Alliance of Residents Concerning O'Hare

...a grass roots not-for-profit corporation

To achieve a balance between public health and the economy

AReCO

Proud Recipient:
* 1995 Environmental Merit Award, Arlington Heights
* 1996/1999 Illinois State Senate Recognition

Protecting the Health and Safety of Millions of O'Hare Affected Citizens

To: Mike MacMullen	Fax Number : 847-506-0202
From : Jack	At:
Pages: 5	For Information Call: 847-506-0670

ARcCO

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"

July 21, 2005

VIA FACSIMILE and regular mail

Bharat Mathur, Acting Regional Administrator
USEPA Region 5
77 West Jackson Blvd.
Chicago, IL 60604-3590

Re. O'Hare DEIS Meteorological "Worst Case" Year (1990) Selection

Dear Mr. Mathur:

Thank you for your brief response to our letter of 6/20/05 regarding your OMP DEIS Comments (filed April 6). Your response was mute on the issue of supporting our petition to the FAA to publish a SDEIS; we assume you have taken that under advisement and are in communication with the FAA in that regard.

On a related matter, we stated that we generally agreed with your comments (below) to the DEIS on Meteorological Data and Modeling.

> *Meteorological Data and Modeling*
> In Appendix J, the DEIS states that one year of meteorological data was initially selected because it represented worst-case weather conditions. (The EPA's Guideline of Air Quality Models states that five years of meteorological data should be used to ensure that the variability in weather conditions is adequately captured.) It is EPA's understanding that the year 1990 was selected after a screening analysis indicated that it would produce the highest modeled predictions among the five years of data examined. Also, the report states that if the results of the modeling were within 10% of the National Ambient Air Quality Standards (NAAQS), the modeling would be conducted with the additional four years of data to ensure that the highest concentrations were predicted. The results of this additional modeling, as well as the results of the screening analysis, could not be found in the DEIS. The results of the screening analysis and the results from the remaining four years of meteorological data need to be reviewed to determine if alternative variability has been adequately considered. We are unable to verify that the year chosen represents the worst case for all alternatives. The results from the screening analysis should be included in the FEIS.

However, we have had a chance to reflect further on this issue, in particular, on the undocumented decision by the FAA to use 1990 as "the" year to represent "worst case" weather conditions, as we also spoke to in our own DEIS Comments. [For your reference, we have reproduced that segment below.]

As stated, the DEIS reference (page J-155) to this decision claims: "Based on discussions with IEPA, year 1990 meteorological data was used to represent maximum conditions," with associated footnote 35, "Teleconference with IEPA, November 22, 2002." And further, "Detailed analysis using the year 2002 input data and the 2018 data for Alternative C resulted in the selection of the 1990 meteorological data for use in the analysis as this year of meteorological data produced the highest concentrations."

Our recent reflection has greatly heightened our concerns about this selection method and the choice of 1990 as representative of "worst-case conditions", to the point that we now strengthen our prior comments to state that:

> **"We believe that the FAA's decision to base all of the DEIS air quality analyses projections on the use of 1990 as the meteorological year (data file) to represent the "worst-case" expected weather year for Air Quality to be experienced at O'Hare airport for the next 30 years... is wrong and, therefore, the AQ dispersion analyses results are in fact not "worst-case"."**

There are a number of reasons for this re-statement, including:

1) The observations contained in our DEIS Comments (excerpted here but not including Appendix D1).
2) The points raised in your DEIA Comments.
3) The undefined nature of the method statement above, "...produced the highest concentrations." Of what? There are seven NAAQS (four analyzed in DEIS) with averaging time requirements of 1 hour, 3 hours, 8 hours, 24 hours, and annual averaging time requirements. Which was used in decision-making? "Highest concentration" of one category could very well be NOT highest in another.
4) The fact that regional weather experiences long term cycles and that we appear to be in a new, hotter, part of the cycle, whereas 1990 (and the entire 1986-1990 selection period) were still in the "colder" part of the cycle. [Perhaps as witness, the current temperature and minimum precipitation extremes in the Midwest region.]
5) The fact that IEPA, in their generally well done "NOx SIP Call" supportive ozone modeling analyses[1] chose 1991 and 1995 as "...representative of typical ozone episodes...", which implies conditions conducive to high concentrations of VOC's and NOx, yet 1991 nor 1995 was considered.
6) The fact that 1990 experienced a low number of ozone exceedance days as compared to both 1988 and the immediately adjacent 1991.
7) U.S. air-stagnation data indicates that 1990 experienced considerably fewer summer air stagnation days than other years in the 1986-1998 period, such as 1988, 1991 and 1995.
8) The unknown impact of using upper air data for Peoria, almost 100 miles away, for the EDMS simulations.[2] Upper air conditions drive hour-by-hour characterizations of

---

[1] "Technical Support Document, Midwest Regional Modeling: 1-Hour Attainment Demonstration For Lake Michigan Area", September 18, 2002

[2] Per USEPA APPENDIX W TO PART 51—GUIDELINE ON AIR QUALITY MODELS
"9.3.3.1 Spatial or geographical representativeness is best achieved by collection of all of the needed model input data in close proximity to the actual site of the source(s)."

9) O'Hare area atmospheric stability, and relatively slight changes in stability can have marked effects on pollutant concentration results. For example, a shift from an effective condition of "slightly stable" to "slightly unstable" can reduce concentrations by almost 10:1.
10) The fact (wide consensus) that we are now in a man-made global warming period for the foreseeable future, indicative that the future will be generally hotter and probably drier in the Midwest region, and that these conditions will have not been experienced in samples of past weather periods (e.g. 1990).

Again, we have petitioned the FAA to issue an SDEIS instead of moving directly to a FEIS, considering the numerous issues raised to date. We once more ask your support in this petition, as we also want to see the FAA's documentation supporting the 1990 selection process…it's just that we firmly believe it should appear within a SDEIS rather than the FEIS, along with the addressing of these numerous other issues (ref. our full DEIS Comments).

AReCO DEIS Comments Excerpt

**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).

Considering the possible dire outcome, it is extremely important to get this right.

Thank you.

Truly yours,

Jack Saporito
Executive Director

c: Marion Blakey
Barry D. Cooper
Kenneth Feith
Sherry Kamke
Suzanne King
Michael MacMullen
Bryian Manning
Patricia Morris
Terry Pastika
Delores Pino
Stephven Rothblatt
Kenneth Westlake