



Appendix G



Land Use Mitigation Alternatives



Appendix G Land Use Mitigation Alternatives

This appendix presents the range of the land use mitigation alternatives that were considered in this Part 150 Noise Compatibility Study (Part 150 Study) to mitigate noise impacts of aircraft operations at the Chicago-Rockford International Airport (RFD or Airport). The proposed measures were evaluated for the anticipated benefits and costs associated with its implementation. Each recommended measure was reviewed with the membership of the Advisory Committee (AC). Local planning professionals from the surrounding communities were invited to meet with the project team to discuss the types of measures that were evaluated and recommended. Copies of all of the materials that were sent are located in **Appendix D, Public Involvement**.

Those alternatives that are recommended for inclusion in the RFD 2023 Noise Compatibility Program (NCP) are included in **Chapter 4, Noise Compatibility Program**.

» G.1 Potential Land Use Controls

Land use controls fall into two categories, preventative and corrective. Preventive land use management techniques seek to prevent the introduction of additional noise-sensitive land uses within existing and future airport noise contours. Corrective or remedial measures are intended to convert existing, non-compatible uses to compatible uses. These potential measures are discussed in **Appendix E, Land Use Methodology** and summarized below:

Preventative

- Compatible Use Zoning
- Subdivision Regulations
- Building Codes
- Capital Improvement Programs
- Growth Risk Assessment
- Fair Disclosure Policies

Corrective

- Sound Insulation
- Land Acquisition
- Purchase Guarantee
- Avigation Easements

The following pages provide a description of each land use alternative evaluated, along with an assessment of the benefits, drawbacks, and a recommendation.

» G.2 Land Use Mitigation Alternatives

This section provides a summary of the analysis of the previously recommended mitigation measures that were included in the revised 2003 NCP and potential new mitigation alternatives that were evaluated as part of this RFD 2023 NCP Update.



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G.2.1 Previously Approved Mitigation Measures

This section provides a review of the nine (9) previously approved land use mitigation measures that were included in the 2003 NCP¹. Five (5) measures were previously withdrawn from the NCP in the 2003 NCP. The Part 150 NEM Update undertaken in 2013 resulted in no housing units or other noise-sensitive land used located within the 65 DNL noise contours. As a result, no further changes to the NCP were recommended at that time. Provided for each measure is a description, the current status, and the recommendation going forward for this RFD 2023 NCP Update.

Measure LU-2

Description: Adopt noise overlay zoning prohibiting development of selected noise-sensitive land uses within the 60-65 DNL noise contour, high occupancy uses in the “double-clear zone” area, and residential uses in the 65+ DNL noise contour of the 2008 NEMs/NCP within the “double-clear zone” are City of Rockford and Winnebago County.

Status: With the publication and FAA Record of Approval (ROA) of the 2003 NCP Update on November 3, 2003, this information was conveyed to the City of Rockford and Winnebago County for implementation at their discretion.

Recommendation: ***Recommended to be continued with modification to include the new 2023/2028 NEMs.***

Measure LU-4

Description: Amend local comprehensive plans by adopting the updated Part 150 NCP as their noise compatibility elements for the City of Rockford and Ogle and Winnebago counties.

Status: With the publication and FAA ROA of the 2003 NCP Update on November 3, 2003, this information was conveyed to the City of Rockford and Ogle and Winnebago counties for implementation at their discretion.

Recommendation: ***Recommended to be continued with modification to include the new 2023/2028 NEMs.***

Measure LU-5

Description: Adopt guidelines for discretionary review of development projects for the City of Rockford, Winnebago County, Ogle County, and the GRAA.

Status: With the publication and FAA ROA of the 2003 NCP Update on November 3, 2003, this information was conveyed to the City of Rockford, Winnebago County, Ogle County, and the GRAA for implementation at their discretion.

Recommendation: ***Recommended to be continued with modification to include the new 2023/2028 NEMs.***

Measure LU-8

Description: Voluntary acquisition of single-family residences on Blackhawk Island in the 2008 NEMs/NCP 65 DNL noise contour.

Status: The implementation of this measure was fully implemented.

Recommendation: ***Recommended to be withdrawn from 2023 NCP.***

¹ FAA Record of Approval issued November 3, 2003.



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Measure LU-9

Description: Redevelop airport-owned land parcels located along Kishwaukee Street south of Research Parkway.

Status: The implementation of this is measure pending; dependent upon the interest of a potential developer and the availability of funding.

Recommendation: ***Recommended to be continued.***

Measure LU-11

Description: Acquire development and overflight rights via purchase of land use and avigation easement over undeveloped parcel in Runway 07L approach area on south side of Kishwaukee River.

Status: This measure is currently implemented.

Recommendation: ***Recommended to be withdrawn from 2023 NCP.***

Measure LU-12

Description: Offer options of voluntary sale to GRAA or sound insulation to owner of one (1) single-family residence south of the airport in the 65 DNL contour of the 1993 NCP.

Status: This measure is currently implemented.

Recommendation: ***Recommended to be withdrawn from 2023 NCP.***

Measure LU-13

Description: Encourage the City of Rockford and Winnebago County to require plat notes on new subdivision plats and to record the notes on deeds for new subdivisions within the Airport Noise Overlay Zones AC-1 and AC-2.

Status: With the publication and FAA ROA of the 2003 NCP Update on November 3, 2003, this information was conveyed to the City of Rockford and Winnebago County for implementation at their discretion. To date, the airport noise contours are not referenced in any local subdivision ordinance.

Recommendation: ***Recommended to be continued with modification to include the new 2023/2028 NEMs.***

Measure LU-14

Description: Encourage Winnebago County, the City of Rockford, the Village of New Milford, and the Village of Davis Junction not to allow an increase in the residential density in the Agricultural Priority (AG) or Rural Residential (RR) zoning districts (Winnebago County) in the 2008 NEM/NCP 60+ DNL noise contour.

Status: With the publication and FAA ROA the 2003 NCP Update on November 3, 2003, this information was conveyed to Winnebago County, the City of Rockford, the Village of New Milford, and the Village of Davis Junction for implementation at their discretion. To date, the airport noise contours are not referenced in any local zoning document.

Recommendation: ***Recommended to be continued with modification to include the new 2023/2028 NEMs.***



G.2.2 Screening of Potential New Mitigation Alternatives

This section summarizes the qualitative screening analysis of modified or potential new noise mitigation measures. Previous noise mitigation measures that were implemented or withdrawn are not included in the screening analysis. Previous noise mitigation measures that are modified are discussed in **Chapter 4, Noise Compatibility Program. Table G-1, Mitigation Alternatives Screening Analysis Summary** presents a summary of the mitigation alternatives screening. The "Evaluation and Recommendation" column provides a brief synopsis of the issues and findings associated with each mitigation alternative and notes whether the mitigation alternative was recommended for further analysis. The mitigation alternatives are presented as either corrective or preventative. Those mitigation alternatives that were determined to warrant further analysis are discussed in greater detail in **Section G.2.3**.



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TABLE G-1 | MITIGATION ALTERNATIVES SCREENING ANALYSIS SUMMARY

DESCRIPTION	BENEFITS	DRAWBACKS	EVALUATION AND RECOMMENDATION
CORRECTIVE			
Offer Residential Sound Insulation Program for Single- and Multi-Family Homes within the 65+ DNL Noise Contour and in the defined Block Rounding Areas Outside of the 65 DNL Noise Contour.	Would reduce interior noise levels for the homes impacted within the 65 DNL contour and in the block rounding area outside of the 65 DNL noise contour.	Final eligibility for each property would have to be determined. Final cost would still have to be determined based on participation rates and local costs to implement.	This measure has the ability to provide benefits to the homes impacted by the 65+ DNL noise contour and in the block rounding area outside the 65 DNL noise contour. Therefore, this alternative is RECOMMENDED for further analysis.
Offer Land Acquisition Program	Has the potential to convert owner-occupied residential housing units into compatible uses. Acquired properties could potentially be utilized in future airport development.	Currently there are no noncompatible properties within the 70+ DNL noise contour.	Due to the lack of noncompatible land uses within the 70+ DNL noise contour this alternative is NOT RECOMMENDED for further analysis.
Offer Avigation Easements to Owner-Occupied Single- and Multi-Family Homes within Noise Mitigation Program Areas (NMPA) if Sound Insulation is Declined.	Has the potential to convert owner-occupied residential housing units into compatible uses. Properties would remain as taxable land.	The total costs are uncertain pending completion of the feasibility study to determine who is interested in participating. Major issues include that all properties would be offered sound insulation and would have to be eligible. Only owners declining either measure would be offered avigation easement.	This measure has the ability to convert impacted properties to compatible uses. Therefore, this alternative is RECOMMENDED for further analysis.
PREVENTATIVE			
Adopt Improved Building Codes.	This alternative would recommend updating existing building codes to ensure that new residential construction meets current FAA criteria for sound insulation.	This alternative would likely increase the overall cost of residential construction within the 60 DNL noise contour.	This measure will require potential builders of an increased level of construction to reduce noise within residential structures within the 60 DNL noise contours. Therefore, this alternative is RECOMMENDED for further analysis.
Develop a Voluntary Fair Disclosure Program.	Will disclose through regulations on the seller or their representatives at the time of sale that an existing property could be subjected to aircraft noise. Potential buyers will be made aware before they purchase the property that it is in an area that has the probability of receiving noise from aircraft.	Will need to seek cooperation from the City of Rockford and Winnebago County along with the local Rockford realtors to participate.	This measure will notify potential buyers that they may be subjected to aircraft noise within the 60 DNL noise contour. Therefore, this alternative is RECOMMENDED for further analysis.



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DESCRIPTION	BENEFITS	DRAWBACKS	EVALUATION AND RECOMMENDATION
Re-zoning of parcels within 60+ DNL Contour	This measure would prevent future non-compatible development and land uses within the 60+ DNL contour.	Potential loss of tax-base dependent on future zoning designation. Based on local land use regulations and ordinances, residential and other incompatible land uses are permitted within compatible zoning, such as commercial and industrial zoning.	This measure fails to meet FAA guidance for effectively preventing incompatible land use, due to the local land use guidelines and ordinances. Therefore, this alternative is NOT RECOMMENDED for further analysis.

Source: Landrum & Brown analysis, 2023.



G.2.3 Analysis of Potential New Mitigation Alternatives

The qualitative analysis described below identified two (2) corrective mitigation alternatives and two (2) preventative mitigation alternatives as recommended for inclusion in the RFD 2023 NCP. The alternative mitigation measures are analyzed in greater detail in the following pages.

The following information is provided for each alternative:

- **Title:** includes a brief descriptive title of the measure.
- **Background and Intent:** includes the intent of the measure as a means to mitigate noise impacts, and the background and setting to which the measure relates where applicable.
- **Benefits:** includes a statement of how the measure would provide land use compatibility benefits.
- **Drawbacks:** identifies any potential negative consequences of implementing the measure.
- **Cost to Implement:** identifies the potential cost to implement each measure.
- **Findings and Recommendations:** provides a recommendation as to whether or not to carry forward the alternative for further analysis and consideration.

In some cases, alternatives had drawbacks that made that alternative unfeasible or they did not provide measurable benefits and therefore no further consideration was warranted. Those alternatives that showed potential benefits were continued for further analysis, including further discussion with parties responsible for implementation (FAA, GRAA, airport users) and presented to the public for input and comment. Alternatives that are recommended for inclusion in this NCP are included in **Chapter 4, Noise Compatibility Program**.



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NOISE COMPATIBILITY PROGRAM - MITIGATION ALTERNATIVE 1

TITLE:	Offer Residential Sound Insulation Program for Single- and Multi-Family Homes within the 65+ DNL Noise Contour
BACKGROUND AND INTENT:	Approximately 61 single- and multi-family residential units located inside the 65+ DNL of the Future (2028) Noise Compatibility Program Noise Exposure Map (NEM) (shown in Exhibit 4-1) would be eligible for sound insulation. In addition, 87 additional single- and multi-family units are located in several proposed block rounding areas outside of the 65+ DNL noise contour. If approved, a total of 148 residential units could potentially be eligible for sound insulation. All homes that participate in the sound insulation program would be required to confer an avigation easement to the GRAA in exchange for the improvements.
BENEFITS:	This measure has the potential to convert owner-occupied residential housing units into compatible uses. AIP funding, if awarded, may be available to offset costs.
DRAWBACKS:	The total costs are uncertain pending completion of the feasibility study to determine who is interested in participating and also pending testing to determine final eligibility.
COST TO IMPLEMENT:	Noise attenuation costs for a particular unit may vary extensively depending upon the size, age, condition and construction of the overall building and each individual unit. No extensive work has been done at this point to assess these factors or to develop actual detailed costs. Total cost would depend upon all of these factors and the number of units that choose to participate. In addition, costs are also based on the level of effort provided by the airport staff. Costs to implement included hard costs which is the actual construction at the property and soft costs which can include program management, architectural and engineering support, acoustical testing, construction oversight, community outreach, development of legal documents, grant applications, etc. After a preliminary review of the housing types and size, a recommended budget of \$50,000 per home is proposed for construction which is similar to other programs in northern climates and similar housing stock. Soft costs can vary from 20% to 30% per property, depending on airport involvement. We recommend budgeting 25% or \$12,500 per property for a total of \$62,500 per property. If all 148 units in the Future (2028) NEM within the 65+ DNL, and in the block rounding area outside the 65 DNL were included in the program, the estimated cost for implementation would be approximately \$9,250,000. This would be considered a maximum cost as it is likely that not all 148 units would participate. Some units may just choose not to participate. Other units would not meet the interior eligibility requirement, and at least two (2) properties are likely to not meet the build date criteria.
FINDINGS AND RECOMMENDATIONS:	This alternative is RECOMMENDED for inclusion in the NCP.



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NOISE COMPATIBILITY PROGRAM - MITIGATION ALTERNATIVE 2

TITLE:	Offer Avigation Easements to owner-occupied single- and multi-family homes within Noise Mitigation Program Areas (NMPA) if sound insulation is declined.
BACKGROUND AND INTENT:	This measure will offer a cash payment in exchange for the avigation easement in case owners decline acquisition and/or sound insulation. The avigation easement would be placed on the property and would be attached to the deed for all future owners. It ultimately deems the property as compatible land use.
BENEFITS:	This measure has the potential to convert owner-occupied residential housing units into compatible uses. AIP funding, if awarded, may be available to offset costs.
DRAWBACKS:	The total costs are uncertain pending completion of the feasibility study to determine who is interested in participating.
COST TO IMPLEMENT:	Total costs would be dependent on the number of units that choose to participate and the Fair Market Value (FMV) for each unit, among other expenses. The cost of the avigation easement is set based on a percentage of the FMV for each unit. The easement almost always does not exceed \$3,000 per unit. For the single- and multi-family homes the avigation easement cost is estimated at \$444,000. However, that cost is based on all 148 residential units participating as they would have to decline sound insulation.
FINDINGS AND RECOMMENDATIONS:	This alternative is RECOMMENDED for inclusion in the NCP.



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NOISE COMPATIBILITY PROGRAM - MITIGATION ALTERNATIVE 3

TITLE:	Adopt Improved Building Codes.
BACKGROUND AND INTENT:	Encourage the City of Rockford, Winnebago and Ogle counties to review and update existing building codes to ensure that new residential construction meets current FAA criteria for sound insulation.
BENEFITS:	This measure has the potential to prevent the construction of incompatible structures and to reduce interior noise levels for new development or the remodeling of residential property. It would ensure that materials for doors, windows, and insulation are installed to a certain standard to upgrade noise reduction capabilities in order to meet or exceed FAA's interior sound level reduction standards. By meeting the FAA interior noise reduction standards the property would be considered compatible.
DRAWBACKS:	This measure would likely increase the overall cost of residential construction within the 60+ DNL noise contours.
COST TO IMPLEMENT:	It is expected that there will be a minimal cost of up to \$50,000 associated with this measure. The City of Rockford and Winnebago County should review and update the local building codes and then coordinate with the local jurisdictions for incorporation into local planning documents.
FINDINGS AND RECOMMENDATIONS:	This alternative is RECOMMENDED for inclusion in the NCP.



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NOISE COMPATIBILITY PROGRAM - MITIGATION ALTERNATIVE 4

TITLE:	Develop a Voluntary Fair Disclosure Program.
BACKGROUND AND INTENT:	Will disclose through voluntary regulations on the seller or their representatives at the time of sale that an existing property could be subjected to aircraft noise. Notification for plats of buildable lots in a new subdivision were covered in the previous NCP in LU-13.
BENEFITS:	Potential buyers will be notified before they purchase that their property has the potential to be exposed to aircraft noise.
DRAWBACKS:	This measure will need to seek the cooperation of local realtors as well as the City of Rockford and Winnebago County. Local realtors may not actively support this measure, as it could reduce potential property sales close to the airport.
COST TO IMPLEMENT:	It is expected that there will be a minimal cost of up to \$50,000 associated with this measure. The local realtors and the City of Rockford and Winnebago County would need to work together to develop the final language for the disclosure program. All jurisdictions would then incorporate into local planning documents.
FINDINGS AND RECOMMENDATIONS:	This alternative is RECOMMENDED for inclusion in the NCP.



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Noise Compatibility Program - Mitigation Alternative 5

TITLE:	Re-zoning of parcels within 60+ DNL Contour
BACKGROUND AND INTENT:	Approximately 200 undeveloped parcels or parcels with existing compatible land use and non-compatible zoning have been identified within the Future (2028) NEM 60+ DNL contour. Approximately 188 of these properties are located on Black Hawk Island, 13 of those properties are located within the 65+ DNL noise contour.
BENEFITS:	This measure could prevent future non-compatible development and land uses within the 60+ DNL contour.
DRAWBACKS:	Potential loss of tax-base dependent on future zoning designation. Based on local zoning regulations and ordinances, even if a parcel is reclassified as compatible land use, through special use permits, the parcel could be used for incompatible purposes still. For example, even if a parcel is zoned as commercial based on local ordinances the parcel could still be used for residential purposes.
COST TO IMPLEMENT:	It is expected that there will be a minimal cost of up to \$50,000 associated with this measure. The City of Rockford, Division of Community and Economic Development, Winnebago and Ogle County Planning and Zoning would need to review and approve recommended zoning designations. Cost would be incurred based on level of required participation of GRAA with each jurisdiction.
FINDINGS AND RECOMMENDATIONS:	This measure fails to meet FAA guidance for effectively preventing incompatible land use, due to the local land use guidelines and ordinances. Therefore, this alternative is NOT RECOMMENDED for inclusion in the NCP.