 24% |
| CUN | 2.4 | 457 | 190.0 | - | - | - | Y | N | N | Y | 87,108 | | - | 87,108 | 20% | 24% |
| CVG | 7.4 | 355 | 47.9 | 6.0 | 423 | 70.5 | Y | Y | N | N | 111,284 | 88,020 | 21,505 | 165,047 | 15% | 18% |
| CWA | - | - | - | 3.0 | 150 | 50.0 | N | Y | N | Y | - | 14,080 | 3,520 | 17,600 | 20% | 24% |
| CZM | - | - | - | 0.4 | 81 | 142.0 | N | Y | N | Y | - | - | - | - | 20% | 24% |
| DAY | 4.0 | 235 | 58.9 | 6.0 | 455 | 75.8 | Y | Y | N | Y | 108,953 | 75,760 | 18,940 | 201,653 | 20% | 24% |
| DBQ | 3.7 | 171 | 46.1 | - | - | - | Y | N | N | Y | 63,358 | | - | 63,358 | 20% | 24% |
| DCA | 7.7 | 1,021 | 132.4 | 12.9 | 1,660 | 128.1 | Y | Y | N | N | 472,694 | 376,110 | 94,028 | 657,783 | 15% | 18% |
| DEN | 5.9 | 769 | 131.2 | 12.0 | 2,345 | 195.4 | Y | Y | N | Y | 406,773 | 482,090 | 120,523 | 1,009,386 | 20% | 24% |
| DFW | 16.6 | 2,232 | 134.7 | 6.7 | 774 | 115.3 | Y | Y | N | Y | 1,065,429 | 185,350 | 46,503 | 1,296,342 | 20% | 24% |
| DSM | 5.7 | 380 | 66.5 | 7.0 | 714 | 102.0 | Y | Y | N | Y | 129,493 | 82,450 | 20,613 | 232,466 | 20% | 24% |
| DTW | 5.7 | 763 | 133.8 | 7.0 | 984 | 140.5 | Y | Y | Y | N | 328,938 | 198,010 | 49,503 | 452,684 | 10% | 12% |
| EGE | 1.1 | 215 | 188.0 | - | - | - | Y | N | N | Y | 31,900 | - | - | 31,900 | 20% | 24% |
| ELP | 2.0 | 258 | 129.0 | - | - | - | Y | N | N | Y | 130,999 | - | - | 130,999 | 20% | 24% |
| ENV | 3.7 | 171 | 46.1 | - | - | - | Y | N | N | Y | 63,867 | - | - | 63,867 | 20% | 24% |
| EWR | 6.7 | 855 | 129.0 | 8.4 | 1,039 | 123.2 | Y | Y | N | N | 391,976 | 345,990 | 86,498 | 596,220 | 15% | 18% |
| EZE | - | - | - | 1.9 | 214 | 214.0 | N | Y | N | Y | - | 6,979 | 1,745 | 8,724 | 20% | 24% |
| FAR | - | - | - | 3.0 | 150 | 50.0 | N | Y | N | Y | - | 28,340 | 7,085 | 35,425 | 20% | 24% |
| FCO | 0.7 | 150 | 210.0 | - | - | - | Y | N | N | Y | 78,531 | - | - | 78,531 | 20% | 24% |
| FLL | 4.1 | 688 | 166.1 | 4.0 | 600 | 150.0 | Y | Y | Y | N | 276,465 | 122,420 | 30,580 | 431,365 | 10% | 12% |
| FRA | 1.0 | 210 | 210.0 | 2.0 | 548 | 274.0 | Y | Y | N | N | 120,218 | 36,359 | 9,090 | 165,765 | 15% | 18% |
| FSD | - | - | - | 5.0 | 250 | 50.0 | N | Y | N | Y | - | 33,340 | 8,335 | 41,675 | 20% | 24% |
| FWA | 4.0 | 196 | 48.7 | 5.0 | 250 | 50.0 | Y | Y | N | Y | 72,224 | 14,800 | 3,675 | 90,099 | 20% | 24% |
| GEG | - | - | - | 1.0 | 122 | 122.0 | N | Y | N | Y | - | 22,800 | 5,700 | 28,500 | 20% | 24% |
| GRB | 5.0 | 247 | 49.3 | 6.0 | 300 | 50.0 | Y | Y | N | Y | 106,348 | 13,480 | 3,370 | 123,198 | 20% | 24% |
| GRR | 5.9 | 352 | 60.1 | 6.0 | 520 | 86.7 | Y | Y | N | Y | 138,328 | 49,410 | 12,353 | 200,091 | 20% | 24% |
| GRU | - | - | - | 1.0 | 214 | 214.0 | N | Y | N | Y | - | 22,642 | 5,661 | 28,303 | 20% | 24% |

## ANALYSIS OF AMERICAN'S REACTION TO UNITED'S FAILURE AT O'HARE

Exhibit E-4
Page 2 of 4

| COLUMN | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Status Quo Capacity[3] | | | | | | | | | | | | | | | |
| ORD to | AA Daily ORD Depts | AA Daily Outbound Seats | AA Avg Aircraft Size | UA Daily ORD Depts | UA Daily Outbound Seats | UA Avg Aircraft Size | AA Serve at ORD? | UA Serve at ORD? | WN Serve at MDW? | Post-UA Monopoly for AA at ORD? | Total AA Onboard Passengers[2] | Total UA Single Coupon Passengers[2] | Incremental UA Connecting Traffic (80/20)[2] | Total Base Onboard Traffic[2] | Fare Increase | Traffic Decrease (@ $e_d$=-1.2) |
| GSO | - | - | - | 4.0 | 286 | 74.4 | N | Y | N | Y | 53,593 | 75,950 | 19,988 | 99,938 | 20% | 24% |
| GSP | 2.9 | 139 | 48.5 | 3.0 | 150 | 50.0 | Y | Y | N | Y | 53,593 | 35,110 | 8,778 | 97,381 | 20% | 24% |
| HDN | 1.0 | 142 | 142.0 | - | - | - | Y | N | N | Y | 19,231 | - | - | 19,231 | 20% | 24% |
| HHG | - | - | - | 1.0 | 347 | 347.0 | N | Y | N | Y | - | 22,672 | 5,668 | 28,340 | 20% | 24% |
| HNL | 2.0 | 420 | 210.0 | 1.0 | 274 | 274.0 | Y | Y | N | Y | 149,657 | 7,100 | 1,775 | 158,532 | 20% | 24% |
| HPN | 5.7 | 534 | 93.4 | 5.7 | 286 | 50.0 | Y | Y | N | Y | 192,620 | 72,800 | 18,200 | 290,620 | 20% | 24% |
| HSV | 1.9 | 93 | 50.0 | - | - | - | Y | N | N | Y | 25,944 | - | - | 25,944 | 20% | 24% |
| IAD | 4.7 | 236 | 50.0 | 8.7 | 1,205 | 138.3 | Y | Y | N | N | 94,262 | 290,990 | 72,748 | 458,000 | 15% | 18% |
| IAH | 3.9 | 498 | 129.0 | 5.0 | 479 | 95.9 | Y | Y | N | N | 172,314 | 137,850 | 34,463 | 258,470 | 15% | 18% |
| ICT | 4.7 | 275 | 58.4 | 4.0 | 200 | 50.0 | Y | Y | N | Y | 10,976 | 67,790 | 16,948 | 95,714 | 20% | 24% |
| IND | 7.6 | 750 | 99.1 | 10.7 | 782 | 73.0 | Y | Y | Y | Y | 252,739 | 121,150 | 30,288 | 404,177 | 15% | 18% |
| JAC | 1.0 | 199 | 199.0 | - | - | - | Y | N | N | Y | 49,147 | - | - | 49,147 | 20% | 24% |
| JAX | - | - | - | 4.0 | 200 | 50.0 | N | Y | N | Y | - | 71,370 | 17,843 | 89,213 | 20% | 24% |
| KIX | - | - | - | 1.0 | 274 | 274.0 | N | Y | N | Y | - | 626 | 157 | 783 | 20% | 24% |
| LAN | - | - | - | 4.0 | 200 | 50.0 | N | Y | N | Y | - | 28,020 | 7,005 | 35,025 | 20% | 24% |
| LAS | 4.9 | 787 | 162.0 | 8.0 | 1,200 | 150.0 | Y | Y | Y | N | 440,287 | 344,560 | 86,140 | 870,987 | 10% | 12% |
| LAX | 10.9 | 1,639 | 150.9 | 11.0 | 2,096 | 190.9 | Y | Y | Y | Y | 1,043,837 | 567,580 | 141,895 | 1,753,257 | 15% | 18% |
| LEX | - | - | - | 4.0 | 200 | 50.0 | N | Y | N | Y | - | 35,310 | 8,828 | 44,138 | 20% | 24% |
| LGA | 18.0 | 2,119 | 129.0 | 13.7 | 1,964 | 143.2 | Y | Y | N | Y | 1,031,418 | 525,120 | 131,280 | 1,687,818 | 20% | 24% |
| LHR | 4.0 | 892 | 223.0 | 3.0 | 822 | 274.0 | Y | Y | N | N | 546,831 | 101,268 | 25,317 | 673,416 | 15% | 18% |
| LIT | 5.9 | 393 | 67.1 | - | - | - | Y | N | Y | Y | 17,693 | - | - | 17,693 | 15% | 18% |
| LMK | - | - | - | 4.0 | 200 | 50.0 | N | Y | N | Y | - | 40,880 | 10,208 | 51,088 | 20% | 24% |
| LSE | 3.0 | 150 | 50.0 | - | - | - | Y | N | N | Y | 54,758 | - | - | 54,758 | 20% | 24% |
| MAN | 1.0 | 210 | 210.0 | - | - | - | Y | N | N | N | 130,177 | - | - | 130,177 | 15% | 18% |
| MBJ | - | - | - | 0.2 | 41 | 142.0 | N | Y | N | N | - | 10 | 3 | 13 | 15% | 18% |
| MBS | - | - | - | 4.0 | 200 | 50.0 | N | Y | N | Y | - | 31,260 | 7,815 | 39,075 | 20% | 24% |
| MCI | 6.1 | 866 | 129.0 | 6.0 | 580 | 96.7 | Y | Y | Y | Y | 402,647 | 175,340 | 43,835 | 621,822 | 15% | 18% |
| MCO | 4.0 | 634 | 158.5 | 3.0 | 1,200 | 150.0 | Y | Y | Y | N | 351,198 | 279,750 | 69,938 | 700,881 | 10% | 12% |
| MDT | 4.0 | 197 | 49.4 | 5.0 | 309 | 61.8 | Y | Y | N | Y | 99,129 | 64,400 | 16,100 | 179,629 | 20% | 24% |
| MEM | 4.9 | 242 | 49.4 | 4.0 | 200 | 50.0 | Y | Y | N | N | 56,193 | 58,340 | 14,585 | 91,466 | 15% | 18% |
| MEX | 1.0 | 142 | 142.0 | 1.0 | 142 | 142.0 | Y | Y | N | N | 65,735 | 23,684 | 5,921 | 95,340 | 15% | 18% |
| MHT | - | - | - | 4.0 | 428 | 106.5 | N | Y | Y | Y | - | 97,280 | 24,320 | 121,600 | 15% | 18% |
| MIA | 10.3 | 1,454 | 141.4 | 2.0 | 279 | 139.6 | Y | Y | N | N | 672,239 | 130,110 | 32,528 | 834,927 | 15% | 18% |
| MKE | 3.1 | 177 | 56.4 | 10.9 | 581 | 53.5 | Y | Y | N | Y | 122,600 | 28,790 | 6,698 | 158,088 | 20% | 24% |
| MLI | 3.9 | 199 | 49.9 | 6.7 | 336 | 50.0 | Y | Y | N | Y | 15,508 | 20,390 | 5,098 | 40,996 | 20% | 24% |
| MSN | 6.1 | 335 | 49.9 | 10.0 | 576 | 57.6 | Y | Y | N | Y | 168,978 | 29,030 | 7,258 | 205,166 | 20% | 24% |
| MSP | 9.4 | 1,006 | 119.6 | 10.0 | 1,439 | 143.9 | Y | Y | N | N | 364,296 | 226,360 | 56,590 | 505,871 | 15% | 18% |
| MSY | 2.9 | 369 | 129.0 | 5.0 | 487 | 97.4 | Y | Y | N | Y | 169,131 | 140,100 | 35,040 | 363,331 | 20% | 24% |
| MTJ | 0.1 | 18 | 129.0 | - | - | - | Y | N | N | Y | 2,675 | - | - | 2,675 | 20% | 24% |
| MYR | - | - | - | 2.0 | 100 | 50.0 | N | Y | N | N | - | - | - | - | 15% | 18% |
| NRT | 1.0 | 223 | 223.0 | 2.0 | 621 | 310.5 | Y | Y | N | N | 119,714 | 26,971 | 6,743 | 153,428 | 15% | 18% |
| OAK | - | - | - | 2.0 | 331 | 165.6 | N | Y | Y | Y | - | 69,550 | 17,390 | 86,940 | 15% | 18% |
| OGG | 1.0 | 210 | 210.0 | 1.0 | 274 | 274.0 | Y | Y | N | Y | 84,635 | 1,150 | 288 | 86,085 | 20% | 24% |
| OKC | 5.3 | 379 | 64.6 | 4.0 | 200 | 50.0 | Y | Y | N | Y | 107,081 | 41,000 | 10,250 | 158,331 | 20% | 24% |
| OMA | 4.9 | 290 | 59.6 | 5.0 | 586 | 116.3 | Y | Y | Y | Y | 95,835 | 130,440 | 32,610 | 258,885 | 15% | 18% |
| ORF | 3.1 | 135 | 44.0 | 4.1 | 285 | 69.8 | Y | Y | Y | Y | 75,300 | 54,880 | 13,720 | 143,900 | 15% | 18% |
| PBI | 2.0 | 258 | 129.0 | 1.1 | 250 | 219.0 | Y | Y | N | Y | 55,460 | 62,290 | 15,573 | 133,443 | 20% | 24% |
| PDX | 1.9 | 240 | 129.0 | 5.0 | 707 | 141.4 | Y | Y | N | Y | 135,834 | 168,710 | 42,178 | 346,522 | 20% | 24% |
| PDX | - | - | - | 1.0 | 274 | 274.0 | N | Y | N | Y | - | 18,292 | 4,573 | 22,865 | 20% | 24% |
| PHL | 7.4 | 958 | 129.0 | 7.7 | 1,113 | 144.3 | Y | Y | Y | N | 278,411 | 303,860 | 75,965 | 558,324 | 10% | 12% |
| PHX | 4.0 | 827 | 129.0 | 6.0 | 900 | 150.0 | Y | Y | Y | N | 398,359 | 245,050 | 61,263 | 694,663 | 10% | 12% |
| PIA | 6.0 | 294 | 49.0 | 4.0 | 200 | 50.0 | Y | Y | N | Y | 90,223 | 13,140 | 3,285 | 106,648 | 20% | 24% |
| PIT | 5.9 | 294 | 49.5 | 6.0 | 755 | 125.9 | Y | Y | Y | N | 128,771 | 111,260 | 27,815 | 196,309 | 10% | 12% |
| PSP | 2.9 | 369 | 129.0 | 1.0 | 120 | 120.0 | Y | Y | N | Y | 90,124 | 10 | 3 | 90,137 | 20% | 24% |
| PUJ | - | - | - | 0.6 | 81 | 142.0 | N | Y | N | Y | - | - | - | - | 20% | 24% |
| PVD | 2.9 | 369 | 129.0 | 4.0 | 506 | 126.4 | Y | Y | Y | Y | 289,481 | 100,870 | 25,218 | 415,569 | 15% | 18% |
| PVG | - | - | - | 1.0 | 274 | 274.0 | N | Y | N | Y | - | 3,010 | 753 | 3,763 | 20% | 24% |
| PVR | 1.4 | 194 | 129.0 | - | - | - | Y | N | N | Y | 10,269 | - | - | 10,269 | 20% | 24% |
| PWM | - | - | - | 3.0 | 150 | 50.0 | N | Y | N | Y | - | 36,230 | 9,058 | 45,288 | 20% | 24% |

## ANALYSIS OF AMERICAN'S REACTION TO UNITED'S FAILURE AT O'HARE

Exhibit E-4
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| COLUMN | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Status Quo Capacity[1] | | | | | | | | | | | | | | | |
| ORD to | AA Daily ORD Depts | AA Daily Outbound Seats | AA Avg Aircraft Size | UA Daily ORD Depts | UA Daily Outbound Seats | UA Avg Aircraft Size | AA Serve at ORD? | UA Serve at ORD? | WN Serve at MDW? | Post-UA Monopoly for AA at ORD? | Total AA Onboard Passengers[2] | Total UA Single Coupon Passengers[2] | Incremental UA Connecting Traffic (80/20)[3] | Total Base Onboard Traffic[4] | Fare Increase | Traffic Decrease (@ $e_d$=-1.2) |
| RDU | 4.9 | 627 | 129.0 | 6.0 | 431 | 71.8 | Y | Y | Y | Y | 314,894 | 91,020 | 22,955 | 428,869 | 15% | 18% |
| RIC | 5.9 | 283 | 48.4 | 6.0 | 429 | 71.5 | Y | Y | N | Y | 60,922 | 60,820 | 21,655 | 169,197 | 20% | 24% |
| RNO | 2.0 | 376 | 188.0 | - | - | - | Y | N | N | Y | 190,513 | - | - | 190,513 | 20% | 24% |
| ROA | - | - | - | 3.0 | 150 | 50.0 | N | Y | N | Y | - | 33,560 | 8,390 | 41,950 | 20% | 24% |
| ROC | 5.0 | 245 | 49.0 | 6.0 | 555 | 92.5 | Y | Y | N | Y | 151,862 | 69,670 | 17,418 | 238,950 | 20% | 24% |
| RST | 5.7 | 284 | 49.7 | - | - | - | Y | N | N | Y | 99,884 | - | - | 99,884 | 20% | 24% |
| RSW | 3.0 | 387 | 129.0 | 2.1 | 448 | 219.0 | Y | Y | N | N | 44,156 | 91,720 | 22,780 | 158,056 | 15% | 18% |
| SAN | 5.9 | 769 | 131.2 | 6.0 | 894 | 149.1 | Y | Y | Y | Y | 377,628 | 186,050 | 46,513 | 625,191 | 15% | 18% |
| SAT | 2.9 | 369 | 129.0 | 3.0 | 345 | 114.9 | Y | Y | N | Y | 192,365 | 69,480 | 17,370 | 279,215 | 20% | 24% |
| SAV | - | - | - | 3.0 | 150 | 50.0 | N | Y | N | Y | - | 57,150 | 14,288 | 71,438 | 20% | 24% |
| SBN | - | - | - | 5.9 | 348 | 58.8 | N | Y | N | Y | - | 14,820 | 3,705 | 18,525 | 20% | 24% |
| SDF | 5.0 | 290 | 58.0 | 6.0 | 338 | 56.3 | Y | Y | Y | Y | 99,576 | 59,830 | 14,958 | 174,364 | 15% | 18% |
| SEA | 3.9 | 498 | 129.0 | 6.0 | 1,344 | 224.0 | Y | Y | Y | N | 351,619 | 277,350 | 69,338 | 698,307 | 10% | 12% |
| SFO | 5.9 | 896 | 152.9 | 10.0 | 2,072 | 207.2 | Y | Y | N | Y | 495,088 | 546,120 | 136,530 | 1,177,739 | 20% | 24% |
| SGF | 5.0 | 238 | 47.6 | 4.9 | 308 | 63.4 | Y | Y | N | Y | 13,902 | 46,070 | 11,518 | 71,490 | 20% | 24% |
| SJC | 3.9 | 522 | 135.3 | 3.0 | 360 | 120.0 | Y | Y | N | Y | 374,210 | 99,130 | 24,533 | 496,873 | 20% | 24% |
| SJD | 1.4 | 194 | 129.0 | - | - | - | Y | N | N | Y | 27,332 | - | - | 27,332 | 20% | 24% |
| SJO | - | - | - | 0.1 | 31 | 219.0 | N | Y | N | Y | - | 4,554 | 1,139 | 5,693 | 20% | 24% |
| SJU | 4.0 | 752 | 188.0 | 1.3 | 290 | 201.9 | Y | Y | N | Y | 299,820 | 45,400 | 11,350 | 356,570 | 20% | 24% |
| SLC | 2.0 | 258 | 129.0 | 4.0 | 433 | 108.3 | Y | Y | Y | N | 132,382 | 89,550 | 22,388 | 188,331 | 10% | 12% |
| SMF | - | - | - | 4.0 | 505 | 126.3 | N | Y | N | Y | - | 109,520 | 27,380 | 136,900 | 20% | 24% |
| SNA | 4.0 | 568 | 142.0 | 4.9 | 853 | 175.6 | Y | Y | N | Y | 336,326 | 173,130 | 43,283 | 542,739 | 20% | 24% |
| SPI | - | - | - | 4.9 | 243 | 50.0 | N | Y | N | Y | - | 16,700 | 4,175 | 20,875 | 20% | 24% |
| STL | 10.3 | 1,335 | 129.8 | 9.4 | 680 | 72.1 | Y | Y | Y | Y | 738,162 | 145,030 | 36,258 | 919,450 | 15% | 18% |
| STT | - | - | - | 0.3 | 41 | 142.9 | N | Y | N | Y | - | 5,870 | 1,468 | 7,338 | 20% | 24% |
| SWF | 3.0 | 150 | 50.0 | - | - | - | Y | N | N | Y | 91,160 | - | - | 91,160 | 20% | 24% |
| SXM | - | - | - | 0.1 | 31 | 219.0 | N | Y | N | Y | - | - | - | - | 20% | 24% |
| SYR | 4.9 | 238 | 48.5 | 6.0 | 340 | 56.7 | Y | Y | N | Y | 137,949 | 47,990 | 11,998 | 197,937 | 20% | 24% |
| TOL | 3.9 | 194 | 47.8 | - | - | - | Y | N | N | Y | 92,121 | - | - | 92,121 | 20% | 24% |
| TPA | 2.9 | 369 | 129.0 | 5.0 | 750 | 150.0 | Y | Y | N | N | 174,343 | 169,710 | 47,428 | 411,481 | 10% | 12% |
| TUL | 3.9 | 498 | 129.0 | 4.0 | 200 | 50.0 | Y | Y | N | Y | 166,547 | 30,480 | 7,620 | 204,647 | 20% | 24% |
| TUS | 3.9 | 498 | 129.0 | 2.0 | 233 | 116.5 | Y | Y | N | Y | 222,795 | 11,900 | 2,975 | 237,670 | 20% | 24% |
| TVC | 2.1 | 107 | 50.0 | 3.0 | 150 | 50.0 | Y | Y | N | Y | 65,944 | 20,590 | 5,148 | 91,682 | 20% | 24% |
| TYS | 4.0 | 192 | 48.1 | 4.0 | 200 | 50.0 | Y | Y | N | Y | 73,840 | 39,360 | 9,840 | 123,040 | 20% | 24% |
| VNA | 6.4 | 425 | 66.1 | 2.7 | 136 | 50.0 | Y | Y | N | Y | 104,341 | - | - | 104,341 | 20% | 24% |
| YEG | - | - | - | 2.0 | 134 | 67.0 | N | Y | N | Y | - | - | - | - | 20% | 24% |
| YOW | 3.0 | 141 | 47.1 | 2.7 | 136 | 50.0 | Y | Y | N | N | 71,913 | 171 | 43 | 72,127 | 15% | 18% |
| YUL | 4.0 | 398 | 99.5 | 3.0 | 150 | 50.0 | Y | Y | N | N | 185,210 | 2,212 | 553 | 187,975 | 15% | 18% |
| YVR | - | - | - | 3.0 | 413 | 137.9 | N | Y | N | Y | - | 46,001 | 11,500 | 57,501 | 20% | 24% |
| YWG | - | - | - | 4.0 | 200 | 50.0 | N | Y | N | Y | - | 5,500 | 1,375 | 6,875 | 20% | 24% |
| YYC | 1.0 | 129 | 129.0 | 2.0 | 220 | 110.2 | Y | Y | N | Y | 89,423 | 13,326 | 3,332 | 106,081 | 20% | 24% |
| YYZ | 5.9 | 756 | 129.0 | 7.0 | 874 | 124.9 | Y | Y | N | N | 296,237 | 192,556 | 26,839 | 384,432 | 15% | 18% |
| Total | 511.9 | 50,715 | 99.1 | 615.0 | 63,964 | 103.9 | | | | | 22,639,210 | 12,525,591 | 3,131,398 | 36,761,999 | | |
| Annual Total | 186,227.5 | 18,511,079 | | 224,940.0 | 23,347,016 | | | | | | | | | | | |

1/ Source: Official Airline Guide, schedules for the week of March 7-13, 2005 (February 2005 Mail Edition).
2/ Source: U.S. DOT Origin & Destination Survey and T-100 data for year ended December 31, 2003 via Data Basis Products, Inc
3/ Column M = Column L / 4
4/ Column N = Column K + Column L + Column M
5/ Column Q = Column N x (1 - Column P)
6/ Column AC = Column R x 365 x 2
7/ Column AD = Column Q / 2

## ANALYSIS OF AMERICAN'S REACTION TO UNITED'S FAILURE AT O'HARE

Exhibit E-4
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| COLUMN | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Post-UA Capacity | | | | | | | | | | | | |
| | | AA Daily | AA Daily ORD Departures by Aircraft Type | | | | | | | | | | | |
| ORD to | Total Post-UA Onboard Traffic[1] | ORD Depts | ERJ 44 Seats | ERJ 50 Seats | CRJ 70 Seats | 380 129 Seats | 738 142 Seats | 757 188 Seats | 763 210 Seats | 777 223 Seats | AA Avg Aircraft Size | AA Daily Outbound Seats | AA Annual Trips[2] | AA Annual Enplanements[3] |
| ABE | 85,302 | 4.0 | | 4.0 | | | | | | | 50.0 | 200 | 2,920 | 17,651 |
| ABQ | 113,768 | 2.0 | | | | 2.0 | | | | | 129.0 | 258 | 1,460 | 58,084 |
| ACA | 4,781 | 0.7 | | | | 0.7 | | | | | 129.0 | 92 | 531 | 2,380 |
| ALB | 142,357 | 6.0 | | 6.0 | | | | | | | 50.0 | 300 | 4,380 | 71,179 |
| AMS | 20,750 | 1.0 | | | | | | | 1.0 | | 210.0 | 210 | 730 | 10,376 |
| ATL | 375,067 | 6.7 | | | | 6.7 | | | | | 129.0 | 866 | 4,901 | 187,534 |
| ATW | 22,886 | 5.7 | | 4.0 | 2.7 | | | | | | 59.5 | 340 | 4,171 | 11,343 |
| AUA | 6,090 | 1.0 | | | | | | 1.0 | | | 168.0 | 168 | 730 | 3,045 |
| AUS | 309,363 | 5.9 | | | | 5.9 | | | | | 129.0 | 756 | 4,276 | 154,681 |
| AVP | 18,487 | 2.0 | | 2.0 | | | | | | | 50.0 | 100 | 1,460 | 9,244 |
| AZO | 66,661 | 3.9 | 0.1 | 3.7 | | | | | | | 49.8 | 192 | 2,816 | 33,331 |
| BDL | 438,231 | 7.0 | | | | 7.0 | | | | | 129.0 | 903 | 5,110 | 219,011 |
| BHM | 33,308 | 3.0 | 3.0 | | | | | | | | 44.0 | 132 | 2,190 | 16,554 |
| BMI | 16,807 | 4.0 | | 4.0 | | | | | | | 50.0 | 200 | 2,920 | 8,404 |
| BNA | 283,541 | 9.0 | | | 9.0 | | | | | | 70.0 | 630 | 6,570 | 141,771 |
| BOI | 24,054 | 1.0 | | | | 1.0 | | | | | 129.0 | 129 | 730 | 12,027 |
| BOS | 842,089 | 11.0 | | | | | 11.0 | | | | 142.0 | 1,562 | 8,030 | 421,549 |
| BRU | 60,267 | 1.0 | | | | | | | 1.0 | | 210.0 | 210 | 730 | 40,133 |
| BTV | 39,625 | 4.0 | | 4.0 | | | | | | | 50.0 | 200 | 2,920 | 19,812 |
| BUF | 209,992 | 7.0 | | 3.0 | 4.0 | | | | | | 61.4 | 430 | 5,110 | 104,841 |
| BWI | 488,515 | 6.0 | | | | 3.0 | | 3.0 | | | 168.3 | 1,010 | 4,380 | 244,808 |
| CAE | 40,147 | 3.0 | | 3.0 | | | | | | | 50.0 | 150 | 2,190 | 20,074 |
| CAK | 30,865 | 3.0 | | 3.0 | | | | | | | 50.0 | 150 | 2,190 | 15,433 |
| CDG | 127,900 | 1.0 | | | | | | | 1.0 | | 210.0 | 330 | 1,147 | 63,939 |
| CHA | 28,268 | 2.9 | 1.4 | 1.4 | | | | | | | 47.0 | 134 | 2,086 | 14,134 |
| CHS | 50,992 | 4.1 | | 4.1 | | | | | | | 50.0 | 207 | 3,024 | 25,446 |
| CID | 134,954 | 7.0 | | 7.0 | | | | | | | 50.0 | 350 | 5,110 | 67,477 |
| CLE | 252,743 | 8.0 | | | 8.0 | | | | | | 70.0 | 560 | 5,840 | 126,371 |
| CLT | 102,073 | 5.0 | | 5.0 | | | | | | | 50.0 | 250 | 3,650 | 51,037 |
| CMH | 354,326 | 9.0 | | | 1.0 | 3.0 | | | | | 63.1 | 748 | 6,570 | 177,414 |
| CMI | 79,360 | 6.9 | 1.0 | 5.9 | | | | | | | 49.1 | 337 | 5,006 | 39,680 |
| COS | 51,661 | 4.0 | | 2.0 | 2.0 | | | | | | 60.0 | 240 | 2,920 | 25,831 |
| CRW | 18,174 | 2.0 | | 2.0 | | | | | | | 50.0 | 100 | 1,460 | 9,087 |
| CUN | 73,861 | 2.4 | | | | | | 2.4 | | | 168.0 | 403 | 1,773 | 36,931 |
| CVG | 135,336 | 7.4 | 7.4 | | | | | | | | 44.0 | 327 | 5,423 | 67,668 |
| CWA | 13,476 | 3.0 | | 3.0 | | | | | | | 50.0 | 150 | 2,190 | 6,988 |
| CZM | - | 0.4 | | | | 0.4 | | | | | 129.0 | 55 | 313 | - |
| DAY | 153,256 | 6.0 | | 4.0 | 2.0 | | | | | | 50.7 | 340 | 4,380 | 76,628 |
| DBQ | 48,152 | 3.7 | 2.4 | 1.3 | | | | | | | 46.1 | 171 | 2,711 | 24,076 |
| DCA | 539,365 | 8.0 | | | | 8.0 | | | | | 129.0 | 1,032 | 5,840 | 269,683 |
| DEN | 767,133 | 11.0 | | | | 11.0 | | | | | 129.0 | 1,419 | 8,030 | 383,566 |
| DFW | 986,740 | 16.6 | | | | 16.6 | | | | 1.0 | 134.7 | 2,232 | 12,097 | 493,370 |
| DSM | 170,574 | 6.0 | | 1.0 | 5.0 | | | | | | 66.7 | 400 | 4,380 | 85,287 |
| DTW | 398,371 | 6.0 | | | | 6.0 | | | | | 129.0 | 774 | 4,380 | 199,185 |
| EGE | 24,244 | 1.1 | | | | | | 1.1 | | | 188.0 | 215 | 834 | 12,122 |
| ELP | 99,559 | 2.0 | | | | 2.0 | | | | | 129.0 | 258 | 1,460 | 49,780 |
| EVV | 63,762 | 5.7 | 0.9 | 4.8 | | | | | | | 49.1 | 281 | 4,171 | 31,881 |
| EWR | 490,549 | 7.6 | | | | 7.6 | | | | | 129.0 | 977 | 5,527 | 245,270 |
| EZE | 6,030 | 1.0 | | | | | | | 1.0 | | 210.0 | 210 | 730 | 3,015 |
| FAR | 26,923 | 3.0 | | 3.0 | | | | | | | 50.0 | 150 | 2,190 | 13,462 |
| FCO | 59,894 | 0.7 | | | | | | | 0.7 | | 210.0 | 150 | 521 | 29,947 |
| FLL | 379,601 | 5.0 | | | | 3.0 | | 3.0 | | | 164.4 | 823 | 3,650 | 189,801 |
| FRA | 135,927 | 2.0 | | | | | | | 2.0 | | 210.0 | 420 | 1,460 | 67,964 |
| FSD | 31,073 | 5.0 | | 5.0 | | | | | | | 50.0 | 250 | 3,650 | 15,537 |
| FWA | 68,475 | 4.0 | 0.0 | 3.1 | | | | | | | 48.7 | 195 | 2,920 | 34,238 |
| GEG | 21,660 | 1.0 | | | | 1.0 | | | | | 129.0 | 129 | 730 | 10,830 |
| GRB | 93,629 | 5.0 | 0.6 | 4.4 | | | | | | | 49.3 | 247 | 3,650 | 46,814 |
| GRR | 152,069 | 6.0 | | 5.0 | 1.0 | | | | | | 60.0 | 360 | 4,380 | 76,034 |
| GRU | 21,510 | 1.0 | | | | | | | 1.0 | | 210.0 | 210 | 730 | 10,755 |

## ANALYSIS OF AMERICAN'S REACTION TO UNITED'S FAILURE AT O'HARE

Exhibit E-4
Page 5 of 6

| COLUMN | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Post-UA Capacity | | | | | | | | | | | | |
| | Total | AA Daily | AA Daily ORD Departures by Aircraft Type | | | | | | | | | AA Daily | | |
| ORD to | Post-UA Onboard Traffic[1] | ORD Depts | ERJ 44 Seats | ERJ 50 Seats | CRJ 70 Seats | 380 128 Seats | 738 142 Seats | 757 188 Seats | 763 210 Seats | 777 223 Seats | AA Avg Aircraft Size | Outbound Seats | AA Annual Trips[2] | AA Annual Enplanements[3] |
| GSO | 75,953 | 4.0 | | | -4.0 | | | | | | 70.0 | 280 | 2,920 | 37,970 |
| GSP | 73,933 | 3.0 | | 3.0 | | | | | | | 50.0 | 150 | 2,190 | 36,967 |
| HDN | 14,616 | 1.0 | | | | | 1.0 | | | | 142.0 | 142 | 730 | 7,308 |
| HHG | 21,528 | 1.0 | | | | | | | | 1.0 | 223.0 | 223 | 730 | 10,764 |
| HNL | 130,484 | 3.0 | | | | | | | 3.0 | | 210.0 | 630 | 2,190 | 65,242 |
| HPN | 221,023 | 6.0 | | | -4.0 | | 2.0 | | | | 94.0 | 564 | 4,380 | 110,512 |
| HSV | 19,717 | 1.9 | | 1.9 | | | | | | | 50.0 | 93 | 1,356 | 9,859 |
| IAD | 375,500 | 6.0 | | | | 6.0 | | | | | 129.0 | 774 | 4,380 | 187,750 |
| IAH | 211,946 | 4.0 | | | | 4.0 | | | | | 129.0 | 516 | 2,920 | 105,973 |
| IDT | 72,742 | 5.0 | | 5.0 | | | | | | | 50.0 | 250 | 3,650 | 36,371 |
| IND | 331,425 | 8.0 | | | 8.0 | 0.0 | | | | | 84.8 | 678 | 5,840 | 165,713 |
| JAC | 87,362 | 1.0 | | | | | | 1.0 | | | 188.0 | 188 | 730 | 19,576 |
| JAX | 67,803 | 4.0 | | 4.0 | | | | | | | 50.0 | 200 | 2,920 | 33,901 |
| KIX | 595 | 1.0 | | | | | | | | 1.0 | 223.0 | 223 | 730 | 297 |
| LAN | 26,619 | 4.0 | | 4.0 | | | | | | | 50.0 | 200 | 2,920 | 13,310 |
| LAS | 766,489 | 8.0 | | | | | 8.0 | 8.0 | | | 178.5 | 1,412 | 5,840 | 383,234 |
| LAX | 1,437,671 | 14.0 | | | | | | 12.0 | 2.0 | | 191.1 | 2,676 | 10,220 | 718,835 |
| LEX | 33,545 | 4.0 | | 4.0 | | | | | | | 50.0 | 200 | 2,920 | 16,772 |
| LGA | 1,282,742 | 18.0 | | | | 18.0 | | | | | 129.0 | 2,322 | 13,140 | 641,371 |
| LHP | 552,201 | 5.0 | | | | | | | | 5.0 | 223.0 | 1,115 | 3,650 | 276,101 |
| LIT | 14,500 | 5.9 | | 1.9 | -4.0 | | | | | | 67.1 | 398 | 4,276 | 7,254 |
| LMK | 38,789 | 4.0 | | 4.0 | | | | | | | 50.0 | 200 | 2,920 | 19,394 |
| LSE | 41,615 | 3.0 | | 3.0 | | | | | | | 50.0 | 150 | 2,190 | 20,807 |
| MAN | 106,745 | 1.0 | | | | | | | 1.0 | | 210.0 | 210 | 730 | 53,373 |
| MBJ | 10 | 0.3 | | | | 0.3 | | | | | 129.0 | 37 | 209 | 5 |
| MBS | 29,697 | 4.0 | | 4.0 | | | | | | | 50.0 | 200 | 2,920 | 14,849 |
| MCI | 509,694 | 7.3 | | | | 7.3 | | | | | 129.0 | 945 | 5,319 | 254,947 |
| MCO | 616,775 | 8.0 | | | | | 8.0 | | | | 142.0 | 1,136 | 5,840 | 308,387 |
| MDT | 136,518 | 8.0 | | 8.0 | | | | | | | 50.0 | 400 | 4,380 | 68,259 |
| MEM | 74,953 | 4.0 | 4.0 | | | | | | | | 84.0 | 314 | 3,546 | 37,476 |
| MEX | 78,394 | 3.0 | | | | | 3.0 | | | | 142.0 | 384 | 1,460 | 39,192 |
| MHT | 99,712 | 4.0 | | | -4.0 | | | | | | 70.0 | 280 | 2,920 | 49,856 |
| MIA | 684,640 | 10.3 | | | | 10.3 | | | | | 129.0 | 1,327 | 7,509 | 342,320 |
| MKE | 118,627 | 5.0 | | 5.0 | | | | | | | 50.0 | 250 | 3,650 | 59,313 |
| MLI | 31,157 | 4.0 | 4.0 | | | | | | | | 44.0 | 176 | 2,920 | 15,578 |
| MSN | 155,926 | 6.7 | 6.7 | 5.0 | | | | | | | 49.9 | 335 | 4,501 | 77,963 |
| MSP | 414,814 | 9.4 | | | 1.4 | 7.0 | | | | | 119.0 | 1,033 | 8,153 | 207,407 |
| MSY | 276,137 | 4.0 | | | | 4.0 | | | | | 129.0 | 516 | 2,920 | 138,068 |
| MTJ | 2,033 | 0.1 | | | | 0.1 | | | | | 129.0 | 15 | 104 | 1,017 |
| MYR | - | 2.0 | | 2.0 | | | | | | | 50.0 | 100 | 1,460 | - |
| NRT | 125,811 | 2.0 | | | | | | | | 2.0 | 223.0 | 446 | 1,460 | 62,905 |
| OAK | 71,269 | 2.0 | | | | 2.0 | | | | | 129.0 | 258 | 1,460 | 35,650 |
| OGG | 65,425 | 2.0 | | | | | | | 2.0 | | 210.0 | 420 | 1,460 | 32,712 |
| OKC | 120,332 | 6.0 | | 6.0 | | | | | | | 50.0 | 300 | 4,380 | 60,166 |
| OMA | 212,286 | 8.0 | | | -8.0 | | | | | | 70.0 | 420 | 4,380 | 106,143 |
| ORF | 118,005 | 5.0 | | 5.0 | | | | | | | 50.0 | 250 | 3,650 | 59,002 |
| PBI | 101,940 | 2.0 | | | | 2.0 | | | | | 129.0 | 258 | 1,460 | 50,970 |
| PDX | 263,356 | 4.0 | | | | 4.0 | | | | | 129.0 | 516 | 2,920 | 131,678 |
| PDX | 17,377 | 1.0 | | | | | | | | 1.0 | 223.0 | 223 | 730 | 8,689 |
| PHL | 500,125 | 7.5 | | | | 7.5 | | | | | 129.0 | 977 | 5,537 | 250,062 |
| PHX | 611,303 | 8.0 | | | | | 8.0 | | | | 142.0 | 1,136 | 5,840 | 305,652 |
| PIA | 81,052 | 6.0 | 1.0 | 5.0 | | | | | | | 49.0 | 294 | 4,380 | 40,526 |
| PIT | 174,511 | 7.0 | | 2.0 | 5.0 | - | | | | | 64.3 | 450 | 5,110 | 87,256 |
| PSP | 68,504 | 2.9 | | | | 2.9 | | | | | 129.0 | 369 | 2,086 | 34,252 |
| PUJ | - | 0.8 | | | | | | 0.8 | | | 168.0 | 107 | 417 | - |
| PVD | 340,766 | 5.0 | | | | 5.0 | | | | | 129.0 | 645 | 3,650 | 170,383 |
| PVG | 2,900 | 1.0 | | | | | | | | 1.0 | 223.0 | 223 | 730 | 1,450 |
| PVR | 7,894 | 1.4 | | | | 1.4 | | | | | 129.0 | 184 | 1,043 | 3,902 |
| PWM | 34,419 | 3.0 | | 3.0 | | | | | | | 50.0 | 150 | 2,190 | 17,209 |

Exhibit E-4
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## ANALYSIS OF AMERICAN'S REACTION TO UNITED'S FAILURE AT O'HARE

| COLUMN | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Post-UA Capacity | | | | | | | | | | | | |
| | | AA Daily | AA Daily ORD Departures by Aircraft Type | | | | | | | | | | | |
| ORD to | Total Post-UA Onboard Traffic[1] | ORD Depts | ERJ 44 Seats | ERJ 50 Seats | CRJ 70 Seats | 380 129 Seats | 738 142 Seats | 757 188 Seats | 763 210 Seats | 777 223 Seats | AA Avg Aircraft Size | AA Daily Outbound Seats | AA Annual Trips[2] | AA Annual Enplanements[3] |
| RDU | 352,829 | 6.0 | | | | 6.0 | | | | | 129.0 | 774 | 4,380 | 176,164 |
| RIC | 128,590 | 6.0 | | 6.0 | | | | | | | 50.0 | 300 | 4,380 | 64,295 |
| RNO | 144,790 | 2.0 | | | | | | 2.0 | | | 188.0 | 376 | 1,460 | 72,395 |
| ROA | 31,882 | 3.0 | | 3.0 | | | | | | | 50.0 | 150 | 2,190 | 15,941 |
| ROC | 181,602 | 7.0 | | 7.0 | | | | | | | 50.0 | 350 | 5,110 | 90,801 |
| RST | 75,912 | 5.7 | 0.3 | 5.4 | | | | | | | 49.7 | 284 | 4,171 | 37,956 |
| RSW | 129,006 | 3.0 | | | | 3.0 | | | | | 129.0 | 387 | 2,190 | 64,503 |
| SAN | 512,656 | 7.0 | | | | 3.0 | 4.0 | | | | 136.4 | 955 | 5,110 | 256,328 |
| SAT | 212,303 | 4.0 | | | 1.0 | 3.0 | | | | | 114.3 | 457 | 2,920 | 106,102 |
| SAV | 54,293 | 3.0 | | 3.0 | | | | | | | 50.0 | 150 | 2,190 | 27,146 |
| SBN | 14,079 | 6.9 | | 6.9 | | | | | | | 50.0 | 343 | 5,008 | 7,040 |
| SDF | 142,980 | 6.0 | | 6.0 | | | | | | | 50.0 | 300 | 4,380 | 71,490 |
| SEA | 614,423 | 8.0 | | | | | 8.0 | | | | 142.0 | 1,136 | 5,840 | 307,211 |
| SFO | 895,012 | 9.0 | | | | | 1.0 | 8.0 | | | 162.9 | 1,466 | 6,570 | 447,541 |
| SGF | 54,202 | 5.0 | | 5.0 | | | | | | | 50.0 | 250 | 3,650 | 27,109 |
| SJC | 377,033 | 6.0 | | | | 6.0 | | | | | 129.0 | 774 | 4,380 | 188,512 |
| SJD | 20,772 | 1.4 | | | | 1.4 | | | | | 129.0 | 184 | 1,043 | 10,386 |
| SJO | 4,836 | 0.1 | | | | | | 0.1 | | | 188.0 | 27 | 194 | 2,163 |
| SJU | 270,903 | 4.0 | | | | | | 4.0 | | | 188.0 | 752 | 2,920 | 135,497 |
| SLC | 165,731 | 8.0 | | | | 8.0 | | | | | 129.0 | 387 | 2,190 | 82,866 |
| SMF | 104,044 | 4.0 | | | | 4.0 | | | | | 129.0 | 516 | 2,920 | 52,022 |
| SNA | 412,481 | 6.0 | | | | | 6.0 | | | | 142.0 | 852 | 4,380 | 206,241 |
| SRQ | 15,865 | 4.0 | | 4.0 | | | | | | | 50.0 | 343 | 3,546 | 7,933 |
| STL | 753,449 | 11.0 | | | | 11.0 | | | | | 129.0 | 1,419 | 8,030 | 376,974 |
| STT | 5,577 | 0.3 | | | | | | 0.3 | | | 188.0 | 54 | 206 | 2,788 |
| SWF | 69,202 | 3.0 | | 3.0 | | | | | | | 50.0 | 150 | 2,190 | 34,541 |
| SXM | - | 0.1 | | | | | | 0.1 | | | 188.0 | 27 | 194 | - - |
| SYR | 150,432 | 6.0 | | 6.0 | | | | | | | 50.0 | 300 | 4,380 | 75,216 |
| TOL | 70,012 | 3.9 | 1.9 | 2.0 | | | | | | | 47.8 | 184 | 2,816 | 35,006 |
| TPA | 362,408 | 6.0 | | | | 6.0 | | | | | 129.0 | 774 | 4,380 | 181,204 |
| TUL | 155,532 | 3.9 | | | | 3.9 | | | | | 129.0 | 498 | 2,816 | 77,766 |
| TUS | 180,629 | 3.9 | | | | 3.9 | | | | | 129.0 | 498 | 2,816 | 90,315 |
| TVC | 69,002 | 3.0 | | 3.0 | | | | | | | 50.0 | 150 | 2,190 | 34,501 |
| TYS | 93,510 | 4.0 | | 4.0 | | | | | | | 50.0 | 200 | 2,920 | 46,755 |
| VNA | 79,259 | 6.4 | 1.7 | 1.7 | 3.0 | 0.7 | | | | | 66.1 | 425 | 4,693 | 39,630 |
| YEG | - | 2.0 | | | 2.0 | | | | | | 70.0 | 140 | 1,460 | - - |
| YOW | 58,144 | 4.0 | | 4.0 | | | | | | | 50.0 | 200 | 2,920 | 29,572 |
| YUL | 154,149 | 5.0 | | | 3.0 | 2.0 | | | | | 93.8 | 469 | 3,650 | 77,076 |
| YVR | 43,701 | 3.0 | | | | 3.0 | | | | | 129.0 | 387 | 2,190 | 21,850 |
| YWG | 5,225 | 4.0 | | 4.0 | | | | | | | 50.0 | 200 | 2,920 | 2,613 |
| YYC | 80,821 | 2.0 | | | | 2.0 | | | | | 129.0 | 258 | 1,460 | 40,411 |
| YYZ | 315,334 | 7.9 | | | | 7.9 | | | | | 129.0 | 1,014 | 5,738 | 157,617 |
| Total | 29,463,900 | 724.4 | 31.1 | 245.6 | 98.0 | 234.4 | 53.0 | 48.7 | 16.3 | 1.0 | 96.5 | 72,161 | 528,833 | 14,731,950 |
| Annual Total | | 264,474.0 | | | | | | | | | | 26,338,113 | | |

Exhibit G-6
Page 1 of 1

## ANALYSIS OF FOREIGN FLAG AND LEGACY CARRIERS' REACTIONS TO UNITED'S FAILURE AT O'HARE

(Based on CY2003 Traffic and March 2005 Schedules)

| Column | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Status Quo Capacity[1] | | | | | | Post-UA Capacity | | | | | | | | | |
| ORD to | OAL Daily ORD Depts | OAL Daily Outbound Seats | OAL Avg Aircraft Size | OAL | Total UA Single Coupon Passengers[2] | Incremental UA Connecting Traffic (60/20) | OAL Daily ORD Depts | OAL Daily Outbound Seats | OAL Avg Aircraft Size | OAL Base Onboard Traffic[3] | Load Factor[4] | OAL Incremental UA Onboard Traffic[5] | OAL Total Onboard Traffic[6] | Fare Increase | Traffic Decrease (@ $e_d$=-1.2) | OAL Post-UA Onboard Traffic[7] |
| ***Foreign Flag Carriers*** | | | | | | | | | | | | | | | | |
| AMS | 1.0 | 276 | 276 | HL | 20,244 | 6,061 | 1.0 | 276 | 276 | 166,347 | 60.2% | | | | | 169,153 |
| CDG | 0.5 | 198 | 232 | AF | 33,154 | 8,278 | 1.3 | 299 | 232 | 153,669 | 79.6% | | | | | 172,911 |
| FRA | 1.0 | 444 | 239 | LH | 39,359 | 9,080 | 1.8 | 444 | 256 | 253,151 | 87.9% | | | | | 284,875 |
| LHR | 2.0 | 850 | 287 | BA | 151,266 | 25,317 | 4.0 | 1,089 | 281 | 523,712 | 72.4% | | | | | 571,868 |
| MEL | 1.0 | 186 | 186 | JM | 10 | 3 | 1.0 | 186 | 186 | 63,426 | 60.0% | | | | | 62,469 |
| MEX | 3.0 | 470 | 157 | MX | 23,084 | 5,971 | 3.0 | 470 | 157 | 219,578 | 60.3% | | | | | 206,608 |
| NRT | 1.0 | 326 | 326 | JL | 28,371 | 6,743 | 2.0 | 652 | 326 | 193,941 | 77.7% | | | | | 198,521 |
| PDX | 2.0 | 143 | 80 | AC | 171 | 43 | 1.8 | 93 | 50 | 91,386 | 51.5% | | | | | 41,702 |
| YUL | 3.7 | 428 | 115 | AC | 2,212 | 553 | 2.7 | 311 | 115 | 176,452 | 54.1% | | | | | 123,863 |
| YYZ | 4.6 | 549 | 120 | AC | 102,568 | 25,642 | 3.6 | 429 | 120 | 187,516 | 44.9% | | | | | 138,627 |
| ***Total*** | 22.8 | 3,815 | | | 944,839.0 | 88,707 | 22.3 | 4,222 | | 1,821,382 | | | | | | 2,150,886 |
| ***Annual Total*** | 8,342.9 | 1,392,319 | | | | | 8,194.3 | 1,541,003 | | | | | | | | |
| ***US Domestic Carriers*** | | | | | | | | | | | | | | | | |
| ATL | 11.0 | 1,461 | 133 | DL | 259,920 | 62,730 | 14.0 | 1,859 | 133 | 754,326 | | 158,825 | 911,151 | 16% | 18% | 747,147 |
| CLE | 5.1 | 276 | 48 | CO | 164,020 | 41,206 | 9.0 | 387 | 46 | 184,258 | | 160,019 | 344,277 | 10% | 12% | 213,210 |
| CLT | 5.1 | 783 | 153 | UA | 187,020 | 36,908 | 5.1 | 783 | 153 | 548,178 | | 87,263 | 410,438 | 16% | 18% | 338,300 |
| CVG | 3.4 | 365 | 85 | DL | 86,020 | 21,505 | 3.4 | 365 | 85 | 306,417 | | 53,263 | 360,170 | 15% | 18% | 295,344 |
| DCA | 3.4 | 341 | 72 | US | 376,110 | 94,028 | 5.0 | 360 | 72 | | | 235,069 | 235,069 | 18% | 18% | 192,716 |
| DTW | 6.4 | 1,200 | 173 | NW | 198,010 | 49,503 | 9.0 | 1,123 | 125 | 434,931 | | 123,758 | 558,689 | 10% | 12% | 491,945 |
| EWR | 7.0 | 708 | 101 | CO | 345,980 | 86,495 | 9.0 | 909 | 101 | 355,531 | | 218,244 | 573,775 | 15% | 18% | 457,455 |
| IAH | 9.0 | 990 | 110 | CO | 137,080 | 34,462 | 9.0 | 990 | 110 | 494,362 | | 85,158 | 579,519 | 15% | 18% | 467,925 |
| MEM | 2.9 | 329 | 115 | NW | 56,340 | 14,085 | 2.9 | 329 | 115 | 184,099 | | 85,213 | 269,312 | 15% | 18% | 192,940 |
| MSP | 10.0 | 1,049 | 99 | NW | 226,380 | 56,595 | 11.0 | 1,092 | 99 | 419,170 | | 141,475 | 560,645 | 15% | 18% | 452,349 |
| PHL | 8.0 | 984 | 131 | US | 303,980 | 75,995 | 7.5 | 920 | 131 | 281,674 | | 199,913 | 473,587 | 10% | 12% | 414,498 |
| PIT | 2.1 | 396 | 98 | US | 111,280 | 27,915 | 6.0 | 588 | 98 | 293,488 | | 64,539 | 358,027 | 10% | 12% | 297,448 |
| SLC | 3.0 | 429 | 143 | DL | 89,560 | 22,398 | 3.0 | 429 | 143 | 306,376 | | 55,969 | 364,345 | 11% | 12% | 292,808 |
| ***Total*** | 86.4 | 8,360 | | | 2,454,720 | 613,880 | 96.8 | 10,514 | | 4,765,492 | | 1,534,200 | 5,699,688 | | | 4,778,948 |
| ***Annual Total*** | 31,761.4 | 3,064,544 | | | | | 35,511.0 | 3,855,485 | | | | | | | | |

1/ Source: Official Airline Guide, schedules for the week of March 7-13, 2005 (Economy 2005 Mar Edition)
2/ Source: U.S. DOT Origin & Destination Survey and T-100 data for year ended December 31, 2003 via Data Base Products, Inc.
3/ Column F = Column E / 4
4/ Column G = 0.6 x (Column E + Column F)
5/ Column M = Column J + Column L
6/ For foreign flag carriers: Column P = Column H x Column K x 165 x 2
7/ For US domestic carriers: Column P = Column M x (1 - Column O)

## APPENDIX F

### ANALYSIS OF COMPETITIVE RESPONSE TO A PROSPECTIVE FAILURE BY AMERICAN AT O'HARE

The purpose of this analysis is to quantify the reaction of United, other U.S. legacy carriers, and foreign flag carriers to a potential failure of American, or a significant reduction in its operations at O'Hare. For this analysis it is assumed that all airlines would adjust capacity and pricing rationally, and that basic economic principles drive scheduling decisions. It was further assumed that all current alliance groupings would remain intact. Detailed assumptions are described in Exhibits F-1 and F-2. Some of the major results are listed in Exhibit F-3. F1

Schedule data was utilized for all carriers providing service in all United and American markets for the week of March 7, 2005.[1] Markets were categorized by the following four benchmarks:

1. Does United serve the market from ORD?
2. Does American serve the market from ORD?
3. Does Southwest serve the market from Chicago-Midway (MDW)?
4. Will United have a monopoly position in the market assuming American ceases all service?

These four qualifiers dictated how much fares would likely rise in each market and how United would adjust its capacity after American discontinues service.

In markets served by Southwest from MDW, and where United has a monopoly at ORD, once American ceases service, fares are estimated to increase by 15%. Assuming a price elasticity of -1.2[2], total traffic in the market would decrease by 18%. In markets served by Southwest from MDW and where United has competition at ORD, fares are expected to increase by 10%; and total traffic would decrease by 12%. If United has a monopoly at ORD and Southwest does not serve it from MDW, fares are expected to increase by 20% and total traffic would decrease by 24%. If United has competition at ORD and the market is not served by

[1] This analysis of prospective changes at ORD that would be occasioned by a cessation (or major reduction) of American's operations is based upon a cross-sectional analysis of recent historical data.

[2] The current FAA benchmark value.

F-1

| Comment | Response |
|---|---|
| F1 | As noted in response to comment 141 on page U.4-600, the FAA has reviewed both *CH Appendices E and F* and does not agree with the assumptions provided by therein nor does the FAA agree with the conclusions drawn from these assumptions. In large measure, the two appendices appear to be interchangeable, addressing consequences of a hypothetical failure of United (*CH Appendix E*) or American (*CH Appendix F*). As a result, the responses to *CH Appendices E and F* are very similar in nature.<br><br>Again, the FAA notes that the Agency has conducted a sensitivity analysis to acknowledge the possibility of a range of future outcomes, including the potential loss of a hubbing carrier at ORD, presented in **Appendix R** of the EIS. The FAA has taken CH's analysis into consideration, however, the FAA prefers its own analysis in **Appendix R.**<br><br>As in *CH Appendix E* and its analysis of the assumed failure of United, the commenter has developed assumptions regarding the increase in fares in markets at ORD, following the assumed failure of American at ORD. No basis is offered for the assumed increase in fares—such as empirical data for similar markets under similar conditions. Therefore, FAA considers the assumptions arbitrary, and not valid for purposes of analysis.<br><br>*CH footnote 3*<br>In *CH footnote 3,* the commenter has referred to "United's limited fleet size." FAA agrees that United has limitations in the use of its fleet. This footnote contradicts the commenter's earlier assertion that airlines at ORD could (and would) immediately return to the fleet mix deployed in 1998.<br><br>Continued on the following page. |

Southwest at MDW, then fares are expected to increase by 15% and total traffic would decrease by 18%.

Each market was analyzed to estimate United's projected onboard traffic after American ceases service and the results are shown in Exhibit F-4. For all markets, it was assumed that United would retain all of its current onboard traffic. In markets with competition, it was assumed that United would gain 50% of American's local O&D traffic for calendar year 2003 as well as some incremental connecting traffic. The incremental connecting traffic was computed by applying an 80/20 local connecting ratio to the 50% of American's local O&D traffic that United gains[3]. In monopoly markets, it was assumed that United would gain all of American's local O&D traffic and some incremental connecting traffic. This incremental connecting traffic was also estimated by applying an 80/20 local connecting ratio to the local O&D traffic that United gains when American would cease operations. Onboard traffic in each market was then reduced based on the level of fare increases and price elasticity, as indicated above.

Once the onboard traffic in each market was computed, daily departures by aircraft type were estimated using United's current fleet composition. For this analysis the following assumptions were made:

- All markets served by United but not American would at a minimum remain at frequency and capacity levels scheduled for the week of March 7, 2005;
- All markets served by American but not United would be assumed by United with at least the same frequency and comparable capacity levels as American provided in the market during the week of March 7, 2005(given United's fleet mix and aircraft deployment);
- In Hawaii markets served by both carriers, United would add American's frequencies (Honolulu increases from one to two daily departures and Maui increases by one, to two daily departures);
- A maximum of eighteen daily departures were assumed for any market;
- In markets with United service already, if traffic is lower after adjusting for higher fares, United would at least retain its current frequency levels; and,

[3] Given the wide range of competitive connecting services at other hub airports and given United's limited fleet size, it is reasonable to assume that at most, United would obtain this modest amount of American's connecting passengers.

F-2

| Comment | Response |
|---|---|
| F1 continued | *CH Exhibits F-1 and F-2*<br>Similar to *CH Exhibits E-1* and *E-2*, referenced in *CH Appendix E*, the commenter indicates that *CH Exhibits F-1 and F-2* contain detailed assumptions supporting the conclusions in *CH Appendix F.*<br><br>Like *CH Exhibits E-1 and E-2*, the FAA finds that the *CH Exhibits F-1 and F-2* contains a series of bullet-point statements that lack any documentation that could give credibility to such assumptions. As discussed in response to comment E1, beginning on page U.4-794, the FAA notes that the questions at hand, regarding a potential failure of United and the results at O'Hare, are very complex, and relate to numerous future events and strategic decisions that cannot be known with certainty in advance—certainly not the certainty assigned by the commenter. The FAA has conducted sensitivity analysis to acknowledge the possibility of a range of future outcomes, and this is presented in **Appendix R** of the EIS.<br><br>*CH Exhibit F-3*<br>Again, similar to *CH Exhibit E-3*, referenced in *CH Appendix E*, the commenter indicates that *CH Exhibit F-3* contains major results of the analysis contained in *CH Appendix F.* The FAA disagrees with the assumptions made by CH in this analysis, and therefore disagrees with the analysis' results.<br><br>*CH Exhibit F-4*<br>The commenter has provided *CH Exhibit F-4* as the analysis supporting the assumptions regarding United's response to American's failure at ORD. A detailed listing of markets is presented, but no evidence supporting the assumptions regarding each market. Without further support and analysis, FAA does not accept this *CH Exhibit F-4* as a reasonable alternative to either (1) the forecast presented in the EIS, or (2) the sensitivity analysis presented in the EIS.<br><br>*CH Exhibit F-5*<br>The commenter has provided *CH Exhibit F-5* to present the results of the *CH Appendix F* analysis. The FAA notes that *CH Exhibit F-5* is a compilation of the assumptions and data presented in the earlier *CH Appendix F* exhibits. Because the earlier *CH Appendix F* exhibits do not have appropriate supporting information and analysis, FAA does not accept the conclusions reported in *CH Exhibit F-5.* |

- A load factor goal of low to mid-70's was conservatively used as a guideline in larger markets (markets with greater than 500,000 annual onboard passengers after adjustment for fare increase).

Based on this analysis, United would increase daily departures from ORD by 104 - from 616 to 720. United's outbound daily seats would increase from 63,964 to 76,699, or by 20% (Exhibit F-4). United would have 126 monopoly non-stop routes at ORD, an increase of 82 from 44 monopoly routes prior to American's service cessation.

The foreign flag carriers analyzed include Air Canada, Air France, British Airways, Japan Airlines, Air Jamaica, KLM, Lufthansa, Air India and Mexicana. The following assumptions were made regarding foreign carrier response to a potential American failure:

- Air India would not increase service to Frankfurt or London (Heathrow);
- Japan Airlines would no longer publish connections to American at ORD and therefore will not add capacity to Tokyo. Untied will upgrade one of its two daily frequencies to a Boeing 747-400 from a Boeing 777-200 so that both daily frequencies are operated with the larger aircraft.
- Air Canada will add one daily frequency to Montreal, Ottawa and Toronto.
- Both United and British Airways will add one daily frequency to London (Heathrow) to adjust for the loss American's four daily frequencies in the market.
- Mexicana will no longer publish connections to American at ORD and therefore will not add capacity to Mexico City. United will add one daily frequency in the market.
- Average aircraft size was held constant at March 2005 levels; and,
- Load factor was held constant at actual 2003 levels for calculating foreign flag onboard and enplaned traffic.

The results of this analysis are shown in Exhibit F-5. Foreign flag daily departures would increase by 4.4, from 22.9 to 27.3, and outbound daily seats would increase by 17% from 3,815 to 4,469. Average aircraft size for these carriers would decrease by 3 seats, from 167 to 164 seats.

The legacy carriers analyzed include Continental, Delta, Northwest and US Airways. The following assumptions were made for legacy carrier response:

- Delta would not change seasonal service to Myrtle Beach;
- Average aircraft size was held constant at March 2005 levels;

Since all legacy carrier markets have competition with United, it was assumed that each legacy carrier would gain 50% of American's local O&D traffic for calendar year 2003 as well as some incremental connecting traffic. The incremental connecting traffic was computed by applying an 80/20 local connecting ratio to the 50% of American's local O&D traffic that the legacy carrier would gain. Total onboard traffic was computed by adding each carrier's calendar year 2003 onboard traffic to the local and connecting traffic it would gain from American's withdrawal of ORD services. Onboard traffic numbers were also adjusted for fare increases similar to the adjustment made to United's post-American Airlines onboard traffic. Additional frequencies were then allocated to each legacy carrier to accommodate the increase in traffic. Frequencies were held constant at March 2005 levels when traffic levels declined slightly due to higher fares (elasticity effect).

The results of this analysis are shown in Exhibit F-5. Daily departures of the legacy carriers, other than American and United, would increase by 4.2, from 85.4 to 89.6. Daily seat departures would increase by 4%, from 9,300 to 9,651, and onboard traffic would increase by 1%.

In summary, if American fails, total annual operations (for the base year 2003) would decrease by 30.4%, from 960,500 to 668,740, as shown in Exhibit 510[4]. Due to this loss in operations from American's failure, O'Hare operations will not surpass 2003 actual levels until 2027 (Chart 5-3)[4]. Similarly, total enplanements would decrease by 32.6% to approximately 22.0 million from 32.6 million, as shown in Exhibit 511[4]. Therefore, total O'Hare enplanements will not equal 2003 levels until 2017 (Chart 5-4)[4]. Furthermore, the average domestic ORD fare would increase by $21.29 (or 14.6%) from $146.09 to $167.38. F2

[4] Section 5.0 of this report.

F-4

| Comment | Response |
|---|---|
| F2 | Relying upon the analysis that the FAA has identified as lacking support and credibility (see response to comment immediately above), the commenter asserts that American's failure would reduce O'Hare operations by 30.4% for base year 2003. Regardless of the many flaws in the commenter's analysis, the conclusion it draws is wholly untenable. American's demise would not depress O'Hare traffic by 30.4% for every year from now on until 2025. Instead, as shown in **Appendix R** of the EIS, the demise of a hubbing carrier in a market such as O'Hare is likely to produce a slight, temporary decline in traffic, followed by a return to historic levels. Stated differently, as a robust local market with convenient hubbing and international service potential, Chicago is simply too large and potentially profitable to expect any significant diminution in forecast traffic several years after a carrier's demise. As such, FAA projections for traffic levels in 2018 are not likely to be affected if a Chicago hub carrier disappears. |

Exhibit F-1
Page 1 of 1

## ASSUMPTIONS FOR ANALYSIS OF UNITED'S REACTION TO AMERICAN'S FAILURE OR SIGNIFICANT REDUCTION OF O'HARE OPERATIONS

- Alliance groupings (Oneworld, SkyTeam & Star) remain constant
- UA retains all current UA onboard traffic
- In markets with competition, UA gains 50% of current AA local O&D traffic and incremental connecting traffic based on a 80/20 local/connect split
- In monopoly markets, UA will provide capacity for all of AA's local O&D and some connecting traffic. The resultant incremental traffic to UA will be 80/20 local/connect split for current UA traffic
- In markets served by WN from Midway and UA has monopoly at ORD, fares increase by 15% → total traffic decreases by 18%
- In markets served by WN from Midway and UA has competition at ORD, fares increase by 10% → total traffic decreases by 12%
- If market is not served by WN and UA has monopoly at ORD, fares increase by 20% → total traffic decreases by 24%
- If market is not served by WN and UA has competition at ORD, fares increase by 15% → total traffic decreases by 18%
- All markets served by UA but not AA will remain at current frequency and capacity levels
- All markets served by AA but not UA will be picked-up by UA with at least the same frequency and comparable capacity as AA provided in the market (given UA fleet mix and deployment)
- In Hawaii markets served by both, UA adds AA frequencies (HNL 1 → 2, OGG 1 → 2)
- All UA markets served with a mix of 146 (88 seats), 319 (120), 320 (120), 32S-Ted (150), 733 (122), 735 (107), 744 (347), 752 (182), 763 (214), 777 (274), CR7 (67), CRJ (50), E70 (70) and ER4 (50) equipment.
- Maximum of 18 daily frequencies allocated to any market
- In markets currently served by UA, if post-AA traffic is lower after adjustments for higher fares, UA will at a minimum retain its current frequency levels
- Load factor goal of low to mid-70's was conservatively used as a guideline in larger markets (post-AA onboard passengers > 500,000)

Exhibit F-2
Page 1 of 1

## ASSUMPTIONS FOR ANALYSIS OF OTHER AIRLINES' REACTIONS TO AMERICAN'S FAILURE OR SIGNIFICANT REDUCTION OF O'HARE OPERATIONS

- In markets served by legacy carriers, they will gain 50% of current AA local O&D traffic and incremental connecting traffic based on a 80/20 local/connect split
- Legacy carriers include CO, DL, NW and US
- Foreign flag carriers include AC, AF, BA, JL, JM, KL, LH, AI, and MX
- AI does not increase service to FRA or LHR
- JL will no longer publish connections to any airline at ORD and therefore will not add capacity to NRT. UA will upgrade one daily frequency to a Boeing 747-400 from a Boeing 777-200 so that both daily frequencies will be flown with the larger aircraft.
- AC and UA will add one daily frequency to YOW, YUL and YYZ.
- DL does not change seasonal MYR service
- Average aircraft size was held constant at actual March 2005 levels for analysis of foreign flag and legacy carriers
- Load factor was held constant at actual 2003 levels for calculating foreign flag onboard and enplaned traffic
- Foreign flag and legacy carrier response is summarized in Exhibit R-5.

Exhibit F-3
Page 1 of 1

## AMERICAN'S FAILURE OR SIGNIFICANT REDUCTION OF O'HARE OPERATIONS WILL RAISE FARES AND PROVIDE UNITED A MONOPOLY ON MOST OF ITS ROUTES

- **United's monopoly routes increase by 82 (+186%) from 44 to 126**
- **Total annual operations decrease by 291,760 (-30.4%) from 960,500 to 668,740**
- **Average aircraft size will increase by 5.4 seats (+5.1%) from 106.2 to 111.6**
- **United's average aircraft size will increase by 2.8 seats (+2.7%) from 103.8 to 106.6**
- **The average domestic ORD fare will increase by $21.29 (+14.6%) from $146.09 to $167.38**

## ANALYSIS OF UNITED'S REACTION TO AMERICAN'S FAILURE AT O'HARE

Exhibit F-4
Page 1 of 6

| COLUMN | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Status Quo Capacity[1] | | | | | | | | | | | | | | | | | Post-UA Capacity |
| ORD to | UA Daily ORD Depts | UA Daily Outbound Seats | UA Avg Aircraft Size | AA Daily ORD Depts | AA Daily Outbound Seats | AA Avg Aircraft Size | UA Serve at ORD? | AA Serve at ORD? | WN Serve at MDW? | Post-AA Monopoly for UA at ORD? | Total UA Onboard Passengers[1] | Total AA Single Coupon Passengers[2] | Incremental AA Connecting Traffic (80/20) | Total Base Onboard Traffic[3] | Fare Increase | Traffic Decrease (@ $\eta_t$=-1.2) | Total Post-AA Onboard Traffic[3] | UA Daily ORD Depts |
| ABE | 4.0 | 200 | 50.0 | - | - | - | Y | N | N | Y | 90,065 | - | - | 90,065 | 20% | 24% | 68,446 | 4.0 |
| ABQ | 2.0 | 140 | 70.0 | 2.0 | 258 | 128.0 | Y | Y | Y | Y | 116 | 54,720 | 13,880 | 68,516 | 15% | 18% | 58,183 | 2.0 |
| ACA | - | - | - | 0.7 | 92 | 128.0 | N | Y | N | Y | | 4,369 | 1,092 | 5,461 | 20% | 24% | 4,151 | 0.7 |
| ALB | 6.0 | 471 | 78.5 | 4.0 | 176 | 44.0 | Y | Y | N | Y | 237,835 | 24,885 | 6,170 | 268,885 | 20% | 24% | 204,201 | 6.0 |
| AMS | 1.0 | 214 | 214.0 | - | - | - | Y | N | N | N | 86,056 | - | - | 86,056 | 15% | 18% | 78,788 | 1.0 |
| ATL | 6.9 | 853 | 124.3 | 6.1 | 598 | 103.5 | Y | Y | N | N | 444,410 | 169,476 | 42,118 | 649,764 | 15% | 18% | 410,808 | 6.9 |
| ATW | 5.7 | 410 | 72.2 | - | - | - | Y | N | N | Y | 178,361 | - | - | 178,361 | 20% | 24% | 135,870 | 5.7 |
| AUA | 1.0 | 153 | 153.0 | - | - | - | Y | N | N | Y | 12,056 | - | - | 12,056 | 20% | 24% | 9,164 | 1.0 |
| AUS | 5.0 | 267 | 53.4 | 5.9 | 756 | 128.0 | Y | Y | N | Y | 160,633 | 137,255 | 34,313 | 332,186 | 20% | 24% | 252,481 | 5.0 |
| AVP | 2.0 | 100 | 50.0 | - | - | - | Y | N | N | Y | 54,513 | - | - | 54,513 | 20% | 24% | 41,430 | 2.0 |
| AZO | 3.0 | 150 | 50.0 | 3.9 | 102 | 49.8 | Y | Y | N | Y | 58,484 | 6,250 | 1,563 | 66,297 | 20% | 24% | 50,385 | 3.0 |
| BDL | 6.9 | 765 | 111.5 | 3.9 | 511 | 131.4 | Y | Y | Y | Y | 475,862 | 108,370 | 26,593 | 610,915 | 15% | 18% | 499,228 | 6.0 |
| BHM | 3.0 | 150 | 50.0 | - | - | - | Y | N | Y | Y | 70,866 | - | - | 70,866 | 15% | 18% | 59,110 | 3.0 |
| BMI | 3.9 | 195 | 50.0 | 4.0 | 200 | 50.0 | Y | Y | N | Y | 72,895 | 276 | 69 | 73,232 | 20% | 24% | 55,657 | 3.9 |
| BNA | 6.0 | 300 | 50.0 | 8.0 | 622 | 77.8 | Y | Y | Y | Y | 187,979 | 111,260 | 27,815 | 307,054 | 15% | 18% | 251,764 | 7.0 |
| BOI | 1.0 | 120 | 119.9 | - | - | - | Y | N | N | Y | 70,659 | - | - | 70,659 | 20% | 24% | 53,701 | 1.0 |
| BOS | 8.1 | 1,312 | 135.0 | 9.4 | 1,340 | 131.6 | Y | Y | N | Y | 769,734 | 278,880 | 69,673 | 1,118,287 | 20% | 24% | 850,133 | 11.0 |
| BRU | - | - | - | 1.0 | 310 | 310.0 | N | Y | N | Y | | 22,312 | 5,578 | 27,890 | 20% | 24% | 21,196 | 1.0 |
| BTV | 4.0 | 257 | 64.3 | - | - | - | Y | N | N | Y | 146,057 | 1,770 | 443 | 148,270 | 20% | 24% | 112,685 | 4.0 |
| BUF | 6.0 | 437 | 72.9 | 6.1 | 301 | 49.0 | Y | Y | N | Y | 300,445 | 39,060 | 9,763 | 349,259 | 20% | 24% | 265,436 | 6.0 |
| BWI | 6.0 | 849 | 141.5 | 3.9 | 486 | 128.0 | Y | Y | Y | Y | 816,796 | 111,870 | 27,968 | 956,634 | 15% | 18% | 839,414 | 6.0 |
| CAE | 3.0 | 150 | 50.0 | - | - | - | Y | N | N | Y | 89,352 | - | - | 89,352 | 20% | 24% | 67,908 | 3.0 |
| CAK | 3.0 | 150 | 50.0 | - | - | - | Y | N | N | Y | 79,011 | - | - | 79,011 | 20% | 24% | 60,048 | 3.0 |
| CDG | 1.0 | 214 | 214.0 | 1.0 | 310 | 310.0 | Y | Y | N | N | 114,394 | 30,285 | 8,571 | 152,199 | 15% | 18% | 132,971 | 1.0 |
| CHA | - | - | - | 2.9 | 134 | 47.0 | N | Y | N | Y | | 15,049 | 3,762 | 18,809 | 25% | 34% | 14,208 | 2.9 |
| CHS | 4.1 | 237 | 58.0 | - | - | - | Y | N | N | Y | 152,881 | - | - | 152,881 | 20% | 24% | 78,190 | 4.1 |
| CID | 7.0 | 475 | 68.5 | 6.9 | 333 | 48.0 | Y | Y | N | Y | 215,567 | 12,435 | 3,108 | 231,045 | 20% | 24% | 175,594 | 7.0 |
| CLE | 7.0 | 810 | 115.7 | 7.9 | 473 | 59.9 | Y | Y | Y | N | 376,516 | 61,276 | 15,319 | 453,104 | 10% | 12% | 387,667 | 7.0 |
| CLT | 6.0 | 597 | 99.4 | 4.0 | 198 | 49.8 | Y | Y | N | N | 269,434 | 35,195 | 8,798 | 313,427 | 15% | 18% | 258,391 | 6.0 |
| CMH | 6.9 | 814 | 118.5 | 8.0 | 534 | 66.7 | Y | Y | Y | Y | 420,434 | 79,400 | 19,850 | 519,684 | 15% | 18% | 428,141 | 6.9 |
| CMI | - | - | - | 6.9 | 337 | 48.1 | N | Y | N | Y | | 6,000 | 1,500 | 7,500 | 20% | 24% | 5,700 | 6.9 |
| COS | 4.0 | 251 | 62.8 | - | - | - | Y | N | N | Y | 151,496 | | - | 151,496 | 20% | 24% | 115,137 | 4.0 |
| CRW | 2.0 | 100 | 50.0 | - | - | - | Y | N | N | Y | 47,932 | | - | 47,932 | 20% | 24% | 36,428 | 2.0 |
| CUN | - | - | - | 2.4 | 457 | 188.0 | N | Y | N | Y | | 63,346 | 15,837 | 79,185 | 20% | 24% | 60,181 | 2.4 |
| CVG | 6.0 | 423 | 70.5 | 7.4 | 366 | 47.8 | Y | Y | N | N | 208,848 | 37,100 | 9,275 | 226,208 | 15% | 18% | 187,948 | 6.0 |
| CWA | 3.0 | 150 | 50.0 | - | - | - | Y | N | N | Y | 75,421 | | - | 75,421 | 20% | 24% | 57,330 | 3.0 |
| CZM | 0.4 | 91 | 143.0 | - | - | - | Y | N | N | Y | - | | | - | 20% | 24% | - | 0.4 |
| DAY | 6.0 | 456 | 76.0 | 4.0 | 235 | 58.9 | Y | Y | N | Y | 264,878 | 29,710 | 5,928 | 294,514 | 20% | 24% | 223,830 | 6.0 |
| DBQ | - | - | - | 3.1 | 171 | 48.1 | N | Y | N | Y | | 3,960 | 990 | 4,450 | 20% | 24% | 3,382 | 3.7 |
| DCA | 12.0 | 1,660 | 139.1 | 7.7 | 1,021 | 132.4 | Y | Y | N | N | 794,998 | 199,918 | 49,982 | 999,291 | 15% | 18% | 729,210 | 13.8 |
| DEN | 12.0 | 2,945 | 195.4 | 5.9 | 769 | 131.2 | Y | Y | N | Y | 1,505,974 | 156,270 | 39,068 | 1,701,312 | 20% | 24% | 1,292,997 | 13.0 |
| DFW | 8.7 | 774 | 115.3 | 16.6 | 2,232 | 134.7 | Y | Y | N | Y | 415,941 | 388,510 | 97,128 | 901,579 | 20% | 24% | 685,206 | 8.0 |
| DSM | 7.0 | 714 | 102.0 | 5.7 | 368 | 66.5 | Y | Y | N | Y | 311,841 | 27,050 | 6,763 | 345,454 | 20% | 24% | 262,545 | 7.0 |
| DTW | 7.0 | 984 | 140.5 | 5.7 | 763 | 133.6 | Y | Y | Y | N | 467,110 | 117,610 | 29,403 | 560,918 | 10% | 12% | 462,342 | 7.0 |
| EGE | - | - | - | 1.1 | 215 | 196.0 | N | Y | N | Y | | 15,510 | 3,878 | 19,388 | 20% | 24% | 14,735 | 1.1 |
| ELP | - | - | - | 2.0 | 256 | 128.0 | N | Y | N | Y | | 55,300 | 13,825 | 69,125 | 20% | 24% | 53,535 | 2.0 |
| EVV | - | - | - | 5.7 | 291 | 48.1 | N | Y | N | Y | | 21,910 | 5,453 | 27,363 | 20% | 24% | 20,729 | 5.7 |
| EWR | 8.4 | 1,038 | 123.2 | 8.7 | 896 | 128.0 | Y | Y | N | N | 612,571 | 213,870 | 53,493 | 746,302 | 15% | 18% | 611,986 | 8.4 |
| EZE | 1.0 | 214 | 214.0 | - | - | - | Y | N | N | Y | | - | - | - | 20% | 24% | | 1.0 |
| FAR | 3.0 | 150 | 50.0 | - | - | - | Y | N | N | Y | 67,874 | | - | 67,874 | 20% | 24% | 51,432 | 3.0 |
| FCO | - | - | - | 0.7 | 150 | 210.0 | N | Y | N | Y | | 20,277 | 5,069 | 25,348 | 20% | 24% | 19,283 | 0.7 |
| FLL | 4.0 | 600 | 150.0 | 4.1 | 688 | 166.1 | Y | Y | Y | N | 250,346 | 176,376 | 44,093 | 470,815 | 10% | 12% | 414,313 | 3.9 |
| FRA | 2.0 | 548 | 274.0 | 1.0 | 210 | 210.0 | Y | Y | N | N | 277,995 | 26,877 | 1,219 | 313,191 | 15% | 18% | 299,817 | 3.0 |
| FSD | 5.0 | 250 | 50.0 | - | - | - | Y | N | N | Y | 101,988 | 1,860 | 465 | 103,909 | 20% | 24% | 78,968 | 5.0 |
| FWA | 5.0 | 250 | 50.0 | 4.0 | 195 | 48.7 | Y | Y | N | Y | 60,777 | 5,800 | 1,450 | 68,027 | 20% | 24% | 58,901 | 5.0 |
| GEG | 1.0 | 122 | 122.0 | - | - | - | Y | N | N | Y | 71,698 | - | - | 71,698 | 20% | 24% | 54,490 | 1.0 |
| GRB | 5.0 | 300 | 60.0 | 5.0 | 247 | 49.3 | Y | Y | N | Y | 113,462 | 6,288 | 1,572 | 121,460 | 20% | 24% | 92,310 | 5.0 |
| GRR | 6.0 | 520 | 86.7 | 5.8 | 352 | 60.1 | Y | Y | N | Y | 328,582 | 10,160 | 2,540 | 342,282 | 20% | 24% | 260,134 | 6.0 |
| GRU | 1.0 | 214 | 214.0 | - | - | - | Y | N | N | Y | 155,208 | | - | 155,208 | 20% | 24% | 79,958 | 1.0 |
| GSO | 4.0 | 296 | 74.4 | - | - | - | Y | N | N | Y | 156,325 | | - | 156,325 | 20% | 24% | 118,807 | 4.0 |
| GSP | 3.0 | 150 | 50.0 | 3.9 | 139 | 48.5 | Y | Y | N | Y | 67,847 | 25,515 | 6,378 | 99,735 | 20% | 24% | 75,798 | 3.0 |
| HDN | - | - | - | 1.0 | 142 | 147.0 | N | Y | N | Y | | 8,438 | 2,109 | 10,538 | 20% | 24% | 8,009 | 1.0 |
| HKG | 1.0 | 347 | 347.0 | - | - | - | Y | N | N | Y | 128,738 | | - | 128,738 | 20% | 24% | 97,838 | 1.0 |

## ANALYSIS OF UNITED'S REACTION TO AMERICAN'S FAILURE AT O'HARE

Exhibit F-4
Page 2 of 6

| COLUMN | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Status Quo Capacity[1] | | | | | | | | | | | | | | | | | Post-UA Capacity |
| ORD to | UA Daily ORD Depts | UA Daily Outbound Seats | UA Avg Aircraft Size | AA Daily ORD Depts | AA Daily Outbound Seats | AA Avg Aircraft Size | UA Serve at ORD? | AA Serve at ORD? | WN Serve at MDW? | Post-AA Monopoly for UA at ORD? | Total UA Onboard Passengers[2] | Total AA Single Coupon Passengers[2] | Incremental AA Connecting Traffic (80/20) | Total Base Onboard Traffic[3] | Fare Increase | Traffic Decrease (@ $\varepsilon_d$=-1.2) | Total Post-AA Onboard Traffic[3] | UA Daily ORD Depts |
| HNL | 1.0 | 274 | 274.0 | 2.0 | 420 | 210.0 | Y | Y | N | Y | - | 41,910 | 10,253 | 51,261 | 20% | 24% | 38,980 | 2.0 |
| HPN | 9.7 | 288 | 30.0 | 8.7 | 594 | 93.4 | Y | Y | N | Y | 125,631 | 106,810 | 21,203 | 281,850 | 20% | 24% | 180,008 | 8.0 |
| HSV | - | - | - | 1.0 | 90 | 53.0 | N | Y | N | Y | - | 10,180 | 3,545 | 13,725 | 20% | 24% | 9,671 | 1.9 |
| IAD | 8.7 | 1,205 | 138.3 | 4.7 | 238 | 50.6 | Y | Y | N | N | 592,172 | 40,440 | 10,110 | 642,722 | 15% | 18% | 527,032 | 8.7 |
| IAH | 8.0 | 478 | 96.9 | 3.0 | 438 | 128.0 | Y | Y | N | N | 393,531 | 89,220 | 22,305 | 505,294 | 15% | 18% | 378,221 | 3.0 |
| ICT | 4.0 | 200 | 50.0 | 4.1 | 278 | 68.4 | Y | Y | N | Y | 145,656 | 2,988 | 648 | 148,788 | 20% | 24% | 113,078 | 4.0 |
| IND | 10.7 | 780 | 73.0 | 7.8 | 750 | 96.1 | Y | Y | Y | Y | 446,635 | 35,310 | 8,828 | 490,713 | 15% | 18% | 402,394 | 10.7 |
| JAC | - | - | - | 1.0 | 188 | 188.0 | N | Y | N | Y | - | 14,958 | 3,739 | 18,697 | 20% | 24% | 14,203 | 1.0 |
| JAX | 4.0 | 200 | 50.0 | - | - | - | Y | N | N | Y | 131,053 | - | - | 131,053 | 20% | 24% | 100,206 | 4.0 |
| KIX | 1.0 | 274 | 274.0 | - | - | - | Y | N | N | Y | - | - | - | - | 20% | 24% | - | 1.0 |
| LAN | 4.0 | 200 | 50.0 | - | - | - | Y | N | N | Y | 88,798 | - | - | 88,798 | 20% | 24% | 67,416 | 4.0 |
| LAS | 8.0 | 1,200 | 150.0 | 4.9 | 707 | 163.0 | Y | Y | Y | N | 807,992 | 217,300 | 54,350 | 969,642 | 10% | 12% | 863,972 | 10.0 |
| LAX | 11.0 | 2,598 | 180.8 | 10.9 | 1,638 | 150.9 | Y | Y | Y | Y | 1,594,365 | 388,798 | 99,948 | 2,034,043 | 15% | 18% | 1,643,316 | 14.0 |
| LEX | 4.0 | 200 | 50.0 | - | - | - | Y | N | N | Y | 63,642 | - | - | 63,642 | 20% | 24% | 63,568 | 4.0 |
| LGA | 13.7 | 1,984 | 143.2 | 19.0 | 2,118 | 124.0 | Y | Y | N | Y | 915,472 | 625,300 | 156,325 | 1,697,047 | 20% | 24% | 1,289,768 | 15.0 |
| LHR | 2.0 | 622 | 274.0 | 4.0 | 892 | 223.0 | Y | Y | N | N | 420,160 | 122,253 | 33,088 | 575,621 | 15% | 18% | 480,209 | 4.0 |
| LIT | - | - | - | 5.8 | 393 | 67.1 | N | Y | Y | Y | - | 5,310 | 1,578 | 7,888 | 15% | 18% | 6,488 | 5.8 |
| LGW | 4.0 | 200 | 50.0 | - | - | - | Y | N | N | Y | 109,094 | 1,920 | 480 | 107,488 | 20% | 24% | 81,699 | 4.0 |
| LSE | - | - | - | 3.0 | 160 | 60.0 | N | Y | N | Y | - | 5,730 | 1,433 | 7,163 | 20% | 24% | 5,444 | 3.0 |
| MAN | - | - | - | 1.0 | 210 | 210.0 | N | Y | N | N | - | 17,880 | 4,470 | 22,350 | 15% | 18% | 18,377 | 1.0 |
| MBJ | 0.3 | 41 | 142.0 | - | - | - | Y | N | N | N | - | - | - | - | 15% | 18% | - | 0.3 |
| MBS | 4.0 | 200 | 50.0 | - | - | - | Y | N | N | Y | 89,032 | - | - | 89,032 | 20% | 24% | 75,264 | 4.0 |
| MCI | 8.0 | 680 | 98.7 | 8.7 | 888 | 128.0 | Y | Y | Y | Y | 270,040 | 192,780 | 48,445 | 618,265 | 15% | 18% | 526,977 | 8.0 |
| MCO | 8.0 | 1,200 | 150.0 | 4.0 | 934 | 158.5 | Y | Y | Y | N | 558,193 | 178,845 | 44,862 | 781,493 | 10% | 12% | 697,714 | 8.0 |
| MDT | 5.0 | 358 | 91.8 | 4.0 | 182 | 46.4 | Y | Y | N | Y | 185,335 | 26,800 | 6,950 | 219,360 | 20% | 24% | 166,106 | 5.0 |
| MEM | 4.0 | 200 | 50.0 | 4.9 | 242 | 49.0 | Y | Y | N | N | 109,731 | 29,876 | 7,468 | 129,405 | 15% | 18% | 105,286 | 4.0 |
| MEX | 1.0 | 142 | 142.0 | 1.0 | 142 | 142.0 | Y | Y | N | N | 79,441 | 16,156 | 8,538 | 127,729 | 15% | 18% | 104,245 | 2.0 |
| MHT | 4.0 | 428 | 106.5 | - | - | - | Y | N | Y | Y | 332,612 | - | - | 332,612 | 15% | 18% | 272,743 | 4.0 |
| MIA | 2.0 | 279 | 139.6 | 10.3 | 1,454 | 141.4 | Y | Y | N | N | 278,734 | 181,550 | 45,388 | 505,672 | 15% | 18% | 414,651 | 4.0 |
| MKE | 10.9 | 591 | 62.5 | 3.1 | 177 | 56.4 | Y | Y | N | Y | 321,410 | 2,340 | 585 | 324,335 | 20% | 24% | 246,495 | 10.9 |
| MLI | 6.7 | 236 | 50.0 | 3.9 | 189 | 48.9 | Y | Y | N | Y | 172,964 | 260 | 65 | 173,289 | 20% | 24% | 135,800 | 6.7 |
| MSN | 10.0 | 676 | 67.6 | 6.7 | 235 | 49.0 | Y | Y | N | Y | 934,738 | 4,460 | 1,115 | 940,313 | 20% | 24% | 735,638 | 10.0 |
| MSP | 10.0 | 1,439 | 143.9 | 6.4 | 1,008 | 116.6 | Y | Y | N | N | 625,212 | 85,220 | 23,805 | 694,725 | 15% | 18% | 561,482 | 10.0 |
| MSY | 5.0 | 487 | 97.4 | 2.9 | 388 | 128.0 | Y | Y | N | Y | 238,089 | 101,600 | 25,255 | 364,974 | 20% | 24% | 277,350 | 5.0 |
| MTJ | - | - | - | 0.1 | 18 | 128.0 | N | Y | N | Y | - | 1,200 | 300 | 1,500 | 20% | 24% | 1,140 | 0.1 |
| MYR | 2.0 | 100 | 50.0 | - | - | - | Y | N | N | N | - | - | - | - | 15% | 18% | - | 2.0 |
| NRT | 2.0 | 621 | 310.5 | 1.0 | 223 | 223.0 | Y | Y | N | N | 357,429 | 19,045 | 4,761 | 381,234 | 15% | 18% | 312,812 | 2.0 |
| OAK | 2.0 | 331 | 165.6 | - | - | - | Y | N | Y | Y | 301,016 | - | - | 301,016 | 15% | 18% | 248,882 | 3.0 |
| OGG | 1.0 | 274 | 274.0 | 1.0 | 210 | 210.0 | Y | Y | N | Y | - | 26,895 | 6,948 | 33,238 | 20% | 24% | 25,261 | 2.0 |
| OKC | 4.0 | 200 | 50.0 | 5.9 | 179 | 64.8 | Y | Y | N | Y | 109,113 | 42,120 | 10,530 | 161,763 | 20% | 24% | 132,946 | 5.0 |
| OMA | 8.0 | 589 | 116.3 | 4.9 | 290 | 59.6 | Y | Y | Y | Y | 375,460 | 22,250 | 5,563 | 403,213 | 15% | 18% | 330,634 | 8.0 |
| ONT | 4.1 | 285 | 69.6 | 3.1 | 138 | 44.0 | Y | Y | Y | Y | 137,236 | 28,460 | 7,123 | 172,588 | 15% | 18% | 141,726 | 4.0 |
| PBI | 1.1 | 250 | 218.0 | 2.0 | 258 | 128.0 | Y | Y | N | Y | 118,250 | 33,030 | 8,258 | 157,538 | 20% | 24% | 119,728 | 2.0 |
| PDX | 5.0 | 707 | 141.4 | 1.9 | 240 | 128.0 | Y | Y | N | Y | 566,048 | 45,060 | 11,265 | 643,173 | 20% | 24% | 489,911 | 5.0 |
| PEK | 1.0 | 274 | 274.0 | - | - | - | Y | N | N | Y | 107,833 | - | - | 107,833 | 20% | 24% | 81,953 | 1.0 |
| PHL | 7.7 | 1,113 | 144.3 | 7.4 | 956 | 129.0 | Y | Y | Y | N | 610,967 | 194,420 | 48,105 | 735,170 | 10% | 12% | 639,028 | 5.0 |
| PHX | 6.0 | 900 | 150.0 | 4.9 | 627 | 128.0 | Y | Y | Y | N | 483,654 | 236,812 | 58,653 | 747,117 | 10% | 12% | 657,463 | 6.0 |
| PIA | 4.0 | 200 | 50.0 | 6.0 | 394 | 65.6 | Y | Y | N | Y | 72,124 | 5,200 | 1,300 | 78,624 | 20% | 24% | 59,792 | 4.0 |
| PIT | 6.0 | 756 | 126.0 | 5.9 | 394 | 66.5 | Y | Y | Y | N | 327,174 | 46,860 | 11,665 | 386,227 | 10% | 12% | 313,676 | 6.0 |
| PSP | 1.0 | 120 | 120.0 | 2.0 | 380 | 128.0 | Y | Y | N | Y | 78 | 46,380 | 11,595 | 58,053 | 20% | 24% | 44,138 | 1.0 |
| PUJ | 0.8 | 81 | 142.0 | - | - | - | Y | N | N | Y | - | - | - | - | 20% | 24% | - | 0.8 |
| PVD | 4.0 | 508 | 126.4 | 2.9 | 388 | 129.0 | Y | Y | Y | Y | 359,418 | 69,660 | 22,373 | 485,481 | 15% | 18% | 394,974 | 6.0 |
| PVG | 1.0 | 274 | 274.0 | - | - | - | Y | N | N | Y | 268 | - | - | 268 | 20% | 24% | 204 | 1.0 |
| PVR | - | - | - | 1.4 | 184 | 129.0 | N | Y | N | Y | - | 7,056 | 1,764 | 8,819 | 20% | 24% | 6,702 | 1.4 |
| PWM | 3.0 | 150 | 50.0 | - | - | - | Y | N | N | Y | 104,518 | 9,880 | 2,468 | 116,843 | 20% | 24% | 89,601 | 3.0 |
| RDU | 6.0 | 431 | 71.8 | 4.9 | 627 | 128.0 | Y | Y | Y | Y | 233,881 | 132,800 | 33,205 | 400,086 | 15% | 18% | 326,005 | 6.0 |
| RIC | 8.0 | 429 | 71.5 | 5.9 | 262 | 44.4 | Y | Y | N | Y | 197,327 | 27,510 | 6,878 | 231,715 | 20% | 24% | 176,103 | 8.0 |
| RNO | - | - | - | 2.0 | 378 | 188.5 | N | Y | N | Y | - | 55,730 | 13,933 | 69,663 | 20% | 24% | 52,944 | 2.0 |
| ROA | 3.0 | 150 | 50.0 | - | - | - | Y | N | N | Y | 75,624 | - | - | 75,624 | 20% | 24% | 57,474 | 3.0 |
| ROC | 8.0 | 555 | 92.5 | 5.0 | 245 | 49.0 | Y | Y | N | Y | 247,817 | 33,360 | 8,340 | 289,693 | 20% | 24% | 220,098 | 8.0 |
| RST | - | - | - | 5.7 | 284 | 49.7 | N | Y | N | Y | - | 17,805 | 4,451 | 22,006 | 20% | 24% | 16,725 | 5.7 |
| RSW | 2.1 | 469 | 219.0 | 3.0 | 387 | 129.0 | Y | Y | N | N | 188,561 | 21,066 | 5,283 | 214,914 | 15% | 18% | 176,147 | 2.1 |
| SAN | 8.0 | 994 | 149.1 | 5.9 | 769 | 131.2 | Y | Y | Y | Y | 516,957 | 136,405 | 34,600 | 689,957 | 15% | 18% | 565,765 | 7.0 |

## ANALYSIS OF UNITED'S REACTION TO AMERICAN'S FAILURE AT O'HARE

Exhibit F-4
Page 3 of 6

| COLUMN | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Status Quo Capacity[1] | | | | | | | | | | | | | | | | | Post-UA Capacity |
| ORD to | UA Daily ORD Depts | UA Daily Outbound Seats | UA Avg Aircraft Size | AA Daily ORD Depts | AA Daily Outbound Seats | AA Avg Aircraft Size | UA Serve at ORD? | AA Serve at ORD? | WN Serve at MDW? | Post-AA Monopoly for UA at ORD? | Total UA Onboard Passengers[1] | Total AA Single Coupon Passengers[2] | Incremental AA Connecting Traffic (80/20)[3] | Total Base Onboard Traffic[4] | Fare Increase | Traffic Decrease (@ $\eta_t$=-1.2) | Total Post-AA Onboard Traffic[5] | UA Daily ORD Depts |
| SAT | 3.0 | 345 | 114.9 | 2.9 | 366 | 126.0 | Y | Y | N | Y | 193,144 | 92,360 | 23,090 | 308,594 | 20% | 24% | 234,531 | 4.0 |
| SAV | 3.0 | 150 | 50.0 | - | - | - | Y | N | N | Y | 59,583 | | - | 59,583 | 20% | 24% | 75,893 | 3.0 |
| SBN | 6.0 | 348 | 58.0 | - | - | - | Y | N | N | Y | 151,609 | | - | 151,609 | 20% | 24% | 115,223 | 6.0 |
| SDF | 6.0 | 338 | 56.3 | 5.0 | 360 | 36.0 | Y | Y | Y | Y | 171,468 | 25,470 | 7,118 | 203,076 | 15% | 18% | 169,802 | 6.0 |
| SEA | 8.0 | 1,344 | 224.0 | 3.0 | 408 | 136.0 | Y | Y | Y | N | 941,210 | 112,865 | 26,495 | 980,885 | 10% | 12% | 865,643 | 8.0 |
| SFO | 10.0 | 2,012 | 201.2 | 5.9 | 896 | 151.9 | Y | Y | N | Y | 1,411,385 | 190,865 | 47,720 | 1,649,985 | 20% | 24% | 1,253,969 | 10.0 |
| SGF | 4.0 | 228 | 57.0 | 5.0 | 236 | 47.2 | Y | Y | N | Y | 132,916 | 2,760 | 895 | 138,360 | 20% | 24% | 103,556 | 4.0 |
| SJC | 3.0 | 380 | 126.7 | 3.9 | 522 | 135.3 | Y | Y | N | Y | 331,661 | 105,516 | 26,403 | 463,574 | 20% | 24% | 352,592 | 5.0 |
| SJO | - | - | - | 1.4 | 184 | 128.0 | N | Y | N | Y | | 17,766 | 4,407 | 22,173 | 20% | 24% | 16,821 | 1.4 |
| SJU | 0.1 | 31 | 219.0 | - | - | - | Y | N | N | Y | 131 | | - | 131 | 20% | 24% | 100 | 0.1 |
| SJU | 1.3 | 280 | 201.9 | 4.0 | 752 | 188.0 | Y | Y | N | Y | 107,971 | 110,040 | 27,510 | 245,521 | 20% | 24% | 186,596 | 2.0 |
| SLC | 4.0 | 423 | 106.3 | 2.0 | 258 | 129.0 | Y | Y | Y | N | 248,662 | 38,138 | 8,533 | 270,883 | 15% | 12% | 239,210 | 4.0 |
| SMF | 4.0 | 505 | 126.3 | - | - | - | Y | N | N | Y | 352,714 | | - | 352,714 | 20% | 24% | 298,223 | 4.0 |
| SNA | 4.9 | 853 | 175.8 | 4.0 | 568 | 142.0 | Y | Y | N | Y | 468,460 | 148,659 | 37,213 | 654,332 | 20% | 24% | 482,597 | 4.9 |
| SPI | 4.9 | 243 | 50.0 | - | - | - | Y | N | N | Y | 63,692 | | - | 63,692 | 20% | 24% | 71,197 | 4.9 |
| STL | 9.4 | 685 | 72.7 | 10.3 | 1,305 | 126.8 | Y | Y | Y | Y | 344,651 | 277,480 | 69,370 | 691,651 | 15% | 18% | 587,154 | 8.4 |
| STT | 0.3 | 41 | 142.0 | - | - | - | Y | N | N | Y | 7,797 | | - | 7,797 | 20% | 24% | 5,828 | 0.3 |
| SWF | - | - | - | 3.0 | 152 | 50.0 | N | Y | N | Y | | 21,110 | 5,278 | 26,388 | 20% | 24% | 20,055 | 3.0 |
| SXM | 0.1 | 31 | 219.0 | - | - | - | Y | N | N | Y | | | - | - | 20% | 24% | - | 0.1 |
| SYR | 6.0 | 340 | 56.7 | 4.9 | 238 | 48.8 | Y | Y | N | Y | 172,202 | 34,810 | 8,703 | 215,715 | 20% | 24% | 164,703 | 6.0 |
| TOL | - | - | - | 3.8 | 184 | 47.8 | N | Y | N | Y | - | 21,160 | 5,290 | 26,450 | 20% | 24% | 20,182 | 3.8 |
| TPA | 9.0 | 158 | 150.0 | 2.9 | 369 | 126.0 | Y | Y | Y | N | 358,016 | 84,770 | 21,193 | 465,980 | 15% | 12% | 409,976 | 8.0 |
| TUL | 4.0 | 200 | 50.0 | 3.9 | 488 | 125.0 | Y | Y | N | Y | 88,234 | 62,240 | 15,610 | 166,284 | 20% | 24% | 125,616 | 4.0 |
| TUS | 2.0 | 233 | 116.5 | 3.9 | 488 | 125.0 | Y | Y | N | Y | 32,397 | 90,576 | 22,643 | 145,616 | 20% | 24% | 110,863 | 2.0 |
| TVC | 3.0 | 150 | 50.0 | 2.1 | 101 | 50.0 | Y | Y | N | Y | 81,411 | 9,898 | 2,488 | 93,699 | 20% | 24% | 71,211 | 3.0 |
| TYS | 4.0 | 200 | 50.0 | 4.0 | 197 | 49.1 | Y | Y | N | Y | 94,996 | 28,925 | 7,230 | 131,149 | 20% | 24% | 99,666 | 4.0 |
| IAD | 2.7 | 135 | 50.0 | 6.4 | 435 | 68.1 | Y | Y | N | Y | - | 36,025 | 9,005 | 45,025 | 20% | 24% | 34,219 | 2.7 |
| YEG | 2.0 | 134 | 67.0 | - | - | - | Y | N | N | Y | 317 | | - | 317 | 20% | 24% | 241 | 2.0 |
| YOW | 2.7 | 135 | 50.0 | 3.0 | 141 | 47.1 | Y | Y | N | N | - | 12,419 | 3,105 | 15,524 | 15% | 18% | 12,728 | 3.7 |
| YUL | 3.0 | 150 | 50.0 | 4.0 | 398 | 99.5 | Y | Y | N | N | 49,716 | 47,202 | 11,801 | 108,722 | 15% | 18% | 89,162 | 4.0 |
| YVR | 3.0 | 410 | 137.0 | - | - | - | Y | N | N | Y | 213,737 | 7,164 | 1,791 | 222,692 | 20% | 24% | 169,246 | 3.0 |
| YWG | 4.0 | 200 | 50.0 | - | - | - | Y | N | N | Y | 33,988 | - | - | 33,988 | 20% | 24% | 25,376 | 4.0 |
| YYC | 3.0 | 229 | 110.2 | 1.0 | 128 | 128.0 | Y | Y | N | Y | 84,241 | 23,739 | 5,933 | 63,904 | 20% | 24% | 63,767 | 3.0 |
| YYZ | 7.0 | 874 | 124.8 | 6.8 | 768 | 128.0 | Y | Y | N | N | 349,345 | 88,339 | 22,085 | 459,644 | 15% | 18% | 376,908 | 8.0 |
| *Total* | 818.0 | 63,884 | 102.8 | 511.8 | 50,115 | 98.1 | | | | | 33,888,851 | 8,898,971 | 2,117,233 | 45,288,294 | | | 34,682,622 | 718.6 |
| *Total Total* | 224,940.0 | 23,347,016 | | 190,827.8 | 18,511,076 | | | | | | | | | | | | | 202,659.4 |

1/ Source: Official Airline Guide, schedules for the week of March 7-13, 2005 (February 2005 Max Edition)
2/ Source: U.S. DOT Origin & Destination Survey and T-100 data for year ended December 31, 2003 via Data Base Products, Inc.
3/ Column M = Column L / 4
4/ Column N = Column K + Column L + Column M
5/ Column Q = Column N x (1 - Column P)
6/ Column AJ = Column R x 365 x 2
7/ Column AJ = Column Q / 2

## ANALYSIS OF UNITED'S REACTION TO AMERICAN'S FAILURE AT O'HARE

Exhibit F-4
Page 4 of 8

| COLUMN | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UA Daily ORD Departures by Aircraft Type | | | | | | | | | | | | | | | | | |
| ORD to | 146 88 Seats | 319 120 Seats | 320 142 Seats | 325 150 Seats | 733 122 Seats | 735 107 Seats | 744 347 Seats | 752 182 Seats | 763 214 Seats | 777 274 Seats | CR7 67 Seats | CRJ 50 Seats | E70 70 Seats | ER4 50 Seats | UA Avg Aircraft Size | UA Daily Outbound Seats | UA Annual Trips[2] | UA Annual Enplanements[3] |
| ABE | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | - | 50.0 | 200 | 2,920 | 34,225 |
| ABQ | - | - | - | - | - | - | - | - | - | - | - | - | 2.0 | - | 70.0 | 140 | 1,460 | 28,092 |
| ACA | - | 0.7 | - | - | - | - | - | - | - | - | - | - | - | - | 120.0 | 58 | 521 | 2,075 |
| ALB | 1.0 | - | - | - | 1.3 | 0.7 | - | - | - | - | - | 2.8 | - | 0.1 | 72.5 | 471 | 4,380 | 102,100 |
| AMS | - | - | - | - | - | - | - | - | 1.0 | - | - | - | - | - | 214.0 | 214 | 730 | 39,383 |
| ATL | - | 1.0 | 1.8 | - | 0.4 | 1.1 | - | 1.0 | - | - | 1.7 | - | - | - | 119.8 | 815 | 5,806 | 225,403 |
| ATW | 4.3 | - | - | - | - | - | - | - | - | - | - | 8.8 | - | - | 82.3 | 470 | 4,171 | 87,786 |
| AUA | - | - | 0.9 | - | - | - | - | 0.1 | - | - | - | - | - | - | 147.7 | 148 | 730 | 4,592 |
| AUS | - | - | - | - | - | 4.0 | - | - | - | - | 1.0 | - | - | - | 99.0 | 495 | 3,650 | 120,230 |
| AVP | - | - | - | - | - | - | - | - | - | - | - | 2.0 | - | - | 50.0 | 100 | 1,460 | 20,715 |
| AZO | - | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 50.0 | 150 | 2,190 | 25,193 |
| BDL | - | - | - | - | 1.5 | 1.0 | - | - | - | - | - | - | - | - | 120.1 | 961 | 5,840 | 249,514 |
| BHM | - | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 50.0 | 150 | 2,190 | 29,555 |
| BMI | - | - | - | - | - | - | - | - | - | - | - | 3.8 | - | - | 50.0 | 190 | 2,816 | 27,408 |
| BNA | - | - | - | - | - | - | - | - | - | - | 7.0 | - | - | - | 97.0 | 679 | 5,110 | 125,892 |
| BOI | - | - | - | - | 0.5 | 0.1 | - | - | - | - | - | - | - | - | 119.5 | 120 | 730 | 26,850 |
| BOS | - | 4.0 | - | - | 4.0 | - | - | 3.0 | - | - | - | - | - | - | 137.6 | 1,514 | 8,030 | 425,087 |
| BRU | - | - | - | - | - | - | - | - | 1.0 | - | - | - | - | - | 214.0 | 214 | 730 | 10,588 |
| BTV | - | - | - | - | - | 1.0 | - | - | - | - | - | 1.0 | - | 2.0 | 84.3 | 257 | 2,920 | 56,342 |
| BUF | 1.0 | - | - | - | 0.1 | 0.9 | - | - | - | - | - | 1.0 | 2.0 | 1.0 | 72.9 | 437 | 4,380 | 132,715 |
| BWI | - | 3.0 | 4.0 | - | - | - | - | 1.0 | - | - | - | - | - | - | 136.8 | 1,110 | 5,840 | 308,707 |
| CAE | - | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 50.0 | 150 | 2,190 | 33,954 |
| CAK | - | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 50.0 | 150 | 2,190 | 30,024 |
| CDG | - | - | - | - | - | - | - | - | 2.0 | - | - | - | - | - | 214.0 | 428 | 1,460 | 66,486 |
| CHA | - | - | - | - | - | - | - | - | - | - | - | 2.9 | - | - | 50.0 | 143 | 2,086 | 7,144 |
| CHS | - | - | - | - | - | - | - | - | - | - | - | 4.1 | - | - | 50.0 | 207 | 3,024 | 39,095 |
| CID | 3.0 | - | - | - | - | - | - | - | - | - | 2.1 | 1.9 | - | - | 89.5 | 479 | 5,110 | 97,797 |
| CLE | - | 8.9 | 2.1 | - | - | 1.1 | - | 1.8 | - | - | 3.3 | - | - | - | 107.4 | 752 | 5,110 | 163,834 |
| CLT | - | 1.0 | - | - | 2.6 | 5.4 | - | - | - | - | 1.0 | 1.0 | - | - | 99.4 | 597 | 4,380 | 129,198 |
| CMH | - | - | 2.0 | - | 2.0 | - | - | - | - | - | - | - | 4.0 | - | 101.0 | 608 | 5,840 | 213,075 |
| CNS | - | - | - | - | - | - | - | - | - | - | - | 8.8 | - | - | 50.0 | 343 | 5,006 | 2,850 |
| COS | - | - | - | - | - | - | - | - | - | - | 3.0 | 1.0 | - | - | 62.8 | 251 | 2,920 | 57,548 |
| CPW | - | - | - | - | - | - | - | - | - | - | - | 2.0 | - | - | 50.0 | 100 | 1,460 | 16,214 |
| CUN | - | - | - | - | - | - | - | 2.4 | - | - | - | - | - | - | 102.0 | 442 | 1,775 | 30,090 |
| CVG | 1.0 | 0.6 | - | - | - | 0.1 | - | - | - | - | 1.0 | 3.0 | - | - | 70.5 | 423 | 4,380 | 93,874 |
| CWA | - | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 50.0 | 150 | 2,190 | 26,660 |
| CZM | - | - | 0.4 | - | - | - | - | - | - | - | - | - | - | - | 142.0 | 61 | 313 | - |
| DAY | 1.0 | 0.9 | - | - | - | 0.1 | - | - | - | - | 2.8 | 1.1 | - | - | 75.8 | 455 | 4,380 | 111,815 |
| DBQ | - | - | - | - | - | - | - | - | - | - | - | 3.7 | - | - | 50.0 | 186 | 2,111 | 1,991 |
| DCA | - | 8.9 | 1.0 | - | 4.7 | 2.1 | - | 1.1 | - | - | - | - | - | - | 125.8 | 1,617 | 8,396 | 394,805 |
| DEN | - | - | - | - | 1.7 | - | - | 8.3 | 2.0 | 2.0 | - | - | - | - | 194.2 | 2,332 | 8,760 | 648,486 |
| DFW | - | - | 3.0 | - | - | - | - | - | - | - | - | - | - | - | 142.0 | 1,278 | 8,570 | 342,600 |
| DSM | - | - | - | - | 0.3 | - | - | 1.7 | - | - | 3.6 | 2.0 | 1.9 | - | 90.0 | 651 | 5,110 | 131,272 |
| DTW | 1.0 | 0.1 | - | - | 8.9 | - | - | 3.0 | - | - | 1.0 | 1.0 | - | - | 124.7 | 872 | 5,110 | 248,871 |
| EGE | - | - | - | - | - | - | - | 1.1 | - | - | - | - | - | - | 192.0 | 208 | 304 | 7,387 |
| ELP | - | 2.0 | - | - | - | - | - | - | - | - | - | - | - | - | 120.0 | 240 | 1,460 | 26,268 |
| EVV | - | - | - | - | - | - | - | - | - | - | - | 5.7 | - | - | 50.0 | 286 | 4,171 | 10,340 |
| EWR | - | 1.3 | 8.3 | - | 6.1 | - | - | 0.7 | - | - | - | - | - | - | 126.8 | 1,069 | 8,153 | 305,994 |
| EZE | - | - | - | - | - | - | - | - | 1.0 | - | - | - | - | - | 214.0 | 214 | 730 | - |
| FAR | - | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 50.0 | 150 | 2,190 | 25,716 |
| FCO | - | - | - | - | - | - | - | - | 0.7 | - | - | - | - | - | 214.0 | 153 | 521 | 9,832 |
| FLL | - | - | - | 5.0 | - | - | - | - | - | - | - | - | - | - | 150.0 | 750 | 3,650 | 207,157 |
| FRA | - | - | - | - | - | - | - | - | - | 3.0 | - | - | - | - | 274.0 | 822 | 2,190 | 126,408 |
| FSD | - | - | - | - | - | - | - | - | - | - | - | 5.0 | - | - | 50.0 | 250 | 3,650 | 39,484 |
| FWA | - | - | - | - | - | - | - | - | - | - | - | 5.0 | - | - | 50.0 | 250 | 3,650 | 33,450 |
| GEG | - | - | - | - | 1.0 | - | - | - | - | - | - | - | - | - | 122.0 | 122 | 730 | 27,345 |
| GRB | - | - | - | - | - | - | - | - | - | - | - | 8.0 | - | - | 50.0 | 300 | 4,380 | 48,161 |
| GRR | 2.7 | - | - | - | 1.0 | - | - | - | - | - | 0.1 | - | 2.1 | - | 86.7 | 520 | 4,380 | 130,087 |
| GRU | - | - | - | - | - | - | - | - | 1.0 | - | - | - | - | - | 214.0 | 214 | 730 | 39,879 |
| GSO | - | - | - | - | - | 1.4 | - | - | - | - | - | 2.3 | - | - | 74.4 | 298 | 2,920 | 59,404 |
| GSP | - | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 50.0 | 150 | 2,190 | 37,699 |
| HON | - | - | 1.0 | - | - | - | - | - | - | - | - | - | - | - | 142.0 | 142 | 730 | 4,804 |
| HKG | - | - | - | - | - | - | 1.0 | - | - | - | - | - | - | - | 347.0 | 347 | 730 | 49,820 |

## ANALYSIS OF UNITED'S REACTION TO AMERICAN'S FAILURE AT O'HARE

Exhibit F-4
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| COLUMN | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UA Daily ORD Departures by Aircraft Type | | | | | | | | | | | | | | | | | |
| ORD to | 146 88 Seats | 319 120 Seats | 320 142 Seats | 325 150 Seats | 733 122 Seats | 735 107 Seats | 744 347 Seats | 752 182 Seats | 763 214 Seats | 777 274 Seats | CR7 67 Seats | CRJ 50 Seats | E70 70 Seats | ER4 50 Seats | UA Avg Aircraft Size | UA Daily Outbound Seats | UA Annual Trips[2] | UA Annual Enplanements[3] |
| HNL | - | - | - | - | - | - | - | - | - | 2.0 | - | - | - | - | 274.0 | 548 | 1,460 | 19,480 |
| HPN | - | - | - | - | - | - | - | - | - | - | - | 2.0 | 4.0 | - | 83.3 | 300 | 4,380 | 99,503 |
| HSV | - | - | - | - | - | - | - | - | - | - | - | 1.0 | - | - | 50.0 | 50 | 1,356 | 4,936 |
| IAD | - | 8.6 | 2.8 | - | 2.4 | 1.9 | - | 0.3 | 1.0 | - | - | - | - | - | 137.1 | 1,195 | 8,361 | 263,518 |
| IAH | - | 0.4 | - | - | 0.8 | 1.1 | - | - | - | - | - | - | 2.0 | - | 95.9 | 479 | 3,850 | 139,110 |
| ICT | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | - | 50.0 | 200 | 3,920 | 56,538 |
| IND | - | 0.1 | - | - | 0.1 | 0.1 | - | 0.1 | - | - | - | 3.7 | 4.9 | 1.0 | 76.5 | 756 | 7,631 | 201,192 |
| JAC | - | - | - | - | - | - | - | 1.0 | - | - | - | - | - | - | 162.0 | 162 | 730 | 7,181 |
| JAX | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | - | 50.0 | 200 | 3,920 | 50,104 |
| KIX | - | - | - | - | - | - | - | - | - | 1.0 | - | - | - | - | 274.0 | 274 | 730 | - |
| LAN | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | - | 50.0 | 200 | 3,920 | 33,709 |
| LAS | - | - | - | 10.0 | - | - | - | - | - | - | - | - | - | - | 150.0 | 1,500 | 7,300 | 426,536 |
| LAX | - | - | - | - | - | - | 1.0 | 9.0 | 5.0 | - | - | - | - | - | 208.2 | 2,973 | 10,220 | 921,557 |
| LEX | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | - | 50.0 | 200 | 2,920 | 31,794 |
| LGA | - | - | 12.0 | - | - | - | - | 3.0 | - | - | - | - | - | - | 150.0 | 2,250 | 10,950 | 644,576 |
| LHR | - | - | - | - | - | - | - | - | - | 4.0 | - | - | - | - | 274.0 | 1,096 | 2,920 | 340,105 |
| LIT | - | - | - | - | - | - | - | - | - | - | 5.8 | - | - | - | 87.0 | 392 | 4,226 | 3,234 |
| LNK | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | - | 50.0 | 200 | 2,920 | 40,850 |
| LSE | - | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 50.0 | 150 | 2,190 | 2,722 |
| MAN | - | - | - | - | - | - | - | - | 1.0 | - | - | - | - | - | 214.0 | 214 | 730 | 9,164 |
| MBJ | - | - | 0.3 | - | - | - | - | - | - | - | - | - | - | - | 142.0 | 41 | 208 | - |
| MBS | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | - | 50.0 | 200 | 2,920 | 37,832 |
| MCI | - | 6.0 | - | - | - | 2.0 | - | - | - | - | - | - | - | - | 118.8 | 934 | 5,840 | 253,489 |
| MCO | - | - | - | 4.0 | - | - | - | - | - | - | - | - | - | - | 150.0 | 1,350 | 9,570 | 943,957 |
| MDT | - | - | - | - | 0.1 | 0.9 | - | - | - | - | - | - | - | 4.0 | 81.8 | 309 | 3,850 | 63,053 |
| MEM | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | - | 50.0 | 200 | 2,920 | 52,644 |
| MEX | - | - | 2.0 | - | - | - | - | - | - | - | - | - | - | - | 142.0 | 284 | 1,460 | 52,123 |
| MHT | - | 8.0 | - | - | 1.9 | 0.1 | - | 3.1 | - | - | - | - | - | 1.0 | 105.2 | 421 | 2,920 | 138,271 |
| MIA | - | - | - | - | - | - | - | 4.0 | - | - | - | - | - | - | 182.0 | 728 | 2,920 | 207,325 |
| MKE | 1.0 | - | - | - | - | - | - | - | - | - | - | 3.9 | - | - | 53.5 | 561 | 7,926 | 123,247 |
| MLI | - | - | - | - | - | - | - | - | - | - | - | 4.1 | - | 2.0 | 50.0 | 336 | 4,901 | 87,755 |
| MSN | 3.0 | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 57.8 | 576 | 7,300 | 117,919 |
| MSP | - | 1.1 | 1.7 | - | 3.8 | 2.3 | - | 2.3 | - | - | - | - | - | - | 135.5 | 1,359 | 7,300 | 280,741 |
| MSY | - | - | - | - | - | 5.0 | - | - | - | - | - | - | - | - | 107.0 | 535 | 3,650 | 136,890 |
| MTJ | - | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - | 120.0 | 17 | 104 | 570 |
| MYR | - | - | - | - | - | - | - | - | - | - | - | 2.0 | - | - | 50.0 | 100 | 1,460 | - |
| NRT | - | - | - | - | - | - | 2.0 | - | - | - | - | - | - | - | 347.0 | 694 | 1,460 | 156,306 |
| OAK | - | - | 3.0 | - | - | - | - | - | - | - | - | - | - | - | 142.0 | 426 | 2,190 | 123,441 |
| OGG | - | - | - | - | - | - | - | - | - | 2.0 | - | - | - | - | 274.0 | 548 | 1,460 | 12,830 |
| OKC | - | - | - | - | - | - | - | - | - | - | - | 5.0 | - | - | 50.0 | 250 | 3,650 | 61,470 |
| OMA | 3.1 | 0.7 | - | - | 1.0 | 0.1 | - | 1.0 | - | - | 1.0 | - | - | - | 110.1 | 661 | 4,380 | 165,313 |
| ONT | - | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | 70.0 | 280 | 2,920 | 70,884 |
| PBI | - | 2.0 | - | - | - | - | - | - | - | - | - | - | - | - | 120.0 | 240 | 1,460 | 59,884 |
| PDX | - | - | - | - | - | - | - | 5.0 | - | - | - | - | - | - | 182.0 | 910 | 3,650 | 244,409 |
| PEK | - | - | - | - | - | - | - | - | - | 1.0 | - | - | - | - | 274.0 | 274 | 730 | 40,877 |
| PHL | - | 2.0 | 1.0 | - | 3.0 | - | - | 2.0 | - | - | - | - | - | - | 139.0 | 1,112 | 5,840 | 319,515 |
| PHX | - | - | - | 6.0 | - | - | - | - | - | - | - | - | - | - | 150.0 | 1,200 | 5,840 | 326,731 |
| PIA | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | - | 50.0 | 200 | 2,920 | 29,896 |
| PIT | 1.0 | 1.9 | 0.1 | - | 0.8 | 1.7 | - | 0.9 | - | - | - | - | - | - | 120.6 | 724 | 4,380 | 156,786 |
| PSP | - | 1.0 | - | - | - | - | - | - | - | - | - | - | - | - | 120.0 | 120 | 730 | 22,865 |
| PUJ | - | - | 0.9 | - | - | - | - | - | - | - | - | - | - | - | 142.0 | 61 | 417 | - |
| PVD | - | - | - | - | 6.0 | - | - | - | - | - | - | - | - | - | 122.0 | 732 | 4,380 | 192,487 |
| PVG | - | - | - | - | - | - | - | - | - | 1.0 | - | - | - | - | 274.0 | 274 | 730 | 102 |
| PVR | - | 1.4 | - | - | - | - | - | - | - | - | - | - | - | - | 120.0 | 171 | 1,043 | 3,351 |
| PWM | - | - | - | - | - | - | - | - | - | - | - | 1.0 | - | 2.0 | 50.0 | 150 | 2,190 | 44,400 |
| RDU | 3.0 | - | - | - | 3.0 | - | - | - | - | - | - | - | - | - | 105.0 | 630 | 4,380 | 164,002 |
| RIC | - | - | - | - | 1.0 | 1.0 | - | - | - | - | - | - | - | 4.0 | 71.5 | 429 | 4,380 | 88,052 |
| RNO | - | - | - | - | - | - | - | 2.0 | - | - | - | - | - | - | 182.0 | 364 | 1,460 | 26,472 |
| RQA | - | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 50.0 | 150 | 2,190 | 28,737 |
| ROC | 2.0 | 1.1 | 0.8 | - | - | - | - | - | - | - | - | 1.0 | 1.0 | - | 92.5 | 555 | 4,380 | 110,043 |
| RST | - | - | - | - | - | - | - | - | - | - | - | 5.7 | - | - | 50.0 | 286 | 4,171 | 9,360 |
| RSW | - | - | - | - | - | - | - | 2.1 | - | - | - | - | - | - | 182.0 | 390 | 1,564 | 88,074 |
| SAN | - | - | 7.0 | - | - | - | - | - | - | - | - | - | - | - | 142.0 | 994 | 5,110 | 282,892 |

## ANALYSIS OF UNITED'S REACTION TO AMERICAN'S FAILURE AT O'HARE

Exhibit F-4
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| COLUMN | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | AE | AF | AG | AH | AI | AJ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UA Daily ORD Departures by Aircraft Type | | | | | | | | | | | | | | | | | |
| ORD to | 146 88 Seats | 319 120 Seats | 320 142 Seats | 325 150 Seats | 733 122 Seats | 735 107 Seats | 744 347 Seats | 752 182 Seats | 763 214 Seats | 777 274 Seats | CR7 67 Seats | CRJ 50 Seats | E70 70 Seats | ER4 50 Seats | UA Avg Aircraft Size | UA Daily Outbound Seats | UA Annual Trips[2] | UA Annual Enplanements[3] |
| SAT | - | - | - | - | - | 4.0 | - | - | - | - | - | - | - | - | 107.0 | 428 | 2,920 | 117,268 |
| SAV | - | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 50.0 | 150 | 2,190 | 37,842 |
| SBN | 0.1 | - | - | - | - | - | - | - | - | - | - | 1.9 | - | 4.0 | 50.8 | 348 | 5,036 | 57,811 |
| SDF | 1.0 | - | - | - | - | - | - | - | - | - | - | 3.0 | - | 2.0 | 56.3 | 336 | 4,380 | 94,601 |
| SEA | - | - | - | - | - | - | - | 7.0 | - | 1.0 | - | - | - | - | 193.5 | 1,548 | 5,840 | 432,921 |
| SFO | - | - | 4.3 | - | - | - | - | 2.9 | 2.0 | 3.9 | - | - | - | - | 320.9 | 2,206 | 7,300 | 626,984 |
| SGF | 1.7 | - | - | - | - | - | - | - | - | - | - | 3.1 | - | - | 53.4 | 309 | 3,546 | 81,828 |
| SJC | - | - | 6.0 | - | - | - | - | - | - | - | - | - | - | - | 142.0 | 710 | 3,650 | 176,136 |
| SJD | - | 1.4 | - | - | - | - | - | - | - | - | - | - | - | - | 120.0 | 171 | 1,043 | 9,410 |
| SJO | - | - | - | - | - | - | - | 0.1 | - | - | - | - | - | - | 192.0 | 26 | 104 | 50 |
| SJU | - | - | 1.0 | - | - | - | - | 1.0 | - | - | - | - | - | - | 162.0 | 324 | 1,460 | 93,298 |
| SLC | - | - | - | - | 4.0 | - | - | - | - | - | 1.0 | - | - | - | 108.3 | 433 | 2,920 | 119,105 |
| SMF | - | 2.9 | 4.1 | - | - | - | - | - | - | - | - | - | - | - | 126.3 | 505 | 2,920 | 149,511 |
| SNA | - | - | 2.3 | - | - | - | - | 2.8 | - | - | - | - | - | - | 160.6 | 746 | 3,546 | 226,398 |
| SPI | - | - | - | - | - | - | - | - | - | - | - | 4.9 | - | - | 50.0 | 243 | 3,546 | 35,598 |
| STL | - | 2.0 | - | - | - | 7.4 | - | - | - | - | - | - | - | - | 109.4 | 1,032 | 8,393 | 283,577 |
| STT | - | - | 0.3 | - | - | - | - | - | - | - | - | - | - | - | 142.0 | 43 | 208 | 2,863 |
| SWF | - | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 50.0 | 150 | 2,190 | 10,827 |
| SXM | - | - | - | - | - | - | - | 0.1 | - | - | - | - | - | - | 192.0 | 26 | 104 | - |
| SYR | - | - | - | - | - | - | - | - | - | - | - | 3.1 | 2.0 | 1.9 | 58.7 | 340 | 4,380 | 82,352 |
| TOL | - | - | - | - | - | - | - | - | - | - | - | 3.8 | - | - | 50.0 | 192 | 2,616 | 10,051 |
| TPA | - | - | - | 6.0 | - | - | - | - | - | - | - | - | - | - | 150.0 | 750 | 3,650 | 204,988 |
| TUL | - | - | - | - | - | - | - | - | - | - | 2.0 | 2.0 | - | - | 58.5 | 234 | 2,920 | 62,808 |
| TUS | - | 0.1 | - | - | 4.8 | 1.0 | - | - | - | - | - | - | - | - | 119.9 | 272 | 1,460 | 55,332 |
| TVC | - | - | - | - | - | - | - | - | - | - | - | 3.0 | - | - | 50.0 | 150 | 2,190 | 35,805 |
| TYS | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | - | 50.0 | 200 | 2,920 | 49,830 |
| VNA | - | - | - | - | - | - | - | - | - | - | - | 2.7 | - | - | 50.0 | 136 | 1,981 | 17,110 |
| YEG | - | - | - | - | - | - | - | - | - | - | 2.0 | - | - | - | 67.0 | 134 | 1,460 | 120 |
| YGW | - | - | - | - | - | - | - | - | - | - | - | 3.7 | - | - | 50.0 | 185 | 2,701 | 8,365 |
| YUL | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | - | 50.0 | 200 | 2,920 | 44,576 |
| YVR | - | 1.6 | 4.1 | - | - | - | - | 0.3 | - | - | - | - | - | - | 134.3 | 403 | 2,190 | 84,623 |
| YWG | - | - | - | - | - | - | - | - | - | - | - | 4.0 | - | - | 50.0 | 200 | 2,920 | 12,846 |
| YYC | - | - | - | - | 1.4 | 1.6 | - | - | - | - | - | - | - | - | 113.0 | 329 | 2,190 | 31,993 |
| YYZ | - | 3.4 | 0.1 | - | 0.8 | 3.1 | - | 0.7 | - | - | - | - | - | - | 120.5 | 964 | 5,840 | 189,454 |
| *Total* | 26.8 | 50.0 | 63.7 | 37.0 | 62.8 | 48.5 | 4.0 | 30.3 | 17.7 | 26.0 | 39.0 | 222.3 | 24.0 | 26.9 | 106.6 | 76,098 | 525,277 | 11,346,011 |
| *Annual Total* | | | | | | | | | | | | | | | | 27,502,136 | | |

050415_01

AReCO

**ALLIANCE OF RESIDENTS CONCERNING O'HARE, Inc.** "a grass roots organization"

P.O. Box 1702 ❍ Arlington Heights, IL 60006-1702 ❍ Fax: 847/506-0202 ❍ Tel: 847/506-0670 ❍ www.areco.org

April 15, 2005

Via email and regular mail
Mr. Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, IL 60018
Via email: < michael.w.macmullen@faa.gov >

RECEIVED APR 15 2005 BY

Dear Mr. MacMullen:

We have received a letter from the Illinois Environmental Protection Agency (Renee Cipriano, 4/6/05), responding to our letter (attached) requesting clarification of substantial differences in airport emission inventories. IEPA basically indicates that their numbers are wrong and the inventory numbers in the O'Hare OMP DEIS are accurate and correct.

The reasons provided for these sometimes huge differences* in emissions calculations is:

> "…primarily from assumptions of time-in-mode (taxi, idle, takeoff, and climbout) and in the emission factors for each. Also, the 1999 Periodic Emissions Inventory assumed a significantly higher level of diesel-powered ground service equipment than the Draft EIS."

**For example, a reduction of VOC's by a factor of 4.3:1 i.e. DEIS VOC's < 1/4 Illinois original estimates.*

As a result of the IEPA conclusion, we are faced with the dual impact of not only the extant issue of correct emission inventories for the OMP but also the use of all of these inventories (created by non-Illinois entities) in critical subsequent Illinois SIP's:

> "The Illinois EPA will incorporate these updated estimates in its planning to attain the 8-hour ozone and fine particulate matter standards." [Cipriano letter.]

Since the DEIS (and the supporting DEIS references distributed to local libraries on 25 DVD's) do not supply information details on the calculations of the emissions from the aircraft and GSE sub-groups (other than totals), AReCO is unable to audit the assumptions, emission factors and calculations that result in the DEIS inventory totals.

> "There were also significant differences that resulted from input assumptions and changes to the Federal Aviation Administration's Emissions and Dispersion Modeling System (EDMS)." [Cipriano letter.]

In consideration of these very significant issues, AReCO therefore requests:

(1) That you provide us with the relevant information and data needed to verify or dispute the FAA's third-party consultant's calculations of Criteria Emissions for the Aircraft and GSE sub-groups of emission sources. This should not be difficult nor an excessive demand for you, as it is our understanding that EDMS 4.12 provides substantial reporting capabilities in these regards.

Proud Recipients -- *1995 Environmental Merit Award, Arlington Heights, IL 1996, '99 Illinois State Senate Recognition*

***Protecting the Health and Safety of Millions of O'Hare Affected Citizens***

| Comment | Response |
|---|---|
| 1 | The FAA responded to this letter from AReCO on April 25, 2005. The FAA letter to AReCO is provided in its entirety beginning on page U.4-825. |

| Comment | Response |
|---|---|
| 1 | Please see the response to this comment on the previous page. |

AReCO/MAAP
4/15/05
p. 2

This should take the form of, for the 2002 Base case, 2018 "Do Nothing" and 2018 Alternative C cases:
* Aircraft types, number of operations and emission factors used, for each of the four modes, along with the assumed time-in-modes (TIM), and net emissions, for each of the Criteria emission types.
*Sufficient information on key calculation assumptions to understand the subsequent inventory calculations methods and results, for example the association of takeoff/climbout TIM with the assumed mixing layer height used (or other calculation assumptions e.g. if reduced altitude limits were applied), how many active engines were assumed during taxiing (all, one, or?), etc.

2) That you provide the same or similar information to an independent auditor*, qualified to audit this information and draw independent, unbiased opinions as to the methods and results. We believe this is important, considering that (a) AReCO could be considered to be "biased" by some (which we obviously refute beforehand) and (b) AReCO believes that the people of the State of Illinois deserve an independent audit before the IEPA uses these results for critical SIP bases.
**{Environ Corporation or Mostardi Platt Environmental are recommended}*

We request that you provide the requested information to us in electronic form, on CDROM or via email, with data files in a format amenable to import into spread sheets or other data-base applications. Files could be "text files" with tab, space or comma delimiters. Microsoft Word or Acrobat (pdf) formats are acceptable for informational files. The measure of information/data adequacy should be "Can the DEIS summary results for yearly Criteria emissions totals for aircraft and GSE sub-groups be validated with this information/data?" 1

Thank you.

Sincerely,

Jack Saporito
Executive Director
Also for MOTHERS AGAINST AIRPORT POLLUTION

c: Honorable Henry J. Hyde
Honorable Rod Blagojevich
Honorable Mayor John Geils
Honorable Mayor Craig Johnson
Stephen Johnson
Dolores Pino
Terry Pastika
Stephen H. Rothblatt
Kenneth A. Westlake

AReCO

ALLIANCE OF RESIDENTS CONCERNING O'HARE, Inc. "a grass roots organization"

P.O. Box 1702 ○ Arlington Heights, IL 60006-1702 ○ Fax: 847/506-0202 ○ Tel: 847/506-0670 ○ www.areco.org

February 2, 2005

VIA FACSIMILE and regular mail
Renee Cipriano, Director
Environmental Protection Agency
1021 North Grand Avenue, FL 003
Springfield, IL 62794

Subject: Major discrepancies between IEPA O'Hare emissions inventory and DEIS inventory

Dear Director Cipriano:

There appears to be some major discrepancies in O'Hare airport emissions inventories, between the recently released DEIS and the figures contained in the existing Illinois Ozone SIP and we are requesting review by your office with response to us ASAP and to the FAA where you agree these discrepancies need rectification.

The fundamental problem is that the FAA's VOC and NOx DEIS inventory figures appear to be much smaller than IEPA's, as evidenced in the following.[i]

A. DEIS 2002 "Baseline" inventory from Table 5.6-8

| | Tons per year | |
|---|---|---|
| Category | VOC | NOx |
| Aircraft | 399 | 3,956 |
| GSE | 442 | 479 |
| Total aircraft+GSE | 841 | 4,435 |

B. 1999 as stated by DEIS, from Tables 5.6-2 and 5.6-3

| | Tons per year | |
|---|---|---|
| Category | VOC | NOx |
| Total aircraft+GSE | 3431 | 12,183 |

As can be seen, if one accepts the DEIS statement of IEPA's 1999 summations, then the 2002 "Baseline" inventory used in the DEIS must be wrong by substantial amounts, using 841t/y of VOC compared to IEPA's 3431t/y and 4,435t/y of NOx vs. IEPA's 12,183. This degree of undercounting cannot be due to relatively minor flight operations increases from 2002 vs. 1999.

To check whether the DEIS has erroneously mis-stated the IEPA's figures, we glean the following aircraft operations and GSE figures from the IEPA's current SIP[ii] (Appendix F, Table 9 and Section 5, Table 5-18a, respectively).

C. IEPA 1999 SIP data

| | Tons per year | |
|---|---|---|
| Category | VOC | NOx |
| Aircraft | 1704 | 6048 |
| GSE[iii] | 594 | 3350 |
| Total aircraft+GSE | 2298 | 9398 |

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***Protecting the Health and Safety of Millions of O'Hare Affected Citizens***

AReCO
2/2/05
p. 2

Comparing the totals of Table C to those in Table B, it is seen that what the DEIS states that the 1999 IEPA's figures are, seems at odds with what the IEPA says in the SIP. Another conflict.

Of great significance however is that, even in light of these IEPA figures (either as stated by the DEIS or as stated in the SIP), the DEIS establishes 2002 Baseline numbers that are extremely small in comparison. Totals of 841t/y and 4435t/y for VOC and NOx, respectively, are so far below IEPA figures as to be not believed (giving the IEPA the benefit of doubt) i.e. 841 vs. 2298 (or 3431) and 4435 vs. 9398 (or 12,183) tons/year.

Even worse, the DEIS states (Table A) 2002 Baseline aircraft emissions as 399t/y VOC and 3956t/y NOx as compared to IEPA's (Table C) 1704t/y and 6048t/y, respectively, a huge difference!

A very large discrepancy also exists between the DEIS figure for GSE NOx (479t/y) and the IEPA's figure (3350t/y.

In summary, the DEIS is using very small emissions inventory numbers for O'Hare's 2002 Baseline reference. This is then carried forward into similarly very low DEIS estimations of future O'Hare inventories, such as seen in the DEIS Table 5.6-44 ("Build-Out + 5", or about year 2018), with total (All C) VOC's of only 719t/y (292 aircraft, 427 GSE) and NOx of 5,739t/y (5,359 aircraft and 380 GSE).

The DEIS figures and comparisons to IEPA's figures are quite hard to believe or understand. We believe that at a minimum, though inexplicable to the DEIS's main objectives", the DEIS inventories may be deficient for in-flight aircraft emissions within the mixing layer (the deficiency may even be a total exclusion!).

We ask that you review these figures and explain the differences to us ASAP (the clock is running on DEIS Comments period). We also request that if your investigation indicates that the DEIS figures are in substantial error, that you submit Comments in this proceeding such that corrections may be made by O'Hare and the FAA.

Thank you.

Regards,

Jack Siegorito
Executive director

c: D. Kolze
K. Westlake

[i] It is suspected that other inconsistencies exist for CO, SO2 and PM inventories, though comparisons are not easily available e.g. no SO2 or PM inventories are in the SIP.
[ii] Illinois 1999 Periodic Emissions Inventory and Milestone Demonstration, IEPA, December 2001.
[iii] Table 5-18a presents Airport Service Equipment (GSE) emissions for the entire Chicago area, which would include a number of airports. Lacking better information, we have arbitrarily estimated O'Hare emissions as 2/3 of

ARsCO
2/2/05
p. 3

the total.

[iv] Said objectives must necessarily include all airport emissions and changes thereto, within the mixing layer, in order to correctly calculate (via dispersion analysis, etc.) public exposures, both direct and indirect (e.g. ozone) and to properly relate to Illinois current and near future SIP conformance requirements.

U.S. Department of Transportation
Federal Aviation Administration

Great Lakes Region
Illinois, Indiana, Michigan, Minnesota, North Dakota, Ohio, South Dakota, Wisconsin

2300 East Devon Avenue
Des Plaines, Illinois 60018

APR 2 5 2005

Mr. Jack Saporito
Executive Director, AReCO
Post Office Box 1702
Arlington Heights, Illinois 60006-1702

Dear Mr. Saporito:

Thank you for your letter of April 15, 2005, requesting FAA to provide you with "all relevant information and data needed to verify or dispute FAA's third-party consultant's calculations of Criteria Emissions for the Aircraft and GSE sub-groups of emission sources," as related to the Draft O'Hare Modernization Environmental Impact Statement (OM DEIS). The information and data needed to complete your request has been publicly available. In addition to being available at certain libraries in the area, it has been available on the FAA's website located at http://www.agl.faa.gov/OMP/DEIS.htm.

Your request specifically addressed the following:

> "This should take the form of, for the 2002 Base case, 2018 "Do Nothing" and 2018 Alternative C cases:
>
> Aircraft types, number of operations and emission factors used, for each of the four modes, along with the assumed time-in-modes (TIM), and net emissions, for each of the Criteria emission types.
>
> Sufficient information on key calculation assumptions to understand the subsequent inventory calculations methods and results, for example the association of takeoff/climbout TIM with the assumed mixing height used (or other calculation assumptions, e.g. if reduced altitude limits were applied), how many active engines were assumed during taxiing (all, one, or ?), etc."

The information and data required to verify or dispute the calculations of criteria pollutant emissions were provided in the OM DEIS and/or on the FAA website for the OM DEIS located at http://www.agl.faa.gov/OMP/DEIS.htm as well as at certain area libraries.

As indicated in your letter, FAA utilized the Emissions and Dispersion Modeling System (EDMS) to perform your referenced analyses in the OM DEIS. The EDMS model is commercially available and information on how to order the model can be obtained at the following website: http://www.ace.faa.gov/emissions/edms/edmshome.htm.



The following provides more detailed information and in-depth website instructions on where to obtain information and data for the remaining requested data.

Aircraft types and number of operations - Appendix J (Table J.3-1) of the OM DEIS.

Emission factors – The emission factors that were used in the air quality analysis for aircraft and ground support equipment (GSE) were the default factors from the EDMS. The factors can be viewed by importing the EDMS files into EDMS and viewing. The import files for each year and alternative are available on the OM website (http://www.agl.faa.gov/OMP/DEIS.htm). To obtain the files, go to the OM website, then go to:

> "O'Hare Modernization Document Library", then go to
> "O'Hare Modernization EIS Technical Simulation Analysis", then go to
> "Air Quality", then go to
> "EDMS", and finally go to
> "Emissions & Model System (EDMS)".

The direct link to the files on the OM website is ftp://public-ftp.agl.faa.gov/Air%20Quality/EDMS/. In the Emissions & Model System (EDMS) folder, there are subfolders for each of the years/alternatives evaluated. The files for the 2002 Baseline condition, the 2018 "Do Nothing" condition, and 2018 Alternative C are denoted as Baseline2002.csv, NoProject2018.csv, and Project2018.csv, respectively.

Time-in-mode (TIM) data for each of the four aircraft operational modes (approach, takeoff, climbout, and taxi/delay) can also be viewed by aircraft assignment by opening the EDMS import files. As stated in the OM DEIS, EDMS default times in mode were used for approach, takeoff, and climbout. The ground delay (taxi/idle) TIM are provided in Appendix J (Table J.2-4) of the DEIS. Net emissions for aircraft and ground support equipment (GSE) are also provided in Appendix J (Tables J.2-71 through J.2-79) of the DEIS. TIM by type of GSE are provided in Appendix J (Table J.2-57) of the DEIS.

The EDMS uses atmospheric mixing height data to approximate the appropriate level in the atmosphere where aircraft emissions would have no discernable impact on ground level emissions (see Appendix J, page J-49 of the DEIS). For this purpose, a Chicago-area specific mixing height of 2,510 feet[1] above ground level was used.

For clarification purposes, the aircraft operational modes of approach, takeoff, climbout, and taxi/delay are defined as follows:

- Approach – The time it takes an aircraft to descend from the height of the atmospheric mixing height to the end of the runway once it lands at an airport.
- Takeoff – The time it takes an aircraft to leave the end of a departure runway up to an altitude of approximately 1000 feet.

[1] Mixing Heights, Wind Speed, and Potential for Urban Air Pollution throughout the Contiguous United States, U.S. Environmental Protection Agency, January 1972.

- Climbout – The time it takes an aircraft to climb from 1000 feet to the height of the atmospheric mixing height.

- Taxi/Delay –All engine on ground time before the takeoff and after the approach operational modes.

With respect to the number of engines assumed during taxi, it was assumed that during the aircraft operational mode of taxi, all aircraft engines are active (running). This can be considered a conservative assumption as, depending on the aircraft, most airlines encourage of the use of single-engine taxiing when feasible.

The electronic versions of the publicly available input data, discussed above, are in a format that may be imported directly into a commercially available version of the EDMS 4.12 model. Your letter also requested that FAA "provide the same or similar information to an independent auditor." While we respect the fact that you have a different opinion on this issue, FAA believes its technical analysis for the OM DEIS is technically sound. Accordingly, we do not believe an independent audit of any OM DEIS computer modeling is necessary.

If you have any further questions, please feel free to bring them to my attention.

Sincerely,

Barry D. Cooper
Manager, Chicago Area Modernization Program Office

050426_01

APR 28 2005

ENVIRONMENTAL LAW & POLICY CENTER
ILLINOIS INDIANA MICHIGAN MINNESOTA OHIO WISCONSIN

April 26, 2005

Mr. Mike MacMullen
Federal Aviation Administration
2300 East Devon Avenue
Des Plaines, Illinois 60018

*Re: Comments on the O'Hare Modernization Program Draft Environmental Impact Statement*

Dear Mr. MacMullen:

Attached are the Environmental Law & Policy Center's comments on the Draft Environmental Impact Statement for the O'Hare Modernization Project. We realize that these comments are late and ask for your consideration in accepting them. Please contact me if you have any questions or comments. 1

Sincerely,

Faith E. Bugel

Faith E. Bugel

Enclosure

cc: Rosemarie Andolino
Steve Schlickman

35 EAST WACKER DRIVE, SUITE 1300 CHICAGO, ILLINOIS 60601-2110
PHONE (312) 673-6500 FAX (312) 795-3730
www.elpc.org elpc@elpc.org

ELLEN C. CRAIG - CHAIRPERSON HOWARD A. LEARNER - EXECUTIVE DIRECTOR

| Comment | Response |
|---|---|
| 1 | Comment noted. |

APR 26 2005

**Comments on**
**O'Hare Modernization Program**
**Draft Environmental Impact Statement**

Submitted by the
Environmental Law & Policy Center

Faith E. Bugel
Staff Attorney
Environmental Law & Policy Center
35 East Wacker Drive, Suite 1300
Chicago, Illinois 60601
(312) 673-6500

Dated: April 26, 2005

The Environmental Law and Policy Center ("ELPC") hereby submits the following comments on the Draft Environmental Impact Statement ("Draft EIS") for the O'Hare Modernization Program issued by the Federal Aviation Administration on January 14, 2005.

## I. INTRODUCTION

ELPC generally supports the O'Hare Modernization Program ("OMP"). O'Hare Airport is the economic engine that drives the Chicago region and efficiently-operating air services at O'Hare is important to meeting both national and Midwest travel needs. 2

The OMP, which involves expanding existing infrastructure at an existing airport, creates fewer adverse environmental impacts than would developing a new major airport, such as the proposed Peotone Airport, on a "greenfield" site, which would lead to increased sprawl, more pollution, and the loss of green spaces. 3

The OMP must be completed in a way that minimizes, to the full extent possible, adverse environmental impacts. The City of Chicago appears to be approaching that commitment through the Draft Environmental Impact Statement, the OMP Best Management Practices Manual, the OMP Sustainable Design Manual, and the City of Chicago's Green Airport Initiatives Environmental Management Best Practices Manual. Nonetheless, the OMP offers unique environmental opportunities that should not be missed. In particular, the development of a Western Terminal provides an opportunity to enhance and expand public surface transportation. Expanding High-Speed Rail connections to O'Hare, in addition to CTA and Metra connections, could offset potential increases in vehicular surface traffic posed by the OMP. The Western Terminal also provides an opportunity to build a model "green" building. LEED Certification distinguishes building projects that have demonstrated a commitment to sustainability by meeting the highest performance

1

| Comment | Response |
|---|---|
| 2 | The FAA notes the ELPC support for the OMP. Please see topical response A-2 on page U.5-3 of this appendix. |
| 3 | The FAA notes the comment regarding the development of a new airport. The FAA is currently conducting a Tier 2 Environmental Impact Statement for the proposed South Suburban Airport. |

standards. The City should seek to obtain LEED certification at the gold or silver level for this new airport terminal building. 4

**II. MITIGATION**

Because mitigation measures are designed to counter the effects of environmental consequences, the environmental opportunities from the development of the Western Terminal should be covered by the mitigation chapter of the final EIS. Increased public transportation, including high-speed rail, connections at the Western Terminal and the LEED Certification of the Western Terminal should be included as mitigation measures. 5

**A. Surface Transportation**

One important way to mitigate the impacts on air quality and surface transportation that will occur as a result of the OMP is by decreasing the use of single-occupancy vehicles to reach O'Hare. We note that over 70 percent of all passengers take autos, taxis, and limos to the airport, while just 13 percent use public transportation or hotel shuttles.

Construction of the Western Terminal provides a once-in-a-lifetime opportunity to truly integrate Chicago's aviation and public transportation infrastructure. First, both the proposed "Star Line" and the current Metra-Elgin line are within a few hundred yards of the proposed Western Terminal. These same tracks could easily meet three distinct travel needs:

1. Metra service to O'Hare from virtually all of Metra's existing rail lines for both travelers and airport employees;
2. Amtrak intercity service to O'Hare from points throughout the Midwest; and
3. High-speed rail service to O'Hare from points throughout the Midwest to be served by the Midwest Regional Rail Initiative. 6

2

| Comment | Response |
|---|---|
| 4 | The FAA notes the comments regarding the minimization of impacts. The FAA has outlined the potential mitigation by the City in **Chapter 7** of the EIS. |
| 5 | The comment regarding the potential impact reduction and mitigation effects due to these surface transportation improvements are noted. **Chapter 5, Section 5.3.5** of the EIS discusses the future surface transportation projects that are currently in the early stages of planning that could potentially reduce project-related impacts. |
| 6 | Although some adverse impacts that have been identified in the Draft EIS could be reduced as a result of these surface transportation initiatives, only surface transportation projects that would be in place during the years of analysis of the Draft EIS, based on the Transportation Improvement Program (TIP) for the Chicago metropolitan area, were considered for mitigation. However, **Chapter 5, Section 5.3.5** of the EIS discusses the future surface transportation projects that are currently in the early stages of planning that could potentially reduce project-related impacts. |

Second, connecting the Western Terminal to the existing terminals will require extending the people-mover in a covered trench. This same trench/tunnel could easily provide CTA access to the Western Terminal and allow for its eventual continuation to Elk Grove Village. With the inclusion of Pace bus service and facilities for private bus lines, the Western Terminal could function as a true multi-modal hub for the entire region.

A multi-modal hub would result in significant reductions in air pollution that would otherwise be caused by people driving cars to O'Hare. Moreover, such a hub would allow Chicago to better compete with other world-class cities. At least a dozen world-class cities (including London, Hong Kong, Tokyo and Stockholm) provide first-class express trains between their airports and downtown. These trains are typically boarded right in the airport. Many cities also provide seamless links to regional and national trains. United Airlines sells tickets on the Paris to Lyon train through a code-sharing arrangement with the French railroad. In Paris, a traveler can easily board a high-speed train right in the airport to reach many destinations in Europe. Indeed, most governments view passenger rail as a cost-effective feeder to regional airports, thereby reducing the pressure to fill limited airport capacity with short-haul flights. As Chicago continues to position itself as an international tourist destination and world-class business center, it is important to provide the transportation amenities that international travelers are coming to expect. 7

**B. LEED Certification of the Western Terminal**

The Western Terminal provides an outstanding opportunity for the City of Chicago to seek to obtain the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) certification for an O'Hare Airport building. The LEED Green Building Rating System is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. LEED aims to improve occupant well-being, environmental performance and economic

3

| Comment | Response |
|---|---|
| 7 | The comment regarding the proposed inclusion of CTA and PACE transportation facilities within the extended (underground) Automated People Mover System (APMS) is noted. The potential western extension of the CTA Blue Line Transit corridor west and north of O'Hare is in the CTA's Long-Range Plan. As part of the City of Chicago's *February 2004 O'Hare International Airport Master Plan* for O'Hare, the on-Airport CTA alignment will be coordinated by the City of Chicago/CTA with the proposed alignment, and potential extension, of the APMS. |

returns of buildings using established and innovative practices, standards and technologies. Based on well-founded scientific standards, LEED emphasizes state-of-the-art strategies for sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. Because the LEED system provides a complete framework for assessing building performance and meeting sustainability goals, it provides a clear roadmap and demonstrable way to mitigate environmental consequences in the areas of air quality, energy supply, natural resources, and construction, among others. With such mitigation potential, discussion of the possibility of LEED certification of the Western Terminal should be included in the EIS. 8

ELPC appreciates the Federal Aviation Administration's review and consideration of the Environmental Law & Policy Center's comments on the Draft EIS.

Dated: April 26, 2005

Respectfully submitted,

Faith E. Bugel
Staff Attorney
Environmental Law & Policy Center
35 East Wacker Drive, Suite 1300
Chicago, Illinois 60601
(312) 673-6500

4

| Comment | Response |
|---|---|
| 8 | The FAA concurs with the comment and encourages the City to seek LEED certification of the Western Terminal should a favorable Record of Decision be issued. |

050427_01

**KARAGANIS, WHITE & MAGEL LTD.**

ATTORNEYS AT LAW
414 NORTH ORLEANS STREET - SUITE 810
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JOSEPH V. KARAGANIS
A. BRUCE WHITE
BARBARA ANNE MAGEL
MARK D. ERZEN
JOHN W. KALICH
CHRISTOPHER W. NEWCOMB

April 27, 2005

**VIA FAX AND E-MAIL**
Mr. Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Airports District Office
2300 East Devon Avenue
Des Plaines, Illinois 60018

**Re: Elk Grove LGK Pocket Park**

Dear Mr. MacMullen:

Per our telephone discussion and agreement last week to provide you information regarding the recreational facility with the informal name: "Lake LGK" by April 27, 2005, we hereby submit the following information:

The property designated as "Lake LGK" is a parcel of property containing a body of water that currently holds a fishery of unknown characteristics. The water body was formed some time ago by the failure and blockage of a discharge pipe.

The "Lake LGK" property was acquired by Elk Grove in 2003 and is intended by Elk Grove Village to be developed, used, and maintained as part of Elk Grove's Business Park "Pocket Park" program. Elk Grove's "Pocket Park" program includes a number of sites in the industrial areas of the Village that Elk Grove intends to use as combination recreational park and storm water retention facilities. In certain wet weather conditions, several "pocket parks" serve to hold, contain, and manage storm water. However, when the storm water conditions are not present, these pocket parks are designed and used as active and passive park recreational facilities and include such activities as sports, picnicking, and enjoyment of nature.

The LGK site is currently closed and fenced because the water body on the site represents an unsupervised water hazard. Elk Grove Village has plans to fix the broken discharge pipe, drain the site, and renovate the site for the combined recreational park and storm water purposes described above.

Directing your attention to the questions you raised in your letter of March 11, 2005, here are our answers:

| Comment | Response |
|---|---|
| 1 | The information submitted regarding the Elk Grove LGK Pocket Park ("Lake LGK") was included and considered in the Draft Section 4(f)/6(f) Evaluation which was made available to the public for review and comments on May 20, 2005.<br><br>As a result of the specific correspondence provided by Karaganis, White, & Magel regarding Lake LGK, and in an effort to avoid and minimize potential impacts to this property, the City of Chicago may not acquire the Lake LGK Property within Elk Grove Village. If a Build Alternative is approved in the FAA's issuance of a Record of Decision, and the City of Chicago decides to proceed with the O'Hare Modernization, the FAA outlined certain conditions under which City of Chicago could consider not acquiring this property. A letter sent to the City of Chicago from FAA on May 13, 2005 specifically addresses the Lake LGK Property within Elk Grove Village. A copy of the FAA's letter is contained in **Appendix L** of the Final EIS. One other option may be for the City of Chicago to acquire the Lake LGK Property but maintain it as a "Pocket Park". |

| Comment | Response |
|---|---|
| 1 | Please see the response to this comment on the previous page. |

Mr. Michael W. MacMullen
April 27, 2005
Page 2

1. Elk Grove Village has jurisdiction and ownership of the LGK property.
2. The site has been acquired and designated by Elk Grove Village for development as a "pocket park" in the Elk Grove system of "pocket parks" throughout the Business Park.
3. The activities that are planned for the pocket park on the LGK property include such activities as sports, picnicking, and enjoyment of nature.
4. The persons using the facility will be employees of companies that are located in the Business Park, and residents of Elk Grove Village.
5. The size of the area available for public use is the entire site, approximately 3 acres.
6. The renovations currently being planned and implemented are drainage and landscaping to create an active and passive park environment and Elk Grove intends to re-open the site in 2006.
7. See answer #3 above.
8. Once proper drainage is restored and renovation is completed the site will be fully open to the public. Public parking will be available on Village streets bordering the site.
9. The site was acquired by Elk Grove Village in the winter of 2003 and will be re-opened to the public after restoration and renovation in 2006. Under prior private ownership the site could be used for fishing.
10. The site is intended for use as a "pocket park" within Elk Grove's "pocket park program".
11. The site currently has the informal designation as "LGK" but will be renamed after restoration and renovation.
12. The site is currently not listed on Village maps since it was recently acquired.

Enclosed with this letter are: 1) a map of the Elk Grove "Pocket Park System" and 2) a photo showing a current pocket park. Per our agreement, we will provide you additional information on other 4(f) resources and comments and information on alternatives by May 6, 2005.

1

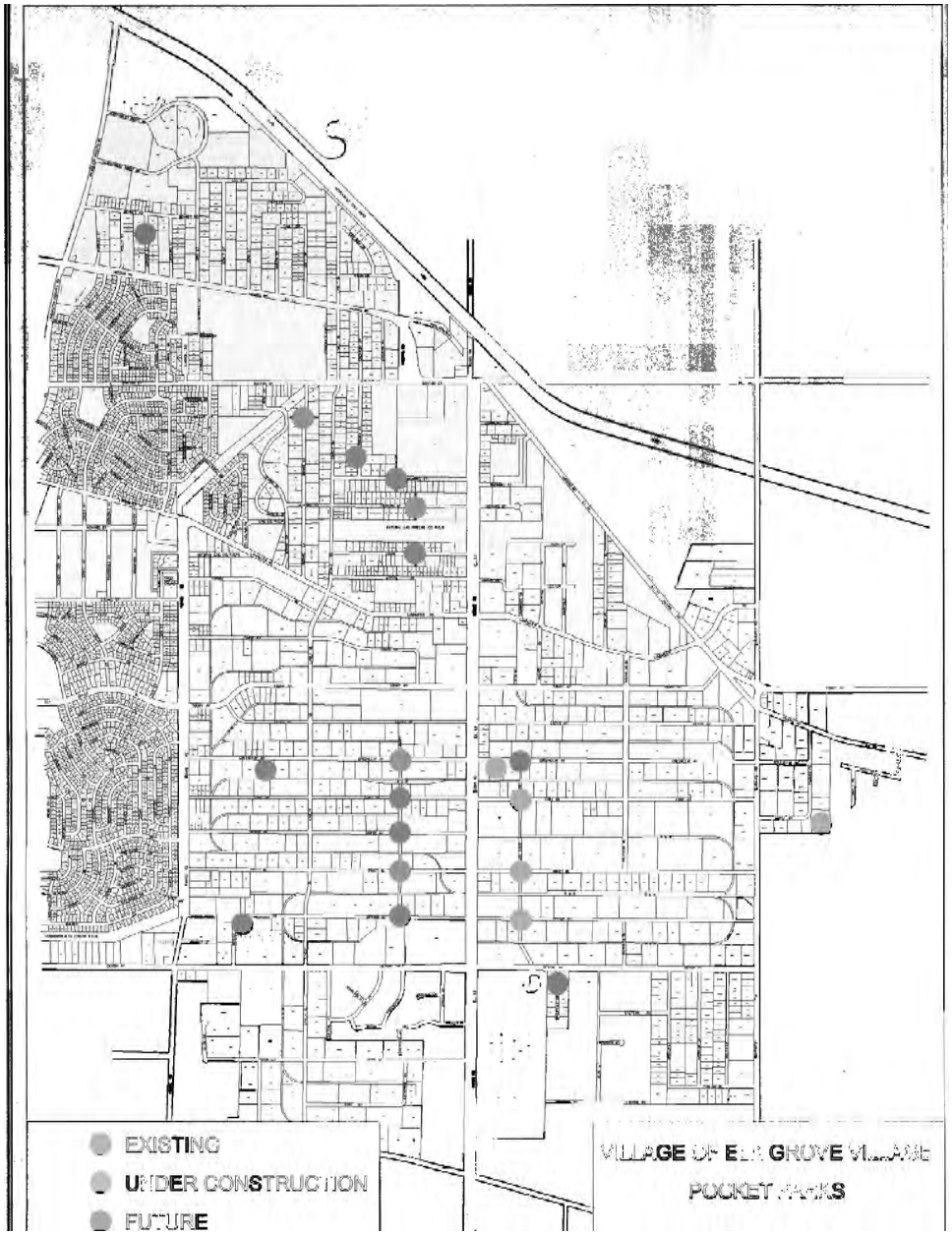
Sincerely yours,

Joe Karaganis

Joseph Karaganis

Enclosure: electronic files transmitted by e-mail and hard copy

cc: Mayor Craig Johnson
Village Manager Gary Parrin
Robert Cohn




**Example of Existing Pocket Park**

050429_01

KARAGANIS, WHITE & MAGEL LTD.
ATTORNEYS AT LAW
414 NORTH ORLEANS STREET - SUITE 810
CHICAGO, ILLINOIS 60610
TELEPHONE
(312) 836-1177
TELEFAX
(312) 836-9083

JOSEPH V. KARAGANIS
A. BRUCE WHITE
BARBARA ANNE MAGEL
MARK D. ERZEN
JOHN W. KALICH
CHRISTOPHER W. NEWCOMB

April 29, 2005

**VIA E-MAIL**
Mr. Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
Airports District Office
2300 East Devon Avenue
Des Plaines, Illinois 60018

**Re: Correction to Exhibit to 4-27-05 letter re Elk Grove LGK Park**

Dear Mr. MacMullen:

On April 27, I sent you a letter on behalf of Elk Grove Village which contained a photo exhibit depicting what was described as an "existing" "Pocket Park". The photo exhibit was incorrectly labeled and the text in the letter to which the photo relates was incorrect.

The photo labeled "Example of Existing Pocket Park" was actually a photo of another park facility owned by the Elk Grove Park District which illustrates (in general) the kind of resource and amenities that Elk Grove Village plans for the Pocket Park at the LGK site.

Enclosed is a photo of an existing Pocket Park on a much smaller site than the LGK site. The LGK site at 3 acres will look more like the Elk Grove Park District facility shown in my April 27th letter.

We apologize for the error. 1

Sincerely yours,

for Karaganis

Joseph Karaganis

cc: Mayor Johnson
Village Manager Gary Parrin
Robert Cohn

| Comment | Response |
|---|---|
| 1 | Comment noted. |

050505_01

**BEFORE THE**
**FEDERAL AVIATION ADMINISTRATION**
**CHICAGO AIRPORTS DISTRICT OFFICE**

| | |
|---|---|
| **In the matter of the** | ) |
| **DRAFT ENVIRONMENTAL IMPACT** | ) |
| **STATEMENT FOR THE O'HARE** | ) |
| **MODERNIZATION PROGRAM (OMP)** | ) |
| | ) |

**AFFIDAVIT OF JOSEPH DEL BALZO**

I, Joseph Del Balzo, having been duly sworn, on oath deposes and states as follows:

1. I currently serve as President of JDA Aviation Technology Solutions in Washington, D.C. My firm and I provide technical advice and assistance on aviation and airport matters to airlines, airports, municipalities, and other clients.

2. Prior to founding JDA Aviation Technology Solutions, I served for 36 years as an aviation professional with the Federal Aviation Administration.

3. In my career with FAA, I held a number of senior positions including that of Acting Administrator of the FAA. In that capacity I was the highest ranking career professional within the FAA.

4. In addition to service as Acting Administrator of the FAA, I have also served as FAA's Executive Director of System Operations where I and my team were responsible for installing and operating all air traffic control systems throughout the Nation, and overseeing and developing safety regulations for all airports, aircraft, airlines, and airmen in the national aviation system.

5. While at FAA I also served as the Director of the FAA National Technical Center conducting and supervising research in airport and airspace systems analysis. I also served as FAA's Chief Technical Advisor and liaison with responsibility for coordinating aviation research and development efforts between the United States, Europe, Africa, and the Middle East.

6. In my work in FAA as Acting Administrator and in other positions I held within the agency, I was very familiar with the FAA's role and responsibility under federal law in the promotion and regulation of airport development. In particular, I am familiar with the FAA's prior consideration of airport development options at O'Hare, and the FAA's determination with regard to that airport in its 1984 Record of Decision. In that determination, the FAA found that future aviation demand at O'Hare and in the Chicago region could be efficiently served through a blended alternative that would include use of the existing O'Hare Airport without additional runways, the use of other local regional airports, and the use of alternative connecting hubs in other cities. 1

7. I was the Regional Director of the FAA's Eastern Region for 8 years and was responsible for FAA's airport development activities and operational issues affecting three of the country's largest commercial airports: JFK, LaGuardia and Newark. These airports function together as a multi-airport system serving the New York metropolitan area. Over the years, both during my tenure and today, FAA has utilized congestion management, in combination with airport development, in a blended regional solution to maximize efficiency, enhance capacity, and minimize delays at the New York area airports. 2

8. I and my colleagues at JDA Aviation Technology Solutions have been retained by the Illinois communities of Bensenville and Elk Grove Village to assess and

| Comment | Response |
|---|---|
| 1 | The FAA does not agree with the commenter's assessment of the 1984 ROD.<br><br>After the issuance of the FAA 1984 ROD, SOC sued the FAA (*Suburban O'Hare Commission v. Dole*, 787 F. 2nd 186 (7th Cir, 1986)) over the approval of the Airport Layout Plan for O'Hare, primarily disagreeing with adequacy of consideration of the possibility of utilizing other airports or construction of a new airport to alleviate some of the demands on O'Hare. The Seventh Circuit Court of Appeals quoted the above statement form the 1984 ROD in finding the FAA's decision to approve the Airport Layout Plan was clearly reasonable and clearly supported by substantial evidence. The Court found that SOC's argument that a new airport should have been selected for construction presupposed that Chicago had some degree of control over transfer passengers, but set forth no effective means of separating those passengers from others. It found that moving air traffic to other locations is not within the power of Chicago to accomplish. "The decision to make O'Hare or any other airport a "hub" airport belongs to the airlines and not to the Government." (*SOC v. Dole* at 196)<br><br>The FAA developed a purpose and need for this EIS and has evaluated all reasonable alternatives to it. The alternatives considered included a Blended Alternative. |
| 2 | FAA notes the comment regarding the utilization of congestion management in New York. |

evaluate Chicago's proposal for a major expansion of O'Hare Airport, including alternatives to that proposal. 3

9. In order to assess and evaluate the Chicago's OMP proposal, I have held numerous working group discussions with the Air Traffic Controllers working in the O'Hare Tower and at the TRACON controlling the arrival and departure of aircraft at O'Hare.

10. In order to assess and evaluate the Chicago's OMP proposal, I have also held working group discussions with senior airline pilots that regularly operate at O'Hare. 4

Object of This Affidavit

11. I have been asked to review and comment on the FAA's Draft Environmental Statement for the O'Hare International Airport (the DEIS) and to describe the on-airport alternatives listed in the April 6, 2005 Comments and Objections of Elk Grove Village and Bensenville. The DEIS reviews the City's preferred six parallel OMP runway configuration, and various alternatives thereto. It is my opinion that the alternatives analysis of the DEIS is seriously deficient. The DEIS failed to consider any on-airport development alternatives in conjunction with a blended alternative that could increase airport capacity, reduce current delays, and reasonably accommodate projected future demand. The failure of the DEIS to consider reasonable on-airport runway configurations is a glaring environmental analysis deficiency, since such an alternative would reduce the adverse environmental impacts of the project on neighboring communities and avoid destruction of the religious cemeteries. 5

12. The FAA's own capacity and delay analysis shows that no matter which option is chosen, demand at the airport will ultimately exceed capacity. Indeed, the Campbell Hill report (April 6, 2005) shows that demand at the airport will likely exceed capacity soon

| Comment | Response |
|---|---|
| 3 | Comment noted. |
| 4 | The FAA notes that through an ongoing process, the FAA is conducting a comprehensive review of the City of Chicago's proposed Airport Layout Plan. All FAA lines of business are participating in the process including Air Traffic (both management and representatives of NATCA). The FAA notes that Air Traffic representatives from management, NATCA, O'Hare Tower, Chicago Center, and the TRACON have been involved in reviewing the modeling conducted for the EIS. |
| 5 | The FAA does not agree with the commenter. The DEIS, in fact, did consider an on-airport development alternative in conjunction with a Blended Alternative. Please see **Section 3.2.3.3, Chapter 3.** |

after the construction is completed with delays equal to or greater than historic high levels. 6

13. Thus, it is clear that alternatives C, D, G in the DEIS will necessarily require the use of blended alternatives — *i.e.*, congestion management at O'Hare plus use of other airports, either at other local airports or in other hub cities. In its DEIS FAA, was able to claim that these alternatives would accommodate the forecast demand by erroneously using an understated outdated Terminal Area forecast and by selecting a year (2018) which ignored the time frame used in establishing the parameters of the Master Plan (*i.e.*, the year 2030 and Planning Activity Level 2). Yet even the FAA's own narrative in Appendix R says that use of the 2003 TAF would show that Alternative C (Chicago's OMP proposal) runs out of capacity even under the relaxed 15 minute delay standard used in the DEIS in 2018. 7

14. The following alternatives should be considered and fully evaluated by FAA, including the detailed modeling conducted by the FAA for each of the other OMP alternatives discussed in the DEIS:

**A. Blended Alternatives A-J set forth at pages 59-60 of the Comments on and Objections to the DEIS dated April 6, 2005.** Each of these Blended alternatives would accomplish the purpose and need articulated by the FAA (*i.e.*, meeting the forecast demand and controlling delays to whatever level was determined to be cost-effective by FAA). Each of these blended alternatives avoids the destruction of homes, businesses, and parkland and the destruction of the religious cemeteries. Each of these alternatives has the advantage of requiring minimal amounts of capital investment. Each of these blended alternatives is similar in concept to the blended alternative (*i.e.*, the "constrained" alternative) selected by the City of Chicago in its 1983 Master Plan and approved by the FAA in its 1984 Record of Decision. Like Chicago's 1983 Master Plan

| Comment | Response |
|---|---|
| 6 | The FAA does not agree with the comment that "the airport will likely exceed capacity soon after the construction is completed." The comment is based on the *Campbell Hill's April 6, 2005* comments in the DEIS, document number 050406_36, beginning on page U.4-501. The FAA directs the commenter to *Campbell-Hill Section 2.0*, responses 43-87, beginning on page U.4-525. |
| 7 | The commenter based the comment that Alternatives C, D and G will require the use of blended alternatives on:<br>1) the assertion that comment number 6 is correct;<br>2) the assertion that FAA used an "outdated" Terminal Area Forecast;<br>3) the assertion that the FAA uses a "15 minute delay standard"<br>4) the assertion that an incorrect planning year was used (2018 versus 2030)<br><br>The FAA disagrees with the assertions made. This comment, like 6, is based on the *Campbell Hill's April 6, 2005* comments in the DEIS, document number 050406_36, beginning on page U.4-501. |
| 8 | The FAA has provided response to *Karaganis-Cohn's April 6, 2005* comments on the DEIS, beginning on page U.4-396. The FAA has evaluated the commenter's proposals "A-J" in a new **Section 3.6** in **Chapter 3.**<br><br>Notably, the commenter has misstated the purpose and need. The purpose and need articulated in **Chapter 2** of the EIS is:<br>• Address the projected needs of the Chicago region by reducing delays at O'Hare and thereby enhancing the capacity of the NAS.<br>• Ensure that existing and future terminal facilities and supporting infrastructure (access, landside, and related ancillary facilities) can efficiently accommodate airport users. |

constrained alternative; each of these blended alternatives would use either other local area airports or hubs in other cities or both — in combination with the existing O'Hare — to accommodate all of the forecast demand. The DEIS limited its discussion of a blended alternative to a base case O'Hare which was comprised of Phase I. A competent evaluation of the blended alternatives should start with the existing airfield as the base. 8

B. Blended Alternatives which employ additional runways at O'Hare which would not require the destruction of homes, businesses, park land, sites of historical significance or require the destruction of religious cemeteries. At p. 60 of the Comments on and Objections to the DEIS dated April 6, 2005, we mentioned at Alternative L. Alternative L is comprised of a series of incremental additional runway alternatives — several of which we have discussed with members of the National Air Traffic Controllers Association (NATCA). None of these ALT L alternatives would require the destruction of homes, businesses, park land, sites of historical significance or require the destruction of religious cemeteries. Each of these ALT L alternatives would be a blended alternative which would use congestion or demand management in combination with the use of either other local area airports or hubs in other cities or both. 9

(1) **Alternative L-1.** This alternative would involve the westward extension runway 9R-27L to increase the runway length to 13,000 and the construction of a two new runways in the southern section of the airport: a) the construction of a new southern runway of 8,000 ft. (10L/28R) located 1,600 ft. south of existing runway 9R/27L, and, (3) the construction of a new runway with 6,095 ft. (10R/28L) 4,300 ft. south of existing runway 9R/27L. This alternative is depicted on Attachment 1 to this affidavit. 10

(2) **Alternative L-2** is depicted in Attachment 2. This alternative also involves extension of existing runway 10L/28R, but instead of construction of a new runway 2,300 ft. south of runway 10L/28R, there would be a new runway with 11,760 ft. 2,300 ft. north of existing runway 9R/27L. ALT L-2 also has a new runway with 6,095 ft. (10R/28L) 4,300 ft. south of existing runway 9R/27L. 11

DC 2066050(1-(212022-v1)

| Comment | Response |
|---|---|
| 8 | Please see the response to this comment on the previous page. |
| 9 | As noted in response to comment 8, the FAA has provided response to *Karaganis-Cohn's April 6, 2005* comments on the DEIS, beginning on page U.4-396. The FAA has evaluated the commenter's proposals "A-J" in a new **Section 3.6** in **Chapter 3.**<br><br>In the **Chapter 3, Section 3.6** of the FEIS, the FAA addresses the commenter's submission which includes "alternatives" that are claimed to be less intrusive than those studied in the DEIS. Analysis was also provided in the Final Section 4(f) and Section 6(f) Evaluation related to historic properties, see **Appendix L** of the EIS. |
| 10 | Please see response to comment 9. |
| 11 | Please see response to comment 9. |

15. Each of the **Alternative L** alternatives can also have variations (as determined to be desirable and cost-effective) as long as these variations do not require the destruction of homes, businesses, park land, sites of historical significance or require the destruction of religious cemeteries. Each of the ALT L alternatives should be examined for the cost-effectiveness and suitability of individual elements of the Alternative, *e.g.*, the southern 10R/28L may pass cost-benefit muster with just the southern 10R/28L alone. 12

16. The length of the alternative runways can be adjusted as long as the adjustments do not require the destruction of homes, businesses, park land, sites of historical significance or require the destruction of religious cemeteries. For example, the length of the alternative 10R/28L arrival runway is suggested at 6,095 feet in order to stay within the confines of the existing airport boundaries. This length is sufficient to accommodate most air carrier arrivals. 13

17. Chicago has suggested that Irving Park Road will be rerouted by the State. If Irving Park Road is rerouted, the alternative 10R/28L runway could easily be longer provided that it does not interfere with the religious cemeteries or the access to the religious cemeteries, and as long as it does not require the destruction of homes, businesses, park land, sites of historical significance in the communities. 14

18. In conclusion, I believe that Alternatives H, I, J and Alternatives L-1 and L-2 (and variations of these alternatives which do not require the destruction of homes, businesses, park land, sites of historical significance or require the destruction of religious cemeteries) should be subjected to the same detailed modeling evaluations as was undertaken for Alternatives C, D, and G in the DEIS. 15

| Comment | Response |
|---|---|
| 12 | Please see the response to comment 9 on the previous page. |
| 13 | Comment noted. The FAA directs the commenter to **Chapter 3, Section 3.6** for the detailed consideration of the commenter's alternatives. |
| 14 | Please see the response to comment 9 on the previous page. |
| 15 | The FAA disagrees that the commenter's alternatives should be subjected to the detailed modeling evaluations undertaken for Alternatives C, D and G in the EIS. The FAA can, based on the modeling conducted and professional judgment, evaluate the commenter's alternatives. The FAA directs the alternative to **Chapter 3, Section 3.6.** |

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 5th day of May, 2005

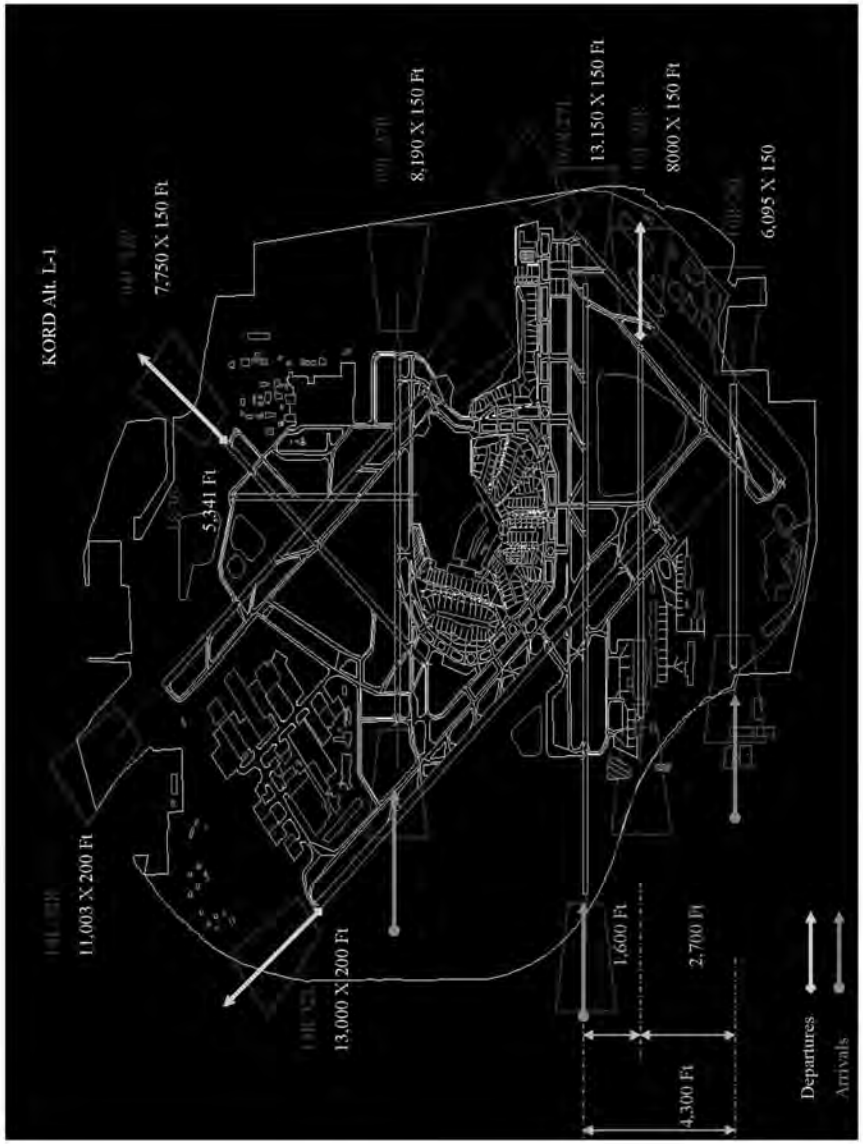
Joseph M. Del Balzo

SUBSCRIBED and SWORN TO before me this 5 day of May, 2005

Notary Public

Washington, District of Columbia
Subscribed and sworn to before me, in my presence,
this 5 day of May 2005
by GUILLERMO FANOLA
Client Financial Analyst
Notary Public
My commission expires May 14, 2008

**ATTACHMENT 1**
**TO**
**MAY 5, 2005**
**AFFIDAVIT**
**OF**
**JOSEPH DEL BALZO**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8000 X 150 Ft
6,095 X 150
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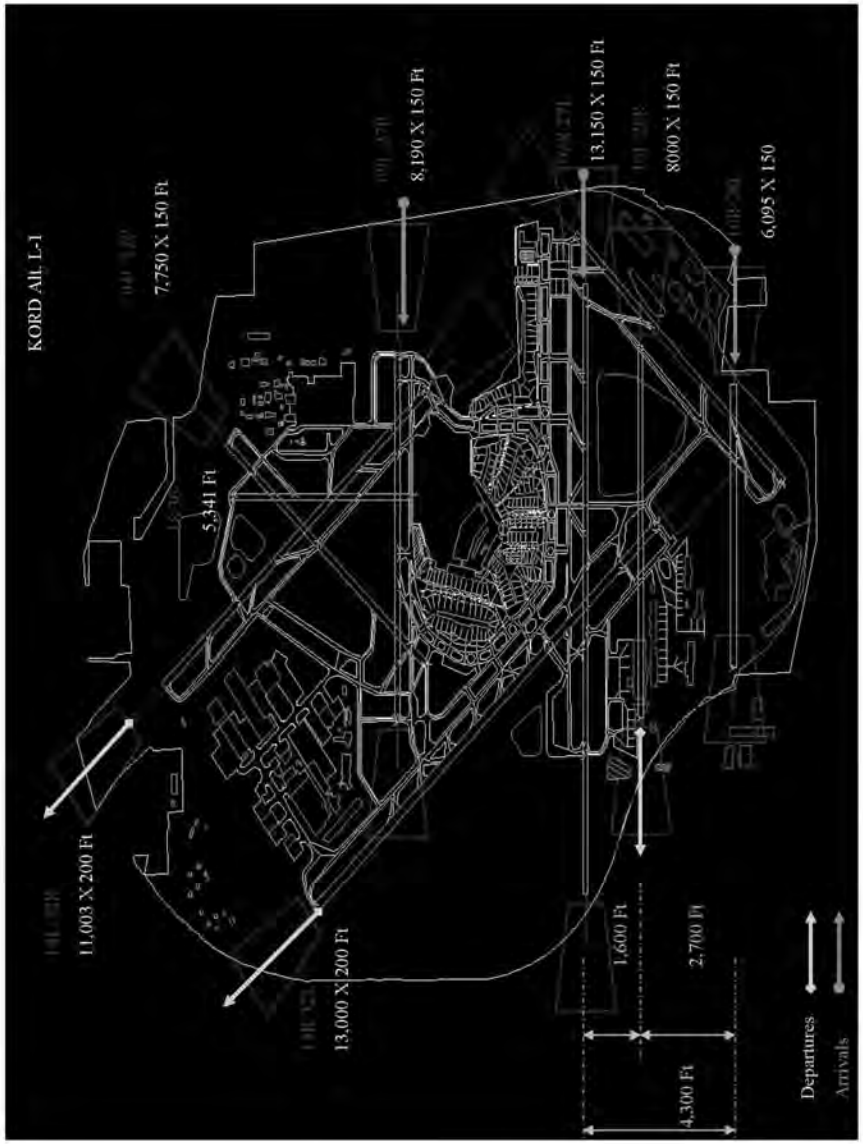
Departures
Arrivals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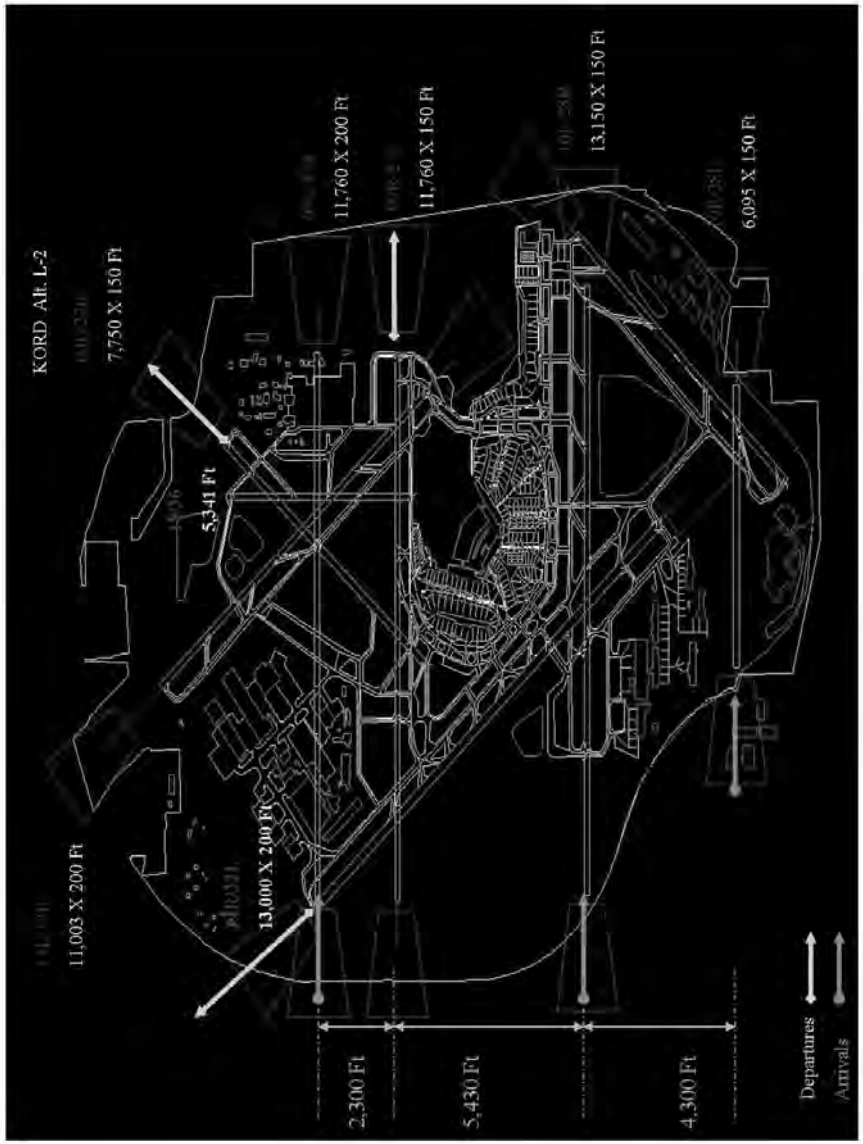
6,095 X 150
1,600 Ft
2,700 Ft
4,300 Ft
Departures
Arrivals

**ATTACHMENT 2**
**TO**
**MAY 5, 2005**
**AFFIDAVIT**
**OF**
**JOSEPH DEL BALZO**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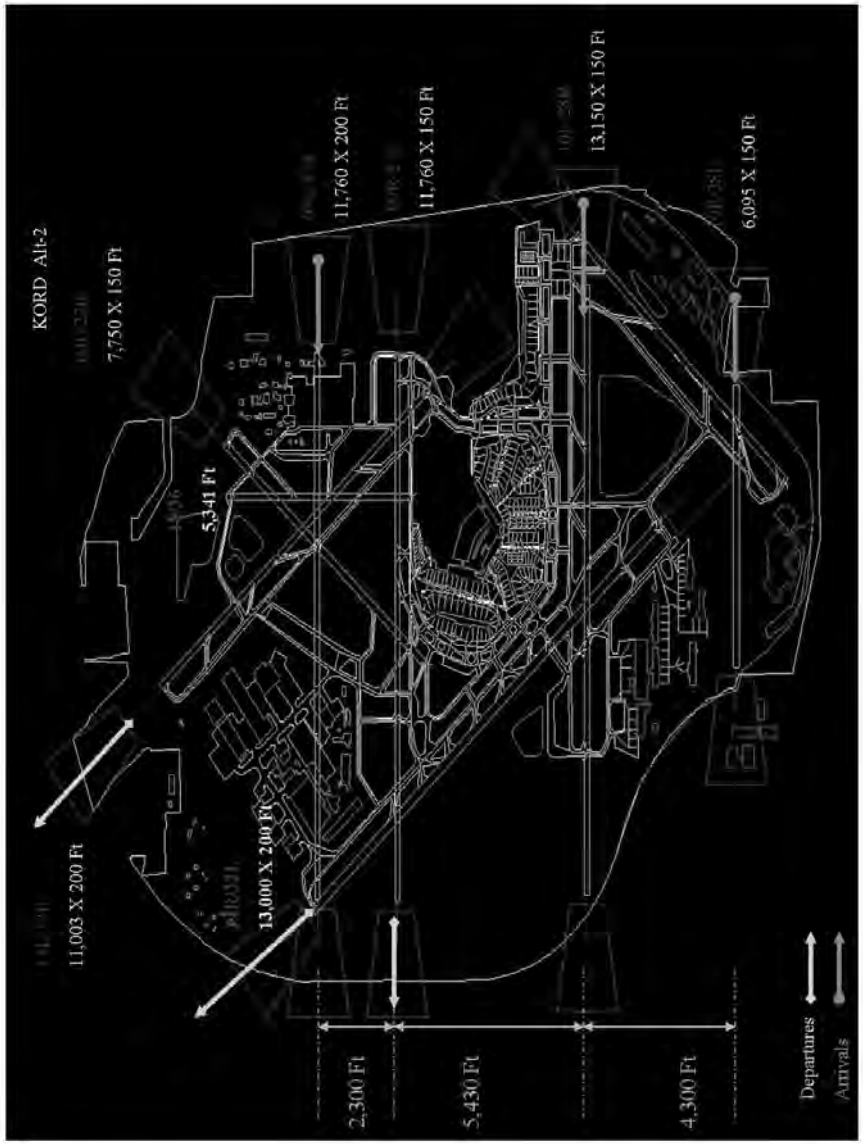
4,300 Ft
Departures
Arrivals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6,095 X 150 Ft
2,300 Ft
5,430 Ft
4,300 Ft
Departures
Arrivals

AReCO

THE ALLIANCE OF RESIDENTS CONCERNING O'HARE, Inc. A Not-for-Profit Corporation

PO Box 1702 ○ Arlington Heights, IL 60006-1702 ○ Fax: 847/506-0202 ○ Tel: 847/506-0870 ○ www.areco.org

050505_02

*"To achieve a balance between public health and the economy"*

May 5, 2005

Mr. Barry D. Cooper
Manager, Chicago Area Modernization Program Office
Federal Aviation Administration
2300 E. Devon Ave.
Des Plaines, IL 60018

Dear Mr. Cooper,

1

Thank you for your April 25 response to our April 15 request for information specifics on the OMP emissions inventory and other related matters.

You state that, "The information and data needed to complete your request has been publicly available. In addition to being available at certain libraries in the area, it has been available on the FAA's website located at http://www.agl.faa.gov/OMP/DEIS.htm. You also refer us to Appendix J in the DEIS for portions of the data.

Be assured that we are well aware of the contents of the DEIS, particularly Appendix J, as is reflected in our recent substantial DEIS Comments filing. We are also familiar with the information contained in the package of DVDs sent to "selected libraries". Indeed, it was our objective to re-review all of that information before presenting our request to the FAA. As an example, emission factors are not in those sources

Also be assured that we are familiar with the cited FAA website. However, your statement that that information is "publicly available" is in error. In brief, the information may be "available" but it is not accessible, apparently due to the security measures incorporated in that server. We have discussed this in our DEIS Comments, after consulting extensively with the FAA's technical staff (Kevin Colbert) and attempting such access via several different, modern computer/PC systems and experts, with no success (and reconfirming prior to this letter). The FAA is aware of this problem and was not responsive to "fixing it".

Thus, in addition to other aspects, we hereby repeat our request (excerpted below) and that you supply all requested on a CDROM.

> (1) That you provide us with the relevant information and data needed to verify or dispute the FAA's third-party consultant's calculations of Criteria Emissions for the Aircraft and GSE sub-groups of emission sources. This should not be difficult nor an excessive demand for you, as it is our understanding that EDMS 4.12 provides substantial reporting capabilities in these regards.

Proud Recipient: *1995 Environmental Merit Award, Arlington Heights - 1996, '99 Illinois State Senate Recognition*
***Protecting the Health and Safety of Millions of O'Hare Affected Citizens***

| Comment | Response |
|---|---|
| 1 | The FAA responded to this letter from AReCO on May 24, 2005. The FAA letter to AReCO is provided in its entirety on page U.4-853. |

This should take the form of, for the 2002 Base case, 2018 "Do Nothing" and 2018 Alternative C cases:

* Aircraft types, number of operations and emission factors used, for each of the four modes, along with the assumed time-in-modes (TIM), and net emissions, for each of the Criteria emission types.

*Sufficient information on key calculation assumptions to understand the subsequent inventory calculations methods and results, for example the association of takeoff/climbout TIM with the assumed mixing layer height used (or other calculation assumptions e.g. if reduced altitude limits were applied), how many active engines were assumed during taxiing (all, one, or?), etc.

We request that you provide the requested information to us in electronic form, on CDROM or via email, with data files in a format amenable to import into spread sheets or other data-base applications. Files could be "text files" with tab, space or comma delimiters. Microsoft Word or Acrobat (pdf) formats are acceptable for informational files. The measure of information/data adequacy should be "Can the DEIS summary results for yearly Criteria emissions totals for aircraft and GSE sub-groups be validated with this information/data?"

Additionally, your suggestion/implication that public interest groups such as AReCO need to purchase a copy of EDMS software, install it, become proficient in its operation, then import the (inaccessible) FAA EDMS files into it, in order to finally view the associated emission factors used by the FAA and requested by AReCO is, frankly, incredulous.

In essence, you are asking us to run OMP EDMS simulations ourselves, in order to gain the requested information, which, as we previously stated, "This should not be difficult nor an excessive demand for you, as it is our understanding that EDMS 4.12 provides substantial reporting capabilities in these regards." It was, and still is our expectation that you or your contracted consultant could relatively easily output essentially all of the requested information via EDMS's reporting capabilities. [We take this view not from being EDMS operational experts but from the FAA's own EDMS documentation.]

Indeed, your suggestion is one reason for our original second request, that being:

> 2) That you provide the same or similar information to an independent auditor*, qualified to audit this information and draw independent, unbiased opinions as to the methods and results. We believe this is important, considering that (a) AReCO could be considered to be "biased" by some (which we obviously refute beforehand) and (b) AReCO believes that the people of the State of Illinois deserve an independent audit before the IEPA uses these results for critical SIP bases.
>
> *[*Environ Corporation or Mostardi Platt Environmental are recommended*]

You have rejected this request and we hereby repeat that request for an independent audit, especially in light of your suggestion that AReCO and other interested groups or individuals need to individually do this exact same thing themselves, in order to effectively access needed data.



Though we respect your opinion that "...FAA believes its technical analysis for the OMP DEIS is technically sound.", we emphasize that third party validation of results is a normal and important process in critical matters such as this and that this request is not extraordinary. Such validation, not only tests your "soundness" opinion; but also, verifies that your third party contractor's myriad input assumptions, approximation methods, and EDMS options exercise are correct or appropriate. For instance, notwithstanding your general statement that, "The EDMS uses atmospheric mixing height data to approximate the appropriate level in the atmosphere where aircraft emissions would have no discernable impact on ground level emissions...", we question the specifics and results of how the above-ground aircraft emissions sources (thousands per day, arrivals/departures, multiple runways, etc.) were structured within EDMS and how such structuring impacted emissions inventory and dispersion analyses results.

Though the information we continue to request can provide some of this information or insights, it would be incomplete without the requested third party validation. We ask that you discuss this matter further within the FAA and reconsider this request.

Regards,

Jack Saporito
Executive Director
Board Member, Mothers Against Airport Pollution

cc: M. MacMullen
K. Westlake
file

U.S. Department of Transportation
Federal Aviation Administration

Federal Aviation Administration
Great Lakes Region

2300 E. Devon Avenue
Des Plaines, Illinois 60018

MAY 24 2005

Mr. Jack Saporito
Executive Director, AReCO
Post Office Box 1702
Arlington Heights, IL 60006-1702

Dear Mr. Saporito:

Thank you for your letter of May 5, 2005.

The Federal Aviation Administration (FAA), in its O'Hare Modernization Environmental Impact Statement process, has endeavored to be proactive in making information available to the public through various means, including posting documents on a publicly accessible website and placing copies of key documents in local public libraries. As stated in our April 25, 2005 letter to you, the information you seek has been available to you through these means.

In your May 5 letter, you indicate that you have been unable to access information from FAA's website despite various efforts on your part to do so. You further state in your letter that "The FAA is aware of this problem and was not responsive to it." The FAA respectfully disagrees with this statement. Our telephone records reflect various discussions between Kevin Colbert of our staff and Ross Ruthenberg of AReCO's staff concerning your information access difficulties. Those discussions focused largely on the limitations of the computer hardware and internet connection being employed by Mr. Ruthenberg, and Mr. Colbert spent a considerable amount of time attempting to assist Mr. Ruthenberg in working through his specific problems. A relevant point concerning the accessibility of FAA's files on the website may be best summarized by Mr. Ruthenberg himself in a September 8, 2004 e-mail to Mr. Colbert, wherein he states, "…two of my associates have said they successfully accessed files at the site…they use PC's and probably MS Explorer as their browsers; they also have high-speed interconnects…whereas I still use a low-speed dial-up." Again, FAA stands by the functionality of its website file access, and we have endeavored to work through individual user problems when they are brought to our attention.

Acknowledging your stated website access difficulties as outlined above, we have suggested to you on multiple occasions that the very same files you seek have also been publicly available on DVD at numerous local libraries. Despite this fact, and to bring closure to the file access issue, we are enclosing with this letter a full set of DVDs for your use. This set contains all air quality analysis information and data that can be found on FAA's website and on DVD at local public libraries.

Concerning access to specific components of the data contained on the enclosed DVDs, we direct you back to the detailed instructions contained in our April 25 letter to you. All information that you seek is contained on either the enclosed DVDs or in the O'Hare Modernization Draft EIS document, which is also publicly available.

Also, based on a specific request in your May 5 letter, we offer the following additional instructional information regarding accessing information you seek:



*Emission factors – The emission factors that were used in the air quality analysis for aircraft and ground support equipment (GSE) were the default factors from the EDMS. The file names within the model that contain the emission factors are:*

*ENG_EI.DBF (aircraft engine emission indices)*
*GSE_EF.DBF (ground support equipment emission factors)*
*APU_EF.DBF (auxiliary power unit emission factors)*
*FUEL_EF.DBF (storage tank emission factors)*

*The aircraft engine values are termed "indices" because the actual factors are for fuel flow and the pollutants are levels of emissions per unit of fuel.*

*On the enclosed disk labeled "Volume 24; Surface Transportation, Noise, and Air Analyses," there are subfolders for each of these analyses. Go to the Air Quality subfolder, then go to the EDMS sub folder, where there are subfolders for the years/alternatives evaluated. The files for the 2002 Baseline condition, the 2018 "Do Nothing" condition, and 2018 Alternative C are denoted as Baseline2002.csv, NoProject2018.csv, and Project2018.csv, respectively.*

Concerning your request that the FAA enlist the services of an independent auditor, we reiterate our opinion that the air quality technical analysis work contained in the Draft EIS is technically sound. We further offer that this work was performed objectively and independently by a firm with well-established expertise in the subject area.

The FAA acknowledges your specific interest in the subject of air quality as it relates to the O'Hare modernization proposal and FAA's O'Hare Modernization EIS. Although we do not believe it is necessary or appropriate for the FAA to perform additional work to respond to your requests for specific technical information, we do believe that our proactive sharing of all relevant technical information used in the Draft EIS provides all interested parties the opportunity to fully scrutinize our technical analysis work. We welcome your input as we proceed with the O'Hare Modernization EIS process.

Sincerely,

Barry D. Cooper
Manager, Chicago Area Modernization Program Office

Enclosures

cc: Ken Westlake, U.S. Environmental Protection Agency

050508_01

**BEFORE THE**
**FEDERAL AVIATION ADMINISTRATION**
**CHICAGO AIRPORTS DISTRICT OFFICE**

| | |
|---|---|
| **In the matter of the** | ) |
| | ) |
| **DRAFT ENVIRONMENTAL IMPACT** | ) |
| **STATEMENT FOR THE O'HARE** | ) |
| **MODERNIZATION PROGRAM** | ) |
| **(OMP)** | |

**SUPPLEMENTAL COMMENTS ON**
**AND OBJECTIONS TO THE**
**DRAFT ENVIRONMENTAL IMPACT STATEMENT**
**FOR THE O'HARE MODERNIZATION PROGRAM**

Communications with respect to this document should be addressed to:

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**May 6, 2005**

**BEFORE THE**
**FEDERAL AVIATION ADMINISTRATION**
**CHICAGO AIRPORTS DISTRICT OFFICE**

| | |
|---|---|
| **In the matter of the** | ) |
| | ) |
| **DRAFT ENVIRONMENTAL IMPACT** | ) |
| **STATEMENT FOR THE O'HARE** | ) |
| **MODERNIZATION PROGRAM** | ) |
| **(OMP)** | |

**SUPPLEMENTAL COMMENTS ON**
**AND OBJECTIONS TO THE**
**DRAFT ENVIRONMENTAL IMPACT STATEMENT**
**FOR THE O'HARE MODERNIZATION PROGRAM**

In response to the FAA's request[1], the Community, Religious, and Homeowner Objectors[2] (collectively, the "Objectors") hereby submit these supplemental comments on and objections to the FAA's Draft Environmental Impact Statement ("DEIS") for the O'Hare Modernization Program ("OMP") providing additional comments and information concerning:

(1) Alternatives to the proposed OMP which were ignored or improperly rejected in the DEIS,

(2) Discussions with O'Hare controllers concerning the deficiencies of and alternatives to both the full OMP and Phase 1 of OMP, and

[1] FAA letters dated April 22, 2005, March 28, 2005 and March 7, 2005.

[2] For parties comprising the Community, Religious and Homeowner Objectors are identified in the Objectors Comments and Objections filed on April 6, 2005.

- 2 -

(3) Defects in the DEIS's identity and analysis of Section 4f properties.

These supplemental comments demonstrate the need for FAA to objectively and fully evaluate a number of viable blended alternatives to the OMP that would avoid the destruction of the homes, businesses and parklands located in the Community Objectors and the religious cemeteries of the Religious Objectors, and reduce O'Hare delays and congestion and enhance local, regional and national capacity. 1

As demonstrated by the affidavit of Joseph Del Balzo, President of JDA Aviation Technology Solutions attached hereto and the Campbell-Hill Report attached to the Objectors' April 6, 2005 Comments and Objections, both the proposed OMP and Phase 1 of OMP individually and collectively are seriously flawed and will not produce the desired objectives of reducing delays and congestion and increasing capacity at O'Hare. Mr. Del Balzo held discussions with the air controllers at O'Hare, who expressed concerns about the safety and efficiency of the proposed OMP and Phase 1 of OMP. Those discussions also explored alternatives to OMP which would address the controllers' safety and efficiency concerns while avoiding the destruction of the homes, businesses, parklands and religious cemeteries. These alternatives are described in Mr. Del Balzo's affidavit and presented below. The FAA should carefully and objectively evaluate all of the alternatives discussed below,

- 3 -

| Comment | Response |
|---|---|
| 1 | The FAA has responded to the detailed comments provided in the following pages of this document. |
| 2 | The FAA has reviewed and responded to the "affidavit of Joseph Del Balzo" and the "Campbell-Hill Report" and provided the responses in this **Appendix U.** The "affidavit", document number 050505_01, begins on page U.4-838, and the "Campbell-Hill Report" begins on page U.4-501.<br><br>With regard to Mr. Del Balzo's discussions with air controllers at O'Hare, the FAA points out that beginning in 2002 the Air Traffic division of FAA, including representatives of air traffic management, NATCA, the Center, the O'Hare Tower and the TRACON, have participated in review of the OMP and Phase I. This review is ongoing and concurrent with the EIS process. The FAA is confident that both safety and efficiency concerns regarding OMP and Phase I of OMP have been addressed.<br><br>With regard to the alternatives put forward by the commenter for review, the FAA has evaluated these alternatives using the same screening process used to evaluate the alternatives considered within the DEIS. The FAA's evaluation of the commenter's proposals is presented in a new **Section 3.6** in **Chapter 3.** |

including undertaking the same detailed level of modeling analysis performed by FAA for the alternatives discussed in the DEIS. 2

As further explained below, the DEIS's wholesale rejection of blended alternatives including use of other local, regional and hub airports and congestion management is improper and wholly inconsistent with prior actions of both the FAA and the City with respect to O'Hare development. 3

Finally, these supplemental comments address defects in the FAA's DEIS Section 4f analyses.

**I. There Are a Number of Viable Alternatives That the DEIS Improperly Failed to Examine That Would Reduce O'Hare Delays and Congestion, Enhance Capacity at O'Hare and in the Chicago Region, and Avoid the Enormous Social, Economic and Environmental Destruction of the Communities and the Religious Cemeteries.**

As the Objectors noted in the Comments and Objections, the DEIS is fatally flawed because it failed properly to evaluate and take an objective "hard look" at the OMP. These deficiencies are most prominent in the DEIS alternatives analysis, which failed to examine numerous viable alternatives to the OMP that would avoid the destruction of the homes, businesses, parklands and historically significant structures in communities and avoid destruction of the religious cemeteries and that would also reduce congestion and delays at O'Hare and meet the projected needs of the Chicago region.



| Comment | Response |
|---|---|
| 2 | Please see response to this comment on the previous page. |
| 3 | The FAA disagrees with the comment regarding the "wholesale rejection of blended alternatives." The FAA evaluated a blended alternative that included limited airfield development, use of congestion management, use of other airports, and other non-airfield alternatives in the secondary screening evaluation contained in **Chapter 3** of the EIS. See **Section 3.3** of the EIS for the FAA's rationale for elimination of the Blended Alternative. |

The Comments discussed several reasonable alternatives which the DEIS either ignored or improperly rejected. These alternatives included using the existing O'Hare airport (*i.e.*, the existing runway configuration) combined with use of other local airports, use of other connecting hub airports, use of congestion management, or use of "blended" alternatives involving various combinations of the foregoing approaches.

In addition, the Comments noted that the DEIS failed to consider a single "build" alternative that did not involve the destruction of the homes, businesses, parklands and historically significant structures in communities and the religious cemeteries. Every alternative but the no-build would result in the destruction of the communities and the religious cemeteries. 4

The existence of viable but unexamined alternatives renders the DEIS legally defective. As our Comments and Objections pointed out, the existing runway configuration at O'Hare, when used with a combination of demand management, use of other hub airports, and/or use of other local regional airports is a "blended alternative" that can provide sufficient capacity to meet the projected demand while controlling delays to acceptable levels. Indeed, as discussed below, it was just such a blended alternative that Chicago adopted in its 1983 Master Plan for O'Hare and which FAA approved in the 1984 Record of Decision. 5

- 5 -

| Comment | Response |
|---|---|
| 4 | The FAA disagrees with the comment that "the DEIS is fatally flawed." The DEIS presented a series of alternatives to meet purpose and need, and a complete evaluation of these alternatives, in **Chapter 3** of the EIS. FAA believes that a comprehensive range of alternatives has been considered.<br><br>The commenter has provided more specific comments on alternatives in the subsequent sections of this comment document, and such comments are responded to accordingly.<br><br>The use of existing ORD (the No Action Alternative) and a blended alternative are included in the alternatives analysis presented in the **Chapter 3** of the EIS. These two alternatives were appropriately evaluated as part of the alternatives screening process documented in **Chapter 3** and **Appendix E** of the EIS. Thus, FAA disagrees that such alternatives were, as the commenter asserts, "ignored or improperly rejected".<br><br>Also, please see response to comments 2 and 3. |
| 5 | This comment is incorrect. FAA considered a comprehensive range of alternatives, from the No Action Alternative to several "build" alternatives. The FAA did evaluate several non-airfield alternatives not involving "destruction of the communities and the religious cemeteries." For a discussion of these alternatives and their evaluation, please see **Chapter 3** of the EIS.<br><br>FAA notes the commenter's observation that the "build" alternatives have impacts. These impacts are documented and evaluated in the EIS, see **Chapter 5.** |

In addition to using the existing O'Hare runway configuration as a base component of a blended alternative, there are a number of alternative runway configurations that can be located within the existing footprint of the airport and thereby avoid the destruction of the communities and the religious cemeteries and that as part of a blended alternative in combination with other alternatives have the potential to reduce delays and congestion, enhance capacity and meet forecast demand. 6

**A. The DEIS's Rejection of The Use of Other Airports or of Congestion Management Is Inconsistent With the City of Chicago's Previous Master Plan Which Endorsed Reliance on Such Alternatives.**

While paying lip service to the importance of objectivity and the importance of conducting a thorough analysis of alternatives, the DEIS results-oriented approach rejected or ignored numerous alternatives, including the use blended alternatives involving a combination of alternatives. The DEIS' rejection of the use of other local airports, use of other hub airports and use of congestion management individually or in combination, stands in stark contrast to and is wholly inconsistent with the City of Chicago's prior reliance, in the City's previous Master Plan issued in 1983 (and approved by FAA in the 1984 Record of Decision), on the very alternatives rejected by the FAA in the DEIS. In that Master Plan, the City

- 6 –

| Comment | Response |
|---|---|
| 6 | The FAA's evaluation of the blended alternative in the DEIS included limited O'Hare development in the form of OMP Phase I, referred to as Alternative B. The FAA rejected the alternative, in part, because it did not meet the forecast of aviation demand. The FAA notes that blending the existing airfield in combination with other alternatives also falls short of meeting the forecast of aviation demand, as can be seen in the new **Section 3.6** in **Chapter 3** of the EIS.<br><br>The commenter has suggested that other variations of blended alternatives should be considered. These proposed "new alternatives" are specifically outlined in the later *Section 2* of the commenter's document; see responses to comment 25, beginning on page U.4-871. |
| 7 | The City of Chicago's *1983 Master Plan* has been superseded by the City of Chicago's *February 2004 O'Hare International Airport Master Plan.* Nonetheless, the FAA has responded to the comments regarding the City's *1983 Master Plan* as they appear in the following paragraphs of this document.<br><br>As for the 1984 ROD, FAA notes that the EIS is based on current circumstances, which have changed since the *1983 Master Plan* and the 1984 ROD. Subsequent to, and in accordance with, the FAA's 1984 Record of Decision (ROD), several FAA grants were issued for state system planning which studied Chicago regional aviation capacity issues and the needs for a supplemental air carrier airport. This satisfied all FAA's 1984 ROD requirements. While the State System Plan did not conclude "that O'Hare's runways should not be expanded….", it did recommend a new south suburban airport. In any event, previous state system plan coverage on the topic of O'Hare has been superseded by the State's 2003 passage of the O'Hare Modernization Act, which provided statewide special emphasis for development of the O'Hare Modernization Program.<br><br>In response to this comment and others, the FAA has added discussion of the 1984 ROD and the "State System Plan" in **Chapter 1, Section 1.2.4.1** of the EIS. |

promoted and relied on the very types of blended alternatives to meet the long term needs of the region that the DEIS now rejects. 7

At that time, the City was faced with the same concerns and objectives with respect to O'Hare as today: rising levels of existing and forecast operations and rising levels of delays and congestion. The City's concerns were reminiscent of today's delay and congestion issues.

In the 1983 Master Plan the City indicated that a combination of the following alternatives would meet the long-term forecast traffic demand:

(i) a cap on the number of operations,

(ii) use of Midway, and

(iii) use of other hub airports[3].

The City prepared a capacity analysis and found that as the forecast demand reached the airport's practical capacity delays will increase exponentially:

> "As can be seen in the exhibit, the pattern of delay appears to be exponential, and undergoes a very rapid change in the rate of increase of delay between 1985 and 1995. The proper conclusion to be reached from the exhibit is that the system would begin to deteriorate very rapidly between 1985 and 1995; and that delay and congestion conditions would become increasingly intolerable after 1985."

[3] The "cap" assumed" by the 1983 Master Plan was the market response to growing congestion and delay. Another way to achieve the cap is by congestion management such as were used from 1969-2001 and which are currently in place at O'Hare.

- 7 –

| Comment | Response |
|---|---|
| 7 | Please see the response to this comment on the previous page. |
| 8 | The FAA does not agree that a cap on the number of operations would meet the "long-term forecast traffic demand." The FAA notes that while the NPRM provides for a limit on the scheduled operations, this is only a temporary measure and is not preferable to capacity enhancement.<br><br>With regard to the specific items raised in this comment:<br><br>(1) A cap on operations was a proposed solution recognizing the then-current agreement to not develop new runways at ORD. This is not a solution to accommodate long-term growth in demand, and has been superseded by O'Hare Modernization Act. In response to this comment and others, the FAA has added discussion of the 1984 ROD and the "State System Plan" in **Chapter 1, Section 1.2.4.1** of the EIS.<br><br>(2) Midway has been used to accommodate demand in the Chicago region since 1984. Midway is nearing its capacity, and does not provide a solution for the future. Also see response to *Campbell-Hill's April 6, 2005* comments on the DEIS, specifically, comments 121 through 123 beginning on page U.4-582.<br><br>(3) It is not reasonable to rely on the use of other hubs for airline activity forecast for ORD. Less significant hubs (e.g., STL) have been reduced in favor of major system hubs such as ORD. Also see response to *Campbell-Hill's April 6, 2005* comments on the DEIS, specifically, comments 129 through 132 beginning on page U.4-586.<br><br>Continued on the following page. |

Chicago 1980s Master Plan, Volume VII, p. III-17.

The City then determined that the huge projected delays would force either a limitation on operations or construction of new facilities: "At some point during that time frame, it would become necessary to either curtail traffic or to begin to rely heavily on the addition of new facilities." Master Plan Volume VII, page III-17.

The City then considered alternatives assuming a cap on operations, *i.e.*, what Chicago called a "constrained" alternative at O'Hare.

> "[T]he O'Hare demand growth was assumed to be curtailed between 1985 and 1995, eliminating the need for the extensive development of the unconstrained case [the "unconstrained case" involved two new runways]."
>
> Chicago 1980s Master Plan, Volume VII, p. IV-9.

8

The City decided not to pursue additional runways and instead to rely on use of Midway, use of other hub airports, along with the cap on O'Hare operations:

> "On the basis of benefit/cost relationships, coupled with the high level of community concern for airport noise, the attendant social costs and the questionable ability to implement plans requiring new runways, a city policy decision was made to proceed with planning based upon the role identified as Alternative 4 (constrained development with 120-130

- 8 –

| Comment | Response |
|---|---|
| 8 continued | The commenter has provided citations and paraphrasing from the 1983 Master Plan. As noted in response to comment 7, the 1980s planning conclusions and agreements regarding ORD development have been superseded as well as overtaken by events.<br><br>In addition, the citations offered by the commenter in fact provide many of the reasons why the conclusions/agreements from the early 1980s are no longer relevant or valid. First, part of the basis for accepting a constrained alternative at ORD was the anticipated ability to use Midway to serve growth in regional demand. This did occur during the 1980s and 1990s, but Midway is now essentially at capacity, and does not offer the potential to accommodate future growth in demand. Second, as noted by the commenter, the selection of the constrained alternative in the early 1980s was intended to defer the need for new capacity to a later time; thus, 20+ years later it is reasonable that new capacity would be required. More generally, FAA is basing this EIS on current conditions, data, and analyses; this information is roughly 20 years more recent than the information available for the documents referred to by the commenter. |
| 9 | Please see response to comment 8. |

domestic gates) utilizing the existing runway configuration. ... [I]t was decided to use Midway to serve part of the scheduled commercial activity, in selected short-haul markets, that would have to be diverted from O'Hare. Thus Alternative 2 was selected for Midway, effectively postponing the time when new aviation facilities will be needed to serve the balance of the Chicago area demand."

Chicago 1980s Master Plan, Volume XI, page V-6.

9

As discussed in our Comments and Objections, in addition to Midway Airport, there are a number of airports available to serve the needs of the Chicago region including Rockford, Milwaukee, Gary and the new Abraham Lincoln National Airport in the south suburbs of Chicago. In fact the DEIS acknowledges that "the use of regional airports could potentially relieve demand at O'Hare and reduce the urgency or need for certain improvements" (DEIS at 3-19) but then dismisses this viable alternative without any evidence or analysis to support the rejection.

10

Significantly, and 180 degrees contrary to the current DEIS, the City's 1980s Master Plan not only acknowledged, but relied on the use of other hub airports to accommodate demand, particularly connecting passengers who have no interest in being in or traversing Chicago:

"The selection of the constrained role for O'Hare and an Alternative 2 level of development for Midway will not fully accommodate the forecast level of demand for the Chicago Metropolitan Area in the planning time period.

- 9 -

| Comment | Response |
|---|---|
| 9 | Please see response to comment 8 on the previous page. |
| 10 | The FAA disagrees with the comment that "[FAA] dismisses [the use of other regional airports] without any evidence or analysis." The commenter is ignoring the analysis presented in the appendices (**Appendices C** and **E** of the EIS) to support the conclusions presented in **Chapter 3** of the EIS. The FAA directs the commenter to the analysis of the use of other regional airports in the EIS, which included evaluating this alternative both as a stand-alone "no build" alternative and as part of a blended alternative. |
| 11 | Please see the response to this comment on the following page. |

***

> [I]t can be assumed that this unsatisfied demand will... be diverted to other air carrier connecting hubs such as St. Louis, Kansas City and/or Dallas/Ft. Worth." City 1980s Master Plan, Volume XI, pages V-6-V-7.

Thus, in 1983 Chicago concluded that transfer or connecting traffic that could not be accommodated by the "constrained" alternative could and would be accommodated by the use of other hub airports. Moreover, this 1983 conclusion by the City of Chicago that a "blended" alternative —*e.g.*, use of a "constrained" O'Hare without additional runways coupled with use of another local regional airport (Midway) for some portion of the local origin-destination traffic and with use of other hub airports for some portion of the connecting or transfer traffic was approved by FAA in its 1984 Record of Decision. 11

The Objectors' Comments and the findings of Campbell Hill Aviation Group submitted with the Comments and Objections on April 6, 2005, with respect to the use of other hubs are completely consistent with the City's conclusions in its 1983 Master Plan. Campbell Hill found that "FAA's dismissal of other connecting hubs is... without foundation. Connecting passengers have many options. They provide little economic benefit to the City and they are relatively indifferent with regard to where they make their

- 10 -

| Comment | Response |
|---|---|
| 11 | Please see response to comments 7 and 8 relating to the *1983 Master Plan* and the 1984 ROD. Of particular note regarding this comment, the assumptions and conclusions used in the 1983 Master Plan and 1984 ROD are 20+ years old. Since that time, airlines have increased emphasis on primary system hubs (such as ORD) and reduced emphasis on secondary hubs (such as St. Louis and Kansas City). |
| 12 | This comment is a reference to comments submitted in *Campbell-Hill's April 6, 2005* comments on the DEIS. Please see the response to *Campbell-Hill's April 6, 2005* comments on the DEIS regarding the use of other hubs, specifically, comments 129 through 132 beginning on page U.4-586.<br><br>In addition, the commenter's analyst, Campbell-Hill, co-authored a study in July 2002 entitled *The National Impact of Civil Aviation.* In *The National Impact of Civil Aviation* —it was suggested that "additional investment in the nation's aviation infrastructure will facilitate economic growth and employment" and "more aggressive investment in civil aviation infrastructure is not only justified by benefit/cost analysis—it is also essential to the well being of the U.S. economy and its citizens". In this same study, the only actions deemed significant by Campbell-Hill were the construction of new runways at large hub airports, including ORD. Nowhere in the study was there any mention that the use of alternative or secondary airports could help alleviate congestion and reduce delays at the nation's major airports. |

connections. Yet the FAA utterly failed to evaluate the potential use of other mid-continent hubs for some of O'Hare's future connecting traffic." 12

Moreover, O'Hare's two hub airlines--United and American--both argued for, and acknowledged the viability of, relying on other hubs: "The airlines have the ability to route connecting passengers through other hubs thus accommodating local passengers or increase in local demand. Local passengers have the priority." Letter of United and American dated January 22, 1996, Campbell Hill Report, Exhibit 404. 13

The City's Master Plan also acknowledged that a new air carrier airport would accommodate the forecast demand for the Chicago region:

> "If connections are off-loaded from O'Hare and Midway is used in an air carrier role..., a reduced level of O'Hare development is required to meet the 1995 origin and destination passenger needs, but another major airport will be required to accommodate the remainder of the unconstrained growth thereafter."
>
> 1980s Chicago Master Plan, Volume XI, page V-1. 14

The Abraham Lincoln National Airport will soon be a reality. Last week the Governor submitted to FAA a plan for the proposed airport near Peotone, Illinois and issued a press statement stating that "This is one of the most important steps we could take in creating the Abraham Lincoln National Airport." As Congressman Jesse Jackson Jr., the key proponent of the new airport, stated: "This project, which we have been fighting for the



| Comment | Response |
|---|---|
| 12 | Please see the response to this comment on the previous page. |
| 13 | The commenter refers to a 1996 letter. FAA believes that the more recent support for the OMP offered by United Airlines and American Airlines supersede the opinions offered almost 10 years ago. The FAA notes that in the public hearing conducted by the FAA for the EIS, both American and United Airlines appeared in support of this project, see page U.6-52 (American) and U.6-98 (United). |
| 14 | Please see the response to comments 7, 8 and 11. |
| 15 | Please see the response to this comment on the following page. |

better part of a decade, comes at no cost to the taxpayers, and is exactly what is needed. ... Chicago needs new aviation capacity, and the Southland need an economic anchor." 15

The Illinois Department of Transportation projected that within five years the Abraham Lincoln National Airport could have almost 100,000 annual operations and almost 500,000 annual enplanements. Over the long term, the new airport will have the capability to have 180 gates and handle over 30 million annual enplanements.[4] 16

The facts belie the DEIS's unsubstantiated claim, which has no evidentiary support, that the Abraham Lincoln National Airport "would not likely function as a significant secondary airport for the region." The same claims were made 25 years ago about Washington Dulles airport, which has now become one of the primary airports serving the Washington D.C. region. 17

In short, the DEIS's rejection of viable blended alternatives such as use of Midway and other regional airports, use of other hub airports and congestion management techniques to control or manage the level of operations at O'Hare to reduce delays and accommodate projected demand, is inconsistent and cannot be reconciled with the approach previously taken by

[4] Moreover, the Abraham Lincoln National Airport can be built out to its full potential at far less cost than the extremely expensive OMP. Cost information on the Abraham Lincoln National Airport can be obtained from the developers of that airport.

- 12 -

| Comment | Response |
|---|---|
| 15 | FAA notes the commenter's citation that the new SSA is proceeding through development. FAA has supported development of SSA. Please see topical response B-2 on page U.5-7. |
| 16 | The commenter notes that SSA will have the capability to have 180 gates and handle over 30 million annual enplanements in the long-term. The FAA notes that the Inaugural Airport Program (IAP) as proposed by the State of Illinois would include a single runway and terminal with a small number of gates. The State of Illinois high case forecast projects 55,400 operations and 2,474,000 enplanements 10 years after the airport opens. As a point of reference, the 2002 Terminal Area Forecast for O'Hare projects over 1.1 million operations and over 50 million enplanements in 2018.<br><br>FAA believes that ultimate development of the SSA site to levels of capacity cited by the commenter will depend on the pace of demand growth at the airport, but almost certainly will not occur until long after the time horizon considered in this EIS.<br><br>Further, the availability of airport capacity in another location does not automatically mean that there will be reduced aviation demand and need for capacity at ORD. **Chapter 3** and **Appendix C** of the EIS present FAA's analysis of the potential use of other regional airports. |
| 17 | The FAA notes that the statement quoted from the EIS is based on the analysis of other airports contained in **Appendix C** of the EIS. The FAA refers the commenter to that appendix for the "evidentiary support" tha the commenter claims is non-existent. While it is true, the EIS includes a statement in **Appendix C,** "a proposed SSA would not likely function as a significant secondary airport for the region (greater than 10 percent of the regional share)." This statement is made in the context of the reasonable foreseeable future studied in the EIS, or out to 2018. Based on the long-range SSA forecasts, SSA, 10 years after opening, could accommodate between 4% and 7% of the region's originating passengers.<br><br>Also, please see response to comment 16. |

the City that expressly relied on those very alternatives in lieu of runway expansion. 18

**B. The DEIS Failed to Evaluate Viable Alternative Runway Configurations Within the Existing Footprint of O'Hare That Would Avoid the Destruction of the Communities and the Religious Cemeteries.**

A fundamental flaw of the DEIS is its failure to evaluate a single "build" alternative within the existing footprint of O'Hare that would avoid the destruction of the homes, businesses and religious cemeteries.

The Objectors have retained leading aviation experts, Joseph Del Balzo (former Acting Administrator of the FAA) and Dr. Kenneth Fleming (Embry Riddle University) to evaluate alternative runway locations and configurations. These experts have worked with a focus group of air traffic controllers at O'Hare to understand their concerns about OMP and Phase 1 and to explore alternatives to the City's preferred alternative. These discussions with the controllers confirm the validity of the Objectors' concerns about the infirmities of both the full OMP and Phase 1. 19

**1. Controllers' Concerns About OMP and Phase 1.**

The controllers have previously expressed the following safety and efficiency concerns about the OMP and Phase 1 in a letter dated November 30, 2001 to Senator Peter Fitzgerald:

- 13 -

| Comment | Response |
|---|---|
| 18 | FAA does not believe that the commenter's assertion is relevant to consideration of the sponsor's request in the subject EIS. The commenter asserts that the FAA's evaluation of alternatives in the current EIS is not consistent with analyses that were conducted in the early 1980s. Please see response to comments 7 and 8. |
| 19 | The commenter refers to an independent analysis of OMP and evaluation of alternative runway layouts. These analyses and evaluations are presented in more detail in separate sections of the comment document that follow, please see response to comments 20-26. |

First, the removal of the two major Northwest-Southeast crosswind runways is a serious safety and efficiency concern:

> "The [OMP] calls for the removal of the NW/SE parallel runways (Runways 32L and 32R). This is a concern because during the winter it is common to have strong winds out of the northwest with snow, cold temperatures, and icy conditions. During these times, it is critical to have runways that point as close as possible into the wind. Headwinds mean slower landing speed for aircraft and they allow for an airplane to decelerate quicker after landing which is when landing on an icy runway. Without these runways, pilots would have to land on icy conditions during strong cross wind conditions. This is a possible safety hazard."

20

Second, the addition of a new east-west parallel runway on the far north side of the airport (which is the first step in Phase 1) will have a negative impact on airport capacity. This northern runway is considered by the controllers to be undesirable, indeed virtually useless, for a number of reasons.

The physical placement of the northern runway and its final approach course would effectively cut off the departure runways and the paths of the departing aircraft from runways 32 L and 32R and 4L because otherwise the departure aircraft would cross or interfere with an arrival stream. The only way to make this work would be to significantly increase the final approach spacing for both 9L and the new northern runway. The controller's focus group advised Mr. Del Balzo that spacing would have to be at least doubled, cutting the arrival rate in half for each runway. Runways 4L and 32R

- 14 -

| Comment | Response |
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| 20 | Based on the FAA review of the analysis contained within the O'Hare Master Plan, an airfield configuration that combines an east-west orientation with crosswind runways in a northeast-southwest configuration meets and exceeds FAA wind coverage criteria. The resulting airfield would resemble those existing at Hartsfield-Jackson Atlanta International (Atlanta) and Dallas/Fort Worth International airports, where recent advances in air traffic control technology for parallel runway operations have been incorporated. **Exhibit A-7** of **Appendix A** of the EIS shows the runway layouts of Atlanta and Dallas/Fort Worth. |
| 21 | The FAA disagrees with the comment that "neither the proposed northern runway nor the proposed closely space [sic] southern runway individually or collectively will increase capacity; indeed…those runways will produce marginal to no capacity enhancement and could increase, not reduce delays." These two runways represent OMP Phase I or Alternative B as it is called in the EIS. The FAA notes that OMP Phase I would reduce delays relative to the No Action Alternative, as shown in **Appendix D** of the EIS. |

departures would be impacted for the same reasons: the departure path of aircraft on these runways would cross both 9L and the new north parallel while arrivals are coming into the airport.

Thus, the only departure runway that would be available in Phase I would be the new south parallel; however, this runway is too closely located to current 9R and therefore the operations are dependent on one another during IFR conditions. This means that a departure can be cleared for takeoff only when the arrival has touched down on the arrival runway. The impact produces a departure rate less than one-third the arrival rate and this imbalance between arrival and departure rates would cause gridlock on the ground, making this configuration impossible to use.

In sum, neither the proposed northern runway nor the proposed closely space southern runway individually or collectively will enhance capacity; indeed, according to the controllers' focus group those runways will produce marginal to no capacity enhancement and could increase, not reduce delays. 21

Third, in the focus group discussions and in NATCA's letter to Senator Fitzgerald, the controllers expressed significant concerns about the proposed OMP parallel runway configuration, which the controllers in their letter to the Senator called a "design flaw", which "creates a runway incursion problem, which is a very serious safety issue." This "design flaw" will increase the number of runway crossings and thereby the potential for

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| Comment | Response |
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| 21 | Please see the response to this comment on the previous page. |
| 22 | With regard to the safety comment, the FAA Air Traffic Division (including representatives of both management and the National Air Traffic Controllers Association (NATCA) participated in the development of taxi routes for all Build Alternatives. Procedures were developed to taxi aircraft safely behind departure aircraft to minimize the number of crossing of active runways. Additionally, Land and Hold Short Operations (LAHSO) procedures allow taxiing aircraft to safely cross the runway beyond the hold short point. Operational procedures for the Build Alternatives were based on *FAA Orders 7110.65 – Air Traffic Controller Handbook*, and *7110.118 – Land and Hold Short Operating Procedures.* The FAA evaluated runway crossings through an analysis comparing two alternative airfields with the existing airfield and with other major air carrier multi-parallel runway airports. The results of this analysis indicate that over time, the risk of runway incursions of the preferred airfield would be approximately equivalent to the existing airfield and less than other existing major air carrier multi-parallel runway airports.<br><br>Also, see response to comment 92 on page U.4-432. |

| Comment | Response |
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| 22 | Please see the response to this comment on the previous page. |

runway incursions by over ten-fold, from approximately 100 per day to over 1,700 per day. The greater the number of runway crossings (whether the crossings are "active" or "passive" (i.e. behind departure intersections)) the potential for mistakes increases. Pilots may misunderstand controller instructions and attempt to cross when another aircraft is getting ready to land or takeoff or foreign pilots may not have a good enough command of English to follow complicated controller taxi instructions. Controllers may make a mistake by issuing a clearance when it is not appropriate. The configuration creates a serious potential safety hazard.

DFW's vaunted parallel runway configuration has created the very crossing/incursion problems the controllers identified with respect to OMP. A recent report issued by DFW proposing new perimeter taxiways (a solution unavailable at O'Hare due to footprint constraints) states:

> "On average DFW experiences over 1,700 runway crossings daily. ...Under current operations, the Local Air Traffic Controller conducts all runway crossings before releasing the aircraft to the Ground Controller. This situation increases the Local Controller's workload and creates radio frequency congestion. During major arrival and/or departure pushes, tradeoffs in airfield efficiency have to be made to safely balance all operations.
>
> This balancing partially consists of controllers delaying departing aircraft so that arriving aircraft can cross the departure runways to get to the terminal area. Because arrivals stack up at the various runway-crossing points, the Local Controller must "gap" departures to allow these crossings to occur. These situations are most evident during the peak traffic times.

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In an effort to improve safety and airfield efficiency by reducing the number of active runway crossings (with the added benefit of reducing runway incursion potential and reducing arrival and departure delays), a perimeter taxiway (PT) concept is proposed. The concept includes new perimeter taxiways on the east and west sides of the Airport." 22

Fourth, the proposed OMP configuration will greatly increase the time and complexity of taxiing aircraft to/from the terminals. The controller focus group expressed concerns that the "simulations" have not taken into account real-world human factors issues with respect to the more complex taxi requirements of OMP. Most simulations assume that aircraft will follow prescribed taxi routes with prescribed aircraft separations. However when pilots are receiving and controllers are giving complicated instructions over congested radio frequencies in a crowded and novel taxi/runway environment, "simulated" taxi models bear little similarity to real world conditions. 23

Fifth, the entire OMP depends on the implementation of the so-called "high and wide" changes to the airspace redesign. This plan will require two additional radar sites at O'Hare, two new towers, new infrastructure and a large increase in *experienced and fully trained* controllers. At a minimum, the new runways will require 96 fully certified and trained controllers at O'Hare alone compared to the current contingent of only 60 controllers. This is a substantial shortfall and does not take into account attrition. It requires almost 2 years to fully certify a controller. 24

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| Comment | Response |
|---|---|
| 22 | Please see the response to this comment on page U.4-868. |
| 23 | Average taxi distances will increase with the preferred alternative; however, simulation modeling has demonstrated time spent in departure queue lines will be significantly reduced. Today, at O'Hare each operating configuration has normal taxi routes, although not formalized. However, there are many times that taxi routes become altered/nonstandard due to a variety of causes including lack of concrete. Under extreme, but not rare, conditions the ground controllers are forced into a phenomena called "daisy chaining" which has taxiing aircraft using nonstandard routes to keep them moving, enabling flights to "peel off" when a gate or departure slot opens up.<br><br>In the future, knowing that the airfield will be larger and the taxi routes longer, the Air Traffic Workgroup has begun the process of developing standardized taxi routes to minimize the complexity and frequency congestion. Additionally, with the planned implementation of standardized taxi routes, the Airport users can more efficiently plan for fuel loads and will know with certainly what the taxi times will be, both inbound and outbound. The users have been briefed on the proposed operation and have agreed that the increased throughput and ability to plan more than offsets the increased distances. This review was conducted by the same Air Traffic Workgroup that developed the taxi and aircraft routing strategies, and was fully vetted during the 1,400 hours of review during the computer simulation modeling. |
| 24 | The commenter's response is misleading when stating "[t]his plan will require two additional radar sites at O'Hare, two new towers...". Although it is being evaluated, it has not been determined that actual additional radar sites will be required, but that additional radar coverage is necessary; in fact it has been determined that one of the current radar sites that serves O'Hare provides adequate coverage for the east High and Wide operation. The coverage issue for the west High and Wide operation has not been resolved, however, the FAA has identified alternatives and is evaluating the feasibility of each alternative. Further, High and Wide is a completely separate operation from the on-airfield needs for additional ATCTs, and no additional infrastructure is required at the Chicago Terminal Radar Approach Control to support the operation. A hiring and training plan is currently in place to address the controller staffing issues. This plan takes into account not only the time to certifiy controllers at the Chicago facilities, but the training success rate, the projected retirement rate and all associated factors. This plan, apart from the EIS, is being fully coordinated within the FAA. |

**2. Additional On-Airport Alternatives That FAA Must Thoroughly Evaluate.**

Our experts, working with the controller focus group, have explored on-airport alternatives which would address the controllers' concerns about OMP and Phase 1, not require the destruction of the homes, businesses and parkland and the religious cemeteries, and have the potential to reduce delays/congestion, enhance capacity and, as part of a blended alternative with other mechanisms, meet forecast regional demand. See attached Affidavit of Joseph Del Balzo.

These alternatives need to be thoroughly and objectively evaluated by the FAA with the same level of analysis and modeling the FAA employed with respect to the OMP and the other alternatives evaluated in the DEIS.

The following is a table of on-airport alternatives that — in combination with use of demand management, use of other local airports and/or use of other hub airports — would avoid destruction of the homes, businesses and parklands in the communities and would avoid destruction of the religious cemeteries.

| | |
|---|---|
| **Alt H** | Existing O'Hare with congestion management (and other airports) to achieve and maintain the 9.3 minute AAAW delay level modeled for 2002 by FAA. |
| **Alt I** | Existing O'Hare with congestion management (and other airports) to achieve and maintain the modeled delay level FAA has as a goal in its March |

- 18 -

| Comment | Response |
|---|---|
| 25 | The commenter provides a table of on-airport proposals that are presented as possible alternatives that would avoid destruction of homes, businesses and parklands in the communities and would avoid destruction of the religious cemeteries. These are referred to as "alternatives" by the commenter, but FAA believes they are more properly characterized as variants of other alternatives that have been reviewed. Nonetheless, FAA has incorporated these variants into the evaluation presented in **Chapter 3** of the EIS and carefully considered the merits of each.<br><br>The FAA has evaluated the commenter's proposals in a new **Section 3.6** in **Chapter 3.** |

| | |
|---|---|
| | 25, 2005 Notice of Proposed Rulemaking[5]. |
| **Alt J** | Existing O'Hare with congestion management (and other airports) to achieve and maintain whatever level of AAAW and IFR delay FAA determines is most cost-effective, including delay levels at the 4, 6 and 8 minute AAAW levels reflected in other FAA statements as to acceptable delay. |
| **Alt K** | Phase I with congestion management (and other airports) to achieve and maintain any of the AAAW delay levels described in Alternatives H-J |
| **Alt L** | Existing O'Hare with additional runways which would not require the destruction of homes businesses and religious cemeteries — with congestion management (and other airports) to achieve and maintain any of the AAAW delay levels described in Alternatives H-J |
| **Alt L-1** | Alternative L-1 is depicted in Attachment 1. It involves the following elements: (1) the extension of Runway 9R/27L to 13,000 ft., (2) the construction of a new southern runway of 8,000 ft. (10L/28R) located 1,600 ft. south of existing runway 9R/27L, and, (3) the construction of a new runway with 6,095 ft. (10R/27L) 4,300 ft. south of existing runway 9R/27L. |
| **Alt L-2** | Alternative L-2 is depicted in Attachment 2. This alternative also involves extension of existing runway 10L/28R, but instead of construction a new runway 2,300 ft. south of runway 10L/28R, there would be a new runway with 11,760 ft. 2,300 ft. north of existing runway 9R/27L. |
| **Alt L-1 and L-2** | These alternatives are variants of L-1 and L-2 that can involve individual elements of these alternatives |

[5] Because of the "apples vs. oranges" confusion caused by FAA's use of various delay metrics, it is difficult to determine how the goals of the March 25 NPRM quantitatively compare with the 9.3 2002 AAAW modeled delay

| | |
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| **Variants** | (*e.g.*, just the southern 10R/28L) or different lengths for individual elements depending on such variables as moving Irving Park Road. Each variant would be examined to see whether each of the elements individually or collectively was cost-effective. |

Alternative L-1 would allow for three simultaneous, non-dependent arrival streams in all weather conditions (with arrivals on existing runway 9L/27R, existing (and extended) runway 9R/27L, and the new southernmost runway 10R/28L). The new mid-south runway 10L/28R would increase the departure capability allowing a balanced level of departures during all weather conditions.

Using this alternative configuration as part of a mix of blended alternatives (including use of other local, regional and hub airports (similar to the Los Angeles plan recently approved by the FAA), and if necessary, use of congestion management, could provide an effective solution to O'Hare delays and congestion, meet the forecast needs of the region, and avoid the destruction of the homes and businesses in the communities and the religious cemeteries.

Alternative L-2 alternative will also allow 3 simultaneous arrival streams and enhanced departure capability to allow for balanced arrivals/departures and increase capacity.

Both of these alternatives avoid the substantial safety and efficiency defects of both the OMP plan and Phase 1.

- They preserve the cross wind runways which the controllers and our experts stated is an important safety and efficiency objective.
- They avoid the runway crossing/incursion problems of the OMP. They preserve the current efficient taxi configuration and will avoid the confusion and taxi delays attendant to the OMP proposal.
- They hold the potential of making the airport more efficient, of enhancing capacity and reducing delays/congestion, especially if coupled as part of a mix of blended alternatives as discussed above.
- Significantly, they hold the potential of providing delay reduction benefits without the need to destroy the home, businesses, parkland, historical sites and religious cemeteries 25

**II. The DEIS Fails to Properly Evaluate the Environmental Impacts on Section 4f Properties.** 26

There are a large number of 4(f) properties that have been either completely overlooked, or improperly dismissed by the FAA in the DEIS.

**A. 4(f) Properties Not Included in the DEIS**

**1. Elk Grove Village 4(f) Properties Not in DEIS**

- 21 -

| Comment | Response |
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| 25 | Please see the response to this comment on page U.4-871. |
| 26 | As a result of information received through the public comment and mitigation coordination process on the DEIS, the FAA became aware of additional concerns related to Section 4(f) resources in the project area. The FAA initiated further contact with the Village of Bensenville, and Elk Grove Village. In addition to phone contacts, on March 7, 2005, March 28, 2005, and again on April 13, 2005, FAA sent letters to the Village of Bensenville and/or Elk Grove Village requesting input to aid in FAA's Section 4(f) evaluation of resources. On April 27, 2005, information was submitted to FAA concerning the Elk Grove Village system of "Pocket Parks".<br><br>Additionally, on May 6, 2005, two separate documents (this particular document included) were submitted to the FAA by representatives of St. John's United Church of Christ, Rest Haven Cemetery Association, the Village of Bensenville and Elk Grove Village. FAA has considered this correspondence in the Section 4(f) Evaluation. In addition, FAA has included the submittals in Appendix E of the Section 4(f) Evaluation to ensure full disclosure of the issues raised. With the exception of two properties, the information pertaining to the "Pocket Parks" and the additional submitted parks and local sites of historic importance were included in this Section 4(f) Evaluation. Two properties, Godiva Park and Busse Farm, were unable to be located based on the information submitted. Subsequent phone calls were made to the Elk Grove Park District (noted as the owner of Godiva Park) and internet searches yielded no specific information regarding the locations of these two resources.<br><br>**Appendix L** of the EIS includes the Final Section 4(f) and Section 6(f) Evaluation. |

The following Elk Grove Village Section 4(f) properties were not included in the DEIS discussion of Section 4(f) properties[6]:

1. Osborne Park (Owned and Maintained by the Elk Grove Park District. The Park functions as a baseball/softball field on 3.3 acres).

2. Udall Park (Owned and Maintained by the Elk Grove Park District. The Park functions as a baseball/softball/soccer/basketball recreational complex along with tennis courts and playground. The Park sits on 6.4 acres).

3. Andrews Park (The Park is adjacent to Rupley Elementary School. The Park is owned by School District 59 and maintained by the Elk Grove Park District through an intergovernmental agreement. The Park functions as a baseball field and neighborhood recreation playground and sits on 4.5 acres).

4. Sanders Park (Property is leased and maintained by the Elk Grove Park District. The Park functions as a soccer and recreational field. The Park sits on 2.0 acres).

5. Appleseed Park (Owned and Maintained by the Elk Grove Park District. The Park functions as a baseball/soccer/basketball/tot-lot recreational complex. The Park sits on 3.3 acres).

6. Salt Creek Field (The Park is adjacent to the Salt Creek Elementary School. The Park is owned by School District 59 and maintained by the Elk Grove Park District through an intergovernmental agreement. The Park functions as a soccer field and neighborhood recreation playground and sits on approximately 4 acres).

7. Marshall Field (The Park is adjacent to the Elk Grove Township Daycare Facility. The Park is owned by Elk Grove Township and maintained by the Elk Grove Park District through an intergovernmental agreement. The Park functions as a competitive

[6] Elk Grove Village officials question why the map shown in the DEIS as Exhibit 5.8-1 fails to extend west to Rout 53 in Elk Grove Village when a new runway is proposed to direct flights right over this area and when the Exhibit extends the 4(f) examination all the way west to Route 53 in the area south of Elk Grove.

soccer field with basketball courts and neighborhood recreation playground and sits on 3.8 acres).

8. Rainbow Falls Recreational Complex including public and private properties. (This Park is owned and maintained by the Elk Grove Park District. It is undergoing complete reconstruction into a water park and in-line hockey rink facility. It may have been included in the DEIS as Lions Park. Lions Park (including Rainbow Falls) is 11.4 acres plus 3 additional acres of privately owned green space owned by the Lutheran Church. The private property is utilized as recreational space along with another approximate 2 acres of privately owned property owned by Queen of the Rosary Church which functions as a baseball diamond).

9. Woodland Meadows (this Park is owned by the Cook County Forest Preserve and maintained by the Elk Grove Park District through an intergovernmental agreement. The Park functions as a soccer field complex and wooded passive recreational area. The Park sits on 23 acres).

10. Huntington Park (Owned and Maintained by the Elk Grove Park District. The Park functions as a soccer field and passive recreational area. The Park sits on 3.44 acres owned by the Park District with another 3.56 acres of quality wetlands owned by the homeowners association).

11. Johnson Park (Owned and Maintained by the Elk Grove Park District. The Park functions as a baseball field, fishing lake, and passive recreational paths. The Park sits on 14.7 acres).

12. Debra Park (Owned and Maintained by the Elk Grove Park District. The Park functions as a soccer practice field with a tot lot. The Park sits on 2.8 acres).

13. Ridge Park (Owned and Maintained by School District 59 and leased by the Elk Grove Park District. The Park functions as a neighborhood playground complex and soccer field. The Park sits on 6.8 acres).

14. Hattendorf Park (The Park is adjacent to the Hattendorf Center Preschool. It is owned and Maintained by the Elk Grove Park

District. The Park functions as a passive recreational area with a tot lot. The Park sits on 5.6 acres).

15. Veterans Memorial Park (Developed in 2003 by Elk Grove Village on two-thirds of an acre. The Park is located at the NE intersection of Biesterfield Road and Wellington Avenue. It includes memorials honoring veterans of military service and a memorial fountain area. The Park serves passive recreation purposes).

16. Village Green (Developed in 1998 by Elk Grove Village. This area is several acres of multiple ownership (Village, Library, and commercial center) and functions as a statuary park with 6 bronze statues, fountains, and clock tower, and it serves as a place for community festivals and gatherings.)

17. Hanson Park (brand-new park developed exclusively as a soccer field. It is located on the east side of Rohlwing Road, just north of Nerge on approximately 2 acres. The park is owned by Elk Grove Village and maintained by the Elk Grove Park District under an intergovernmental agreement.)

18. Godiva Park (Owned and maintained by the Elk Grove Park District. The Park functions as a neighborhood playground complex. The Park sits on one acre).

19. Majewski Metro Park in Des Plaines (It is believed that this property is owned by the Mount Prospect Park District and serves as a large soccer and sports field complex. The park is believed to be in excess of 50 acres. We recommend that the FAA investigate with the Village of Des Plaines and/or the Mount Prospect Park District).

20. Terrace Park in Bensenville boarded by Devon Ave, Spruce Ave, and Iroquois Street (Believed to be owned and maintained by the Wood Dale Park District. Size of this park is unknown. We recommend that the FAA investigate with the Village of Bensenville or Wood Dale Park District.)

21. "Athletic Fields" identified in DEIS are "Community Athletic Fields" located in Itasca, not Elk Grove.

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22. Ned Brown/Busse Woods Forest Preserve which has more visitors annually than Yellowstone National Park. (The Ned Brown Forest Preserve was created by an act of Federal Legislation and is said to be one of the oldest Forest Preserves in the nation. The Ned Brown Preserve is a 3700 acre (5.8 square mile) property. This preserved land, also known locally as Busse Woods, surrounds Busse Lake, a 590-acre lake that serves as a place for boating and fishing. The Ned Brown/Busse Woods Preserve has 11.2 miles of bicycle trails and a heard of Elk. The Preserve also offers 32 large picnic groves and a model airplane flying field.)

23. "Salt Creek Marsh" Forest Preserve (Owned and maintained by the DuPage County Forest Preserve District. It consists of 95 acres of quality wetlands and forest. The property is utilized for passive recreation purposes).

24. Elk Grove Cemetery (Located in unincorporated Elk Grove Township and privately owned. The cemetery is estimated at several acres in size with grave markers that date to the 1840s. Its historical significance includes the fact that only five revolutionary war veterans are buried in various cemeteries in the Chicago area. Two of these veterans are buried in the Elk Grove Cemetery. One was Aaron Miner who was one of the first pioneers to settle in the Elk Grove area.)

25. Salt Creek County Club/Golf Course in Itasca. (We recommend that the FAA contact the Village of Itasca or the Itasca Park District regarding information on this facility).

26. Elk Grove Village owned 2 acres of "Preservation Area" just south of Arlington Heights Road on the west side of Salt Creek. (The Village acquired this property in the late 1980s to preserve the Salt Creek area from encroaching development. The property includes a forest.)

27. Elk Grove High School Preserve Area along Salt Creek (This property on the east side of Salt Creek is adjacent to and more extensive than the Village property on the east side of Salt Creek. This property is forested with a trail along the creek utilized for passive recreation. In addition, the High School uses a portion of the property for several baseball/softball/football fields. Open space is estimated at 50 acres.)

28. MWRD Preservation Area consisting of approximately 90 acres located North of Higgins/South of I-90. The property is located in the Mount Prospect Park District and we understand that the District intends to develop the property into a ski hill recreational use.

29. Busse Farm – the only active farm in the NW suburbs and associated 100+ year old farmhouse. (This property is owned and maintained by Allan Busse. He was born and raised in the farmhouse and a descendant of the original Busse Family which bears the name Busse Woods Forest Preserve and Busse Lake.)

30. Elk Grove Park District Farmhouse Museum. The farmhouse is the 2nd oldest in Elk Grove and dates to 1856. The museum includes many artifacts from that same period. The farmhouse and museum are owned and operated by the Elk Grove Park District.

31. Original Farmhouse on north side of Cosman at Cosman. The Cook County Forest Preserve owns this home. It is recommended that the FAA contact Cook County for more information concerning this historically preserved home.

32. Original Farmhouse on east side of Arlington Heights Road at Edgeware. The Cook County Forest Preserve owns this home. It is recommended that the FAA contact Cook County for more information concerning this historically preserved home.

33. SBL Park Site (Owned by Elk Grove Village and Arbor Club homeowners association. Property consists of 1.38 of forested acres owned by Elk Grove Village and another 3+ quality wetland acres that are privately owned. Together, these lands are utilized for passive recreational purposes.)

34.

35. Historic Tonne House – Oldest House in Elk Grove circa 1840. Privately owned by the Berthold Family. It is recommended that the FAA contact the Elk Grove Historical Society for additional information on this home.

36. Elk Grove Village owned and Park District maintained preservation on the east side of Salt Creek from Placid Avenue to south of Walnut

Street. This preserve property of 17+ acres includes pastoral grounds and mature trees. It is utilized for passive and active recreational purposes including, fishing along Salt Creek, canoe launching into Salt Creek, and trail biking amongst the wooded areas. The property may have been labeled in the DEIS as Burbank Park. In that case, Burbank Park will total in excess of 30+ acres. If Morton Park is included as Burbank Park and the Village preserve, the total property will be nearly 50 acres.

**2. Bensenville 4(f) Properties Not Included in DEIS**

The following Bensenville Section 4(f) properties were also not included in the DEIS discussion of Section 4(f) properties:

1) Lake LGK Pocket Park;

2) Redmond Park;

3) Korthauer Log House Historic Site;

4) Library District Park;

5) Bensenville Library Garden of Knowledge;

6) Legends Golf Course;

7) Veterans Park West (on west side of Church Rd.);

8) Palm-Breiter Park (Church Rd.);

9) Rose Park (at Belmont & York);

10) Kremples Park (at Deloris & Pamela).

As previously discussed, the Lake LGK Pocket Park property was acquired to enhance Elk Grove's system of "Pocket Parks" and is currently being developed for both passive and active recreational uses. Additional

information establishing the 4(f) eligibility of this park is set forth in our letter to Michael W. MacMullen, dated April 27, 2005.

The Bensenville Library – Garden of Knowledge is located on the Bensenville Library property which is adjacent to Varble Park, but owned and operated as a separate entity by the Bensenville Library for outdoor educational purposes. The Bensenville Library also owns and maintains approximately 7 acres of heavily wooded land at this location for passive recreational uses. This land is known as the Bensenville Library District Park and features undisturbed natural habitat, and Potawatomi Indian archeological resources. The Korthauer Log House, also located on the Library property, is a well known historic site built by the Henry Korthauer in 1844, and is currently operated as a living history museum.

The Palm-Breiter Park is being built on Church Road. This is a nature park featuring indigenous flora and fauna native to the pre-settlement prairie. 27

**B. 4(f) Properties Dismissed from Planning to Avoid and Minimize Harm**

The FAA's April 13, 2005 letter requesting a meeting or conference call with Bensenville and Elk Grove regarding Section 4(f) properties, referenced only a single property, Bretman Park, as a "4(f) resource owned by the Village of Bensenville which would be directly impacted through acquisition,

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| Comment | Response |
|---|---|
| 27 | As noted above in response to comment 26, the additional properties submitted by the commenters were added to the analysis within the Section 4(f) and Section 6(f) Evaluation. In some instances there were properties that may have been duplicates (i.e. Korthauer Log House Historic Site). However, any additional properties were added to the analysis within the Section 4(f) Evaluation.<br><br>**Appendix L** of the EIS includes the Final Section 4(f) and Section 6(f) Evaluation. |
| 28 | Please see the response to this comment on the following page. |

if an O'Hare Modernization "Build" Alternative were to be implemented." This overlooks a number of other 4f properties that need to be evaluated. 28

**1. Additional Directly Impacted 4(f) Properties**

In addition to Bretman Park, the following seven 4(f)/6(f) properties, all located in Bensenville and initially identified in the DEIS, will also be directly impacted by the OMP build-alternatives and should also be the subject of avoidance and mitigation discussions with Bensenville: 1) Schuster Park (also a 6(f) property); 2) St. Johannes Cemetery; 3) Rest Haven Cemetery; 4) Green Street School; 5) Gas station; 6) Geodesic Dome; and 7) DuPage County Forest Preserve (Silver Creek).

With respect to the DuPage County Forest Preserve (Silver Creek), the FAA has apparently eliminated this site from additional 4(f) analysis because it concludes that there are "no recreational areas within the portion to be acquired." DEIS at 5.8-13. As noted in our April 20 teleconference this is not correct.

It is unclear why the remaining six directly-impacted properties were not included in your April 13, 2005 letter. Because they would be subject to direct impact through demolition or removal under the build-alternatives, these properties must be central to the FAA's review of alternatives, and planning to minimize harm under Section 4(f), and must be included as the subject of consultation with the Village of Bensenville. 29

- 29 -

| Comment | Response |
|---|---|
| 28 | FAA's letter dated April 13, 2005 to the Village of Bensenville specifically referenced Bretman Park because this property is under the jurisdiction of the Village of Bensenville. The other properties referenced in the comments have not been "overlooked" in the evaluation of Section 4(f) properties. The specific directly impacted 4(f) properties referenced in the comment are taken into consideration in the Section 4(f) and Section 6(f) Evaluation. |
| 29 | Please see response to comment 28. |

**2. Additional Indirectly Impacted 4(f) Properties**

Bensenville and Elk Grove are also concerned about the potential for indirect impacts on 4(f) properties. We believe that all of the 4(f) properties within the study area are potentially subject to indirect impacts which could constitute a substantial impairment and constructive use of the property, yet none of these properties was included in the FAA's April 13, 2005 letter regarding Bensenville and Elk Grove's 4(f) properties.

In addition to the 8 Bensenville properties that will be directly impacted by the proposed build alternatives, 11 additional properties in Bensenville, and 13 additional properties in Elk Grove are listed in the DEIS as Section 4(f) properties within the study area.

The Bensenville properties are as follows: 1) Churchville School; 2) DiOrio Park; 3) Lions Park; 4) Pines Park; 5) Poplar Park; 6) Sunrise Park; 7) Sunset Park; 8) Varble Park/Water Park & Golf Waters/ Deer Grove; 9) Veteran's Memorial Park; 10) Woodcrest Park; and 11) Woodside Park.

The additional Elk Grove Properties are as follows: 1) Audubon Park; 2) Bartrum Park; 3) Burbank Park; 4) Fairchild Park; 5) Lions Park; 6) Muir Park; 7) Olmstead Park; 8) Athletic Fields; 9) Burbank Park; 10) Jaycee Park; 11) Morton Park; 12) Olmstead Park; and 13) Roosevelt Park.

The DEIS acknowledges that all the OMP build-alternatives will result in substantial impairment and a constructive use of the Locomotive Museum

at Bensenville's Veteran's Memorial Park due noise impacts associated with both the construction and build-out phases of those alternatives. However this property was not referenced in the FAA's April 13, 2004 letter.

We also believe that all of the 4(f) properties within the study area could potentially be substantially impaired by additional $PM_{2.5}$ air pollution generated by construction of the OMP build-alternatives. The majority of these properties are used by young children (and adults) for outdoor recreational purposes. As you know, children are especially vulnerable to the long and short term health hazards associated with air pollutants like $PM_{2.5}$. Therefore, all of these properties are potentially subject to a substantial impairment and constructive use caused by OMP-related air pollution. The Agency has no basis to dismiss these risks and has a duty to conduct further investigation of these well established health risks as a part of both its NEPA review and its Section 4(f) analysis.

The DEIS concluded that there are no 4(f) properties that are even potentially subject to substantial impairment caused by air pollution because: "For each of the future construction phases, there were no Section 4(f) lands that would experience exceedances of the NAAQS as documented in Section 5.6, Air Quality." DEIS at 5.8-11. On our April 20, 2005 conference call, we reiterated out position that the FAA cannot validly reach that conclusion because it simply does not know whether or not this is a true statement. The

FAA has made no analysis of the criteria pollutant $PM_{2.5}$ in connection with this DEIS.

The FAA stated on the conference call that "there were no standards for $PM_{2.5}$." This is not correct. As we indicated in our April 6, 2005 comments on the DEIS, $PM_{2.5}$ is a criteria pollutant for which the EPA has established health-based ambient air quality standards. The National Ambient Air Quality Standard ("NAAQS") for $PM_{2.5}$ were promulgated nearly eight years ago by the EPA on July 18, 1997. See 62 Fed. Reg. 38,652 (1997). The EPA's health-based standard is 15 $\mu g/cm^3$ (annual) and 65 $\mu g/cm^3$ (24-hour). Cook and DuPage counties currently exceed these health based standards. On December 17, 2004, EPA designated Cook and DuPage counties as "non-attainment" for the $PM_{2.5}$ standard.[7] Construction activities utilizing diesel powered construction equipment are likely to generate a significant amount of additional $PM_{2.5}$ in an area that is already in non-attainment for this pollutant. Accordingly, the FAA has no basis for concluding that the 4(f) properties within the study area will not be impacted or substantially impaired by $PM_{2.5}$ pollution. 30

**C. Consideration of Additional Alternatives**

[7] The EPA is still developing implementation rules for states to use in demonstrating reasonable further progress towards meeting NAAQS in state implementation plans submitted under the Clean Air Act, but this has no relevance to the FAA's obligation to meet its NEPA and Section 4(f) obligations with respect to a clearly identified and defined criteria air pollutant like $PM_{2.5}$.

- 32 -

| Comment | Response |
|---|---|
| 30 | The potential indirect impacts of the Section 4(f) properties in the project area have been evaluated in Section 2.1.2 of the Section 4(f) and Section 6(f) Evaluation. This included the indirect impacts related to noise, surface transportation, water quality, air quality, and visual/aesthetic effects.<br><br>The FAA notes that in May 2005, the FAA established a methodology for estimating aircraft $PM_{2.5}$ emissions. FAA has included an emissions inventory and dispersion modeling for $PM_{2.5}$ in the Final EIS. Please see **Section 5.6** in the Final EIS.<br><br>In addition, **Appendix L** of the EIS includes the Final Section 4(f) and Section 6(f) Evaluation. |
| 31 | Please see the response to this comment on page U.4-887. |

During our April 20 teleconference, the FAA appeared to be focused only on mitigating harm from OMP build-options. Before addressing the issue of mitigation, harm avoidance needs to be given a "hard look". Section 4(f) requires the FAA to: 1) evaluate all "prudent and feasible alternatives" to the use of 4(f) properties; and 2) engage in "all possible planning to minimize harm" to the 4(f) resources. Similarly, both NEPA and the National Historic Preservation Act (NHPA) also require the evaluation of alternatives for the purpose of avoiding and minimizing environmental harm. Such evaluations require that alternatives be selected and weighed against the level of environmental harm presented by project alternatives. In order to weigh relative harm, all potentially impacted resources must first be identified. As indicated in our April 6, 2005 DEIS comments, this initial resource identification has not been properly completed pursuant to the requirements of NEPA, Section 106 of the NHPA, or Section 4(f).

We believe that if the resource identification processes under each of these statutes had been properly completed, that any number of blended alternatives, including the on-airport alternatives discussed above would have been identified as viable alternatives to the OMP development alternative.

Therefore, given the existence of more prudent and feasible alternatives to the OMP which would not directly impact 4(f) or Section 106

resources, the DEIS is legally flawed, must be rescinded and a new DEIS prepared which fairly and thoroughly evaluates these feasible alternatives.

On a separate but related set of issues relating to the religious cemeteries, the FAA is affirmatively assisting Chicago in Chicago's violation of the First Amendment Free Exercise rights of the Religious Objectors and is deliberately violating FAA's additional responsibilities under the federal Religious Freedom Restoration Act. The existence of numerous "blended" alternatives and the 1983 decision by the City of Chicago to use what is now called a "blended alternative" (*i.e.*, no expansion of O'Hare boundaries coupled with the use of other local airports and other city hub airports) — a decision that was approved by the FAA in its 1984 ROD — demonstrates:

A. There is no compelling governmental need to destroy these religious cemeteries, and:

B. There are a variety of "blended alternatives" that can accomplish the stated governmental goals articulated by FAA in the DEIS while at the same time avoiding the unnecessary destruction of the religious cemeteries. 31

**III. Conclusion**

The DEIS ignored or improperly rejected a number of viable alternatives to OMP. These supplemental comments provide additional evidence demonstrating the defects of OMP and Phase 1 and the need for

- 34 -

| Comment | Response |
|---|---|
| 31 | In response to this comment and others, the FAA has added **Section 5.22** to **Chapter 5** of the EIS for the FAA's discussion of legal issues involving potential destruction of St. Johannes and Rest Haven Cemeteries.<br><br>Finally, as noted in previous responses, the FAA has evaluated the commenter's proposals in a new **Section 3.6** in **Chapter 3.** |
| 32 | The FAA disagrees with the conclusion of the commenter. The FAA believes it has fully and fairly evaluated the commenter's alternatives in the new **Section 3.6** in **Chapter 3** of the Final EIS. |

| Comment | Response |
|---|---|
| 32 | Please see the response to this comment on the previous page. |

FAA to evaluate other alternatives including on-airport alternatives that will address the safety and efficiency defects of OMP without destroying the homes, businesses, parklands and religious cemeteries. The Objectors urge FAA to fully and fairly evaluate the alternatives listed in the April 6 Comments and Objections and in these Supplemental Comments and Objections with the same level of analysis and modeling detail as the FAA performed for OMP. 32

Respectfully submitted,

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Counsel for The Village of Bensenville and The Village of Elk Grove Village

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**MOTHERS AGAINST AIRPORT POLLUTION**

POB 1702 * Arlington Heights., IL * 60006-1702 * Fax: (847) 506-0202 * Phone: (630) 415-3370

050629_01

June 29, 2005

VIA FACSIMILE and email

Mr. Mike MacMullen
Federal Aviation Administration
2300 E. Devon Ave.
Des Plaines, IL 60018
Fax (847) 294-7046 ompeis@faa.gov

Re. ENVIRONMENTAL SHORTCUTTING DETRIMENTAL EFFECTS

As the only organization taking a pro- active interest in the O'Hare OMP significant environmental and public health effects, we are unable to protect the health, safety and general welfare of the millions of people who will be affected due to the shortening and shortcutting of the environmental protection process.

As you may know, the reason for the shortcutting of the protecting environmental protection review process was a result of the lobbying by the airport and airlines executives.

What we need is the time, money, and expertise to compete with the air transportation industry interests.

For example: You, the Federal Aviation Administration recently threw the O'Hare 5,000 page OMP DEIS at us and we expect the FEIS in July, with a probable 30 day comment period; there is a General Conformity document due by June 20, producing a final version in 30 days; we have a major wetland document with comment date due July 5th; National Airspace Redesign, cost/benefit analysis, and other numerous additional FAA and EPA interactions, etc.

All of this has been dumped on us in less than 6 months…you are just burying us with unrealistic deadlines designed specifically to prevent a full and open review process! 1

Add to this our inability to access FAA documents on your website, etc. Clearly the FAA's intent is to create a bureaucratic nightmare for those in the private sector wishing to comment by the deadline.

While this may benefit the industry with its desired results, it is dangerous to the American public, considering all of the significant potential harmful results, including an increase in climate warming effects, (jet aircraft are a proven cause of climate change). Massive airport expansion is being rammed through in the face of increasing evidence of significant PM2.5 harmful effects, while the EPA struggles to complete

| Comment | Response |
|---|---|
| 1 | The FAA responded to this letter from Mothers Against Airport Pollution on July 1, 2005. The FAA letter is provided in its entirety beginning on page U.4-893. |
| 2 | The FAA has performed an air quality analysis of PM2.5 emissions, including dispersion in coordination with IEPA. The results of these analyses are included in **Section 5.6** of the Final EIS. These results indicated that there would be no exceedances of the NAAQS, with or without the proposed O'Hare Modernization for this pollutant. The NAAQS takes into consideration impacts on children and the elderly as the most sensitive portions of the population. |

MAAP - ARCO
6/29/05
p. 3

PM2.5 research (e.g., speciation) in a timely manner and works against air transportation industry resistance to get valid aircraft engine PM2.5 information and to get engines certified for PM2.5. 2

While NASA is working on new technology, more time is needed to study the effects and develop the new technology and equip the fleet. More time is needed overall, not less, and these shortcutting results could be devastating. USDOT is on record of wanting to triple flights by 2015 and we have documents that state flights will double every 8-10 until 2050. (We are also concerned with the almost impossible technological hurdles and the unrealistic timeline that Congress has demanded of NASA in the development of climate warming technology.)

While there is an answer to all of the problems that would benefit all of the stakeholders (see attachment), the industry refuses to comply and instead pressures public officials to continue with the status quo. This both harms the public and the industry itself, and is also unsustainable, due to rising fuel costs, climate warming, etc. Thus, we need adequate resources as mentioned above.

Because of this and other numerous issues, we request that the FAA produce an OMP Supplemental Draft EIS (SDEIS). Also, we request an extension of 90 days for Draft O'Hare Modernization Section 300/4(f) and Section 6(f) Evaluation comment period.

Furthermore, we are requesting from you, the federal government, to help us obtain the badly needed extension in time, money, and expertise in order to compete with one of the worst polluters in the world and protect the American public and our planet. 3

Thank you.

Sincerely,

Jack Saporito
MAAP Board Member
Executive Director, Alliance of Residents Concerning O'Hare

c: B. Cooper, FAA Project Manager
T. Pastika
D. Pino

| Comment | Response |
|---|---|
| 2 | Please see the response to this comment on the previous page. |
| 3 | Please see response to comment 1 on the previous page. |

***Locally, the O'Hare airport and nationally, the aviation flight expansion plan is just a bad plan for the resident, traveler, air transport industry and taxpayer. It is not sustainable, for many reasons including the rising cost of fuel and significant climate change problems.***

***Sustainable solutions are not being considered because it does not benefit those that are behind the current scheme; however, there is a comprehensive solution that will work for all stakeholders.***

**Better Solutions and the Need to Think Out of the Box:**

1. Better solutions cost about 1/3 the cost of expanding highways and airports.
2. Will honestly create hundreds of thousands of new full time jobs, while creating at least hundreds of new business in Illinois alone...millions more jobs, nationwide.
3. Will make the air transportation industry and our local airlines more sustainable, creating new jobs in that industry also.
4. Relieve the resident from significant environmental and public health harm, giving aviation technology its much-needed time to catch up.
5. There is a comprehensive solution for these problems, backed by independent government analysis/reports, that would work for all stakeholders, including air transportation employees, residents, taxpayers, and travelers; making the air transportation industry long-term sustainable and maintaining Chicago, as our nation's transportation hub.

This alternative and other short to long-term solutions are well presented in the GAO-02-185 report "NATIONAL AIRSPACE SYSTEM: Long-Term Capacity Planning Needed Despite Recent Reduction in Flight Delays". We paraphrase:

a) Take non-safety/navigation issues away from FAA and give to DOT; thus, taking into consideration all long-term transportation capacities needs not just another failed attempt to fix aviation.

b) Put back the operational and management controls that Congress took away (exceptions to the high-density rule, etc.) that ignited the massive delays of 2000, which we continue to experience.

c) Build a Wayport (reliever) system to open slots at major airports, leaving them open for origin and destination flights. This will eliminate the need for airport expansion. [The major airports today handle an average of 57% straight transfer traffic.]

d) Build a national world-class High Speed Rail system linking the airports together (in order to make the aviation industry more sustainable, give the airports some type of ownership and the airlines, codesharing with rail).

All of this will give aviation technology the decades of time it needs to catch up with the needed technology, making the industry and our economy more sustainable. It has been reported that this plan could create millions of new jobs, at least thousands of new spin-off businesses at about 1/3 the cost of building new highways or expanding the airports.

The majority of these created jobs will be "high quality", i.e. not just minimum wage employment (e.g. airport concessions). Construction/trades jobs currently proposed for "rehabbing" existing airports would be transferred and expanded, not eliminated. Overall airport safety would be significantly improved by not forcing additional capacity into land-locked existing airports.

For more comprehensive solutions, see: Martin, Peter & Alan Martin. *"A Vicious Cycle: How Can The Government Justify Expanding Airport Capacity To Solve An Overcapacity Problem?"* Oct. 30, 2003, p. 31-33.

***Contact: The Alliance of Residents Concerning O'Hare, Inc. for more information: 847-506-0670***

AReCO, Mothers Against Airport Pollution & American Working Group for National Policy represent people on all sides of the serious air transportation sustainability and airport viability issues.

U.S. Department
of Transportation
**Federal Aviation Administration**

Great Lakes Region
Illinois, Indiana, Michigan,
Minnesota, North Dakota,
Ohio, South Dakota,
Wisconsin

2300 East Devon Avenue
Des Plaines, Illinois 60018

Via Fax and Federal Express

July 1, 2005

Mr. Jack Saporito
Mothers Against Airport Pollution
823 N. Salem
Arlington Heights, Illinois 60004

Dear Mr. Saporito:

Thank you for your letter of June 29, 2005 on behalf of the Mothers Against Airport Pollution organization. The Federal Aviation Administration (FAA) welcomes and appreciates all public input as it conducts its O'Hare Modernization Environmental Impact Statement (EIS) process.

Your June 29th letter begins by stating that your organization is the only organization taking a pro-active interest in the environmental and public health effects of the City of Chicago's proposed O'Hare Modernization Program (OMP). In response, we must first point out that both the U.S. Environmental Protection Agency (USEPA) and the Illinois Environmental Protection Agency (IEPA) are designated cooperating agencies in the FAA's O'Hare Modernization EIS process. As such, USEPA and IEPA have actively participated in and contributed to the FAA's EIS work. Additionally, the FAA has taken a number of steps throughout the O'Hare Modernization EIS process to solicit input from other government agencies and from the public on all aspects of the proposed action. FAA's efforts have included public outreach sessions and, following release of the Draft EIS in January 2005, a formal public comment period that included three separate public hearings. In response, the FAA has received in excess of 1,000 comment submissions from organizations and individuals regarding the proposed modernization of O'Hare and the impacts, positive or negative, that this action may have on the environment and the surrounding population. As stated above, the FAA welcomes all input from the public as we develop the O'Hare Modernization EIS.

Your June 29th letter further suggests that the FAA is shortcutting the environmental review process as we develop the O'Hare Modernization EIS. While it is true that Congress has directed Federal agencies to seek process streamlining in the completion of required environmental studies, this direction does not alter or eliminate any procedural requirement as defined by the National Environmental Policy Act (NEPA) and associated Federal regulations. Accordingly, the FAA has adhered to all NEPA requirements throughout the O'Hare Modernization EIS process which, when completed, will have spanned a start to finish time frame of over three years.

2

Your June 29th letter also expresses concern regarding the volume of information being put forth by the FAA and the time frame available to review that information. In response, we do acknowledge that the EIS process produces substantial information that is made available for public review. In light of this, the FAA has taken a proactive and innovative approach to information-sharing for the O'Hare Modernization EIS. Beginning in 2003 (and continuing throughout 2004/2005), we established and have maintained a publicly accessible web site for posting of key documentation pertaining to FAA's O'Hare Modernization EIS work. Over the course of approximately the last two years, FAA has posted in excess of 7 million pages of data, correspondence, and reports on this web site for public inspection. Additionally, in an effort to provide ample time for public review of our Draft EIS document, the FAA released that document in January 2005, followed by a 60-day public comment period and a 15-day comment period extension. We do acknowledge that the FAA currently has in public circulation a Draft Section 4(f) and Section 6(f) Determination document, with a deadline of July 5, 2005 for public comments to be received by FAA.

We also acknowledge statements in your June 29th correspondence, as well as in past correspondence from you, regarding difficulties you have encountered in your efforts to access information from FAA's web site. As we have stated in prior responses to you, we believe our web site to be functional and accessible to the public based on the substantial interaction our staff has had with numerous members of the public who have accessed our information. When requested, the FAA has provided assistance to individuals who, for any of a number of technical reasons, encountered difficulty in obtaining access, and we have documented our success in assisting these individuals in obtaining access. Furthermore, to establish a second avenue for full access by the public to key EIS-related information, the FAA has placed copies of EIS-related documentation in public libraries in the vicinity of O'Hare. Specifically in regard to your AReCO document access issues, as our efforts to assist you did not provide web access to your satisfaction, the FAA took an additional step and provided you a complete set of DVDs containing the air quality analysis information that you had sought.

In response to a request in your June 29th letter for FAA to produce a Supplemental Draft EIS and to extend for 90 days the public comment period for the Draft Section 4(f) and Section 6(f) Determination, we do not concur that either action is warranted. Once again, we reiterate that the required steps of NEPA have been adhered to throughout our O'Hare Modernization EIS process, and throughout this process we have taken some innovative steps to make EIS-related documentation available to the public at the earliest possible opportunity.

Lastly, concerning your request that the Federal government assist you in obtaining additional funding and expertise for review of the O'Hare Modernization EIS, the FAA is not obligated to provide funding upon request for external review of its EIS analytical work. The FAA enlists the services of highly qualified consultants whose expertise is objectively applied to the environmental analyses contained in the EIS. NEPA requires such objective analysis by FAA and it requires that we share this information with the public and seek public input. In regard to the O'Hare Modernization EIS, the FAA has complied with or exceeded NEPA requirements.

In addition to the above points, we highlight the fact that your June 29th letter referenced an attachment; however, no attachment was included with the letter copies received by the FAA. If it was your intent to submit an attachment with the letter, please forward a copy of the attachment to us.

3

As we complete the O'Hare Modernization EIS process, the FAA welcomes whatever specific comments your organization may have concerning our environmental analysis, and we thank you for your interest in our analysis of the O'Hare modernization proposal.

Sincerely,

Barry D. Cooper
Manager, Chicago Area Modernization Program Office

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VILLAGE OF WILMETTE
1200 Wilmette Ave.
WILMETTE, ILLINOIS 60091-0040

RECEIVED JUL 05 2005

OFFICE OF THE
VILLAGE PRESIDENT

(847) 251-2700
FAX (847) 853-7700
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June 30, 2005

Mr. Michael W. MacMullen
Airports Environmental Program Manager
Federal Aviation Administration
2300 East Devon Ave.
Des Plaines, IL 60018

**Re: Comments on the Draft O'Hare Modernization Evaluation**

Dear Mr. MacMullen:

Thank you for the opportunity to comment on the Draft O'Hare Modernization Evaluation for the O'Hare Modernization Environmental Impact Statement per your letter of May 20, 2005.

Based on the noise analysis of the three build alternatives proposed at Chicago O'Hare Airport, there do not appear to be any projected increases or decreases to the noise levels within the corporate boundaries of the Village of Wilmette. This assessment is based on an analysis (attached) conducted by the staff from the Chicago Area Modernization Program Office. Should an additional build alternative be considered we would appreciate being advised of the potential noise impacts.

I encourage that the O'Hare Modernization Plan continue to mitigate any negative noise impacts on residents of Wilmette. Thank you for soliciting and accepting the Village's comments. Should you require further information, please contact Jason Bielawski, Assistant to the Village Manager, at 847-853-7503 or bielawskij@wilmette.com. 1

Sincerely,

Christopher S. Canning
Village President

Cc:

Village Board
Michael J. Earl, Village Manager
Jason Bielawski, Assistant to the Village Manager

Printed on recycled paper

| Comment | Response |
|---|---|
| 1 | Comment noted. |

**Draft O'Hare Modernization Environmental Impact Statement**
**Wilmette, Illinois Noise Information**

The FAA evaluated noise impacts over an area approximately 30 nautical miles by 25 nautical miles. The entire City of Wilmette, Illinois was evaluated in this analysis. The FAA performed a detailed noise analysis on three "build" alternatives in addition to the do-nothing alternative.

**Potential Noise Impacts on Wilmette**
Exhibits containing the results of the FAA's noise analysis, which include at least a portion of Wilmette, are presented on Attachment 1. For all alternatives evaluated, there are no projected increases or decreases within the City limits of Wilmette. The closest increases and decreases in relationship to Wilmette are presented in the two paragraphs below.

**Closest Noise Increases to Wilmette**
There are some increases of 5 db or more in the 45 to 60 DNL east of Wilmette over Lake Michigan. These increases are located approximately 3 nautical miles east of the shore line. Most likely these increases are due to air traffic procedure modifications developed to serve the proposed reconfigured runways at the airport.

**Closest Noise Decreases to Wilmette**
There are some decreases of 5 db or more in the 45 to 60 DNL west of Wilmette over Glenview. These decreases are located starting approximately 1 nautical mile west of the City limits of Wilmette. These reductions in noise are most likely due to changes in runway use in relationship to the proposed reconfigured runways at the airport.

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