



U.S. Department
of Transportation
**Federal Aviation
Administration**

Great Lakes Region
Illinois, Indiana, Michigan,
Minnesota, North Dakota,
Ohio, South Dakota,
Wisconsin

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

October 6, 2003

Mr. Chris Arman
Deputy Commissioner
O'Hare Modernization Program
Department of Aviation
Post Office Box 66142
Chicago, Illinois 60666

Dear Mr. Arman,

We have completed a comprehensive review of the following draft reports submitted to the Federal Aviation Administration (FAA) by the City of Chicago on February 7 and March 6, 2003; *Project Definition Report, Concept/Development Refinement Report, Unconstrained Demand Analysis Report, Airport Layout Plan Submittal, and Airside Simulation Analysis Report*. Our review was based on master plan processes and procedures found in Advisory Circular 150/5070-6A, *Airport Master Plans*.

The results of our review are set forth in the attached technical comments. These comments should be addressed and incorporated in the final O'Hare Modernization Program master plan report. As you are aware, the FAA has approval authority only on the forecast, benefit cost analysis and airport layout plan portions of the master plan process. Our review of the master plan document is based on determining FAA standards have been met and planning techniques have been applied in the development of the final report and ensuring completion and submission of work items as specified in the grant agreement, all of which are included in the attached comments.

We are available to meet with representatives of your office to discuss the items in the attached document and to provide any technical assistance necessary to facilitate the development of the City's master plan report.

If you have any questions or wish to further discuss the attached comments, please contact my office at (847) 294-7812.

Sincerely,

Barry D. Cooper
Manager, Chicago Area Modernization Program Office

Attachment

Concept Development/Refinement Report

- A-1. Page II-3, paragraph 3; provide justification on why a 13 knot allowable crosswind was used when Airport Design Group A-1 and B-1, which consist of 0.6% of the operation has an allowable crosswind of 10.5 knots.
- A-2. Table II-2; shows under precipitation the Runway 9-27 & 4-22 combination only has 94.0% wind coverage both during the daytime operating hours and all hours analysis. In accordance with Advisory Circular (AC) 150/5300-13, Airport Design, the criteria is 95 percent for total wind observations. Provide information in the text on how the proposed configuration meets this standard. (See comment A-1)
- A-3. Page II-5, Section 2.1.1.2, paragraph 4; provide additional data to justify why it is acceptable that none of the orientation meet 95 percent coverage for 10.5 knots crosswind.
- A-4. Page II-6, section 2.1.2; verify when the New Large Aircraft (NLA) will begin commercial service at O'Hare International Airport and provide consistency throughout all of the O'Hare Modernization Program (OMP) planning documents (Project Definition, Unconstrained Demand Analysis, and Airside Simulation Analysis Report), 2006 or 2009.
- A-5. Page II-6, section 2.1.2, paragraph 2; verify the length required for the NLA and provide consistency throughout all of the OMP planning documents.
- A-6. Page II-6, section 2.1.2, paragraph 2; NLA are shown in the Project Definition Report to only have parking positions available at the Western Terminal and West Satellite Terminal, not at the International Terminal 5 or the new international arrival facilities (assuming to be Terminal 2 under World Gateway Program (WGP)).
- A-7. Table II-5; verify runway length needed for NLA.
- A-8. Page II-8, paragraph 1; verify the length needed by the most demanding aircraft, under the most demanding condition. It appears to be 12,250 feet. If this is the requirement and aircraft performance is improving, how and why justify a 13,000-foot runway with declared distances?
- A-9. Page II-8, paragraph 2, last sentence; "Based on manufacturer's information, new ADG VI runways with departure lengths greater than 10,300 feet should be provided where practicable." Runway 10C/28C must use declared distances to provide a standard safety area when Design Group VI aircraft are on Taxiway S. This still provides a length of 10,543 feet. Please provide information why declared distances are used in order to maintain 10,600 feet of departure and arrival length on Runway 28C, when according to all the information presented in

this document the manufacturer reports greater than 10,300 feet are needed where practicable. Provide the practicability for using declared distance to gain 300 feet, when it is a design provision only to be used on a prior constrained runway.

- A-10. Page II-13, paragraph one; “Departure Runways are 27C, 28C, and Runway 22L.” In the text Runway 22L should be identified as a secondary departure runway.
- A-11. Throughout Section II, provide consistent text to describe Federal Aviation Administration (FAA) approval prior to IFR and VFR quad operations.
- A-12. Throughout Section II, provide consistent text when identifying the secondary/overflow, departure or arrival runway.
- A-13. Page II-14, Option 4, second to last sentence; “Departures occur on Runway 27C, 28C, and 22L.” In text Runway 22L should be identified as a secondary departure runway.
- A-14. Page II-14, Option 5; clarify this section. Was Option 5 the base case or one of the options put forth for review and consideration that thus became the preferred option? What does Option 5 consist of, provide text as provided in Option 1-5.
- A-15. Page II-15, section 2.4.2; the last two sentences of this paragraph discuss the original intent to provide 10,000 feet on Runway 9C/27C. ATCT indicated the desire to cross aircraft behind the departing aircraft so a length of 11,245 feet was provided. Does this length take into consideration the need for NLA to have 10,300 feet for departure?
- A-16. Page II-15, section 2.4.3, paragraph 2, describes how the south airfield is more suitable to be designed for Aircraft Design Group (ADG) VI aircraft guidelines given that the existing terminal area essentially “opens” to the south. Why is this a planning factor since the Project Definition Report (PDR) shows all ADG VI aircraft located in the Western Terminal complex?
- A-17. Page II-15, section 2.4.3, paragraph 2, last sentence; how do the departing South America flights affect traffic flow?
- A-18. Page II-16, bullet 8; provide additional information on the potential congestion that exists between Runway 27C and 27L for ADG VI aircraft and the solution for this situation.
- A-19. Page II-17, bullet 5; provide additional information on the potential congestion that exists at the end of Runway 10L/28R and Runway 10C/28C because of runway crossings required for ADG VI aircraft and the solution for this situation.

- A-20. Page II-17, bullet 4; reevaluate taxiway flow for ADG VI aircraft, according to the PDR they do not have parking areas designated in Terminal 5.
- A-21. Page II-18, bullet 1; if the taxi flows depicted in exhibit I-40 are correct, aircraft landing on Runway 9C, would also have to cross Runway 10L and Runway 10C in order to reach Terminal 5 (see comment A-20).
- A-22. Page II-18, section 2.4.4; the assumption about the use of the parallel taxiway during Category II/III approaches when there is a runway/taxiway separation of 400 feet is incorrect. At no time can an ADG V aircraft be on any portion of the taxiway while another aircraft occupies the runway and vice versa. (See Draft ALP comment A-48 issued May 21, 2003.)
- A-23. Page II-19, paragraph 1,3, and 5; why did the study use “terminal gate facilities to support operations at the highest demand level to allow for a full analysis of the airfield capacity without gate constraints”. Explain the gate capacity used and if additional gates are needed beyond Planned Activity Level (PAL) 1 and PAL 2.
- A-24. Page II-19, paragraph 6; based on accessibility to the southern most runway, verify the ability to achieve peak hour departure and arrival numbers (see Draft ALP comment B-95 issued August 6, 2003).
- A-25. Page II-20, section 2.5.1; See Draft ALP comment B-100 issued May 21, 2003.
- A-26. Page II-20, section 2.5.3; verify the length that critical aircraft require for departure and arrival, 12,250 feet, and the declared distance, 12,249 feet. Provide justification for the use of declared distances, such as critical aircraft. Also provide all appropriate declared distance information such as Take Off Distance Available (TODA), Take Off Run Available (TORA), and Accelerated Stop Distance Available (ASDA).
- A-27. Page II-20, section 2.5.4; "Runway 10C localizer...located east of Runway 4L/22R" should be "east of Runway 4R/22L"
- A-28. Page II-20 and II-21, section 2.5.4; verify runway length and provide information on TODA, TORA, and ASDA.
- A-29. Page II-21, section 2.5.5, paragraph 2; reconcile this paragraph with the results of the City's review of the ALP comments submitted to the City on May 21 and August 6, 2003.
- A-30. Page II-22, paragraph 2; change the reference to “Exhibit II-55” to “Exhibit II-47”.

- A-31. Page II-22, paragraph 4; the study of the current Runway 9L/27R Category II/III approach capability is not part of OMP. In addition the assumptions in this paragraph are not correct, refer to the forthcoming response to Airspace Case Number 2003-AGL-0005-NRA.
- A-32. Page II-25, section 2.5.8.1; do not designate runways as "primarily" arrival or departure runways.
- A-33. Page II-25, paragraph 1; this paragraph seems to be out of place. In addition ORD does not have an approved SMGCS plan on file with the FAA.
- A-34. General comment throughout document is to change reference made to FAR (Federal Acquisition Regulations) to 14 CFR (Code of Federal Regulations).
- A-35. Page II-25, section 2.5.8, paragraph 3; describe what operational concerns of the runway profile are mitigated with the "flat runway" concept.
- A-36. Page II-25, section 2.5.8.1; verify length of Runway 10C/28C.
- A-37. Page II-26, section 2.5.8.2, paragraph 4; document the increase in grade affect takeoff performance.
- A-38. Page II-27, section 2.5.6.3, paragraph 6 and paragraph 7 on page II-28; reference the lighting standards for auto parking and apron area lighting standards described in this paragraph.
- A-39. Table II-7, why are numbers 4 and 7 highlighted? Also, what is the footnote reference for "These objects penetrate the 40:1 surface"? The text indicates all items in this chart penetrate the 40:1 surface.
- A-40. Table II-7, These objects must be studied under an airspace analysis and appropriate actions must be taken.
- A-41. Page II-29; paragraph 2; verify whether this approach must meet MLS or ILS TERPS standards. The approach surface should meet the 50:1 standards found in 14 CFR part 77.
- A-42. Page II-30; include an exhibit that shows the South Tower shadowing if applicable.
- A-43. Exhibit II-2; remove Runway 14L/32R, 14R/32L and 18/36 depictions.
- A-44. Exhibit II-37 through 40; use an airport diagram that more accurately reflects the taxiway configuration around the West Terminal Complex.

- A-45. Exhibit II-44; improve the exhibit to more accurately show declared distances including TORA, TODA, and ASDA.
- A-46. Add an exhibit to show the declared distance lengths on Runway 10C/28C, including Landing Distance Available (LDA), ASDA, TORA, and TODA.
- A-47. Exhibit II-46; change the exhibit to reflect changes made based on City's response to FAA's ALP comments.
- A-48. Exhibit II-49; change title to reflect existing Runway 27L.
- A-49. Page III-2, paragraph 1; update information on gate capacity based on Note to File, OMP 2018 Gate Requirements, Ura Yvan, Ricondo & Associates – June 18, 2003 and Memo from FAA's Third Party Contractor, OMP EIS – LFA Review of OMP Gate Requirements dated July 23, 2003 and verify consistency with *Project Definition Report*.
- A-50. Page III-2, section 3.2, paragraph 1; the last sentence "potential range of options that might be available in each area to meet the potential gate needs of the Airport both in the timeframe envisioned in the OMP, and beyond" indicates that there will be enough gates to support the levels identified in section 3.1 past 2018. This may not be the situation based on Note to File, OMP 2018 Gate Requirements, Ura Yvan, Ricondo & Associates – June 18, 2003; Memo from FAA's Third Party Contractor, OMP EIS – LFA Review of OMP Gate Requirements dated July 23, 2003; and information provided in the *Project Definition Report*. Update this paragraph to reflect the most current planning.
- A-51. Page III-4, bullet 2; "assuming development is allowed within the existing Runway 4L RPZ." Development is not allowed in the RPZ, why assume it here?
- A-52. Page III-4, section 3.2.2.1, bullet 2-4; change either the exhibit titles or change the concepts to 1 through 4.
- A-53. Page III-5, section 3.2.3, bullet 2; change "bride" to "bridge".
- A-54. Page III-6 and 7, section 3.2.4; add information on passenger convenience, international processing, gate capacity, and in general, needs of WGP. Also address need for additional gates for 2018 and beyond.
- A-55. Page III-8, section 3.3.2; explain why the switch was made from wide body jets in the WGP to Regional Jets in OMP. Why is a mix of gates that include narrow body jets and multi use gates not included?
- A-56. Page III-9, paragraph 3; explain what terminal or gates are meant by the following, "As such, development of additional facilities in the Terminal Core or East Terminal Area other than those currently planned is not anticipated during the analysis period". Is this an indirect reference to WGP?

- A-57. Page III-9, section 3.4, bullet 2; verify whether two or three satellites could be provided without impacting taxiway facilities planned to be retained.
- A-58. Page III-10, paragraph 2; rewrite paragraph to better discuss curb-front requirements for the Western Terminal and draw the conclusion that the proposed concept is able to meet and even exceed the current areas.
- A-59. Page III-10, paragraph 3; explain why an Federal Inspection Services (FIS) is needed if there are no international arrivals in the west terminal, as discussed in paragraph 2 on this page.
- A-60. Page III-10, footnote 6; OMP includes portions of WGP, thus should not be sited separately in this footnote.
- A-61. General Comments on Section III.
- a. Add discussion on gate capacity and gate development through 2030 or PAL2, which are the levels used in the Unconstrained Demand Analysis Report and ALP Report. At a minimum provide text that additional analysis will be required for future capacity beyond 2018.
 - b. Explain the selected East Terminal Concept? Is it WGP without Terminal 2 changes? How does the Terminal 6 RJ facility and Terminal 4 fit into the refined concept?
 - c. Explain what role the East Terminal Complex plays in the total gate capacity, this includes NLA versus regional jets, location of aircraft, and OMP compared to WGP purpose and need.
- A-62. Exhibit III-1; show Terminal 2 changes.
- A-63. Exhibit III-7; Runway 9L appears to be shorter than in Option 5.
- A-64. Exhibit III-34; update the legend to reflect the types of aircraft depicted in the layout.
- A-65. Exhibit III-35; verify the West Satellite Terminal has only three piers on the ALP versus this exhibit, which shows four.
- A-66. Page IV-1; add Aircraft Rescue and Fire Fighting (ARFF) facilities and custom facilities if appropriate.
- A-67. Page IV-2, bullet 5; add auto parking for customers and pilots in the General Aviation (GA)/Fixed Base Operators (FBO) facility.
- A-68. Table IV-1; format text font.

- A-69. Table IV-1; explain in discussion text why square footage for the GA/FBO has almost doubled, but operations have basically remained the same through the planning horizon.
- A-70. Page IV-4, paragraph 1, last sentence; “The assessments of the airline maintenance and GA/FBO facilities also demonstrate that no additional facilities are projected throughout the planning levels.” According to Table IV-1, the square footage has almost doubled by 2018.
- A-71. Page IV-4, section 4.1.2.1, paragraph 2; explain what numbers were used in the ratios to determine the future cargo facility requirements, especially since the current facilities exceed the current need.
- A-72. Page IV-4, section 4.2.1.2, paragraph 2; add “ACA” after Atlantic Coast Airlines.
- A-73. Page IV-5, section 4.1.2.3, paragraph 1; how can the Airline Ground Service Equipment (GSE) Maintenance facilities assessment be similar to airline maintenance facility assessments since GSE maintenance is based on aircraft operations and airline maintenance facility requirements are based on airline decisions.
- A-74. Page IV-5, section 4.1.2.4, paragraph 1; explain what method was used in the evaluation of the truck loading dock areas and auto parking, especially in reference to the statement “was performed analogous to the methodology used for the previous assessments.” What previous assessments?
- A-75. Page IV-5, section 4.1.2.4, paragraph 2; why was DOA consulted to estimate the use of current flight kitchens on the airport? Would it not have been better to consult the airlines, especially since the flight kitchens demand is based on their needs?
- A-76. Page IV-6, paragraph 1; update information since the FBO has relocated to the military apron.
- A-77. Page IV-6, section 4.2, paragraph 2, sentence 2; rewrite to revise grammar.
- A-78. Page IV-7, paragraph 2; recommend pursuing this recommendation and making a part of the proposed OMP.
- A-79. Page IV-8, paragraph 2; have the two facilities, the Northwest Air Cargo and FedEx Cargo facility, been determined not to be a hazard to Air Navigation by the FAA?

- A-80. Page IV-8, paragraph 2; has it been determined that employee parking in the South Cargo Area does not pose a hazard to security?
- A-81. Page IV-8, section 4.3; exhibits IV-24 and IV-25 are missing from the document.
- A-82. Page IV-9, paragraph 3; GA/FBO do not require more space within the planning horizon than currently occupied.
- A-83. In general the GA/FBO information throughout section IV needs to be reviewed and updated to more accurately reflect the location and size of current and future facilities.
- A-84. Exhibit IV-13; update to reflect information presented on page IV-6 paragraph 1.
- A-85. Page V-1, section 5.1; "No other terminal curb-front changes are proposed under OMP." How is WGP incorporated in OMP? It is included in the proposed ALP and listed in the phases as part of OMP. Will there be curb-front changes with the addition of Terminal 4 and 6, as well as there are changes shown to Terminal 5 on the ALP.
- A-86. Page V-1, section 5.1.1; change and verify the existing ratio of "10,150" to "10,147" and the "780-foot" curb-front to Terminal 1 to "779-foot" in accordance with footnote on page III-10.
- A-87. Page V-2, paragraph 1; will two sets of three lanes give you the ability to separate departing traffic according to regional roads (in reference to last sentence of the paragraph)?
- A-88. Page V-2, section 5.2, bullet 6; list the other WGP Roadway Concepts.
- A-89. General comment; clarify what portions of WGP are part of OMP and which ones are not. Discuss why each portion was or was not included. Also discuss the WGP components affect on the overall capacity and efficiency of OMP.
- A-90. Page V-2, section 5.2.1.1; verify with surface transportation sub-group that 900 inbound trips and 800 outbound trips are appropriate.
- A-91. Page V-2 and V-3; discuss in this section how western access will be provided to the entire airport.
- A-92. Page V-5 and 6, Concept 2 and 3, Airfield Impacts; if I-190 does not have security requirements currently when it is on airport property, why would the north/south roadway located on airport property have security requirements?

- A-93. Page V-7, section 5.2.1.4; off Airport Impacts; has the 300 feet reserved for the Western Bypass been verified as adequate space and if so, by what agency?
- A-94. Page V-8, section 5.2.2.2, bullet 2; fix grammar.
- A-95. Table V-1; remove footnote on "Left Turn Lanes at Signalized Intersections".
- A-96. Table V-1; add environmental impacts on streams, which is caused by Concept IP-3.
- A-97. Page V-12, section 5.2.3.3 and 5.2.3.4; review road around Runway 9L, which is the preferred concept to make sure it does not affect western by-pass, does not penetrate approach surface, and that traffic will not backup in the RPZ.
- A-98. Page V-12, section 5.2.4; verify Bessie Coleman flyover ramps do not affect Part 77 surfaces and Bessie Coleman is out of RSA.
- A-99. Page V-13, Concept 1 through 4; identify impacts on the RPZ and if any entrance or exit ramps penetrate the 14 CFR part 77 surfaces as discussed in Concept 4.
- A-100. Page V-13, last paragraph; provide information on why no I-190 realignment was considered under OMP.
- A-101. Page V-14, section 5.2.6; identify what capacity improvements are to be made to I-190.
- A-102. Page V-14, section 5.2.6; identify how Terminal 4 will be accessed.
- A-103. Page V-14, paragraph 1; explain how the percentage split between east and west terminals was determined (84 and 16 percent), review this information based on 2002 gate schedules.
- A-104. Table V-3; explain in text where the assumptions in the table were determined, especially the split between short and long-term parking and the area for the parking stalls.
- A-105. Page V-17, second bullet, The Preferred Concept; see ALP Comment submitted to the City on May 21, 2003.
- A-106. Page V-19, footnote 1; are Transportation Security Administration (TSA) employees considered in the employee parking requirements. If they are they need to be discussed in the text.

- A-107. Page V-20; first paragraph; explain how it was determined to use 300 and 325 square feet for stall area, especially when table V-3 used 325 square feet for structure and 350 square feet for surface parking.
- A-108. Table V-7; explain in text how the stall numbers were determined for the east and west terminals. Also, verify these assumptions are valid with the surface transportation working group.
- A-109. Table V-8; the footnote 1 in table V-6 states that United Airlines and American Airlines have approximately 6,467 stalls in the northwest maintenance area. Verify why this table only shows a requirement of 3,121 employee-parking stalls in the northwest maintenance area.
- A-110. Page V-21, section 5.4.2.1; removing parking from the northwest maintenance area should be a Department of Aviation Goal in the time frame of the OMP development.
- A-111. Page V-21; verify if new ATS station and blue line connection is still proposed under OMP.
- A-112. General comment on Section V; when making assumptions about passenger and employee parking, why is it assumed that after 2014, demand on the east side will be met? Will the east side terminals reach capacity after 2014? Discussions areas include, but are not limited to, page V-26 and Table V-11.
- A-113. Table V-9, footnote 3; why do the northwest maintenance area employees parking stalls reflect in-kind replacement of existing parking stalls? Is there no forecasted growth for those tenants that currently use that area or will they be accommodated in other areas of the airport?
- A-114. Page V-24 and 25; section 5.5.2.1, Preferred Concept; verify that the four story rental car facility is located outside the RPZ, extended OFA and that the facility is not a 14 CFR part 77 violation.
- A-115. Page V-29, paragraph 3; there will need to be a security check point for screening of commercial vehicles on the West Terminal complex access road, as is available on the east side.
- A-116. Page V-31; Preferred Secure APM Concept; provide discussion of the capacity of the secured automatic people mover (APM). What is the flow through of people between the East and West Terminal Complexes, how many cars will be available, and what is the wait time for passengers?
- A-117. Page V-31, section 5.7.2; provide discussion and options for passengers who arrive at the West Terminal and do not have ability to check bags because airline

facilities are unavailable, thus the passenger is unable to get through security to gain access to the secured APM.

- A-118. Page V-32; section 5.7.2.1; determine if the airport transit system (ATS) causes a 14 CFR part 77 violation. Please review and provide a more detailed discussion if necessary.
- A-119. Page V-32, section 5.7.2.1, paragraph 2; add passengers who have checked baggage on airlines that only serve the east terminal complex to the list of people that would use the ATS.
- A-120. Page V-34, bullet 1 and 3; in accordance with AC 150/5300-13, Airport Design, the bridge width must be the width of the runway or taxiway plus safety area. Thus the width of the bridge for Runway 4L/22R, must be a minimum of 500 feet wide.
- A-121. Page V-35, section 5.7.2.3; show diagram of the route the shuttle will take when operating on local roadways.
- A-122. Page V-35, section 5.7.2.3, paragraph 5; parking facilities, including long term parking lots, must be taken into consideration in this bus route. At a minimum discuss how passengers from the West Terminal, who parked in the East Terminal long-term parking lot, will access their vehicle.
- A-123. Page V-25 and V-26, section 5.7.2.4; verify 8 buses will be adequate to provide service every 10 minutes at each stop, including long-term parking lots.
- A-124. Page V-41, paragraph 1; verify that the Metra connection at the West Terminal Complex reference is the same as Metra's proposed STAR Line.
- A-125. Page V-41, paragraph 2; the reference to CTA seems to be out of place. It should be incorporated into section 5.9.1.
- A-126. General Comment, Appendix A; include this information in the Unconstrained Demand Analysis Report. (This has been discussed with the FAA's Third Party Contractor.)
- A-127. General Comment, Appendix A; reevaluate the use of forecast date of 2022. In order to be consistent with all other planning information, we recommend the use of 2018, or PAL1 or PAL2.
- A-128. Page A-5, paragraph 2; explain how it was determined the international carriers would increase their share of enplaned belly cargo and thus causing an increase in the overall average of enplaned cargo tonnage.

A-129. Page B-2, bullet 5; include apron, hangar, and customer parking in description of needs.

A-130. Page B-5, second paragraph; “Although approximately 12 percent of cargo is processed off-airport, thus not requiring warehouse, cargo...” this infers the calculations in the sentence prior includes a 12 percent reduction. If this is correct, the second to last sentence of this paragraph is incorrect or need to be verified. It indicates table B-3, which lists the exact amount, as the sentence above, does not take the 12 percent reduction into consideration when calculating peak month total enplaned cargo.

A-131. Page B-14, Table B-13; is there a need to include ARFF in future airport maintenance DOA future facility requirements?

A-132. Page B-14; verify the need to relocate the GA/FBO from its present relocated site, due to the construction of Runway 10C/28C. In addition, review fractional ownership industry trends when determining facilities required such as customer parking and apron space available.

A-133. Transportation Security Administration comments on the Concept Development/Refinement Report.

- a. Page IV-7, section on Exhibits IV-6 through IV-8, refers to moving the parking area outside of the secured area near the Mount Prospect Road entrance. This would be a positive step towards improved security. Employees could be screened prior to boarding employee buses, which bring them to their work sites within the secured area, which would then be redefined as a result of the OMP. A structure could house a screening facility in this parking area, thus preventing unscreened individuals from entering the airfield.
- b. Page V-3 and V-5, Concept 2 describes a north/south roadway bisecting the airport that would provide access to the West Terminal. Opening a public access road anywhere on airport property will require consideration of an area where vehicles can stop and be searched under certain security conditions. Any concept that includes a public road, which brings vehicle traffic closer to aircraft, will not be supported by TSA security.
- c. Until TSA Security requirements for airfield and terminal access become further defined, only security concepts can be discussed. However, planning for the construction of screening structures must be considered, regardless of whether the proposed plans address passengers, employees, or layers of preventive measures.

Project Definition Report

- B-1. Page 4, section 3; discuss what the wind coverage will be with the east west configuration and with and without the 4/22 Runways.
- B-2. Page 4, section 3; discuss the critical aircraft and the length required for those aircraft.
- B-3. Page 4, section 3; under the proposed configuration not all runways are designed for Aircraft Design Group (ADG) V aircraft. There are numerous restrictions that must be discussed and should be mentioned in this section. (See Draft ALP comment A-48 issued May 21, 2003.)
- B-4. Page 4, section 3.1.1; "The length of this will satisfy landing and departure runway length requirements for ADG IV and smaller for the majority of domestic markets." As described earlier, all runways are designed for ADG V, thus why will this runway not meet the requirements of a majority of the ADG V and smaller landing and departure runway lengths required. Also, what percentage is a majority?
- B-5. Page 4, section 3.1.1, paragraph 2; discuss the taxi restriction of ADG V aircraft, as provided in ALP comments and FAA/City Airport Layout Plan (ALP) working sessions. (See Draft ALP comment A-48 issued May 21, 2003.)
- B-6. Page 6, paragraph 3; explain why the dual ADG V taxiways around the north side of the east terminal area were not included as part of OMP, since it was a recommendation of the 1991 Delay Task Force. (See Draft ALP comment D-1 issued May 21, 2003.)
- B-7. Page 6, paragraph 4 and 5; see Draft ALP comment B-96 issued May 21, 2003.
- B-8. Page 7, paragraph 2; see Draft ALP comment A-48 issued May 21, 2003.
- B-9. Page 7, section 3.1.2, paragraph 3; see Draft ALP comment A-48 issued May 21, 2003.
- B-10. Page 7, section 3.1.2, paragraph 4; in the first sentence change "22R" to "22L".
- B-11. Page 7, section 3.1.2 paragraph 4; see Draft ALP comment A-42 issued May 21, 2003.
- B-12. Page 8; verify the length of Runway 10C/28C and provide justification and all information pertaining to declared distances. (See Draft ALP comment A-43 issued May 21, 2003.)

- B-13. Page 8, paragraph 3 and 4; see Draft ALP comment D-3 issued May 21, 2003.
- B-14. Page 8; see Draft ALP comment D-4 issued May 21, 2003.
- B-15. Page 9; see Draft ALP comment D-5 and D-6 issued May 21, 2003.
- B-16. Add information pertaining to Runway 4L/22R and 4R/22L to the runway descriptions.
- B-17. Page 10, section 3.2.1, paragraph 2; describe how the other 10 of the 14 potential runway-operating plans will be used if only four are considered primary configurations, high wind, snow removal, runway maintenance etc.
- B-18. Page 10, Table-1, footnote 1; verify footnote relevance after Collision Risk Model results are provided by FAA for Runway 9L/27R and Taxiway H.
- B-19. Page 12, Exhibit 4 through 8; review taxi flow configurations and runway usage based on Draft ALP comments issued August 6, 2003.
- B-20. Page 16, section 3.2.2, bullet 1; describe where and how the taxi flows are designed to reduce runway crossings.
- B-21. Page 17, Exhibit 9, review NLA taxiway routes based on Draft ALP comments issued May 21 and August 6, 2003.
- B-22. Page 26, section 4; see Draft ALP comments D-9 and D-10 issued May 21, 2003.
- B-23. Page 26; verify the location of NLA and wide body aircraft gates, the need for FIS in Terminal 5 and the West Terminal Complex, and the location of regional jet and narrow body jet aircraft. Do the locations enhance passenger convenience and efficiency? Do the type of gates and their locations match the need of the tenants?
- B-24. Page 27; see Draft ALP comments D-12 issued May 21, 2003.
- B-25. Page 32, Table-3; update table based on Note to File, OMP 2018 Gate Requirements, Ura Yvan, Ricondo & Associates – June 18, 2003 and Memo from FAA’s Third Party Contractor, OMP EIS – LFA Review of OMP Gate Requirements dated July 23, 2003 and verify consistency with *Concept Development/Refinement Report*.
- B-26. Page 36, bullet 2; provide information on how vehicles are moved across Runway 10L/28R, if applicable.

- B-27. Page 36, bullet 6; will the development meet TERPS standards?
- B-28. Page 37, Table-5; provide current and proposed cargo facilities, so comparison of impact can be made.
- B-29. Page 38, section 6, paragraph 1; explain to what extent facility replacement may change.
- B-30. Page 38, bullet 3 and 5; verify consistency of symbol usage on exhibits. Guard posts are depicted using a green triangle.
- B-31. Page 38, bullet 9; will the sanitary unit be relocated? Is this the proper location in the text to discuss the sanitary unit?
- B-32. Page 40, bullet 8; in last sentence change “additional” to “addition”.
- B-33. Page 44, section 7.2.1; include discussion of proposed western by-pass that will be located on airport property, according to Concept Development/Refinement Report and numerous newspaper articles.
- B-34. Page 48, section 7.3.2; see Draft ALP comment B97 issued May 21, 2003, pertaining to parking in the RPZ and extended OFA.
- B-35. Page 50, section 7; provide description of un-secure access between the West and East Terminal Complexes and the long-term parking. This should include the method used for transportation including route, capacity and demand of the facility, and passengers and tenants that will use the facility.
- B-36. Page 59, section 8.2; see Draft ALP comment A-41 issued May 21, 2003.
- B-37. General Comment, section 9; provide additional detailed information on the phasing process, such as what remains in operation, what items must be altered, if certain portions of the airport must change use in order to accommodate construction, etc.
- B-38. Page 73, Operational Impacts; must partially close Runway 14R/32L.
- B-39. Page 73, Operational Assumptions; Category II/III capability is a recommendation of the Delay Task Force, not a requirement of OMP.
- B-40. Page 73, section 9.1.4, WS-3; change may to must. If the APM is not built prior to the development of the West Satellite Concourse, how will people be transported between the West and East Terminal Complexes?
- B-41. Page 74, Operational Assumptions; Category II/III capability is a recommendation of the Delay Task Force, not a requirement of OMP.

- B-42. Page 74, Operational Assumptions, bullet 3; restoration of Runway 28R Category II/III capability should be found in Phase 1B.
- B-43. Page 74, Operational Assumption, bullet 4; provide a better description of runway length requirements. There will not be 13,000 feet available at all times on runway 10L/28R due to the protection of Taxiway Q and Runway 4R/22L.
- B-44. Page 74, Operational Assumptions, bullet 4; change reference to "22R" to "28R".
- B-45. Page 74, 76 and 77, General Comment; provide justification for 13,000 feet of runway length.
- B-46. Page 76, section 9.2.3, 2B-4; is the ultimate relocation of all employees' parking from within the northwest maintenance area to an area outside of the Airport Operations Area still a consideration? This would be a preferred alternative.
- B-47. Page 82; see Draft ALP comments pertaining to runway/taxiway separation requirements and runway safety area requirements. If any portion of the airport does not meet FAA design standards the Airport must request a Modification to Standards and provide justification. If a runway safety area does not meet standards a practicability study must be completed.

Unconstrained Demand Analysis Report

Comments were sent to the FAA's Third Part Contractor on August 1, 2003, that will be incorporated in revised report that will be based on the 2002 Terminal Area Forecast.

Airside Simulation Analysis

Except for a few comments below, the majority of the comments on this document can be found in the Draft ALP comments submitted on August 6, 2003.

- C-1. Throughout the document, incorporate information based on the use of the 2002 Terminal Area Forecast (TAF).
- C-2. Page II-3, section 2.1.4; discuss the assumptions used to determine the seats per departure.
- C-3. Page II-8, third paragraph; review general aviation operations based on 2002 TAF. (See Draft ALP comment B-8 issued August 6, 2003.)

- C-4. Page II-14, paragraph 2; add text describing how gate availability was used in the TAAM simulation model.
- C-5. Section 2.3; provide information on how precipitation will affect land and hold short operations (LAHSO) and thus affect throughput of the airport.
- C-6. Page IV-1, first paragraph; moving the runway 400 feet north may have allowed free flow of aircraft to gates that were determined restricted based on the FAA's collision risk model (CRM), thus may have materially changed the airfield/airspace. Please reevaluate this assumption.
- C-7. Page IV-1, IV-4, and IV-8; how many gates were used in the TAAM model to provide sufficient capacity for the runways? Is this number considered in the proposed plan? How does this number correspond with the information provided in the *Project Definition Report* and the *Concept Development/Refinement Report*?
- C-8. Page IV-3, section 4.1.2.1; according to the *Project Definition Report* and the *Concept Development/Refinement Report*, 12,000 feet for Runway 28R would not meet the needs of the users.
- C-9. Page IV-4, paragraph 1; the 400-foot runway/taxiway separation on the east end of Runway 28 is not shown on the current approved ALP, however the dual taxiways are. There is a service road shown that creates the 400 feet separation that was not included in the World Gateway Program.
- C-10. Page IV-6, section 4.2.2.1; according to the *Project Definition Report* and the *Concept Development/Refinement Report*, 12,000 feet for Runway 28R would not meet the needs of the users.
- C-11. Page IV-8, section 4.3.1.2, paragraph 1, change "1,200 feet" to "1,607 feet".
- C-12. Page IV-8, section 4.3.1.2, paragraph 2; the 400-foot runway/taxiway separation on the east end of Runway 28 is not shown on the current approved ALP, however the dual taxiways are. There is a service road shown that creates the 400 feet separation that was not included in the World Gateway Program.
- C-13. Page IV-9, section 4.3.2.1; the 400-foot runway/taxiway separation on the east end of Runway 28R, is not shown on the current approved ALP however the dual taxiways are. There is a service road shown that creates the 400 feet separation that was not included in the World Gateway Program.
- C-14. Page IV-9, section 4.3.2.2, paragraph 2; verify the length of Runway 10C/28C and coordinate with the *Project Definition Report* and the *Concept Development/Refinement Report*.

- C-15. Section V; provide information or documentation on if and how NLA was taken into consideration when developing the arrival and departure traffic flows, based on only certain runways and taxiways are being designed to handle this size of aircraft.
- C-16. Page VI-1, section 6.1, paragraph 4, last sentence; provide information on how it was determined that the effects of the additional airspace changes are estimated to be of significantly less impact than the addition of the new runways.
- C-17. Page VI-2; provide addition information on the relationship between OMP and the National Airspace Review (NAR). (See Draft ALP comment B-90 issued August 6, 2003.)
- C-18. Exhibit VI-1; verify the Option 5 graphic is correct. The graph appears to be incorrect based on the numbers found in table VI-2, which shows 10.2 minutes of delay shown in the table versus approximately 7 minutes of delay shown in the graph.
- C-19. Section VI; explain in this section how gate delay was determined for Option 1 and Option 5, especially since it was discussed on pages IV-1, 4, and 8 that a full gate capacity was provided for the simulations in order to allow for a full analysis of the airfield capacity without gate constraints. What number of gates was used to determine gate capacity and provide information on the number of gates required for OMP to gain the benefits of the proposed runway configuration?
- C-20. Section VI; update information on gate capacity based on Note to File, OMP 2018 Gate Requirements, Ura Yvan, Ricondo & Associates – June 18, 2003 and Memo from FAA’s Third Party Contractor, OMP EIS – LFA Review of OMP Gate Requirements dated July 23, 2003 and verify consistency with *Project Definition Report* and the *Concept Development/Refinement Report*.

Airport Layout Plan Submittal

Revise this document to reflect changes in airport layout, costs, facility requirements and forecast activity, both passenger and operations.

General Comments

In addition to revising the information in the *Project Definition Report*, *Concept Development Refinement Report*, *Unconstrained Demand Analysis Report*, *Airside Simulation Report*, and the *Airport Layout Plan Submittal Report* as recommended above, provide the following information in the final OMP Master Plan Report.

- D-1. Provide an OMP financial plan, which includes a discussion of what role/priority OMP plays in the Chicago O’Hare Capital Improvement Plan, funding sources (AIP, PFC, entitlements, discretionary, bonds, others), and amounts.

- D-2. Develop a cost benefit analysis for OMP.
- D-3. Provide documentation on the economic impact of OMP on the City of Chicago and the region.
- D-4. Discuss further how the goals and objectives of the OMP and the WGP work together to provide an overall more efficient and beneficial airport.
- D-5. Provide documentation describing the existing conditions and issues. This includes an airport inventory and an assessment of pertinent airport-related issues and operational constraints.
- D-6. Provide a discussion of the City's public outreach program.
- D-7. Provide a discussion of compatible land-use such as zoning, RPZ acquisition, and public interest. (See Draft ALP comment A-41 issued May 21, 2003.)
- D-8. Provide discussion of airport capacity and delay based on 2002 Terminal Area Forecasts. This discussion should include information on constrained and unconstrained airfield capacity, delay numbers that compare a build and no build scenario, and other capacity and delay issues, such as runway versus airfield delay numbers, as appropriate.