APPENDIX C

NOISE AND LAND USE

This appendix discusses information regarding noise and land use that supplements the material in **Section 2.4**. This appendix consists of the following sections:

- C.1 Noise
- C.2 Aircraft Noise Assessments
- C.3 Summary of AEDT Input Data
- C.4 Noise Contour Results
- Attachment C-1 Modeled Flight Track Exhibits
- Attachment C-2 AEDT Input Data
- Attachment C-3 Basics of Noise & Terminology
- Attachment C-4 Altitude Control Code Development Memorandum
- Attachment C-5 Noise Research Program Update
- Attachment C-6 Grid Point Analysis Exhibits

C.1 NOISE

This appendix presents the aircraft noise analysis for modeling scenarios relevant to this Re-Evaluation of the O'Hare Modernization Program Environmental Impact Statement (EIS). Details of the nighttime preferential runway use configurations modeled for noise and land use analysis are discussed in **Chapter 2**.

For consistency between the EIS, the 2015 Re-Evaluation, and this Re-Evaluation, methodology for this noise analysis generally parallels that of the EIS. Since the EIS and the 2015 Re-Evaluation, however, FAA released an updated noise model—Aviation Environmental Design Tool (AEDT 2d)—and mandated its use for analyses undertaken as part of compliance with the National Environmental Policy Act (NEPA).[1] AEDT is further described in **Section C.1.2**.

The noise and land use appendix includes summaries of the operational data used in the calculation of noise exposure levels. It also provides background information regarding metrics used to describe aircraft noise, how people respond to noise, and FAA guidance on the compatibility of various land uses to different noise exposure levels (and when those levels are considered noncompatible). To ensure consistency with the EIS and the 2015 Re-Evalation, much of the background information in this appendix is drawn directly from the comparable Appendix F in the EIS.

[1] FAA policy requiring use of AEDT for aircraft noise analysis under NEPA and for airport compatible land-use planning was published at 80 FR 28753 (May 15, 2015).

C.1.1 Regulatory Context

The analysis of aviation noise impacts from federal actions is the responsibility of FAA. Federal statutes, FAA regulations, and FAA guidance related to the consideration of noise impacts include:

- 49 U.S.C. 44715, The Control and Abatement of Aircraft Noise and Sonic Boom Act of 1968, as amended
- 49 U.S.C. 4901-4918, The Noise Control Act of 1972
- 49 U.S.C. 47501 et seq., The Aviation Safety and Noise Abatement Act of 1979, as amended
- 49 U.S.C. 47101 et seq., The Airport and Airway Improvement Act of 1982, as amended
- 49 U.S.C. 47521-47534, The Airport Noise and Capacity Act of 1990
- 14 CFR Part 150, Airport Noise Compatibility Planning
- 14 CFR Part 161, Notice and Approval of Airport Noise and Access Restrictions
- 49 U.S.C. 47534, Prohibition on Operating Certain Aircraft weighing 75,000 Pounds or Less Not Complying with Stage 3 Noise Levels [section 506 of the FAA Modernization and Reform Act of 2012]
- FAA Order 1050.1F, Environmental Impacts: Policies and Procedures
- FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions

These laws and guidance documents direct the use of DNL—the Day-Night Average Sound Level—the noise metric used in most environmental impact analyses.[2] DNL, a cumulative sound level, provides a measure of total sound energy during a specified time period. DNL logarithmically averages the sound levels of multiple events at a location over a 24-hour period, with a 10-decibel (dB) weighting added to all sounds occurring during nighttime hours (between 10:00:00 p.m. and 6:59:59 a.m.).[3] The 10 dB increase for nighttime events represents the added intrusiveness of noise that occurs during sleeping hours; ambient sound levels during nighttime hours are typically about 10 dB lower than during daytime hours.

FAA requires the use of a 24-hour period which is equal to an average of the operations over a year for NEPA analysis. This 24-hour period is referred to as the average annual day (AAD) and is used for all noise analysis. Further details on noise and DNL can be found in **Attachment C-3**.

Estimates of noise effects resulting from aircraft operations can be interpreted in terms of the probable effect on human activities typical to specific land uses. FAA has adopted suggested guidelines for evaluating land-use compatibility with noise exposure; these are presented in **Attachment C-3**. Additional discussion of compatible land use can be found in Section 5.2 of the EIS.[4] All land uses are generally considered compatible with noise levels lower than 65 DNL but only certain uses are compatible with DNL levels at or above 65 dB.

The noise analysis considers impacts of the Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1, and Revised Interim Fly Quiet 2 using FAA's thresholds of significance. The significance threshold for changes in noise, in accordance with FAA Order 1050.1F,[5] is when an action, compared to the no action alternative for the same timeframe, would cause noise-sensitive areas to experience a noise increase of at least 1.5 dB

[2] Part 150 and FAA Order 1050.1F in particular direct the use of DNL for evaluating land-use compatibility and change of exposure for assessing significance of environmental impacts.
[3] A 10 dB change in sound levels is perceived by the average person as a doubling, or halving, of the sound's loudness.
[4] EIS, Chapter 5, Section 5.2, pp 5.2-1 and following; July 2005.
[5] FAA Order 1050.1F, Environmental Impacts: Policies and Procedures

at or above 65 DNL as shown in **Table C-1**. **Table C-1** also lists FAA-defined noise significance and reportable changes of noise levels.

TABLE C-1
DNL NOISE THRESHOLDS

	65 DNL or higher	Greater than or equal to 60 DNL but less than 65 DNL	Greater than or equal to 45 DNL but less than 60 DNL
Minimum Change in DNL with Alternative	1.5 dB	3.0 dB	5.0 dB
Level of impact	Significant	Reportable	Reportable
Source: FAA Order 1050.1F and the 1050.1F Desk Reference.			

C.1.2 Aircraft Noise Modeling

This Re-Evaluation used the new AEDT Version 2d[6] for all aircraft noise analysis. AEDT is a combined noise and emission model that replaces the Integrated Noise Model (INM) modeling software used to calculate noise exposure and Emissions and Dispersion Modeling System (EDMS) used to evaluate emissions impacts in the EIS and 2015 Re-Evaluation.

AEDT uses a database of aircraft noise and performance characteristics to predict DNL values based on user input on the aircraft types, AAD aircraft operations, airport operating conditions, aircraft performance, and flight patterns. AEDT also calculates air pollutant emissions from aircraft engines for air quality analysis, enables noise and air quality calculations on a regional basis (as opposed to in the immediate airport environment only), and includes updated databases for newer aircraft models.

C.1.2.1 Noise Exposure Contours

Noise contours—lines of equal noise exposure (usually expressed in terms of DNL)—are typically used to illustrate average daily noise exposure around an airport. These noise contours are similar to topographic contour maps in that a set of concentric contours, representing successively lower DNLs, usually extends out from the airport's runways. DNL contours are typically presented in 5 dB increments on a base map, each successive contour representing a 5 dB decrease in AAD noise exposure. Contours developed for the Re-Evaluation are the 65, 70, and 75 DNL contours.

C.1.2.2 Grid Point Noise Calculations

The AEDT provides another method of showing noise levels in the airport environs. DNL or other metrics supported by the AEDT can be calculated for any location and presented in a number of formats. Grid points show the change in noise levels over specific locations and are helpful in determining where significant or reportable noise changes may occur. In this Re-Evaluation, noise levels are developed for two area-wide grid sets similar to the evaluation in the EIS. An inner set of points was defined to generally capture areas that would be exposed to 60 DNL or greater for one or more alternatives, and an outer set of points to generally capture areas that would be exposed to levels in the range of 45 DNL

[6] AEDT 2d was released on September 27, 2017 (https://aedt.faa.gov/2d_information.aspx).

to 60 DNL for one or more alternatives. The inner grid consists of 0.2 nautical miles (NM) (1,215 feet) squares and extends approximately eight (8) NM in each direction from the Airport Reference Point.[7] The outer grid consists of 0.6 NM (3,645 feet) squares and extends 25 NM in each direction from the Airport Reference Point. Grid point analysis results are provided in **Attachment C-6**.

C.1.2.3 Site-Specific Noise Calculations

AEDT provides another method of showing noise levels in the airport environs. DNL or other metrics supported by the AEDT can be calculated for any geographic location and presented in a number of formats. In this Re-Evaluation, noise levels are provided for noise-sensitive locations, as was presented in the EIS.

C.1.2.4 Noise Exposure Mapping

DNL contours can be used to:

- highlight an existing or potential aircraft noise level.
- assist in preparing noise compatibility programs.
- provide guidance in developing land use controls such as zoning ordinances, subdivision regulations, and building codes.

For purposes of the Re-Evaluation, the noise contours show areas exposed to DNLs for each condition. Significantly, a line drawn on a map does not imply that a particular noise condition exists on one side of the line and not the other. For further information on noise and its effects on people, please refer to Appendix F.1 in the EIS and **Attachment C-3**.

C.1.2.5 Noise Modeling versus Noise Monitoring Data

Since 1996, the Chicago Department of Aviation (CDA) has used the Airport Noise Management System (ANMS) to monitor the noise generated by O'Hare aircraft over the surrounding communities. ANMS collects, analyzes, and processes data from several sources of information, including a network of 36 permanent noise monitors[8] near O'Hare and cross-references that data with FAA radar data. That information is used to share data in monthly and quarterly reports to disclose past noise levels to the public.[9]

FAA is frequently asked why modeling was used to create the noise contours for the EIS, the 2015 Re-Evaluation, and this Re-Evaluation rather than using data from the noise monitors surrounding O'Hare. Noise monitors integrated into the ANMS record existing noise levels; they cannot, however, predict future noise levels, a requirement for assessing impacts from the Proposd Interim Fly Quiet and its alternatives under NEPA. All three documents analyzed future conditions in accordance with NEPA and FAA implementing orders.[10]

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[7] The Airport Reference Point is an FAA defined location based on the geographic center of an airport runway ends. (The Airport Reference Point for O'Hare is 41.974522 degrees north, 87.906597 degrees west)

[8] The ANMS has 36 noise monitors as of November 2018: https://www.flychicago.com/SiteCollectionDocuments/Community/Noise/OHare/ANMS/ORD_Fact_Sheet_Noise_Monitor_Introduction.pdf

[9] https://www.flychicago.com/community/ORDnoise/ANMS/Pages/ANMSreports.aspx

[10] FAA Order 1050.1F and FAA Order 5050.4B.

AEDT was used to calculate the level of aircraft noise in this Re-Evaluation. As explained earlier, AEDT uses a database of aircraft noise characteristics to predict DNL based on user input on the types and number of aircraft operations, AAD operating conditions, average aircraft performance, and aircraft flight patterns.

The ANMS is used to provide information on historical noise levels, while AEDT is used to predict future noise levels.

C.2 AIRCRAFT NOISE ASSESSMENTS

This Re-Evaluation addresses noise effects of proposed changes to the Existing Fly Quiet runway use program:

- Existing Fly Quiet, which is voluntary in nature
    - O'Hare currently operates seven runways that are used at different times. Runway use depends primarily on prevailing wind conditions on the airfield as well as on other weather conditions, airfield conditions, and air traffic conditions.
    - When feasible, the preferential runways should be implemented between 10:00 p.m. and 6:59 a.m. to minimize the effects of nighttime noise on the surrounding communities. Unless weather, runway closures, or loss of navigational aids dictate otherwise, FAA, utilizes the following runways (listed in no particular order):
        - Runway 10L/28R
        - Runway 9R/27L
        - Runway 4L/22R
        - Runway 4R/22L[11]
    - Any runway may be closed by the CDA on any given night for routine safety inspections.
    - Preferential Departure Flight Tracks/Paths
        - Between 10:00 p.m. and 6:59 a.m., the preferred departure nighttime tracks (paths over the ground) direct aircraft over less populated areas to limit noise exposure on the surrounding communities. The following paths are part of this program:
            - Runways 4L, 9R, 10L, 27L – Fly runway heading until reaching 3,000 feet mean sea level (MSL).
            - Runway 4R – Fly runway heading for one (1) mile then right turn heading 090° until 3,000 feet MSL (following the Kennedy Expressway).
            - Runway 22L – Make left turn heading 180° until 3,000 feet MSL (following the Tri-State Tollway).
            - Runway 28R – Make right turn heading 290° until 3,000 feet MSL.

[11] https://www.flychicago.com/SiteCollectionDocuments/Community/Noise/OHare/FQ/ORDFlyQuietManual2018.09.pdf

- Arrival Descent and Departure Climb Profiles
  - Existing Fly Quiet includes the following nighttime arrival and departure profiles for noise abatement between 10:00 p.m. and 6:59 a.m. These procedures are advisory in nature.
    - Descent: Aircraft should not be lower than 4,000 feet MSL when turning on final approach.
    - Arrival Reverse Thrust: Limit the use of reverse thrust.
    - Departure: Maintain quiet climb configuration to 3,000 feet MSL.
- Ground Run-Up Procedures
  - The Ground Run-Up Enclosure (located on the Scenic Hold Pad) is a structure that uses acoustical dampening materials to reduce the noise impacts of operation of an engine at high power for extended periods for maintenance tests.
  - Alternate run-up locations can be used when the Ground Run-Up Enclosure is in use or winds are not conducive for run-ups in the Ground Run-Up Enclosure.

- Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1, and Revised Interim Fly Quiet 2[12]
  - The purpose of the Proposed Interim Fly Quiet is to implement a balanced, cost-effective plan to reduce the impact of aircraft noise over noise-sensitive land uses.[13] The O'Hare Noise Compatibility Commission's and the CDA's general goals and objectives are to:
    - Provide near-term noise exposure relief.
    - Reduce impacts and provide noise relief to the highest impacted communities.
    - Provide predictability via a published rotation schedule that informs citizens, to the extent possible, of relief periods.
  - The Proposed Interim Fly Quiet and Revised Interim Fly Quiet 1 and 2 would not alter the location of the preferential flight tracks or the arrival/departure profiles. Only the nighttime runway use would change during the Proposed Interim Fly Quiet period.
  - There are six runway operating configurations in the Proposed Interim Fly Quiet and Revised Interim Fly Quiet 1 and 2. The CDA's Proposed Interim Fly Quiet request is for FAA to implement the configurations when conditions allow. Generally, aircraft depart into the wind because it allows pilots to achieve a higher altitude in less time and with less speed, and aircraft land into the wind since it allows for a shorter stopping distance and a reduced speed upon landing. For any given time, therefore, runway configurations are based on wind direction. These configurations are designed so that:

[12] Subsequent to the CDA's Interim Fly Quiet request to the FAA, the CDA also submitted two additional alternatives. The alternatives are referred to as Revised Interim Fly Quiet 1 and 2 in this Re-Evaluation.
[13] Noise-sensitive land uses are defined in Appendix C.4.7.

1) No more than two runways are used in each configuration.
2) Either only the east/west runways or only the "diagonal" runways (Runways 4L/22R and 4R/22L) are in use.
3) Departure and arrival operations occur on as many different runways as feasible.

- Runway operating configurations without Runway 10L/28R may still include departure operations on Runway 10L/28R by pilots specifically requesting this longer runway due to aircraft operational requirements.
- Proposed east flow configurations are:
  - Configuration K arrives Runway 10L and departs Runway 9R
  - Configuration L arrives Runway 4R and departs Runway 4L
  - Configuration M arrives Runway 10C and departs Runway 10L
- Proposed west flow configurations are:
  - Configuration H arrives Runway 27L and departs Runway 28C
  - Configuration I arrives Runway 22R and departs Runway 22L
  - Configuration Oarrives Runway 28C and departs Runway 28R

If FAA needs to assign an intersection departure[14], the CDA requests FAA assign use of intersection departures closest to the runway end to allow for the greatest runway length possible. Unless the runway is closed, airline requests for Runway 10L/28R would be accommodated with advance notice of two or more hours to the CDA's Airfield Operations Division. The CDA would give permission with less than two hours' notice during weeks in which diagonal runways are in use. If Runway 10L/28R is closed, Runway 10C/28C would be made available.

Each runway use configuration includes a period of nighttime non-Fly Quiet operations, while the runways in use are similar to daytime operations. This period is typically just after 10:00 p.m. and before 5:30 a.m. but may vary depending on factors such as the Fly Quiet configuration in use, runway inspections, and weather.

C.2.1 Noise Model

Noise exposure levels from the Existing Fly Quiet, Proposed Interim Fly Quiet, and Revised Interim Fly Quiet 1 and 2 are analyzed in this Re-Evaluation. The results were generated using the same modeling procedures as in the EIS, but with an updated computerized noise model, i.e., the AEDT. The metrics and modeling processes are consistent with those used in the EIS, preserving substantial consistency between this Re-Evaluation, the EIS, and the 2015 Re-Evaluation.

AEDT's aircraft database includes information for commercial, general aviation, and military aircraft powered by turbojet, turbofan, or propeller-driven engines. For each aircraft in the database, the following information is provided:

- a set of departure performance profiles for each applicable trip length

[14] Intersection departures are often used where the runway is long enough that the full length is not needed by a particular aircraft and the aircraft can begin its departure roll at a taxiway intersection rather than at the runway end.

- a set of approach perfomance profiles
- single event noise characteristics[15]

Using this database, AEDT can compute noise on the ground from an aircraft on a particular flight trajectory from any distance. The following sections describe input data needed for the model and how it was prepared.

C.2.2 Noise Model Input Data

The Re-Evaluation used an updated forecast of aircraft operations based on 2016 historical schedules and the 2017 FAA Terminal Area Forecast (TAF). As discussed in **Appendix B**, activity levels were determined to accurately represent the conditions forecast for the non-consecutive 11-month period[16] when the Proposed Interim Fly Quiet would occur. Aircraft operations simulation modeling described in **Appendix A** used the design day flight schedule (DDFS), and provided operational inputs to AEDT which served as the foundation for the runway layouts, daytime and nighttime uses, and basic flight path structure.

The primary data input into AEDT were:

- Airfield Layout – The locations of each runway centerline endpoint, width, threshold crossing height, and elevation.
- Aircraft Operations – AAD aircraft operations were defined by time. Daytime was defined as 7:00 a.m. to 9:59 p.m. and nighttime was defined as 10:00p.m. to 6:59 a.m. Departures and arrivals were the two types of flight operations modeled for this Re-Evaluation. Run-up (maintenance) operations were not modeled.
- Aircraft Fleet Mix – Refers to the aircraft engine types.
- Flight Profiles and Stage Length – AEDT contains flight procedures for each of its aircraft types describing the schedules of altitude, thrust/power setting, and airspeed for departures and arrivals. Departures were assigned flight profiles by their assigned stage length.[17] Stage length is assigned according to each departure's trip distance to its final destination. The stage lengths were determined using city-pair information provided in the forecast; flight profiles were selected based on a review of 2017–18 ANMS radar data.
- Runway Use – The rate at which each runway is used by time of day, operation type, and aircraft type per AAD.
- Flight Track Location and Use – Flight tracks provide the locations over the ground where the aircraft arrive or depart. Flight tracks typically consist of a backbone and sub-tracks which provide the average location and dispersion of flights for a certain procedure. The use of each set of tracks provides the distribution of flights for each procedure.

[15] A more detailed discussion of noise metrics is included in Attachment C-3 to this appendix.
[16] Estimated periods are November 2019 through May 2020 and September 2020 through January 2021.
[17] AEDT uses stage length as a surrogate for an aircraft's takeoff weight, as the longer the trip, the more fuel will be required.

C.2.3 Data Development for the Existing Fly Quiet

The following sections provide details on how the data for the Existing Fly Quiet was developed. The majority of the data came from the Total Airspace and Airport Modeler (TAAM) simulation output for the existing airfield.[18] As described below, the data was modified in adherence to the process used in the EIS.

C.2.3.1 Airfield Layout

AEDT requires that the runway layout be defined, usually in the form of points of latitude and longitude. The runway layout was set up in AEDT using current runway coordinates for the existing runways provided by the CDA. At times, the aircraft do not begin their departure rolls at the end of the runways but rather at other taxiway intersections. These are referred to as intersection departures and the runway identification for intersection departures were appended with "Int."— for example, "10L(Int.)". Where these occur, an overlay runway was set up in AEDT to define the modified departure thresholds.

Table C-2 provides the runway end locations for the airfield.

TABLE C-2
RUNWAY DATA

Runway ID	Centerline Endpoint		Elevation (ft MSL)	Arrival Displaced Threshold (ft)	Glide Slope (deg)	Threshold Crossing Height (ft)	Width (ft)
	Latitude (deg)	Longitude (deg)					
04L	41.981656	-87.913918	655.7	0	3.0	50	150
22R	41.997537	-87.896371	647.7	0	3.0	69	150
04R	41.953327	-87.899419	661.4	0	3.0	67	150
22L	41.969922	-87.879743	654.4	0	3.0	73	150
09L	42.002832	-87.926676	668.0	0	3.0	52	150
27R	42.002831	-87.899075	663.6	0	3.0	55	150
09R	41.983897	-87.918352	659.8	0	3.0	74	150
27L	41.983900	-87.889051	650.1	0	3.0	67	150
10L	41.968995	-87.931532	672.1	0	3.0	74	150
10L(Int.)	41.969014	-87.920864	667.5	0	3.0	74	150
28R	41.969070	-87.883739	651.4	0	3.0	74	150
28R(Int.)	41.969054	-87.895563	656.5	0	3.0	74	150
10C	41.965701	-87.931522	669.4	0	3.0	75	200
28C	41.965766	-87.891810	650.1	0	3.0	80	200
10R	41.957201	-87.927861	680.0	0	3.0	69	150

[18] The TAAM simulations were developed by Ricondo & Associates for the CDA to support this effort. Information regarding the Existing Fly Quiet simulations can be found in Appendix A.

28L	41.957246	-87.900288	658.0	0	3.0	50	150
Note: 10L(Int.) and 28R(Int.) are the locations of Intersection Departures for those runways. Sources: The CDA, Ricondo & Associates TAAM data packages, May 2018, HMMH.							

C.2.3.2 Weather Data

AEDT default airport-specific average weather conditions for O'Hare[19] were used for the Existing Fly Quiet and Revised Interim Fly Quiet 1 and 2:

- Temperature = 51.2 degrees Fahrenheit
- Pressure = 29.92 in-Hg
- Relative Humidity = 70.7 percent
- Headwind = 8.0 knots

C.2.3.3 Aircraft Operations

Operations data for AEDT was extracted from the TAAM output files. For each operation simulated in the TAAM experiment, the data listed in **Table C-3** was extracted from the TAAM output files.

TABLE C-3
TAAM OUTPUT DATA

Data Item	Source
Flight Number	POST file (ACID)
Aircraft Type	POST file (ACTYPE)
Origin Destination Cities	POST file (DEP_APT, ARR_APT)
Runway Used	POST file (DEP_RWY, ARR_RWY)
Operation Type	POST file (ARRDEP)
Route Used	POST file (DEP_RTE, ARR_RTE)
Operation Time	POST file (ACT_DEP_T, ACT_ARR_T)
Sources: Ricondo & Associates TAAM data packages, June 2018.	

The extracted operation time indicates whether the operation occurred during daytime (7:00 a.m. to 9:59 p.m.) or nighttime (10:00 p.m. to 6:59 a.m.) hours. For noise analysis purposes, a Day/Night flag was assigned to each operation based on the operation time. For a daytime operation, this record appears as "D" (as in the example below). For a nighttime operation, it would appear as "N." As a subsequent step, nighttime operations occuring during Existing Fly Quiet Mode (10:30 p.m. to 05:29 a.m.)[20] were distinguished from those night operations conducted in non-Fly Quiet conditions. Each operation in an experiment was assigned an operation value equal to "1."

[19] Per FAA guidance, weather conditions provided in AEDT are based on 30-year averages from the National Climatic Data Center.
[20] The Fly Quiet Mode hours for this study, based on information provided by the CDA, were incorporated into the TAAM and AEDT modeling. Fly Quiet hours are still formally noted by the CDA as 10:00 p.m. to 6:59 a.m., but the CDA currently ends Fly Quiet Mode when operational demand increases, additional runways are needed, and preferential flight tracks can no longer be used.

For the example operation in **Table C-4**, the output values illustrate the output from the TAAM file for a United Airlines B738 (UAL B738) aircraft departing from Runway 22L and following the departure route to the EARND waypoint[21] as simulated under the TAAM Experiment 551 runway configuration for the Existing Fly Quiet.

TABLE C-4
TAAM EXTRACTED DATA

Data Item	Output Values
Flight Number	UAL1996D
Aircraft Type	B738
Origin Destination Cities	KORD-TJSJ
Runway Used	22L
Operation Type	D
Route Used	EARND
Day/Night Flag	D
Operation Value	1.0000
Source: TAAM Experiment 551, Ricondo & Associates, June 2018.	

Each operation extracted from TAAM was initially assigned an operation value equal to 1.0000. At the conclusion of this process, a record was created for each operation with the following format:

- UAL1996D, B738, KORD-TJSJ, 22L, EARND, D, 1.0000

C.2.3.4 Aircraft Fleet Mix

The aircraft fleet mix was provided from TAAM for each experiment for the Existing Fly Quiet. Data from each TAAM POST file was extracted and processed into a single operations file based on the annual usage of each airfield configuration as shown below in **Exhibit C-1**. For the Existing Fly Quiet, four experiments were simulated in TAAM, as shown in **Exhibit C-1**.

[21] EARND is a RNAV waypoint, a predetermined geographical position used for route/instrument approach definition, progress reports, published VFR routes, visual reporting points, or points for transitioning and/or circumnavigating controlled airspace that is defined in terms of latitude/longitude coordinates.

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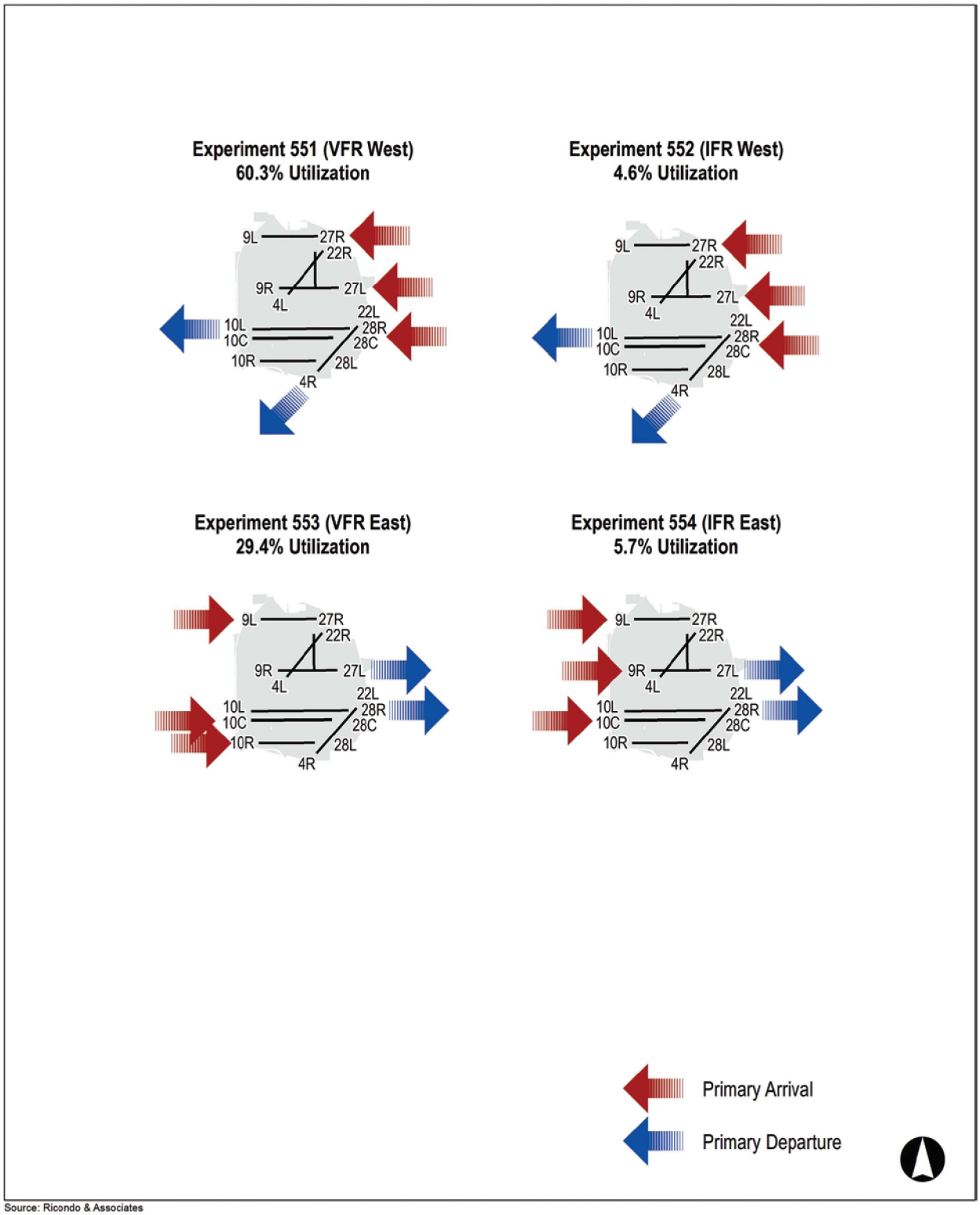

Source: Ricondo & Associates

Chicago O'Hare International Airport
Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Existing Fly Quiet Modeled Airfield Operating Configurations

▶ Exhibit C-1

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The configuration percentages for the Existing Fly Quiet are provided in **Table C-5**. Visual Flight Rule (VFR) experiments account for nearly 90 percent of the flight operations. **Table C-5** shows the Existing Fly Quiet operating approximately 65 percent in west flow and 35 percent in east flow. Because the Proposed Interim Fly Quiet analysis period is from November 2019 through May 2020 and September 2020 through January 2021, the seasonally predominant wind favors west flow. This is different than if a regular calendar year was analyzed. See **Appendix A** for more detail.

TABLE C-5
TAAM EXPERIMENT EAST/WEST FLOW DISTRIBUTION FOR EXISTING FLY QUIET

Experiment Number	Description	Annualized Percent
551	West VFR	60.3
552	West IFR	4.6
553	East VFR	29.4
554	East IFR	5.7
Total		**100.0%**

Source: Ricondo & Associates, June 2018.

These percentages replace the initially assigned value of 1.0000 to each flight record extracted from the TAAM files. At the conclusion of this process, using the Existing Fly Quiet configuration percent values, a record was created for each operation with the following format. (One record of data for each experiment is shown below with the new information in bold).

- UAL1996D, B738, KORD-TJSJ, 22L, EARND, D, **0.603**
- UAL1996D, B738, KORD-TJSJ, 22L, EARND, D, **0.046**
- UAL1996D, B738, KORD-TJSJ, 22L, EARND, D, **0.294**
- UAL1996D, B738, KORD-TJSJ, 22L, EARND, D, **0.057**

In addition, during this process aircraft were grouped by airframe type using the list below. These categories were used to assist in identifying traffic flows that may be used primarily by unique aircraft types:

- W – Wide-body Jet aircraft (aircraft weighing over 355,000 lbs.)
- J – Jet aircraft, including light, medium, and regional jets
- P – Propeller aircraft, including turboprop and piston-engined variants

The following records were then assigned "J" (shown in bold) due to the B738 belonging to the Jet category.

- UAL1996D, B738, KORD-TJSJ, 22L, EARND, D, **J**, 0.603
- UAL1996D, B738, KORD-TJSJ, 22L, EARND, D, **J**, 0.046
- UAL1996D, B738, KORD-TJSJ, 22L, EARND, D, **J**, 0.294
- UAL1996D, B738, KORD-TJSJ, 22L, EARND, D, **J**, 0.057

C.2.3.5 AAD Operations

To create DNL contours, aircraft activity used as input to AEDT must represent AAD operations, as required by FAA Order 1050.1F. Since the input from the TAAM schedules reflects the average day of the peak month (PMAD), the PMAD operations must be converted to AAD. For the Existing Fly Quiet there are 2,636 PMAD operations, and a scale factor of 0.893 was applied to obtain the total of 2,354 AAD operations.

As an example, the AAD scale factor was applied to the operational value from the first TAAM Experiment flight record above (551) and is shown in bold below:

- UAL1996D, B738, KORD-TJSJ, 22L, EARND, D, J, **0.538**[22]

C.2.3.6 Assignment of AEDT Aircraft Type

An AEDT Aircraft Type lookup table for the Existing Fly Quiet PMAD schedule was used to assign the AEDT types for each operation. The AEDT database correlates unique combinations of airframe and engine types with noise characteristics. For the example operations above, the UAL B738 would be assigned as follows:

- UAL, B738, 737800, 100 percent.
- The UAL B738 in the TAAM was assigned to the AEDT type 737800. For some aircraft types, multiple AEDT types are assigned based on the splits in the AEDT Aircraft Type lookup table.
- Applying the AEDT type information to the example record from above, the record is changed to be: UAL1996D, **737800**, KORD-TJSJ, 22L, EARND, D, J, 0.538

This is repeated for each operational record from the experiments and results in each record being assigned an AEDT type for modeling. The lookup table used for the Re-Evaluation is provided in **Attachment C-2**.

C.2.3.7 Flight Profiles

Flight profiles were assigned based on the city pair (Origin and Destination airports). A single stage length value was determined for each AEDT aircraft type and city pair in the schedule for the Existing Fly Quiet. The table for these assignments is in **Attachment C-2**.

Using the data from **Attachment C-2**, the operational flight record now includes the stage length (KORD to TJSJ is a stage length 4).

- UAL1996D, 737800, KORD-TJSJ, 22L, EARND, D, J, **4**, 0.538

AEDT allows for the use of Altitude Control Codes (ACCs) which instruct the model to adjust the standard AEDT flight profile for each aircraft type. The radar track bundles were evaluated to determine track bundles where a well-defined level flight segment was evident. ACCs were applied to 63 model track bundles (18 departure track bundles and 45 arrival track bundles). Additional details can be found in **Attachment C-5**.

C.2.3.8 Runway Use

Runway use was derived from the TAAM output files. For Existing Fly Quiet, four runway configurations were run in TAAM and were then annualized to provide the average annual daily use of the runways.

[22] TAAM experiment 551 operation value equals 0.603 multiplied by the AAD scale factor of 0.893 and results in an operation value of 0.538.

Adjustments were made to runway assignments directly in the Existing Fly Quiet AEDT data to cover activity not modeled in TAAM rather than create a separate operating configuration.

Runway use was derived from TAAM output data using the following three-step process:

- Step 1 – Runway assignment for each flight in each configuration modeled in TAAM were extracted from TAAM output files.
- Step 2 – Runway assignment data for each configuration modeled in TAAM was annualized according to its annual percent occurrence factor as shown in **Table C-5**.
- Step 3 – Further adjustments to the runway use data from Step 2 were made to account for non-modeled runway activity that may occur due to unforeseen circumstances such as runway closures for maintenance purposes. This step involved shifting a small percentage—generally 0.2 percent or less—of the total runway activity from a "Source" runway to a "Receiving" runway.

Table C-6 defines the adjustments used to incorporate use of runways not included in the Existing Fly Quiet TAAM modeling. These adjustments were based on comparisons to the 2017–18 radar data sample and FAA review. Details of how the non-modeled adjustments are derived are included in **Attachment C-2**. The adjustments were made for DNL's two time periods:

- Daytime (7:00 a.m. to 9:59 p.m.)
- Nighttime (10:00 p.m. to 6:59 a.m.)

TABLE C-6
RUNWAY USE ADJUSTMENTS FOR ACTIVITY NOT MODELED IN TAAM FOR EXISTING FLY QUIET

Source Runway	Operation Type	Receiving Runway	DNL (Day/Night)	Activity Shift
09R	Departure	04L	Day	0.20%
09R	Departure	09L	Day	0.20%
10L	Departure	10C	Day	0.20%
10L	Departure	10R	Day	0.20%
10L	Departure	04R	Day	0.20%
28R	Departure	27R	Day	0.20%
28R	Departure	27L	Day	0.20%
22L	Departure	28C	Day	0.20%
22L	Departure	28L	Day	0.20%
09R	Departure	04L	Night	0.40%
09R	Departure	09L	Night	0.20%
10L	Departure	10C	Night	1.60%
10L	Departure	10R	Night	0.20%
10L	Departure	04R	Night	0.20%
28R	Departure	27R	Night	0.20%
28R	Departure	27L	Night	0.20%
28R	Departure	28C	Night	4.00%

Source Runway	Operation Type	Receiving Runway	DNL (Day/Night)	Activity Shift
28R	Departure	28L	Night	0.20%
10C	Arrival	10L	Day	0.20%
10R	Arrival	04R	Day	0.20%
27R	Arrival	22R	Day	0.20%
28C	Arrival	22L	Day	0.20%
28C	Arrival	28L	Day	0.20%
28C	Arrival	28R	Day	0.20%
10C	Arrival	04R	Night	0.20%
28R	Arrival	22L	Night	0.20%
27L	Arrival	22R	Night	0.20%
28C	Arrival	28L	Night	0.20%

Note: For Arrivals, all operations were shifted from the Source to the Receiving Runway.
For Departures, only non-wide-body operations were shifted from the Source to the Receiving Runway.
Source: FAA & HMMH, August 2018.

C.2.3.9 Modeled Flight Tracks and Operational Assignments

FAA received a sample of 2017 and 2018 radar data from the CDA's ANMS. Data from the third week of each month from January to May 2017 and September 2017 to April 2018 was provided (7 days x 13 months = 91 days of data).[23] This data was imported and tagged to allow FAA to identify unique traffic flows for each runway, aircraft category, time of day, and procedure combination. This data was used to develop the flight track structure for existing runways, and to assist in the adjustments for runways not simulated in TAAM. Development of the model flight tracks involved the following steps:

- Step 1 – The data was parsed by runway, operation type, general direction, route, and time of day. **Exhibit C-2** displays the radar tracks of all aircraft on departure routes from Runway 22L to the south.
- Step 2 – Each departure flow was parsed to the departure waypoint used in TAAM. The data was also parsed by aircraft category for track development. **Exhibit C-3** displays all jet departures from Runway 22L to the waypoint identified as EARND (pronounced "earned").
- Step 3 – A single "backbone" track was developed for each group of radar tracks based on the statistical center of the bundle. Sub-tracks to either side of the backbone are produced by the AEDT to represent the entire flow. The sub-tracks represent the lateral dispersion of operations within the flight corridor. The number of sub-tracks is based on the density and width of the flow and is split evenly on each side of the center backbone track, as shown in **Exhibit C-4**.
- Step 4 – The percentage use of each backbone and sub-track was then computed based on the statistical distribution of the radar tracks within the corridor.
- Step 5 –AEDT model tracks and overall usage were reviewed and approved by members of the FAA Air Traffic Workgroup.[24]

[23] Representing the expected months of the year the Proposed Interim Fly Quiet would be available.

[24] The Air Traffic Workgroup is comprised of representatives from O'Hare Tower (ORD ATCT), Chicago TRACON (C90), Chicago ARTCC (ZAU), the National Air Traffic Controllers Association (NATCA), FAA Chicago Airports District Office (CHI-ADO), FAA's Third-party Contractor, HMMH, and Ricondo & Associates, Inc.

Arrival track data was developed following a similar process. This process was completed for each runway, route, and aircraft group combination. The tracks based on the 2017–18 radar data track structure were used to the maximum extent practical for existing runways (given that these tracks were developed based on observations of actual flight operations and their dispersion characteristics were similarly based on observed flight operations). In the final stage, all AEDT track geometry was checked for consistency with the TAAM geometry and adjustments were made accordingly.

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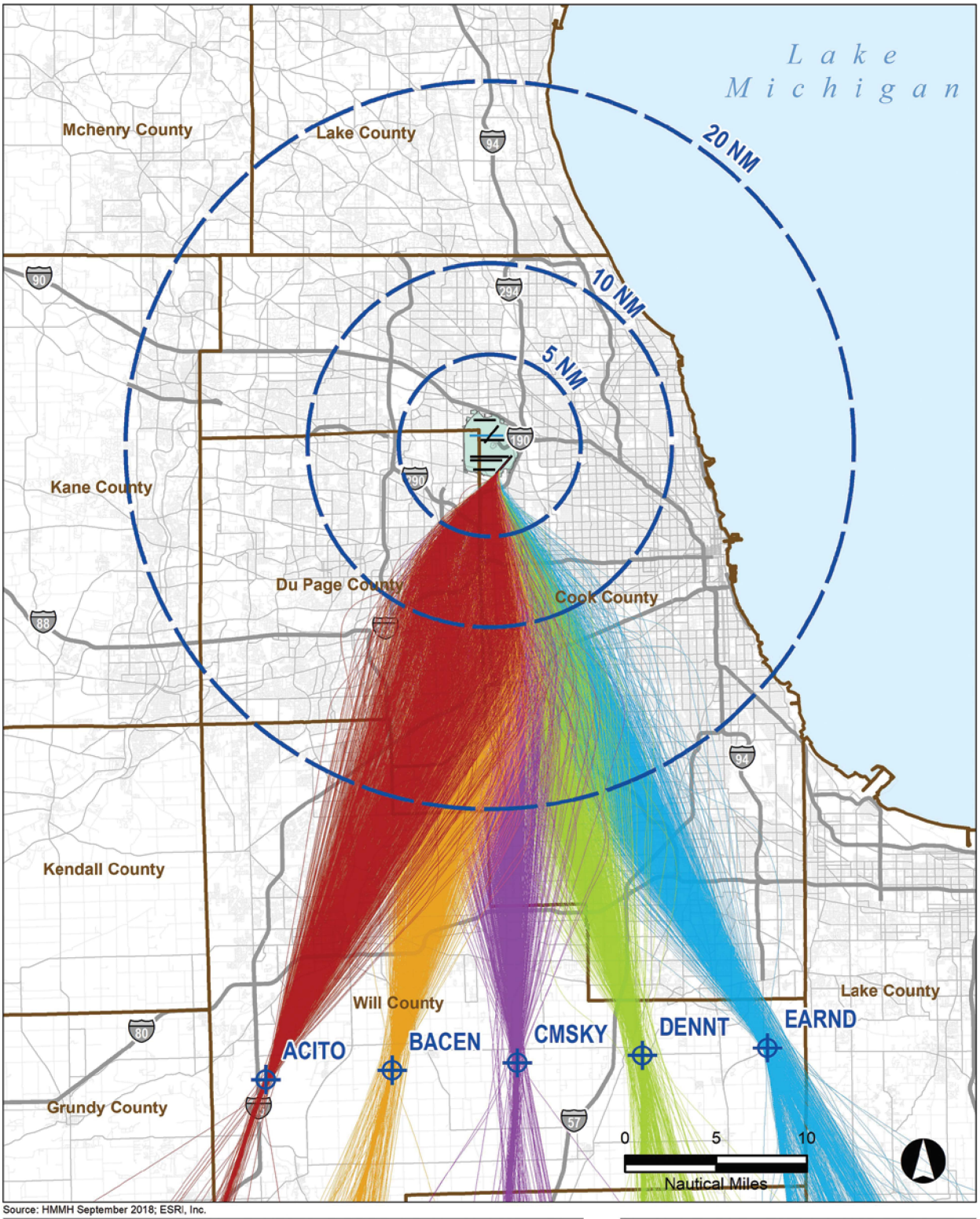

Source: HMMH September 2018; ESRI, Inc.

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All Radar Tracks on Departure Routes from Runway 22L to the South (Step 1)

▶ Exhibit C-2

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Source: HMMH September 2018; ESRI, Inc.

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Jet Departures from Runway 22L to EARND (Step 2)

▶ Exhibit C-3

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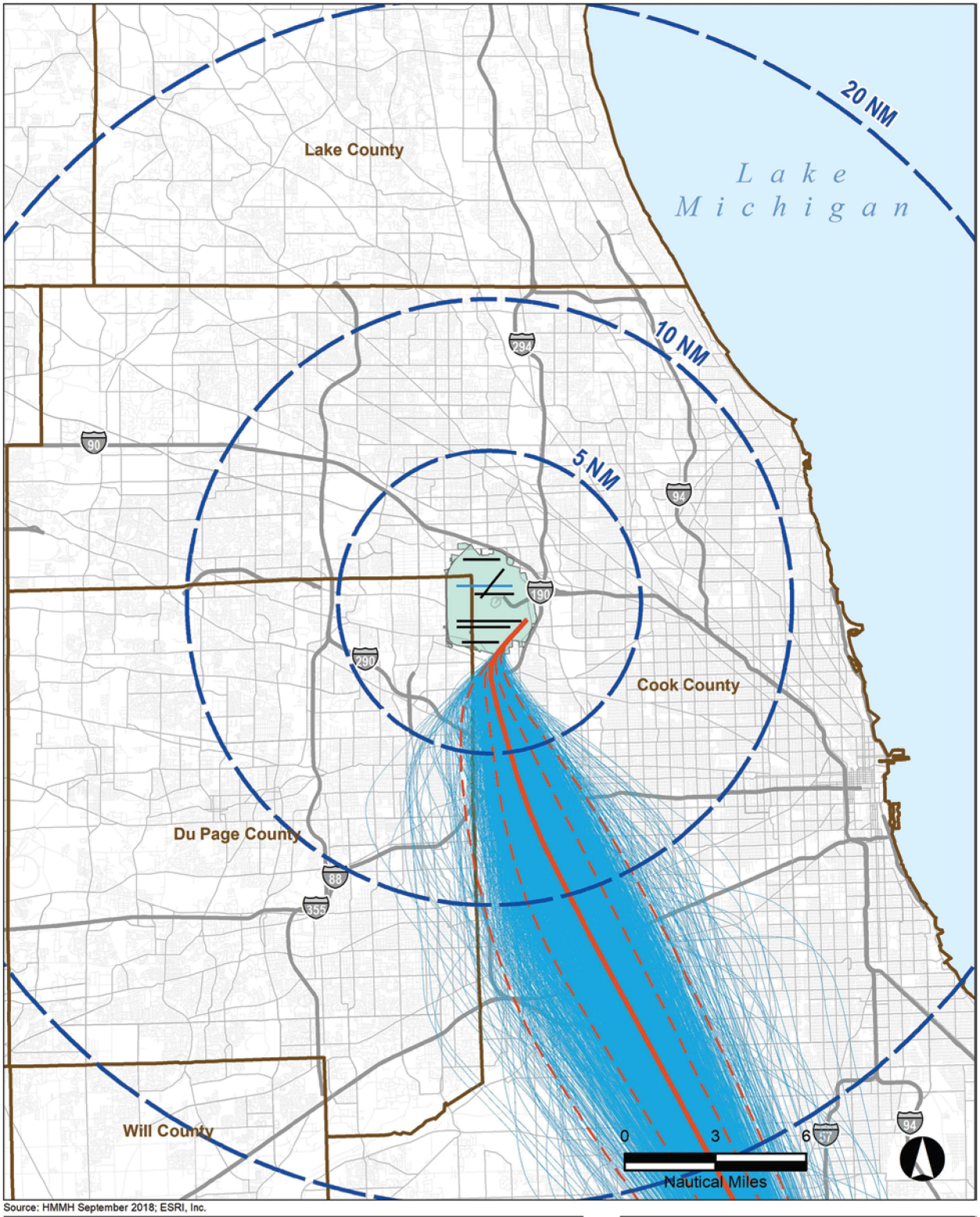

Source: HMMH September 2018; ESRI, Inc.

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Jet Departures and AEDT Model Track from Runway 22L to EARND (Step 3)

▶ Exhibit C-4

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Once the model track development was completed, the operational data developed from TAAM was assigned to the appropriate model tracks representing that runway and route combination. A summary of the three-step AEDT operations assignment process follows:

- Step 1 – Each aircraft operation received a model track bundle code based on aircraft category, operation mode, configuration, runway, time of day, and arrival/departure fix.
- Step 2 – Operations were matched and distributed among a database of model track bundles based on their code.
- Step 3 – Any resulting unmatched operations from Step 2 were manually re-assigned to other existing model tracks on a similar route.

Exhibit C-5 and **Exhibit C-6** illustrate how the AEDT input model tracks compare to the TAAM tracks for arrivals and departures, respectively.

For Existing Fly Quiet, Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1, and Revised Interim Fly Quiet 2, Runway 10R and Runway 28L include a 2.5 degree arrival offset to the south to increase parallel runway arrival aircraft separation.

The resulting flight tracks, used as input to the noise modeling, are illustrated in **Attachment C-1** in this appendix. The exhibits display the projected flight path flows for arrivals and departures separated by east and west flow.

C.2.4 Data Development for Proposed Interim Fly Quiet

The following sections provide details on how the data for Proposed Interim Fly Quiet was developed. AEDT input for the Proposed Interim Fly Quiet is heavily based on Existing Fly Quiet. The primary difference is that the Proposed Interim Fly Quiet has different nighttime runway use as provided by the CDA.

C.2.4.1 Proposed Interim Fly Quiet Night Operations and Runway Use

Operations data for AEDT modeling was extracted from the TAAM output files in the same manner as for the Existing Fly Quiet (see **Section C.2.3.3**). For nighttime operations, however, the assigned runway for each operation was modified based on the Proposed Interim Fly Quiet configurations data. The aircraft type, origin or destination, and route for each operation at night would remain the same as in the Existing Fly Quiet except for the runway assignment. For the Proposed Interim Fly Quiet, six configurations were developed in the CDA Runway Use Process shown in **Exhibit C-7**.

Each of the six configurations would occur for a week and would rotate through the Proposed Interim Fly Quiet period. The Proposed Interim Fly Quiet rotation is shown in **Exhibit C-8.**

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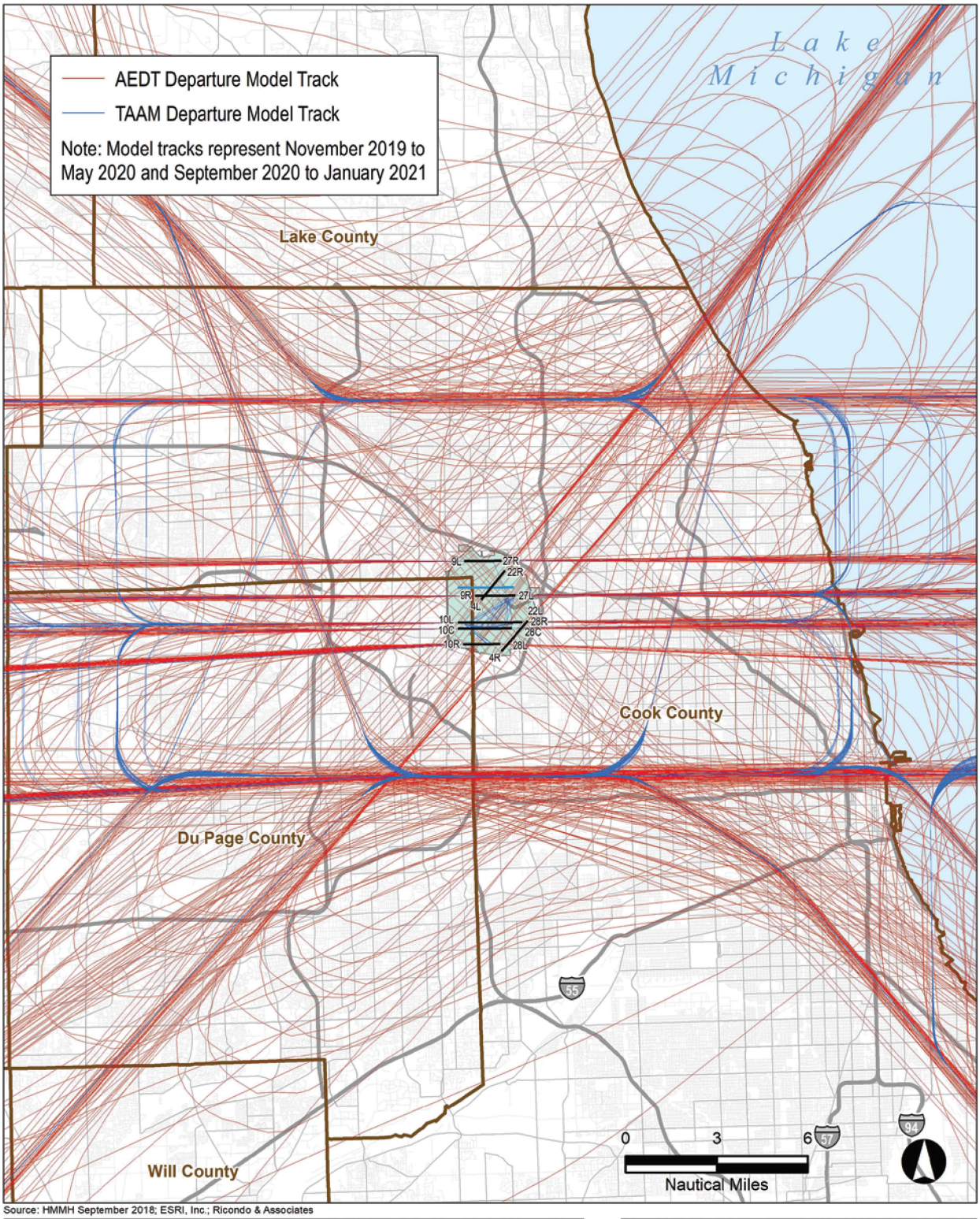

Source: HMMH September 2018; ESRI, Inc.; Ricondo & Associates

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TAAM and AEDT Arrival Model Track Comparison

▶ Exhibit C-5

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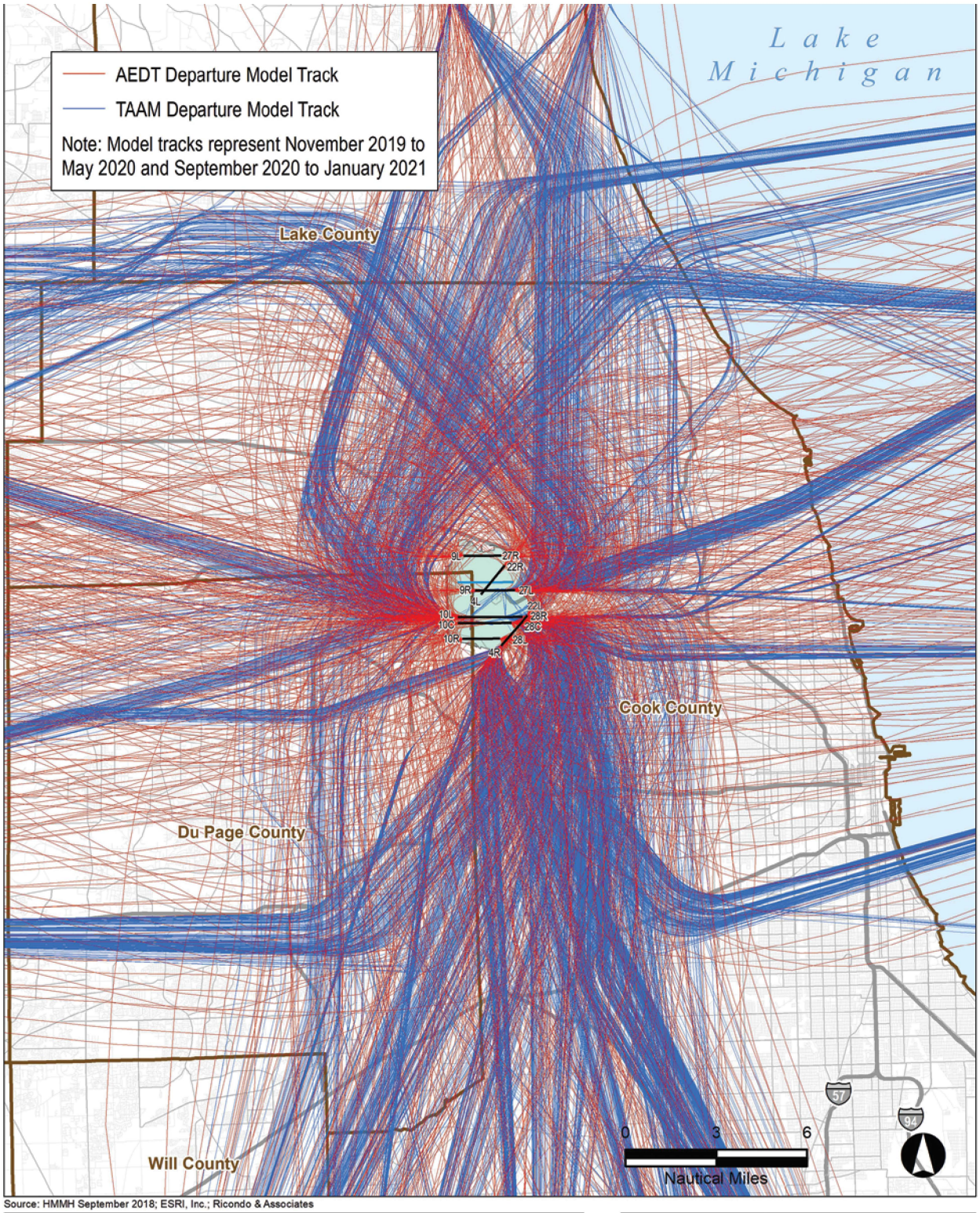

Source: HMMH September 2018; ESRI, Inc.; Ricondo & Associates

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TAAM and AEDT Departure Model Track Comparison

▶ Exhibit C-6

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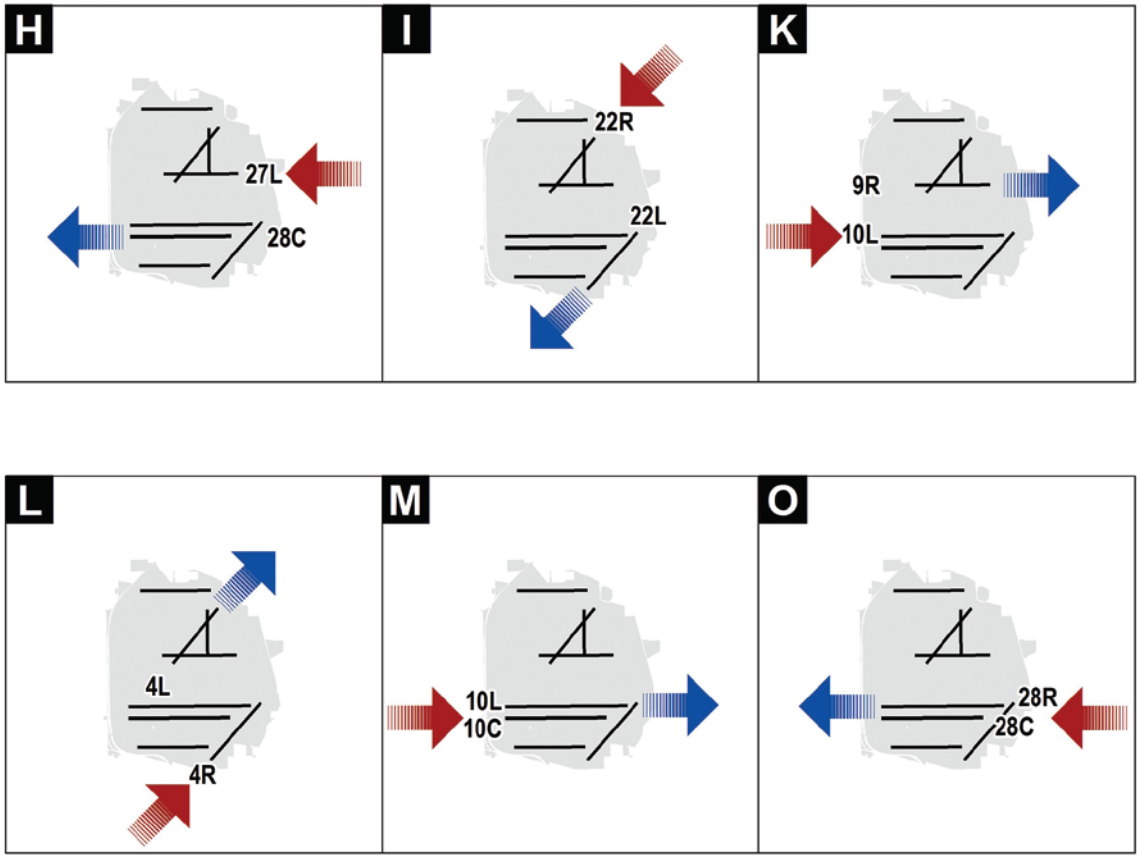

Notes

- Flights that require additional runway length should contact CDA Airfield Operations Division at a minimum of 2 hours prior to arrival or departure.
- Alternative runways would be used to allow for construction, snow removal, runway maintenance, runway inspection, and strong winds.
- Available runways are determined by CDA.

Arrival

Departure

Source: https://www.flychicago.com/docs/ifq%20submittal%20final.pdf

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Proposed Interim
Fly Quiet Runway Rotation
(Nighttime Only)

▶ Exhibit C-7

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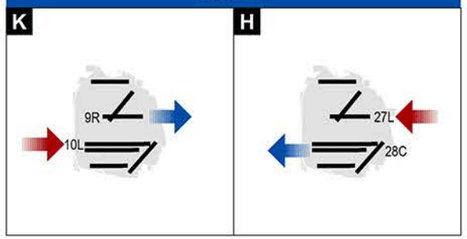
The graphic below outlines the Proposed Interim Fly Quiet Runway Rotation. For each week, a primary and secondary runway use configuration is provided to accommodate potential changes in wind direction. The runway use configurations have been defined and approved by the O'Hare Noise Compatibility Commission (ONCC) to balance noise exposure to the extent possible. Special procedures have been defined to accommodate aircraft that require specific runways.

Parallel - East

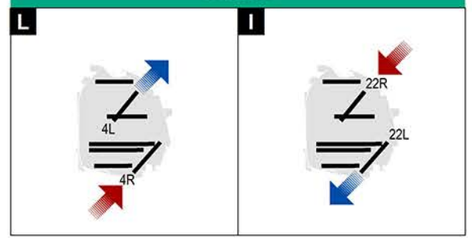
Week 1



Primary Secondary

Diagonal - East

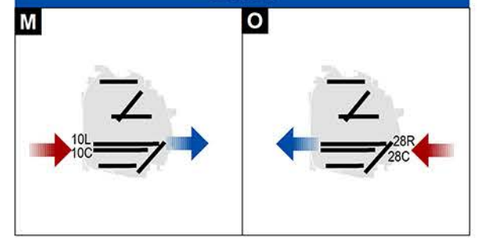
Week 2



Primary Secondary

Parallel - East

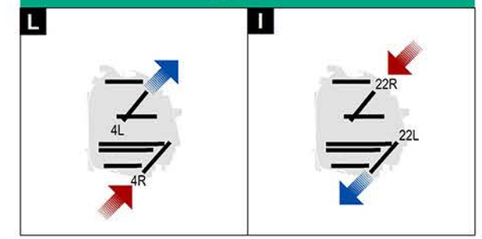
Week 3



Primary Secondary

Diagonal - East

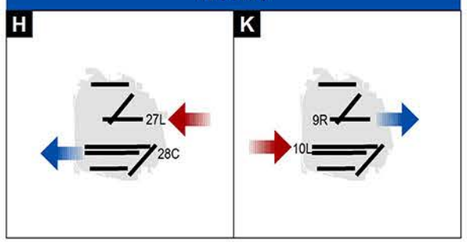
Week 4



Primary Secondary

Parallel - West

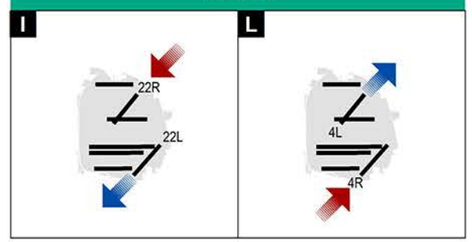
Week 5



Primary Secondary

Diagonal - West

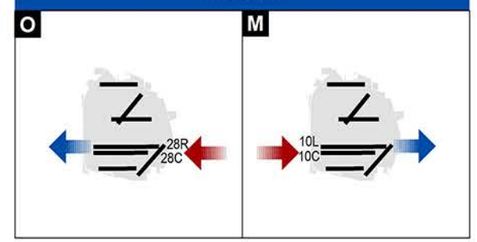
Week 6



Primary Secondary

Parallel - West

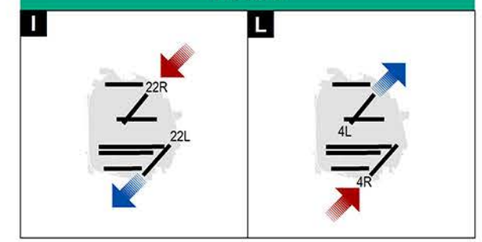
Week 7



Primary Secondary

Diagonal - West

Week 8



Primary Secondary

Each weekly period would begin on Sunday evening at 10 p.m. or after when demand allows for one arrival and one departure runway.

Notes

- Flights that require additional runway length should contact CDA Airfield Operations Division at a minimum of 2 hours prior to arrival or departure.
- Alternative runways may be used to allow for construction, snow removal, runway maintenance, runway inspection, and strong winds.
- Available runways are determined by CDA.

Arrival
Departure

Source: https://www.flychicago.com/SiteCollectionDocuments/Community/Noise/OHare/FQ/ORDFlyQuietManual2018.09.pdf

Chicago O'Hare International Airport
Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Proposed Interim
Fly Quiet Runway Rotation
(Nighttime Only)

▶ Exhibit C-8

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The CDA developed the rotation schedule based on the Proposed Interim Fly Quiet Rotation Plan submitted to FAA on February 15, 2018.[25] The submitted rotation plan was then applied to the available days where the Proposed Interim Fly Quiet would occur. The runway operating configurations are proposed for use, when possible, in an eight-week repeating schedule. Important characteristics of the schedule are:

- For each week, a primary runway operating configuration would be designated with an alternate (secondary) configuration designated to provide additional wind coverage if needed.
- Two runways would be proposed per week to minimize the disruption caused by nighttime runway maintenance and construction.
- The runway operating configurations would also be used to alternate between configurations using east/west-oriented runways and diagonal runways.

The proposed weekly configuration cycles for the Proposed Interim Fly Quiet, illustrated in **Exhibit C-8,** are as follows:

- Week 1 – Parallel East Flow (Primary Configuration is K, Secondary Configuration is H)
- Week 2 – Diagonal East Flow (Primary Configuration is L, Secondary Configuration is I)
- Week 3 – Parallel East Flow (Primary Configuration is M, Secondary Configuration is O)
- Week 4 – Diagonal East Flow (Primary Configuration is L, Secondary Configuration is I)
- Week 5 – Parallel West Flow (Primary Configuration is H, Secondary Configuration is K)
- Week 6 – Diagonal West Flow (Primary Configuration is I, Secondary Configuration is L)
- Week 7 – Parallel West Flow (Primary Configuration is O, Secondary Configuration is M)
- Week 8 – Diagonal West Flow (Primary Configuration is I, Secondary Configuration is L)

The CDA requests that the Proposed Interim Fly Quiet commence soon after a potential FAA approval. The Proposed Interim Fly Quiet would not be implemented during runway closures expected to be necessary to reconstruct Runway 4L/22R and rehabilitate Runway 4R/22L. Consequently, if approved, the Proposed Interim Fly Quiet could begin in November 2019 through mid-May 2020 (discontinuing during the rehabilitation of Runway 4R/22L) and resume in mid-September 2020 until the end of January 2021. The Proposed Interim Fly Quiet would be in place for approximately 11 months. When the Proposed Interim Fly Quiet restarts after a runway closure, the rotation would begin again at Week 1.

The configuration percentages for the Proposed Interim Fly Quiet are provided below in **Table C-7**. The number of weeks column in **Table C-7** represents the number of weeks each configuration is expected to be in use during the Proposed Interim Fly Quiet period. This directly influences the weighting of each configuration.

[25] CDA (Aaron Frame) submitted the request for Proposed Interim Fly Quiet to FAA (Amy Hanson) on February 15, 2018. https://www.flychicago.com/docs/ifq%20submittal%20final.pdf

TABLE C-7
CDA CONFIGURATION DISTRIBUTION PERCENTAGES FOR PROPOSED INTERIM FLY QUIET (NIGHTTIME ONLY)

Flow	Primary Configuration	Number of Weeks	Weighting
East Parallel	K	7	14.6
East Diagonal	L	14	29.2
East Parallel	M	7	14.6
West Parallel	H	5	10.4
West Diagonal	I	10	20.8
West Parallel	O	5	10.4
	Total	**48**	**100.0%**
Source: CDA, August 2018.			

Each of the six Proposed Interim Fly Quiet runway configurations provide the assigned runway and percent use based on the weighting above for nighttime operations.

The grouping of aircraft into "W" for wide-body jet aircraft, "J" for other jet aircraft, and "P" for propeller-driven aircraft is identical to the Existing Fly Quiet (see **Section C.2.3.4**).

AEDT daytime runway use is identical to the Existing Fly Quiet (see **Section C.2.3.8**).

Nighttime runway use for Proposed Interim Fly Quiet was provided from the CDA Runway Use Process output file. For Proposed Interim Fly Quiet, data for six runway configurations was developed by the CDA, and these six configurations were then annualized using the data in **Table C-6** to provide the annual average daily use of the runways. Adjustments were made to runway assignments directly in the Proposed Interim Fly Quiet AEDT data to cover activity not assigned in the CDA Runway Use Process rather than create a separate operating configuration.

Runway use was derived from CDA output data using the following two-step process:

- Step 1 – The annualized nighttime flight operation runway assignments for each configuration developed in the CDA Runway Use Process were extracted.
- Step 2 – Further adjustments to the runway use data from Step 1 were made to account for non-modeled runway activity that may occur due to unforeseen circumstances such as runway closures for maintenance purposes. This step involved shifting a small percentage—generally 0.2 percent or less—of the total runway activity from a "Source" runway to a "Receiving" runway.

Table C-8 defines the adjustments used to incorporate use of runways not included in the Proposed Interim Fly Quiet modeling. These adjustments were based on comparisons to the 2017–18 radar data sample and FAA review. The adjustments were made only to the nighttime (10:00 p.m. to 6:59 a.m.) period. The daytime period would retain the same operations and adjustments made for the Existing Fly Quiet (see **Section C.2.3.8**). The same adjustments were made to the Revised Interim Fly Quiet 1 and the Revised Interim Fly Quiet 2 runway use.

TABLE C-8
RUNWAY USE ADJUSTMENTS FOR ACTIVITY NOT MODELED IN TAAM FOR PROPOSED INTERIM FLY QUIET AND REVISED INTERIM FLY QUIET 1 AND 2

Source Runway	Operation Type	Receiving Runway	DNL Day/Night	Activity Shift
09R	Departure	04L	Day	0.2%
09R	Departure	09L	Day	0.2%
10L(Int.)	Departure	10C	Day	0.2%
10L(Int.)	Departure	10R	Day	0.2%
10L(Int.)	Departure	04R	Day	0.2%
28R(Int.)	Departure	27R	Day	0.2%
28R(Int.)	Departure	27L	Day	0.2%
22L	Departure	28C	Day	0.2%
22L	Departure	28L	Day	0.2%
09R	**Departure**	**09L**	**Night**	**0.2%**
10L(Int.)	**Departure**	**10R**	**Night**	**0.2%**
10L(Int.)	**Departure**	**04R**	**Night**	**0.2%**
28R(Int.)	**Departure**	**27L**	**Night**	**0.2%**
28R(Int.)	**Departure**	**27R**	**Night**	**0.2%**
28C	**Departure**	**28L**	**Night**	**0.2%**
10C	Arrival	10L	Day	0.2%
10R	Arrival	04R	Day	0.2%
27R	Arrival	22R	Day	0.2%
28C	Arrival	22L	Day	0.2%
28C	Arrival	28L	Day	0.2%
28C	Arrival	28R	Day	0.2%
28C	**Arrival**	**28L**	**Night**	**0.2%**
28C	**Arrival**	**22L**	**Night**	**0.2%**

Note: Day adjustments are the same as Existing Fly Quiet.
Night adjustments for Proposed Interim Fly Quiet and Revised Interim Fly Quiet 1 and 2 are shown in **BOLD**.
For arrivals, all operations were shifted from the Source to the Receiving Runway.
For departures, only non-wide-body operations were shifted from the Source to the Receiving Runway.
Source: FAA & HMMH, August 2018.

C.2.4.2 Proposed Interim Fly Quiet Data From Existing Fly Quiet

The following data is unchanged between the Proposed Interim Fly Quiet and the Existing Fly Quiet:

- The airfield layout (see **Section C.2.3.1**)
- The modeled weather data (see **Section C.2.3.2**)
- The modeled aircraft fleet mix (see **Section C.2.3.4**)
- PMAD operations to AAD operations conversion (see **Section C.2.3.5**)
- The AEDT aircraft type assignment (see **Section C.2.3.6**)

- The stage lengths and ACCs for aircraft operations (See **Section C.2.3.7)**
- AEDT model flight tracks (see **Section C.2.3.9**)

C.2.5 Data Development for Revised Interim Fly Quiet 1

The following sections provide details on how the data for Revised Interim Fly Quiet 1 was developed. Revised Interim Fly Quiet 1 is based on Proposed Interim Fly Quiet and Existing Fly Quiet. The primary difference between Revised Interim Fly Quiet 1 and Proposed Interim Fly Quiet is the runway use, as provided by the CDA.

C.2.5.1 Revised Interim Fly Quiet 1 Night Operations and Runway Use

AEDT data for Revised Interim Fly Quiet 1 was extracted from TAAM output files in a manner consistent with that of the Existing Fly Quiet (see **Section C.2.3.3**), i.e., developed for an 11-month period between November 2019 and January 2021 when the Revised Interim Fly Quiet 1 operations would occur. Revised Interim Fly Quiet 1 operations would not occur during the summer months of 2019 and 2020 due to scheduled runway rehabilitation projects which would reduce the number of available runways. For the nighttime operations, however, the assigned runway for each operation was modified based on the Proposed Interim Fly Quiet configurations data (see **Section C.2.4.3**). The details for each operation at night would remain the same as the Proposed Interim Fly Quiet except for the runway used.

With the Revised Interim Fly Quiet 1, the allocation of runway use would remain unchanged during the daytime but would change as described in **Section 2.2.3** for nighttime operations. The same six runway configurations as in Proposed Interim Fly Quiet would be used as shown in **Exhibit C-7.** However, the rotation would occur over six weeks instead of eight weeks.

The nighttime runway use for Revised Interim Fly Quiet 1 was derived from the CDA Runway Use Process output file. For Revised Interim Fly Quiet 1, data for the six runway configurations was developed by the CDA and the six configurations were then annualized to provide the annual average daily use of the runways. Revised Interim Fly Quiet 1 would involve a six-week configuration of each rotation. Runway use was derived from CDA output data using the following same two-step process listed in **Section C.2.4.8**.

The same adjustments that were made to the Proposed Interim Fly Quiet (**Table C-7**) were also made to runway assignments directly in the Revised Interim Fly Quiet 1 AEDT data. These adjustments cover activity not assigned in the CDA Runway Use Process rather than creating a separate operating configuration. The adjustments were made only to the nighttime (10:00 p.m. to 6:59 a.m.) period. The daytime period would retain the same operations and adjustments made for the Existing Fly Quiet (see **Section C.2.3.8**).

The configuration percentages for the Revised Interim Fly Quiet 1 are provided below in **Table C-9**. The number of weeks column in **Table C-9** represents the number of weeks each configuration is expected to be in use during the Revised Interim Fly Quiet 1 period. This directly influences the weighting of each configuration.

TABLE C-9
CDA CONFIGURATION DISTRIBUTION FOR REVISED INTERIM FLY QUIET 1 (NIGHTTIME ONLY)

Flow	Primary Configuration	Number of Weeks	Weighting
East Parallel	K	9	18.7
East Diagonal	L	8	16.7
East Parallel	M	9	18.7
West Parallel	H	8	16.7
West Diagonal	I	7	14.6
West Parallel	O	7	14.6
	Total	**48**	**100.0%**
Source: CDA, August 2018.			

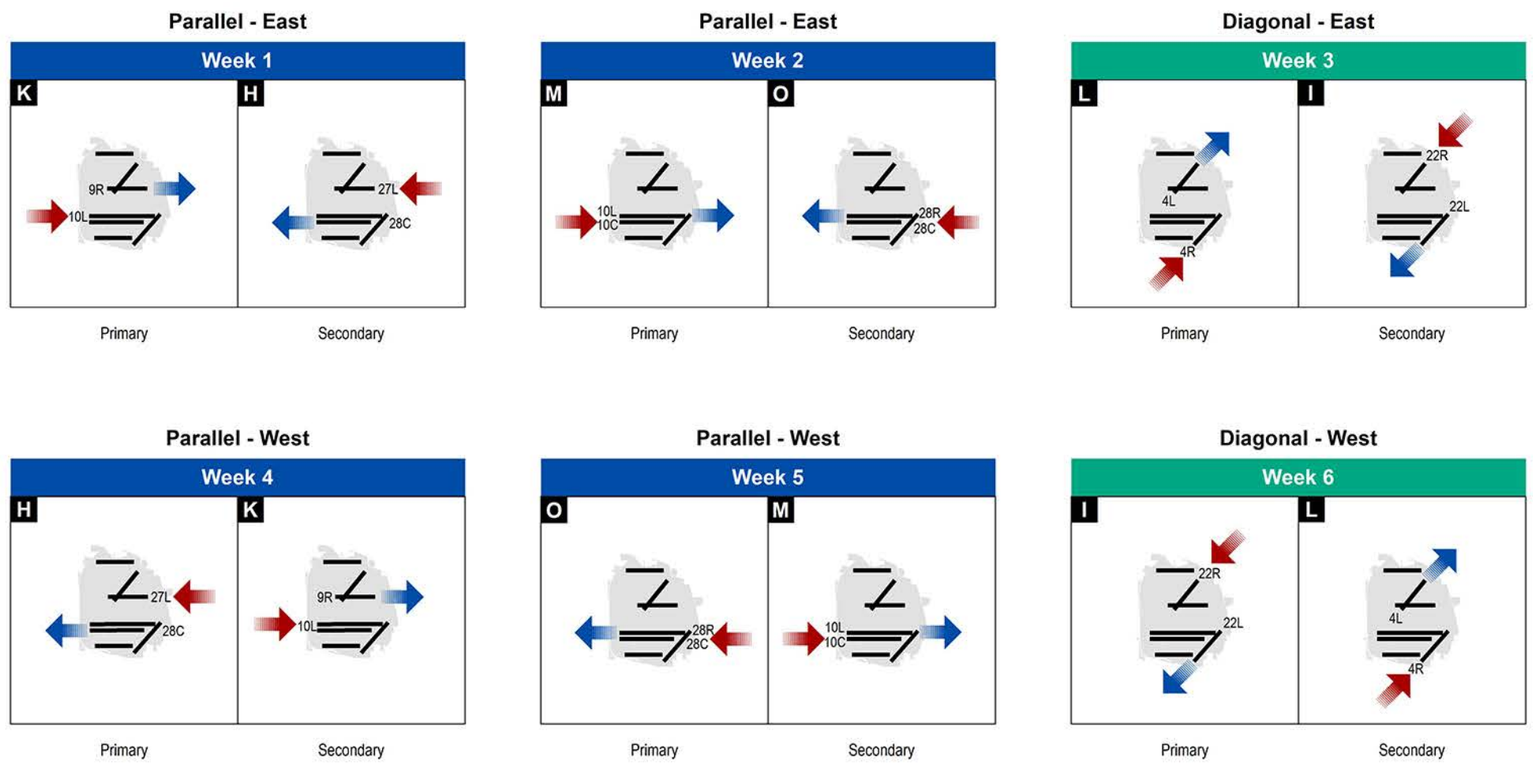
Exhibit C-9 displays the six-week rotation for Revised Interim Fly Quiet 1. The proposed rotation would start with week one and rotate through week six in the following order:

- Week 1: The primary runway operating configuration would be east flow arrival configuration K (arrivals on Runway 10L and departures on Runway 9R) with west flow arrival configuration H (arrivals on Runway 27L and departures on Runway 28C) serving as the secondary configuration.
- Week 2: The primary runway operating configuration would be east flow arrival configuration M (arrivals on Runway 10C and departures on Runway 10L) with west flow arrival configuration O (arrivals on Runway 28C and departures on Runway 28R) serving as the secondary configuration.
- Week 3: The primary runway operating configuration would be east flow arrival configuration L (arrivals on Runway 4R and departures on Runway 4L) with west flow arrival configuration I (arrivals on Runway 22R and departures on Runway 22L) serving as the secondary configuration. The use of a diagonally-orientated configuration would minimize additional effects on the communities affected during the prior two weeks.
- Week 4: The primary runway operating configuration would be west flow arrival configuration H (arrivals on Runway 27L and departures on Runway 28C) with east flow arrival configuration K (arrivals on Runway 10L and departures on Runway 9R) serving as the secondary configuration. The use of an east/west-orientated configuration would minimize additional effects on the communities affected during the prior week.
- Week 5: The primary runway operating configuration would be west flow arrival configuration O (arrivals on Runway 28C and departures on Runway 28R) with east flow arrival configuration M (arrivals on Runway 10C and departures on Runway 10L) serving as the secondary configuration.
- Week 6: The primary runway operating configuration would be west flow arrival configuration I (arrivals on Runway 22R and departures on Runway 22L) with east flow arrival configuration L (arrivals on Runway 4R and departures on Runway 4L) serving as the secondary configuration.

The use of a diagonally-orientated configuration would minimize additional effects on the communities affected during the prior two weeks.

The rotation would then repeat every six weeks during the available period. The Revised Interim Fly Quiet 1 would not be available during construction of runway rehabilitation projects, which is expected to occur primarily during the summer months. When the Revised Interim Fly Quiet 1 restarts after a runway closure, the rotation would begin again at Week 1.

The graphic below outlines the Revised Interim Fly Quiet 1 Runway Rotation. For each week, a primary and secondary runway use configuration is provided to accommodate potential changes in wind direction. The runway use configurations have been defined and approved by the O'Hare Noise Compatibility Commission (ONCC) to balance noise exposure to the extent possible. Special procedures have been defined to accommodate aircraft that require specific runways.



Each weekly period would begin on Sunday evening at 10 p.m. or after when demand allows for one arrival and one departure runway.

Notes

- Flights that require additional runway length should contact CDA Airfield Operations Division at a minimum of 2 hours prior to arrival or departure.
- Alternative runways may be used to allow for construction, snow removal, runway maintenance, runway inspection, and strong winds.
- Available runways are determined by CDA.

Arrival
Departure

Source: CDA, HMMH

Chicago O'Hare International Airport
Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Revised Interim
Fly Quiet 1 Runway Rotation
(Nighttime Only)

▶ Exhibit C-9

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C.2.5.2 Revised Interim Fly Quiet 1 Data from Existing Fly Quiet

The following data remain unchanged between the Revised Interim Fly Quiet 1 and the Existing Fly Quiet:

- The airfield layout (see **Section C.2.3.1**)
- The modeled weather data (see **Section C.2.3.2**)
- The modeled aircraft fleet mix (see **Section C.2.3.4**)
- PMAD operations to AAD operations conversion (see **Section C.2.3.5**)
- The AEDT aircraft type assignment (see **Section C.2.3.6**)
- The stage lengths and ACCs for aircraft operations (See **Section C.2.3.7)**
- AEDT model flight tracks (see **Section C.2.3.9**)

C.2.6 Data Development for Revised Interim Fly Quiet 2

The following sections provide details on how the data for Revised Interim Fly Quiet 2 was developed. Revised Interim Fly Quiet 2 is based on Proposed Interim Fly Quiet and Existing Fly Quiet. The primary difference between Revised Interim Fly Quiet 2 and Proposed Interim Fly Quiet is the runway use, as provided by the CDA.

C.2.6.1 Revised Interim Fly Quiet 2 Night Operations and Runway Use

AEDT data for the Revised Interim Fly Quiet 2 was extracted from TAAM output files in a manner consistent with that of the Existing Fly Quiet (see **Section C.2.3.3**), i.e., developed for an 11-month period between November 2019 and January 2021 when the Revised Interim Fly Quiet 2 operations would occur. Revised Interim Fly Quiet 2 operations would not occur during the summer months of 2019 and 2020 due to scheduled runway rehabilitation projects that would reduce the number of available runways. For nighttime operations, however, the assigned runway for each operation was modified based on the Proposed Interim Fly Quiet configurations data (see **Section C.2.4.3**). The details for each operation at night would remain the same as those of the Proposed Interim Fly Quiet except for the runway used.

With the Revised Interim Fly Quiet 2, the allocation of runway use would remain unchanged during the daytime but would change as described in **Section 2.2.3** for nighttime operations. The same six runway configurations as in Proposed Interim Fly Quiet would be used, as shown in **Exhibit C-7**. However, the rotation would occur over 20 weeks instead of eight weeks.

The nighttime runway use for Revised Interim Fly Quiet 2 was derived from the CDA Runway Use Process output file. For Revised Interim Fly Quiet 2, data for the six runway configurations was developed by the CDA and these six configurations were then annualized to provide the annual average daily use of the runways. Revised Interim Fly Quiet 1 would involve a 20-week configuration of each rotation. Runway use was derived from CDA output data using the same two-step process listed in **Section C.2.4.8**.

The same adjustments that were made to the Proposed Interim Fly Quiet (**Table C-8**) were also made to runway assignments directly in the Revised Interim Fly Quiet 2 AEDT data. These adjustments cover activity not assigned in the CDA Runway Use Process rather than creating a separate operating configuration. The adjustments were made only to the nighttime (10:00 p.m. to 6:59 a.m.) period. The daytime period would retain the same operations and adjustments made for the Existing Fly Quiet (see **Section C.2.3.8**).

The configuration percentages for the Revised Interim Fly Quiet 2 are provided below in **Table C-10**. The number of weeks column in **Table C-10** represents the number of weeks each configuration is expected to be in use during the Revised Interim Fly Quiet 2 period. This directly influences the weighting of each configuration.

TABLE C-10
CDA CONFIGURATION DISTRIBUTION FOR REVISED INTERIM FLY QUIET 2 (NIGHTTIME ONLY)

Flow	Primary Configuration	Number of Weeks	Weighting
East Parallel	K	8	16.7
East Diagonal	L	10	20.8
East Parallel	M	7	14.6
West Parallel	H	7	14.6
West Diagonal	I	9	18.7
West Parallel	O	7	14.6
	Total	**48**	**100.0%**
Source: CDA, August 2018.			

Exhibit C-10 displays the 20-week rotation for Revised Interim Fly Quiet 2. The proposed rotation would start with Week 1 and rotate through Week 20 in the following order:

- Week 1: The primary runway operating configuration would be east flow arrival configuration K (arrivals on Runway 10L and departures on Runway 9R) with west flow arrival configuration H (arrivals on Runway 27L and departures on Runway 28C) serving as the secondary configuration.
- Week 2: The primary runway operating configuration would be east flow arrival configuration M (arrivals on Runway 10C and departures on Runway 10L) with west flow arrival configuration O (arrivals on Runway 28C and departures on Runway 28R) serving as the secondary configuration.
- Week 3: The primary runway operating configuration would be east flow arrival configuration L (arrivals on Runway 4R and departures on Runway 4L) with west flow arrival configuration I (arrivals on Runway 22R and departures on Runway 22L) serving as the secondary configuration. The use of a diagonally-orientated configuration would minimize additional effects on the communities affected during the prior two weeks.
- Week 4: The primary runway operating configuration would be west flow arrival configuration H (arrivals on Runway 27L and departures on Runway 28C) with east flow arrival configuration K (arrivals on Runway 10L and departures on Runway 9R) serving as the secondary configuration. The use of an east/west-orientated configuration would minimize additional effects on the communities affected during the prior week.
- Week 5: The primary runway operating configuration would be west flow arrival configuration I (arrivals on Runway 22R and departures on Runway 22L) with east flow arrival configuration L (arrivals on Runway 4R and departures on Runway 4L) serving as the secondary configuration. The use of a diagonally-orientated configuration would minimize additional effects on the communities affected during the prior week.

- Week 6: The primary runway operating configuration would be west flow arrival configuration O (arrivals on Runway 28C and departures on Runway 28R) with east flow arrival configuration M (arrivals on Runway 10C and departures on Runway 10L) serving as the secondary configuration.
- Week 7: The primary runway operating configuration would be east flow arrival configuration K (arrivals on Runway 10L and departures on Runway 9R) with west flow arrival configuration H (arrivals on Runway 27L and departures on Runway 28C) serving as the secondary configuration.
- Week 8: The primary runway operating configuration would be east flow arrival configuration L (arrivals on Runway 4R and departures on Runway 4L) with west flow arrival configuration I (arrivals on Runway 22R and departures on Runway 22L) serving as the secondary configuration. The use of a diagonally-orientated configuration would minimize additional effects on the communities affected during the prior two weeks.
- Week 9: The primary runway operating configuration would be east flow arrival configuration M (arrivals on Runway 10C and departures on Runway 10L) with west flow arrival configuration O (arrivals on Runway 28C and departures on Runway 28R) serving as the secondary configuration. The use of an east/west-orientated configuration would minimize additional effects on the communities affected during the prior week.
- Week 10: The primary runway operating configuration would be west flow arrival configuration I (arrivals on Runway 22R and departures on Runway 22L) with east flow arrival configuration L (arrivals on Runway 4R and departures on Runway 4L) serving as the secondary configuration. The use of a diagonally-orientated configuration would minimize additional effects on the communities affected during the prior week.
- Week 11: The primary runway operating configuration would be west flow arrival configuration H (arrivals on Runway 27L and departures on Runway 28C) with east flow arrival configuration K (arrivals on Runway 10L and departures on Runway 9R) serving as the secondary configuration. The use of an east/west-orientated configuration would minimize additional effects on the communities affected during the prior week.
- Week 12: The primary runway operating configuration would be west flow arrival configuration O (arrivals on Runway 28C and departures on Runway 28R) with east flow arrival configuration M (arrivals on Runway 10C and departures on Runway 10L) serving as the secondary configuration.
- Week 13: The primary runway operating configuration would be east flow arrival configuration L (arrivals on Runway 4R and departures on Runway 4L) with west flow configuration I (arrivals on Runway 22R and departures on Runway 22L) serving as the secondary configuration. The use of a diagonally-orientated configuration would minimize additional effects on the communities affected during the prior two weeks.
- Week 14: The primary runway operating configuration would be east flow arrival configuration K (arrivals on Runway 10L and departures on Runway 9R) with west flow arrival configuration H (arrivals on Runway 27L and departures on Runway 28C) serving as the secondary configuration. The use of an east/west-orientated configuration would minimize additional effects on the communities affected during the prior week.
- Week 15: The primary runway operating configuration would be west flow arrival configuration I (arrivals on Runway 22R and departures on Runway 22L) with east flow arrival configuration L (arrivals on Runway 4R and departures on Runway 4L) serving as the secondary configuration.

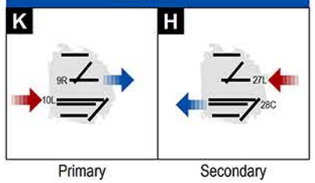
The use of a diagonally-orientated configuration would minimize additional effects on the communities affected during the prior week.

- Week 16: The primary runway operating configuration would be east flow arrival configuration M (arrivals on Runway 10C and departures on Runway 10L) with west flow arrival configuration O (arrivals on Runway 28C and departures on Runway 28R) serving as the secondary configuration. The use of an east/west-orientated configuration would minimize the additional effects on the communities affected during the prior week.
- Week 17: The primary runway operating configuration would be west flow arrival configuration H (arrivals on Runway 27L and departures on Runway 28C) with east flow arrival configuration K (arrivals on Runway 10L and departures on Runway 9R) serving as the secondary configuration.
- Week 18: The primary runway operating configuration would be east flow arrival configuration L (arrivals on Runway 4R and departures on Runway 4L) with west flow arrival configuration I (arrivals on Runway 22R and departures on Runway 22L) serving as the secondary configuration. The use of a diagonally-orientated configuration would minimize additional effects on the communities affected during the prior two weeks.
- Week 19: The primary runway operating configuration would be west flow arrival configuration O (arrivals on Runway 28C and departures on Runway 28R) with east flow arrival configuration M (arrivals on Runway 10C and departures on Runway 10L) serving as the secondary configuration. The use of an east/west-orientated configuration would minimize additional effects on the communities affected during the prior week.
- Week 20: The primary runway operating configuration would be west flow arrival configuration I (arrivals on Runway 22R and departures on Runway 22L) with east flow arrival configuration L (arrivals on Runway 4R and departures on Runway 4L) serving as the secondary configuration. The use of a diagonally-orientated configuration would minimize additional effects on the communities affected during the prior week.

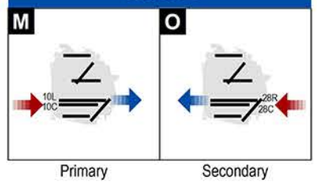
The rotation would then repeat every 20 weeks during the available period. The Revised Interim Fly Quiet 2 would not be available during construction of runway rehabilitation projects, which is expected to occur primarily during the summer months. When the Revised Interim Fly Quiet 2 restarts after a runway closure, the rotation would begin again at Week 1.

The graphic below outlines the Revised Interim Fly Quiet 2 Runway Rotation. For each week, a primary and secondary runway use configuration is provided to accommodate potential changes in wind direction.
The runway use configurations have been defined and approved by the ONCC to balance noise exposure to the extent possible. Special procedures have been defined to accommodate aircraft that require specific runways.

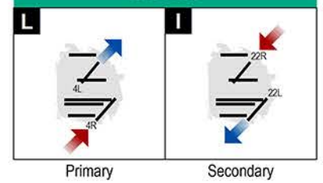
Parallel - East
Week 1



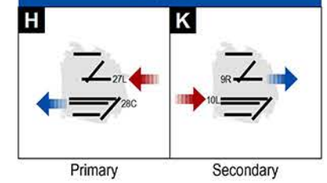
Parallel - East
Week 2



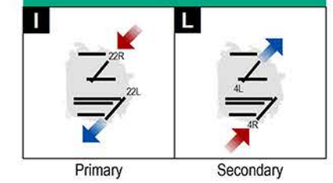
Diagonal - East
Week 3



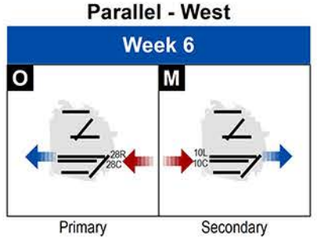
Parallel - West
Week 4



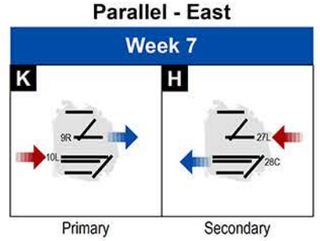
Diagonal - West
Week 5



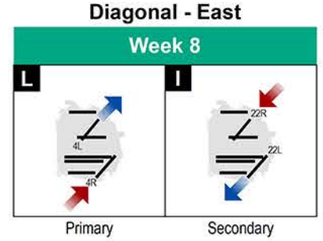
Parallel - West
Week 6



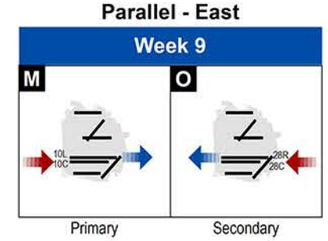
Parallel - East
Week 7



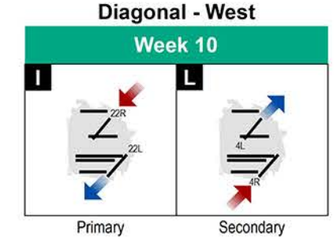
Diagonal - East
Week 8



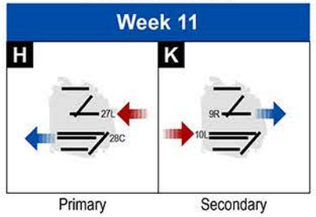
Parallel - East
Week 9



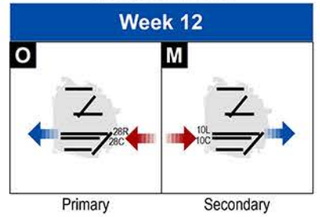
Diagonal - West
Week 10



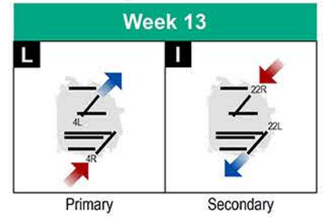
Parallel - West
Week 11



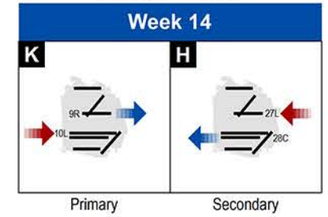
Parallel - West
Week 12



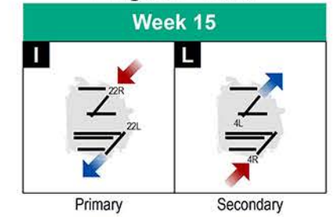
Diagonal - East
Week 13



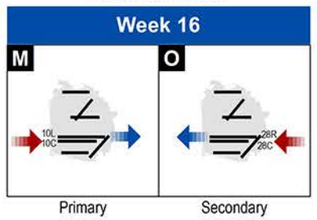
Parallel - East
Week 14



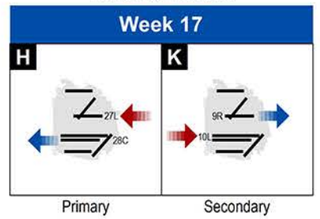
Diagonal - West
Week 15



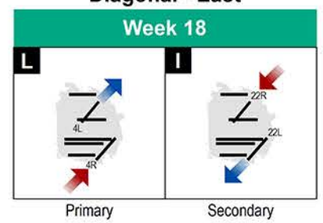
Parallel - East
Week 16



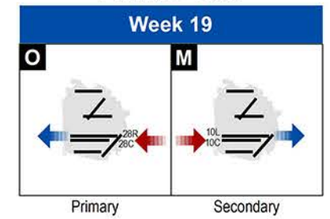
Parallel - West
Week 17



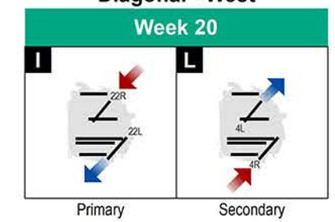
Diagonal - East
Week 18



Parallel - West
Week 19



Diagonal - West
Week 20



Notes
- Flights that require additional runway length should contact CDA Airfield Operations Division at a minimum of 2 hours prior to arrival or departure.
- Alternative runways may be used to allow for construction, snow removal, runway maintenance, runway inspection, and strong winds.
- Available runways are determined by CDA.

-Each weekly period would begin on Sunday evening at 10 p.m. or after when demand allows for one arrival and one departure runway.

Arrival
Departure

Source: CDA, HMMH

Chicago O'Hare International Airport
Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Revised Interim
Fly Quiet 2 Runway Rotation
(Nighttime Only)

▶ Exhibit C-10

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C.2.6.2 Revised Interim Fly Quiet 2 Data from Existing Fly Quiet

The following data remained unchanged between the Revised Interim Fly Quiet 2 and the Existing Fly Quiet:

- The airfield layout (see **Section C.2.3.1**)
- The modeled weather data (see **Section C.2.3.2**)
- The modeled aircraft fleet mix (see **Section C.2.3.4**)
- PMAD operations to AAD operations conversion (see **Section C.2.3.5**)
- The AEDT aircraft type assignment (see **Section C.2.3.6**)
- The stage lengths and ACCs for aircraft operations (See **Section C.2.3.7)**
- AEDT model flight tracks (see **Section C.2.3.9**)

C.3 SUMMARY OF AEDT INPUT DATA

The following section summarizes the data used as input for AEDT for the Existing Fly Quiet, Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1, and Revised Interim Fly Quiet 2 analyzed in this Re-Evaluation. This data includes the AAD aircraft operations by aircraft type, operation type (arrival or departure), and time of day.

C.3.1 Aircraft Operations

Table C-11 shows the number of aircraft arrivals and departures for the AAD by category of aircraft for all scenarios evaluated in this Re-Evaluation. Existing Fly Quiet, Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1, and Revised Interim Fly Quiet 2 all use the same level and periods of activity.

TABLE C-11
AVERAGE ANNUAL DAILY OPERATIONS

	Arrival (a,b)			Departure (a,b)			Total Operations (a,b)		
Aircraft Category	**Day**	**Night**	**Total**	**Day**	**Night**	**Total**	**Day**	**Night**	**Total**
Jet (non-wide-body)	964	115	1,079	993	84	1,077	1,957	199	2,156
Wide-body Jet	71	17	88	64	21	85	135	38	173
Propeller-driven	12	1	13	12	-	12	24	1	25
Total	**1,047**	**133**	**1,180**	**1,069**	**105**	**1,174**	**2,116**	**238**	**2,354**

Notes: (a) Data rounded to the nearest whole operation. Departures may not equal arrivals due to the use of actual operation data from TAAM.
(b) Day is 7:00 a.m. to 9:59 p.m.; night is defined as 10:00 p.m. to 6:59 a.m. (local)
Source: Ricondo & Associates, June 2018.

C.3.2 Aircraft Fleet Mix

Table C-12 shows the day and night split for AAD operations for each AEDT aircraft type category for Existing Fly Quiet, Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1, and Revised Interim Fly Quiet 2.

TABLE C-12
AVERAGE ANNUAL DAILY OPERATIONS BY AIRCRAFT TYPE AND PERIOD

Aircraft ID (AEDT) (b)	Description	Day (a)			Night (a)			Total Operations
		Arr (c)	Dep (c)	Total	Arr (c)	Dep (c)	Total	
Wide-Body Jets								
7478	Boeing 747-8F/GEnx-2B67	7.14	3.47	10.61	0.89	4.57	5.46	16.07
747400	Boeing 747-400/PW4056	5.36	5.31	10.67	1.79	0.94	2.73	13.40
767300	Boeing 767-300/PW4060	5.36	5.36	10.72	1.79	0.89	2.68	13.40
777200	Boeing 777-200Er/Ge90-90B	13.39	14.87	28.26	2.68	0.31	2.99	31.25
777300	Boeing 777-300/Trent892	1.79	2.68	4.47	2.68	2.68	5.36	9.83
767JT9	Boeing 767-200/JT9D-7R4D	0.89	0.89	1.78	0.89	0.89	1.78	3.56
7773ER	Boeing 777-300ER/GE90-115B-EIS	8.93	8.93	17.86	0.89	-	0.89	18.75
7878R	Boeing 787-8/T1000-C/01	14.29	11.51	25.80	-	3.67	3.67	29.47
A300-622R	A300-622R\PW4168	0.89	1.79	2.68	2.68	0.89	3.57	6.25
A330-301	A330-301\GE CF6-80 E1A2	4.46	3.52	7.98	-	0.94	0.94	8.92
A330-343	A330-343\RR Trent 772B	3.57	1.79	5.36	-	1.79	1.79	7.15
A340-642	A340-642\Trent 556	0.89	0.89	1.78	-	-	-	1.78
A380-841	A380-841\RR Trent970	0.89	0.89	1.78	-	-	-	1.78
A380-861	A380-861\EA GP7270	0.89	0.89	1.78	-	-	-	1.78
DC1010	DC10-10/CF6-6D	2.68	1.47	4.15	1.79	2.99	4.78	8.93
MD11GE	MD-11/CF6-80C2D1F	-	-	-	0.89	0.89	1.78	1.78
Subtotal		71.42	64.26	135.68	16.97	21.45	38.42	174.10
Jets (non-wide-body)								
717200	Boeing 717-200/BR 715	9.82	8.04	17.86	-	0.89	0.89	18.75
737700	Boeing 737-700/CFM56-7B24	5.36	6.25	11.61	0.89	0.89	1.78	13.39
737800	Boeing 737-800/CFM56-7B26	170.33	184.07	354.40	40.40	26.67	67.07	421.47
757RR	Boeing 757-200/RB211-535E4	6.25	13.34	19.59	7.14	2.73	9.87	29.46
A319-131	A319-131\IAE V2522-A5	42.77	43.17	85.94	1.88	1.47	3.35	89.29
A320-211	A320-211\CFM56-5A1	9.52	10.72	20.24	2.98	1.79	4.77	25.01
A320-232	A320-232\V2527-A5	63.00	61.25	124.25	3.97	6.61	10.58	134.83
A321-232	A321-232\V2530-A5	59.56	67.17	126.73	14.55	5.16	19.71	146.44

Aircraft ID (AEDT) (b)	Description	Day (a)			Night (a)			Total Operations
		Arr (c)	Dep (c)	Total	Arr (c)	Dep (c)	Total	
CIT3	CIT 3/TFE731-3-100S	-	0.89	0.89	-	-	-	0.89
CL600	CL600/ALF502L	40.98	38.35	79.33	3.66	5.41	9.07	88.40
CNA500	CIT 2/JT15D-4	0.89	0.89	1.78	-	-	-	1.78
CNA55B	Cessna 550 Citation Bravo / PW530A	2.68	0.89	3.57	0.89	-	0.89	4.46
CNA560E	Cessna Citation Encore 560 / PW535A	1.79	0.89	2.68	-	0.89	0.89	3.57
CNA560U	Cessna Citation Ultra 560 / JT15D-5D	-	0.89	0.89	-	-	-	0.89
CNA680	Cessna Model 680 Sovereign / PW306C	0.89	0.89	1.78	-	-	-	1.78
CNA750	Citation X / Rolls Royce Allison AE3007C	3.57	2.68	6.25	-	-	-	6.25
COMJET	1985 BUSINESS JET	0.89	-	0.89	-	-	-	0.89
CRJ9-ER	CL-600-2D15/CL-600-2D24/CF34-8C5	190.30	191.31	381.61	11.51	13.17	24.68	406.29
EMB145	Embraer 145 ER/Allison AE3007	191.21	202.13	393.34	15.06	5.03	20.09	413.43
EMB170	ERJ170-100	118.50	114.94	233.44	8.30	9.18	17.48	250.92
EMB190	ERJ190-100	8.67	7.14	15.81	0.26	1.79	2.05	17.86
GV	Gulfstream GV/BR 710	2.68	1.79	4.47	-	0.89	0.89	5.36
IA1125	ASTRA 1125/TFE731-3A	2.68	1.79	4.47	-	-	-	4.47
LEAR35	LEAR 36/TFE731-2	3.57	5.36	8.93	-	-	-	8.93
MD82	MD-82/JT8D-217A	20.54	18.70	39.24	0.89	0.05	0.94	40.18
MD83	MD-83/JT8D-219	5.36	7.46	12.82	2.68	1.47	4.15	16.97
MD9025	MD-90/V2525-D5	0.89	0.89	1.78	-	-	-	1.78
MU3001	MU300-10/JT15D-5	0.84	0.89	1.73	0.05	-	0.05	1.78
Subtotal		963.54	992.78	1,956.32	115.11	84.09	199.20	2,155.52
Propeller-driven								
CNA182	Cessna 182H / Continental O-470-R	0.89	-	0.89	-	-	-	0.89
CNA208	Cessna 208 / PT6A-114	8.93	9.82	18.75	0.89	-	0.89	19.64
CNA441	CONQUEST II/TPE331-8	0.89	0.89	1.78	-	-	-	1.78
DHC6	DASH 6/PT6A-27	0.89	0.89	1.78	-	-	-	1.78
Subtotal		11.60	11.60	23.20	0.89	-	0.89	24.09
Grand Total		1,046.56	1,068.64	2,115.20	132.97	105.54	238.51	2,353.71

Notes: (a) Day is defined as 7:00 a.m. to 9:59 p.m.; night is defined as 10:00 p.m. to 06:59 a.m. (local).
(b) For noise modeling purposes, aircraft are assigned AEDT aircraft codes based on aircraft model and engine type. Several AEDT codes may apply to the same aircraft model because of different types of engines used.
(c) Arr = Arrivals, Dep = Departures. Departures may not equal arrivals due to the splitting of general aircraft types, as described in airline schedules, among the more numerous and detailed AEDT codes.
Source: TAAM, HMMH analysis, August 2018.

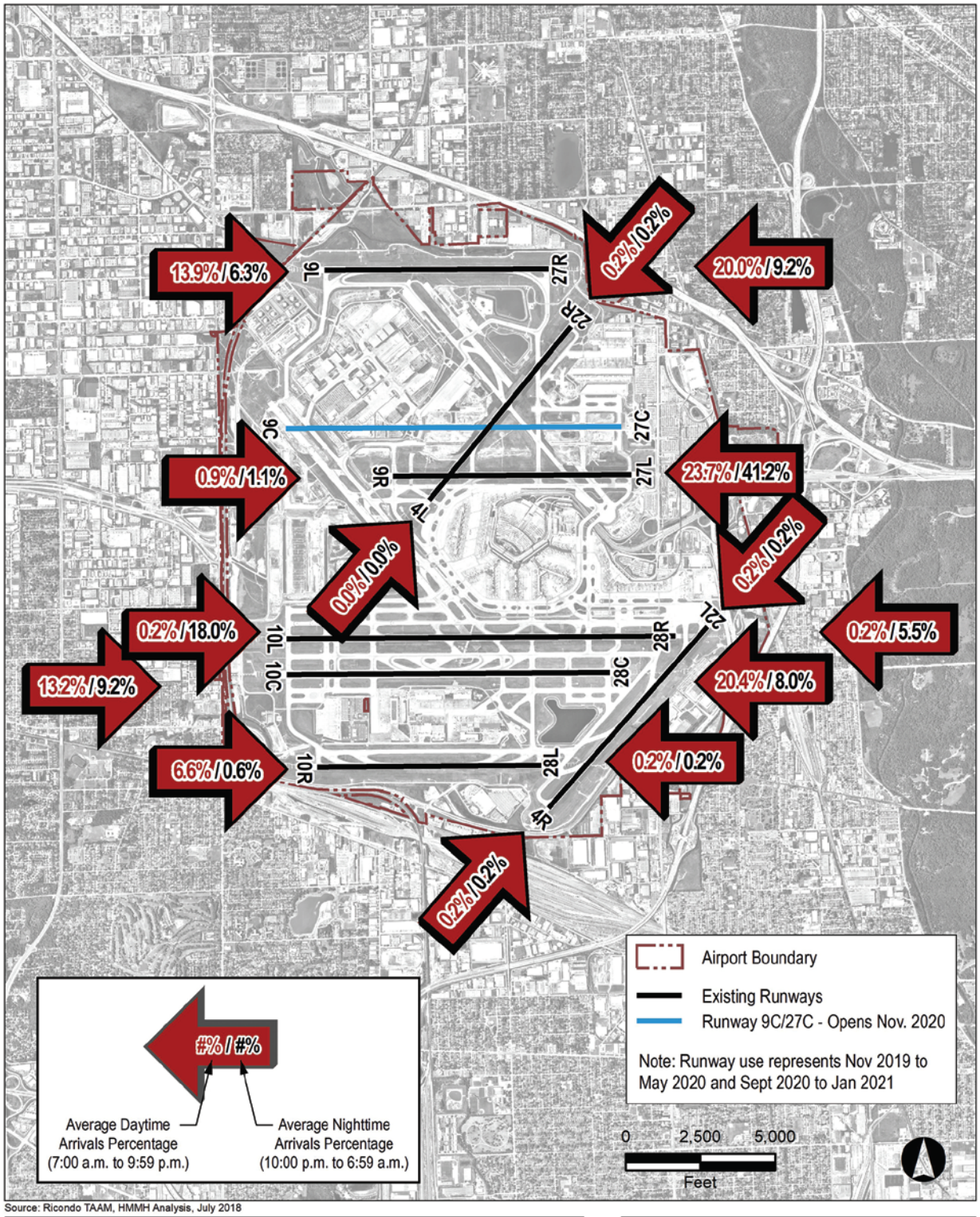
C.3.3 Runway Use

Table C-13 presents the runway utilization percentages for the Existing Fly Quiet. **Exhibit C-11** and **Exhibit C-12** graphically depict the runway use for arrivals and departures, respectively.

TABLE C-13
RUNWAY USE PERCENTAGES FOR EXISTING FLY QUIET

	Arrival (a)		Departure (a)		Overall (a)	
Runway ID	**Day (%)**	**Night (%)**	**Day (%)**	**Night (%)**	**Day (%)**	**Night (%)**
04L	-	-	0.2	0.4	0.1	0.2
04R	0.2	0.2	0.2	0.2	0.2	0.2
09L	13.9	6.3	0.2	0.2	7.0	3.6
09R	0.9	1.1	16.2	21.6	8.7	10.2
10C	13.2	9.2	0.2	1.6	6.6	5.9
10L	0.2	18.0	0.9	7.2	0.5	13.2
10L(Int) (b)	-	-	16.9	4.9	8.5	2.2
10R	6.6	0.6	0.2	0.2	3.4	0.4
22L	0.2	0.2	27.2	14.8	13.9	6.7
22R	0.2	0.2	-	-	0.1	0.1
27L	23.7	41.2	0.2	0.2	11.8	23.1
27R	20.0	9.2	0.2	0.2	10.0	5.2
28C	20.4	8.0	0.2	4.0	10.2	6.2
28L	0.2	0.2	0.2	0.2	0.2	0.2
28R	0.2	5.5	2.0	37.3	1.1	19.6
28R(Int) (b)	-	-	35.0	7.0	17.7	3.1
Total (c)	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Notes: (a) Day is defined as 7:00 a.m. to 9:59 p.m.; night is defined as 10:00 p.m. to 6:59 a.m. (local).
(b) The "(Int.)" notation means intersection departures from that runway.
(c) Some totals may not equal 100% due to rounding.
Source: Ricondo & Associates TAAM data packages, June 2018, FAA.



Source: Ricondo TAAM, HMMH Analysis, July 2018

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Existing Fly Quiet Arrival Runway Use

▶ Exhibit C-11

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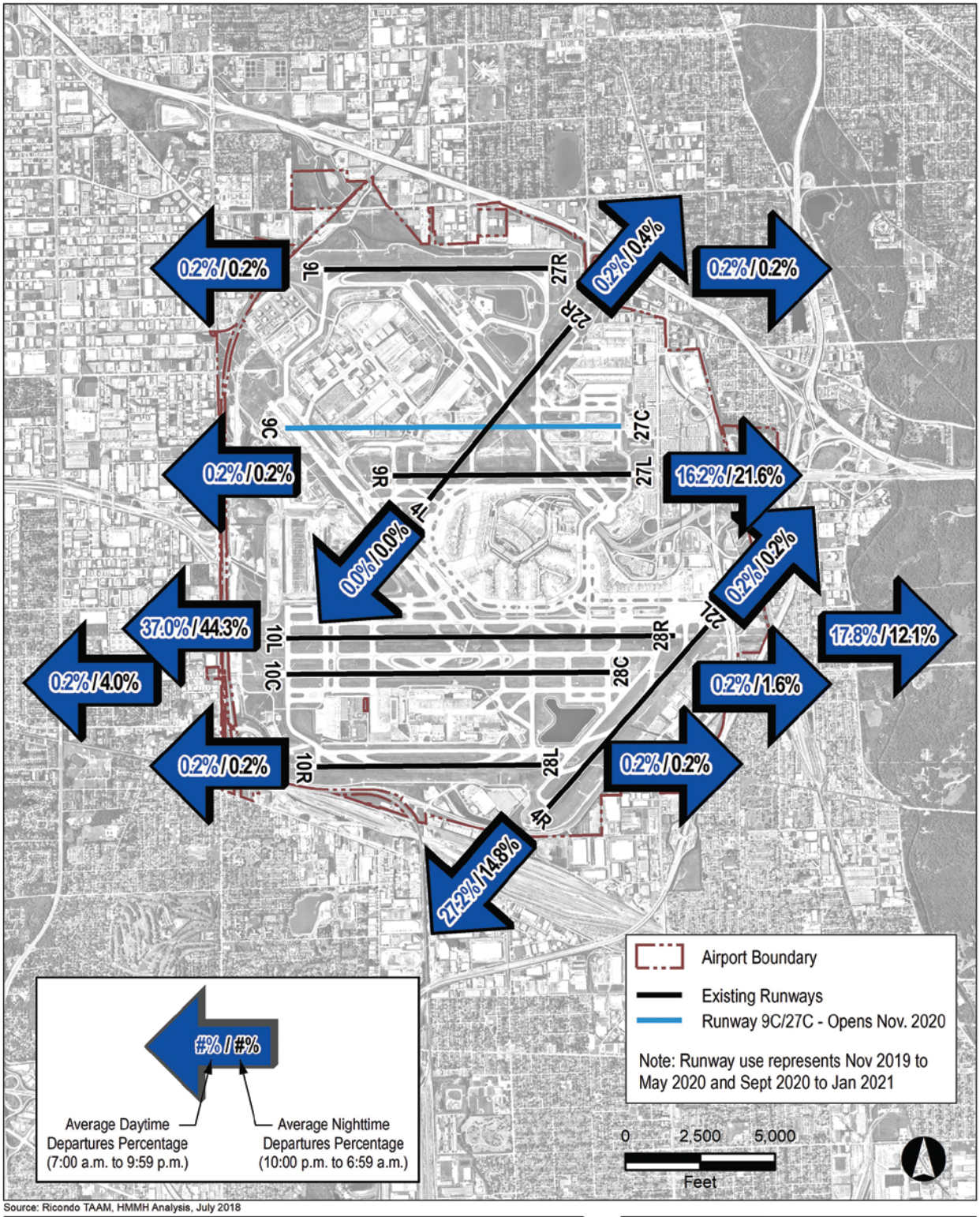

Source: Ricondo TAAM, HMMH Analysis, July 2018

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Existing Fly Quiet Departure Runway Use

▶ Exhibit C-12

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Table C-14 presents the runway utilization percentages for the Proposed Interim Fly Quiet. **Exhibit C-13** and **Exhibit C-14** graphically depict the runway use for arrivals and departures, respectively.

TABLE C-14
RUNWAY USE PERCENTAGES FOR PROPOSED INTERIM FLY QUIET

Runway ID	Arrival (a)		Departure (a)		Overall (a)	
	Day (%)	Night (%)	Day (%)	Night (%)	Day (%)	Night (%)
04L	-	-	0.2	3.0	0.1	1.3
04R	0.2	5.0	0.2	0.2	0.2	2.9
09L	13.9	6.3	0.2	0.2	7.0	3.6
09R	0.9	0.3	16.2	16.1	8.7	7.3
10C	13.2	16.1	0.2	1.2	6.6	9.5
10L	0.2	7.1	0.9	9.0	0.5	7.9
10L(Int) (b)	-	-	16.9	6.4	8.5	2.8
10R	6.6	0.6	0.2	0.2	3.4	0.4
22L	0.2	0.2	27.2	20.2	13.9	9.0
22R	0.2	10.6	-	-	0.1	5.9
27L	23.7	22.3	0.2	0.2	11.8	12.5
27R	20.0	9.2	0.2	0.2	10.0	5.2
28C	20.4	19.4	0.2	5.4	10.2	13.2
28L	0.2	0.2	0.2	0.2	0.2	0.2
28R	0.2	2.6	2.0	26.9	1.1	13.4
28R(Int) (b)	-	-	35.0	10.6	17.7	4.7
Total (c)	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Notes: (a) Day is defined as 7:00 a.m. to 9:59; night is defined as 10:00 p.m. to 6:59 a.m. (local).
(b) The "(Int.)" notation means intersection departures from that runway.
(c) Some totals may not equal 100% due to rounding.

Source: Ricondo & Associates TAAM data packages, June 2018, FAA, CDA Runway Use Process.

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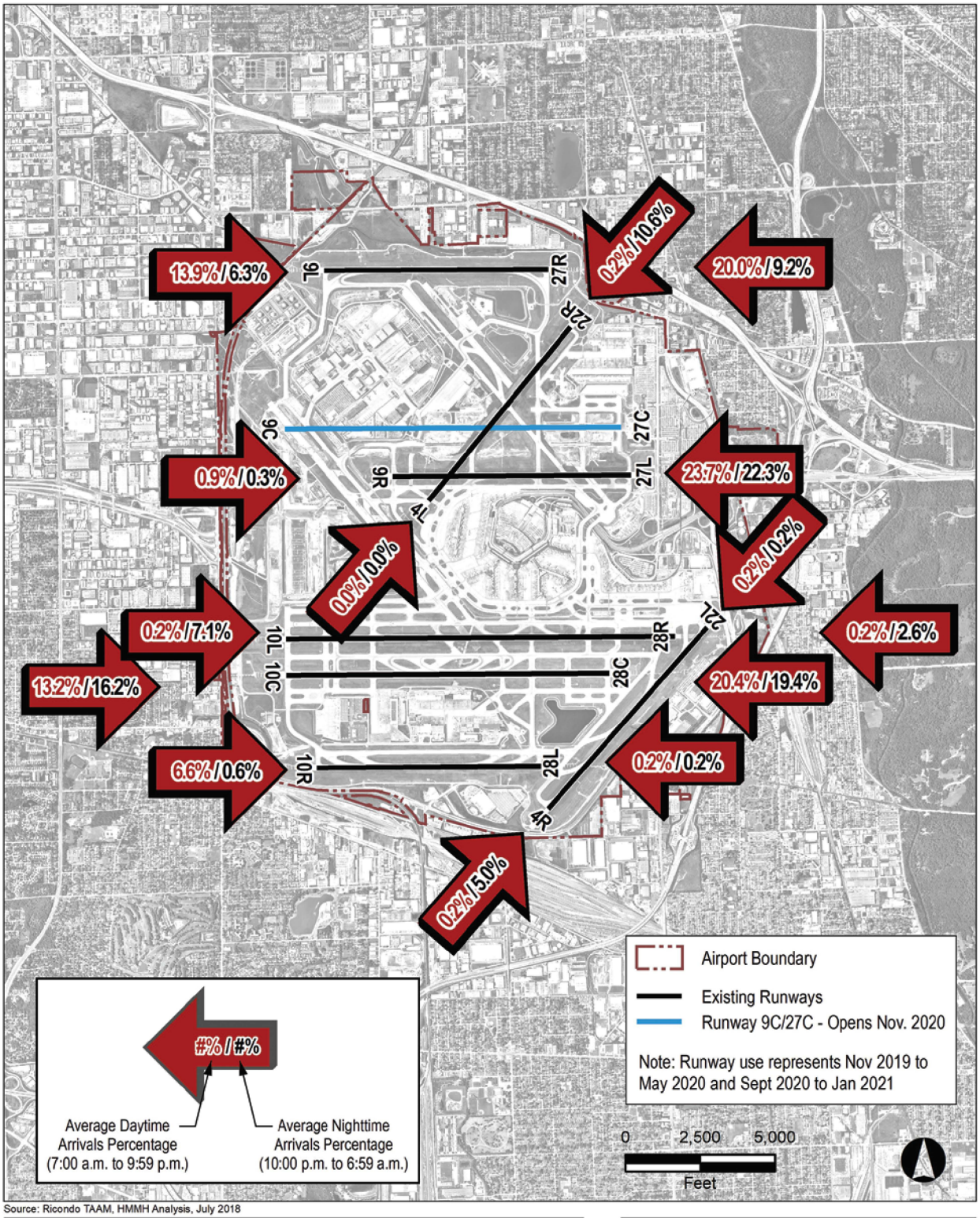

Source: Ricondo TAAM, HMMH Analysis, July 2018

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Proposed Interim Fly Quiet Arrival Runway Use

▶ Exhibit C-13

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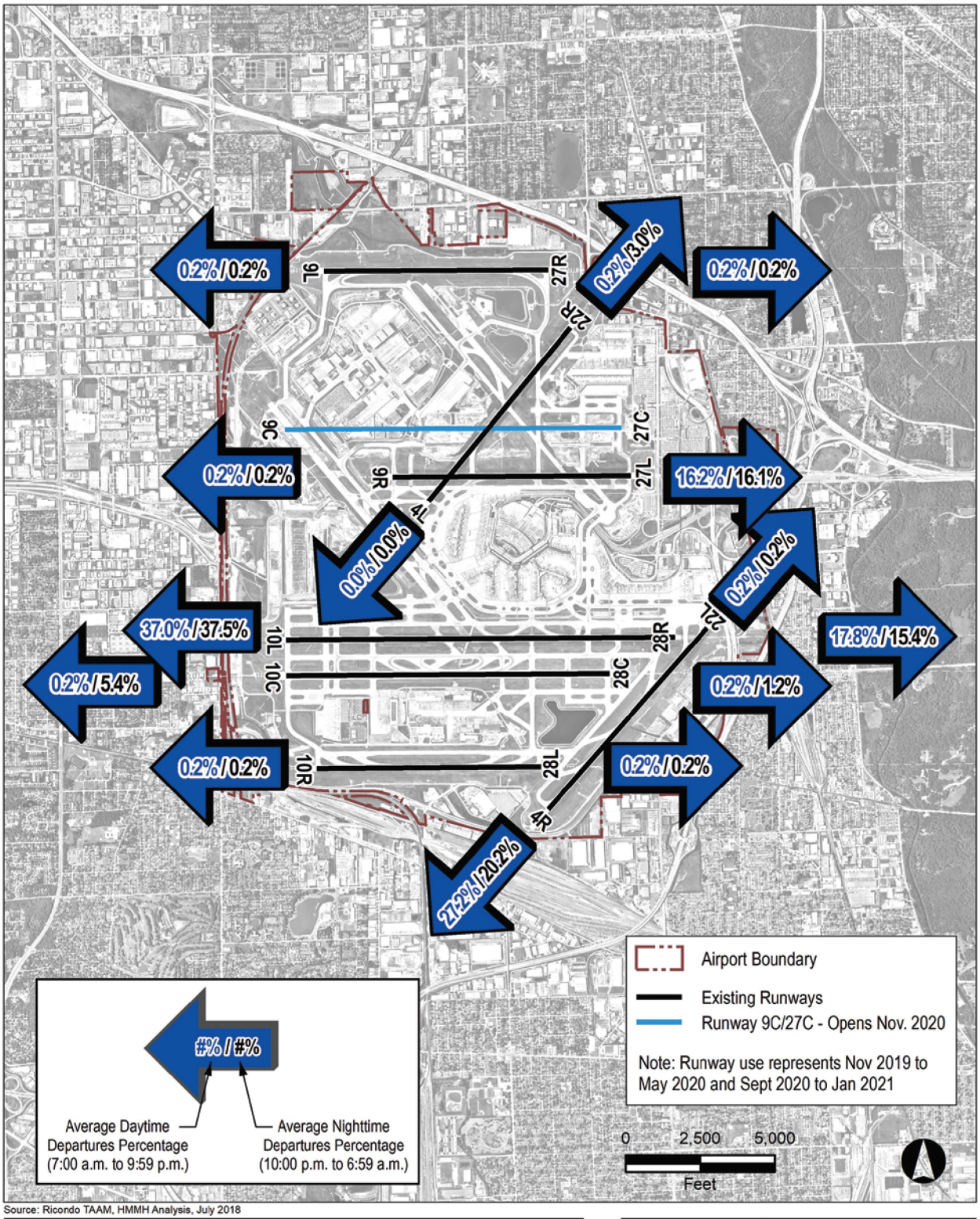

Source: Ricondo TAAM, HMMH Analysis, July 2018

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Proposed Interim Fly Quiet Departure Runway Use

▶ Exhibit C-14

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Table C-15 presents the runway utilization percentages for Revised Interim Fly Quiet 1. **Exhibit C-15** and **Exhibit C-16** graphically depict the runway use for arrivals and departures, respectively.

TABLE C-15
RUNWAY USE PERCENTAGES FOR REVISED INTERIM FLY QUIET 1

Runway ID	Arrival (a)		Departure (a)		Overall (a)	
	Day (%)	Night (%)	Day (%)	Night (%)	Day (%)	Night (%)
04L	-	-	0.2	1.9	0.1	0.8
04R	0.2	3.1	0.2	0.2	0.2	1.8
09L	13.9	6.3	0.2	0.2	7.0	3.6
09R	0.9	0.3	16.2	16.7	8.7	7.6
10C	13.2	17.1	0.2	1.2	6.6	10.1
10L	0.2	8.0	0.9	9.6	0.5	8.7
10L(Int) (b)	-	-	16.9	6.3	8.5	2.8
10R	6.6	0.6	0.2	0.2	3.4	0.4
22L	0.2	0.2	27.2	17.9	13.9	8.0
22R	0.2	6.6	-	-	0.1	3.7
27L	23.7	24.2	0.2	0.2	11.8	13.6
27R	20.0	9.2	0.2	0.2	10.0	5.2
28C	20.4	21.8	0.2	6.5	10.2	15.0
28L	0.2	0.2	0.2	0.2	0.2	0.2
28R	0.2	2.3	2.0	28.0	1.1	13.7
28R(Int) (b)	-	-	35.0	10.6	17.7	4.7
Total (c)	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Notes: (a) Day is defined as 7:00 a.m. to 9:59; night is defined as 10:00 p.m. to 6:59 a.m. (local).
(b) The "(Int.)" notation means intersection departures from that runway.
(c) Some totals may not equal 100% due to rounding.

Source: Ricondo & Associates TAAM data packages, June 2018, FAA, CDA Runway Use Process.

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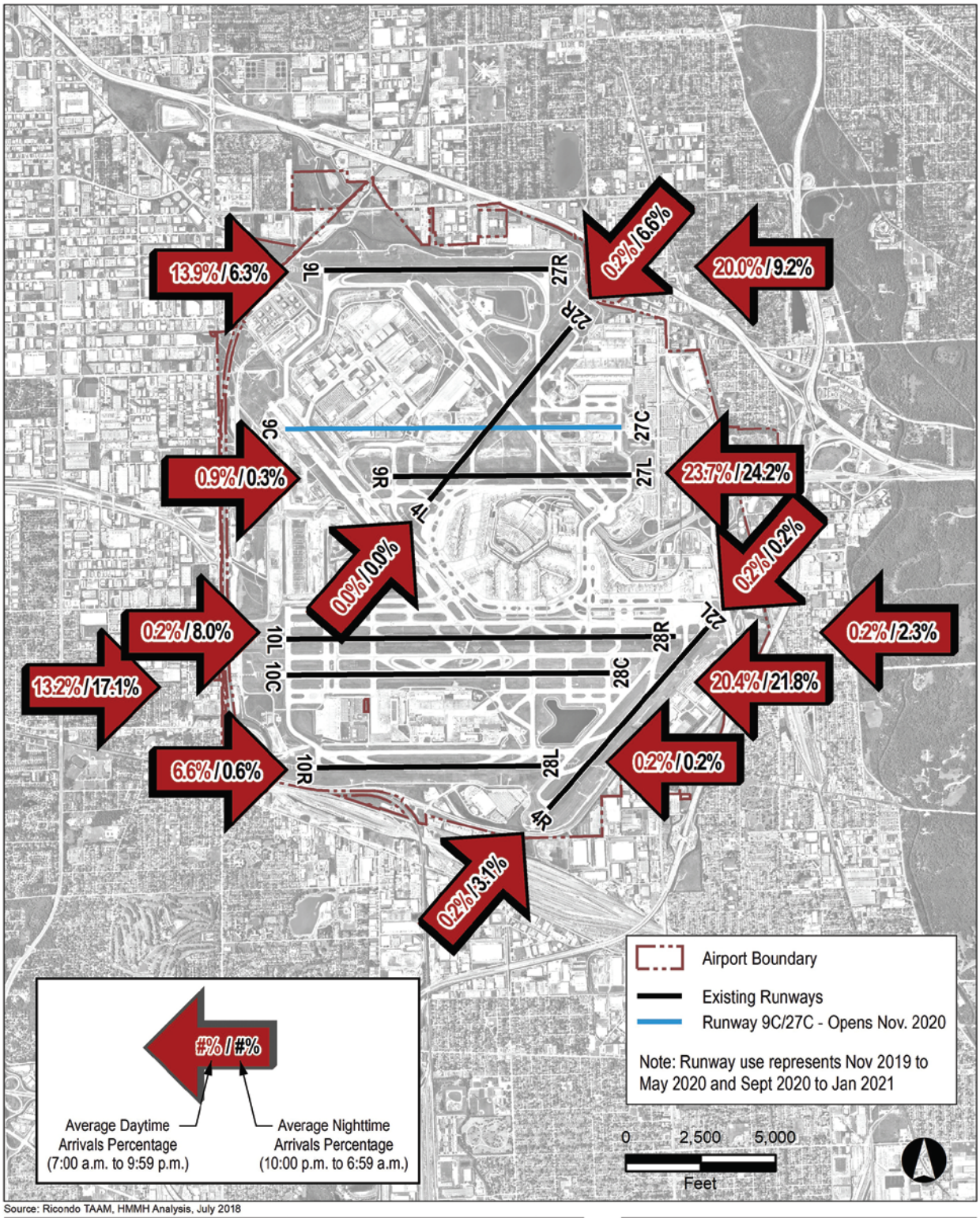

Source: Ricondo TAAM, HMMH Analysis, July 2018

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Revised Interim Fly Quiet 1
Arrival Runway Use

▶ Exhibit C-15

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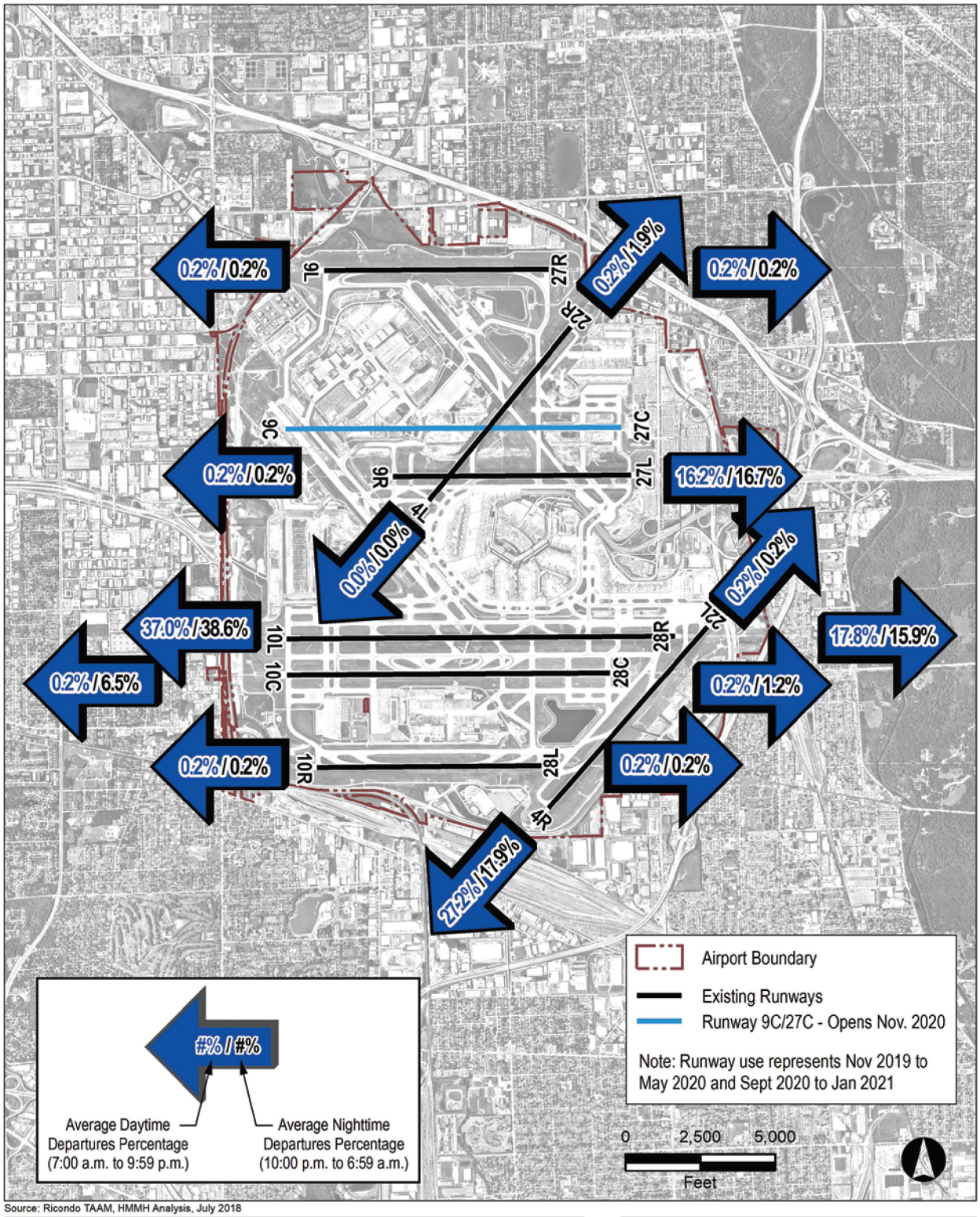

Source: Ricondo TAAM, HMMH Analysis, July 2018

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Revised Interim Fly Quiet 1 Departure Runway Use

▶ Exhibit C-16

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Table C-16 presents the runway utilization percentages for Revised Interim Fly Quiet 2. **Exhibit C-17** and **Exhibit C-18** graphically depict the runway use for arrivals and departures, respectively.

TABLE C-16
RUNWAY USE PERCENTAGES FOR REVISED INTERIM FLY QUIET 2

Runway ID	Arrival (a)		Departure (a)		Overall (a)	
	Day (%)	Night (%)	Day (%)	Night (%)	Day (%)	Night (%)
04L	-	-	0.2	2.4	0.1	1.1
04R	0.2	4.1	0.2	0.2	0.2	2.4
09L	13.9	6.3	0.2	0.2	7.0	3.6
09R	0.9	0.3	16.2	16.6	8.7	7.5
10C	13.2	16.4	0.2	1.3	6.6	9.7
10L	0.2	7.7	0.9	9.1	0.5	8.3
10L(Int) (b)	-	-	16.9	6.4	8.5	2.8
10R	6.6	0.6	0.2	0.2	3.4	0.4
22L	0.2	0.2	27.2	18.9	13.9	8.5
22R	0.2	8.3	-	-	0.1	4.6
27L	23.7	23.5	0.2	0.2	11.8	13.2
27R	20.0	9.2	0.2	0.2	10.0	5.2
28C	20.4	20.7	0.2	6.0	10.2	14.2
28L	0.2	0.2	0.2	0.2	0.2	0.2
28R	0.2	2.4	2.0	27.5	1.1	13.5
28R(Int) (b)	-	-	35.0	10.6	17.7	4.7
Total (c)	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Notes: (a) Day is defined as 7:00 a.m. to 9:59; night is defined as 10:00 p.m. to 6:59 a.m. (local).
(b) The "(Int.)" notation means intersection departures from that runway.
(c) Some totals may not equal 100% due to rounding.

Source: Ricondo & Associates TAAM data packages, June 2018, FAA, CDA Runway Use Process.

C.4 NOISE CONTOUR RESULTS

This section provides a description of projected noise exposure in the area around O'Hare from the Existing Fly Quiet, Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1, and Revised Interim Fly Quiet 2.

C.4.1 Methodology

FAA's publicly available AEDT was used to generate lines of equal DNL, i.e., DNL contours, resulting from aircraft operations and to evaluate effects of that noise. The AEDT also was used to compute the DNL value at locations of particular interest in order to conduct analyses of noise-sensitive sites.

C.4.2 Aircraft Noise Exposure for Existing Fly Quiet

Table C-17 provides estimates of the total area, noise sensitive sites, population, and housing unit counts exposed to aircraft noise of at least 65 DNL. As presented, the area exposed to DNL of at least 65 dB is approximately 9,063 acres. Land exposed to DNL of at least 65 dB includes nearly 836 acres of single-family residential use, approximately 56 acres of multi-family residential use, and nearly 447 acres of public parks.

The Existing Fly Quiet area exposed to greater than or equal to 65 DNL includes 24 noise sensitive sites including four schools all of which have been sound insulated by the CDA. The Existing Fly Quiet exposes 14,232 people and 5,054 housing units to greater than or equal to 65 DNL. Of the 5,054 housing units, 4,124 have been sound insulated by the CDA.

Exhibit C-19 depicts the 65, 70, and 75 DNL contours for the Existing Fly Quiet. The 65 DNL contour has three lobes that extend to the east: 1) From Runway 9L/27R extending approximately 2,000 feet past Interstate 294, 2) From Runway 9R/27L along Interstate 90 nearly to North Osage Avenue and 3) From Runways 10R/28L and 10C/28C through Norridge past Route 171 almost to Prospect Avenue.

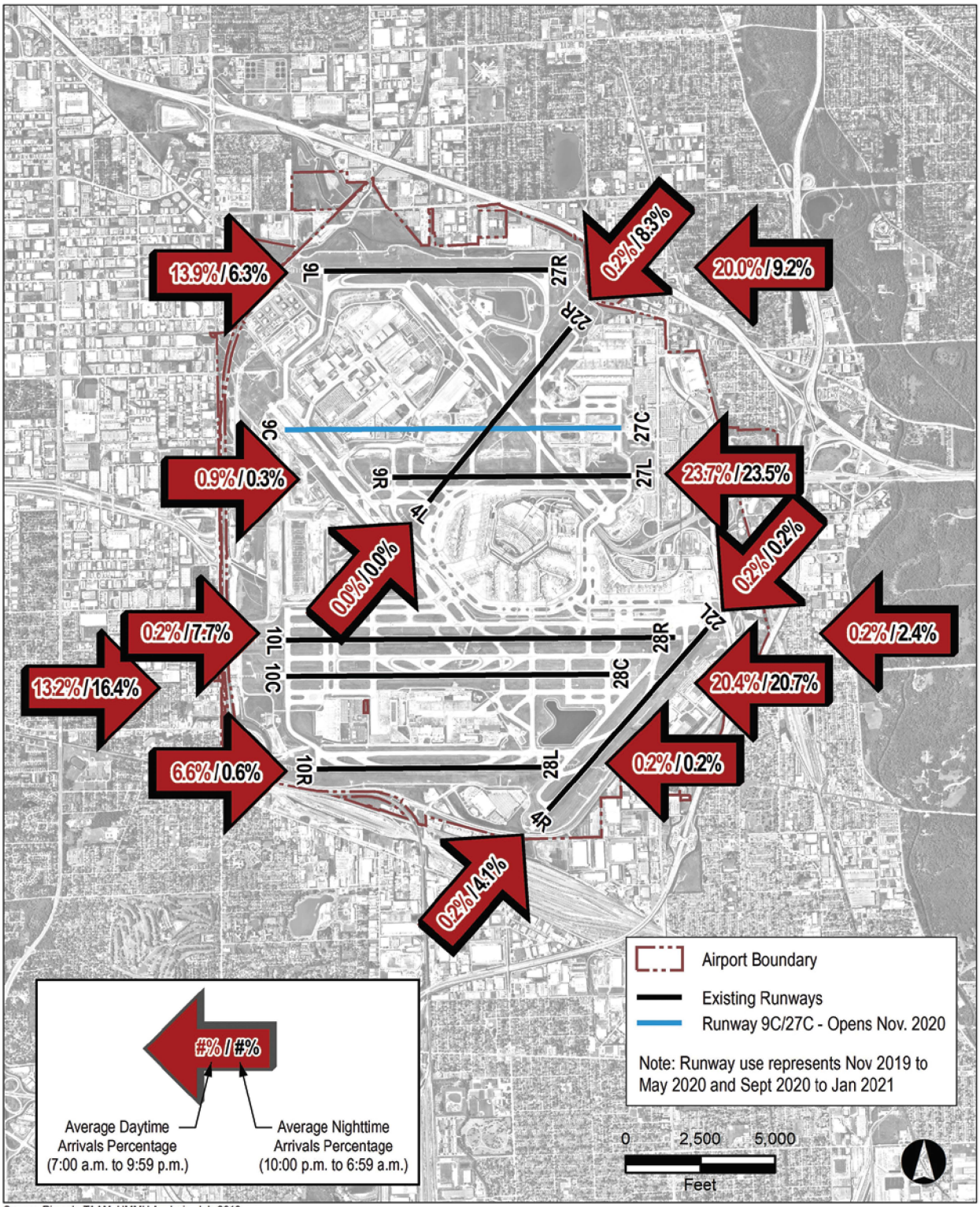
To the south, the 65 DNL contour extends nearly to Wellington Avenue due to departures from Runway 22L heading to the south and east. To the west, the 65 DNL contour extends west from Runway 10L/28R to West Green Street. The 65 DNL contour also extends west from Runways 10R/28L and 10C/28C into Bensenville, out through Wood Dale, and into Itasca remaining just north of Route 19 almost to South Prospect Avenue. Lastly, the 65 DNL contour extends west from Runway 9L/27R almost to Busse Road.

The 70 DNL contour has three lobes that extend to the east. One lobe is from Runway 9L/27R extending to Interstate 90. The second lobe is from Runway 9R/27L along the Kennedy Expressway to the interchange with North River Road and the third lobe is from Runway 10R/28L and 10C/28C ending between Forster Avenue and North River Road.

To the south, the 70 DNL contour extends over the railroad tracks due to departures from Runway 22L heading to the south and east. To the west, the 70 DNL contour extends west from Runways 10R/28L and 10C/28C into Bensenville almost to North Poplar Avenue.

Only airport and industrial land uses are exposed to DNL greater than or equal to 75 dB.

Exhibit C-20 shows the DNL contours for Existing Fly Quiet with O'Hare's residential sound insulation program.



Source: Ricondo TAAM, HMMH Analysis, July 2018

Chicago O'Hare International Airport
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Revised Interim Fly Quiet 2
Arrival Runway Use

▶ Exhibit C-17

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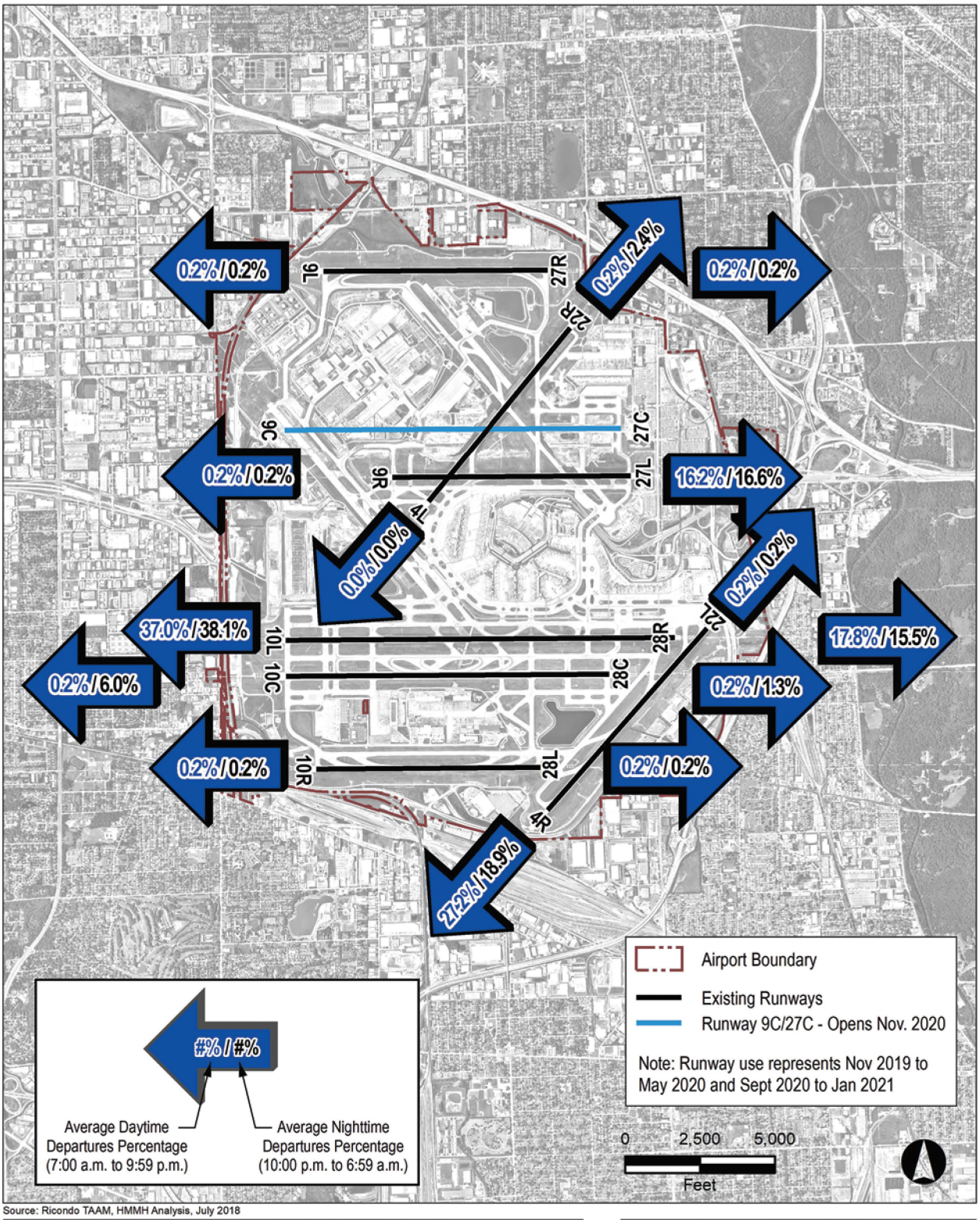

Source: Ricondo TAAM, HMMH Analysis, July 2018

Chicago O'Hare International Airport
Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Revised Interim Fly Quiet 2 Departure Runway Use

▶ Exhibit C-18

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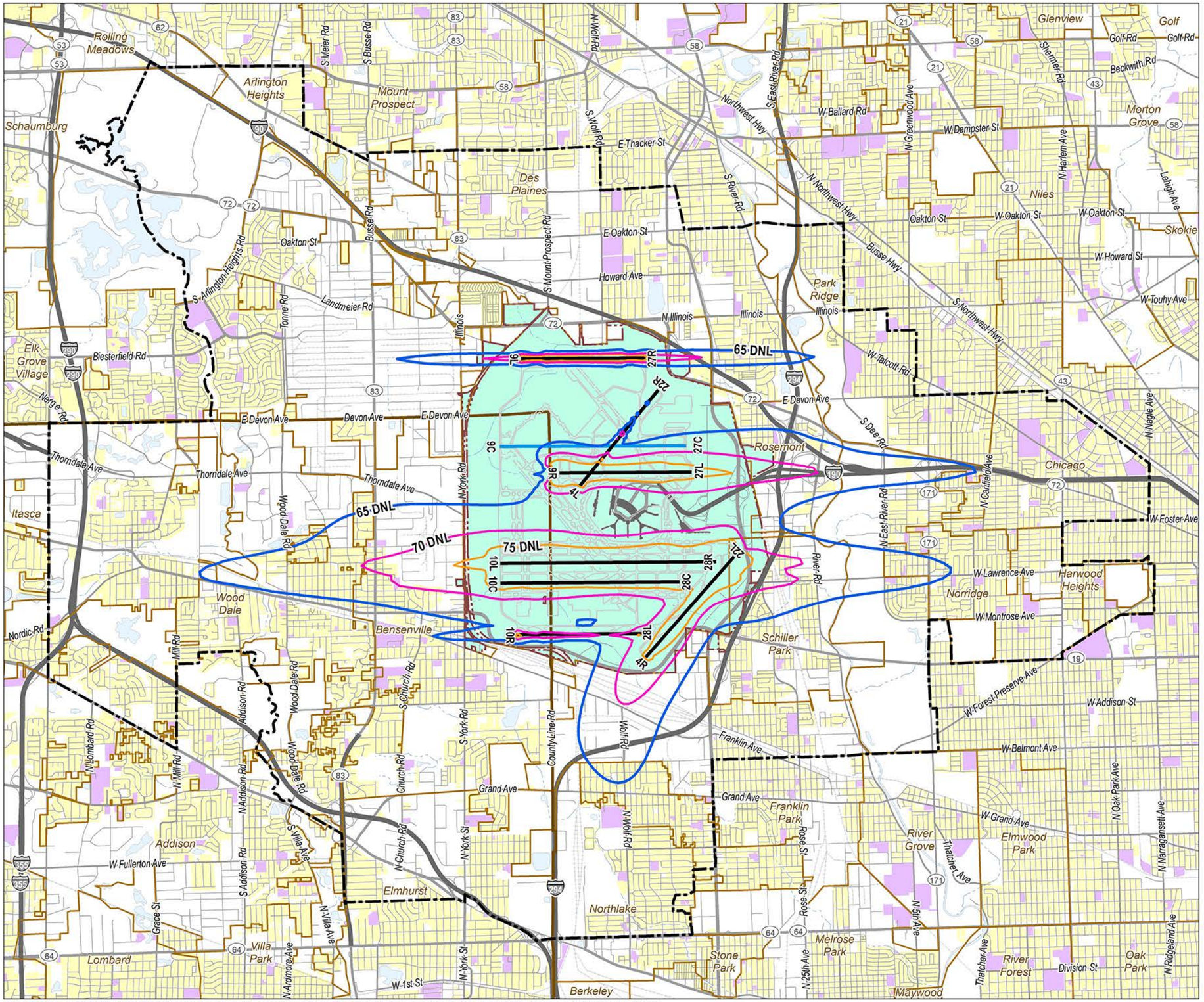

Source: HMMH, Landrum & Brown, Ricondo & Associates, NearMap US Inc., Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, Environmental Systems Research Institute

Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

- Existing Fly Quiet 65 DNL Noise Contour
- Existing Fly Quiet 70 DNL Noise Contour
- Existing Fly Quiet 75 DNL Noise Contour
- Project Area
- Airport Boundary
- Existing Runways
- Runway 9C/27C - Opens Nov. 2020

Land Use

- Residential
- Public, Hospital, Institutional
- Compatible
- Water
- County Boundary
- Community Boundary
- Highway
- Primary Roads
- Secondary Roads
- Local Roads
- Railroad Lines

Note: DNL contours represent November 2019 to May 2020 and September 2020 to January 2021

0 1 2 Miles

Existing Fly Quiet DNL Noise Contours

▶ Exhibit C-19

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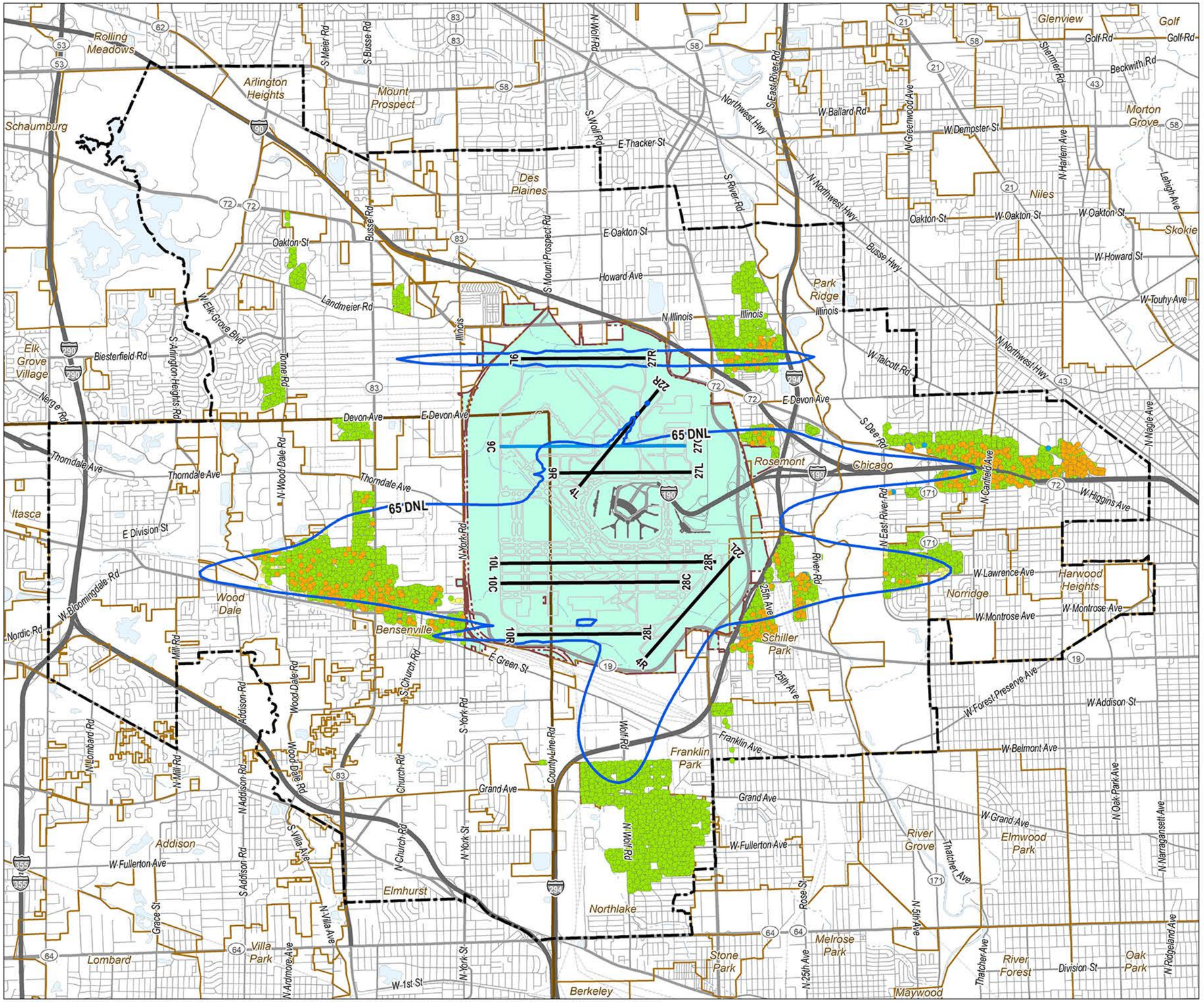

Source: HMMH, Landrum & Brown, Ricondo & Associates, NearMap US Inc., Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, Environmental Systems Research Institute

Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Existing Fly Quiet 65 DNL Noise Contour

Residential Sound Insulation Status

- Insulated
- Partially Insulated
- Pending
- Not Insulated

Project Area

Airport Boundary

Existing Runways

Runway 9C/27C - Opens Nov. 2020

County Boundary

Community Boundary

Highway

Primary Roads

Secondary Roads

Local Roads

Railroad Lines

Note: DNL contour represents November 2019 to May 2020 and September 2020 to January 2021

0 1 2

Miles

Existing Fly Quiet DNL Noise Contour with Residential Sound Insulation Program

▶ Exhibit C-20

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TABLE C-17
NOISE EXPOSURE FOR EXISTING FLY QUIET

		DNL Contour Bands			
Land Use (Acres)	**Compatibility**	**65-70**	**70-75**	**75+**	**Total**
Single-Family	Noncompatible	802.0	33.8	-	835.8
Multi-Family		36.0	20.2	-	56.2
Mobile Homes		-	-	-	-
Commercial	Compatible	278.5	15.2	-	293.7
Industrial		2,011.3	525.0	14.4	2,550.7
Public Parks		446.5	0.4	-	446.9
Institutional (see note 1)		29.1	5.9	-	35.0
Undeveloped		110.1	10.0		120.1
Airport		2,102.8	1,274.9	1,336.4	4,714.1
Water		10.9	-	-	10.9
	Total	**5,827.2**	**1,885.4**	**1,350.8**	**9,063.4**
Noise-Sensitive Facilities (Count)					
Public Parks		7	1	-	8
Historic Properties		5	-	1	6
Places of Worship		5	-	-	5
Nursing Homes		-	-	-	-
Hospitals		-	-	-	-
Libraries		1	-	-	1
Universities		-	-	-	-
Schools		3	1	-	4
Sound-insulated Schools (included above)		*3*	*1*	-	*4*
	Total	**21**	**2**	**1**	**24**
Population and Housing Units (Count)					
Population		12,389	1,843	-	14,232
Housing Units		4,423	631	-	5,054
Non-mitigated single-family housing units (included above)		*527*	*8*	-	*535*
Non-mitigated multi-family housing units (included above)		*364*	*31*	-	*395*
Sound-insulated single-family housing units (included above)		*2,921*	*203*	-	*3,124*
Sound-insulated multi-family housing units (included above)		*611*	*389*	-	*1,000*

Note 1: For the purposes of this document, Institutional land use is considered compatible.

Sources: ORD_RSIP_August 2018 database: City of Chicago.
2010 U.S. Census Bureau Census Block Population Data.
Existing Fly Quiet Contour, Land Use, Noise-Sensitive Facilities, Population and Housing data: HMMH Analysis, April 2019.

C.4.3 Aircraft Noise Exposure for Proposed Interim Fly Quiet

Table C-18 provides the estimates of the total area, noise sensitive sites, population, and housing unit counts that would be exposed to aircraft noise of at least 65 DNL. As presented, the area exposed to DNL of at least 65 dB would be approximately 9,072 acres. This land area would include approximately 832 acres of single-family residential use, nearly 65 acres of multi-family residential use, and nearly 379 acres of public parks.

The Proposed Interim Fly Quiet area exposed to greater than or equal to 65 DNL would include 24 noise sensitive sites including four schools, all of which have been sound insulated by the CDA. The Proposed Interim Fly Quiet would expose 15,680 people and 5,623 housing units to greater than or equal to 65 DNL. Of the 5,623 housing units, 4,120 have been sound insulated by the CDA.

Exhibit C-21 depicts the 65, 70, and 75 DNL contours for the Proposed Interim Fly Quiet. The 65 DNL contour has three lobes extending to the east. One lobe from Runway 9L/27R extends approximately 1,800 feet past Interstate 294. The second lobe extends from Runway 9R/27L east along Interstate 90 to North East River Road and the third lobe from Runways 10R/28L and 10C/28C extends through Norridge past North Canfield Avenue to just past Ozanam Avenue.

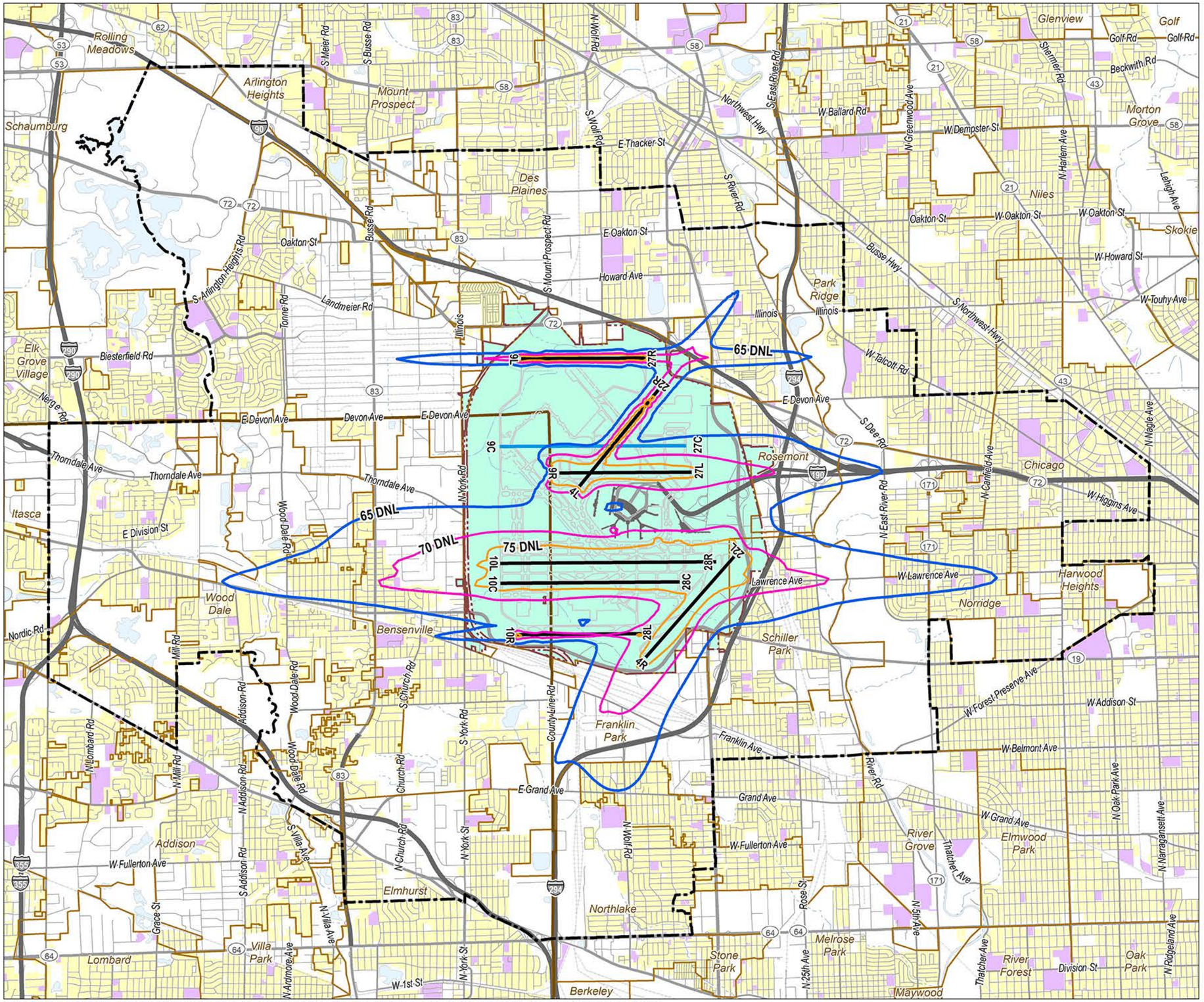
To the south, the 65 DNL contour extends nearly to West Grand Avenue due to departures from Runway 22L heading to the south and east. Due to arrivals to Runway 4R, the 65 DNL extends to the southwest almost to County Line Road. To the west, the 65 DNL contour extends from Runway 10R/28L to West Green Street. The 65 DNL contour also extends west from Runways 10L/28R and 10C/28C into Bensenville, through Wood Dale, and south to Route 19's intersection with Miller Lane. The 65 DNL contour extends west from Runway 9L/27R east of Busse Road. It also extends to the northeast from Runway 4L/22R into Des Plaines ending south of Fargo Street.

The 70 DNL contour has three lobes extending to the east. One lobe from Runway 9L/27R extends just past Interstate 90 toward Mannheim Road. The second lobe extends from Runway 9R/27L along the Kennedy Expressway to the interchange with Interstate 294 and the third, from Runways 10R/28L and 10C/28C, extends along West Lawrence Avenue ending east of North River Road.

To the south, the 70 DNL contour extends south of Franklin Avenue due to departures from Runway 22L heading to the south and east. To the west, the 70 DNL contour extends from Runways 10R/28L and 10C/28C into Bensenville almost to Busse Road.

Only airport property and industrial land uses would be exposed to DNL greater than or equal to 75 dB.

Exhibit C-22 shows the DNL contours for Proposed Interim Fly Quiet with O'Hare's residential sound insulation program.



Source: HMMH, Landrum & Brown, Ricondo & Associates, NearMap US Inc., Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, Environmental Systems Research Institute

Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

- Proposed Interim Fly Quiet 65 DNL Noise Contour
- Proposed Interim Fly Quiet 70 DNL Noise Contour
- Proposed Interim Fly Quiet 75 DNL Noise Contour
- Project Area
- Airport Boundary
- Existing Runways
- Runway 9C/27C - Opens Nov. 2020

Land Use

- Residential
- Public, Hospital, Institutional
- Compatible
- Water
- County Boundary
- Community Boundary
- Highway
- Primary Roads
- Secondary Roads
- Local Roads
- Railroad Lines

Note: DNL contours represent November 2019 to May 2020 and September 2020 to January 2021

0 1 2 Miles

Proposed Interim Fly Quiet DNL Noise Contours

▶ Exhibit C-21

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TABLE C-18
NOISE EXPOSURE FOR PROPOSED INTERIM FLY QUIET

		DNL Contour Bands			
Land Use (Acres)	**Compatibility**	**65-70**	**70-75**	**75+**	**Total**
Single-Family	Noncompatible	798.5	33.7	-	832.2
Multi-Family		43.2	21.6	-	64.8
Mobile Homes		-	-	-	-
Commercial	Compatible	216.7	21.1	-	237.8
Industrial		2,020.0	508.4	10.2	2,538.6
Public Parks		369.3	9.2	-	378.5
Institutional (see note 1)		39.2	8.1	-	47.3
Undeveloped		100.0	11.4	-	111.4
Airport		2,170.9	1,288.3	1,394.7	4,853.9
Water		7.2	-	-	7.2
	Total	5,765.0	1,901.8	1,404.9	9,071.7
Noise-Sensitive Facilities (Count)					
Public Parks		8	1	-	9
Historic Properties		5	-	1	6
Places of Worship		5	-	-	5
Nursing Homes		-	-	-	-
Hospitals		-	-	-	-
Libraries		-	-	-	-
Universities		-	-	-	-
Schools		3	1	-	4
Sound-insulated Schools (included above)		*3*	*1*	-	*4*
	Total	21	2	1	24
Population and Housing Units (Count)					
Population		13,473	2,207	-	15,680
Housing Units		4,766	857	-	5,623
Non-mitigated single-family housing units (included above)		*871*	*13*	-	*884*
Non-mitigated multi-family housing units (included above)		*496*	*123*	-	*619*
Sound-insulated single-family housing units (included above)		*2,936*	*176*	-	*3,112*
Sound-insulated multi-family housing units (included above)		*463*	*545*	-	*1,008*

Note: For the purposes of this document, Institutional land use is compatible.
Sources: ORD_RSIP_August 2018 database: City of Chicago.
2010 U.S. Census Bureau Census Block Population Data.
Proposed Interim Fly Quiet Contour, Land Use, Noise-Sensitive Facilities, Population, and Housing data: HMMH Analysis, April 2019.

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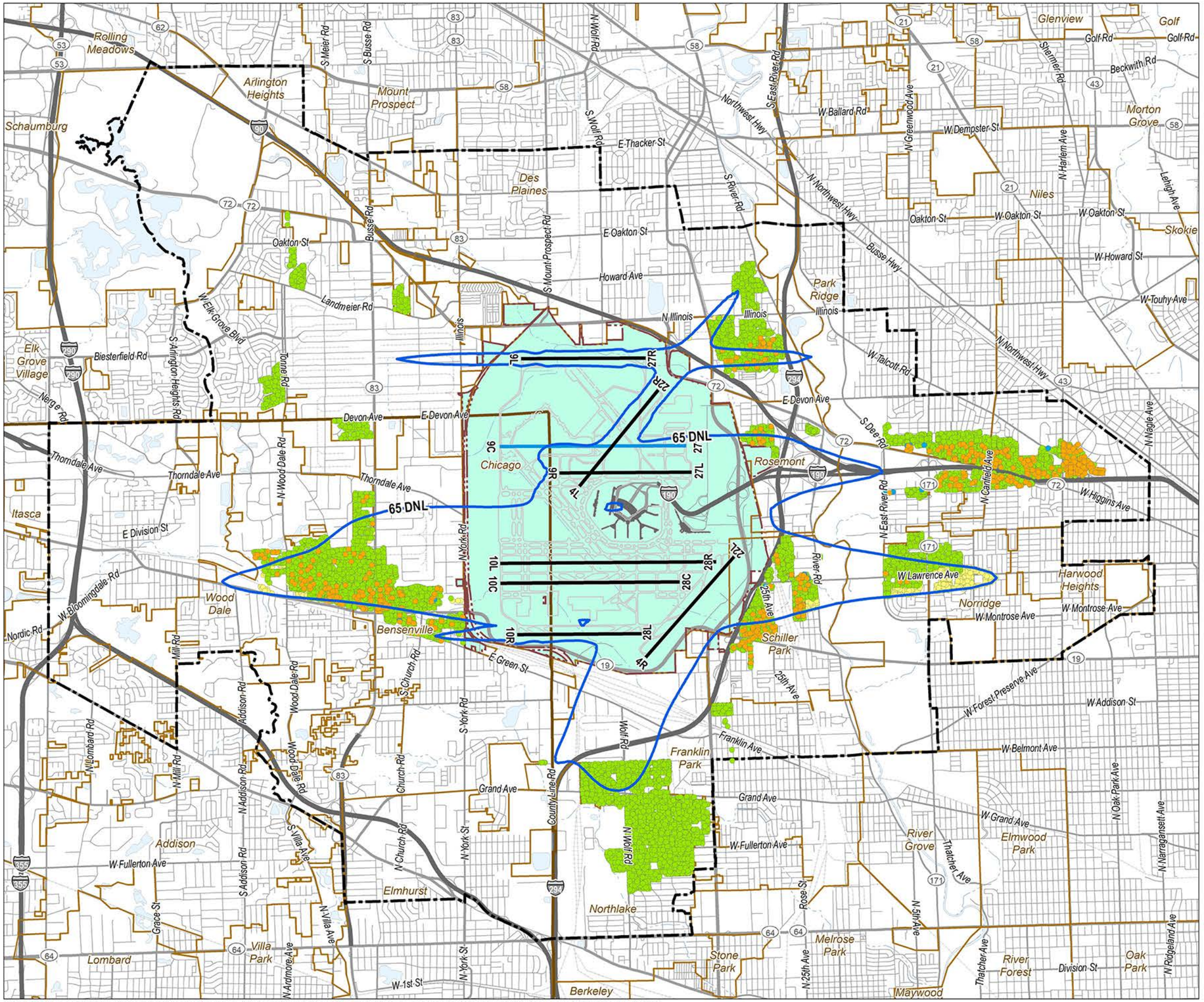

Source: HMMH, Landrum & Brown, Ricondo & Associates, NearMap US Inc., Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, Environmental Systems Research Institute

Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Proposed Interim Fly Quiet 65 DNL Noise Contour

Residential Sound Insulation Status

- Insulated
- Partially Insulated
- Pending
- Not Insulated

Project Area

Airport Boundary

Existing Runways

Runway 9C/27C - Opens Nov. 2020

County Boundary

Community Boundary

Highway

Primary Roads

Secondary Roads

Local Roads

Railroad Lines

Note: DNL contour represents November 2019 to May 2020 and September 2020 to January 2021

0 1 2
Miles

Proposed Interim Fly Quiet DNL Noise Contour with Residential Sound Insulation Program

▶ Exhibit C-22

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C.4.4 Aircraft Noise Exposure for Revised Interim Fly Quiet 1

Estimates of the total area that would be exposed to aircraft noise at or above 65 DNL for the Revised Interim Fly Quiet 1 are provided in **Table C-19**. The total area that would be exposed to at least 65 DNL is estimated to be 9,062 acres. This land area would include approximately 851 acres of single-family residential use, approximately 67 acres of multi-family use, and approximately 401 acres of public parks.

The Revised Interim Fly Quiet 1 area exposed to greater than or equal to 65 DNL would include 23 noise sensitive sites including four schools, all of which have been sound insulated by the CDA. The Revised Interim Fly Quiet 1 would expose 15,998 people and 5,760 housing units to greater than or equal to 65 DNL. Of the 5,760 housing units, 4,125 have been sound insulated by the CDA.

Exhibit C-23 depicts the 65, 70, and 75 DNL contours for the Revised Interim Fly Quiet 1. The 65 DNL contour has three lobes extending to the east. One lobe from Runway 9L/27R extends approximately 1,500 feet past Interstate 294. The second lobe extends from Runway 9R/27L along Interstate 90 to North East River Road and the third lobe from Runways 10R/28L and 10C/28C through Norridge past North Canfield Avenue to North Overhill Avenue.

To the south, the 65 DNL contour extends nearly to West Grand Avenue due to departures from Runway 22L heading to the south and east and the 65 DNL extends almost to County Line Road due to arrivals to Runway 04R. To the west, the 65 DNL contour extends west from Runway 10R/28L to Green Street. The 65 DNL contour also extends west from Runways 10L/28R and 10C/28C into Bensenville, through Wood Dale, extending just south of Route 19, west of its intersection with Miller Lane. The 65 DNL contour extends west from Runway 9L/27R east of Busse Road. It also extends to the northeast from Runway 4L/22R into Des Plaines south of East Touhy Avenue.

The 70 DNL contour has three lobes extending to the east. One lobe extends from Runway 9L/27R to Interstate 90. The second lobe extends from Runway 9R/27L along the Kennedy Expressway to the interchange with Interstate 294, and the third lobe extends from Runways 10R/28L and 10C/28C along West Lawrence Avenue ending east of North River Road.

To the south, the 70 DNL contour extends south of Franklin Avenue due to departures from Runway 22L heading to the south and east. To the west, the 70 DNL contour extends from Runways 10R/28L and 10C/28C into Bensenville to Busse Road.

Only airport property and industrial land uses would be exposed to DNL greater than or equal to 75 dB.

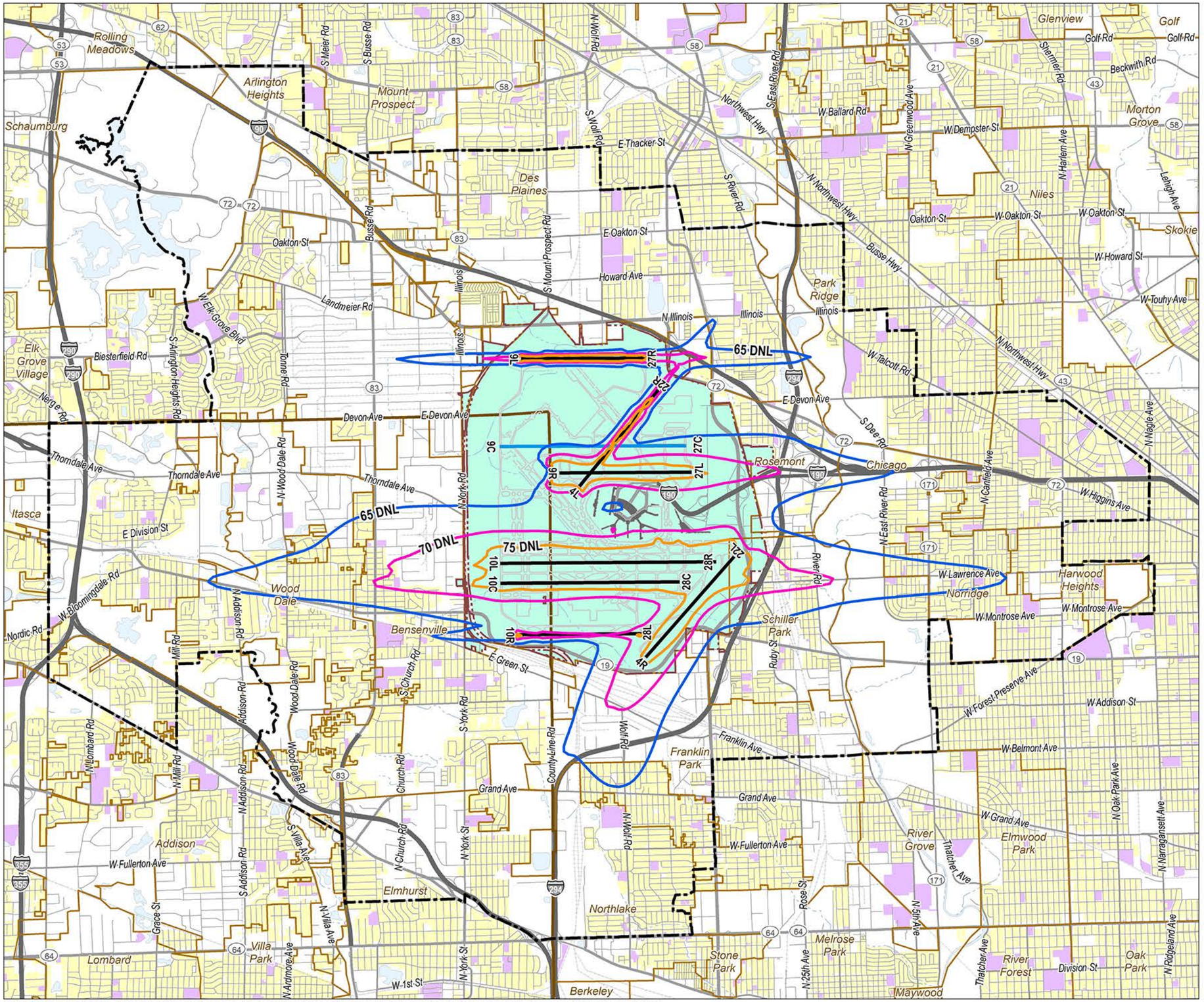
Exhibit C-24 shows the DNL contours for the Revised Interim Fly Quiet 1 with O'Hare's residential sound insulation program.

TABLE C-19
NOISE EXPOSURE FOR REVISED INTERIM FLY QUIET 1

		DNL Contour Bands			
Land Use (Acres)	Compatibility	**65-70**	**70-75**	**75+**	**Total**
Single-Family	Noncompatible	812.0	39.2	-	851.2
Multi-Family		40.7	26.0	-	66.7
Mobile Homes		-	-	-	-
Commercial	Compatible	231.6	18.3	-	249.9
Industrial		2,000.4	503.5	10.2	2,514.1
Public Parks		386.9	14.3	-	401.2
Institutional (see note 1)		37.0	8.4	-	45.4
Undeveloped		104.5	10.6	-	115.1
Airport		2,154.1	1,278.0	1,378.6	4,810.7
Water		7.4	-	-	7.4
	Total	5,774.6	1,898.3	1,388.8	9,061.7
Noise-Sensitive Facilities (Count)					
Public Parks		7	1	-	8
Historic Properties		5	-	1	6
Places of Worship		5	-	-	5
Nursing Homes		-	-	-	-
Hospitals		-	-	-	-
Libraries		-	-	-	-
Universities		-	-	-	-
Schools		3	1	-	4
Sound-insulated Schools (included above)		*3*	*1*	-	*4*
	Total	20	2	1	23
Population and Housing Units (Count)					
Population		13,477	2,521	-	15,998
Housing Units		4,806	954	-	5,760
Non-mitigated single-family housing units (included above)		1,012	16	-	1,028
Non-mitigated multi-family housing units (included above)		484	123	-	607
Sound-insulated single-family housing units (included above)		2,909	206	-	3,115
Sound-insulated multi-family housing units (included above)		401	609	-	1,010

Note 1: For the purposes of this document, Institutional land use is considered compatible.

Sources: ORD_RSIP_August 2018 database: City of Chicago.
2010 U.S. Census Bureau Census Block Population Data.
Revised Interim Fly Quiet 1 Contour, Land Use, Noise-Sensitive Facilities, Population and Housing data: HMMH Analysis, April 2019.



Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

- Revised Interim Fly Quiet 1 65 DNL Noise Contour
- Revised Interim Fly Quiet 1 70 DNL Noise Contour
- Revised Interim Fly Quiet 1 75 DNL Noise Contour
- Project Area
- Airport Boundary
- Existing Runways
- Runway 9C/27C - Opens Nov. 2020

Land Use

- Residential
- Public, Hospital, Institutional
- Compatible
- Water
- County Boundary
- Community Boundary
- Highway
- Primary Roads
- Secondary Roads
- Local Roads
- Railroad Lines

Note: DNL contours represent November 2019 to May 2020 and September 2020 to January 2021

0 1 2 Miles

Revised Interim Fly Quiet 1 DNL Noise Contours

▶ Exhibit C-23

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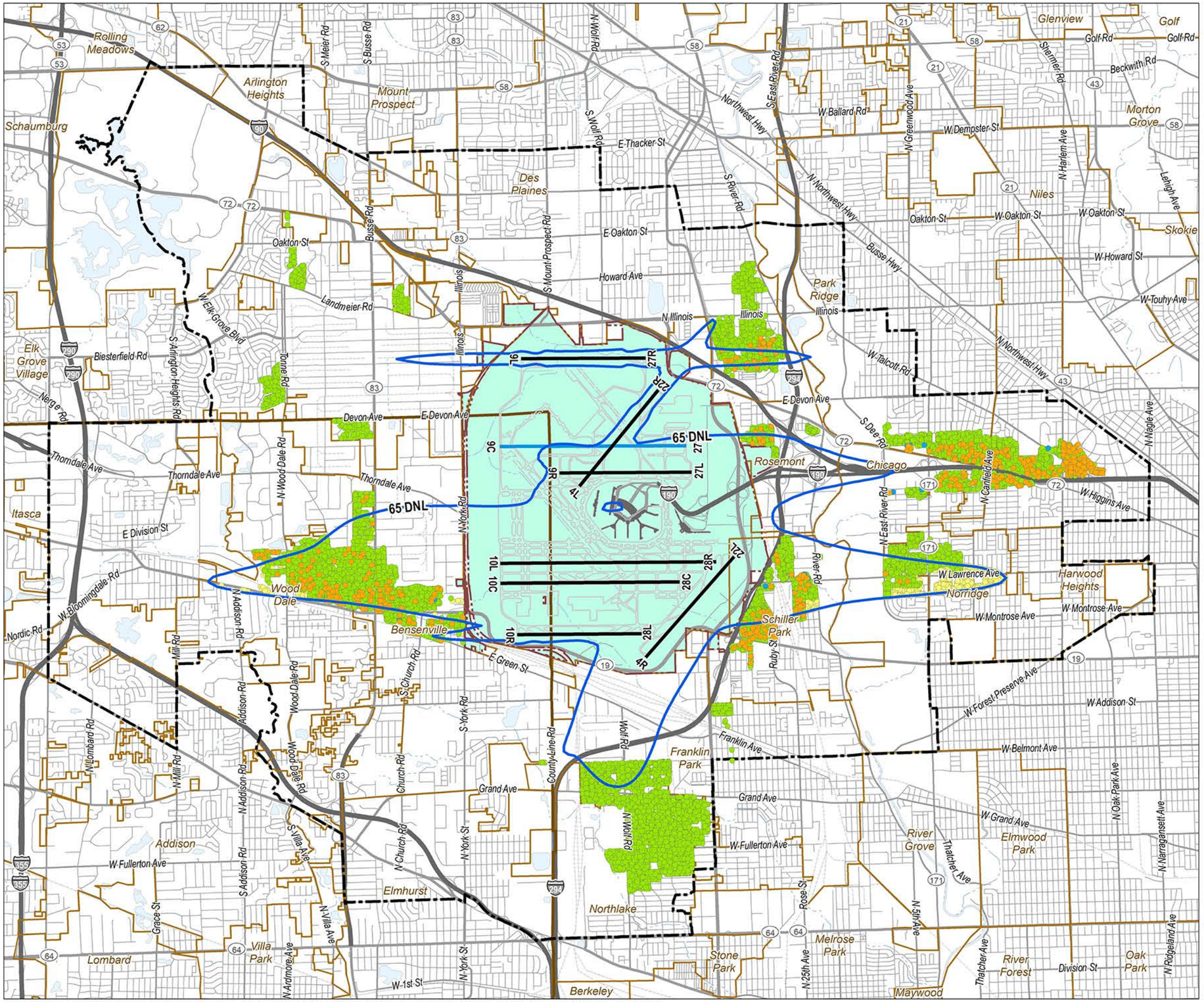

Source: HMMH, Landrum & Brown, Ricondo & Associates, NearMap US Inc., Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, Environmental Systems Research Institute

Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Revised Interim Fly Quiet 1 65 DNL Noise Contour

Residential Sound Insulation Status

- Insulated
- Partially Insulated
- Pending
- Not Insulated

Project Area

Airport Boundary

Existing Runways

Runway 9C/27C - Opens Nov. 2020

County Boundary

Community Boundary

Highway

Primary Roads

Secondary Roads

Local Roads

Railroad Lines

Note: DNL contour represents November 2019 to May 2020 and September 2020 to January 2021

0 1 2
Miles

Revised Interim Fly Quiet 1 DNL Noise Contour with Residential Sound Insulation Program

▶ Exhibit C-24

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C.4.5 Aircraft Noise Exposure for Revised Interim Fly Quiet 2

Estimates of the total area that would be exposed to aircraft noise at or above 65 DNL for the Revised Interim Fly Quiet 2 are provided in **Table C-20**. The total area that would be exposed to at least 65 DNL is estimated to be approximately 9,072 acres. This land area would include 843 acres of single-family residential use, 66 acres of multi-family use, and approximately 393 acres of public parks.

The Revised Interim Fly Quiet 2 area exposed to greater than or equal to 65 DNL would include 23 noise sensitive sites including four schools, all of which have been sound insulated by the CDA. The Revised Interim Fly Quiet 1 would expose 15,886 people and 5,709 housing units to greater than or equal to 65 DNL. Of the 5,709 housing units, 4,126 have been sound insulated by the CDA.

Noise exposure contours for the Revised Interim Fly Quiet 2 are presented as **Exhibit C-25**. The 65 DNL contour has three lobes extending to the east. One lobe extends from Runway 9L/27R to approximately 1,500 feet past Interstate 294. The second lobe extends from Runway 9R/27L along Interstate 90 to North East River Road, and the third lobe extends from Runways 10R/28L and 10C/28C through Norridge past North Canfield Avenue to Ozark Avenue.

To the south, the 65 DNL contour extends nearly to West Grand Avenue due to departures from Runway 22L heading to the south and east. The 65 DNL contour extends almost to County Line Road due to arrivals to Runway 04R. To the west, the 65 DNL contour extends west from Runway 10R/28L to Green Street. The 65 DNL contour also extends west from Runways 10L/28R and 10C/28C into Bensenville, through Wood Dale, and extending just south of Route 19 to Route 19's intersection with Station Drive. The 65 DNL contour extends west from Runway 9L/27R east of Busse Road. It also extends to the northeast from Runway 4L/22R into Des Plaines, ending south of Sherwin Avenue.

The 70 DNL contour has three lobes extending to the east. One lobe extends from Runway 9L/27R extending to Interstate 90. The second lobe extends from Runway 9R/27L along the Kennedy Expressway to the interchange with Interstate 294, and the third lobe extends from Runways 10R/28L and 10C/28C along West Lawrence Avenue, ending east of North River Road.

To the south, the 70 DNL contour extends south of Franklin Avenue due to departures from Runway 22L heading to the south and east. To the west, the 70 DNL contour extends west from Runways 10R/28L and 10C/28C into Bensenville to Busse Road.

Only airport property and industrial land uses would be exposed to DNL greater than or equal to 75 dB.

Exhibit C-26 shows the DNL contours for the Revised Interim Fly Quiet 2 with O'Hare's residential sound insulation program.

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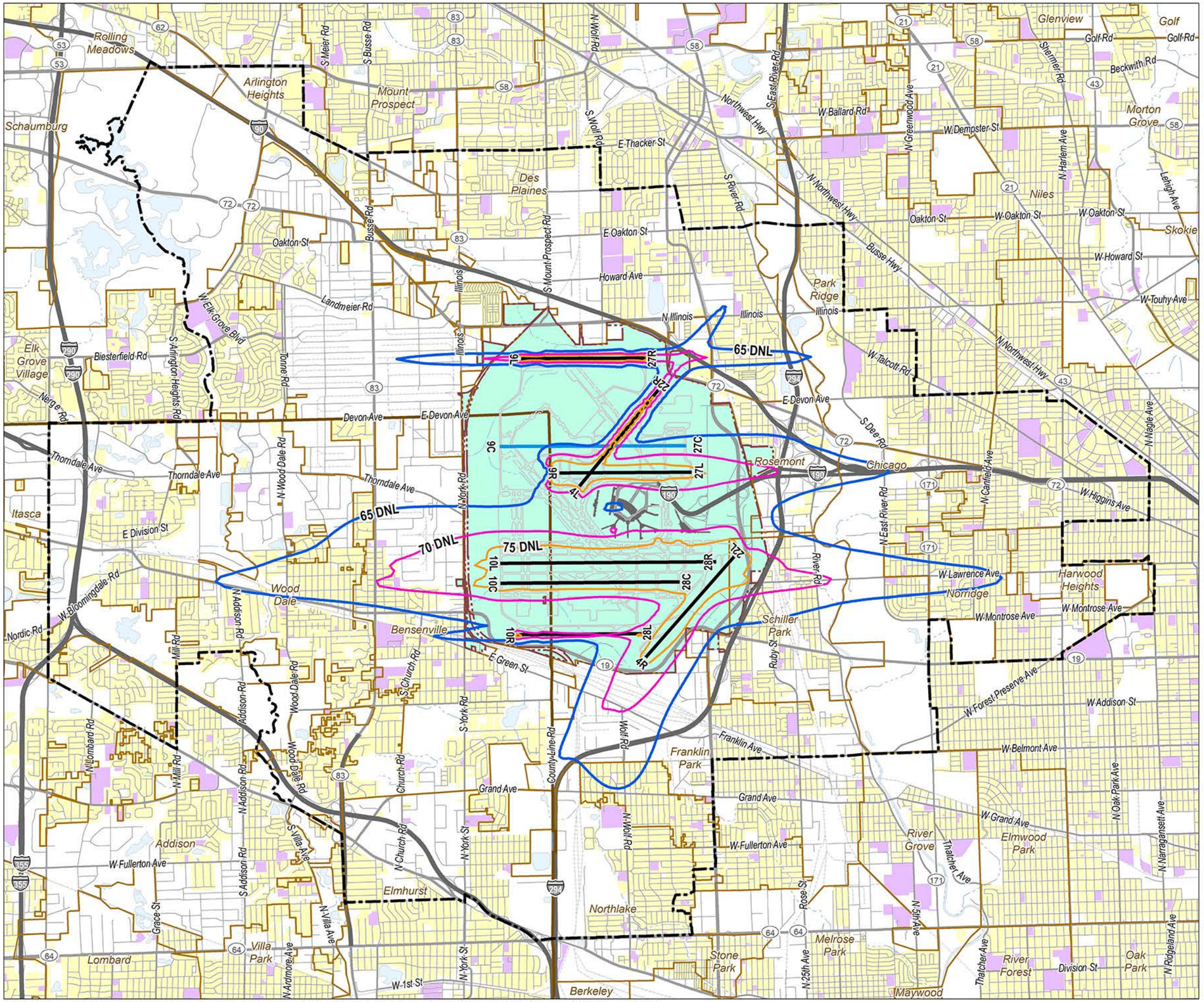

Source: HMMH, Landrum & Brown, Ricondo & Associates, NearMap US Inc., Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, Environmental Systems Research Institute

Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

- Revised Interim Fly Quiet 2 65 DNL Noise Contour
- Revised Interim Fly Quiet 2 70 DNL Noise Contour
- Revised Interim Fly Quiet 2 75 DNL Noise Contour
- Project Area
- Airport Boundary
- Existing Runways
- Runway 9C/27C - Opens Nov. 2020

Land Use

- Residential
- Public, Hospital, Institutional
- Compatible
- Water
- County Boundary
- Community Boundary
- Highway
- Primary Roads
- Secondary Roads
- Local Roads
- Railroad Lines

Note: DNL contours represent November 2019 to May 2020 and September 2020 to January 2021

0 1 2 Miles

Revised Interim Fly Quiet 2 DNL Noise Contours

▶ Exhibit C-25

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TABLE C-20
NOISE EXPOSURE FOR REVISED INTERIM FLY QUIET 2

		DNL Contour Bands			
Land Use (Acres)	**Compatibility**	**65-70**	**70-75**	**75+**	**Total**
Single-Family	Noncompatible	806.5	36.5	-	843.0
Multi-Family		41.5	24.3	-	65.8
Mobile Homes		-	-	-	-
Commercial	Compatible	226.1	19.2	-	245.3
Industrial		,2004.5	506.6	10.1	2,521.2
Public Parks		381.2	11.8	-	393.0
Institutional (see note 1)		37.2	8.2	-	45.4
Undeveloped		102.7	10.9	-	113.6
Airport		2,163.6	1,288	1,386.1	4,837.7
Water		7.3	-	-	7.3
	Total	5,770.6	1,905.5	1,396.2	9,072.3
Noise-sensitive Facilities (Count)					
Public Parks		7	1	-	8
Historic Properties		5	-	1	6
Places of Worship		5	-	-	5
Nursing Homes		-	-	-	-
Hospitals		-	-	-	-
Libraries		-	-	-	-
Universities		-	-	-	-
Schools		3	1	-	4
Sound-insulated Schools (included above)		*3*	*1*	-	*4*
	Total	20	2	1	23
Population and Housing Units (Count)					
Population		13,410	2,476	-	15,886
Housing Units		4,768	941	-	5,709
Non-mitigated single-family housing units (included above)		953	14	-	967
Non-mitigated multi-family housing units (included above)		493	123	-	616
Sound-insulated single-family housing units (included above)		2,923	195	-	3,118
Sound-insulated multi-family housing units (included above)		399	609	-	1,008

Note 1: For the purposes of this document, Institutional land use is considered compatible.

Sources: ORD_RSIP_August 2018 database: City of Chicago.
2010 U.S. Census Bureau Census Block Population Data.
Revised Interim Fly Quiet 2 Contour, Land Use, Noise-Sensitive Facilities, Population, and Housing data: HMMH Analysis, April 2019.

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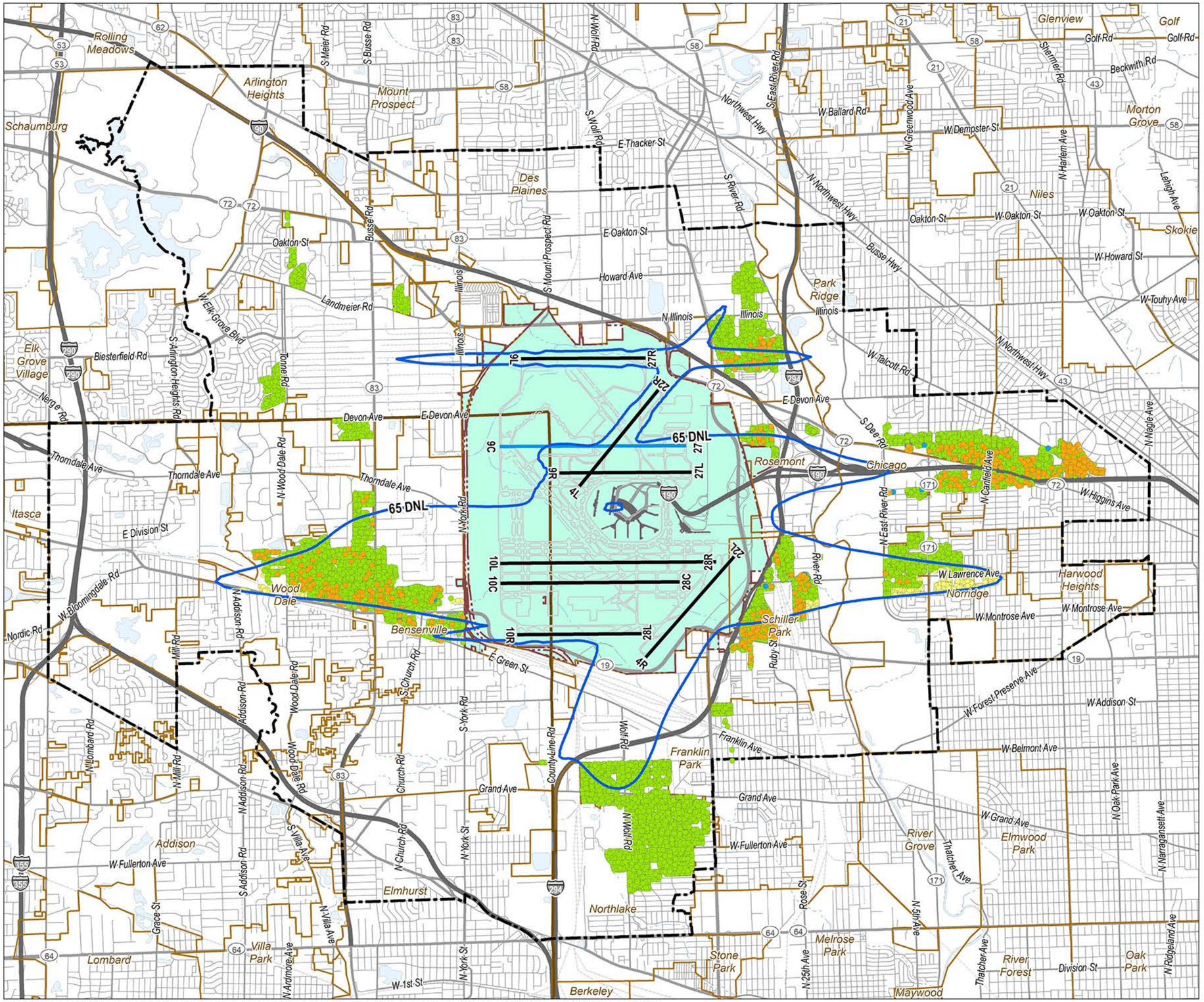

Source: HMMH, Landrum & Brown, Ricondo & Associates, NearMap US Inc., Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, Environmental Systems Research Institute

Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Revised Interim Fly Quiet 2 65 DNL Noise Contour

Residential Sound Insulation Status

- Insulated
- Partially Insulated
- Pending
- Not Insulated

Project Area

Airport Boundary

Existing Runways

Runway 9C/27C - Opens Nov. 2020

County Boundary

Community Boundary

Highway

Primary Roads

Secondary Roads

Local Roads

Railroad Lines

Note: DNL contour represents November 2019 to May 2020 and September 2020 to January 2021

0 1 2
Miles

Revised Interim Fly Quiet 2 DNL Noise Contour with Residential Sound Insulation Program

▶ Exhibit C-26

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C.4.6 Comparison of Alternatives

Exhibit C-27 compares the 65 DNL contours for the Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1, and Revised Interim Fly Quiet 2 with those of the Existing Fly Quiet. In general, Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1, and Revised Interim Fly Quiet 2 would all increase the area covered by the 65 DNL contour. However, Proposed Interim Fly Quiet would result in the smallest increase in population and housing units as compared to the Existing Fly Quiet, and a smaller increase than both Revised Interim Fly Quiet 1 and Revised Interim Fly Quiet 2. Due to the modifications in nighttime runway use certain regions near O'Hare would experience an increase in area and some regions would experience a decrease in area. Starting north of the airport and working clockwise, the 65 DNL contours for the Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1 or Revised Interim Fly Quiet 2:

- Extending to the north from Runway 22R would increase, with the Proposed Interim Fly Quiet larger than Revised Interim Fly Quiet 1 and Revised Interim Fly Quiet 2.
- Extending to the east from Runway 27L would decrease.
- Extending to the east from Runways 28R and 28C would increase and shift slightly to the south, with the Revised Interim Fly Quiet 1 larger than Revised Interim Fly Quiet 2 and Proposed Interim Fly Quiet.
- Extending to the south from Runway 4R would increase with the Proposed Interim Fly Quiet larger than Revised Interim Fly Quiet 1 and Revised Interim Fly Quiet 2.
- Extending to the west from Runways 10L and 10C would decrease but also shift slightly to the south.
- Extending to the west from Runway 9L would remain nearly identical.

Table C-21 summarizes the changes in potentially noncompatible land use acreage, change in numbers of noise-sensitive facilities, and change in population/housing units exposed to DNL of at least 65 dB relative to Existing Fly Quiet.

- For Proposed Interim Fly Quiet, potentially noncompatible land use would increase by five acres. The number of noise-sensitive facilities (exposed to DNL of at least 65 dB) would remain the same. The population and numbers of housing units exposed to DNL of at least 65 dB would increase by 1,448 and 569, respectively.
- For Revised Interim Fly Quiet 1, potentially noncompatible land use would increase by approximately 26 acres. The number of noise-sensitive facilities (exposed to DNL of at least 65 dB) would decrease by one (1). The population and numbers of housing units exposed to DNL of at least 65 dB would increase by 1,766 and 706, respectively.
- For Revised Interim Fly Quiet 2, potentially noncompatible land use would increase by approximately 17 acres. The number of noise-sensitive facilities (exposed to DNL of at least 65 dB) would decrease by one (1). The population and numbers of housing units exposed to DNL of at least 65 dB would increase by 1,654 and 655, respectively.

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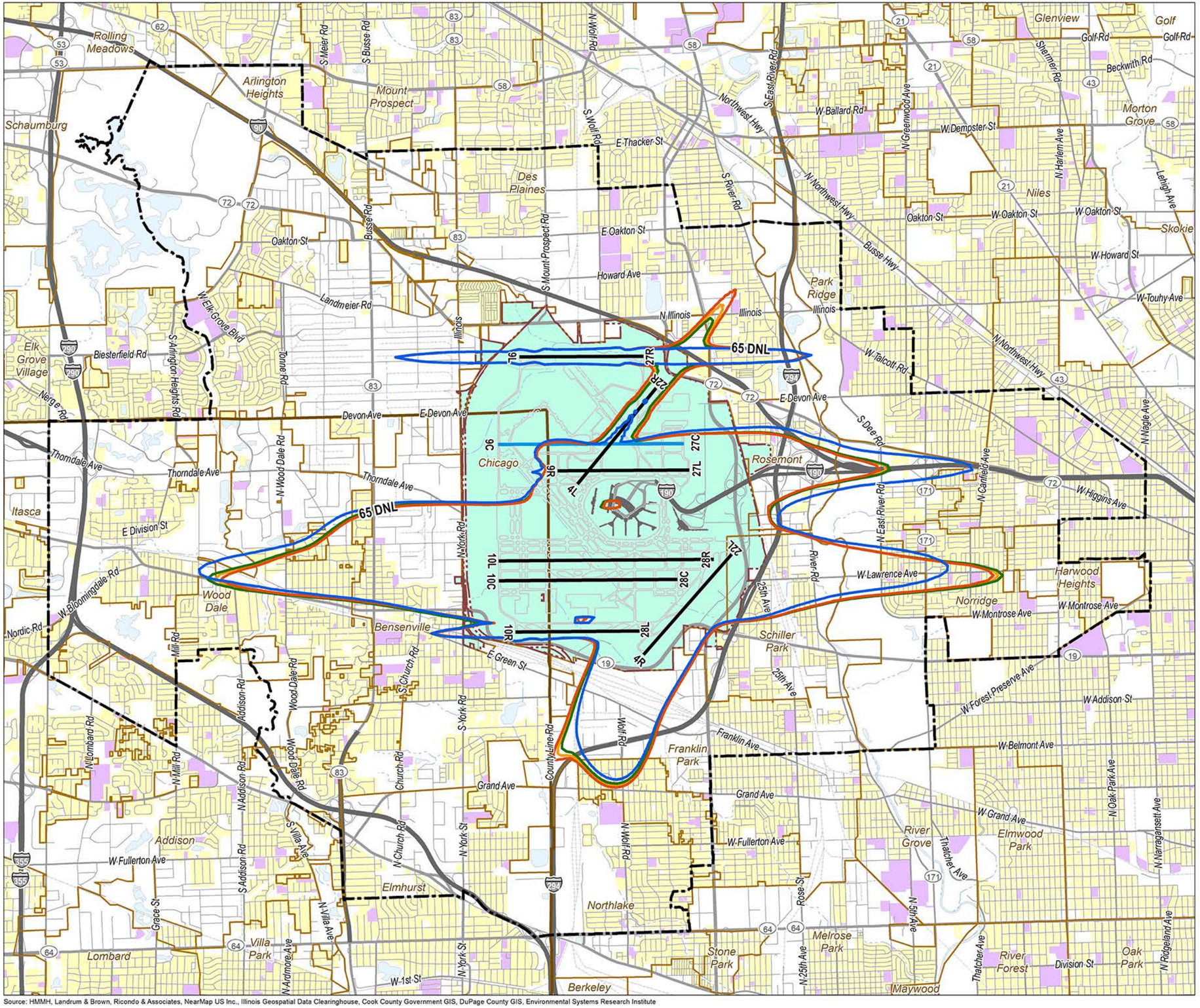

Source: HMMH, Landrum & Brown, Ricondo & Associates, NearMap US Inc., Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, Environmental Systems Research Institute

Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

- Existing Fly Quiet 65 DNL Noise Contour
- Proposed Interim Fly Quiet 65 DNL Noise Contour
- Revised Interim Fly Quiet 1 65 DNL Noise Contour
- Revised Interim Fly Quiet 2 65 DNL Noise Contour
- Project Area
- Airport Boundary
- Existing Runways
- Runway 9C/27C - Opens Nov. 2020

Land Use

- Residential
- Public, Hospital, Institutional
- Compatible
- Water
- County Boundary
- Community Boundary
- Highway
- Primary Roads
- Secondary Roads
- Local Roads
- Railroad Lines

Note: DNL contours represent November 2019 to May 2020 and September 2020 to January 2021

0 1 2
Miles

Existing, Proposed and Revised Interim Fly Quiet DNL Noise Contours

▶ Exhibit C-27

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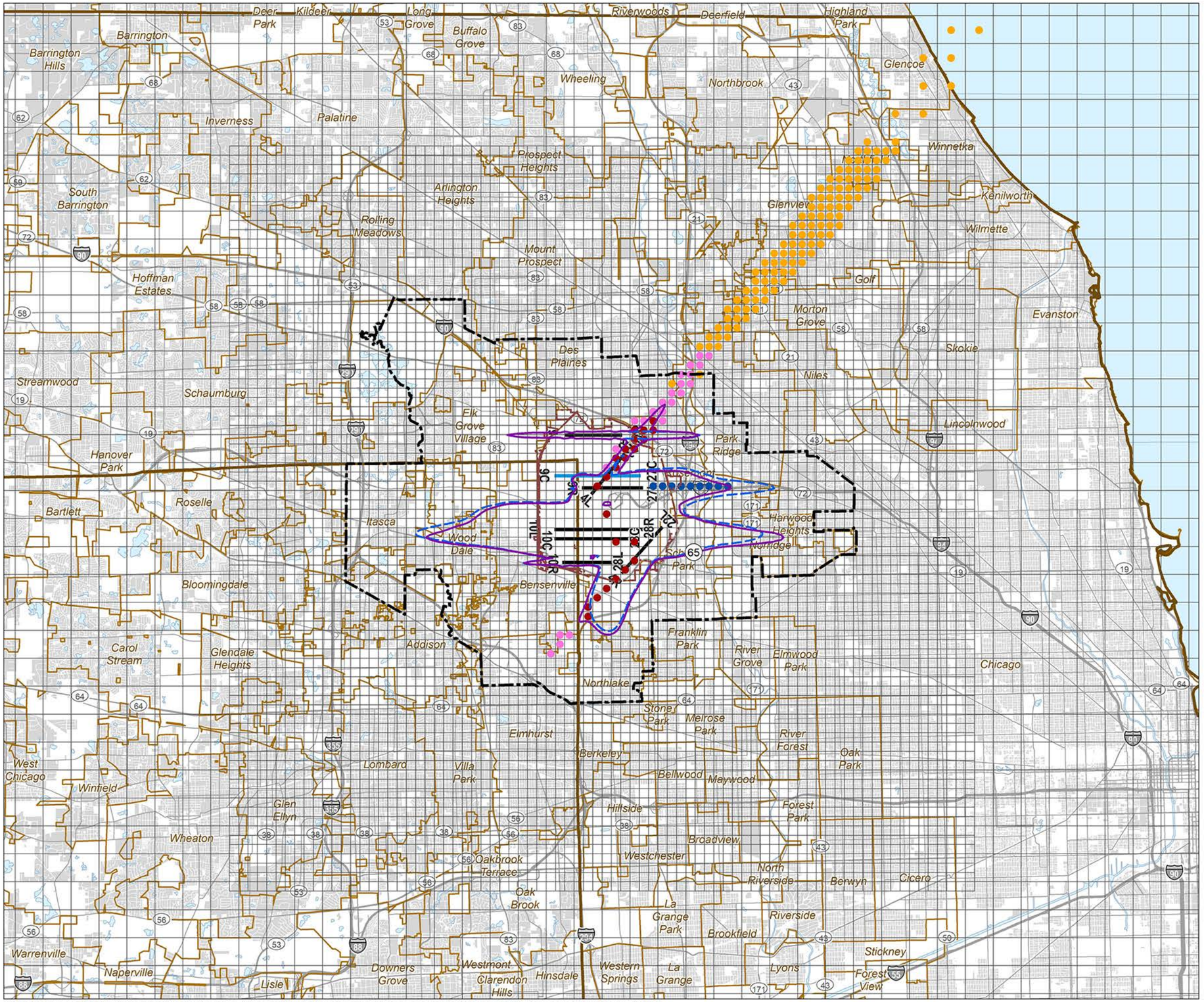
TABLE C-21
SUMMARY OF NONCOMPATIBLE ACREAGE, NOISE-SENSITIVE FACILITIES, AND POPULATION/HOUSING COUNTS FOR THE 65 DNL

Parameter	Existing Fly Quiet	Proposed Interim Fly Quiet	Net change from Existing Fly Quiet	Revised Interim Fly Quiet 1	Net change from Existing Fly Quiet	Revised Interim Fly Quiet 2	Net change from Existing Fly Quiet
Potentially Noncompatible Land Use (Acres)							
Single-Family	835.8	832.2	(3.6)	851.2	15.4	843.0	7.2
Multi-Family	56.2	64.8	8.6	66.7	10.5	65.8	9.6
Mobile Homes	-	-	-	-	-	-	-
Total Noncompatible Land Use	**892.0**	**897.0**	**5.0**	**917.9**	**25.9**	**908.8**	**16.8**
Total Compatible Land Use	**8,171.4**	**8,174.7**	**3.3**	**8,143.8**	**(27.6)**	**8,163.5**	**(7.9)**
Total Land Use	**9,063.4**	**9,071.7**	**8.3**	**9,061.7**	**(1.7)**	**9,072.3**	**8.9**
Noise-Sensitive Facilities (Count)							
Public Parks	8	9	1	8	-	8	-
Historic Properties	6	6	-	6	-	6	-
Places of Worship	5	5	-	5	-	5	-
Nursing Homes	-	-	-	-	-	-	-
Hospitals	-	-	-	-	-	-	-
Libraries	1	-	(1)	-	(1)	-	(1)
Universities	-	-	-	-	-	-	-
Schools	4	4	-	4	-	4	-
Sound-insulated Schools (included above)	*4*	*4*	-	*4*	-	*4*	-
Total	**24**	**24**	**-**	**23**	**(1)**	**23**	**(1)**
Population and Housing Units (Count)							
Population	14,232	15,680	1,448	15,998	1,766	15,886	1,654
Housing Units	5,054	5,623	569	5,760	706	5,709	655
Non-mitigated single-family housing units (included above)	*535*	*884*	*349*	*1,028*	*493*	*967*	*432*
Non-mitigated multi-family housing units (included above)	*395*	*619*	*224*	*607*	*212*	*616*	*221*
Sound-insulated single-family housing units (included above)	*3,124*	*3,112*	*(12)*	*3,115*	*(9)*	*3,118*	*(6)*
Sound-insulated multi-family housing units (included above)	*1,000*	*1,008*	*8*	*1,010*	*10*	*1,008*	*8*

Sources: ORD_RSIP_August 2018 database: City of Chicago.
2010 U.S. Census Bureau Census Block Population Data.
Re-Evaluation DNL Contours, Land Use, Noise-Sensitive Facilities, Population and Housing data: HMMH Analysis, April 2019.

Exhibits C-28, C-29, and C-30 provide the results from the wide-area grid point analysis for the Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1, and Revised Interim Fly Quiet 2 as decribed in **Section C.1.2.2**. Each graphic displays any points showing a 1.5 dB increase or decrease within the equal to or

greater than 65 DNL contour. This shows areas of significant impact (increase or decrease). Each graphic also displays the 3 dB change between 60 DNL and 65 DNL and the 5 dB change within the 45 DNL and 60 DNL. These are reportable changes. A closer view of these graphics along with modeled noise values is provided in **Attachment C-6**.



Source: HMMH, Landrum & Brown, Ricondo & Associates, NearMap US Inc., Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, Environmental Systems Research Institute

Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Grid Points 65 DNL and Greater
- 1.5 dB and Greater Increase
- 1.5 dB and Greater Decrease

Grid Points 60 DNL - 65 DNL
- 3 dB and Greater Increase
- 3 dB and Greater Decrease

Grid Points 45 DNL - 60 DNL
- 5 dB and Greater Increase
- 5 dB and Greater Decrease

0.6 NM Grid Spacing
0.2 NM Grid Spacing

Existing Fly Quiet 65 DNL Noise Contour
Proposed Interim Fly Quiet 65 DNL Noise Contour
Project Area
Airport Boundary
Existing Runways
Runway 9C/27C - Opens Nov. 2020
Non-Compatible Land Use
Water
County Boundary
Community Boundary
Highway
Primary Roads
Secondary Roads
Railroad Lines

Note: DNL contours and grid points represent November 2019 to May 2020 and September 2020 to January 2021

0 3 6
Miles

Existing and Proposed Interim Fly Quiet DNL Change

▶ Exhibit C-28

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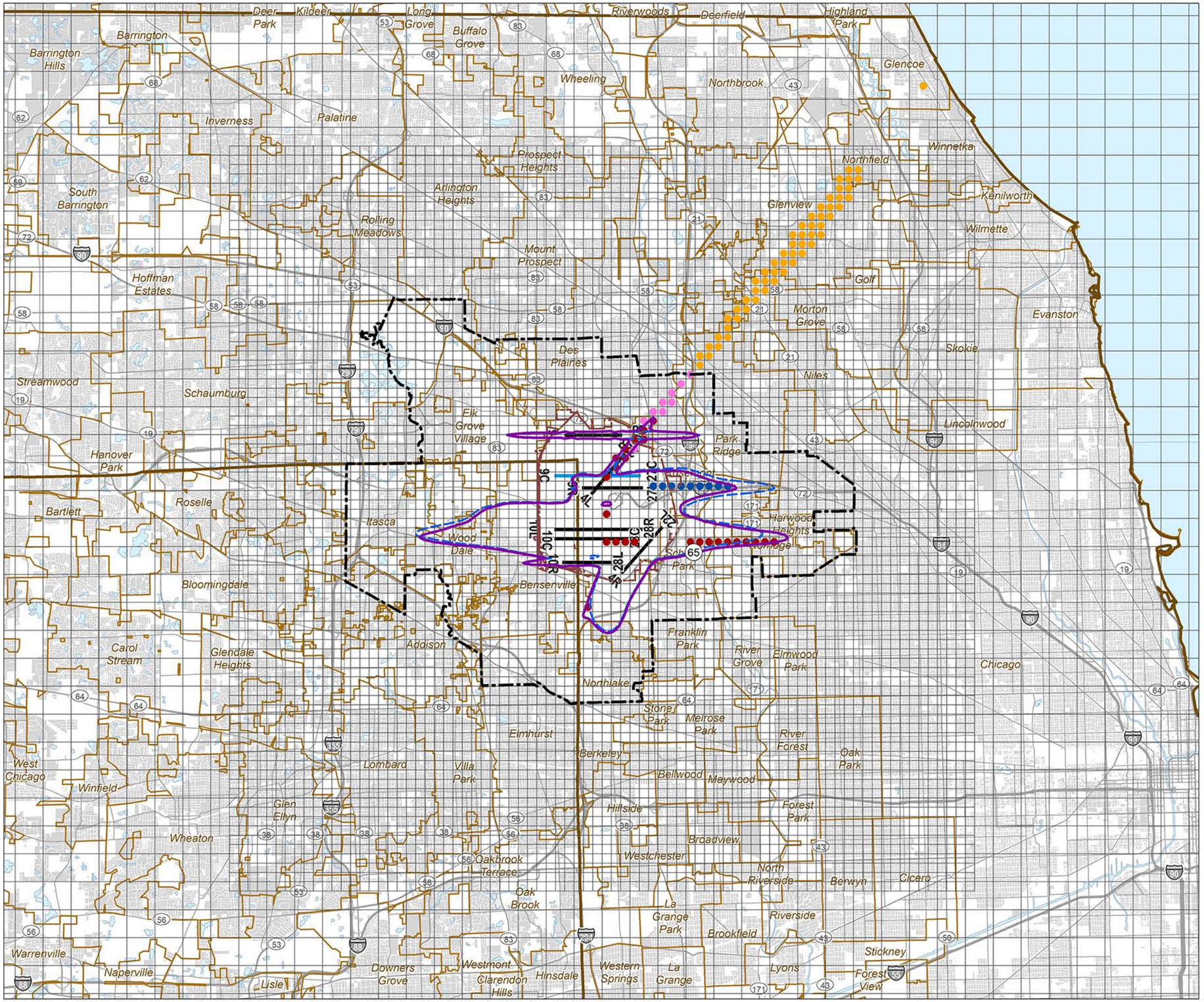

Source: HMMH, Landrum & Brown, Ricondo & Associates, NearMap US Inc., Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, Environmental Systems Research Institute

Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Grid Points 65 DNL and Greater
- 1.5 dB and Greater Increase
- 1.5 dB and Greater Decrease

Grid Points 60 DNL - 65 DNL
- 3 dB and Greater Increase
- 3 dB and Greater Decrease

Grid Points 45 DNL - 60 DNL
- 5 dB and Greater Increase
- 5 dB and Greater Decrease

0.6 NM Grid Spacing
0.2 NM Grid Spacing

Existing Fly Quiet 65 DNL Noise Contour
Revised Interim Fly Quiet 1 65 DNL Noise Contour

Project Area
Airport Boundary

Existing Runways
Runway 9C/27C - Opens Nov. 2020

Non-Compatible Land Use
Water

County Boundary
Community Boundary
Highway
Primary Roads
Secondary Roads
Railroad Lines

Note: DNL contours and grid points represent November 2019 to May 2020 and September 2020 to January 2021

0 3 6
Miles

Existing and Revised Interim Fly Quiet 1 DNL Change

▶ Exhibit C-29

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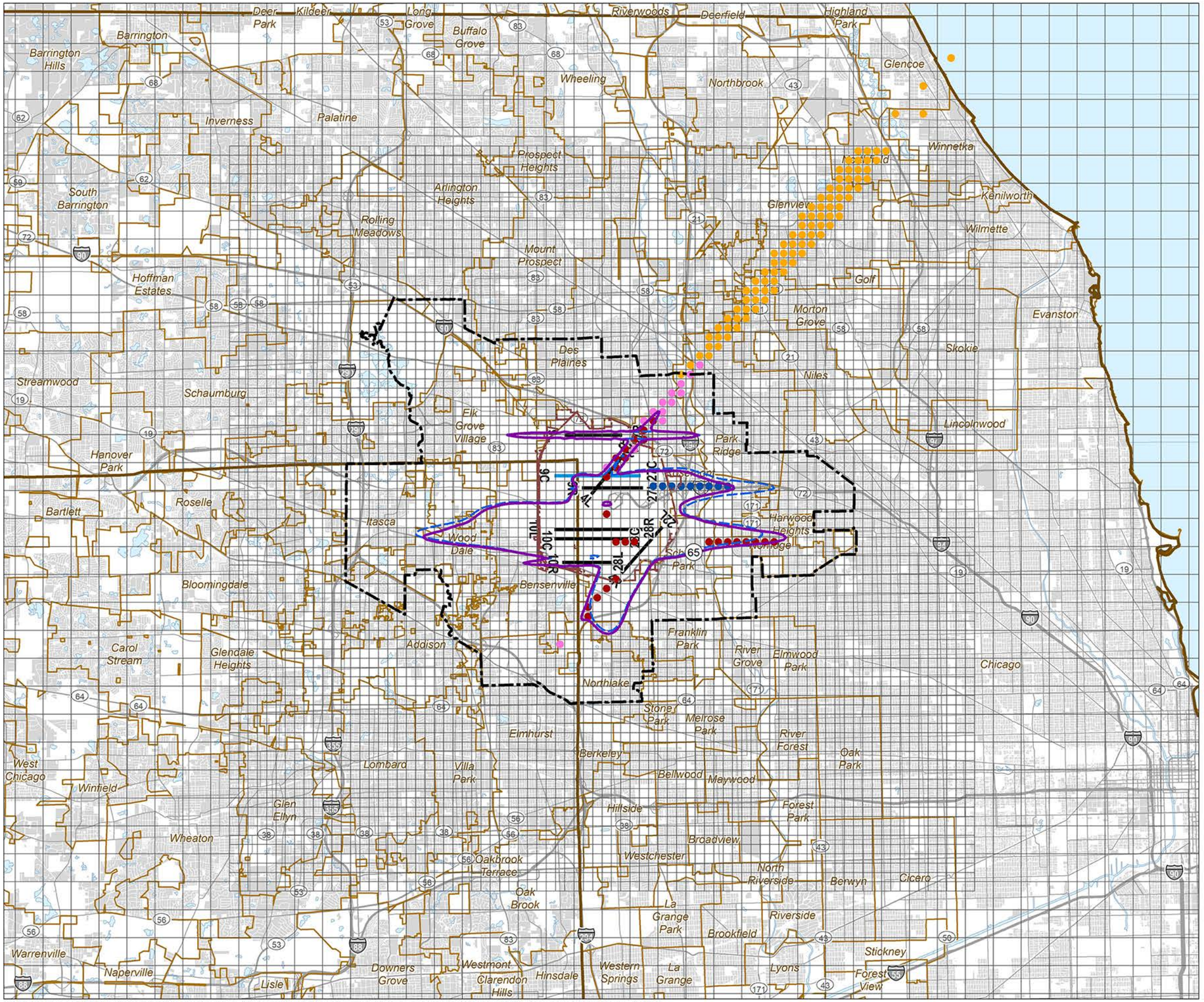

Source: HMMH, Landrum & Brown, Ricondo & Associates, NearMap US Inc., Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, Environmental Systems Research Institute

Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Grid Points 65 DNL and Greater
- 1.5 dB and Greater Increase
- 1.5 dB and Greater Decrease

Grid Points 60 DNL - 65 DNL
- 3 dB and Greater Increase
- 3 dB and Greater Decrease

Grid Points 45 DNL - 60 DNL
- 5 dB and Greater Increase
- 5 dB and Greater Decrease

0.6 NM Grid Spacing
0.2 NM Grid Spacing

Existing Fly Quiet 65 DNL Noise Contour
Revised Interim Fly Quiet 2 65 DNL Noise Contour

Project Area
Airport Boundary

Existing Runways
Runway 9C/27C - Opens Nov. 2020

Non-Compatible Land Use
Water

County Boundary
Community Boundary
Highway
Primary Roads
Secondary Roads
Railroad Lines

Note: DNL contours and grid points represent November 2019 to May 2020 and September 2020 to January 2021

0 3 6
Miles

Existing and Revised Interim Fly Quiet 2 DNL Change

▶ Exhibit C-30

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C.4.7 Noise-Sensitive Facilities Analysis

FAA has published guidelines relating the compatibility of land use types to airport sound levels. These guidelines are defined in Federal Aviation Regulations (FAR), 14 CFR Part 150. These guidelines delineate the compatibility parameters for residential, public, commercial, manufacturing and production, and recreational land uses and determines the various types of noise-sensitive facilities. Learning institutions (e.g., public/private schools, universities, and libraries), healthcare facilities (e.g., hospitals and nursing homes), and places of worship (e.g., churches, temples, and synagogues) are considered noise-sensitive non-residential facilities. The EIS established a complete listing of noise-sensitive facilities within the project area. For this Re-Evaluation, FAA reviewed the list of facilities and removed facilities that have been demolished or are no longer noise-sensitive. **Exhibit C-31** shows the modeled noise-sensitive facilities within the project area and they number:

- 76 public and private schools (grades K-12), three colleges/universities, and six libraries
- Two hospitals and six nursing homes
- 84 places of worship

Section C.4.8 includes tables listing all of the modeled noise-sensitive facilities in the project area along with their DNL, which was computed with the AEDT.

C.4.8 Inventory of Noise-Sensitive Facilities

Table C-22 through **Table C-25** show results of DNL analyses at each of the facilities listed in the following five subsections, respectively. Each table provides the DNL value at each facilities along with the change in DNL for any facilities with a DNL of 65 dB or greater.

C.4.8.1 Learning Institutions

A total of 85 learning institutions—76 schools, three universities or colleges, and six libraries—are listed in **Table C-22**. Those institutions included in the School Sound Insulation Program (SSIP) SSIP are listed in bold type; these learning centers either have completed insulation or are funded for the program. Of the 85 learning institutions in **Table C-22**, sound insulation for 65 has been completed and/or funded by the SSIP.

C.4.8.2 Health Care Facilities

Health care facilities include hospitals and nursing homes. A total of two hospitals and six nursing homes are located in the area. **Table C-23** identifies each health care facility modeled.

C.4.8.3 Places of Worship

This section includes any place of worship by various religions, including churches, synagogues, temples, and other religious places. A combined total of 84 places of worship are located within the area. **Table C-24** identifies each place of worship modeled.

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Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

- School
- University
- Place of Worship
- Hospital
- Library
- Sound Insulated School
- Project Area
- Airport Boundary
- Existing Runways
- Runway 9C/27C - Opens Nov. 2020
- Water
- County Boundary
- Community Boundary
- Highway
- Primary Roads
- Secondary Roads
- Local Roads
- Railroad Lines

0 1 2 Miles

Noise Sensitive Facilities

▶ Exhibit C-31

Source: HMMH, Landrum & Brown, Ricondo & Associates, NearMap US Inc., Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, Environmental Systems Research Institute

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TABLE C-22
DNL VALUES AT LEARNING INSTITUTIONS

Map ID	City	Name	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
Universities and Colleges									
U1	Bensenville	Robert Morris College	62.2	61.6	-	61.8	-	61.7	-
U2	Chicago	Wright College	55.9	57.1	-	57.3	-	57.2	-
U3	Des Plaines	Choice Career College	61.5	61.0	-	61.0	-	61.1	-
Libraries									
L1	Bensenville	Bensenville Community Library	63.7	63.6	-	63.8	-	63.7	-
L2	Harwood Heights	Eisenhower Library	61.8	63.2	-	63.5	-	63.4	-
L3	Itasca	Itasca Community Library	61.5	60.2	-	60.5	-	60.4	-
L4	Northlake	Northlake Public Library	59.1	59.5	-	59.3	-	59.4	-
L5	Schiller Park	Schiller Park Public Library	61.3	61.6	-	61.7	-	61.6	-
L6	Wood Dale	Wood Dale Public Library	65.5	64.3	-	64.5	-	64.4	-
Preschools, Montessori, Elementary Schools, Middle Schools, Junior High Schools, and High Schools									
S1	**Bensenville**	**Blackhawk Middle School**	**58.6**	**58.5**	**-**	**58.6**	**-**	**58.6**	**-**
S3	**Bensenville**	**Fenton High School**	**63.6**	**63.5**	**-**	**63.6**	**-**	**63.6**	**-**
S5	**Bensenville**	**St. Charles Borromeo**	**55.6**	**57.4**	**-**	**56.8**	**-**	**57.1**	**-**
S6	**Bensenville**	**Tioga Elementary School**	**58.1**	**58.2**	**-**	**58.2**	**-**	**58.2**	**-**
S8	**Bensenville**	**W. A. Johnson Elementary School**	**57.3**	**57.2**	**-**	**57.3**	**-**	**57.3**	**-**
S9	Chicago	Brickton Montessori School	62.5	61.3	-	61.5	-	61.4	-
S10	**Chicago**	**Dirksen Elementary School**	**62.5**	**62.0**	**-**	**62.0**	**-**	**62.0**	**-**
S11	**Chicago**	**Edison Elementary Regional Gifted Center**	**58.1**	**57.4**	**-**	**57.5**	**-**	**57.4**	**-**
S12	**Chicago**	**Garvy Elementary School**	**59.0**	**58.1**	**-**	**58.3**	**-**	**58.2**	**-**
S13	**Chicago**	**Immaculate Conception School**	**62.7**	**60.7**	**-**	**61.0**	**-**	**60.9**	**-**

Map ID	City	Name	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
S14	**Chicago**	**Norwood Park Elementary School**	**60.1**	**58.4**	**-**	**58.6**	**-**	**58.6**	**-**
S15	**Chicago**	**Oriole Park Elementary School**	**60.5**	**59.3**	**-**	**59.4**	**-**	**59.4**	**-**
S16	Chicago	Our Savior Lutheran	58.5	57.2	-	57.3	-	57.3	-
S17	**Chicago**	**Resurrection High School**	**59.3**	**58.2**	**-**	**58.4**	**-**	**58.3**	**-**
S18	**Chicago**	**Socrates School**	**64.9**	**62.8**	**-**	**63.1**	**-**	**63.0**	**-**
S19	**Chicago**	**St. Eugene**	**60.8**	**60.3**	**-**	**60.4**	**-**	**60.3**	**-**
S20	**Chicago**	**St. Paul Lutheran**	**64.5**	**62.4**	**-**	**62.8**	**-**	**62.6**	**-**
S21	**Chicago**	**Taft High School**	**62.0**	**59.9**	**-**	**60.2**	**-**	**60.1**	**-**
S22	**Des Plaines**	**Algonquin Middle School**	**52.6**	**53.2**	**-**	**52.9**	**-**	**53.1**	**-**
S23	Des Plaines	Angel Town Private School	56.5	60.7	-	59.4	-	60.1	-
S24	**Des Plaines**	**Devonshire School**	**52.5**	**53.0**	**-**	**52.8**	**-**	**52.9**	**-**
S25	Des Plaines	Forest Elementary School	52.5	53.3	-	53.0	-	53.1	-
S26	**Des Plaines**	**Friendship Junior High School**	**52.8**	**53.3**	**-**	**53.1**	**-**	**53.2**	**-**
S27	Des Plaines	Iroquois Community School	56.4	62.4	-	60.9	-	61.6	-
S28	**Des Plaines**	**Maine West High School**	**52.5**	**54.2**	**-**	**53.5**	**-**	**53.8**	**-**
S29	**Des Plaines**	**Orchard Place Elementary School**	**65.8**	**66.1**	**0.3**	**65.9**	**0.1**	**66.0**	**0.2**
S30	**Des Plaines**	**Our Lady of Destiny Elementary South**	**53.4**	**55.9**	**-**	**55.0**	**-**	**55.4**	**-**
S31	**Des Plaines**	**Plainfield Elementary School**	**52.7**	**54.9**	**-**	**54.0**	**-**	**54.5**	**-**
S32	Des Plaines	South Elementary School	53.8	55.8	-	55.0	-	55.4	-
S33	**Des Plaines**	**St. Zachary School**	**52.7**	**53.2**	**-**	**53.0**	**-**	**53.1**	**-**
S34	**Elk Grove Village**	**Clearmont Elementary School**	**59.8**	**59.7**	**-**	**59.7**	**-**	**59.7**	**-**
S35	**Elk Grove Village**	**Elk Grove High School**	**59.4**	**59.3**	**-**	**59.4**	**-**	**59.4**	**-**
S36	**Elk Grove Village**	**Grove Junior High School**	**57.8**	**57.7**	**-**	**57.8**	**-**	**57.8**	**-**
S37	**Elk Grove Village**	**Lutheran School of the Holy Spirit**	**55.5**	**55.3**	**-**	**55.4**	**-**	**55.4**	**-**
S38	**Elk Grove Village**	**Queen of the Rosary School**	**57.2**	**57.1**	**-**	**57.2**	**-**	**57.2**	**-**
S39	**Elk Grove Village**	**Ridge Family Center For Learning**	**56.5**	**56.4**	**-**	**56.4**	**-**	**56.4**	**-**

Map ID	City	Name	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
S40	**Elk Grove Village**	**Rupley Elementary School**	**54.6**	**54.5**	**-**	**54.6**	**-**	**54.6**	**-**
S41	**Elmhurst**	**Churchville Junior High School**	**54.9**	**57.1**	**-**	**56.4**	**-**	**56.7**	**-**
S42	**Elmhurst**	**Conrad Fischer Elementary School**	**55.9**	**59.3**	**-**	**58.3**	**-**	**58.9**	**-**
S43	**Franklin Park**	**East Leyden High School**	**57.6**	**57.8**	**-**	**57.8**	**-**	**57.8**	**-**
S44	**Franklin Park**	**Enger Elementary School**	**58.6**	**58.9**	**-**	**58.8**	**-**	**58.9**	**-**
S45	**Franklin Park**	**North Elementary School**	**56.9**	**57.1**	**-**	**57.1**	**-**	**57.1**	**-**
S46	Harwood Heights	Maple Park Academy	58.9	60.3	-	60.5	-	60.4	-
S47	**Harwood Heights**	**Union Ridge Elementary School**	**61.5**	**62.7**	**-**	**62.9**	**-**	**62.8**	**-**
S48	**Itasca**	**Elmer H. Franzen Elementary School**	**57.8**	**56.9**	**-**	**57.1**	**-**	**57.0**	**-**
S49	**Itasca**	**F.E. Peacock Junior High School**	**59.4**	**58.5**	**-**	**58.7**	**-**	**58.6**	**-**
S50	**Itasca**	**Lutheran School Of St. Luke**	**63.3**	**63.2**	**-**	**63.5**	**-**	**63.3**	**-**
S51	Itasca	New Morning Children's House	59.9	58.9	-	59.1	-	59.0	-
S52	**Itasca**	**St Peter the Apostle School**	**59.6**	**58.7**	**-**	**59.0**	**-**	**58.9**	**-**
S53	Itasca	Raymond Benson Primary School	63.7	63.3	-	63.6	-	63.4	-
S54	**Norridge**	**Divine Savior School**	**58.8**	**59.8**	**-**	**60.0**	**-**	**59.9**	**-**
S55	**Norridge**	**J. Giles Elementary School**	**56.8**	**57.6**	**-**	**57.7**	**-**	**57.6**	**-**
S56	Norridge	Jolly Fun House (JFH) Educational Academy, Inc.	55.4	56.0	-	56.0	-	56.0	-
S57	**Norridge**	**J. Leigh Elementary School**	**64.5**	**65.9**	**1.4**	**66.1**	**1.6**	**66.0**	**1.5**
S58	**Norridge**	**Pennoyer Elementary School**	**61.4**	**60.9**	**-**	**61.0**	**-**	**60.9**	**-**
S59	**Norridge**	**Ridgewood Community High School**	**59.1**	**60.3**	**-**	**60.5**	**-**	**60.4**	**-**
S60	**Northlake**	**Parkview Baptist Academy**	**58.6**	**59.0**	**-**	**58.8**	**-**	**58.9**	**-**
S61	**Northlake**	**Roy Elementary School**	**60.1**	**60.4**	**-**	**60.3**	**-**	**60.4**	**-**
S62	**Northlake**	**St. John Vianney School**	**58.7**	**59.1**	**-**	**58.9**	**-**	**59.0**	**-**
S63	**Northlake**	**West Leyden High School**	**62.6**	**63.0**	**-**	**62.8**	**-**	**62.9**	**-**
S64	**Northlake**	**Westdale Elementary School**	**60.6**	**61.0**	**-**	**60.8**	**-**	**60.9**	**-**

Map ID	City	Name	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
S65	Park Ridge	Alternative Resource Center	60.9	60.4	-	60.4	-	60.4	-
S66	**Park Ridge**	**George Washington Elementary School**	**60.4**	**60.3**	**-**	**60.3**	**-**	**60.3**	**-**
S67	**Park Ridge**	**Maine South High School**	**61.9**	**61.7**	**-**	**61.7**	**-**	**61.7**	**-**
S68	**Park Ridge**	**Mary, Seat of Wisdom**	**59.3**	**58.8**	**-**	**58.8**	**-**	**58.8**	**-**
S69	**Rosemont**	**Rosemont Elementary School**	**66.0**	**65.1**	**-0.9**	**65.2**	**-0.8**	**65.2**	**-0.8**
S70	**Schiller Park**	**John F. Kennedy Elementary School**	**60.2**	**60.4**	**-**	**60.4**	**-**	**60.4**	**-**
S71	**Schiller Park**	**Lincoln Middle School**	**58.1**	**58.0**	**-**	**57.9**	**-**	**58.0**	**-**
S72	**Schiller Park**	**St. Beatrice School**	**61.9**	**62.1**	**-**	**62.1**	**-**	**62.1**	**-**
S73	**Schiller Park**	**St. Maria Goretti School**	**59.5**	**59.7**	**-**	**59.7**	**-**	**59.7**	**-**
S74	**Itasca**	**Washington Elementary School**	**70.0**	**71.0**	**1.0**	**71.2**	**1.2**	**71.1**	**1.1**
S75	**Wood Dale**	**Early Childhood Education Center**	**65.1**	**64.1**	**-**	**64.3**	**-**	**64.2**	**-**
S76	**Wood Dale**	**Holy Ghost School**	**62.7**	**63.0**	**-**	**63.2**	**-**	**63.1**	**-**
S77	**Wood Dale**	**Oakbrook Elementary School**	**59.8**	**59.6**	**-**	**59.7**	**-**	**59.7**	**-**
S78	**Wood Dale**	**Westview Elementary School**	**60.2**	**60.3**	**-**	**60.6**	**-**	**60.4**	**-**
S79	**Wood Dale**	**Wood Dale Junior High School**	**64.8**	**63.9**	**-**	**64.1**	**-**	**64.1**	**-**

Notes: **BOLD** indicates schools that have been sound-insulated or funded for sound insulation through the CDA School Sound Insulation Program (SSIP).
* Difference only shown if the DNL of the proposed scenario is greater than or equal to 65 dB.
The following school was demolished: S4-Mohawk Elementary School
The following schools were merged into one facility: S2-Chippewa Elementary School and S7-Tioga School Special Education merged into S6-Tioga Elementary School

Sources: SSIP: CDA, SSIP Information, June 2018.
EIS. HMMH, FAA Review September 2018.

TABLE C-23
DNL VALUES AT HEALTH CARE FACILITIES

Map ID	City	Name	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
Hospitals									
H1	Chicago	Resurrection Medical Center	61.8	60.1	-	60.3	-	60.2	-
H2	Northlake	Kindred Hospital Chicago Northlake	57.6	57.8	-	57.7	-	57.8	-
Nursing Homes									
N1	Bensenville	Bridgeway of Bensenville	58.0	58.2	-	58.2	-	58.2	-
N2	Elmhurst	York Convalescent Center Ltd.	54.5	56.0	-	55.5	-	55.8	-
N3	Franklin Park	Scallabrini Life Center	59.7	60.0	-	59.9	-	59.9	-
N4	Itasca	Arbor of Itasca, Inc.	63.6	63.2	-	63.5	-	63.3	-
N5	Norridge	Norridge Nursing Center	55.9	56.9	-	57.1	-	57.0	-
N6	Northlake	Concord Plaza Assisted Living Center	59.7	60.1	-	59.9	-	60.0	-

Note: *Difference only shown if the DNL of the proposed scenario is greater than or equal to 65 dB.
Sources: EIS, HMMH, FAA review September 2018.

TABLE C-24
DNL VALUES AT PLACES OF WORSHIP

Map ID	City	Name	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
W1	Addison	Sunnyplace Church of God	53.2	53.6	-	53.5	-	53.6	-
W2	Arlington Heights	Baptist General Conference	52.0	51.8	-	51.9	-	51.9	-
W3	Bensenville	Bensenville Bible Church	58.6	58.7	-	58.8	-	58.7	-
W4	Bensenville	Bensenville United Methodist Church	57.4	57.4	-	57.5	-	57.5	-
W5	Bensenville	Calvary Baptist Church	58.8	59.1	-	59.1	-	59.1	-
W6	Bensenville	Cornerstone Christian Assembly	59.4	59.3	-	59.5	-	59.4	-
W7	Bensenville	First Spanish Baptist Church	67.7	67.1	-0.6	67.3	-0.4	67.2	-0.5
W8	Bensenville	Grace Gospel Center	54.0	54.4	-	54.3	-	54.3	-
W9	Bensenville	Grace Lutheran Church	55.0	56.2	-	55.8	-	56.0	-
W10	Bensenville	Immanuel United Church of Christ	53.7	54.7	-	54.4	-	54.5	-
W11	Bensenville	Jesus Alive Church	64.2	64.4	-	64.6	-	64.5	-
W12	Bensenville	Manav Seva Mandir	64.5	64.4	-	64.5	-	64.5	-
W13	Bensenville	Peace Church United Christ	60.8	60.7	-	60.9	-	60.8	-

Map ID	City	Name	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
W14	Bensenville	Faith International LLC (formely Sam Mool United Methodist Church/St. John's United Church)	67.2	66.7	-0.5	66.9	-0.3	66.8	-0.4
W15	Bensenville	St. Alexis	60.0	59.9	-	60.1	-	60.0	-
W16	Bensenville	St. Bede's Episcopal Church	58.1	58.0	-	58.2	-	58.1	-
W17	Bensenville	St. Charles Borromeo	55.6	57.2	-	56.7	-	57.0	-
W18	Bensenville	True Jesus Church	56.1	56.3	-	56.3	-	56.3	-
W19	Bensenville	Ukranian Pentecostal Church	59.8	61.1	-	60.7	-	60.9	-
W20	Bensenville	Zion Lutheran Church	53.8	54.7	-	54.5	-	54.6	-
W21	Chicago	All Saints Polish National Catholic Church	64.4	63.2	-	63.3	-	63.3	-
W22	Chicago	Bethel Community Church	60.3	59.7	-	59.8	-	59.7	-
W23	Chicago	Church of the Full Gospel, Inc.	58.2	57.2	-	57.3	-	57.3	-
W24	Chicago	First Korean Presbyterian Church	60.2	58.7	-	59.0	-	58.9	-
W25	Chicago	Holy Resurrection Church	65.1	63.0	-	63.3	-	63.2	-
W26	Chicago	Norwood Park Evangelical Lutheran Church	60.9	59.0	-	59.3	-	59.2	-
W27	Chicago	Our Lady Mother of the Church	66.2	67.6	1.4	67.8	1.6	67.7	1.5

Map ID	City	Name	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
W28	Chicago	Our Savior Lutheran Church of Norwood Park	58.1	57.0	-	57.2	-	57.1	-
W29	Chicago	Our Saviors English Lutheran Church	58.8	57.4	-	57.6	-	57.6	-
W30	Chicago	Sisters of Charity BVM	60.7	60.2	-	60.3	-	60.2	-
W31	Chicago	Sisters of the Living Word	61.3	60.8	-	60.9	-	60.8	-
W32	Chicago	St. Albans Episcopal Church	57.5	56.7	-	56.8	-	56.8	-
W33	Chicago	St. Andrew Presbyterian Church	59.9	59.2	-	59.3	-	59.2	-
W34	Chicago	St. James Lutheran Church	59.9	59.3	-	59.4	-	59.3	-
W35	Chicago	St. Joseph Ukrainian Church	64.4	63.6	-	63.6	-	63.5	-
W36	Chicago	St. Paul Evangelical Lutheran Church	64.2	62.2	-	62.5	-	62.4	-
W37	Chicago	St. Sophia Ukrainian Church	59.6	58.3	-	58.5	-	58.4	-
W38	Des Plaines	Brentwood Baptist Church	52.5	52.7	-	52.7	-	52.7	-
W39	Des Plaines	Taiwan Christian Church	52.4	53.6	-	53.1	-	53.3	-
W40	Des Plaines	Church of Christ	53.7	55.6	-	54.8	-	55.2	-
W41	Des Plaines	First Presbyterian Church	54.8	60.0	-	58.6	-	59.2	-
W42	Des Plaines	Good Shepherd Lutheran Church	53.4	56.2	-	55.2	-	55.7	-

Map ID	City	Name	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
W43	Des Plaines	Korean Philippi Presbyterian	56.9	59.6	-	58.7	-	59.2	-
W44	Des Plaines	Phat Bao Temple	53.9	56.4	-	55.4	-	55.9	-
W45	Des Plaines	St. Stephen Catholic Church	56.3	55.6	-	54.7	-	55.1	-
W46	Des Plaines	St. Zachary Catholic Church	52.7	53.2	-	53.0	-	53.1	-
W47	Des Plaines	Trinity Lutheran Church	52.6	53.2	-	52.9	-	53.0	-
W48	Elk Grove Village	First Baptist Church of Elk Grove Village	56.3	56.2	-	56.2	-	56.2	-
W49	Elk Grove Village	Elk Grove Presbyterian Church	58.5	58.4	-	58.5	-	58.5	-
W50	Elk Grove Village	Evangelical Lutheran Church	54.3	54.3	-	54.3	-	54.4	-
W51	Elk Grove Village	Gethsemane Presbyterian Church	54.9	54.8	-	54.9	-	54.9	-
W52	Elk Grove Village	Lutheran Church of the Holy Spirit	56.7	56.5	-	56.6	-	56.6	-
W53	Elk Grove Village	Queen of the Rosary Church	56.0	55.8	-	55.9	-	55.9	-
W54	Elk Grove Village	St. Nicholas Episcopal Church	60.9	60.8	-	60.8	-	60.8	-
W55	Elk Grove Village	Wesleyan Community Church	55.5	55.5	-	55.5	-	55.5	-
W57	Elmhurst	Chicago Church of Christ, Inc.	64.7	64.3	-	64.5	-	64.4	-
W58	Elmhurst	Vineyard Presbyterian Church	55.9	57.0	-	56.6	-	56.8	-
W60	Franklin Park	Faith Christian Center	56.1	56.3	-	56.3	-	56.3	-

Map ID	City	Name	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
W61	Franklin Park	Mt. Calvary Lutheran Church	56.9	57.1	-	57.1	-	57.1	-
W63	Harwood Heights	Bethany Baptist Church	61.7	62.0	-	62.1	-	62.1	-
W64	Harwood Heights	Northside Arabic Church	57.1	57.9	-	58.0	-	58.0	-
W65	Itasca	Bethany United Methodist Church	59.6	58.7	-	58.9	-	58.8	-
W66	Itasca	Christian Fellowship Church	57.2	56.7	-	56.8	-	56.8	-
W67	Itasca	Hanmee Presbyterian Church	57.7	57.9	-	58.1	-	58.0	-
W68	Norridge	Acacia Park Evangelical Lutheran Church	57.2	58.1	-	58.3	-	58.2	-
W69	Norridge	Church of Our Savior	64.2	65.4	1.2	65.7	1.5	65.6	1.4
W70	Norridge	Divine Savior	59.2	60.3	-	60.5	-	60.4	-
W71	Norridge	Zion Evangelical Lutheran Church	66.1	67.0	0.9	67.2	1.1	67.1	1.0
W72	Northlake	U-Turn Covenant Church	58.4	58.8	-	58.6	-	58.7	-
W73	Northlake	Iglesia Bautista Hispana	59.3	59.7	-	59.5	-	59.6	-
W74	Northlake	Parkview Baptist Church	58.6	59.1	-	58.9	-	59.0	-
W75	Northlake	St. John the Baptist Melkite Catholic Church	58.3	58.5	-	58.4	-	58.5	-
W76	Northlake	St. John Vianney Church	58.6	59.0	-	58.8	-	58.9	-

Map ID	City	Name	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
W77	Northlake	St. Peter's Syrian Orthodox Church	58.9	59.2	-	59.0	-	59.1	-
W78	Northlake	Trinity Presbyterian Church	63.5	63.9	-	63.7	-	63.8	-
W79	Park Ridge	Mary, Seat of Wisdom Church	59.7	59.0	-	59.0	-	59.0	-
W80	Park Ridge	South Park Church	58.9	58.4	-	58.4	-	58.4	-
W81	Schiller Park	Grace Community Evangelical	62.0	62.2	-	62.3	-	62.3	-
W82	Schiller Park	International Christian Assembly of God	62.2	62.5	-	62.5	-	62.5	-
W83	Schiller Park	St. Beatrice Church	62.2	62.4	-	62.4	-	62.4	-
W84	Wood Dale	Calvary Evangelical Lutheran Church	60.8	60.6	-	60.7	-	60.7	-
W85	Wood Dale	Christian Congregation	58.4	58.3	-	58.4	-	58.3	-
W86	Wood Dale	First Baptist Church—Wood Dale	55.4	55.3	-	55.4	-	55.3	-
W87	Wood Dale	St. Peter's Latvian Lutheran Church	58.6	58.5	-	58.6	-	58.5	-

Notes: The following places of worship are no longer in the project area: W56 - Assembly God Hammond Church , W59 - Espirity Santo Episcopal Church, and W62 - St. Paul's United Church Of Christ.

*Difference only shown if the DNL of the proposed scenario is greater than or equal to 65 dB.

Sources: EIS 2005, HMMH, FAA Review September 2018.

C.4.8.4 Parks

Exhibit C-32 shows the 94 modeled parks (including two parks the CDA aquired due to OMP) within the project area. These parks are listed in **Table C-25** along with their DNL values. In addition to being noise-sensitive sites, parks are also potential Section 4(f) locations and therefore are shown on the Section 4(f) and 6(f) Exhibit.

C.4.8.5 Section 4(f) and 6(f) Lands

Among the impact categories that were examined are the potential direct impacts (use) and indirect impacts (constructive use) of the development alternatives (1) on lands protected under the Department of Transportation Act, Section 303, Title 49 U.S. Code, commonly referred to as "Section 4(f)"; and (2) on lands purchased or developed using monies from the Department of Interior Land and Water Conservation Fund Act (LAWCON), more commonly known as "Section 6(f)." This document addresses both direct and indirect impacts to applicable recreational/park and historic properties in the EIS project area. Further details can be found in Appendix L of the EIS. **Table C-26** is a list of Section 4(f) and Section 6(f) sites evaluated in the Re-Evaluation along with their DNL values. The sites are depicted in **Exhibit C-32**. Each table provides the DNL value at each site along with the change in DNL for any sites with a DNL of 65 dB or greater.

Chicago O'Hare International Airport

Written Re-Evaluation of the O'Hare Modernization Environmental Impact Statement for the Interim Fly Quiet Runway Rotation Plan

Park
Historic Place
Historic Site

Project Area
Airport Boundary

Existing Runways
Runway 9C/27C - Opens Nov. 2020

Water

County Boundary
Community Boundary

Highway
Primary Roads
Secondary Roads
Local Roads
Railroad Lines

0 1.5 3
Miles

Section 4(f) and 6(f) Sites

Exhibit C-32

Source: HMMH, Landrum & Brown, Ricondo & Associates, Illinois Geospatial Data Clearinghouse, Cook County Government GIS, DuPage County GIS, National Register of Historic Places, Environmental Systems Research Institute

Document Path: G:\Projects\307XXX\307171_Chicago_IDIQ\GIS\307171_ORD_IDIQ_ExhibitC-32_Section_4f_6f_Sites.mxd

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TABLE C-25
DNL VALUES AT PARKS

Map ID	City	Name	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
P1	Bensenville	Bretman Park	64.0	64.0	-	64.1	-	64.0	-
P2	Bensenville	Diorio Park	59.2	59.1	-	59.3	-	59.2	-
P3	Bensenville	Kremples Park	55.9	57.2	-	56.8	-	57.0	-
P4	Bensenville	Lions Park	60.7	60.6	-	60.7	-	60.6	-
P5	Bensenville	Pines Park	55.5	55.9	-	55.8	-	55.8	-
P6	Bensenville	Poplar Park	68.9	69.4	0.5	69.6	0.7	69.5	0.6
P7	Bensenville	Rose Park	55.5	57.0	-	56.5	-	56.7	-
P8	Bensenville	Schuster Park	67.1	67.1	0.0	67.2	0.1	67.1	0.0
P9	Bensenville	Sunrise Park	58.5	58.8	-	58.8	-	58.8	-
P10	Bensenville	Sunset Park	62.0	61.9	-	62.0	-	61.9	-
P11	Bensenville	Varble Park/Water Park & Golf Waters/Deer Grove	58.4	58.3	-	58.4	-	58.3	-
P12	Bensenville	Veterans Park	64.0	63.9	-	64.1	-	64.1	-
P13	Bensenville	Woodcrest Park	55.1	55.0	-	55.1	-	55.0	-
P14	Bensenville	Woodside Park	55.6	55.6	-	55.7	-	55.7	-

P15	Chicago	Grandparents Park	62.0	60.9	-	61.1	-	61.0	-
P16	Chicago	Mulberry Point Park	61.4	59.4	-	59.7	-	59.6	-
P17	Chicago	Myrtle Point Park	58.0	57.0	-	57.1	-	57.0	-
P18	Chicago	Norwood Circle Park	60.3	58.6	-	58.9	-	58.8	-
P19	Chicago	Norwood Park	62.1	59.9	-	60.2	-	60.1	-
P20	Chicago	Oriole Park	62.3	60.7	-	60.9	-	60.8	-
P21	Chicago	Summerdale Park	59.9	58.8	-	59.0	-	58.9	-
P22	Des Plaines	Administrative & Leisure Center	56.1	65.2	9.1	63.4	-	64.3	-
P23	Des Plaines	Apache Park	54.1	57.5	-	56.3	-	56.9	-
P24	Des Plaines	Arndt Park	54.1	56.9	-	55.9	-	56.4	-
P25	Des Plaines	Lake Park	53.8	57.1	-	55.9	-	56.5	-
P26	Des Plaines	McKay-Nealis Park	54.0	56.8	-	55.8	-	56.3	-
P27	Des Plaines	Seminole Park	60.5	60.1	-	60.1	-	60.1	-
P29	DuPage County	Salt Creek Park	59.5	59.4	-	59.5	-	59.5	-
P30	Elk Grove Village	Andrews Park	54.7	54.6	-	54.7	-	54.7	-
P31	Elk Grove Village	Appleseed Park	55.1	55.0	-	55.1	-	55.1	-
P32	Elk Grove Village	Athletic Fields	58.7	58.1	-	58.2	-	58.2	-
P33	Elk Grove Village	Audubon Park	57.7	57.6	-	57.6	-	57.6	-
P34	Elk Grove Village	Bartrum Park	56.9	56.8	-	56.9	-	56.9	-

P35	Elk Grove Village	Burbank Park	58.4	58.1	-	58.2	-	58.1	-
P36	Elk Grove Village	Fairchild Park	59.0	58.8	-	58.9	-	58.8	-
P37	Bensenville	Lions Park	56.4	56.2	-	56.3	-	56.3	-
P38	Elk Grove Village	Muir Park	58.8	58.5	-	58.6	-	58.6	-
P39	Elk Grove Village	Olmstead Park	60.2	60.1	-	60.2	-	60.1	-
P40	Elk Grove Village	Osborn Park	54.3	54.2	-	54.2	-	54.2	-
P41	Elk Grove Village	Sanders Park	56.2	56.1	-	56.1	-	56.1	-
P42	Elk Grove Village	Udall Park	54.5	54.5	-	54.5	-	54.6	-
P43	Franklin Park	Hawthorne Park	57.4	57.7	-	57.6	-	57.7	-
P44	Franklin Park	Iceland Park	58.7	58.9	-	58.9	-	58.9	-
P45	Franklin Park	James Park	60.3	60.7	-	60.5	-	60.6	-
P46	Franklin Park	Linden Park	58.7	58.9	-	58.8	-	58.9	-
P47	Franklin Park	North Park	58.9	59.1	-	59.1	-	59.1	-
P49	Franklin Park	Pine Park	57.1	57.3	-	57.3	-	57.3	-
P50	Franklin Park	Robinson And Crusoe Park	56.7	56.9	-	56.9	-	56.9	-
P51	Franklin Park	Ruby-Addison Park	58.4	58.5	-	58.5	-	58.5	-
P52	Harwood Heights	St. Rosalie's Kiddie Park	58.3	59.6	-	59.8	-	59.7	-
P54	Itasca	Benson Park	58.6	58.6	-	58.8	-	58.7	-
P55	Itasca	Clayson Park	58.6	57.7	-	58.0	-	57.9	-

P56	Itasca	Country Club Park	60.0	59.2	-	59.4	-	59.3	-
P57	Itasca	Franzen Park	57.6	56.7	-	56.9	-	56.8	-
P58	Itasca	Peacock Park	59.2	58.4	-	58.6	-	58.6	-
P59	Itasca	Schiller Park	64.5	63.3	-	63.6	-	63.4	-
P60	Itasca	Washington Park	63.8	63.1	-	63.4	-	63.3	-
P61	Norridge	Norridge Park	63.7	64.6	-	64.8	-	64.7	-
P62	Park Ridge	Brickton Park	61.5	60.2	-	60.4	-	60.3	-
P63	Park Ridge	Centennial Park	57.3	57.2	-	57.1	-	57.2	-
P64	Park Ridge	Jaycee Park	59.8	58.8	-	58.9	-	58.8	-
P65	Park Ridge	Southwest Park	61.4	60.5	-	60.6	-	60.5	-
P66	Schiller Park	Fairview Park	65.9	65.7	-0.2	65.7	-0.2	65.7	-0.2
P67	Schiller Park	Kennedy Park/Memorial Pool	60.8	61.0	-	61.0	-	61.0	-
P68	Schiller Park	North Village Park	70.3	71.7	1.4	72.0	1.7	71.9	1.6
P69	Schiller Park	Stalica Park	60.5	60.7	-	60.7	-	60.7	-
P70	Schiller Park	Wm. M. Dooley Memorial Park	66.8	67.1	0.3	67.1	0.3	67.1	0.3
P71	Wood Dale	Brookwood Park	57.5	57.4	-	57.5	-	57.5	-
P72	Wood Dale	Central Park	68.9	67.5	-1.4	67.7	-1.2	67.7	-1.2
P73	Wood Dale	Community Park	63.5	62.9	-	63.0	-	63.0	-
P74	Wood Dale	Lionwood Park	63.6	64.1	-	64.4	-	64.2	-

P75	Wood Dale	Veteran's Memorial Park	65.0	65.4	0.4	65.6	0.6	65.5	0.5
P76	Wood Dale	White Oak Park	60.9	60.7	-	60.8	-	60.8	-
P77	Wood Dale	Wood Dale Water Park	66.1	66.2	0.1	66.5	0.4	66.3	0.2
PP1	Elk Grove Village	Pocket Park #1 (Under Construction)	62.9	62.9	-	62.9	-	62.9	-
PP2	Elk Grove Village	Pocket Park #2 (under construction)	57.9	57.8	-	57.9	-	57.8	-
PP3	Elk Grove Village	Pocket Park #3 (Under Construction)	57.6	57.6	-	57.7	-	57.6	-
PP4	Elk Grove Village	Pocket Park #4 (Under Construction)	58.2	58.2	-	58.2	-	58.2	-
PP5	Elk Grove Village	Pocket Park #5 (Under Construction)	64.1	64.1	-	64.1	-	64.1	-
PP6	Elk Grove Village	Pocket Park #6 (Future)	62.6	62.6	-	62.6	-	62.6	-
PP7	Elk Grove Village	Pocket Park #7 (Under Construction)	63.8	63.8	-	63.8	-	63.8	-
PP8	Elk Grove Village	Pocket Park #8 (Future)	58.1	58.0	-	58.1	-	58.1	-
PP9	Elk Grove Village	Pocket Park #9 (Existing)	58.5	58.5	-	58.5	-	58.5	-
PP10	Elk Grove Village	Pocket Park #10 (Future)	60.1	60.0	-	60.1	-	60.1	-
PP11	Elk Grove Village	Pocket Park #11 (Future)	63.1	63.1	-	63.1	-	63.1	-
PP12	Elk Grove Village	Pocket Park #12 (Existing)	62.4	62.4	-	62.4	-	62.4	-
PP13	Elk Grove Village	Pocket Park #13 (Future)	58.4	58.3	-	58.4	-	58.3	-
PP14	Elk Grove Village	Pocket Park #14 (Future)	62.3	62.3	-	62.3	-	62.3	-
PP15	Elk Grove Village	Pocket Park #15 (Existing)	54.4	54.4	-	54.5	-	54.5	-
PP16	Elk Grove Village	Pocket Park #16 (Future)	54.7	54.7	-	54.8	-	54.8	-

PP17	Elk Grove Village	Pocket Park #17 (Future)	54.6	54.6	-	54.6	-	54.6	-
PP18	Elk Grove Village	Pocket Park #18 (Existing)	54.9	54.9	-	55.0	-	55.0	-
PP19	Elk Grove Village	Pocket Park #19 (Future)	55.1	55.2	-	55.2	-	55.2	-
PP20	Elk Grove Village	Pocket Park #20 (Future)	53.9	53.7	-	53.7	-	53.7	-

Legend: Green highilght denotes property acquired and/or demolished.

Notes: P48 was omitted from Park numbering consistent with the 2015 Re-Evaluation.

The following parks are no longer in the project area: P28 - Winnebago Park and P53 – Tot Park

* Difference only shown if the DNL of the proposed scenario is greater than or equal to 65 dB.

Sources: DuPage County Park District, Cook County Park District, Community Park Districts.
EIS

TABLE C-26
DNL VALUES AT SECTION 4(f) AND SECTION 6(f) LANDS

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
Historic Properties									
HP-1	Churchville School	65	52.5	53.6	-	53.3	-	53.4	-
HP-2	Norwood Park Historical District	65	63.0	61.0	-	61.3	-	61.1	-
HP-3	Noble-Seymour-Crippen House	65	62.4	60.3	-	60.6	-	60.5	-
HP-4	Green Street School (Commercial Property)	70	62.8	62.7	-	62.8	-	62.7	-
HP-5	Gas Service Station (Vacant)	n/a	66.2	66.3	0.1	66.5	0.3	66.4	0.2
HP-6	Rest Haven Cemetery	85	69.3	69.6	0.3	69.8	0.5	69.7	0.4
HP-7	St. Johannes Cemetery	85	77.5	78.2	0.7	78.4	0.9	78.3	0.8
HP-8	United Terminal 1 And CTA Transfer Station	n/a	65.4	65.0	-0.4	65.0	-0.4	65.0	-0.4
HP-9	Old Control Tower	n/a	65.4	65.3	-0.1	65.2	-0.2	65.3	-0.1
HP-10	Schwerdtfeger Farmstead (Vacant)	n/a	66.7	66.8	0.1	67.1	0.3	67.0	0.3
HP-11	Wingert House	65	58.1	57.5	-	57.6	-	57.6	-
HPN-24	Old Edgebrook District	65	56.2	55.1	-	55.3	-	55.2	-
HPN-4	Chicago & NW Depot	75	57.9	56.7	-	56.9	-	56.8	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
Parks									
HPN-24	Old Edgebrook District	65	56.2	55.1	-	55.3	-	55.2	-
HPN-4	Chicago & NW Depot	75	57.9	56.7	-	56.9	-	56.8	-
FP-1	Elk Grove Forest Preserve (Salt Creek West)	75	55.5	55.3	-	55.3	-	55.3	-
FP-2	Elk Grove Forest Preserve (Salt Creek East)	75	55.7	55.4	-	55.5	-	55.5	-
FP-3	Silver Creek (DuPage County Forest Preserve)	75	67.0	67.0	0.0	67.3	0.3	67.2	0.2
FP-4	Ned Brown Forest Preserve	75	49.5	49.3	-	49.3	-	49.3	-
P1	Bretman Park	75	64.0	64.0	-	64.1	-	64.0	-
P2	Diorio Park	75	59.2	59.1	-	59.3	-	59.2	-
P3	Kremples Park	75	55.9	57.2	-	56.8	-	57.0	-
P4	Lions Park	75	60.7	60.6	-	60.7	-	60.6	-
P5	Pines Park	75	55.5	55.9	-	55.8	-	55.8	-
P6	Poplar Park	75	68.9	69.4	0.5	69.6	0.7	69.5	0.6
P7	Rose Park	75	55.5	57.0	-	56.5	-	56.7	-
P8	Schuster Park [also a 6(f) property]	75	67.1	67.1	0.0	67.2	0.1	67.1	0.0
P9	Sunrise Park	75	58.5	58.8	-	58.8	-	58.8	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
P10	Sunset Park	75	62.0	61.9	-	62.0	-	61.9	-
P11	Varble Park/Water Park & Golf Waters/Deer Grove	75	58.4	58.3	-	58.4	-	58.3	-
P12	Veterans Park	75	64.0	63.9	-	64.1	-	64.1	-
P13	Woodcrest Park	75	55.1	55.0	-	55.1	-	55.0	-
P14	Woodside Park	75	55.6	55.6	-	55.7	-	55.7	-
P15	Grandparents Park	75	62.0	60.9	-	61.1	-	61.0	-
P16	Mulberry Point Park	75	61.4	59.4	-	59.7	-	59.6	-
P17	Myrtle Point Park	75	58.0	57.0	-	57.1	-	57.0	-
P18	Norwood Circle Park	75	60.3	58.6	-	58.9	-	58.8	-
P19	Norwood Park	75	62.1	59.9	-	60.2	-	60.1	-
P20	Oriole Park	75	62.3	60.7	-	60.9	-	60.8	-
P21	Summerdale Park	75	59.9	58.8	-	59.0	-	58.9	-
P22	Administrative & Leisure Center	75	56.1	65.2	9.1	63.4	-	64.3	-
P23	Apache Park	75	54.1	57.5	-	56.3	-	56.9	-
P24	Arndt Park	75	54.1	56.9	-	55.9	-	56.4	-
P25	Lake Park	75	53.8	57.1	-	55.9	-	56.5	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
P26	McKay-Nealis Park	75	54.0	56.8	-	55.8	-	56.3	-
P27	Seminole Park	75	60.5	60.1	-	60.1	-	60.1	-
P29	Salt Creek Park	75	59.5	59.4	-	59.5	-	59.5	-
P30	Andrews Park	75	54.7	54.6	-	54.7	-	54.7	-
P31	Appleseed Park	75	55.1	55.0	-	55.1	-	55.1	-
P32	Athletic Fields	75	58.7	58.1	-	58.2	-	58.2	-
P33	Audubon Park	75	57.7	57.6	-	57.6	-	57.6	-
P34	Bartrum Park	75	56.9	56.8	-	56.9	-	56.9	-
P35	Burbank Park	75	58.4	58.1	-	58.2	-	58.1	-
P36	Fairchild Park	75	59.0	58.8	-	58.9	-	58.8	-
P37	Lions Park	75	56.4	56.2	-	56.3	-	56.3	-
P38	Muir Park	75	58.8	58.5	-	58.6	-	58.6	-
P39	Olmstead Park	75	60.2	60.1	-	60.2	-	60.1	-
P40	Osborn Park	75	54.3	54.2	-	54.2	-	54.2	-
P41	Sanders Park	75	56.2	56.1	-	56.1	-	56.1	-
P42	Udall Park	75	54.5	54.5	-	54.5	-	54.5	-
P43	Hawthorne Park	75	57.4	57.7	-	57.6	-	57.7	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
P44	Iceland Park	75	58.7	58.9	-	58.9	-	58.9	-
P45	James Park	75	60.3	60.7	-	60.5	-	60.6	-
P46	Linden Park	75	58.7	58.9	-	58.8	-	58.9	-
P47	North Park	75	58.9	59.1	-	59.1	-	59.1	-
P49	Pine Park	75	57.1	57.3	-	57.3	-	57.3	-
P50	Robinson And Crusoe Park	75	56.7	56.9	-	56.9	-	56.9	-
P51	Ruby-Addison Park	75	58.4	58.5	-	58.5	-	58.5	-
P52	St. Rosalie's Kiddie Park	75	58.3	59.6	-	59.8	-	59.7	-
P54	Benson Park	75	58.6	58.6	-	58.8	-	58.7	-
P55	Clayson Park	75	58.6	57.7	-	58.0	-	57.9	-
P56	Country Club Park	75	60.0	59.2	-	59.4	-	59.3	-
P57	Franzen Park	75	57.6	56.7	-	56.9	-	56.8	-
P58	Peacock Park	75	59.2	58.4	-	58.6	-	58.6	-
P59	Schiller Park	75	64.5	63.3	-	63.6	-	63.4	-
P60	Washington Park	75	63.8	63.1	-	63.4	-	63.3	-
P61	Norridge Park	75	63.7	64.6	-	64.8	-	64.7	-
P62	Brickton Park	75	61.5	60.2	-	60.4	-	60.3	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
P63	Centennial Park	75	57.3	57.2	-	57.1	-	57.2	-
P64	Jaycee Park	75	59.8	58.8	-	58.9	-	58.8	-
P65	Southwest Park	75	61.4	60.5	-	60.6	-	60.5	-
P66	Fairview Park	75	65.9	65.7	-0.2	65.7	-0.2	65.7	-0.2
P67	Kennedy Park/Memorial Pool	75	60.8	61.0	-	61.0	-	61.0	-
P68	North Village Park	75	70.3	71.7	1.4	72.0	1.7	71.9	1.6
P69	Stalica Park	75	60.5	60.7	-	60.7	-	60.7	-
P70	Wm. M. Dooley Memorial Park	75	66.8	67.1	0.3	67.1	0.3	67.1	0.3
P71	Brookwood Park	75	57.5	57.4	-	57.5	-	57.5	-
P72	Central Park	75	68.9	67.5	-1.4	67.7	-1.2	67.7	-1.2
P73	Community Park	75	63.5	62.9	-	63.0	-	63.0	-
P74	Lionwood Park	75	63.6	64.1	-	64.4	-	64.2	-
P75	Veteran's Memorial Park	75	65.0	65.4	0.4	65.6	0.6	65.5	0.5
P76	White Oak Park	75	60.9	60.7	-	60.8	-	60.8	-
P77	Wood Dale Water Park	75	66.1	66.2	0.1	66.5	0.4	66.3	0.2
PP1	Pocket Park #1 (Under Construction)	75	62.9	62.9	-	62.9	-	62.9	-
PP2	Pocket Park #2 (under construction)	75	57.9	57.8	-	57.9	-	57.8	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
PP3	Pocket Park #3 (Under Construction)	75	57.6	57.6	-	57.7	-	57.6	-
PP4	Pocket Park #4 (Under Construction)	75	58.2	58.2	-	58.2	-	58.2	-
PP5	Pocket Park #5 (Under Construction)	75	64.1	64.1	-	64.1	-	64.1	-
PP6	Pocket Park #6 (Future)	75	62.6	62.6	-	62.6	-	62.6	-
PP7	Pocket Park #7 (Under Construction)	75	63.8	63.8	-	63.8	-	63.8	-
PP8	Pocket Park #8 (Future)	75	58.1	58.0	-	58.1	-	58.1	-
PP9	Pocket Park #9 (Existing)	75	58.5	58.5	-	58.5	-	58.5	-
PP10	Pocket Park #10 (Future)	75	60.1	60.0	-	60.1	-	60.1	-
PP11	Pocket Park #11 (Future)	75	63.1	63.1	-	63.1	-	63.1	-
PP12	Pocket Park #12 (Existing)	75	62.4	62.4	-	62.4	-	62.4	-
PP13	Pocket Park #13 (Future)	75	58.4	58.3	-	58.4	-	58.3	-
PP14	Pocket Park #14 (Future)	75	62.3	62.3	-	62.3	-	62.3	-
PP15	Pocket Park #15 (Existing)	75	54.4	54.4	-	54.5	-	54.5	-
PP16	Pocket Park #16 (Future)	75	54.7	54.7	-	54.8	-	54.8	-
PP17	Pocket Park #17 (Future)	75	54.6	54.6	-	54.6	-	54.6	-
PP18	Pocket Park #18 (Existing)	75	54.9	54.9	-	55.0	-	55.0	-
PP19	Pocket Park #19 (Future)	75	55.1	55.2	-	55.2	-	55.2	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
PP20	Pocket Park #20 (Future)	75	53.9	53.7	-	53.7	-	53.7	-
PX-193	Terrace Park	75	58.5	58.3	-	58.4	-	58.4	-
PX-194	Redmond Park	75	58.8	59.9	-	59.6	-	59.7	-
PX-195	Veteran's Park West—Bensenville City Park	75	64.1	64.0	-	64.2	-	64.1	-
PX-196	Bensenville Library Garden of Knowledge	75	59.8	59.7	-	59.9	-	59.8	-
PX-197	Library District Park	75	59.4	59.3	-	59.5	-	59.4	-
PX-198	Palm-Breiter Park	75	57.6	57.6	-	57.7	-	57.7	-
PX-199	Veteran's Memorial Park	75	59.7	59.5	-	59.6	-	59.6	-
PX-200	Hanson Park	75	56.2	55.8	-	55.9	-	55.9	-
PX-201	Village Green	75	59.7	59.6	-	59.6	-	59.6	-
PX-202	Elk Grove Park District (Salt Creek Placid Ave.)	75	58.2	57.8	-	57.9	-	57.9	-
PX-203	Debra Park	75	56.3	56.1	-	56.1	-	56.1	-
PX-204	Johnson Park	75	56.9	56.7	-	56.7	-	56.7	-
PX-205	Majewski Metro Park in Des Plaines	75	53.1	53.5	-	53.4	-	53.4	-
PX-206	MWRD Preservation Area	75	53.7	53.9	-	53.9	-	53.9	-
PX-207	Salt Creek Golf Club	75	60.3	59.5	-	59.7	-	59.6	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
PX-208	SBL Park	75	58.2	57.6	-	57.8	-	57.7	-
PX-209	Marshall Field	75	57.2	57.0	-	57.0	-	57.0	-
PX-210	Salt Creek Field	75	60.4	60.3	-	60.3	-	60.3	-
PX-211	Woodland Meadows	75	55.4	55.2	-	55.2	-	55.2	-
PX-212	Huntington Park (Chase)	75	57.4	57.1	-	57.2	-	57.2	-
PX-213	Ridge Park (Field)	75	56.2	56.1	-	56.2	-	56.2	-
PX-214	Hattendorf Park (Al Hattendorf Center)	75	58.8	58.7	-	58.7	-	58.7	-
PX-215	Legends Golf Course	75	60.1	63.2	-	62.3	-	62.8	-
Locally Important Historic Sites									
LS-249	Commercial	70	56.7	56.9	-	56.9	-	56.9	-
LS-251	Durocraft Homes	65	61.4	60.8	-	60.9	-	60.8	-
LS-289	Commercial	70	55.7	55.5	-	55.5	-	55.5	-
LS-320	Hodges House	65	58.3	58.2	-	58.2	-	58.2	-
LS-333	Residence	65	58.8	58.6	-	58.6	-	58.6	-
LS-335	Residence	65	58.4	58.4	-	58.3	-	58.3	-
LS-336	Residence	65	59.4	59.3	-	59.3	-	59.3	-
LS-340	Residence	65	60.7	60.6	-	60.6	-	60.6	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
LS-343	Residence	65	58.4	58.0	-	58.1	-	58.1	-
LS-357	Residence	65	59.8	59.0	-	59.1	-	59.0	-
LS-359	Residence	65	58.7	58.5	-	58.5	-	58.5	-
LS-361	Residence	65	60.1	60.0	-	60.0	-	60.0	-
LS-362	Residence	65	61.1	61.0	-	61.0	-	61.0	-
LS-363	Residence	65	61.8	61.7	-	61.7	-	61.7	-
LS-364	Residence	65	61.9	61.8	-	61.8	-	61.8	-
LS-368	Residence	65	58.4	58.0	-	58.1	-	58.0	-
LS-369	Residence	65	58.4	58.0	-	58.1	-	58.1	-
LS-370	Residence	65	60.1	60.0	-	60.0	-	60.0	-
LS-371	Residence	65	61.1	61.1	-	61.1	-	61.1	-
LS-378	Residence	65	62.3	62.2	-	62.2	-	62.2	-
LS-379	Residence	65	60.1	60.0	-	60.0	-	60.0	-
LS-381	Residence	65	61.0	60.9	-	60.9	-	60.9	-
LS-382	Residence	65	61.1	61.1	-	61.1	-	61.1	-
LS-384	Residence	65	58.3	58.1	-	58.1	-	58.1	-
LS-385	Residence	65	59.2	58.5	-	58.6	-	58.6	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
LS-386	Residence	65	59.3	58.6	-	58.6	-	58.6	-
LS-388	Residence	65	58.4	58.3	-	58.3	-	58.3	-
LS-389	Residence	65	58.9	58.8	-	58.8	-	58.8	-
LS-390	Residence	65	60.0	59.9	-	59.9	-	59.9	-
LS-391	Residence	65	60.1	60.1	-	60.0	-	60.1	-
LS-392	Residence	65	61.8	61.7	-	61.7	-	61.7	-
LS-409	Residence	65	59.4	59.4	-	59.3	-	59.3	-
LS-410	Residence	65	60.1	60.1	-	60.1	-	60.1	-
LS-411	Residence	65	60.6	60.6	-	60.6	-	60.6	-
LS-412	Residence	65	60.6	60.6	-	60.6	-	60.6	-
LS-413	Residence	65	60.6	60.6	-	60.6	-	60.6	-
LS-418	Residence	65	60.3	60.2	-	60.1	-	60.1	-
LS-429	Residence	65	60.2	60.1	-	60.1	-	60.1	-
LS-430	Residence	65	61.4	61.3	-	61.3	-	61.3	-
LS-431	Residence	65	62.0	61.9	-	61.9	-	61.9	-
LS-440	Residence	65	60.1	60.0	-	59.9	-	59.9	-
LS-441	Residence	65	61.0	60.9	-	60.9	-	60.9	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
LS-443	Residence	65	58.6	58.5	-	58.4	-	58.5	-
LS-444	Residence	65	59.1	58.4	-	58.5	-	58.5	-
LS-445	Residence	65	58.7	58.6	-	58.6	-	58.6	-
LS-446	Residence	65	58.7	58.6	-	58.6	-	58.6	-
LS-448	Residence	65	58.7	58.6	-	58.6	-	58.6	-
LS-449	Residence	65	59.5	59.5	-	59.5	-	59.5	-
LS-450	Residence	65	60.8	60.7	-	60.7	-	60.7	-
LS-452	Residence	65	61.4	61.3	-	61.3	-	61.3	-
LS-453	Residence	65	60.1	59.9	-	59.9	-	59.9	-
LS-455	Residence	65	51.9	52.4	-	52.1	-	52.3	-
LS-456	Residence	65	58.8	58.6	-	58.6	-	58.6	-
LS-457	Residence	65	60.1	60.0	-	59.9	-	59.9	-
LS-460	Residence	65	61.0	61.0	-	61.0	-	61.0	-
LS-461	Commercial	70	58.8	58.6	-	58.6	-	58.6	-
LS-464	Residence	65	60.8	60.7	-	60.7	-	60.7	-
LS-480	21 Siemer's Home	65	63.1	63.3	-	63.3	-	63.3	-
LS-481	Alexander Robinson House	65	62.0	62.3	-	62.3	-	62.3	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
LS-482	20 Corner Store	65	70.1	71.0	0.9	71.1	1.0	71.0	0.9
LS-486	Residence	65	60.2	60.3	-	60.5	-	60.4	-
LS-487	Residence	65	63.9	64.2	-	64.4	-	64.3	-
LS-502	Private Home (1918)**	65	62.9	62.8	-	62.9	-	62.8	-
LS-503	Private Home (1911)	65	62.8	62.7	-	62.8	-	62.8	-
LS-504	Private Home (1906)	65	62.7	62.5	-	62.7	-	62.6	-
LS-505	Private Home (1903)	65	62.5	62.4	-	62.5	-	62.5	-
LS-506	Private Home (1919)	65	61.8	61.7	-	61.9	-	61.8	-
LS-507	Private Home (1924)	65	61.5	61.4	-	61.5	-	61.4	-
LS-508	Private Home (1925)	65	61.5	61.3	-	61.5	-	61.4	-
LS-509	Private Home (1921)	65	61.2	61.1	-	61.3	-	61.2	-
LS-510	Private Home (1900)	65	61.3	61.2	-	61.3	-	61.3	-
LS-511	Private Home (1920)	65	61.2	61.1	-	61.3	-	61.2	-
LS-512	Private Home (1921)	65	61.0	60.8	-	61.0	-	60.9	-
LS-513	Private Home (1923)	65	60.4	60.3	-	60.5	-	60.4	-
LS-514	Private Home (1925)	65	60.3	60.2	-	60.3	-	60.2	-
LS-515	Private Home (1919)	65	64.8	64.7	-	64.8	-	64.8	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
LS-516	Private Home (1923)	65	64.9	64.8	-	64.9	-	64.8	-
LS-517	Private Home (1923)	65	64.9	64.8	-	64.9	-	64.9	-
LS-518	Private Home (1919)	65	64.9	64.8	-	64.9	-	64.9	-
LS-519	Private Home (1907)	65	64.8	64.7	-	64.8	-	64.7	-
LS-520	Private Home (1872)	65	64.7	64.6	-	64.8	-	64.7	-
LS-521	Private Home (1922)	65	61.8	61.7	-	61.8	-	61.8	-
LS-522	Private Home (1922)	65	62.1	61.9	-	62.1	-	62.0	-
LS-523	Private Home (1924)	65	61.3	61.2	-	61.4	-	61.3	-
LS-524	Private Home (1922)	65	61.1	60.9	-	61.1	-	61.0	-
LS-525	Private Home (1925)	65	60.3	60.2	-	60.3	-	60.3	-
LS-526	Private Home (1868)	65	57.2	57.4	-	57.4	-	57.4	-
LS-527	Private Home (1903)	65	60.6	60.6	-	60.7	-	60.7	-
LS-528	Private Home (1923)	65	60.6	60.6	-	60.7	-	60.6	-
LS-529	Private Home (1918)	65	60.6	60.6	-	60.7	-	60.6	-
LS-530	Private Home (1900)	65	61.5	61.4	-	61.5	-	61.5	-
LS-531	Private Home (1925)	65	61.2	61.2	-	61.3	-	61.2	-
LS-532	Private Home (1894)	65	61.2	61.1	-	61.3	-	61.2	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
LS-533	Private Home (1900)	65	61.1	61.0	-	61.2	-	61.1	-
LS-534	Private Home (1903)	65	61.0	60.9	-	61.0	-	61.0	-
LS-535	Private Home (1919)	65	60.7	60.7	-	60.8	-	60.7	-
LS-536	Private Home (1922)	65	60.3	60.2	-	60.3	-	60.3	-
LS-537	Private Home (1919)	65	60.2	60.1	-	60.3	-	60.2	-
LS-538	Private Home (1925)	65	59.5	59.5	-	59.6	-	59.6	-
LS-539	Private Home (1925)	65	59.5	59.4	-	59.6	-	59.5	-
LS-540	Private Home (1866)	65	53.5	54.5	-	54.2	-	54.3	-
LS-541	Private Home (1904)	65	65.3	65.2	-0.1	65.3	0.0	65.2	-0.1
LS-542	Private Home (1907)	65	61.0	61.0	-	61.1	-	61.0	-
LS-544	Private Home (1905)	65	60.7	60.6	-	60.8	-	60.7	-
LS-545	Private Home (1912)	65	60.5	60.5	-	60.6	-	60.5	-
LS-546	Private Home (1912)	65	59.9	59.9	-	60.0	-	60.0	-
LS-547	Private Home (1870)	65	63.3	63.3	-	63.4	-	63.3	-
LS-548	Private Home (1910)	65	62.7	62.7	-	62.8	-	62.8	-
LS-549	Private Home (1924)	65	61.1	60.9	-	61.1	-	61.0	-
LS-550	Private Home (1922)	65	60.6	60.5	-	60.7	-	60.6	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
LS-551	Private Home (1924)	65	60.4	60.3	-	60.4	-	60.4	-
LS-552	Private Home (1920)	65	59.2	59.2	-	59.3	-	59.3	-
LS-553	Private Home (1894)	65	59.2	59.3	-	59.4	-	59.3	-
LS-57	Peace Church	65	60.5	60.5	-	60.6	-	60.5	-
LS-58	Theatre/Stores	70	65.9	65.9	0.0	66.0	0.1	65.9	0.0
LS-59	Residence	65	61.0	61.0	-	61.1	-	61.0	-
LS-62	St. John Church	65	68.2	67.5	-0.7	67.7	-0.5	67.6	-0.6
LS-63	Peach Church Manse	70	62.9	62.9	-	63.0	-	62.9	-
LS-66	Railroad Monument	75	63.8	63.7	-	63.8	-	63.8	-
LS-73	Residence	65	60.4	60.4	-	60.5	-	60.5	-
LS-75	Residence	65	60.9	60.9	-	61.0	-	60.9	-
LS-76	Residence	65	60.7	60.6	-	60.8	-	60.7	-
LS-79	Tioga School	65	58.5	58.5	-	58.6	-	58.5	-
LS-83	A.G. Chessman	65	66.5	66.2	-0.3	66.3	-0.2	66.2	-0.3
LS-86	Korthauer Log House	65	59.9	59.8	-	59.9	-	59.8	-
LS-88	Chippewa School, Formerly BHS	65	57.7	57.9	-	57.9	-	57.9	-
LS-90	Janker's Building	70	60.2	60.1	-	60.3	-	60.2	-

Map ID	Description	Land-Use Compatibility Guideline by Use (DNL, dB)	Existing Fly Quiet DNL (dB)	Proposed Interim Fly Quiet		Revised Interim Fly Quiet 1		Revised Interim Fly Quiet 2	
				DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)	DNL (dB)	Change in DNL* (dB)
LS-91	Fanzen's Mill Memorial	75	60.0	59.9	-	60.0	-	60.0	-
LSS-1	Geodesic Dome	65	67.3	67.4	0.1	67.6	0.3	67.5	0.2
LSS-2	Elk Grove Cemetery	85	52.9	52.7	-	52.8	-	52.8	-
LSS-3	Elk Grove Park District Farmhouse Museum	65	59.6	59.5	-	59.5	-	59.5	-
LSS-4	Historic Tonne House	65	58.8	58.4	-	58.5	-	58.5	-
LSS-5	Original Farmhouse - 1	65	54.6	54.3	-	54.3	-	54.3	-
LSS-6	Original Farmhouse - 2	65	54.7	54.6	-	54.7	-	54.7	-

Legend: Green highilght denotes property acquired and/or demolished.
Note 1: Subsequent to the issuance of the ROD in 2005, HP-7 - St. Johannes Cemetery was acquired by the CDA.
* Difference only shown if the DNL of the proposed scenario is greater than or equal to 65 dB.
** Denotes year constructed.
Source: EIS, HMMH Analysis, October 2018.
NA = Not Applicable or Available.

C.4.9 Summary of DNL Values at Schools Equal to or Greater than 65 dB

Table C-27 provides a list of schools exposed to a minimum of 65 DNL for the Existing Fly Quiet, Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1, and Revised Interim Fly Quiet 2. All of these schools have been sound-insulated.

TABLE C-27
DNL VALUES FOR SCHOOLS AND COUNT OF SCHOOL-AGE CHILDREN EXPOSED TO DNL OF 65 DB OR GREATER

			Count of Children for			
			Existing Fly Quiet	**Proposed Interim Fly Quiet**	**Revised Interim Fly Quiet 1**	**Revised Interim Fly Quiet 2**
Total School-Age Children within 65 DNL – Under 18 Years of Age (children)			1,278	1,636	1,636	1,636
			DNL (dB) for			
Map ID	**City**	**Name**	**Existing Fly Quiet**	**Proposed Interim Fly Quiet**	**Revised Interim Fly Quiet 1**	**Revised Interim Fly Quiet 2**
Preschools, Montessori, Elementary Schools, Middle Schools, Junior High Schools, and High Schools						
S29	**Des Plaines**	**Orchard Place Elementary School**	**65.8**	**66.1**	**65.9**	**66.0**
S57	**Norridge**	**J. Leigh Elementary School**	**64.5**	**65.9**	**66.1**	**66.0**
S69	**Rosemont**	**Rosemont Elementary School**	**66.0**	**65.1**	**65.2**	**65.2**
S74	**Itasca**	**Washington Elementary School**	**70.0**	**71.0**	**71.2**	**71.1**
S75	**Wood Dale**	**Early Childhood Education Center**	**65.1**	**64.1**	**64.3**	**64.2**

Notes: **BOLD** indicates schools that have been sound-insulated or funded for sound insulation through the School Sound Insulation Program (SSIP).
Source: EIS, CDA SSIP, June 2018. HMMH, October 2018.

C.4.10 Minority and Low-Income Households

See **Appendix D** for discussion of minority population and low-income households exposed to 65 DNL or greater for each condition.

C.4.11 Change Analysis for Alternatives

Table C-28 shows the numbers of acreage, noise-sensitive facilities, and people and housing units newly included in, excluded from, or exposed to a significant or reportable impact. Any of these parameters would be newly included if they are exposed to DNL less than 65 dB in Existing Fly Quiet while exposed to at least 65 DNL in either Proposed Interim Fly Quiet, Revised Interim Fly Quiet 1, or Revised Interim Fly Quiet 2. They would be significantly impacted if exposed to at least 65 DNL and their increase in DNL, relative to Existing Fly Quiet, would be at least 1.5 dB. There would be a reportable change if exposed to DNL between 60 dB and 65 dB (exclusive) and their increase in DNL, relative to Existing Fly Quiet, would be at least 3 dB. The reportable changes below 60 DNL are shown on the grid point maps in **Attachment C-6** as a factor for the FAA to consider.[26]

Conversely, acreage, noise-sensitive facilities, people, or housing units would be newly excluded if exposed to DNL of at least 65 dB in Existing Fly Quiet but exposed to DNL less than 65 dB in any of the proposed scenarios. They would be significantly relieved if exposed to at least 65 DNL in Existing Fly Quiet and their decrease in DNL would be at least 1.5 dB. They would have a reportable reduction if exposed to DNL between 60 dB and 65 dB (exclusive) under Existing Fly Quiet and their decrease in DNL, relative to Existing Fly Quiet, would be at least 3 dB.

In terms of acreage, Proposed Interim Fly Quiet and Revised Interim Fly Quiet 2 would have the least newly included acreage (approximately 142) but only by one to two acres compared to the other scenario. Proposed Interim Fly Quiet would significantly impact the least acreage (nearly 16) but, at nearly 89 acres, Revised Interim Fly Quiet 1 would have the least acreage of reportable increase. Proposed Interim Fly Quiet would have the highest acreage of newly excluded noncompatible land use area (nearly 137). Proposed Interim Fly Quiet would also have the highest acreage of significant relief for noncompatible land use (nearly 33) but only by a margin of two acres over the other two scenarios. Neither scenario would have any acreage of reportable decrease.

In terms of noise-sensitive facilities, Revised Interim Fly Quiet 1 and 2 would newly include the fewest facilities (two). Proposed Interim Fly Quiet, with one, would have the fewest facilities experiencing significant impact. No facilities would experience reportable change. All of the scenarios would newly exclude three facilities. One facility would experience significant relief and none would experience reportable relief.

In terms of population, Proposed Interim Fly Quiet would newly include the fewest people (2,428), and Proposed Interim Fly Quiet would significantly impact the fewest people (167). Revised Interim Fly Quiet 1 would cause a reportable increase for the smallest number of people (1,959). Proposed Interim Fly Quiet would newly exclude the most people (978), and Proposed Interim Fly Quiet would provide significant relief to the most people, 147. Neither scenario would cause reportable relief to population.

In terms of housing units, Proposed Interim Fly Quiet would newly include the fewest housing units (961), and Proposed Interim Fly Quiet would significantly impact the fewest housing units (57). Revised Interim Fly Quiet 1 would cause reportable increases to the lowest number of housing units (652). At 392 and 56, respectively, Proposed Interim Fly Quiet would newly exclude and significantly relieve the most housing units. Neither scenario would cause reportable relief to housing units.

[26] Desk Reference for Airport Actions, Chapter 17, October 2007.

TABLE C-28
IMPACTS AND REPORTABLE CHANGES TO NONCOMPATIBLE ACREAGE, NOISE-SENSITIVE FACILITIES, POPULATION, AND HOUSING UNITS

Range of DNL for Proposed/Revised Scenario	Type of Impact or Relief	Minimum Change in DNL (dB) (1)	Proposed Interim Fly Quiet	Revised Interim Fly Quiet 1	Revised Interim Fly Quiet 2
Noncompatible Land Use (Acreage) (2)					
Newly Included (3)		n/a	**142.5**	144.0	**142.5**
DNL 65 or greater	Significant Impact	1.5	**15.9**	89.0	65.0
DNL 60-64.9	Reportable Change	3	153.8	**79.3**	115.1
Newly Excluded (4)		n/a	**137.5**	118.4	125.7
DNL 65 or greater	Significant Relief	-1.5	**33.4**	31.1	31.1
DNL 60-64.9	Reportable Change	-3	-	-	-
Noise-Sensitive Facilities (Count)					
Newly Included (3)		n/a	3	**2**	**2**
DNL 65 or greater	Significant Impact	1.5	**1**	4	3
DNL 60-64.9	Reportable Change	3	-	-	-
Newly Excluded (4)		n/a	3	3	3
DNL 65 or greater	Significant Relief	-1.5	1	1	1
DNL 60-64.9	Reportable Change	-3	-	-	-
Population					
Newly Included (3)		n/a	**2,428**	2,583	2,530
DNL 65 or greater	Significant Impact	1.5	**167**	2,262	1,679
DNL 60-64.9	Reportable Change	3	3,256	**1,959**	2,521
Newly Excluded (4)		n/a	**978**	817	875
DNL 65 or greater	Significant Relief	-1.5	**147**	138	138
DNL 60-64.9	Reportable Change	-3	-	-	-
Housing Units					
Newly Included (3)		n/a	**961**	1,038	1,010
DNL 65 or greater	Significant Impact	1.5	**57**	1,006	747
DNL 60-64.9	Reportable Change	3	1,094	**652**	849
Newly Excluded (4)		n/a	**392**	332	355
DNL 65 or greater	Significant Relief	-1.5	**56**	53	53
DNL 60-64.9	Reportable Change	-3	-	-	-

Notes: **BOLD** indicates either the lowest increase or the greatest decrease for the alternatives.
1 Change from Existing Fly Quiet
2 Single-family, multi-family, and mobile home and school land uses only
3 Meaning DNL for Existing Fly Quiet is less than 65 DNL but Proposed/Revised would be greater than or equal to 65 DNL, regardless of change in DNL
4 Meaning DNL for Existing Fly Quiet is greater than or equal to 65 DNL but Proposed/Revised would be less than 65 DNL, regardless of change in DNL
Source: EIS, CDA SSIP, June 2018, HMMH October 2018.