CHICAGO
MAYOR BRANDON JOHNSON

O'Hare Noise Compatibility Commission
Residential Committee Meeting
September 12, 2023

New Federal Aviation Administration ("FAA") Guidance for the Residential Sound Insulation Program ("RSIP")

CDA
Chicago Department of Aviation

O'HARE
INTERNATIONAL AIRPORT

Updates to FAA Guidance

UPDATES TO AIP HANDBOOK

Previous Guidance: FAA Order 5100.38C, Airport Improvement Program Handbook, released on June 28, 2005; hereafter, “AIP Handbook previous version”

Replaced by: FAA Order 5100.38D, Airport Improvement Program Handbook, released on September 30, 2014

Current Guidance: FAA Order 5100.38D, Change 1, Airport Improvement Program Handbook, released on February 26, 2019; hereafter, “AIP Handbook current version”

UPDATES TO ADVISORY CIRCULAR

Previous Guidance: FAA Advisory Circular 150/5000-9A, Guidelines for the Sound Insulation of Residences Exposed to Aircraft Operations, released on July 2, 1993

Hereafter, “AC previous version”

Current Guidance: FAA Advisory Circular 150/5000-9B, Guidelines for Sound Insulation of Structures Exposed to Aircraft Noise, released on June 8, 2022

Hereafter, “AC current version”

General Eligibility

ELIGIBILITY DATE FOR NEW CONSTRUCTION

PREVIOUS GUIDANCE	CURRENT GUIDANCE
"The date the Record of Decision was issued, **September 30, 2005**, is considered to be the O'Hare Modernization Program's RSIP Eligibility Date. Homes within the established noise contour built before this date could be determined to be eligible."	"The building permit of a structure must have been issued prior to **October 1, 1998**, unless the airport operator or sponsor has demonstrated to the FAA that no published noise contours existed at the time."
August 2006 FAA Letter Regarding O'Hare Modernization Program ("OMP")	AC current version, Section 3.2.5.2

ELIGIBILITY DATE FOR NEW CONSTRUCTION

PREVIOUS PRACTICE	PROPOSED APPROACH
September 30, 2005	October 1, 1998

ELIGIBILITY DATE FOR ADDITIONS

PREVIOUS GUIDANCE	CURRENT GUIDANCE
AIP Handbook and AC previous versions are silent on this issue.	"…residential property constructed after October 1, 1998 and within the DNL 65 dB, or above, **contour of an NEM* published prior to the property's construction**, is not approved for remedial noise mitigation. This **also applies to partial renovations and additions**." * NEM = Noise Exposure Map

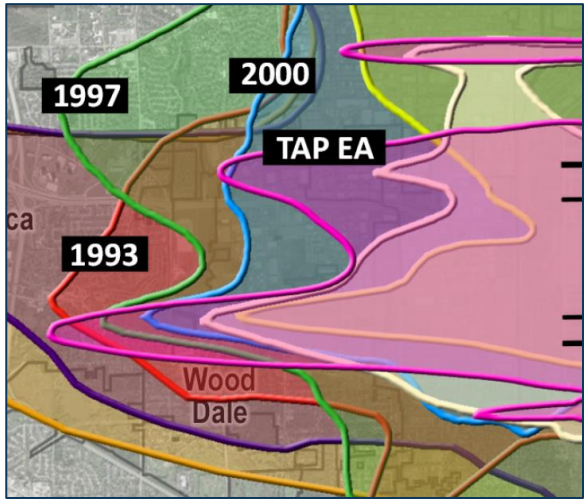
AC current version, Section 6.4.1.3.1

ELIGIBILITY DATE FOR ADDITIONS

PREVIOUS PRACTICE	PROPOSED APPROACH*
All additions were eligible as long as the addition was completed prior to the field measurement appointment.	2000 Noise Contour – TBD OMP Build-Out Noise Contour – 9/30/2005 Terminal Area Plan (“TAP”) EA Noise Contour – 11/17/2022

*Ineligible additions may be treated if they serve as an entry point for noise due to a lack of acoustical separation from the eligible portion of the home.

EXAMPLES OF HOW ELIGIBILITY DATES MAY AFFECT ADDITIONS



Overlay of historic O'Hare noise contours (65 DNL)

Example #1: Original home was built in 1945 and within the 2000 Noise Contour. Addition was built in 1992.

Status of addition: Eligible, because the addition was built prior to the publication of the 2000 Noise Contour.

Example #2: Original home was built in 1984 and within the 2000 Noise Contour. Addition was built in 2016.

Status of addition: Ineligible, because the addition was built after the publication of the 2000 Noise Contour.

ELIGIBILITY DATE FOR PARTIAL RENOVATIONS

PREVIOUS GUIDANCE	CURRENT GUIDANCE
"Homes within the established noise contour that have been built or substantially remodeled (**90% or more of original structure**) after this date [September 30, 2005] should be determined to be not eligible for the program."	"…residential property constructed after October 1, 1998 and within the DNL 65 dB, or above, **contour of an NEM published prior to the property's construction**, is not approved for remedial noise mitigation. This also **applies to partial renovations and additions**."
August 2006 FAA Letter Regarding OMP	AC current version, Section 6.4.1.3.1

ELIGIBILITY DATE FOR PARTIAL RENOVATIONS

PREVIOUS PRACTICE	PROPOSED APPROACH
Allowable at any time, as long as at least 10% of original structure remains after renovation, and all work is completed prior to the field measurement appointment	FAA defines “partial renovation” as any renovation that creates new habitable space*. 2000 Noise Contour – TBD OMP Build-Out Noise Contour – 9/30/2005 TAP EA Noise Contour – 11/17/2022

*Ineligible new habitable rooms may be treated if they serve as an entry point for noise due to a lack of acoustical separation from the eligible portion of the home.

EXAMPLE OF HOW ELIGIBILITY DATES MAY AFFECT PARTIAL RENOVATIONS

Example #1 : Home was built in 1951 and partially renovated in 2018 by updating and enlarging the kitchen, which is a habitable space.

Status of the renovation: Eligible, because the renovation did not create a new habitable space, it simply updated an existing habitable space.

EXAMPLE OF HOW ELIGIBILITY DATES MAY AFFECT PARTIAL RENOVATIONS

Example #2: A single-story home was built in 1962 and partially renovated in 2020 by adding several dormers to the roof and converting the attic (non-habitable space) into a new master bedroom (habitable space).

Status of the renovation: Ineligible, because a new habitable space was built after the publication date of the 2000 Noise Contour.

PURPOSE OF PRE-CONSTRUCTION NOISE AUDIT

PREVIOUS GUIDANCE	CURRENT GUIDANCE
"…**determine the as-is level of noise reduction**." / "…determine the need for additional noise reduction and to **design an appropriate scheme of modifications**."	"A noise-impacted structure **must have interior noise levels that are DNL 45 dB or greater** with the windows closed to be considered non-compatible."
AC previous version, Section 3.3	AC current version, Section 6.4.2.1

PURPOSE OF PRE-CONSTRUCTION NOISE AUDIT

PREVIOUS PRACTICE	PROPOSED APPROACH
Pre-construction noise audit not used to determine eligibility, but used to set a baseline against which post-construction results can be measured.	Eligibility noise audit used to measure existing interior noise levels for the purpose of determining eligibility, as well as to establish a baseline against which post-construction results can be measured.

NUMBER OF STAGES TO DETERMINE ELIGIBILITY

PREVIOUS GUIDANCE	CURRENT GUIDANCE
"Noise compatibility projects usually are located in areas where aircraft noise exposure is significant, as measured in **day-night average sound level (DNL) of 65 decibels (dB) or greater**."	"The project must meet the two-stage eligibility test. First the property must be **in an eligible noise contour threshold** [. . .] and second, the property must **meet the interior noise level requirement** …."
AIP Handbook previous version, Section 810, a	AIP Handbook current version, Table R-6, g, (3)

NUMBER OF STAGES TO DETERMINE ELIGIBILITY

PREVIOUS PRACTICE	PROPOSED APPROACH
Home needs to be in the 65 DNL noise contour or included due to block-rounding.	STAGE 1 – must be in the 65 DNL noise contour or included due to block-rounding. STAGE 2 – must have an average interior DNL of 45 dB or greater.

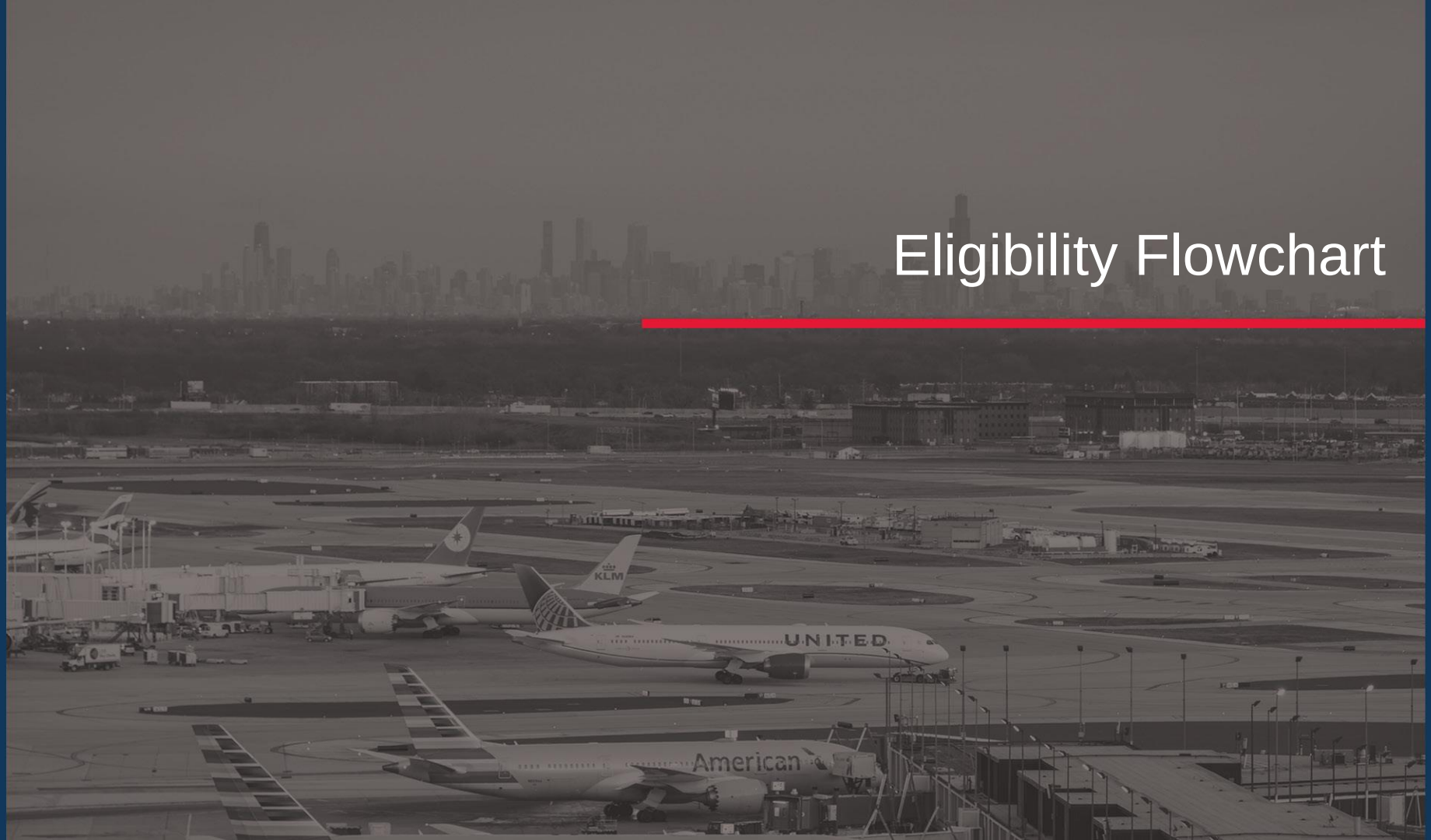
BLOCK-ROUNDING

PREVIOUS GUIDANCE	CURRENT GUIDANCE
“If acoustical windows are to be installed in a preponderant number of homes within the project area, **eligibility may be extended** to an incidental number of homes within the project area, even though they would not qualify for window installation if considered individually.”	“Once a residence is approved for block-rounding, its **interior noise levels must meet the requirements** in Paragraph R-8 in order for that particular residence to be eligible.” “A noise-impacted non-compatible structure must be experiencing existing interior noise levels that are 45 dB or greater [. . .] to be considered eligible.”
AIP Handbook previous version, Section 812, a, (3)	AIP Handbook current version, Section Table R-2, f & R-8

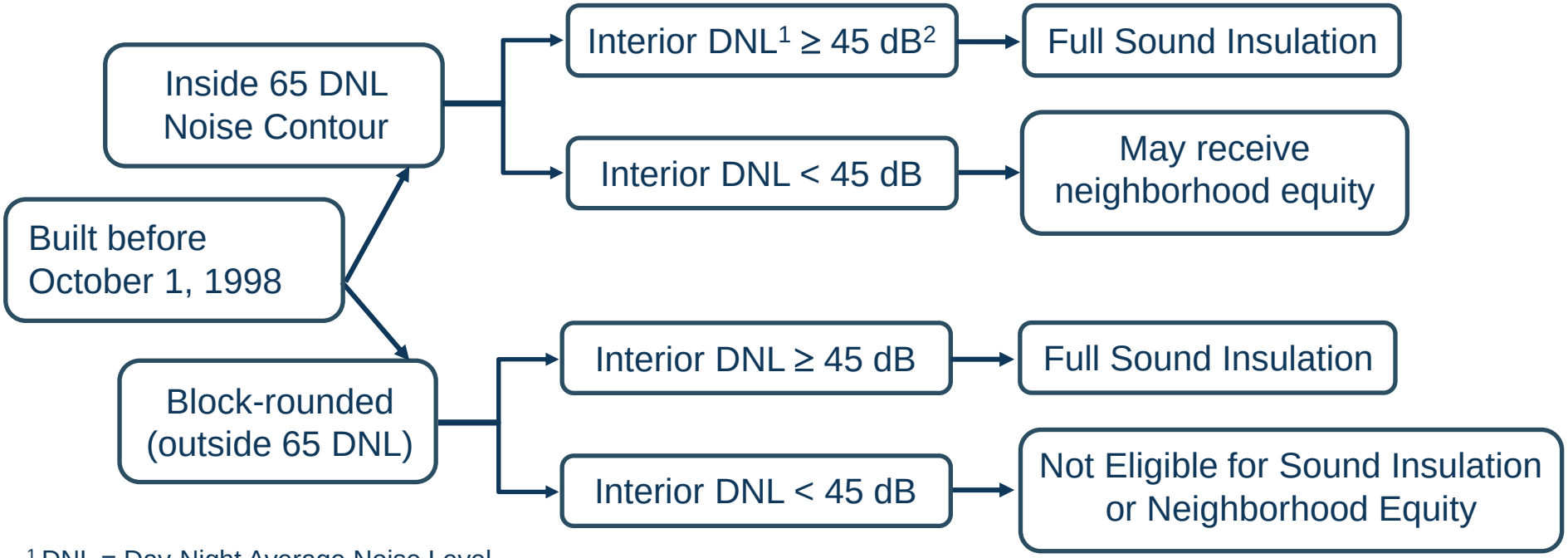
BLOCK-ROUNDING

PREVIOUS PRACTICE	PROPOSED APPROACH
As approved in ONCC Resolution 2001-9, any home included for block-rounding receives one of the available sound insulation packages.	Any homes included for block-rounding must have an average interior DNL of 45 dB or greater to be considered eligible for full sound insulation.

Eligibility Flowchart



ELIGIBILITY FLOWCHART



[1] DNL = Day-Night Average Noise Level
[2] dB = Decibel

Treatment Packages

ALLOWABLE HABITABLE ROOM TREATMENTS

PREVIOUS GUIDANCE	CURRENT GUIDANCE
"A noise level reduction (NLR) of 25-35 from outdoor noise levels to indoor levels usually can be achieved with some combination of window and door replacement, ceiling insulation, caulking, weather-stripping, and central air ventilation (or air conditioning as limited below) systems. Therefore, **project eligibility will normally be limited to these measures**…"	"The **following measures are allowable**: window and door replacement, caulking, weather-stripping, and installing central air ventilation so that the windows can be kept closed only if the structure does not already have a central air ventilation system. The use of **other measures is not allowable** unless the ADO has approved the use of the measures in advance."
AIP Handbook previous version, Section 812, a, (5)	AIP Handbook current version, Table R-6, g, (6)

ALLOWABLE HABITABLE ROOM TREATMENTS

PREVIOUS PRACTICE	PROPOSED APPROACH
• Window replacement • Prime door replacement • Sliding glass door replacement • Storm door replacement • Drywall • Adding air-conditioning • Remove/patch through-wall AC • Through-wall AC baffle covers	• Window replacement • Prime door replacement • Sliding glass door replacement • Storm door replacement • ~~Drywall~~ (removed) • Adding air-conditioning • Remove/patch through-wall AC • ~~Through-wall AC baffle covers~~ (removed)

ALLOWABLE NON-HABITABLE ROOM TREATMENTS

PREVIOUS GUIDANCE	CURRENT GUIDANCE
AIP Handbook and AC previous versions are silent on this issue.	"In some cases, elements such as windows of non-habitable space might be **entry points that contribute to unacceptable noise levels** in adjacent habitable rooms. For example, a stairway window next to an open bedroom or an open closet with a window next to a bedroom may need to be considered for mitigation if it is considered an entry point to a habitable room."

AC current version, Section 8.2.1.1.3

ALLOWABLE NON-HABITABLE ROOM TREATMENTS

PREVIOUS PRACTICE	PROPOSED APPROACH
• Window replacement (lower acoustical value) • Prime door replacement • Sliding glass door replacement • Storm door replacement	No work is allowed in non-habitable rooms unless they are open to an adjacent habitable room creating an entry point for noise.

FAILURE TO MEET FAA NOISE REDUCTION GOALS

PREVIOUS GUIDANCE	CURRENT GUIDANCE
AIP Handbook and AC previous versions are silent on this issue.	"**Offer secondary package** if necessary to achieve noise compatibility if post construction testing of structures results in objectives not being met."

AC current version, Section 3.4.2

FAILURE TO MEET FAA NOISE REDUCTION GOALS

PREVIOUS PRACTICE	PROPOSED APPROACH
In rare cases when a home did not meet the 5 dB reduction goal, no remedial work took place as long as the installed products met all specification requirements.	A targeted supplemental treatment will be developed, and installed, aimed at providing the additional noise reduction necessary to meet the 5 dB noise reduction goal and the interior DNL 45 dB goal.

FAILURE TO MEET FAA NOISE REDUCTION GOALS – EXAMPLE

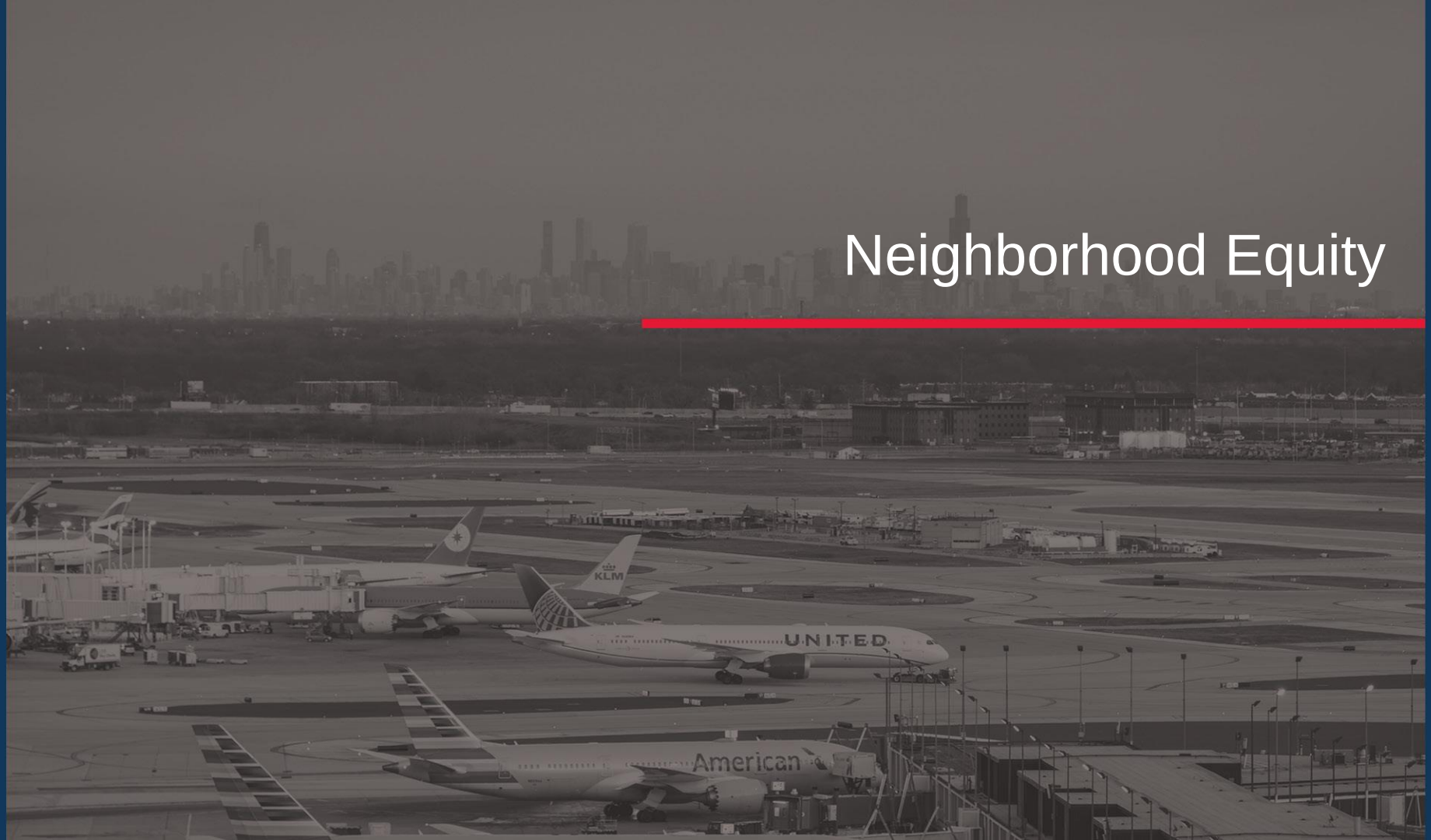
Step 1: A older, poorly maintained frame construction home receives full sound insulation.

Step 2: Post-construction noise audit indicates an average noise reduction less than 5 dB and/or an average interior DNL greater than 45 dB.

Step 3: A supplemental drywall treatment is applied to one or more habitable rooms in the home.

Step 4: A second post-construction noise audit is conducted confirming an average noise reduction of at least 5 dB and an interior DNL less than 45 dB.

Neighborhood Equity



NEIGHBORHOOD EQUITY

PREVIOUS GUIDANCE	CURRENT GUIDANCE
"For purposes of equity in a neighborhood where noise insulation has taken place…some lesser level of noise insulation (replacement of depreciated windows, storm doors, caulking and weatherstripping, etc.) **may be provided to assure conformity of improvements and perceived equity** of application in the project neighborhood."	"A sponsor may consider the use of neighborhood equity when a few residences in the eligible noise contour threshold [. . .] **that do not meet the interior noise level requirements** are scattered among residences that do…." "The ADO* **must not approve** the use of the standard noise insulation package for neighborhood equity residences."
AIP Handbook previous version, Section 812, b, (1)	AIP Handbook current version, R-10

* ADO = Airports District Office

NEIGHBORHOOD EQUITY

PREVIOUS PRACTICE	PROPOSED APPROACH
A full sound insulation package was provided instead of a reduced neighborhood equity package.	Homes that fail stage 2 eligibility test (average interior DNL < 45 dB) are not eligible for full sound insulation but may be eligible to receive a neighborhood equity package.

NEIGHBORHOOD EQUITY – PERCENT PARTICIPATION LIMIT

PREVIOUS GUIDANCE	CURRENT GUIDANCE
"If acoustical windows are to be installed in a preponderant number of homes within the project area, eligibility **may be extended to an incidental number of homes** within the project area, even though they would not qualify for window installation if considered individually."	"Per FAA policy, the ADO must not approve neighborhood equity for more than **10% of the residences in the neighborhood**, (as logically bounded by either streets or other geographic delineation) or **20 residences in a phase of the noise insulation program, whichever is less**.
AIP Handbook previous version, Section 812, a, (3)	AIP Handbook current version, Table R-3, c.

NEIGHBORHOOD EQUITY – PERCENT PARTICIPATION LIMIT

PREVIOUS PRACTICE	PROPOSED APPROACH
No percent participation limit was used.	Request FAA approval to exceed limit of 10% of residences in neighborhood or 20 homes in phase, whichever is less

Prioritization of Homes

PRIORITIZATION POLICY

PREVIOUS GUIDANCE	CURRENT GUIDANCE
"Priority should be given to homes which are in the **highest noise zones**."	"The FAA recommends airports prioritize based on the **highest level of noise exposure**." "Where numerous properties are within the same exposure levels, the airport operator or sponsor will need to set additional priorities. These need to be set in consultation with the FAA Program Manager." (continued on next slide)
AC previous version, Section 4.1.1	AC current version, Section 6.3.1 & 6.3.2

PRIORITIZATION POLICY

PREVIOUS GUIDANCE	CURRENT GUIDANCE
“Priority should be given to homes which are in the **highest noise zones**.”	(continued from previous slide) “They can include criteria such as prioritizing structures that benefit the largest number of individuals compared to the amount of time spent in the structures, for example: • Multi-family residences before single-family residences.”
AC previous version, Section 4.1.1	AC current version, Section 6.3.2

PRIORITIZATION POLICY

PREVIOUS PRACTICE	PROPOSED APPROACH
For pre-OMP homes, the ONCC approved Resolution 2001-9, which prioritized the homes with the highest exterior DNL. For OMP homes, the ONCC approved Resolution 2006-3, which instituted a “fairness policy” and sequenced homes according to regional groupings.	1. Review prioritization with ONCC Residential Committee 2. Consult with FAA 3. Approve draft resolution with ONCC Residential Committee 4. Approve final resolution with ONCC

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