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

Great Lakes Region
2300 East Devon Avenue
Des Plaines, IL 60018

APR 14 2016

Ms. Stacey Udoni
Management Analyst
City of Wood Dale
404 N Wood Dale Rd.
Wood Dale, IL 60191

Dear Ms. Udoni:

Thank you for arranging the public outreach session in Wood Dale that took place on November 16, 2015. We appreciate having the opportunity to address the public's concerns regarding the O'Hare Modernization Program (OMP). Earlier this year, we received your envelope with the comment cards your residents submitted. We have been reviewing and preparing our responses.

With this package please find all of the originally submitted resident question/comment cards. We have sorted and categorized them by the type of question. They are filed in envelopes, and on the front of each envelope is a reference to our "List of Common Responses" from Appendix I of the Final Re-Evaluation of the O'Hare Modernization Environmental Impact Statement. To provide a response to any of the cards in the envelope, you simply refer to that letter/number in the far left column of the response matrix. A few question/comment cards have responses not on the matrix, and those replies are indicated on the outside of the envelope.

As I mentioned to you in a recent email, we are not able to provide responses to all of the cards. Some cards did not have a question or comment. Some cards apply to Chicago Department of Aviation (CDA) initiatives or programs. We have scanned those cards and emailed them to Aaron Frame, Deputy Commissioner for Environment with the CDA. Some cards were either illegible, in a foreign language, or asked questions regarding city programs and not the OMP. We have included these cards in this package as well.

If Wood Dale has any further questions regarding the OMP, or the FAA's roles and responsibilities with respect to O'Hare operations, please do not hesitate to contact us.

Christina Drouet
Deputy Regional Administrator
Great Lakes Region

Enclosures

cc: Aaron Frame

LIST OF COMMON RESPONSES

Comment Category ID	Comment Category	Response
A	**Environmental Impact Statement and Re-Evaluation**	
A1	Comments about public input during the Environmental Impact Statement and/or the Re-Evaluation	During the preparation of the Environmental Impact Statement, an extensive public outreach program was conducted. The Environmental Impact Statement is available on the Federal Aviation Administration's (FAA's) website. Appendix T of that document identifies numerous methods of public outreach that were conducted including: • **Scoping meetings**: Forty-nine people attended the meeting on August 21, 2002 in Des Plaines and 268 people attended the meeting on August 22, 2002 in Elk Grove Village. • **Mayor's briefings**: An informational meeting was held on August 29, 2002 specifically for the Mayors of municipalities surrounding O'Hare. • **Briefings of the O'Hare Noise Compatibility Commission**: FAA briefings on the development of the Environmental Impact Statement for the O'Hare Modernization Program took place at O'Hare Noise Compatibility Commission meetings on February 7, 2003, June 4, 2004, January 25, 2005, and June 3, 2005. • In March 2003, the FAA conducted a public meeting introducing the **preliminary purpose and need statement** for the Environmental Impact Statement. The session was held at the Sheraton Four Points Hotel in Schiller Park, Illinois on March 29, 2003. • In October 2003, the FAA conducted a working session with invited members of local government to **discuss the alternatives** for consideration during the Environmental Impact Statement process at the Fountain Blue Banquet Hall in Des Plaines, Illinois on October 17, 2003. • **Public Hearings**: Public hearings were held to receive comments on the Draft Environmental Impact Statement on February 22 (Avalon Banquets – Elk Grove Village), February 23 (Waterford Conference Center – Elmhurst) and February 24, 2005 (White Eagle Banquets – Niles) more than 30 days after the Draft Environmental Impact Statement was released for review. Approximately 1,500 people attended the three events and

Comment Category ID	Comment Category	Response
		approximately 300 people provided testimony over the course of the three hearings. Public outreach during preparation of the Environmental Impact Statement and the Re-Evaluation was conducted in compliance with FAA Orders 1050.1 and 5050.4, which specify compliance with the National Environmental Policy Act. Notices of these meetings were published in the *Federal Register*, the *Chicago Tribune, Sun Times*, and other local newspapers available in the neighborhoods. Sites were selected that had sufficient space to accommodate more than 1,000 people and serve residents in all quadrants around the airport. Information on the Environmental Impact Statement can be found at http://www.faa.gov/airports/airport_development/omp/eis/
A2	Comments that the Environmental Impact Statement and the Re-Evaluation are flawed and demands for further study.	The Environmental Impact Statement and this Re-Evaluation were prepared in accordance with all applicable regulations and Federal Aviation Administration (FAA) Orders. The FAA has developed its Orders concerning the National Environmental Policy Act in Orders 1050.1 and 5050.4 after extensive review and discussion with the President's Council on Environmental Quality. The approach to National Environmental Policy Act evaluations relies on proven and industry-accepted methods. The Environmental Impact Statement and Re-Evaluation include details for the categories of environmental analyses contained in them. In enacting the National Environmental Policy Act, Congress recognized that nearly all Federal activities affect the environment in some way and mandated that before Federal agencies make decisions, they must consider the effects of their actions on the quality of the human environment. Under the National Environmental Policy Act, the Council on Environmental Quality works to balance environmental, economic, and social objectives in pursuit of the National Environmental Policy Act's goal of "productive harmony" between humans and the human environment. [42 U.S.C. §4331(a)]. As the owner and operator of O'Hare, the City of Chicago determines on a daily basis which runways will be open and available for use by air traffic control and the airlines based on airfield,

Comment Category ID	Comment Category	Response
		air traffic and weather conditions. On July 31, 2015, the City of Chicago announced plans to review the existing voluntary Fly Quiet Program giving the public an opportunity for input.[1] The O'Hare Noise Compatibility Commission is forming an ad hoc Fly Quiet Committee to discuss and evaluate potential changes to Fly Quiet. The FAA will participate in the review and will evaluate any proposed changes for operational and environmental impacts. It is too early to speculate if there would be a new Fly Quiet Program or what a new Fly Quiet Program would include upon completion of the Build Out of the project. FAA will, however, give consideration to suggestions for changes in the Fly Quiet Program developed by the O'Hare Noise Compatibility Commission and requested of the FAA by the City of Chicago. The Fly Quiet Program would be modified by the O'Hare Noise Compatibility Commission in the future only if needed; such modification would be done in consultation with the FAA and the City of Chicago. The FAA's Record of Decision approved the O'Hare Modernization, and the existing Fly Quiet Program remains in place, except as affected by runway decommissionings. The Environmental Impact Statement and the Re-Evaluation disclose the potential effects of runway decommissioning on the Fly Quiet Program. **Section 2.3** of the Re-Evaluation discusses FAA's consideration of its responsibilities under the National Environmental Policy Act. **Section 3.6** of the Draft and Final Re-Evaluation discuss the FAA's final determination about the Re-Evaluation. A Supplemental Environmental Impact Statement is not necessary.
A3	Comments on the Re-Evaluation Workshop logistics and document readability	Noted. Although the comment is marked noted, the Federal Aviation Administration (FAA) may or may not agree with the comment. The FAA selected locations based on location (to serve residents in all quadrants around the airport), capacity (to handle approximately 1,000 people), free parking, Americans with Disability Act compliance, public transportation accessibility, and availability. The presentation boards displayed at the public workshops are posted on the FAA website at:

[1] Chicago Department of Aviation's O'Hare International Airport Noise Recommendations, July 31, 2015. Can be downloaded from http://www.flychicago.com/business/en/media/news/Pages/MOU_Meeting3.aspx

Comment Category ID	Comment Category	Response
		http://www.faa.gov/airports/airport_development/omp/eis_re_eval/ Exhibits and figures in the Final Re-Evaluation have been updated with names of major streets, where appropriate.
B	**Forecast – See List of Commenters for individual responses, where applicable**	
C	**Airport/Airfield/Air Traffic Operations**	
C1	Comments on low flying aircraft	Numerous individuals reported low flying aircraft in the vicinity of O'Hare. Aircraft approaching to land may be at different altitudes depending on the number of parallel runways in use, weather conditions and other factors. Once aircraft are cleared for final approach the aircraft continue on their level flight segment until they intercept the glideslope using instrumentation to follow a 3-degree descent angle. Aircraft typically intercept the glideslope from 5 to 10 nautical miles from the landing runway; however, during triple simultaneous instrument approaches, the intercept may be up to 20 nautical miles from the landing runway. Each runway has a Final Approach Fix altitude, which is the minimum altitude that the arriving aircraft can intercept the glideslope. The Final Approach Fix altitudes for O'Hare's runways vary from 1,500 to 2,000 feet Above Ground Level (AGL) due to terrain elevations in the Chicago area. The glide-path angle is the descent profile that the aircraft flies while guided by the glideslope, as defined by the International Civil Aviation Organization. According to Federal Aviation Administration (FAA) Order 8260.3 *Terminal Instrument Procedures* paragraph 2-3A and Table 2-1, the Maximum Glide-Path Angle for the type aircraft flying into O'Hare is 3.1 degrees. Currently the glide-path angle at O'Hare is 3.0 degrees. The difference in aircraft altitudes between a 3.0 degree and 3.1 degree glide-path at two nautical miles from the runway threshold would be an increase of 21 feet. For consistency, all existing and future procedures at O'Hare use the FAA standard 3.0 degree glideslope. Displacing a landing threshold also increases an aircraft's altitude on approach. An aircraft would

Comment Category ID	Comment Category	Response
		be 52 feet higher over the same spot on the ground for every 1,000 feet that a threshold is displaced when utilizing a 3-degree glideslope. The resulting reduction in safety due to shortening of the available runway landing distance outweighs the noise reduction gained by raising aircraft 52 feet over any specific point on the ground. Size differences between narrow-body aircraft, such as the Boeing 737 and regional jets, may be visually perceived to be flying higher than larger aircraft, like Boeing 747s and Airbus A380s. Our visual perception is to associate small object images to appear far, and associate large object images to appear close. All aircraft on final approach to land on an O'Hare runway are flying an approach descent profile according to a strict glide path that ensures safe clearance to obstacles and maintains the aircraft in the proper airspace. Fines for any Federal regulatory violation would be deposited in the United States Treasury in accordance with Federal law. In September 2008, Runway 10L/28R was extended by approximately 3,000 feet to the west. With that extension, arrivals from the west can touch down further west than before. The associated arrival profile shifts 2,856 feet west, which means that aircraft are at a lower altitude west of O'Hare arriving on Runway 10L than before September 2008. The difference in altitude for arrivals is about 150 feet. A 3-degree glideslope equates to 318 feet of altitude for every nautical mile (6,076.12 feet). In addition, starting in October 2013, intersection departures (departing from an intersection runway/taxiway location instead of using full length) to the west started from Runway 28R. With the intersection departures being further west than full length departures, the intersection departures from 28R are lower in altitude to the west of the airport than before October 2013. Some large aircraft still do and will depart full length from Runway 28R. These procedures were included in the Environmental Impact Statement and Re-Evaluation modeling. The navigable airspace is a limited natural resource that Congress has charged the FAA to administer in the public interest as necessary to ensure its efficient use and the safety of aircraft. The amount of usable airspace above a given property varies depending upon the location of the property relative to an Airport. Federal Regulation 14 CFR Part 77 establishes standards and notification requirements for objects on the ground affecting navigable airspace. Specifically, Part 77 includes a section 77.13 - which describes what types of construction requires notice to and study by

Comment Category ID	Comment Category	Response
		the FAA.
C2	Comments requesting to increase the height of aircraft above the ground and to keep aircraft higher longer	According to Federal Aviation Administration Order 8260.3 Terminal Instrument Procedures paragraph 2-3A and Table 2-1, the Maximum Glide-Path Angle for the type aircraft flying into O'Hare is 3.1 degrees. See response to comment C1 for additional information on the glideslope/glide-path.
C3	Comments requesting to align flight paths with highways and commercial land use areas	As the owner and operator of O'Hare, the City of Chicago determines on a daily basis which runways are open and available for use by the air traffic controllers and the airlines. The Federal Aviation Administration (FAA) determines which runways to use based on the available runways, air traffic, and prevailing weather conditions. It is a complex decision-making process which includes consideration of an airplane's origin or destination, as well as other enroute traffic. Safety is the FAA's highest priority. Safety, efficiency to the users, and capacity of the National Airspace System are all taken into consideration when planning complex operations such as at O'Hare. Generally speaking, the preference is to allow arriving aircraft to be routed to the runway that is closest to the origination city without having to cross other aircraft streams enroute to the Airport. Typically, arriving aircraft are aligned straight into the runway at least 5 nautical miles from the runway end. The FAA adheres to the Fly Quiet program from 10:00:00 PM to 5:59:59 AM, as wind and weather conditions allow. In early 2012, O'Hare Noise Compatibility Commission leadership and FAA management from the O'Hare Traffic Control Tower began to meet quarterly. The purpose of these meetings is to improve controller and pilot adherence to the existing Fly Quiet Program. As a result of these meetings, improvements have been and continue to be made.
C4	Comments requesting to discontinue visual approaches	Visual approaches to O'Hare allow the flight crew to proceed visually to the landing runway while continuing to employ all of the information available on an instrument approach. Visual approaches reduce flying miles, reduce associated fuel burn, reduce carbon emissions, and improve efficiency while maintaining a high safety standard.

Comment Category ID	Comment Category	Response
C5	Comments requesting to enforce and/or increase the glideslope	See response to comments C1 and C2.
C6	Comments requesting to keep the diagonal runways open and operational	The Environmental Impact Statement includes analysis of alternatives that utilize the diagonal runways in Chapter 3. As the owner and operator of O'Hare, the City of Chicago determines on a daily basis which runways will be open and available for use by air traffic control and the airlines based on airfield, air traffic and weather conditions. Pilots may also request the use of a specific runway for a variety of reasons. As part of the construction of the O'Hare Modernization Program approved in the 2005 O'Hare Modernization Environmental Impact Statement, both northwest-southeast diagonal Runways (14R/32L and 14L/32R) will be decommissioned. Runway 32L was closed to all arrivals starting May 6th, 2010. The City of Chicago sent the Federal Aviation Administration (FAA) a letter on April 10, 2015 requesting "a shutdown of the NAVAIDS facilities, noted herein, serving Runways 14L-32R effective on or about May 1, 2015." The City of Chicago sent the FAA an additional letter on August 7, 2015 requesting "a shutdown of all remaining navigational and visual aid facilities serving Runway 14L/32R effective on the morning of August 20, 2015." As approved in the Environmental Impact Statement, a part of Runway 14L/32R will be demolished and removed, and the central portion of Runway 14R/32L will be converted to a taxiway. The City's current construction schedule indicated the decommissioning of Runway 14L/32R in 2016 and the decommissioning of Runway 14R/32L in 2019. Runways 4R/22L and 4L/22R, which are the northeast-southwest diagonals, will remain in operation. If the City requests to keep the runways open, the FAA will evaluate the proposal.
C7	Comments requesting to distribute the location of flights more evenly over the areas surrounding O'Hare	As the airport operator, the City of Chicago determines which runways are open and available for use by the air traffic controllers and the airlines. The Federal Aviation Administration (FAA) determines which runways to use based on the available runways, air traffic, and prevailing weather conditions. Pilots may also request the use of a specific runway for a variety of reasons. It is a complex decision-making process which includes consideration of an airplane's origin or destination, as well as other enroute traffic. Safety is the FAA's highest priority. Safety, efficiency to

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		the users, and capacity of the National Airspace System are all taken into consideration when planning complex operations such as at O'Hare. Generally speaking, the preference is to allow arriving aircraft to be routed to the runway that is closest to the origination city without having to cross other aircraft streams enroute to the Airport. The FAA adheres to the Fly Quiet program from 10:00:00 PM to 5:59:59 AM, as wind and weather conditions allow. In early 2012, O'Hare Noise Compatibility Commission leadership and FAA management from the O'Hare Traffic Control Tower began to meet quarterly. The purpose of these meetings is to improve controller and pilot adherence to the existing Fly Quiet Program. As a result of these meetings, improvements have been and continue to be made.
C8	Comments requesting to move large aircraft and/or cargo traffic to other airports	The Federal Aviation Administration (FAA) does not have the legal authority to direct where carriers provide service. Airline/cargo operators determine where they will provide service and with what equipment. There is no prohibition on the types of aircraft using O'Hare. O'Hare can accept up to a maximum size of an Aircraft Design Group VI (Boeing 747-800 and Airbus 380). The FAA analyzed the use of other airports as an alternative to the O'Hare Modernization Program in the Environmental Impact Statement. After review, the use of other airports (including General Mitchell Milwaukee International Airport, Gary/Chicago Airport, the proposed South Suburban Airport, and others) did not meet the purpose and need for the project and was dismissed from further consideration.
C9	Comments requesting to introduce operational improvements to reduce noise	The Federal Aviation Administration (FAA) is using the procedures approved in the O'Hare Modernization Environmental Impact Statement. The FAA is aware that the City of Chicago may propose potential operational changes for O'Hare. The FAA will work with the City of Chicago on their proposals, and any environmental review would be completed separately from this document.
C10	Comments on flights with landing gear down	The point at which the aircraft are expected to lower the landing gear is the Final Approach Fix. The distance from the Final Approach Fix in relation to the runway end varies but is typically approximately 5 nautical miles from the runway threshold.

Comment Category ID	Comment Category	Response
C11	Comments on hiring additional air traffic controller	Hiring additional air traffic controllers would not change the distribution of noise around O'Hare. Noise is a function of multiple variables such as runway use, aircraft type, and engine type, but not the number of air traffic controllers.
C12	Comments on departure altitude	There are many factors that affect how quickly an aircraft gains altitude after departure. Some of those factors include aircraft type, aircraft weight, temperature, prevailing wind, and density altitude (atmospheric conditions).
D	**Noise and Land Use**	
D1	Comments on noise metrics (i.e., the use of DNL)	The Day-Night Average Sound Level (DNL) represents noise as it occurs over a 24-hour period, with the assumption that noise events occurring at night (I0:00:00 PM to 6:59:59 AM) are I0 decibels (dB) louder than they really are. This I0 dB penalty is applied to account for people's greater sensitivity to nighttime noise, and the fact that events at night are often perceived to be more intrusive because nighttime ambient noise is less than daytime ambient noise. Further details on how DNL is computed can be found in **Appendix C, Attachment C-3** in the Re-Evaluation. DNL can be estimated. Measurements are practical only for obtaining DNL values for limited numbers of points, and, in the absence of a permanently installed monitoring system, only for relatively short periods. Measurements are also historical and only document what has occurred. Most airport noise studies use computer-generated DNL estimates depicted as equal-exposure noise contours (much like topographic maps that indicate contours of equal elevation). The Federal Aviation Administration (FAA) requires that airports use computer-generated DNL contours (FAA Order 1050.1). DNL contours reflect average annual operating conditions, taking into account the type of aircraft, average number of flights each day, time of day, how often each runway is used throughout the year, and where, over the surrounding communities, the aircraft normally fly. The FAA and other Federal agencies have formally adopted DNL when evaluating effects from aircraft operations at or near an airport. The Federal Interagency Committee on Noise reaffirmed the appropriateness of DNL in a 1992 report. The summary report stated; "There are no new

Comment Category ID	Comment Category	Response
		descriptors or metrics of sufficient scientific standing to substitute for the present DNL cumulative noise exposure metric."[2] The FAA is beginning work on the next step in a multi-year Noise Research Program that will update the scientific evidence on the relationship between aircraft noise exposure and its effects on communities around airports. If changes are necessary, the FAA will propose new policy and related guidance and regulations, subject to interagency coordination, as well as public review and comment.
D2	Comments on the Fly Quiet program	The City of Chicago's Fly Quiet Program is a voluntary program that encourages pilots and air traffic controllers to use designated nighttime preferential runways and flight tracks developed by the Chicago Department of Aviation in cooperation with the O'Hare Noise Compatibility Commission, the airlines and the air traffic controllers. Information on the program can be found at: http://www.flychicago.com/OHare/EN/AboutUs/NoiseManagement/FlyQuiet/Pages/Fly-Quiet-Program.aspx. As part of the Fly Quiet Program, the Chicago Department of Aviation prepares a Quarterly Fly Quiet Report. This report is shared with Chicago Department of Aviation officials, the O'Hare Noise Compatibility Commission, the airlines, and the general public. The Fly Quiet Report contains detailed information regarding nighttime runway use, flight operations, flight tracks, and noise complaints and 24-hour tracking of ground run-ups. The data presented in this report is compiled from the Airport Noise Management Systemm and airport operation logs. Fly Quiet Reports can be found at http://www.flychicago.com/OHare/EN/AboutUs/NoiseManagement/FlyQuiet/Quarterly-Reports.aspx. On July 31, 2015, the City of Chicago announced plans to review the existing voluntary Fly Quiet Program giving the public an opportunity for input[3]. The O'Hare Noise Compatibility Commission is forming an ad hoc Fly Quiet Committee to discuss and evaluate potential changes to Fly Quiet.

[2] Federal Interagency Committee on Noise, "Federal Agency Review of Selected Airport Noise Analysis Issues," 1992; page ES-1.
[3] CDA's O'Hare International Airport Noise Recommendations, July 31, 2015. Can be downloaded from http://www.flychicago.com/business/en/media/news/Pages/MOU_Meeting3.aspx

Comment Category ID	Comment Category	Response
		The Federal Aviation Administration (FAA) will participate in the review and will evaluate any proposed changes for operational and environmental impacts. It is too early to speculate if there would be a new Fly Quiet Program or what a new Fly Quiet Program would be before or upon completion of the Build Out of the project. FAA will, however, give consideration to suggestions for changes in the Fly Quiet Program developed by the O'Hare Noise Compatibility Commission and requested of the FAA by the City of Chicago. The Fly Quiet Program would be modified by the O'Hare Noise Compatibility Commission in the future only if needed; such modification would be done in consultation with the FAA and the City of Chicago. The FAA's Record of Decision approved the O'Hare Modernization, and the existing Fly Quiet Program remains in place, except as affected by runway decommissioning. The Environmental Impact Statement and the Re-Evaluation disclose the potential effects of runway decommissioning on the Fly Quiet Program. The City of Chicago is required to operate the airport for the use and benefit of the public and to make it available to all types, kinds, and classes of aeronautical activity on reasonable terms, without unjust discrimination, and at all times of day.
D3	Comments on sound insulation and other forms of mitigation	The Environmental Impact Statement and Re-Evaluation document the mitigation measures that the Federal Aviation Administration (FAA) has required to be implemented as part of the OMP. This mitigation has been developed and implemented in accordance with FAA Orders and with special purpose environmental laws. The FAA and the City of Chicago continue to support the application of the mitigation program from the Environmental Impact Statement, which is based on the Build Out contour for the approved Environmental Impact Statement Alternative. The FAA does not provide mitigation for Interim Conditions such as temporary runway closures or construction phases. We recognize that commenters have suggested that the sound insulation program be expanded. The City's July 31, 2015 letter sent to FAiR includes a number of noise recommendations, one of which is additional evaluation of previously insulated homes in the 70 DNL Build Out contour. The FAA will evaluate any proposals from the City.

Comment Category ID	Comment Category	Response
		The FAA considers that nearly all land uses in areas exposed to noise less than the Build Out's 65 DNL noise contour are compatible with airport operations and are not eligible for mitigation. However, the responsibility for determining acceptable and permissible land uses within a noise exposed area rests with local authorities. In cases where local authorities determine that a lower level of exposure is appropriate for specific properties, additional mitigation may be feasible. This provision was applied when the City of Chicago voluntarily implemented the School Sound Insulation Program. Sound insulation can and is being used as a mitigation measure for non-compatible land uses, including residential structures and schools. FAA has established parameters for the insulation of homes around airports in response to Congress. At present, federal funds can only be used to insulate homes within the 65 DNL noise exposure contours, as reflected in the current mitigation program. Descriptions of the residential and school sound insulation programs are contained in Chapter 7, Mitigation, of the Environmental Impact Statement. The City of Chicago, as the airport sponsor, in coordination with the O'Hare Noise Compatibility Commission, has been and continues to implement these programs on a voluntary basis. Under the City's School Sound Insulation Program, one school, Socrates St. Sava Academy in Chicago, was identified in the Environmental Impact Statement as exposed to noise above 65 DNL and eligible for mitigation. It has been completed. An additional 122 schools were identified within the 60 DNL contour, (schools within the 60-65 DNL were included as a result of adoption of the lower local standard). Sound insulation of these facilities also has been completed with the exception of Ebinger Elementary School, which is under construction now. This program has resulted in the sound insulation of 123 Schools using Federal Airport Improvement Program funds. **Table C-17** in **Appendix C, Noise and Land Use** lists the Learning Institutions modeled in the Re-Evaluation and the forecasted noise levels under each Interim Condition. Under the City's Residential Sound Insulation Program, the City has insulated almost 11,000 housing units. **Exhibits C-16** and **C-17** in **Appendix C, Noise and Land Use** depict the 2015 and 2020 Interim Condition 65 DNL contours. Each exhibit also shows the June 2015 status of the Residential Sound Insulation Program. Residents can determine if they are within the eligibility

Comment Category ID	Comment Category	Response
		area for Sound Insulation by going to https://gisapps.cityofchicago.org/AviationPropertyLocatorWeb/ Residents can then contact the City or the O'Hare Noise Compatibility Commission to see if they meet other eligibility criteria. In accordance with the FAA's Record of Decision on the Environmental Impact Statement, after Build Out occurs, the City is to produce a new 65 DNL noise contour based on the operational characteristics of the Build Out configuration but with forecasted operational levels five years in the future – 2026 based on the present construction schedule. This new contour is referred to as the Build Out+5 contour in the Environmental Impact Statement. The City would then insulate all eligible residences and schools within the Build Out +5 65 DNL contour that have not previously been sound insulated, and must complete that program by the time Build Out +5 would occur. Many commenters expressed concern that the Build Out will not occur. The City of Chicago, as owner and operator of O'Hare, has reaffirmed its commitment to the Build Out airfield improvements. The City provided an updated construction schedule in a letter dated November 5, 2013. Terminal components of the Build Out are currently anticipated to be completed in later years as demand warrants (see **Section 2.2.1** of the Re-Eval). FAA has monitored the progress of the OMP and the City's implementation of mitigation measures, as evidenced by the Re-Eval **Section 2.5, Mitigation**, and the FAA plans to continue to monitor progress until Build Out is complete. If it appears that further delays in the OMP progress are experienced, the FAA could prepare additional NEPA documentation, but will address that need on a case-by-case basis. Chapter 7, Sections 7.1, Noise, in the Environmental Impact Statement identified a number of other measures to mitigate significant noise impacts: • FAA will continue to support the City's Fly Quiet program (See response to comment D2). The Re-Evaluation considered the existing program in the modeling for the interim conditions. • The O'Hare Noise Compatibility Commission will continue to oversee noise mitigation efforts around O'Hare. • The City will continue required use of the ground run-up enclosure during engine run-up

Comment Category ID	Comment Category	Response
		testing. Regarding aircraft noise emissions, separate from the Environmental Impact Statement and Re-Evaluation process, aircraft noise standards have been established by the International Civil Aviation Organization and adopted by the U.S. In the early 1980s, the FAA began issuing rules and regulations that control aircraft noise at the source -- the aircraft engines and fuselage. These aircraft noise standards established by the Federal government must be met by aircraft manufacturers through newly-designed engines and aircraft. The government established timetables for airlines to comply with these noise standards, commonly known as Stage 1, Stage 2, Stage 3, and Stage 4 (in the international arena these Stages are referred to as Chapters 1 through 4). Full compliance with Stage 2 standards was established in January 1, 1988 [Federal Aviation Regulations (FAR) Part 36]. Subsequently, Congress passed the Airport Noise and Capacity Act of 1990 (Public Law 101-508, 104 Stat. 1388), which established two broad directives for the FAA. The first established a method to review aircraft noise and airport use or access restrictions imposed by airport proprietors, and the second was to institute a program to phase out Stage 2 aircraft over 75,000 pounds by December 31, 1999. In early 2000, the International Civil Aviation Organization established the Stage 4 requirements that required newly manufactured aircraft engines to meet Stage 4 levels by December 31, 2006. There is currently no proposed phase-out of Stage 3 aircraft; however, aircraft manufactured today meet Stage 4 requirements.
D4	Comments on flight paths and frequency of flights	The general frequency and scheduling of flights throughout the day are largely driven by airlines and are based on passenger demand, the need to coordinate with schedules of connecting flights and other factors. The Federal Aviation Administration (FAA) does not and cannot mandate scheduling practices. Which runway and which flight path an aircraft then uses during the day is determined primarily by wind direction, other weather conditions, and efficiency of traffic flows. The projected noise, air quality and other impacts resulting from the frequency and scheduling of the aircraft operating, as well as which runways are used throughout the day and night are addressed for the 2015 and 2020 Interim Conditions in the body of the Re-Evaluation. The impacts of other interim conditions and the Build Out were addressed fully in the Environmental Impact

Comment Category ID	Comment Category	Response
		Statement. For the Re-Evaluation, the FAA provided **Exhibits 3-1** and **3-2** for the 2015 Interim Condition and **Exhibits 3-5** and **3-6** for the 2020 Interim Condition. They depict the usage of each of the runways during day or night periods for arrivals and departures. In accordance with the City's plans, diagonal Runway 14L/32R is assumed to be decommissioned in 2016 and diagonal Runway 14R/32L is assumed to be decommissioned in 2020. No flights will operate from those runways once decommissioning occurs. The FAA also provided **Exhibits 1** through **10** in **Appendix C, Noise and Land Use, Attachment C-1** depicting the location of the flight tracks for the Interim Conditions considered in the Re-Evaluation. The existing and proposed flight paths and runway use for the Build Out were analyzed, disclosed and approved in the Environmental Impact Statement. For the Build Out condition, the FAA provided Table F-39 in Appendix F of the Environmental Impact Statement which depicts the usage of each of the runways during day or night periods for arrivals and departures. The FAA also, provided Exhibits 19 through 23 to Appendix F, Noise, Attachment F-2 depicting the location of the flight tracks for the Build Out.
D5	Comments on noise measurements	Noise measurements are not required as part of a National Environmental Policy Act study per Federal Aviation Administration (FAA) Order 1050.1. Further, if collected, noise measurement data cannot be used to calibrate the FAA's noise model, which has a comprehensive internal data base of aircraft noise and performance characteristics. Notwithstanding that limitation, the City of Chicago has an extensive noise monitoring system which collects current and historic noise levels. This data is available to the public through the City's website on a monthly basis. Noise monitors integrated into the City's Airport Noise Management System record existing noise levels but they cannot predict future noise levels. Instead, in the Re-Evaluation and in the Environmental Impact Statement, the FAA's Integrated Noise Model was used for calculating the levels of future aircraft noise. The Integrated Noise Model uses a database of aircraft noise characteristics to predict Day-Night Average Sound Levels based on user input on the types and number of aircraft operations, average annual day operating conditions, average aircraft performance, and aircraft flight patterns. In simple terms, modeling is used to

Comment Category ID	Comment Category	Response
		predict future noise levels and the City's Airport Noise Management System is used to provide information on historic noise levels. Further discussion of the Day-Night Average Sound Level metric can be found in **Appendix C, Noise and Land Use, Section C.1.1** and in **Attachment C-3** and details of the Integrated Noise Model can be found in **Appendix C, Section C.1.2.** The FAA does not conduct ongoing noise measurements near any airport. Rather, that is the responsibility of the airport operator - the City of Chicago for O'Hare. The City currently maintains an Airport Noise Management System that includes sound level measurements. The current system consists of 33 permanent monitors placed in the neighborhoods in the vicinity of the Airport. The City is currently working on adding seven (7) more to the System, which they expect to be completed in 2015. In addition to the permanent monitors, the City also has mobile/portable equipment that it uses in the neighborhoods in response to individual citizen or community requests. Information about the City's program can be found at: http://www.flychicago.com/OHare/EN/AboutUs/NoiseManagement/Pages/Aircraft-Noise-Management-System-Reports.aspx Residents can request a temporary monitor be installed at their home by filling out an application with the City. The application can be obtained from http://oharenoise.org/sitemedia/documents/noise_mitigation/noise_monitors/noisemonitorapplication.pdf
D6	Comments on noise modeling	In the U.S., the annual Day-Night Average Sound Level is used for quantifying airport noise, and the Federal Aviation Administration's (FAA's) Integrated Noise Model is used to produce the projections of aircraft noise at airports. To conform to the requirements of FAA Order 1050.1 and Title 14 of the Code of Federal Regulations (14 CFR) Part 150, the Integrated Noise Model produces Day-Night Average Sound Level calculations in terms of an "average annual day". 14 CFR Part 150 Sec. A150.103(b)) states in part "...the following information must be obtained for input to the calculation of noise exposure contours: ...Airport activity levels and operational data which will indicate, on an annual average-daily-basis, the number of aircraft, by type of aircraft, which utilize each flight track, in both standard daytime (0700-2200 hours [7:00 AM to 10:00 PM] local) and nighttime (2200-0700 hours [10:00 PM to 7:00 AM] local) periods for both landings and takeoffs." The average annual day is a best representation of the typical long-term average conditions for the

Comment Category ID	Comment Category	Response
		airport and provides a means of comparing long-term effects of alternative operating conditions. All noise results in the Re-Evaluation are generated using the same modeling procedures and same version of the FAA's Integrated Noise Model (version 6.1) as was used for the Environmental Impact Statement, thus allowing comparisons of alternatives. Though newer models for computing airport noise have been released since the Environmental Impact Statement, the benefits of maintaining consistency between the Re-Evaluation and the Environmental Impact Statement are important. The FAA has directed the use of the Integrated Noise Model, version 6.1 so that the noise analyses of the Re-Evaluation will be consistent with the tools and results in the Environmental Impact Statement. The 65, 70 and 75 Day-Night Average Sound Level contours are produced as outputs for this study. Results reported in the Re-Evaluation also include Day-Night Average Sound Level calculations at a separate set of noise-sensitive locations – the same noise-sensitive sites identified in the Environmental Impact Statement. Complete details of the noise modeling process conducted for this Re-Evaluation can be found in **Appendix C, Noise and Land Use, Section C.2.2** and information on the specific inputs developed for the noise model can be found in **Section C.2.3**.
D7	Comments on the health effects of noise exposure	Non-auditory health effects can be defined as those physiological effects on health and well-being (see also D9) which are caused by aircraft noise, but excluding effects on hearing. These include: stress response, cardiovascular effects, mental health effects, and mortality. (Annoyance can be considered a non-auditory health effect and for further information see **Appendix C, Noise and Land Use** of the Re-Evaluation.) It is possible that long term exposure to environmental noise may affect the human cardiovascular system and thus contribute to disease. Few studies have examined aircraft noise, but extensive research has demonstrated that chronic road traffic noise has non-auditory (cardiovascular) health effects. An open question is the applicability of these findings to aircraft noise. Airport Cooperative Research Program (ACRP) Synthesis Report 9, *Effects of Aircraft Noise: Research Update on Selected Topics*, provides a summary of current understanding of these non-auditory effects, and concludes as follows: "Despite decades of research, including review of old data and new research efforts, health effects of aviation noise continue to be an enigma. Most, if not all,

Comment Category ID	Comment Category	Response
		current research concludes that it is as yet impossible to determine causal relations between health disorders and noise exposure, despite well-founded hypotheses."[4] The Federal Aviation Administration is currently conducting additional research to determine the scientific understanding between aviation noise and cardiovascular disease and sleep disturbance. For sleep related questions please see response to comment D9.
D8	Comments on property value	Federal regulations do not have provisions for costs of mitigation for property values. Property assessment and valuation are the responsibility of the counties surrounding the Airport. Disturbance and annoyance due to airport and aircraft noise are reflected in the Day-Night Average Sound Level (DNL) noise contours. A 2008 report by the Airport Cooperative Research Program (ACRP) concluded: "In summary, the studies of the effects of aviation noise on property values are highly complex owing to the differences in methodologies, airport/community environments, market conditions, and demand variables involved. Whereas most studies concluded that aviation noise effects on property value range from some negative impacts to significant negative impacts, some studies combined airport noise and proximity and concluded that the net effect on property value was positive."[5] One of the difficulties in evaluating the effect of aircraft noise on property values is the application of findings from one location to another. *The Effect of Airport Noise on Housing Values: A Summary Report*, prepared in 1994 by Booz-Allen & Hamilton, Inc. for the FAA[6], outlined a viable method of examining the effects of airport noise on housing values at the national level by using an approach referred to as the "neighborhood pair model." A series of studies conducted at Baltimore-Washington International, Los Angeles International, and New York LaGuardia and Kennedy International Airports determined that the neighborhood pair model can be used to establish the boundaries of the effect that airport noise has on housing values at a given airport. However, Booz-Allen recommended that their approach not be used at this time to determine property values due

[4] Airport Cooperative Research Program, Synthesis 9, "Effects of Aircraft Noise: Research Update on Selected Topics", 2008; page 9.
[5] Airport Cooperative Research Program, Synthesis 9, "Effects of Aircraft Noise: Research Update on Selected Topics", 2008; page 20.
[6] Booz-Allen & Hamilton, Inc., "Effect of Noise on Housing Values: A Summary Report", 1994, prepared for the Federal Aviation Administration, Office of Environment and Energy.

Comment Category ID	Comment Category	Response
		to the small sample size.
D9	Comments on quality of life	In enacting the National Environmental Policy Act, Congress recognized that nearly all Federal activities affect the environment in some way and mandated that before Federal agencies make decisions, they must consider the effects of their actions on the quality of the human environment. Under the National Environmental Policy Act, the Council on Environmental Quality works to balance environmental, economic, and social objectives in pursuit of the National Environmental Policy Act's goal of "productive harmony" between humans and the human environment. [42 U.S.C. §4331(a)]. The Environmental Impact Statement and the Re-Evaluation were prepared in accordance with FAA's applicable environmental regulations. There is no environmental impact category or significant threshold for determining what is an appropriate "quality of life." However, the Environmental Impact Statement and the Re-Evaluation do present analyses for individual environmental categories such as noise, air quality, and water quality which contribute to quality of life. The noise and air quality resource categories in the Re-Evaluation each address individual threshold values for consideration of significant impacts and the mitigation of those impacts. The DNL noise threshold, for example, recognizes the contribution of factors such as speech interference and disruption to TV listening to overall community annoyance. Additional research on sleep disruption, which many also consider a quality of life issue, is being carried out primarily in Europe. Researchers are finding that the probability of awakening depends on the indoor maximum sound level but that other factors such as time of night, sleep stage, rise time, frequency content and individual factors such as age all affect whether someone will awaken due to noise. Developmental work on modeling awakenings from aircraft is being funded through the FAA's Partnership for Air Transportation Noise and Emissions Reduction (PARTNER). Current PARTNER reports on sleep disturbance may be found at: http://partner.mit.edu/projects/noise-exposure-response-sleep-disturbance.
D10	Comments on property taxes	The noise impacts and proposed mitigation for surrounding residential land use for the O'Hare Modernization are discussed in the Environmental Impact Statement. Property assessment and local taxes are the responsibility of the counties surrounding the Airport. The Federal Aviation

Comment Category ID	Comment Category	Response
		Administration (FAA) does not have the authority to alter local tax regulations or assessments. Residents can contact their respective counties to learn more about property taxes and assessments.
D11	Comments on forms of subsidies	Federal Aviation Administration (FAA) Order 5100.38D, *Airport Improvement Program Handbook*,[7] for financial eligibility does not permit reimbursements of operational or supplemental costs. See answer D3 for further explanation of FAA's mitigation options.
D12	Comments on TV/radio/internet reception interference	Interference may occur when broadcast signals are reflected off of large metal surfaces, such as buildings, airplanes, etc. The interference is caused when the broadcast signal, which is regulated by the Federal Communications Commission, bounces off reflective surfaces before being received by the antenna. Problems with reception may be reported to the Federal Communications Commission, but before contacting the Commission it is recommended that affected persons attempt to troubleshoot possible solutions. The homeowner may want to consider making adjustments to the position of the antenna, purchasing a highly directive television antenna, or using two identical television antennas stacked. Consumers may report their experience with broadcast reception -- for radio, television, wire, satellite and cable -- to the https://consumercomplaints.fcc.gov (link is external) or 1-888-225-5322 (1-888-CALL FCC).
D13	Comments on working from home	Commercial offices, business and professional use buildings are considered by the Federal Aviation Administration (FAA) to be compatible with aircraft noise levels below 70 DNL, and compatible with higher levels (below 80 DNL) with noise reduction modifications. While an individual is working from home their home office is considered compatible with aircraft noise levels below 70 DNL, just as other commercial uses.
D14	Comments on the history of noise at	The City of Chicago is the owner and operator of O'Hare and is implementing the O'Hare Modernization Program as approved in the Environmental Impact Statement. The O'Hare

[7] Federal Aviation Administration Order 5100.38D, "Airport Improvement Program Handbook", effective September 30, 2014; Appendix C.

Comment Category ID	Comment Category	Response
	O'Hare and the Environmental Impact Statement	Modernization Program approved for construction was evaluated in the Environmental Impact Statement, along with other alternatives, for safety and efficiency. The project under construction meets all Federal Aviation Administration (FAA) safety standards. The existing and proposed noise levels from the Environmental Impact Statement can be found in Tables F-50 through F-53 in Appendix F, Section F.3. Also, existing and future flight paths were analyzed and disclosed in the Environmental Impact Statement and approved in the FAA's Record of Decision. For the Build Out condition, the FAA provided Table F-39 in Appendix F of the Environmental Impact Statement, which depicts the usage of each of the runways during day or night periods for arrivals and departures. The FAA also provided Exhibits 19 through 23 to Appendix F, Noise, Attachment F-2 which depict the locations of the flight tracks for the Build Out. Also, see response to comment D2 for more on the City's Fly Quiet program, and response to comment D3 for mitigation. In **Appendix C, Noise and Land Use** of the Re-Evaluation, **Tables C-17** through **C-21** report the DNL noise levels for the 2015 and 2020 Interim Conditions predicted at noise sensitive sites identified in the Environmental Impact Statement. The public outreach conducted for the Environmental Impact Statement is documented in Appendix T of the Environmental Impact Statement and the outreach conducted for the Re-Eval is documented in **Appendix H.**
D15	Comments on structural impacts of vibration	Structural vibrations resulting in the rattling of windows and items in some homes near airports are caused by low frequency noise from aircraft. Though the Federal Aviation Administration (FAA) has investigated the phenomenon, it has no regulations or guidelines for measuring low frequency noise or mitigating for damage to homes due to vibrations from passing aircraft. In 2002, the Federal Interagency Committee on Aviation Noise, of which FAA is a member, enlisted an Expert Panel to report on issues of low frequency noise based on work they had completed for the Minneapolis Metropolitan Airports Commission and the City of Richfield, Minnesota. The Federal Interagency Committee on Aviation Noise published several major responses to findings from the panel. They found, in part:

Comment Category ID	Comment Category	Response
		• Low-frequency aircraft noise from civil aircraft poses no known risk of adverse public health effects, nor a risk of structural damage, nor does its presence necessarily increase annoyance. • Areas experiencing high levels of low-frequency noise cannot be identified effectively using the Day-Night Average Sound Level (DNL) because it does not account for the low frequencies. However, there is no other existing measure of low frequency noise that is effective at predicting noise-induced rattle. • It is premature to adopt a low-frequency noise metric or impact criteria without additional research to address the interaction of building construction, and the contributions of loudness and rattle to annoyance. The Federal Interagency Committee on Aviation Noise complete findings regarding low-frequency noise may be found at: http://www.fican.org/pdf/lfn_expertpanel.pdf In a subsequent investigation of low frequency noise conducted under the FAA's Partnership for Air Transportation Noise and Emissions Reduction, researchers found that sources of low frequency noise included start-of-takeoff-roll, acceleration down the runway, and reverse thrust on landing and that any new predictive measure of annoyance from vibration and rattle should account for lower frequencies than those in A-weighted sound levels. Additional information on low frequency noise studies and airports can be accessed at: http://partner.mit.edu/projects/low-frequency-noise-study
E	**Air Quality and Climate**	
E1	Comments on general air quality	The U.S. Environmental Protection Agency has established primary (health-based) and secondary (welfare-based) National Ambient Air Quality Standards for six air pollutants—nitrogen dioxide (NO_2), carbon monoxide (CO), particulate matter (PM), sulfur dioxide (SO_2), lead (Pb), and ozone (O_3). For PM, there are standards for both particles less than or equal to 10 micrometers in size (PM_{10}) and less than or equal to 2.5 micrometers in size ($PM_{2.5}$). The Re-Eval was prepared, and air quality analysis performed, to disclose the environmental impacts of the interim conditions generated by the modifications to the construction schedule for the OMP. With the exception of Pb

Comment Category ID	Comment Category	Response
		and O_3, the air quality analysis was designed to result in the highest (i.e., worst-case) O'Hare-related predicted levels of these air pollutants. As stated in the Re-Evaluation, levels of Pb were not evaluated because the fleet of aircraft operating at O'Hare contains a minimal number of aircraft equipped with piston engines (less than 0.1 percent of the fleet), the engine type that uses fuel that contains Pb. As also stated, modeling to determine the effects of an individual project on regional levels of O_3 are not considered reasonable because the computer models used to assess this pollutant do not support comparisons between modeling results at specific locations and the National Ambient Air Quality Standards. Notably, with respect to O_3, the Final General Conformity Determination in the Environmental Impact Statement (Attachment J-2 to Appendix J) concluded that the total direct and indirect O'Hare Modernization Program-related emissions of volatile organic compounds (VOC) and nitrogen oxides (NOx), the precursor emissions to O_3, were either accounted for in the Illinois Environmental Protection Agency's emission projections for the area's applicable State Implementation Plan or could reasonably be accounted for in established emission totals and/or excess regional emission estimates. The U.S. Environmental Protection Agency has established primary (health-based) and secondary (welfare-based) National Ambient Air Quality Standards for six air pollutants—nitrogen dioxide (NO_2), carbon monoxide (CO), particulate matter (PM), sulfur dioxide (SO_2), lead (Pb), and ozone (O_3). For PM, there are standards for both particles less than or equal to 10 micrometers in size (PM_{10}) and less than or equal to 2.5 micrometers in size ($PM_{2.5}$). The Re-Eval was prepared, and air quality analysis performed, to disclose the environmental impacts of the interim conditions generated by the modifications to the construction Studies have shown that emission source concentrations decrease with distance from the emission source (see U.S. Environmental Protection Agency, NO_2 Risk and Exposure Assessment Report, November 2008[8] and Phase III of the Los Angeles International Airport Air Quality and Source Apportionment Study, June 2013[9]). Because the results of the air quality analysis at the "worst-case" locations show that air pollutant levels would not exceed either the primary or secondary National Ambient Air Quality Standards for any

[8] U.S. Environmental Protection Agency, Risk and Exposure Assessment to Support the Review of the NO_2 Primary National Ambient Air Quality Standard, November 2008, http://www3.pa.gov/ttn/naaqs/standards/nox/s_nox_cr_rea.html

[9] Los Angeles World Airports, Phase III LAX Air Quality Source Apportionment Study (Volumes I through III), June 18, 2013, http://www.lawa.org/airQualityStudy.aspx?id=7716

Comment Category ID	Comment Category	Response
		of the evaluated pollutants, O'Hare-related pollutant concentrations in the surrounding neighborhoods and throughout the Chicagoland area would not exceed either the primary or secondary National Ambient Air Quality Standards for these pollutants. The Illinois Environmental Protection Agency maintains and operates air pollutant monitors throughout the Chicagoland area. The location of (as assigned by the Illinois Environmental Protection Agency), and data from, these monitors can be viewed on U.S. Environmental Protection Agency's AirData website (www.epa.gov/airdata/). Federal regulations require the Illinois Environmental Protection Agency to submit to U.S. Environmental Protection Agency an air monitoring network plan annually for the prospective year. The network plan provides a description of the monitoring network for each criteria pollutant including proposed changes. The plan is subject to public review and comment prior to its submission to the U.S. Environmental Protection Agency. The Illinois Environmental Protection Agency's air monitoring network plan for the year 2015 can be reviewed at the following website: www.epa.state.il.us/air/monitoring/2015/air-monitoring-network-plan.pdf. Contact the Illinois Environmental Protection Agency to review the plan for the year 2016. The closest monitoring station to O'Hare is located adjacent to Mannheim Road in Schiller Park (on the east side of the airport. The values from the Schiller Park monitor and the other Illinois Environmental Protection Agency monitors reflect all sources of air pollutants within the Chicagoland area, including O'Hare-related sources. The values are measured samples, not predicted levels, of the ambient air in both the neighborhoods surrounding O'Hare and throughout the Chicagoland area. A review of historical data shows that over time measured pollutant concentrations throughout Chicagoland have generally decreased (See Figure E.5-1 of the Re-Evaluation). These reductions are primarily due to U.S. Environmental Protection Agency's regulatory actions that reduce emissions from the sources) of air pollutants and pollutant precursors (e.g., motor vehicles, aircraft, open burning).
E2	Comments on soot or residue	Soot is a black substance produced by the incomplete combustion of wood, oil, coal, etc. The sources of soot include mobile sources (especially diesel engines), open burning (including wildfires), and residential heating (including fireplaces/woodstoves). In response to public concern, studies regarding soot/particle deposition have been conducted at several airports. The findings of

Comment Category ID	Comment Category	Response
		four such studies are briefly described below: • Boca Raton Airport (2011) – This study concluded that the soot-like material near the airport was mold.[10] • Fort Lauderdale International Airport (2006) – The report that was prepared states that the collected particle sizes were much large than particles from aircraft engine exhaust and the chemical make-up of the particles did not contain petroleum-based hydrocarbons (which would be an indication that the particles were aircraft-related).[11] • Los Angeles International Airport (2000) – This study concluded that the composition of the soot samples were similar to samples in other areas of the Los Angeles metropolitan area.[12] • O'Hare International Airport (1999) - As stated in the Environmental Impact Statement, the City of Chicago released a study that evaluated the major sources of soot, oily films, and other deposits in the areas surrounding O'Hare (Findings Regarding Source Contributions to Soot Deposition: O'Hare International Airport and Surrounding Communities. City of Chicago, December). To assess the sources of the deposited materials, samples of soot and particulate matter were collected over a multi-week period at, and near, the Airport (e.g., Elmhurst, Rosemont, Schiller Park, Park Ridge). Fuel and exhaust samples from aircraft, diesel engines, and gasoline engines were also collected for comparison. One additional sample, a sample of "typical" urban dust was obtained from the National Institute of Science and Technology (an agency of the U.S. Department of Commerce). Based on the results of the analysis, it was concluded that the deposited particles at all of the sites surrounding O'Hare bore little chemical resemblance to either unburned jet fuel or soot from jet exhaust. Instead, the collected material was chemically similar to general urban

[10] Power-point presentation prepared by Palm Beach County Health Department, 2011.
[11] Investigating Air Emission Impacts on the Community Particle Deposition from Airport Activities, Broward County Aviation Department 2006.
[12] Inglewood Particulate Fallout Study Under and Near the Flight Path to Los Angeles International Airport, South Coast Air Quality Management District, 2000.

Comment Category ID	Comment Category	Response
		pollution particles from the burning of heavy fuels (e.g., diesel fuel) and motor vehicle exhaust.[13] Soot-like material may also be caused by vegetation and/or insects. In a story entitled "Black, Sticky, Oily Stuff a Neighborhood Nuisance"[14] from a community newspaper in Rhode Island, it was reported that the source of the substance that had coated two neighborhoods since the year 2011 is attributed to secretions by an insect called the black-banded lecanium scale. This bug feeds on tree sap, leaving behind a sticky substance suitable for growing sooty mold. There are other such cases reported of algae, moss, and other similar vegetative material creating similar stains.
E3	Comments on fuel dumping	Emergencies that result in pilots needing to dump fuel are rare. Large commercial aircraft have a maximum takeoff weight and a maximum landing weight. Events that would result in a pilot jettisoning fuel include medical emergencies and equipment problems that require immediate attention. In the event of such emergencies, the FAA would instruct the pilot of an aircraft that is equipped to jettison fuel (e.g., Boeing 737 aircraft do not have fuel venting systems), to fly the aircraft to a specified altitude where the fuel will dissipate before reaching the ground and/or to a specified area away from centers of population. Similarly, instances of aircraft releasing waste rarely occur. Vapor trails, more commonly referred to as contrails, are long artificial clouds that sometimes form behind aircraft. These "clouds" can be caused by the water vapor in the exhaust of an aircraft engine or changes in air pressure over the surface of an aircraft's wing. Water can also condense or freeze in the vortices of an aircraft's wingtip on arrival and departure which is often mistakenly thought to be aircraft fuel.
E4	Comments on air quality modeling and	The dispersion analysis that resulted in predicted concentrations of the pollutants for which there are National Ambient Air Quality Standards considered the contribution of airport-related emission

[13] Findings Regarding Source Contribution to Soot Deposition O'Hare International Airport and Surrounding Communities, prepared for the City of Chicago; prepared by KM Chng 1999.

[14] http://www.ecori.org/pollution-contamination/2013/9/13/black-sticky-oily-stuff-a-neighborhood-nuisance.html; eco RI news; September 13, 2013.

Comment Category ID	Comment Category	Response
	community impacts	sources (e.g., aircraft, ground support equipment, passenger/ employee motor vehicles, construction equipment) and non-airport sources (all other sources within the Chicagoland area). For the 2015 and 2020 Interim Conditions, the maximum contribution of airport-related sources at the evaluated "worst-case" locations is provided in Tables E.5-3 and E.5-4, respectively (see values for "Within Study Area"). The Re-Eval analysis shows that airport-related sources contribute the least to 24-hour loads of PM_{10} (6 percent of the maximum concentration) and the most to 1-hour concentrations of CO (89 percent of the maximum concentration). Both the locations at which the least contribution and the most contribution are predicted to occur are in the airport's terminal area. Because the airport's contribution to total air pollutants diminishes with distance from the airport (especially concentrations of CO which dissipate rapidly with distance), the airport's contribution to air pollution in the communities surrounding O'Hare would be less than these maximum values. It is important to note that none of the maximum concentrations (airport and non-airport sources) are predicted to meet or exceed the National Ambient Air Quality Standards. Also, as discussed in **Section E.5.3, Dispersion Analysis Considerations**, of the Re-Eval, there are a number of factors, including the use of an aircraft operational level and an aircraft fleet mix, that overstate the total airport-related emissions used in the analysis of both the 2015 and 2020 Interim Conditions. This overstatement would result in a lower airport-related contribution than presented in the Re-Evaluation.
E5	Comments on air quality health effects	Airport-related sources do directly emit air pollutants that are associated with increased respiratory diseases such as asthma and cancer (e.g., coarse (PM_{10}) and fine ($PM_{2.5}$) particulate matter and sulfur dioxide (SO_2)) as well as emissions that are precursors to a pollutant that can trigger or exacerbate the symptoms of asthma (volatile organic compounds (VOC) and nitrogen oxides (NO_x) are precursors to the air pollutant ozone (O_3) which can trigger/exacerbate asthma symptoms). Certain VOCs and other emissions are also considered by the U.S. Environmental Protection Agency to be hazardous air pollutants (HAPs), some which are carcinogenic (i.e., cancer causing). While the U.S. Environmental Protection Agency's National Ambient Air Quality Standards, levels that are established by the agency to protect public health, do address levels of PM_{10}, $PM_{2.5}$, SO_2 and O_3,

Comment Category ID	Comment Category	Response
		there are currently no ambient (i.e., outdoor) air quality standards for any of the HAPs. As included in the Record of Decision "the City, working in cooperation and consultation with the Illinois Environmental Protection Agency, will pay to the Illinois Environmental Protection Agency the cost associated with that agencies purchase and installation of three HAPs capable air quality monitors in the O'Hare environs". Because the results of the air quality analysis for the 2015 and 2020 Interim Conditions indicate that levels of PM_{10}, $PM_{2.5}$, and SO_2 will be below the National Ambient Air Quality Standards for these pollutants, residents in the surrounding communities, should not be at a greater risk of developing asthma than communities exposed to similar air pollutant concentrations that are not located near the airport. The airport is not a unique source of any of the U.S. Environmental Protection Agency-regulated air pollutants or pollutant precursor emissions. This is evidenced by the variety of sources reported by the U.S. Environmental Protection Agency to contribute to air pollutant emissions within the State of Illinois (see www.epa.gov/air/emissions/where.htm). These sources are generally categorized as mobile (includes aircraft and all O'Hare and non-O'Hare-related motor vehicle emissions), biogenic (occurring naturally), industrial, and agricultural. Depending on the pollutant, solvents, fires, and dust are also identified as being sources of pollutants and/or pollutant precursors. The air pollutant O_3 is considered a regional pollutant because, at any given time, levels of O_3 are essentially the same throughout Chicagoland. Because levels of this pollutant are homogeneous throughout the area, residents in the communities that surround the airport should not be at a greater risk of asthma symptoms than communities at greater distances from the airport. To supplement the National Integrated Urban Air Toxics Strategy, the Illinois Environmental Protection Agency measured the airborne levels of various air contaminants in the vicinity of O'Hare to assess the relative impact of airport related emissions. Ambient (outdoor) levels of both Urban Air Toxics and HAPs were measured from June to December of 2000 at two sites in the vicinity of O'Hare (one in Bensenville and one in Schiller Park) and at three sites in the Chicago metropolitan area (Northbrook, Southeast Chicago, and Lemont). Urban Air Toxics are compounds identified by the U.S. Environmental Protection Agency to present the greatest threat to public

Comment Category ID	Comment Category	Response
		health in urban areas. HAPs are compounds that are known or suspected to cause cancer or have other serious health effects but are not included in the U.S. Environmental Protection Agency's list of Urban Air Toxic compounds. the Illinois Environmental Protection Agency's review and analysis of the accumulated monitoring results resulted in the following findings: 1. The levels of air toxic compounds found near O'Hare and other sites in the Chicago metropolitan area were comparable or lower than those found in other large U.S. cities. 2. The highest levels of most air toxic compounds measured in the Chicago area were found in Southeast Chicago. 3. An analysis of data collected from the sites at O'Hare found that emissions from the Airport have an impact on the air quality in adjacent communities, but that impact did not result in levels higher than those found in a typical urban environment.
E6	Comments on climate change	As stated in the Re-Evaluation, there is presently a broad scientific consensus that greenhouse gases associated with human activities are contributing to changes in the earth's atmosphere and, on July 1st of 2015, the U.S. Environmental Protection Agency proposed to determine that greenhouse gases from certain classes of aircraft engines are contributing to the gases. In their July 1st Advance Notice of Proposed Rulemaking, the U.S. Environmental Protection Agency sought input on issues related to setting an international greenhouse gas-related standard for these engines. The comment period closed on August 31, 2015. If the U.S. Environmental Protection Agency issues final affirmative findings regarding greenhouse gases, the U.S. Environmental Protection Agency would then be required to undertake a separate Notice and Comment Rulemaking to issue emission standards applicable to greenhouse gas emissions from the classes of aircraft engines that the U.S. Environmental Protection Agency finds cause or contribute to climate change. In 2013, U.S. greenhouse gas emissions from all sources in the U.S. are estimated by the U.S. Environmental Protection Agency to have totaled 6,673,000,000 metric tons of CO_{2e}. This represents the most recent national emissions inventory that U.S. Environmental Protection Agency has been prepared. The 2015 Interim Condition greenhouse gas emissions (10,077,700 metric tons of CO_{2e}) were contrasted with the 2013 national inventory. That comparison indicates that the 2015 Interim

Comment Category ID	Comment Category	Response
		Condition fuel dispensed greenhouse gas emissions would represent approximately 0.15 percent of total emissions generated in the U.S.
E7	Comments on the presence of a smell of jet fuel	According to studies and other research pertaining to airport-related odors, the most likely source of odors reported to be jet fuel is hydrocarbon-containing aircraft engine exhaust generated during the low-thrust setting modes (i.e., idle and taxi). This exhaust has a very distinctive odor that can be detected by at very low concentrations over distances up to 1,000 feet from an aircraft. Currently, the U.S. Environmental Protection Agency does not have air quality standards for hydrocarbons.
E8	Comments on the trends in air quality over time	The U.S. Environmental Protection Agency evaluates air quality trends from air pollutant monitoring data across the country (including monitors in Illinois). Data on the agency's website, http://www.epa.gov/airtrends/aqtrends.html, indicates that when comparing emission levels in 1980 to those in 2013, levels of CO, Pb, NOx, VOC, PM_{10}, and SO_2 have decreased 67, 99, 52, 53, 50, and 81 percent, respectively.
E9	Comments on the regulation of air pollutant and pollutant precursor emissions from aircraft engines	Since 1973, the U.S. Environmental Protection Agency has established emission standards and test procedures for aircraft and aircraft engines. Following Section 231(a) of the Clean Air Act, the U.S. Environmental Protection Agency's Administrator will propose new standards when the agency believes such standards would reduce the possibility of endangerment to the public health or welfare. The last revision to the engine emissions standards occurred in June of 2012. These latest standards are applicable to gas turbine engines with rated thrusts greater than 26.7 kilonewtons (engines that are primarily used on commercial passenger and freight aircraft). Currently, the U.S. Environmental Protection Agency and the Federal Aviation Administration (FAA) are working with the International Civil Aviation Organization to establish international emission standards for greenhouse gas emissions with an anticipation that standards will be adopted in February of 2016. The evolution of newer, more fuel-efficient airframes/engines has produced significant aviation emissions reductions historically and will drive more reductions in the future. The FAA, the National Aeronautic and Space Administration and the Department of Defense are evaluating a number of efforts and collaborating with the aviation industry to develop and improve technology

Comment Category ID	Comment Category	Response
		that results in better fuel efficiency and reduced emissions. These efforts are being coordinated through the National Aeronautic Research and Development Plan (www.whitehouse.gov/stes/defualt/files/microsites/ostp/aero--rdplan-2010.pdf)
F	**Surface Traffic – See List of Commenters for individual responses, where applicable**	
G	**Original Environmental Impact Statement**	**See response A1 and A2.**
H	**Cumulative**	**– See List of Commenters for individual responses, where applicable**
I	**Miscellaneous**	**– See List of Commenters for individual responses, where applicable**
J	**Comment Noted**	**Noted. Although noted, the FAA may or may not agree with the comment.**
D-Bensenville	The applicable common responses are indicated to the right.	D14 C6 D2 D3 D3
D-Elk Grove	The applicable common responses are indicated to the right.	C6 D2 C7 C9 D3

Comment Category ID	Comment Category	Response
D-FAiR	The applicable common responses are indicated to the right.	D2 C7 C6
D-Niles	The applicable common responses are indicated to the right.	C6 D2 C7 C9 D3
D-Norridge	The applicable common responses are indicated to the right.	C6 D2 C7 C9 D3
D-Wood Dale	The applicable common responses are indicated to the right.	C6 D2 C7 C9 D3