

O'HARE MODERNIZATION PROGRAM
AERONAUTICAL STUDY: 2003-AGL-0878-NRA
FAA COMMENTS/ CITY RESPONSE

GENERAL COMMENTS

Ref. No.	Comment	Response
1	The review and comments associated with Case Number 2003-AGL-0878-NRA are for planning purposes only. Construction is not permitted until the Federal Aviation Administration (FAA) issues a Final Environmental Impact Statement (EIS) and a favorable Record of Decision (ROD).	Noted.
2	The FAA, Airway Facilities (AF), System Management Office (SMO) is responsible for all existing FAA facilities. Work impacting FAA equipment because of the projects depicted in this Airport Layout Plan (ALP) will require that the sponsor/contractor notify the FAA AF, SMO of the project pre-construction meeting. The sponsor is responsible for establishing a reimbursable agreement to protect, relocate, and/or re-establish FAA equipment that will be disturbed during sponsor's project. Before each construction activity begins, FAA AF, SMO shall be contacted to provide locations of existing facility cables.	Noted.
3	All FAA facility and/or infrastructure additions, modifications, relocations and/or removals required to implement the proposed ALP will require a reimbursable or similar agreement. The proposed ALP identifies the relocation and/or establishment of numerous communication, weather, radar and navigational aid systems. In addition, it would require the relocation of FAA infrastructure and support facilities. Advisory Circular (AC) 150/5300-7B, FAA Policy on Facility Relocations Occasioned by Airport Improvements or Changes, should be referenced for guidance. The Policy was written to reaffirm to the aviation community the FAA policy governing the responsibility for funding relocation, replacement and modification to Air Traffic Control and air navigation facilities that are made necessary by improvements or changes to the airport.	Noted.

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4	<p>The City of Chicago, Department of Aviation (DOA) is responsible for providing a line of sight evaluation for all proposed construction that would be located between any existing and future Air Traffic Control Tower (ATCT) and any movement area under its control.</p>	<p>The Final “North Airport Traffic Control Tower Site Selection Study” was submitted to FAA September 12, 2003.</p> <p>Similarly, an ATCT site selection study will be conducted for any additional future ATCT similar in scope to that previously submitted.</p> <p>Additional ATCT LOS studies for specific facilities that may affect ATCT LOS will be conducted as needed in conjunction with facilities design.</p>
<p><i>JETBLAST</i></p>		
5	<p>In accordance with FAA Airport Design AC 150/5300-13, Airport Design, paragraph 600. D. Jet Blast/Exhaust, NAVAIDs, monitoring devices and equipment shelters should be located at least 300’ behind the source of jet blast to minimize the accumulation of exhaust deposits on antennas. See AC 150/5300-13, Chapter 8, The</p>	<p>Phase I of Jet Blast Study provided to FAA.</p> <p>Phase II in progress and to be submitted to the FAA by November month-end.</p>

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	Effects and Treatment of Jet Blast. The City shall conduct the jet blast study workscope as identified in the June 9, 2004 letter from the Chicago Area Modernization Program Office to the City of Chicago. (See Attachment A)	
6	The Runway 14R Localizer (LOC) antenna array will stand outside the runway and taxiway safety areas, but inside the Runway 10L/28R Object Free Area (OFA). The array may be in the path of jet blast from airplanes turning from the north parallel taxiway of Runway 10L onto the north parallel taxiway of Runway 32L. The array would be expected to receive repeated 70-mph breakaway thrust jet blasts from B-747's during the facility life. Consideration should be given to mitigate these blast effects.	Jet blast mitigation will be assessed during engineering/design phase. Information to be provided to the FAA through the NAVAID Working Group. Also, see response to Comment 5.
<i>ACCESS ROADWAYS</i>		
7	Conduct the access roadway workscope as identified in the June 9, 2004 letter from the Chicago Area Modernization Program Office to the City of Chicago. (See Attachment A)	Access/ service roads will be depicted on the phased drawings as part of the phasing workscope.
8	As FAA and the City of Chicago work together to further refine the locations of service and access roads, the FAA cautions against making connections where the parallel taxiway turns into the first or last connector taxiway, due to runway safety concerns.	See response to Comment 7.
9	For many Navigational Aids (NAVAIDs), access roads/routes are not shown (e.g., mid-Runway Visual Ranges (RVRs)), or are only partially shown. One partially shown access road system is for Runway 27R High Intensity Approach Landing System with Sequenced Flashing Lights in the Category (CAT) 2 Configuration	See response to Comment 7.

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	(ALSF-2), where the path is not shown from the segment ending at Station 10+25 to the rest of the ALSF-2. Access routes to Glide Slope (GS) facilities surrounded by taxiways must be clearly defined.	
<hr/> <i>PHASING DRAWINGS</i> <hr/>		
10	Conduct the phasing workscope as identified in the June 9, 2004 letter from the Chicago Area Modernization Program Office to the City of Chicago. (See Attachment A)	Phasing drawings will be provided as requested in FAA Workscope letter of June 9. ADDITIONAL INFORMATION IS NEEDED FROM THE FAA AS TO THE NUMBER OF PHASES TO BE PROVIDED AND DETAIL REQUIREMENTS OF EACH PHASE.
<hr/> <i>AIRCRAFT RESCUE & FIRE FIGHTING (ARFF)</i> <hr/>		
11	Conduct the Aircraft Rescue Fire Fighting (ARFF) workscope as identified in June 9, 2004 letter from the Chicago Area Modernization Program Office to the City of Chicago. (See Attachment A)	ARFF workscope including field tests completed. As part of the certification of the proposed North Runway 9L/27R, the City will demonstrate actual response times required by FAR Part139 upon completion of Future Runway 9L/27R.
<hr/> <i>NAVAIDS/FAA FACILITIES</i> <hr/>		
12	The proposed ALP, Aeronautical Study number 2003-AGL-0878-NRA, identifies the best location for FAA NAVAIDS, given the information currently available. It is	Type, location and phasing of NAVAIDS will be determined through the engineering/

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	required that prior to construction, all FAA National Airspace System (NAS) facilities will undergo extensive siting evaluation by the FAA and the sponsor. The FAA and the sponsor will use more specific and timely information to determine the optimal location, in accordance with applicable FAA orders, AC's and siting criteria. Specifically, the placement of the Very High Frequency (VHF) Omni-directional Range (VOR), Airport Surveillance Radar (ASR), ATCTs, components of the Instrument Landing System (ILS) as well as surveillance, communication and weather system facilities, etc. will require additional engineering to determine their optimal placement. In addition, each construction activity shall be preceded by a Construction Safety Phasing Plan (CSSP) aeronautical study.	design phase and information provided to the FAA through the NAVAIDS Working Group.
13	To accommodate the modifications proposed under the ALP, extensive duct work, infrastructure and fiber optics cable modifications are needed. Proactive, aggressive planning by the sponsor will be necessary to accommodate or support the infrastructure requirements within the periods and phases identified.	See response to Comment 12.
14	The VOR with Distance Measuring Equipment (DME) critical area has a radius of 1000'. The proposed ALP identifies the existing and future location of the VOR/DME, as well as its critical area. The VOR 1000' critical area is equivalent to a Building Restriction Line (BRL). Any proposed construction, grade change, massing of vehicles or aircraft within 1000' of any VOR shall be evaluated by the FAA in order to protect the integrity of the VOR operation. The area within the critical area must not be modified without prior approval from the FAA.	See response to Comment 12.
15	The ASR critical area has a radius of 1500'. The proposed ALP identifies the existing and future locations of the ASRs, as well as the critical areas. The ASR critical area should not be equated to a BRL. Proposed constructions within an ASR critical area must be evaluated, and if possible, approved on a case-by-case basis. Any proposed construction, grade change or structure proposed within 1500' of any ASR shall be	See response to Comment 12.

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	evaluated by the FAA to protect the integrity of the ASR operation. The area within the critical area must not be modified without prior approval from the FAA.	
16	In response to the ALP proposed under earlier Airspace Study number 2002-AGL-0848-NRA, the FAA requested that the critical area for the National Weather Service (NWS) owned Automated Surface Observation System (ASOS) and its 500' critical area be depicted. The current proposal, 2003-AGL-0878-NRA, identifies the future location of the ASOS co-located with the Runway 27L GS. With this configuration, the ASOS 500' critical area depiction is not necessary, however it should be understood that a 500' critical area exists around the proposed ASOS. This particular critical area should not be equated to a BRL. Construction should be evaluated, and if possible, approved on a case-by-case basis. Any proposed construction, grade change or structure proposed within 500' of the proposed ASOS should be evaluated to protect the integrity of the ASOS operation. The area within the critical area must not be modified without prior approval from the FAA and the NWS.	See response to Comment 12.
17	Underground diesel fuel storage tanks will be required at some locations. It is assumed that each of the LOC/ALSF-2 buildings will contain a diesel Engine Generator (EG). Each EG requires a minimum of a 1,000-gallon diesel fuel tank. Because the LOC buildings must be within the Runway Protection Zone (RPZ), the tanks must be placed underground. The underground tanks must meet all the applicable local, state, and federal environmental requirements.	See response to Comment 12.
18	The Precision Approach Path Indicator (PAPI) facilities are, by design, located close to runways and taxiways. It will be necessary to design the area in such a way to promote operability, serviceability and accessibility to the PAPI facilities. To facilitate protection of the PAPIs from grass cutting equipment, it will be necessary to place the PAPIs on an asphalt (or equivalent) pad that will provide a buffer from grass cutting equipment. In addition, service road access to the PAPIs from the connector	See response to Comment 12.

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	taxiways will be essential. During snow operations, a plan must be developed by the City of Chicago to protect the PAPIs from the discharge of snow removal equipment. The piling and banking of snow cannot be placed in such a way as to interfere with the line of sight for the PAPIs.	
19	The PAPI pad, access road width and location in relation to the connector taxiways should be evaluated together by the FAA and the sponsor. The pad may be substantially wider and longer than the access road width in order to permit snow removal equipment to circumnavigate the visual aid. This could create the impression of a continued taxiway, potentially creating a hazard. Access roads should not commence at a taxiway across from another taxiway, possibly creating the impression of a continuation of that taxiway. Each PAPI "Snow Pad" should be reviewed by the FAA, to ensure that all concerns area addressed.	See response to Comment 12.
20	Numerous existing NAS facilities on the airfield are required for the operation of the ASR-9 and Airport Surface Detection Equipment, Type Three (ASDE-3). These facilities are called Moving Target Indicator (MTI) reflectors and Fixed Target Reflectors (FTRs). While the FAA does not require that these FAA NAS facilities appear on the ALP, the FAA is providing the most up to date coordinates for the facilities. Locations for the MTI and FTR reflectors are included in Appendix B . This information should be conveyed to the civil engineers and construction firms so they can understand what these facilities are and protect them.	See response to Comment 12.

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21	The Sponsor must assume their portion of the responsibility for ensuring continuous operation of critical weather, communication, radar and navigational aid devices. All equipment required to support seamless, safe and efficient airport operation shall be protected from construction or airport modification until suitable replacement systems or operational plans are in place.	See response to Comment 12.
22	There are instances of non-standard FAA NAS facility configurations. Each non-standard configuration may have to be considered separately. Each non-standard configuration may require documented acknowledgement and justification on the part of the sponsor. Achieving the proposed ALP configuration would be contingent on the receipt of a National Change Proposal (NCP) waiver for each non-standard condition.	See response to Comment 12. If it is determined that a non-standard condition exists, a National Change Proposal (NCP) waiver will be coordinated with the FAA through the NAVAIDS Working Group. Any condition requiring an NCP waiver will be reported to the FAA as information becomes available.
23	In accordance with AC 150/5300.7b, FAA Policy on Facility Relocations Occasioned by Airport Improvements or Changes, Paragraph 5, Accomplishment of Work, the FAA shall have exclusive right to determine how all facets of the relocation of an FAA facility will be accomplished. This includes, but is not limited to, engineering, site selection, procurement of equipment, construction, installation, testing, flight inspection and re-commissioning of the facility.	See response to Comment 12.
24	The RVR Facilities identified on the proposed ALP meet the standard siting criteria. The RVR siting criteria in AC 150/5300-13 is being updated. When the engineering for the project progresses to a point where RVR siting is necessary, coordination with the FAA must be initiated by the Sponsor's engineering staff.	See response to Comment 12.

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	<i>COMMUNICATIONS</i>	
25	The proposed North Airport Maintenance Complex (AMC) building located near the Fuel Tank Farm may affect the Remote Transmit/Receive (RTR) -P facility. The antennas for the RTR must have a clear line of site to the approach threshold of Runway 9L. A final determination cannot be made until the design of the AMC building is known. As soon as the height, footprint and material of the AMC building is known, the sponsor should begin airspace approval coordination with the FAA through a request for an aeronautical study.	See response to Comment 12.
26	In order to support the expanded communications requirements that result from the proposed ALP, it may become necessary to add RTR facilities to the overall FAA communications plan. If additional RTR facilities become necessary, it will be the sponsor's responsibility to provide a suitable location, as well as funding necessary to establish the facilities.	See response to Comment 12.
27	The intent is for existing O'Hare Fiber Optics Transmission System (FOTS) cable loops to remain intact throughout construction. Due to construction activities, some existing fiber cable segments will have to be rerouted because the existing service will be destroyed. Prior to construction activities that will destroy an existing fiber cable segment, and in lieu of splicing working segments after cutting, a new fiber cable will be installed between fiber patch panels and a transition to the new cable must occur. The cost of this must be borne by the Sponsor.	See response to Comment 12.
28	During Phases 1A and 1B, construction on the new fiber duct system and new FOTS loops may begin. Instead of creating linear point-to-point FOTS configurations (i.e., establishing a two terminal system) a third hub node may have to be established at the O'Hare International Airport (ORD) ATCT until RTR locations have been established. It is possible that when ready, the hub nodes will be relocated to the new	See response to Comment 12.

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	<p>RTR building, and connected back on the loop (will permit the node to be programmed at installation as if it were already at the new RTR location). If instead, linear point-to-point configurations were established, an entire fiber loop would have to be turned down, deprogrammed, and re-established as a multi-node ring configuration (this will take days to reconfigure). This requires the simultaneous purchase of all FOTS equipment necessary to establish each complete ring. Therefore, a FOTS plan will be needed to minimize the risk associated with conducting construction activities on an operational airport. It will be imperative that the sponsor coordinate each phase with the FAA prior to beginning construction.</p> <hr/> <p><i>FREQUENCY ANALYSIS</i></p> <hr/>	
29	<p>The O'Hare Modernization Program (OMP), as proposed, requires additional communication channels (frequencies). The additional air/ground communication channels must be found within the present FAA air/ground spectrum. The FAA is conducting a spectrum analysis to determine the scope of the spectrum requirements. Once this is completed, the sponsor may be asked to participate in an effort to obtain the necessary frequencies.</p> <hr/> <p><i>SECURITY & HAZARDOUS MATERIALS DIVISION, AGL-700</i></p> <hr/>	FAA to provide requirements to sponsor
30	<p>Any modifications to existing FAA facilities, or construction of new FAA facilities, are to be coordinated with the Manager, Security and Hazardous Materials Division, AGL-700. AGL-700 will review and provide guidance to ensure that appropriate physical security standards are met for the designated Security Level of the specific Federal Facility. Coordination is to be made with this office to assist with site</p>	See response to Comment 12.

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	<p>selection, facility location, hardware schedule, and product specifications for security related items of FAA facilities.</p> <hr/> <p><i>TRANSPORTATION SECURITY ADMINISTRATION</i></p>	
31	Construction and other projects impacting the security of ORD will necessitate either a notification of changed conditions affecting security, or an amendment to the ORD airport security program depending on the duration of the particular project.	TSA, where appropriate, will be consulted for any design of new facilities or modification of existing facilities that may affect security.
32	In the event that the Sponsor has established any Exclusive Area Agreements that will be impacted by any projects related to the OMP, the Sponsor will need to ensure procedures are in place for the relevant aircraft operator or foreign air carrier to provide for alternate security measures if necessary.	See response to Comment 31.
33	In the event that the Sponsor has established any Airport Tenant Security Programs that will be impacted by any projects related to the OMP, the Sponsor will need to ensure procedures are in place for the relevant tenant to provide for alternate security measures if necessary.	See response to Comment 31.

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34	<p>The fingerprint-based Criminal History Record Check requirements outlined in 49 Code of Federal Regulations (CFR) 1542.209 must be met by all persons employed to work in an unescorted capacity within the Secured Area and/or Airport Operations Area (AOA) during all phases of projects related to the OMP.</p> <p><u>INDIVIDUAL SHEET COMMENTS</u></p> <p><i>General note: Comments below apply specifically to the sheet where noted. However, global changes should be made to address the same comment on all sheets within the ALP set depicting the same information.</i></p> <hr/> <p>COVER SHEET</p>	See response to Comment 31.
35	<p>The October 2003 ALP submittal is assigned an airspace case of “2003-AGL-0878-NRA” not “2003-AGL-0848-NRA”. The next ALP re-submittal will be assigned a new airspace number upon its arrival.</p> <hr/> <p>SHEET #1: CONTENT SHEET</p>	Noted for revision
36	<p>Ensure page title on content sheet matches the actual sheet title.</p> <hr/> <p>SHEET #2: EXISTING AIRPORT LAYOUT PLAN</p>	Noted for revision
37	<p>The “banana” portion of Concourse B is incorrectly labeled “Concourse A”. Please revise.</p>	Noted for revision

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38	<p>Several of the existing LOC critical areas are incorrectly depicted. It is important to note that the LOC serving a runway approach is located beyond the departure end of that runway, not at the approach end. For instance, the Runway 14L LOC is located southeast of the Runway 32R end.</p> <ul style="list-style-type: none"> a. The Runway 14L, 32R, 14R and 32L LOC critical areas are depicted incorrectly. b. The Runway 14L LOC critical area, which is located at the Runway 32R approach end, is incorrectly shown as a CAT-I critical area. Modify this to show CAT-II/III critical area criteria. c. The Runway 32R LOC critical area, which is located at the Runway 14L approach end, is incorrectly shown as a CAT-II/III critical area. Modify this to show CAT-I critical area criteria. d. The Runway 14R LOC critical area, which is located at the Runway 32L approach end, is incorrectly shown as a CAT-I critical area. Modify this to show CAT II/III critical area criteria. e. The Runway 32L LOC critical area, which is located at the Runway 14R approach end, is incorrectly shown as a CAT-II/III critical area. Modify this to show CAT-I critical area criteria. 	Noted for revision
39	A mid-field RVR should be depicted for Runway 14R	Noted for revision
40	Label the touchdown elevation for existing Runway 9R	Noted for revision
41	Provide a note explaining the criteria used to determine the depicted location of the BRL	Noted for revision
42	Remove taxiway lights and runway shoulder markings from the ALP.	Noted for revision

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43	Provide a note explaining how survey monuments are protected	Noted for revision
44	Provide a note referencing the source documentation containing a list of approved modifications to FAA Airport Design Standards.	Noted for revision
45	Show current disposition of land area currently identified as facility #801	Noted for revision
46	<p>The Existing ALP labels the former decommissioned ATCT rather than the existing ATCT.</p> <ul style="list-style-type: none"> a. Identify the old tower merely as an obstruction point, without distinction. b. The existing ATCT should be identified as existing. c. Outline the pentagon that makes up the existing ATCT. 	Noted for revision
SHEET #3: FUTURE AIRPORT LAYOUT PLAN		
47	For operational flexibility, the south turnoff from Runway 27C located west of Runway 22R (approximately 5,200' from the Runway 27C threshold) should be modified to a high-speed exit, if able.	Noted for evaluation during the engineering/design phase.
48	The snow road that crosses Runway 4R/22L at midfield is unacceptable, due to the potential for runway incursions. Remove this road. The parallel service road, however, is still required.	Noted for revision
49	A hold pad on the north side of Future Runway 9R is recommended to provide operational flexibility. Preferred siting of this hold pad is between the third and	Current simulation analysis does not support operational requirements of a hold pad.

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	fourth proposed north/south access taxiways.	Future planning efforts may consider it.
50	<p>The elevation of the Runway 27R approach light plane will govern obstruction removal where it is below the 50:1 approach surface. There are two options in designing the approach light plane; both governed by the elevation of the Runway 22R 50:1 approach surface (see Sheet 15). The Runway 27R ALSF-2 light bars cannot be permitted to penetrate the Runway 22R 50:1. The Sponsor must resolve this conflict. Two of the options are:</p> <p style="margin-left: 40px;">d. Option 1. Design the ALSF-2 such that the approach light plane is coplanar with the 50:1 approach surface out to the station 10+25 light bar. At the 10+25 bar, the steady-burning lights will be at elevation 677.0. Break the approach light plane at station 10+25, and run it out at elevation 677.0 to the end of the system.</p> <p style="margin-left: 40px;">e. Option 2. Design the ALSF-2 with a constant slope of 1.74 percent out to an elevation of 681.5 at station 14+05. The station 14+05 steady-burning light centerlines will be 0.1' lower than the Runway 22R 50:1 approach surface at that point. Break the 27R approach light plane at station 14+05, and run it out at elevation 681.5 to the end of the system.</p> <p>The sponsor should study the obstructions that would have to be removed or lowered in each option to determine which of the two options involves less costly obstruction removal. Of particular interest are the above-mentioned streetlights and a streetlight or two along the east edge of Lee Street. Option 1 would give a lower approach light plane, and less expensive towers.</p> <p>Confirm the removal of all the trees along the East side of Lee Street; out to 210 feet both sides of the Runway 27R extended centerline. This will preclude future problems with ALSF-2 construction and tree re-growth. The ALSF-2 approach light plane design option selected will govern obstruction removal within the boundaries of the approach light plane. Outside the approach light plane, the 50:1 approach surface will govern obstruction removal.</p>	<p>Noted for evaluation during the engineering/design phase.</p>

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51	<p>Obstruction to Runway 22R Medium Intensity Approach Lighting System (MALS) with Runway Alignment Indicator Lights (RAIL) (MALSR): The outermost four Runway 27R ALSF-2 bars will penetrate the existing Runway 22R MALSR plane complex. Therefore, if the ALSF-2 were to be constructed, the MALSR profile would have to be modified to make the MALSR compatible with the ALSF-2. The MALSR modification may involve only reconstructing the five RAIL flasher towers such that:</p> <p style="margin-left: 40px;">f. The outermost RAIL flasher light is at the same elevation as the neighboring steady-burning lights of the Runway 27R ALSF-2.</p> <p>The other four RAIL flasher lights are on a straight line between the outermost MALS bar lights and outermost RAIL flasher light.</p>	<p>Resolution will be determined during engineering/ design phase of construction.</p>
52	<p>Confirm that the Runway 10L ALSF-2 light lane crosses the railroad tracks at a right angle where the tracks are set widely apart. This non-standard spacing would require a NCP waiver.</p>	<p>See response to Comment 22.</p>
53	<p>The FAA requests that the City of Chicago clarify if any buildings depicted on the base mapping in the Runway 10L RPZ are places of public assembly. If the building just west of York Road remains, it appears that two of the Runway 10L ALSF-2 light bars would have to be mounted on the building. This light bar siting would present structural, access, safety, and leasing challenges.</p>	<p>Preliminary survey indicates that these buildings are not places of public assembly however, a detailed assessment will be provided during discussions with property owners regarding easements for the approach lighting system (ALS). Technical issues pertaining to the ALS will be determined during the engineering/ design phase and communicated to the FAA through the NAVAID Working Group.</p>
54	<p>The Runway 10R GS is sited 1,070 feet from threshold, to give a 55-foot Threshold Crossing Height (TCH). The GS is shown 407 feet from runway centerline, to place it outside of the runway OFA. Irving Park Road encroaches upon a small segment of the southwest corner of the GS critical area. Technically, this encroachment is a non-standard feature requiring an NCP waiver. The encroachment is indicative of a larger problem, specifically the security fence, the traffic on Irving Park Road, and railroad</p>	<p>See response to Comment 12.</p> <p>Additionally, any encroachment inside the glideslope critical area will be simulated to determine probabilities of interference. Results of any signal interference study will be provided to the FAA through the</p>

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	traffic, as they curve around to the northwest in front of the GS. These items must be math modeled by the sponsor to determine the impact on the GS signal. If there is a degradation of service, the sponsor may be required to mitigate to rectify the problem	NAVAIDS Working Group.
55	Provide a note referencing the source documentation containing a list of proposed/planned modifications to standards expected to be approved as part of the ALP review process.	See response to Comment 22.
56	As presently sited, the Runway 28L touchdown RVR may not give representative visibility readings. Show the Runway 28L touchdown RVR 1,050 feet west of threshold and 370 feet south of runway centerline.	Noted for evaluation during engineering/design phase.
57	Future Runway 28C Approach: Move the LOC/Approach Landing System (ALS)/DME building to be more than 250 feet north of Runway 28C extended centerline. It will be near the Runway 22L GS.	Noted for evaluation and revision during engineering/design phase.
58	Pavement removal hatching should be depicted in the Future Runway 28R/22L pad islands, south of "D6" (they are currently hatched as existing pavement to remain). The Phase 1 Concept and Ultimate Phase Concept plans show that this pavement will be removed.	The Future ALP depicts abandoned pavement while the Ultimate Phase Plan only depicts usable pavement and does not imply abandoned pavement will be removed. For clarity, the Future ALP legend will be modified.
59	Depict all abandoned pavement as removed	While it is anticipated that the City will establish a pavement removal program, it is not anticipated that all pavement will be removed immediately upon decommissioning.
60	"Relocated" is spelled incorrectly in legend ("Existing Airport Buildings In AOA To Be Relocated" label).	Noted for revision
61	Depict 300' reserved Western Bypass corridor.	Noted for revision.
62	Please label the existing ATCT.	Noted for revision

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63	The proposed Terminal 4 (Labeled "T2") and existing (Heating & Refrigeration) H&R Building, number 450, should be evaluated to determine if the proposed building would affect the line of sight from the existing ATCT to the airport movement area	It has been determined that supplemental LOS coverage provided by the North ATCT would mitigate any LOS obstructions that could exist from the existing ATCT. See Final "North Airport Traffic Control Tower Site Selection Study" – September 12, 2003.
64	Proposed building R22, future-cooling towers should be evaluated to determine if it, or plume from it, would have any effect on the line of sight from the existing and future ATCT to airport movement areas.	See response to Comment 63.
65	Building numbers 437 and 438 are identified on the key as exhaust room #1 and exhaust room #2. Prior to construction, these proposed buildings as well as the predicted plume should be evaluated to determine if it would have any effect on the line of site from the existing ATCT to airport movement areas.	See response to Comment 63.
66	Building number 458 is identified as a FAA Microwave Tower and building. It should be labeled as the Operational RTR antennas and building.	Noted for revision
67	The Future Runway 27R Mark 20A CAT-II/III ILS has only one Far Field Monitor (FFM) antenna. The Runway 27R antenna can be sited on runway extended centerline 1,055 feet from threshold. This siting places the FFM antenna 30 feet east of the Station 10+25 light bar, and about 15 feet west of the edge of the airport perimeter road. The drawing should be revised to show this, and to delete the other FFM that presently is shown on the pavement of the O'Hare Express North access ro	Noted for revision
68	The future railroad track route in the vicinity of the Future Runway 10R end needs to be adjusted slightly (see Approach Sheets 29-34 for more detail). As the track is presently shown, it is unacceptably close to the ALSF-2 outermost light bar at Station 24+50. If the track must be routed as shown, the outermost light bar will likely have to stand further from the runway threshold than 2,450 feet, to adequately clear the track. The outermost light bar cannot be sited farther from runway threshold than	See response to Comment 22.

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	<p>2,450 feet without an NCP waiver.</p> <p>The solution is to site the outermost two ALSF-2 bars at Stations 23+40 and 24+50, and to design the railroad tracks to cross the extended runway centerline 2,395 feet from Runway 10R threshold. This design would place each light bar tower between 25' and 30' from the nearest track. An NCP waiver will be required for non-standard ALSF-2 stationing.</p>	
69	The runway/parallel taxiway separation for proposed Runway 9L/27R should be depicted as shown in the April 8, 2004 letter from the Chicago Area Modernization Program Office to the City of Chicago. (See Appendix C)	Noted for revision
70	The runway/parallel taxiway separation for the future Runway 9R/27L (Existing Runway 9L/27R) with an extension can be shown as depicted on the ALP drawing. Due to the presence of a second parallel taxiway, aircraft can be routed on this taxiway during CAT II/III conditions. Please see the April 8, 2004 letter from the Chicago Area Modernization Program Office to the City of Chicago. (See Appendix C)	No ALP change; operational restriction required
71	Reference runway to parallel taxiway separation standards; follow the guidance in the FAA letter on this subject dated April 8, 2004, from the Chicago Area Modernization Program Office to the City of Chicago. (See Appendix C)	No ALP change; operational restriction required
72	<p>Taxiway to runway centerline distance restrictions per United States Standard for Terminal Instrument Procedures (TERPS) Instruction Letter (TIL) 00-005A (effects of Height Above Touchdown (HAT) values) are as follows:</p> <p style="margin-left: 40px;">a. The minimum HAT value for CAT II operations is 100 feet where the runway centerline to taxiway centerline separation is 600 feet or</p>	No ALP change; operational restrictions noted

	<p>greater. This value may be also achieved with:</p> <ol style="list-style-type: none"> 1. Runway taxiway centerline separation of 500 feet at elevations of 4,000 feet and below, provided taxi operation are restricted to aircraft with wingspans less than 214 feet and tail heights less than 66 feet. 2. Runway taxiway centerline separation of 400 feet at elevations of 4,000 feet and below, provided taxi operation are restricted to aircraft with wingspans less than 171 feet and tail heights less than 55 feet. 3. Larger aircraft flying the approach or taxiing on parallel taxiways, or taxiway/runway separation less than stated above require a collision risk analysis to determine the minimum HAT values.
<p>73 Proposed Simultaneous ILS operations must meet the requirements of 8260.3B Change 19, Volume 3, Appendix 2.</p>	<p>No ALP change required</p>
<p>74 VOR/DME relocation will require revision of 22 Standard Instrument Approach Procedures (SIAPS), 5 Standard Terminal Arrival Routes (STARs), and 3 Departure Procedures (DPs).</p>	<p>Noted</p>
<p>75 In addition to the ALP items listed above, the following also need to be considered.</p> <ol style="list-style-type: none"> b. In order to maintain existing/and or expand Instrument Flight Rules (IFR) operations at this airport, refer to AC/150-5300-13, Appendix 16, Table a16-1a/precision or Table a16-1b. c. Construction of a runway and establishment of LOC and DME equipment will require development of new and revisions of existing SIAPS at the airport. The Chicago Flight Procedures Office (FPO) 	<p>Noted for evaluation and coordination with the FAA through the NAVAIDS Working Group. Due to the long lead-time required for Standard Instrument Approach Procedures (SIAPS), information will be provided to the FAA as soon as it becomes available.</p>

	<p>requires new runway end coordinates, runway end elevations, runway touchdown zone elevation and all facility data in accordance with FAA 405 Spec. If the airport elevation changes by 1.0 foot, all SIAPS will have to be revised.</p> <p>d. An update in airport and NAVAID magnetic variation is recommended. Currently the airport is using the 1980 magnetic variation of 0 degrees, the ORD VOR/DME is using the 1965 magnetic variation of -2 degrees, the current and 2005 value is also -2 degrees. There will be no change in runway numbering as a result of this update.</p> <p>e. To meet publication cutoff dates a minimum of 12 months, up to 1 ½ years, based on complexity and current workload, may be required to revise existing and develop new SIAPS. Any new runway pavement will have to be flight checked for day/night operations: Reference United States Standard Flight Inspection Manual OAP 8200.1, Chapt.100, Sect.104, Types and Priorities of Flight Inspections.</p> <p>f. A copy of the data described above will need to be forwarded to the National Flight Data Center, ATA-110 and Flight Inspection Technical Support Branch, AVN-210. This data will be used to amend and publish instrument approach procedures at this airport.</p>	
<p>76</p>	<p>An approved ALP does not constitute a request for procedure revision and/or development. These must be requested separately by the sponsor.</p>	<p>Noted.</p>
<p>77</p>	<p>Timely notification of estimated project completion, (minimum of 1 year prior) to the Chicago FPO is necessary to ensure procedure development and publication coincident with commissioning of runways and facilities.</p>	<p>Schedules to be refined during engineering/design phase and coordinated with the FAA through the OMP Construction Working Group.</p>
<p>78</p>	<p>The runway/parallel taxiway separation for future proposed Runway 10L/28R (Existing Runway 9R/27L) with extension can be shown as depicted on the ALP drawing. Due to the</p>	<p>New roadways have been tunneled/depressed under aircraft movement</p>

	presence of a second parallel taxiway, aircraft can be routed on this taxiway during CAT II/III conditions. However, due to the heavy volume of traffic, both aircraft and service vehicles, the FAA recommends that the City tunnel the service road north of Taxiway M between Taxiway ZT and Taxiway ZV through north of Taxiway LL between Taxiway ZZ and Taxiway S. A north/south service road should be maintained at the exit of the east side of the tunnel.	areas where practical. The roadways in question have been planned per FAA standard and tunneling has not been determined as a requirement.
79	The plan proposes that the Runway 22R LOC move to the Runway 4L RSA. Due to the location of the proposed West Terminal and the air traffic requirements of existing and future taxiway infrastructure in this area, this location appears to be the only feasible and prudent siting alternative available. All efforts should be made to site this outside of the RSA.	No change to ALP
80	Modify the fence line location to effectively move ARFF station #3 airside to allow ARFF response in accordance with Federal Aviation Regulation (FAR) Part 139 to Runway 10L and Runway 9R.	Noted for revision
SHEET #4: AIRPORT DATA SHEET		
81	“Existing” is spelled incorrectly in all wind coverage tables.	Noted for revision
82	The City of Chicago has utilized a survey completed in October 2001 for the Local Area Augmentation System (LAAS) antenna as the basis for the Latitude and Longitudes of the existing and proposed runways. National Oceanic & Atmospheric Administration (NOAA) completed a survey in September 2002. The FAA continues to review both sources of information. Additional information will be provided to the City at the completion of the review.	The FAA provided the City with additional information on September 17, 2004 indicating that the NOAA survey will be used to determine existing and future runway coordinates.
SHEET #5: EXISTING TERMINAL AREA PLAN - CORE		

83	Guard Post point 9, (GP9) or the ATCT height information should be moved slightly so that the ATCT top elevation is visible. The ATCT height elevation is needed for planning purposes.	Noted for revision
SHEET #8: FUTURE TERMINAL AREA PLAN - CORE		
84	Guard Post point 9, (GP9) or the ATCT height information should be moved slightly so that the ATCT top elevation is visible. The ATCT height elevation is needed for planning purposes.	Noted for revision
SHEET #9: FUTURE TERMINAL AREA PLAN - EAST		
85	Ensure consistency of apron/gate markings and use of loading bridge symbols between future terminal area plan sheets	Noted for revision
SHEET #10: PHASE 1A CONCEPT PLAN		
86	To facilitate labeling consistency, remove Runway 4L LOC critical area label	Noted for revision
87	The Runway 14L Inner Marker (IM) is shown on the runway pavement. Move the IM 210 feet northeast of Runway 14L centerline. This IM siting will require NCP waiver.	Noted for revision
88	Future Runway 10L/28R is incorrectly labeled. Please revise.	Noted for revision

89	The 24' x 68' Runway 14L ALSF-2 building is not shown. Show it 1,000 feet northwest of the Runway 14L displaced threshold with its length perpendicular to Runway 14L. Place the southwest wall of the building 410 feet northeast of Runway 14L centerline.	Recommendation noted. See response to Comment 12.
90	The Runway 32R LOC antenna array is correctly shown centered approximately 1,094 feet from the northwest end of Runway 14L pavement. It shall be permitted to leave the array at its present location if the new perimeter road north of it is relocated. The plan should be modified to show the straight segment of the perimeter road northeast of the array extended 150 feet to the west before it curves southerly. Do not curve the road any farther south than perpendicular to the Runway 14L extended centerline.	Recommendation noted. See response to Comment 12.
91	<p>The perimeter road in the vicinity of the Runway 32R LOC is shown encroaching through the north corner of the LOC critical area. Vehicles parked, or moving slowly through this area could degradate the LOC service. The FAA recommends that the service road skirt around the LOC critical area. Alternatively, leaving the road within the northeast tip of the critical area would be allowed provided that the DOA meet the following requirements:</p> <ul style="list-style-type: none"> a. Signs must be posted to protect the LOC critical area. The signs shall contain language warning against stopping or parking in the LOC critical area. b. Each contractor intending to use this road as a haul route shall be notified, before, and throughout the project, that parking, stopping or staging of vehicles is not permitted and may interrupt critical navigation devices. c. An agreement between the FAA and the DOA should be reached and documented prior to expending funding on engineering and/or construction. 	Recommendation noted. See response to Comment 12.
92	Rerouting the perimeter road in the vicinity of the Runway 32R LOC will create the	Recommendation noted. See response to

	space needed for the Runway 14L FFM antennas between the array and the road. The FFM's are not shown. Show the FFM's on Runway 14L extended centerline 25 feet and 75 feet, respectively, northwest of the antenna array centerline	Comment 12.
93	The existing Runway 32R LOC building must be shown in its existing location, and as re-sited. Reconstruct the Runway 32R LOC building about 125 feet northwest, parallel to Runway 14L extended centerline. This will place the shelter about 25 feet from the perimeter road. The building will stand on grade excavated to a slope of about 4.5 percent, which is acceptable. So sited the building and its lightning rods will clear under the touchdown area 7:1 transitional surface.	Recommendation noted. See response to Comment 12.
94	Show the Runway 14L mid-RVR 3,550 feet southeast of the Runway 14L displaced threshold and 270 feet northeast of Runway 14L centerline	Recommendation noted. See response to Comment 12.
95	Show the future Runway 27L mid-RVR east of the VOR/DME access road, about 825 feet east of where it is presently shown on Sheet #11 of the ALP document.	Recommendation noted. See response to Comment 12.
96	The future Runway 27L and Runway 28R LOC critical areas should be depicted as CAT II/III critical areas.	Noted for revision
97	All but two or three of the light bars and flashers of the Runway 14L ALSF-2 will have to be semi-flush. Equipment limitations may require the flasher junction boxes and Individual Control Cabinets (ICC) to be less than 200 feet from Runway 14L extended centerline. If so, NCP waivers will be required for the penetration of the approach light plane by these items.	See response to Comment 22.
98	Provide a clear distinction between the existing and future property lines.	Noted for revision
SHEET #11: PHASE 1 CONCEPT PLAN		
99	Comments #89-#97 from Sheet #10 also apply to Sheet #11.	See response to FAA Comments 89 & 97.
100	Modify the fence line location to effectively move ARFF station #3 airside to allow	Noted for revision to ALP Set.

	ARFF response in accordance with FAR Part 139 to Runway 10C.	
101	As depicted on Sheet 3 (Future Airport Layout Plan), the Existing Runway 9R hold-pad needs to be retained in its current location to provide operational flexibility. Ensure consistent depiction of this pavement throughout the ALP.	Existing Runway 9R Hold Pad will be unusable due to insufficient aircraft holding capability after Existing Runway 9R is extended and parallel taxiways are constructed.
102	It appears that some linework and/or labels are missing from the Phase 1 Concept Plan (Sheet #11) when compared to the Phase 1A Concept Plan (Sheet #10) (i.e., apron outlines in the north airfield area, concourse labels from the existing core terminal area, and Taxiway Object Free Area (TOFA) in the southwest Cargo Area). Revise accordingly.	Noted for revision
103	Show the Runway 14R mid-RVR 4,050 feet from the Runway 14R threshold, and 410 feet southwest of runway centerline	Recommendation noted. See response to Comment 12.
104	The Runway 32L GS is shown 1,225 feet from threshold and about 360 feet southwest of runway centerline. This siting will give too high a TCH, and will place the facility within the OFA. Site the facility with the GS antenna mast 1,050 feet from threshold, for a nominal TCH. The desired GS antenna mast lateral distance is 410 feet southwest of runway centerline. If the antenna mast is so placed, the CAT-I GS grading criteria require a small segment of the future detention basin to be filled. Please revise shape of future detention basin to achieve the same surface area. Set Point A 50 feet southwest of the antenna mast. Set Point B 560 feet southwest of the Runway end at runway centerline. Draw a line between Points A and B. The resulting Line AB cuts off a small wedge of basin near the northeast edge of the basin. Northeast of Line AB, the grade must be high enough to be dry at all times. Reconfigure the GS critical area accordingly. Also, reposition the RVR red dot 40 feet northwest of the GS antenna mast.	Recommendation noted. See response to Comment 12.
105	As shown, the relocated Runway 32L MALSR has three too many light stations. Delete the three southernmost black rectangles of the MALSR. The outermost black rectangle of the MALSR will be the one 2,500 feet southeast of the relocated Runway 32L threshold. Also, the triple bar (thousand-foot bar) is in the wrong place. Make	Recommendation noted. See response to Comment 12.

<p>the light bar that is shown at Station 10+55 the triple bar, not the Station 8+45 bar. The MALS threshold light bar would be a 23-light bar, with 220 feet between the outboard lights. Do not depict this threshold bar with the small rectangle that represents the other MALS stations. The scale of the drawing is so small that it might be best not to show the MALS threshold bar.</p>	
<p>106 The relocated Runway 32L MALS light bars and flashers would be on frangible mounts, except for part or all of the MALS threshold bar, the Station 8+45 MALS bar, and the Station 20+75 RAIL flasher, which will be semi-flush. The profile of the frangible portion of the MALS will be as low as feasible, to preclude being an obstruction to airplane engine nacelles near the taxiways. The northeast end of the MALS threshold light bar will extend into the high-speed turnoff taxiway. MALS threshold lights in that taxiway will have to be semi-flush.</p>	<p>Recommendation noted. See response to Comment 12.</p>
<p>107 Relocated Runway 32L MALS plane penetration and clear line of sight. It is predicted that the top of the Runway 14R LOC antenna array will be 7 feet above the chevron pavement. If the antenna array is centered at Station 15+65 (1,570' from 32L threshold), and the outermost MALS light bar is at Station 14+65, then:</p> <p style="padding-left: 40px;">g. The array will penetrate the relocated Runway 32L MALS approach light plane complex, which the siting criteria permit.</p> <p>The array will not penetrate clear line of sight to the Station 14+65 MALS bar, or to any other light of the MALS.</p>	<p>Recommendation noted. See response to Comment 12.</p>
<p>108 Runway 14R LOC/32L MALS and EG Building(s): There are three buildings at the existing Runway 14R LOC site. The existing LOC equipment is in a 12' x 16' building. The existing Runway 32L MALS equipment and DME are housed in a separate 10' x 12' building. The LOC EG has its own 12' x 16' building. When the Runway 32L threshold is relocated 4,856 feet, the DME should be relocated to the existing Runway 32L LOC building beyond the northwest end of the runway. That will leave the Runway 14R LOC/Runway 32L MALS building(s) to be reconstructed or relocated. The option exists to:</p>	<p>Recommendation noted. See response to Comment 12.</p>

<ul style="list-style-type: none"> a. Relocate the existing 12' x 16' buildings. b. Construct two new separate 12' x 16' buildings, one for the LOC and MALSR, one for the EG. c. Construct one 16' x 24' building with an equipment room and an EG room. In the following discussion, it is assumed that this option is taken. <p>The new LOC/MALSR/EG building is not shown on Sheet #11, and it must be shown. The EG will require a 500-gallon underground diesel fuel tank near the EG room. There are two viable sites, as follows:</p> <ul style="list-style-type: none"> a. Site 1. The building is centered 330 feet north of the Runway 10L centerline (170 feet south of the parallel taxiway centerline), and 270 feet southwest of the Runway 14R extended centerline. Here, the building would be inside the Runway 10L OFA, but outside the OFA of the parallel taxiway. At this site, the building would not receive jet blast. b. Site 2. The building is centered 265 feet northeast of Runway 32L centerline and midway between the centerlines of the two parallel taxiways north of Runway 10L. The 24' building length is oriented parallel to Runway 14R. So sited, the building is outside the OFA's of all taxiways. The LOC/MALSR/EG building would be subjected to 70-mph breakaway thrust jet blasts from B-747's during the facility life. For this reason, constructing the building of concrete should be considered. This site is near existing Structure 959, the North Pump Station. 	
<p>109 Runway 32L Precision Object Free Area (POFA). The Runway 32L future POFA, which is prominently outlined with a black rectangle, has an existing high-speed taxiway running through it. FAA is willing to accept an operational restriction during conditions that warrant the activation of the POFA</p>	<p>Operational contingency noted. This condition will ultimately be mitigated by the decommissioning of Runway 14R-32L.</p>

GENERAL COMMENTS ON APPROACH SURFACE SHEETS (SHEETS #15 - #44)		
110	On each of the following approach surface sheets, there appears to be required obstruction evaluation points that are not depicted or evaluated per 14CFR77.23(b)]. Verify that all required obstruction evaluation points are depicted and properly analyzed on these sheets: 15-17, 19-28, 36-42, 44	Noted for revision to ALP Set.
111	To facilitate easy location recognition, label all off-airport roadway names on all sheets.	Noted for revision
INDIVIDUAL APPROACH SURFACE SHEET COMMENTS		
SHEET #15: EXISTING/FUTURE RUNWAY 22R APPROACH SURFACE		
112	Depict and label existing property line in addition to future property line.	Noted for revision
SHEET #16: EXISTING/FUTURE RUNWAY 4R APPROACH SURFACE		
113	Label property line as Existing/Future	Noted for revision
SHEET #17: EXISTING/FUTURE RUNWAY 22L APPROACH SURFACE		

114	<p>Top elevations of objects R21 and R28 in the “Approach Surface Obstruction” table do not appear consistent with the object depictions in the profile view. Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table.</p> <p style="text-align: center;">Sheets #18-19: Future Runway 9L Approach Surface</p>	Noted for revision
115	<p>Delete the text “APPROACH LIGHT PLANE SURFACE” from the text labeling the FAR Part 77 50:1 inner approach surface. The approach light plane surface text implies that the approach light plane will be coplanar with the 50:1 approach surface to the end of the ALSF-2, which is misleading (both sheets).</p>	Noted for revision
116	<p>Top elevations of objects RR1 through RR4 in the “Approach Surface Obstruction” table do not appear consistent with the object depictions in the profile view (sheet #19). Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table.</p>	Noted for revision
117	<p>Add a certification stating: “ALL RAILROAD TRACKS CLEAR UNDER THE FAR PART 77 50:1 APPROACH SURFACE BY A MINIMUM OF 23.0 FEET”. (sheet #19).</p> <p style="text-align: center;">SHEET #20: FUTURE RUNWAY 27R APPROACH SURFACE</p>	Noted for revision
118	<p>Top elevations of objects R11 and FR-2 in the “Approach Surface Obstruction” table do not appear consistent with the object depictions in the profile view. Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table.</p>	Noted for revision

119	Several objects in the lower profile do not appear to line up vertically between plan and profile views. Please revise.	Noted for revision
120	Point RR2 appears to be depicted in an incorrect location on the plan view. Please revise.	Noted for revision
121	Point FR4 does not appear to be depicted in the profile view. Please revise.	Noted for revision
122	The plan view scale is about 1" = 224.5'. The horizontal scale of the profile views is 1" = 200'. The non-standard scale of the plan view makes it difficult to work with, and the disparity in scales makes the drawing hard to read and interpret. Please revise the plan view to a more common scale.	Noted for revision
123	Access Road to O'Hare Express North. Construction of the access road from Lee Street to the O'Hare Express North buildings is either complete or near completion. Verify that the new streetlights along the west edge of that road do not penetrate the 50:1 approach surface. The streetlight's top elevations and distances from Runway 27R threshold should be evaluated. Lee Street, the O'Hare Express North access road, and the future service road will all cross the Runway 27R extended centerline. The distances between these roads require nonstandard light bar spacing for which an NCP waiver is required.	Noted for assessment prior to revision of ALP Set.
SHEET #21: FUTURE RUNWAY 9C APPROACH SURFACE		
124	Road points R1 and R2 are determined to be Part 77 penetrations, although the resolution is labeled "N/A". The roads causing these penetrations do not appear on the Ultimate Phase Concept Plan (Sheet #12). If these roads are to be removed, the resolution should read "Remove".	Noted for revision
SHEET #22: FUTURE RUNWAY 27C APPROACH SURFACE		

125	<p>Top elevations of objects R17 and R21 in the “Approach Surface Obstruction” table do not appear consistent with the object depictions in the profile view. Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table.</p> <hr/> <p>SHEET #23: FUTURE RUNWAY 9R APPROACH SURFACE</p>	Noted for revision
126	<p>Top elevation of objects RR4 through RR6 in the “Approach Surface Obstruction” table do not appear consistent with the object depictions in the profile view. Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table.</p>	Noted for revision
127	<p>Please verify/revise the location of FW1 on the plan view.</p> <hr/> <p><i>SHEET #24: FUTURE RUNWAY 27L APPROACH SURFACE</i></p>	Noted for revision
128	<p>Top elevation of objects R17 through R21 in the “Approach Surface Obstruction” table do not appear consistent with the object depictions in the profile view. Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table</p>	Noted for revision
129	<p>Depict all future roads in the plan view. It is unclear what future road points FR1 through FR9 evaluate. Please clarify</p>	Noted for revision
130	<p>It appears that point RR8 is labeled as R8 in the plan view. Please revise</p>	Noted for revision
131	<p>It appears that point RR9 is labeled as RR2 in the profile view. Please revise.</p>	Noted for revision

SHEET #25: FUTURE RUNWAY 10L APPROACH SURFACE		
132	Top elevations of objects R16 through R20 and RR4 through RR6 in the “Approach Surface Obstruction” table do not appear consistent with the object depictions in the profile view. Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table.	Noted for revision
133	Label the future railroad.	Noted for revision
SHEET #26: EXISTING RUNWAY 27L/FUTURE RUNWAY 28R APPROACH SURFACE		
134	Top elevation of object R8 in the “Approach Surface Obstruction” table does not appear consistent with the object depiction in the profile view. Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table.	Noted for revision
135	Re-label the runway end in the profile view to read “Existing Runway 27L/Future Runway 28R”.	Noted for revision
SHEET #28: FUTURE RUNWAY 28C APPROACH SURFACE		

136	<p>Road points R1 through R4 are determined to be Part 77 penetrations, although the resolution is labeled as “N/A”. The roads causing these penetrations do not appear on the Ultimate Phase Concept Plan (Sheet #12). If these roads are to be removed, the resolution should read “Remove”.</p> <hr/> <p>SHEETS #29-34: FUTURE RUNWAY 10R APPROACH SURFACE</p> <hr/>	Noted for revision
137	<p>Label the future Bensenville drainage ditch and relocated railroad (Sheets #29 through #34).</p>	Noted for revision
138	<p>Top elevations of objects R17 through R27 in the “Approach Surface Obstruction” table do not appear consistent with the object depictions in the profile view (Sheet #30). Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table.</p>	Noted for revision
139	<p>Top elevations of objects RR2 through RR5 and RR9 through RR11 in the “Approach Surface Obstruction” table do not appear consistent with the object depictions in the profile view (Sheet #31). Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table.</p>	Noted for revision
140	<p>Points FW1 through FW3 and G1 are duplicated in the table (Sheet #32). Please revise.</p>	Noted for revision
141	<p>On the plan view, change the word airline to line (sheet #33).</p> <hr/> <p>SHEET #35: FUTURE RUNWAY 28L APPROACH SURFACE</p> <hr/>	Noted for revision

142	Top elevation of object R19 in the "Approach Surface Obstruction" table does not appear consistent with the object depiction in the profile view. Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table	Noted for revision
143	Road points R1 and R2 are determined to be Part 77 penetrations, although the resolution is labeled as "N/A". The roads causing these penetrations do not appear on the Ultimate Phase Concept Plan (Sheet #12). If these roads are to be removed, the resolution should read "Remove".	Noted for revision
144	Top elevations for objects R23 and R24 appear to be switched. Please revise.	Noted for revision
SHEET #36: EXISTING RUNWAY 9L APPROACH SURFACE		
145	Future roads (FR1 and FR2) should not be evaluated on an existing sheet.	Noted for revision
146	Top elevation of object F1 in the "Approach Surface Obstruction" table does not appear consistent with the object depiction in the profile view. Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table.	Noted for revision
147	Revise the line type at the end of the RSA/OFA for consistency with other approach sheets.	Noted for revision
148	Label the Part 77 Approach Surface for consistency with other approach sheets	Noted for revision
SHEET #37: EXISTING RUNWAY 27R APPROACH SURFACE		

149	<p>Future roads (FR1 through FR15) should not be evaluated on an existing sheet.</p> <hr/> <p>SHEET #38: EXISTING RUNWAY 9R APPROACH SURFACE</p> <hr/>	Noted for revision
150	<p>Top elevations of objects R1 through R15, RR1 through RR4, and R18 in the “Approach Surface Obstruction” table do not appear consistent with the object depictions in the profile view. Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table</p>	Noted for revision
151	<p>Remove the double line at the 680’ grid.</p>	Noted for revision
152	<p>Label NAVAIDS (i.e., LOC, MALSR)</p> <hr/> <p>SHEET #39: EXISTING RUNWAY 14L APPROACH SURFACE</p> <hr/>	Noted for revision
153	<p>Object R16 does not appear to be depicted on the plan or profile views. Please revise</p> <hr/> <p>SHEET #40: EXISTING RUNWAY 32R APPROACH SURFACE</p> <hr/>	Noted for revision
154	<p>Top elevations of objects R15 and R30 in the “Approach Surface Obstruction” table do not appear consistent with the object depictions in the profile view. Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table.</p>	Noted for revision

SHEET #41: EXISTING RUNWAY 14R APPROACH SURFACE		
155	Top elevations of objects R2 and R13 through R15 in the “Approach Surface Obstruction” table do not appear consistent with the object depictions in the profile view. Please revise and ensure top elevations of all other evaluation points are consistent between the profile view and data table.	Noted for revision
156	The base overlay mapping appears to be off from the aerial photograph. Please revise.	Noted for revision
157	It appears that object RR7 is incorrectly labeled as R7 in the profile view. Please revise.	Noted for revision
158	Provide a leader from the Middle Marker (MM) label to the location of the MM.	Noted for revision
SHEET #42: EXISTING RUNWAY 32L APPROACH SURFACE		
159	Provide a leader from the MM label to the location of the MM.	Noted for revision
SHEETS #45-#47: FUTURE AIRPORT LAYOUT PLAN PART 77 SURFACE DRAWINGS		
160	Approach profiles presented on Sheet #47 only depict the first 10,000 feet of the approach surface for future runways. The length of the approach surfaces for all proposed future runways (except Runway 4L) is 50,000 feet. Depict the approach profiles for the full length of each runway’s approach surface.	Sheet #47 Noted for Revision - Resubmit

161	It appears on Sheet #45 that there are Part 77 penetrations beyond the first 5,000 feet of the approach surface by at least one object on both the Runway 9C and 10R ends. It appears these penetrations may be objects B5 and B6 depicted on the "Future Airport Layout Plan Inner Part 77 Surfaces" sheet; if so, they should be identified as such on Sheet #45. If not, the penetrations should be depicted on the Part 77 Surfaces Drawing(s).	Noted for revision. Current scale is preferred for presentation purposes. This is consistent with AC 150/5300-13 Appendix 7.
162	Verify that the FAA's Digital Obstruction File (or comparable database) and/or the most recent NOAA Airport Obstruction Chart (OC #166, published 7/03)/National Geographic Survey Aeronautical Data Sheet was used to identify and depict objects that penetrate Part 77 surfaces. Provide disposition information for objects that penetrate Part 77 on the existing OC and will continue to do so in the future configuration. Also, provide a note on appropriate sheets stating the source of data used to identify objects for Part 77 evaluation.	Noted for revision
SHEETS #48-#50: EXISTING/FUTURE ON-AIRPORT LAND USE AND EXISTING OFF-AIRPORT LAND USE DRAWINGS		
163	Add RPZ line type to the legend on Sheets #48 and #49.	Noted for revision
164	The RPZ line color varies between the Existing (Sheet #48) and Future (Sheet #49) On-Airport Land Use Plans. Please revise.	Noted for revision
165	The property line in the legend of the Existing On-Airport Land Use Plan (Sheet #48) does not match the line type used on the drawing. Please revise	Noted for revision
166	Depict the VOR critical area on the Existing On-Airport Land Use Plan (Sheet #48).	Noted for revision

167	The depiction of future terminal buildings on the Future On-Airport Land Use Plan (Sheet #49) appears inconsistent. For example, the Future Terminal 6 and Future Terminal 4 expansions are outlined with a dashed line, while the Future Concourse K expansion is outlined with a solid black line. The Future West Terminal is outlined with a thin solid black line, similar to the outline around the existing terminal facilities. There is no outline depicted in the legend. Revise for consistency.	Noted for revision
168	Future On-Airport Land Use Plan (Sheet #49) water detention color still does not match the color used in the legend. Please revise.	Noted for revision
169	Add the hatching line types used on Sheet #49 to the sheet legend	Noted for revision

A-GENERAL SAFETY AND SECURITY - FAACOMMENT/ CITY RESPONSE

(General Note: Comments below apply to FAA comments and the City's Response provided to the FAA in October 2003. Please refer to that document for the original FAA comment and the City's response.)

TECHNICAL COMMENTS

Ref. No.	Comment	Response
A-1)g)	Please identify the location of the VOR test facility (VOT) on the Proposed ALP.	Location of the VOR test facility will be coordinated with FAA NAVAID Working Group
A-3)	The proposed Runway 9L/27R will influence the operation of the Runway 32R LOC. The future ALP does not clearly identify a plan for minimizing this impact. The sponsor shall continue to coordinate with the FAA to determine the most effective alternative.	The City will continue to coordinate the construction phasing plans with the FAA.
A-5)	Due to the complexity of the project and the aggressive implementation schedule, the FAA must be coordinated with during development of the proposed phasing plan.	See response to Comment A-3.
A-17)	Excessive snow or any other change in grade in front of a GS facility could	All pre-construction drawings will be

Ref. No.	Comment	Response
	<p>significantly change the GS signal. To facilitate snow removal, GS snow removal areas are recommended. FAA Order 6750.49A, Maintenance of ILS Facilities requires that snow deeper than 18 inches be removed in front of a GS, to prevent signal distortion, or, if the snow is not removed the approach minima will be raised to LOC-only minima for category "D" aircraft and CAT II/III service will be unavailable. To facilitate snow removal, the FAA and the sponsor have agreed to hard-surfaced snow removal areas, constructed in front of each GS facility. The snow removal areas depicted on the proposed ALP meet the FAA criteria. Before construction, each snow removal area should be reviewed by the FAA.</p>	<p>reviewed and approved by FAA prior to construction.</p>
A-24)	<p>As Runways 4R/22L and 4L/22R are existing runways (and not proposed to be modified) that are landlocked by major surface streets. It is neither practical nor prudent to relocate the LOC antennas. Therefore, no remedial action is required in this area. However, the FAA recommends re-evaluating this area in the future if changes are proposed to these runways.</p>	<p>Any changes to the Future ALP will be reviewed by the FAA</p>
A-25)	<p>ILS holding position markings (hold line) at GS critical area. It is sometimes necessary to prevent airplanes from entering a GS critical area as they taxi on a parallel taxiway that runs past the GS facility. To define the point at which the airplanes must hold short of the edge of the GS critical area, an ILS hold line is painted across the parallel taxiway. The point at which the ILS hold line is painted across the parallel taxiway is the intersection of the edge of the critical area with the inner edge of the taxiway. The inner edge of the taxiway is the edge closest to the runway that the GS serves. If the new GSs are all 1,050 feet from runway threshold, the ILS holds lines will be between 820' and 850' from threshold. Present guidance on use of the ILS hold lines is as follows:</p> <p style="margin-left: 40px;">a. If weather conditions are less/worse than 800-2, airplanes must hold behind the ILS hold line.</p>	<p>Proposed changes to the location of airport markings will be reviewed by FAA.</p>

Ref. No.	Comment	Response
	<p>b. If weather conditions are 800-2 or better, airplanes may taxi past the ILS hold line.</p>	
A-26)	<p>The ALSF-2s of future Runways 9L, 9C, 9R, 10L, 10C, 10R, 27L, 27C, 27R, and 28R, are all shown crossing public roadways.</p> <p>a. Permits for these crossings will be required from the government bodies administering these roadways.</p> <p>b. To facilitate the issuance of permits for construction within the rights of way of these roadways, it is essential that the DOA begin planning with the responsible entities now, if that planning is not already in progress.</p>	<p>The City of Chicago is having ongoing discussions with the appropriate entities. Information will be provided to the FAA through the NAVAID Working Group when it becomes available.</p>
A-27)	<p>The ALSF-2s of future Runways 9L, 9C, 9R, 10L, 10C, and 10R are all shown crossing railroad tracks. Permits for these crossings will be required from the railroad. To facilitate the issuance of permits for construction within the railroad right of way, it is essential that the DOA begin planning with the railroad now, if that planning is not already in progress.</p>	<p>See Response to Comment A-26.</p>
A-28)	<p>Elements of the ALSF-2s of future Runways 9C, 9R, 10L, and 10C are shown west of York Road on land that is shown off airport property. It is the DOA's responsibility to furnish all the interests in real estate required for the establishment of NAVAIDS. For ALSF-2, the interests include land on which to install light bar structures, cable ducts and cables, access roads and walkways, personnel ingress and egress, security, appurtenances, and aviation easements to protect the approach light planes from penetration. These aviation easements will be for airspace below the 14CFR77, 50:1 approach light plane. For the Runways 9C and 10L ALSF-2s, facility elements will have to be constructed on existing buildings off airport property. If these buildings are to remain, then the DOA must obtain special real estate interests that will be</p>	<p>See Response to Comment A-26.</p>

Ref. No.	Comment	Response
	mutually acceptable to the owner of the ALSF-2 and of the buildings, which are to be depicted on the Future On-Airport Land Use Plan.	
A-30)	A meteorological study has been conducted to determine the optimal locations for the Low Level Wind Shear Alert System (LLWAS) sensors. The sponsor must furnish interests in real estate required for the establishment of NAVAIDs. For LLWAS, the interests include land on which to install the LLWAS tower and sensor, cable ducts and cables, access roads and walkways, personnel ingress and egress, security, appurtenances, and avigation easements to protect the LLWAS facility from interference.	See Response to Comment A-26.
A-31)	It the previous evaluation it was identified that buildings R11 and R10 obscured the line of sight from the existing ATCT to existing or proposed movement areas. To mitigate this item as well as numerous other concerns, additional ATCTs have been proposed. If all line of sight impacts are mitigated, the FAA would have no objections from a line of sight perspective. Construction of the proposed North ATCT will remove this particular objectionable condition.	See Final "North Airport Traffic Control Tower Site Selection Study" submitted to FAA September 12, 2003.
A-43)	Facility data (e.g., LOC, DME, GS) will still need to be provided in a timely manner in order to ensure publication timelines are met. Realistically, a minimum of 12 to 18 months is needed in lead-time.	NAVAID locations to be determined in the engineering phase and coordinated with the FAA NAVAIDS Working Group and information provided as soon as it becomes available.

Ref. No.	Comment	Response

FREQUENCY ANALYSIS

Ref. No.	Comment	Response
A-49)	<p>An extensive NAVAIDs frequency allocation study is being performed by the FAA since frequency allocation options in the Chicago area are extremely limited. This study must be completed before an operational ILS frequency plan can be made to implement the runway configurations as proposed in the OMP. VHF LOC frequencies in the Central United States are extremely limited. Presently, 34 out of 38 available frequencies are in use within 60 nautical miles of ORD. The radio frequency environment surrounding ORD is exceedingly complex and limits which of the 38 frequencies can be assigned at ORD.</p> <p><i>A-49) b)</i> Results of an extensive NAVAID frequency allocation study may indicate the following:</p> <p>The plan will require spectrum engineering to change ILS/DME frequencies at other airports to provide ILS/DME as requested on the proposed 6 east - west runways. The ILS/DME frequency change impacts due to the proposed modernization of O'Hare International Airport will require mitigation, and the costs of making these changes at other airports may have to be covered by the sponsor.</p> <p>v) Specific ILS approaches may have to be restricted if interference is predicted or the operation on these approaches will have to be mitigated in other ways, i.e. use of radar.</p>	<p>ILS Frequency Plan to incorporate FAA Frequency Allocation Study results.</p>

Ref. No.	Comment	Response
	<p>A-49) c) After the proposed new Runway 9L-27R is added in Phase 1A, ILS/DME frequency assignments for proposed new east-west runways may require the shutdown of ILS/DME NAVAIDs on Runways 14L-32R and 14R-32L. These frequencies may be required to establish ILS/DME NAVAIDs for proposed new east-west runways. The phasing for Runways 14L-32R and the 14R-32L NAVAID shut down is critical for the assignment of ILS/DME frequencies at the other proposed new future east-west runways during the later phases of the project.</p>	<p>The City will coordinate construction phasing to include impacts of NAVAID frequency allocation and will coordinate directly with the NAVAID Working Group.</p>

COMMUNICATIONS

Ref. No.	Comment	Response
A-52)	<p>Impacts to FAA facilities and infrastructure due to the proposed modernization of O'Hare International Airport will require mitigation, the costs of which must be covered by the sponsor through reimbursable agreements with the FAA. A complete evaluation of the communication plan for O'Hare ATCT, TRACON and Air Route Traffic Control Center (ARTCC) as it relates to the planned airport development must be completed before the FAA can fully identify the extent of these impacts. Costs may include work both on and off airport property, additional equipment and infrastructure, and phasing the placement of communication facilities on an interim basis. No existing communication or fiber facilities or infrastructure will be removed</p>	<p>NAVAID locations and any changes to associated infrastructure will be determined in the engineering phase and coordinated with the FAA NAVAIDS Working Group</p>

Ref. No.	Comment	Response
	<p>from service or impacted by airport development without prior coordination with the FAA and new or interim communication services and/or facilities being in place and ready for operation.</p> <p><i>A-52) a) i)</i> RTR-ORD is presently located in the area identified as the future location of the West Terminal Satellite Concourse (T4) and will require relocation.</p> <p><i>A-52) a) ii)</i> RTR-A will require relocation due to its proximity to the future proposed Runway 10R/28L. An interim and/or final location for the equipment and services provided from this facility must be identified and evaluated.</p> <p><i>A-52) a) iii)</i> RTR-B will require relocation due to its proximity to the future proposed Runway 10C/28C. An interim and/or final location for the equipment and services provided from this facility must be identified and evaluated.</p> <p><i>iv) A-52) a) iv)</i> The future ALP shows a four level rental car facility at the location P3 requiring removal or relocation of RTR-C. This impact was not identified in early planning documentation. This parking structure is identified as "unphased". FAA</p>	<p>NAVAID locations and any changes to associated infrastructure will be determined in the engineering phase and coordinated with the FAA NAVAIDS Working Group</p> <p>See response to Comment A-52) a) i)</p> <p>See response to Comment A-52) a) i)</p> <p>See response to Comment A-52) a) i)</p>

Ref. No.	Comment	Response
	<p>can only assume that this indicates that this portion of the plan has yet to be tied to the Phasing Plan. Early planning documents did not indicate any work, which would place current RTR-C (feature 902) in jeopardy. The frequencies currently housed in RTR-C must be relocated as a result of planned construction. While it may be possible that communication facilities from RTR-C can be accommodated in other RTR sites, there is no guarantee. This particular item requires resolution. The FAA requests additional details on the plans for this parking area for further evaluation. An interim and final location for the equipment and services provided from this facility must be identified and evaluated.</p> <p><i>A-52) a) v)</i> RTR-D will require relocation due to the construction of Terminal #4. An interim and/or final location for the services provided from this facility must be identified and evaluated.</p> <p><i>A-52) a) vi)</i> The FAA has documented that the ORD Remote Communication Air/Ground (RCAG) does not penetrate TERPS. Consequently, there is no requirement to relocate this particular facility. The sponsor incorrectly identified the communication facility on the north border of the airport property as RTR-F. The sponsor should change the facility designator from RTR- F to ORD RCAG- the actual location identifier of ORD and the facility type of RCAG.</p>	<p></p> <p>See response to Comment A-52) a) i)</p> <p>Noted for correction</p>

Ref. No.	Comment	Response
	<p>A-52) a) vii) No automatic assumptions should be made regarding the ability of existing facilities to accommodate equipment and services from communication facilities targeted for removal from the airport. Further evaluation and planning will be required, as staging plans become more specific for airport development.</p>	<p>Impacts to NAVAID/Communication systems will be determined in the engineering phase and coordinated with the FAA NAVAIDS Working Group</p>
	<p>A-52) a) viii) The proposed site, RTR-U has been shown within the footprint to the West Terminal Satellite Concourse (Building T4 on the future ALP). The FAA will require additional information as the concourse is engineered, to determine if co-locating RTR-U with the concourse is feasible. Close coordination, regarding this facility, will be necessary to ensure all structural, space; access and infrastructure requirements are met. The FAA requires 24-hour, un-impeded access to this facility.</p>	<p>See response to Comment A-52) a) i)</p>
	<p>A-52 b) i) Further evaluation will be required to determine on and off airport impacts to communication facilities directly or indirectly impacted by the configuration at the airport. Additional work or facilities may be required off the airport in support of Chicago ATCT, TRACON, or ARTCC requirements to properly provide air traffic services. When the communication plan for O'Hare ATCT, the TRACON and ARTCC air traffic control operations are further defined and coverage and frequency plans are studied, it will be determined if the conceptual locations of communication facilities are adequate or if any alternate facilities may be required. The costs of work both on and off airport will be the responsibility of the airport to cover through the reimbursable agreement.</p>	<p>See response to Comment A-52) a) i)</p>

Ref. No.	Comment	Response
	<p><i>A-52) b) ii)</i> Four new RTRs are depicted to the northwest (RTR-P), the northeast (RTR-Q1), the southwest (RTR-R) and the southeast (RTR-S). The proposed runway configuration supports the requirement for two additional RTRs in the area of the West Terminal Concourse (RTR-U) and the existing ATCT (RTR-T). Space and funding should be reserved for the construction of RTR-U and RTR-T, associated towers and infrastructure in the event that a co-location with other buildings such as the concourse or the tower cannot be accommodated. The ALP should be modified to include RTR access roads. There is a heightened regard for the movement of vehicles on and around the AOA. The following comment made by the sponsor is incorrect: "Response to ALP Comments" Page 22, Reference number 52b) ii. "It has been determined by the NAVAIDS Working Group that an additional site for RTR-T will not be required." RTR-T may in fact be required.</p>	<p>See response to Comment A-52) a) i) Furthermore, access roads will be included in updated phasing plans during engineering evaluation.</p>
	<p><i>A-52) b) iii)</i> While resolution of this item is not expected as part of the ALP determination, the FAA requests details on both the concourse (T4) and parking structure (P3), as they become available for possible incorporation of FAA co-location requirements. Resolution of this item will be required to achieve milestones in implementation of the overall plan. The plans for the parking structure and the terminal building are still unclear. It will be necessary to evaluate the plan in depth before any construction in either of these areas begins. Space, power, utilities, cabling and antenna location may be completed in conjunction with airport work if facilities are acceptable to FAA requirements. Regardless of the final configuration, it will be necessary for the sponsor to accommodate the communications facilities needed to support the proposed airport configuration.</p>	<p>See response to Comment A-52) a) i)</p>

Ref. No.	Comment	Response
	<p><i>A-52) b) iv)</i> RTR-Q1 is shown very close to Runway 14L/32R. The facility tower plans and phasing should be closely monitored to ensure that communication tower locations and phases are not detrimental to the operation of Runway 14L/32R.</p>	<p>See response to Comment A-52) a) i)</p>
	<p><i>A-52) b) v)</i> The proposed location of RTR-S must be evaluated with respect to the timing of RTR-A and RTR-B removals, and shortening of Runway 14R/32L. Placement and timing will be important with respect to the removal of Runway 14R/32L.</p>	<p>See response to Comment A-52) a) i)</p>
	<p><i>A-52) b) vi)</i> Additional equipment and materials may need to be obtained to support the new or transitional communication or fiber requirements associated with the airport development and in the mitigation of any operational impacts.</p>	<p>See response to Comment A-52) a) i)</p>
	<p><i>A-52) b) vii)</i> An integrated FAA and sponsor phasing plan will be needed. Detailed integrated scheduling for the construction of all new communication facilities must be developed to ensure services are continued without disruption. The FAA may determine that some work can be consolidated with airport activity. Details of this nature and associated responsibilities will be outlined in the future reimbursable agreement with the airport.</p>	<p>A detailed phasing plan is being developed in close coordination with the FAA through the NAVAIDS Working Group and will be submitted as they become available.</p>
	<p><i>A-52) b) viii)</i> Fibre optic cables, ductwork, conduit and equipment requirements must be included/planned for connecting all new communication facilities to the existing ATCT and two future ATCTs. It will be necessary for the Sponsor and the FAA to work together to define the work and reimbursable agreement responsibilities.</p>	<p>See response to Comment A-52) a) i)</p>

Ref. No.	Comment	Response
	<p><i>A-52) b) ix)</i> Further planning will be required within the FAA and with the airport to determine specific plans and timing of when new fiber network requirements need to be in place. The FAA will determine where and when new fiber optic capabilities must be established prior to any impact to the existing FOTS infrastructure.</p>	<p>See response to Comment A-52) a) i)</p>
	<p><i>A-52) b) x)</i> Two separate manholes must be provided for physical diversity of power, control, and communication cables, etc. for each new communication facility. Design responsibilities still need to be discussed and agreed to between the FAA and the Sponsor, then documented in a reimbursable agreement.</p>	<p>See response to Comment A-52) a) i)</p>
	<p><i>A-52) b) xi)</i> The airport must construct access roads, grading and subsurface work to and from each facility to include each communication facility. This will require additional coordination with the sponsor both on responsibilities and schedule integration. While the FAA is concerned about the plans for access roads and access procedures to each facility, RTR-R and RTR-U are of particular concern. Access to all facilities must meet or exceed the SMO expectations. RTR-U, which is proposed on top of the new West Terminal, will pose unique access complications and new procedures. Concerns for secured and exclusive access, parking, movement of heavy or oversized equipment to and from the facility, will have to be addressed, negotiated and resolved.</p>	<p>Access to NAVAID/Communication systems will be determined in the engineering phase and coordinated with the FAA NAVAIDS Working Group.</p> <p>Access roads will be provided in the phase drawings.</p>
	<p><i>A-52) b) xii)</i> FOTS presence at O'Hare. The established FOTS systems provide operational service communications between on airport FAA sites and the ORD ATCT. Further,</p>	<p>See response to Comment A-52) a) i)</p>

Ref. No.	Comment	Response
	<p>it is important to establish awareness as soon as possible, that construction activities must consider first the existing FOTS infrastructure, then new and/or revised runway and site transitions. Listed below are some items to keep in mind prior to construction:</p> <ul style="list-style-type: none"> a. All FAA operational on airport services, between the ORD ATCT and NAVAIDs, radio transmitter, or radar site locations are provided over a FOTS system. b. There is a future FOTS plan, in association with the OMP and any runway construction activities should consider associated FOTS requirements (e.g., conduit, duct, and fiber optic cable and equipment requirements). <p>In addition, any runway or site relocation (e.g., LOC, GS, ALSF, MALSR, ASR-9, and RTR) presently connected via a FOTS system, will need to be established at the new location before disconnection occurs at the current location. The duct or conduit will be traceable back to the ORD ATCT. Fiber Optic Cable and FOTs equipment will be used for all FAA on airport operational services between the ORD ATCT and FAA sites. Detailed discussions will be required to address the plans to minimize impacts to existing facilities while preparing future infrastructure needed for new facilities.</p> <p>Construction activities, especially from Runway 9L/27R and south, may put fiber optic cable at risk. Damage to cable will result in loss of service.</p>	<p>See response to Comment A-52) a) i)</p> <p>Noted.</p>

AIRCRAFT RESCUE AND FIREFIGHTING

Ref. No.	Comment	Response
A-53)	<p>The dedicated ARFF access roads that cross movement areas need to have controlled access. If they are accessible to all traffic, they should be incorporated into the service road system and reviewed as such.</p> <p>The travel time for the first responding vehicle to proposed new north runway is too close to the regulation. The FAA, with cooperation from the City's contractor, will develop a field test that closely replicates the proposed distance including turns and driving over the crown of runways. A field test will be conducted in near future.</p>	<p>Controlled access locations to be determined during the engineering design phase and coordinated with the FAA</p> <p>ARFF workscope including field tests completed. As part of the certification of the proposed North Runway 9L/27R, the City will demonstrate actual response times required by FAR Part 139 upon completion of Future Runway 9L/27R.</p>
A-55)	<p>The FAA continues to review information provided by the City as it relates to storm water (detention/retention) facilities. Additional information will be provided to the City as the FAA completes the analysis of the data.</p>	<p>The City will continue to ensure that USDA Wildlife Services remains engaged in the on-going construction phasing. The Wildlife Hazard Management Plan and program will be updated as necessary.</p>

GROUND VEHICLE SERVICE ROADS

Ref. No.	Comment	Response
A-56)	The FAA continues to work with the City of Chicago on the service and access roads depicted on the ALP. Specifically, this work will resolve access roadway issues as identified in the June 9, 2004 letter from the Chicago Area Modernization Program Office to the City of Chicago.	Access/ service roads will be depicted on the phased drawings as part of the phasing workscope.
A-58)	The FAA continues to work with the City of Chicago on the access roads for the NAVAIDs on the future ALP. Specifically, this work will resolve access roadway issues as identified in the June 9, 2004 letter from the Chicago Area Modernization Program Office to the City of Chicago.	See response to Comment A-56.
A-60)	The study focuses on the primary service road system, which for the most part succeeds in reducing movement area crossings. The FAA requests to see plans for the secondary roads, such as the access roads to the NAVAIDs and visual aids. The FAA would like to emphasize the elimination of the potential need for vehicles to stop on the roadway as it crosses a movement area, e.g., a roadway intersection with a taxiway. Issues associated with these comments will be addressed as identified in the June 9, 2004 letter from the Chicago Area Modernization Program Office to the City of Chicago.	See response to Comment A-56.
A-61)	Due to the heavy volume of traffic, both aircraft and service vehicles, the FAA recommends the City tunnel the service road north of Taxiway M between Taxiway ZT and Taxiway ZV through north of Taxiway LL between Taxiway ZZ and Taxiway S.	New roadways have been tunneled/depressed under aircraft movement areas where practical. The roadways in question have been planned per FAA standard and tunneling has not been

Ref. No.	Comment	Response
		determined as a requirement.
A-62)	The FAA continues to support the inclusion of this service road bridge in the earliest phases of the project. This will help eliminate unnecessary ground vehicle movements across the taxiway bridges to the north airfield.	Phasing of the Service Road Bridge will ultimately be determined through engineering and benefit/cost analyses however preliminary assessment determined bridge construction slated for Phase 2.

COMPLEX INTERSECTIONS

Ref. No.	Comment	Response
A-64)	During Phase 1A, the FAA recommends use of one interim Runway 14L/32R configuration from Runway 9L/27R construction start until Runway 14L/32R decommissioning. During Phase 1B, the FAA is uncertain if the Runway 32L end will be displaced or relocated. Please provide clarity on the phasing of the proposed development.	Interim runway configurations will be provided per Phasing Workslope as identified in the June 9, 2004 letter from the FAA OMP Office to the City of Chicago.

WILDLIFE

Ref. No.	Comment	Response
A-66)	Prior to commencing any construction related to development in the project, the City of Chicago shall complete a Wildlife Hazard Assessment (WHA) to evaluate each separate phase of the construction plan. USDA Wildlife Services is an acceptable party to conduct this assessment based on their expertise with animal damage control at airports, in addition to their specific expertise at O'Hare. If the WHA is not conducted by USDA Wildlife Services, the FAA will need to be consulted to evaluate the qualifications of the person(s) conducting the assessment prior to approval.	See response to Comment A-55.
A-67)	The FAA continues to review information provided by the City as it relates to storm water (detention/retention) facilities. Additional information will be provided to the city as the FAA completes the analysis of the data.	See response to Comment A-55.

TRANSPORATION SECURITY ADMINISTRATION

O'Hare International Airport will be required to comply with all regulations governing civil aviation security throughout the OMP process, inclusive of all points identified below. All comments associated with the October 2003 document remain valid, as do the City's responses.

Ref. No.	Comment	Response
A-68)	All new facilities must have an adequate infrastructure to accommodate an access control system as well as personnel screening facilities since all new construction will either be contained within, or provide access to, the secured area of O'Hare International Airport.	TSA and FAA security requirements will be incorporated during engineering design.
A-69)	Terminal and cargo buildings must be designed with sufficient space to handle screening equipment for passengers, employees, baggage and cargo.	TSA and FAA security requirements will be incorporated during engineering design.
A-70)	Relocation and modification of perimeter gates must be designed to accommodate an area	TSA and FAA security requirements will be

Ref. No.	Comment	Response
	where screening of vehicles and occupants can take place.	incorporated during engineering design.
A-71)	The increase in the number of employees will necessitate additional capacity in the access control and identification badge computer systems.	TSA and FAA security requirements will be incorporated during engineering design.

B-PHASING COMMENTS

(General Note: Comments below apply to FAA comments and the City's Response provided to the FAA in October 2003. Please refer to that document for the original FAA comment and the City's response.)

PHASE 1 GENERAL COMMENTS

Ref. No.	Comment	Response
B-4)	It appears that Runway 14L/32R will be temporarily closed and the pavement near Runway 9L/27R removed. The FAA is unsure if Runway 14L/32R will be re-opened as it currently exists. Please provide the necessary phasing information. The FAA recommends all abandoned pavement be removed.	The City will continue to work closely with the FAA and provide information when it becomes available. Phasing drawings will be provided per Phasing Workslope as identified in the June 9, 2004 letter from the FAA OMP Office to the City of Chicago.
B-5)	The Runway 14R CAT II/III approach facilities, to include the ILSs, ALSF-2, and RVR, should be protected from construction, in order to maintain CAT II/III service to this runway.	See response to Comment B-4.
B-6)	In preliminary information provided by the City of Chicago, it was stated that, "The future GS-RVR building will be temporarily relocated to enable the use of Runway 14R/32L". The complications associated with the option of operating Runway 14R/32L, during the extension construction of Runway 9L/2R must be resolved to the satisfaction of the FAA. The concern for incorrect information is considered a project phasing concern and will be addressed as such. However, it should be understood that the GS building has an operational requirement to be within 10 feet of the GS antenna building.	See response to Comment B-4.

PHASE 1A- RUNWAY 9L/27R

Ref. No.	Comment	Response
	<p><i>B-7) a)</i> Trains on the railroad track are a concern for the operation of the GS facility performance. The City of Chicago, DOA, is accomplishing further study. Results of this study have not yet been released to the FAA.</p> <p><i>B-7) c)</i> The ALSF-2 stationing as seen on Proposed ALP of 10/2003 meets standard stationing requirements and no longer requires a NCP waiver.</p>	<p>Results of the Glideslope Interference Study will be provided when available.</p> <p>Comment noted. Any variance in the location of stationing determined during the engineering/design phase, will be provided to the FAA through the NAVAID Working Group.</p>
<p>B-8)</p>	<p>Runway 27R Approach and Runway 22R Instrumentation: The Runway 27R ALSF-2 light plane design has not been resolved through the proposed ALP of 2003-AGL-0878-NRA, or surrounding discussions. It is highly recommended that this complication receive attention as soon as practical so that resolution is clearly defined.</p> <p><i>B-8) d)</i> Portions of the DOA response to Airspace case number 2002-AGL-0848-NRA, B-8d are acceptable; however, there may be a typographical error in the DOA response. "9L ALSF-2 Light bar..." change to "27R ALSF-2 Light bar..." If this is not the case, this comment will require re-evaluation by the FAA.</p>	<p>Resolution will be provided during the engineering design phase and coordinated with the FAA through the NAVAIDS Working Group.</p> <p>Correction noted. See response to Comment B8.</p>

Ref. No.	Comment	Response
	<p><i>B-10) b)</i> The proposed new ATCT site must meet FAA Order 6480.4, Air Traffic Control Tower Siting Criteria.</p>	See FINAL "North Airport Traffic Control Tower Site Selection Study" submitted to FAA September 12, 2003.
	<p><i>B-10) c) vi)</i> The proposed new ATCT sites must be large enough to accommodate for employee parking, Government Owned Vehicle (GOV) parking, a base building and support equipment.</p>	Accommodations for parking base building and support equipment to be incorporated with engineering/design of the ATCT.

PHASE 1B- RUNWAY 10L/28R EXTENSION

Ref. No.	Comment	Response

Ref. No.	Comment	Response
	<p><i>B-22) b)</i> Runway 10L ALSF-2- A waiver will be required for a non-standard spacing configuration that's results when crossing the railroad and when accommodating existing structure. DOA should acknowledge in writing that they are aware of the Non-standard Configuration. Written justification for this configuration may be required.</p> <p>The railroad tracks on the 10L approach are two sets of two tracks each, separated by a wide median. In that median, there is ample room to install a light bar tower. If a light bar tower is installed in the railroad median, an access road grade crossing would be necessary across the two tracks on which railroad cars would block the crossing for the shortest duration. Even with the light bar in the railroad median, a couple of light bar intervals would deviate from the standard siting criteria. This non-standard spacing requires corrective action or a NCP waiver. With the light bar in the railroad median, an ALSF-2 bridge would not be required, but a special turnoff on the east side of York Road might be necessary to access the light bar. If a light bar tower is sited between the tracks and York Road, a special turnoff on the east side of York Road would definitely be needed. Alternatively, if an ALSF-2 bridge across York Road and the tracks were constructed, the turnoff on the East Side of York Road would not be necessary.</p>	<p>Ultimate configuration will be determined during the engineering/design phase.</p> <p>Any non-standard condition will be coordinated with the FAA through the NAVAIDS Working Group and a NCP waiver will be requested.</p>
	<p><i>B-22) c)</i> If the building just west of York Road remains, one or two ALSF-2 light bars would have to be mounted on the building. This light bar siting would be a structural, access, safety, and leasing challenge that would have to be solved. The FAA and the Sponsor will work together for a solution to this complex configuration.</p>	<p>The City continues to have ongoing discussions with the appropriate entities. Information will be provided to the FAA when it becomes available.</p>
	<p><i>B-23) b)</i> Runway 28R ALSF-2- A waiver will be required for a non-standard spacing configuration that results when crossing Runway 22L and Taxiway</p>	<p>See response to Comment B-22)b)</p>

Ref. No.	Comment	Response
	<p>“Q”. Prior to construction, DOA should acknowledge in writing that they are aware of the Non-standard Configuration. Written justification for this configuration may be required.</p> <p>A waiver will be required for a non-standard equipment type- Semi-flush Steady Burning Lights. DOA should acknowledge in writing that they are aware of the non-standard configuration. Written justification for this configuration may be required.</p>	
	<p><i>B-23) c)</i></p> <p>Based on the future configuration, the Runway 28R approach IM and LOC, FFM's would be non-standard. A waiver will be required for a non-standard spacing configuration. DOA should acknowledge in writing that they are aware of the Non-standard Configuration. Written justification for this configuration may be required.</p>	See response to Comment B-22)b)
	<p><i>B-23) d)</i></p> <p>Based on the future configuration, the Runway 28R IM antenna would be installed about 205 feet south of the Runway 28R centerline and 205 feet southeast of the Runway 22L centerline. This non-standard configuration will require corrective action to meet current FAA standards. If this is not corrected, a waiver will be required for a non-standard spacing configuration. DOA should acknowledge in writing that they are aware of the Non-standard Configuration. Written justification for this configuration may be required.</p>	See response to Comment B-22)b)
	<p><i>B-23) g)</i></p> <p>Irving Park Road/York Road Intersection Reconstruction: Elements of the ALSF-2's of future Runways 9C, 9R, 10L, and 10C are shown west of York Road on land that is shown off airport property. It is the DOA's responsibility to furnish all the interests in real estate required for the establishment of NAVAIDs. For ALSF-2, the interests include land on which to install light bar</p>	See response to Comment B-22) c.

Ref. No.	Comment	Response
	<p>NAVAIDs. For ALSF-2, the interests include land on which to install light bar structures, cable ducts and cables, access roads and walkways, personnel ingress and egress, security, appurtenances, and avigation easements to protect the approach light planes from penetration. These avigation easements will be for airspace below the FAR Part 77 50:1 approach light plane. For the Runways 9C and 10L ALSF-2s, facility elements will have to be constructed on existing buildings off airport property. If these buildings are to remain, then the DOA must obtain special real estate interests that will be mutually acceptable to the owner of the ALSF-2 and of the building.</p>	

PHASE 1C- RUNWAY 10C/28C

Ref. No.	Comment	Response
B-38)	<p>The FAA continues to work with the City of Chicago concerning the location of service and access roads for Runway 10C instrumentation. The task needs to be completed as part of the workscope contained in the June 9 letter from the Chicago Area Modernization Program Office to the City of Chicago. (see Appendix A)</p>	<p>Service Roads will be provided in detailed drawings during each of the engineering design phases in accordance with FAA Phasing Workscope as identified in the June 9, 2004 letter from the FAA OMP Office to the City of Chicago.</p>
B-39)	<p>The configuration of the Runway 28C IM is non-standard and will require an NCP waiver. The sponsor may be asked to provide written justification for the non-standard configuration. The Runway 10C LOC/Runway 28C ALSF-2 building must be repositioned on the ALP. In addition, it is desired to move the Runway 28C GS, RVR, PAPI, and included connector taxiway 44 feet east of position shown on ALP, to give a GS TCH of 56.5 feet. Option in NAVAIDs design must be studied by the FAA with the option in the location of the Runway 32L threshold.</p>	<p>See response to Comment B-22)b)</p>

Ref. No.	Comment	Response
B-40)	Relocation of Runway 32L threshold north of Taxiway M would eliminate the intersection with the high-speed taxiway, per the phasing plan currently being developed by the City of Chicago. FAA will review and comment on the phasing drawings when submitted by the City of Chicago.	Detailed information will become available during engineering/design phase. The City will continue to work closely with the FAA through the Construction Working Group. Phasing drawings will be provided per Phasing Workslope as identified in the June 9, 2004 letter from the FAA OMP Office to the City of Chicago.
B-46)	Due to the heavy volume of traffic, both aircraft and service vehicles, Air Traffic recommends the City should tunnel the service road north of Taxiway M between Taxiway ZT and Taxiway ZV through north of Taxiway LL between Taxiway ZZ and Taxiway S. A north/south service road should be maintained at the exit of the east side of the tunnel.	New roadways have been tunneled/depressed under aircraft movement areas where practical. The roadways in question have been planned per FAA standard and tunneling has not been determined as a requirement.
B-49)	The FAA requests that the City of Chicago clarify if any buildings depicted on the base mapping in the Runway 10C RPZ are places of public assembly. Additionally, please confirm if any of the buildings depicted in the Runway 10L or Runway 9C RPZ's are places of public assembly.	Preliminary survey indicates that these buildings are not places of public assembly however, a detailed assessment will be provided during discussions with property owners regarding easements for the approach lighting system (ALS). Technical issues pertaining to the ALS will be determined during the engineering/ design phase and communicated to the FAA through the NAVAID Working Group.
B-59)	The existing ASR shall be relocated and operational prior to construction activity and earthwork for Phase 1 – West Satellite and Phase 2-West Terminal.	The City will continue to coordinate with the FAA through the NAVAID Working Group.

Ref. No.	Comment	Response

PHASE 2A - RUNWAY 9R/27L EXTENSION

Ref. No.	Comment	Response
B-68)	<i>B-68) a)</i> The proposed Runway 9R ALSF-2 configuration is non-standard and requires an NCP waiver. The optimal Runway 9R GS and PAPI configuration is: GS 1,171' from threshold, 58.1' TCH; PAPI 1,521' from threshold, 75.4' TCH.	See response to Comment B-22)b)

Ref. No.	Comment	Response
	<p><i>B-68) b)</i></p> <p>The ALSF-2 light lane must cross the railroad tracks at a right angle where the tracks are set widely apart. The railroad tracks on the approach to Runway 9R are two sets of two tracks each, separated by a wide median. In that median, there is ample room to install a light bar tower. If a light bar tower is installed in the railroad median, an access road grade crossing would be necessary across the two tracks on which railroad cars would block the crossing for the shortest duration. Even with the light bar in the railroad median, a couple of light bar intervals would deviate from the standard siting criteria. The DOA may be asked to acknowledge in writing that they are aware of the Non-standard Configuration. Written justification for this configuration may be required.</p> <p>With the light bar in the railroad median, an ALSF-2 bridge would not be required, but a special turnoff on the east side of York Road might be necessary to access the light bar. If a light bar tower is sited between the tracks and York Road, a special turnoff on the east side of York Road would definitely be needed. Alternatively, if an ALSF-2 bridge across York Road and the tracks were constructed, the turnoff on the east side of York Road would not be necessary. The non-standard configuration, would be approved by the FAA pending the approval of the NCP waiver. The DOA may be asked to acknowledge in writing that they are aware of the Non-standard Configuration. Written justification for this configuration may be required.</p>	<p>See response to Comment B-22)b)</p>

Ref. No.	Comment	Response
	<p>The City of Chicago, DOA, responded to the FAA Comment B-68b, in part by referencing the "Access routes have been detailed". The FAA responded to the City, by stating that the detail of the service road and facility access provided on the ALP was not acceptable and that additional information would be required. The City responded to the FAA, stating that the level of detail would be included in the Service Road Access Plan. The FAA has since determined that the document does not meet the need of the FAA. A new access study has been requested.</p> <p><i>B-69) d)</i></p> <p>The sponsor should revise the language within response to OMP DRAFT ALP Comment number B-69d. The language should specify Bessie Coleman Drive instead of Mannheim Road.</p>	<p>The City has subsequently determined that the appropriate means by which future access roads should be reviewed and depicted is during the engineering/ design phase. It is through this process that exact locations of access roads will be determined. Engineering drawings of access roads will be provided to the FAA through the NAVAIDS Working Group as they become available during engineering/ design phase.</p> <p>Change Noted.</p>
B-71)	The City states it will assess complex intersections that may exist at each interim phase. The City needs to identify and address these interim conditions before construction starts.	See response to Comment B-40.
B-75)	Taxiway R south of Runway 4L/22R is not operationally necessary.	This acknowledges that FAA-Air Traffic has determined that Taxiway R south of Runway 4L is not operationally necessary. Taxiway R will be illustrated accordingly in Future ALP drawings.

Ref. No.	Comment	Response
	<p><i>B-81) a)</i> The Runway 27C GS Distance from Threshold should be 1070'.</p>	<p>Ultimate location NAVAIDS will be determined in the engineering/design phase. Any change to recommended locations will be coordinated with the FAA through the NAVAIDS Working Group.</p>
	<p>B-81)a) The Runway 27C GS Distance from Threshold should be 1070'.</p>	<p>Ultimate location of NAVAIDS will be determined during the engineering/ design phase. Any change to recommended locations will be coordinated with the FAA through the NAVAIDS Working Group.</p>
B-90	The City states it will assess complex intersections that may exist at each phase of construction. The City needs to identify and address these interim conditions before construction starts.	See Response to Comment B-71
B-93)	Providing Yankee Echo Gate (Post 14) and Yankee Tango Gate (Post 15) remains in place, the FAA accepts vehicular traffic crossing Taxiway Y.	Noted. Any change to the location of Post 14 & Post 15 will be coordinated with the FAA.

PHASE 2C - RUNWAY 10R/28L

Ref. No.	Comment	Response
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Ref. No.	Comment	Response
	<p><i>B-104) c)</i> Runway 10R ALSF-2. The future Bensenville ditch, the airport security fence, future relocation Irving Park Road, and rerouted railroad tracks are all shown crossing through the ALSF-2. These items must be designed to accommodate standard stationing of the ALSF-2 light bars.</p>	See response to Comment B-81 a)
	<p><i>B-104) c) i)</i> The previous recommendation was to route the Railroad Tracks around the end of the ALSF-2 lights. This was not accomplished. If possible, the sponsor should reroute the railroad tracks around the end of, instead of through, the ALSF-2. Ideally, the tracks should amply clear the outermost light bar tower of the ALSF-2. If the tracks must cross the ALSF-2, the track design must include ALSF-2 ducts under the tracks, and a grade crossing for the access road.</p> <p>The proposed ALP illustrates the relocation of the Railroad between the last ALSF-2 light bar and the second to last ALSF-2 Light bar. This creates additional problems for maintaining a light bar so close to an active rail.</p> <ol style="list-style-type: none"> 1) A grade crossing will be required to access the outermost light bar. 2) The Railroad must be relocated to equal-distance between the last and second to last light bars, to accommodate safe facility maintenance. 	See response to Comment B-81 a)

Ref. No.	Comment	Response
	<p><i>B-105) a)</i></p> <p>The previous recommendation was to route the fence outside of the Runway 28L GS Critical Area. This has been accomplished on the ALP; however, the proposed fence runs parallel to the GS Critical area edge for approximately 150'. This configuration could seriously influence the operation of the proposed GS. The sponsor should have the proposed GS signal modeled to ensure that there will be no impacts as a result of the proposed fence configuration. The FAA has no objections provided the sponsor accepts all responsibility to mitigate any impacts associated with such a configuration.</p>	<p>The City has solicited a GS Signal Interference Study. Information will be provided to the FAA through the NAVAIDS Working Group when it becomes available.</p>
	<p><i>B-105) b) ii)</i></p> <p>The FAA has no objections provided Frangible lights are to be installed only where they fall on runways or taxiways. The practice of installing semi-flush lights in a threshold-to-taxiway infield (see Runway 28R below) should not be repeated. The best visual guidance, the greatest facility reliability, and the greatest ease of maintenance derive from frangible lights, not semi-flush lights.</p>	<p>See response to Comment B-81 a)</p>

Ref. No.	Comment	Response
	<p><i>B-105) b) iii)</i> The FAA has no objections provided semi-flush: (1) Steady-burning lights are installed for all three light bars at station 7+00, and for at least one light bar of stations 5+00 and 6+00, in Taxiway "S" (2) Steady burning and flashing lights are installed at stations 13+00, 14+00, 15+00, and 16+00, in Taxiway S2 and Runway 4R-22L. In crossing Runway 4R-22L and Taxiways "S" and "S2", the ALSF-2 approach light plane will have to stay very close to the ground.</p>	<p>See response to Comment B-81 a)</p>
	<p><i>B-105) c)</i> The proposed configuration results in a penetration of the Approach Light Plane, which will require an NCP waiver.</p>	<p>See response to Comment B-22 b)</p>

Ref. No.	Comment	Response
	<p><i>B-105) e)</i></p> <p>The FAA offers the following guidance for the proposed South ATCT: The requirements for two additional ATCT facilities are valid from a line of sight perspective. The Air Traffic Division, AGL-510 and the Chicago NAS Implementation Center, ANI-400 will determine and approve the appropriate locations.</p> <p>i) The new ATCT site must meet FAA Order 6480.4, Air Traffic Control Siting Criteria.</p> <p>ii) The City of Chicago, DOA must submit an ATCT Siting report indicating the following information:</p> <ol style="list-style-type: none"> (1) Distance and depth perception to runway ends. (2) Maximum to Avoid (MTA) elevations at each site. (3) Shadow studies at each site. (4) Look down angle radius at each site. (5) A narrative for each site addressing sunrise and sunset impacts, glare and light reflection impacts and employee access. (6) The new site must be large enough (2+ acres) for employee parking, Government Owned Vehicle (GOV) parking a base building and support equipment. 	<p>The City plans to provide an ATCT Siting Study prior to OMP Phase II construction.</p> <p>The City will work closely with the FAA and solicit input from FAA-Air Traffic at the appropriate time. The format and content of information to be provided will be similar to the Final "North Airport Traffic Control Tower Site Selection Study" submitted to FAA September 12, 2003.</p>
B-116)	The ATCT has indicated that they do not need Taxiway R south of Runway 4L/22R. Please remove from the ALP.	See Response to Comment B-75.
B-119)	The ALP depicts the Runway 4L LOC approximately 720' from the runway end. Due to the constraints located in this area, this location appears to be the only feasible and prudent siting alternative available. If future modifications are proposed on this runway, all efforts should be made to site this LOC outside of the RSA.	Any future modifications will be coordinated with the FAA.

Ref. No.	Comment	Response
B-120)	The ALP depicts the Runway 22R LOC approximately 890' from the runway end. Due to the location of Taxiway J, this location appears to be the only feasible and prudent siting alternative available. If future modifications are proposed on this runway, all efforts should be made to site this LOC outside of the RSA.	See response to Comment B-119.

RUNWAY 4R/22L

Ref. No.	Comment	Response
B-125)	The ALP depicts the Runway 4R LOC approximately 530' from the runway end. Due to the location of Mannheim Road, this location appears to be the only feasible and prudent siting alternative available. If future modifications are proposed on this runway, all efforts should be made to site this LOC outside of the RSA.	See response to Comment B-119.
B-126)	The ALP depicts the Runway 22L LOC approximately 860' from the runway end. Due to the location of Irving Park Road, this location appears to be the only feasible and prudent siting alternative available. If future modifications are proposed on this runway, all efforts should be made to site this LOC outside of the RSA.	See response to Comment B-119.

C-INDIVIDUAL SHEETS

(General Note: Comments below apply to FAA comments and the City's Response provided to the FAA in October 2003. Please refer to that document for the original FAA comment and the City's response.)

GENERAL

Ref. No.	Comment	Response
C-109)	In response to Comment C-109 the City states that the 34:1 TERPS Approach Obstacle Clearance Surface was added to the Runway 9L inner approach profile drawing. However, the referenced TERPS surface is not depicted on either Sheet #18 or Sheet #19.	Noted for revision.
C-126)	Future Runway 27R (sheet #20) does not appear to be centered laterally in the plan view.	Noted for revision.