



# FAR Part 150 Update – Duluth (DLH)

Public Information Workshop | February 2021



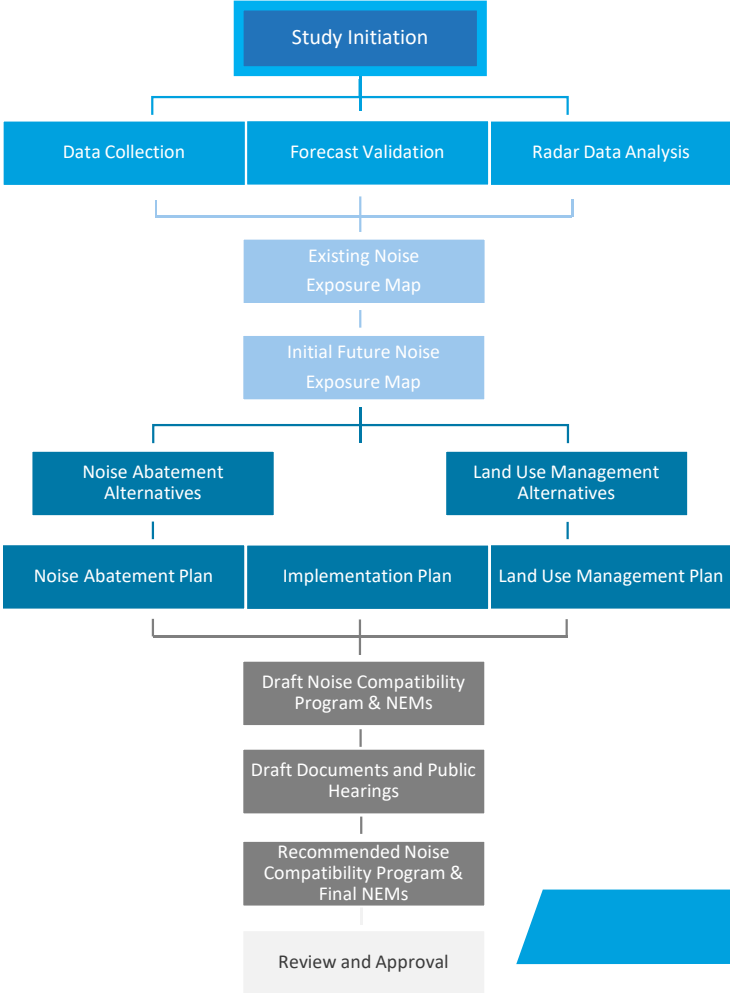
# Agenda

- Part 150 Study Process
- Elements of a Noise Compatibility Program (NCP)
- Revised Baseline Noise Exposure Contours
- Noise Compatibility Program Screening Overview
- Recommended Land Use Mitigation Measures
  - Corrective
  - Preventative
- Recommended Program Management Measures
- NCP Estimated Total Cost
- Next Steps



# Part 150 Study Process

We are Here



# Part 150 Study Process

## Essential Elements of a Part 150 Study

- **Noise Exposure Maps**
  - Description of the noise levels for existing and future conditions
    - Future condition should take into account any changes (physical or operational) that may have an effect on the noise levels around the airport
- **Noise Compatibility Program**
  - Recommendations for reducing, minimizing, and/or mitigating aircraft noise and land use conflicts
    - Noise Abatement Alternatives
    - Land Use Mitigation Alternatives
    - Program Management Alternatives
- **Public Involvement**
  - Planning Advisory Committee (PAC)
  - Focused coordination meetings
  - Public information meetings/workshops



# Elements of a Noise Compatibility Program (NCP)

## **Noise Abatement Alternatives**

- **Purpose: To reduce noise levels in surrounding communities**
- **Types of noise abatement alternatives**
  - Flight Location (e.g., moving arrival and departure flight corridors)
  - Runway Use Program (e.g., how often runway ends are used)
  - Ground Activity Restrictions (e.g., maintenance run-up location/times)
  - Facility Development (e.g., runway extension, noise barriers)
  - Flight Restrictions (e.g., mandatory curfews/restrictions – would require a Part 161 Study)

## **Land Use Mitigation Alternatives**

- **Purpose: To mitigate noise levels in surrounding communities**
- **Types of land use mitigation alternatives**
  - Corrective (e.g., sound insulation, land acquisition)
  - Preventative (e.g., re-zoning program, land use management overlay/plan)

## **Program Management Alternatives**

- **Purpose: To recommend community outreach programs**
- **Types of program management alternatives**
  - Community roundtable/noise abatement committee
  - Noise complaint website or telephone hotline
  - Regular update of NEM and review of NCP



# Noise Compatibility Program Screening Overview

- **Eight (8) Noise Abatement Alternatives Considered**

- (1) Modification of military flight corridors
- (2) Modification of commercial aircraft runway use
- (3) Optimized Profile Descents
- (4) Distant Noise Abatement Departure Profiles
- (5) Close-in Noise Abatement Departure Profiles
- (6) Runway 03/21 extension and modification of military runway use
- (7) Noise barriers/berms
- (8) Restrictions to type of aircraft that can operate at airport

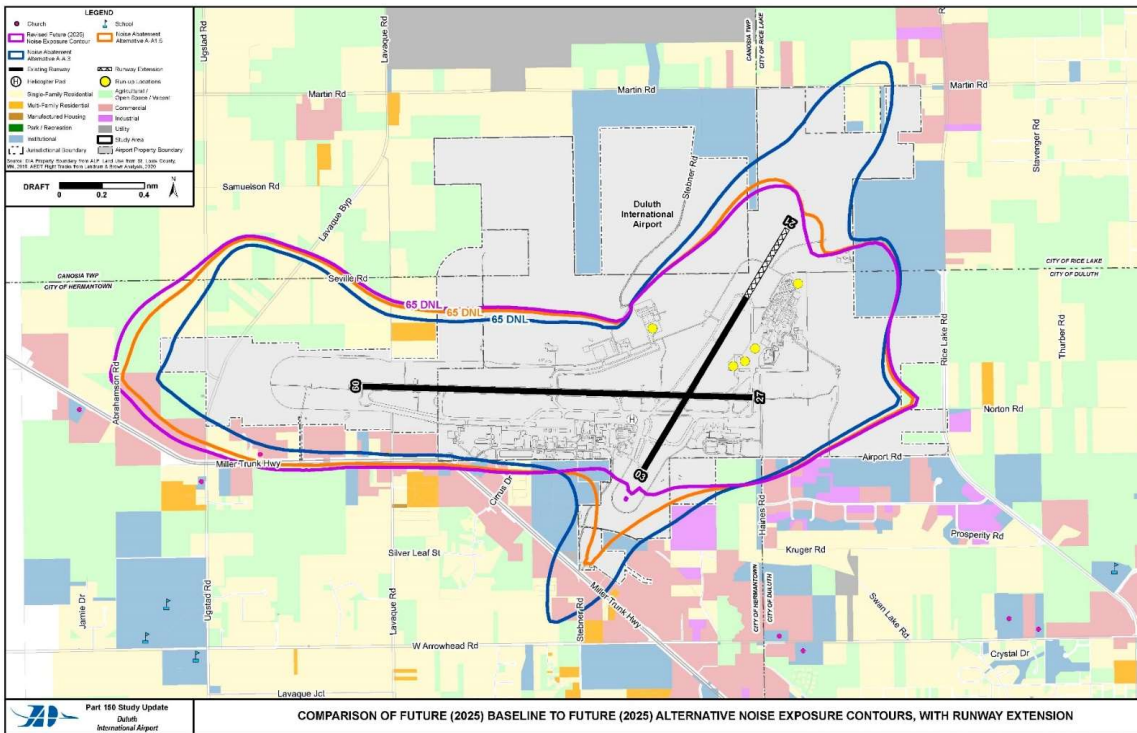
- **Extension of Runway 03/21 and modification of military runway use was recommend for further noise and impact analysis.**

- Abatement measure would not significantly reduce the number of homes impacted by the 65 DNL noise contour, while potentially impacting properties that are not currently impacted south and north of the 03/21 runway ends.
- Total cost of extension estimated at \$30 million



# Noise Compatibility Program Screening Overview

- Alternative A-A1.3 – 20% F-16 ops. on Rwy. 03/21 (0% night departures)
- Alternative A-A1.5 – 10% F-16 ops. on Rwy. 21 only (0% night departures)



FUTURE (2025) BASELINE & FUTURE ALTERNATIVE (2025) DNL NOISE CONTOUR (65+)

Housing Type	Units	Difference from Baseline	Population	Difference from Baseline
<b>FUTURE (2025) BASELINE (0% F-16 ops. on Runway 03/21)</b>				
Single-Family	48	--	99	--
Multi-Family	2	--	4	--
Mobile Homes	33	--	62	--
<b>ALTERNATIVE A-A1.3 (40% F-16 arrival/departure ops. on Runway 03 (20%)/21 (20%) &amp; 0% night ops.)</b>				
Single-Family	36	-12	74	-25
Multi-Family	2	0	4	0
Mobile Homes	31	-2	58	-4
<b>ALTERNATIVE A-A1.5 (10% F-16 arrival/departure ops. on Runway 21 only &amp; 0% night ops.)</b>				
Single-Family	39	-9	81	-18
Multi-Family	2	0	4	0
Mobile Homes	30	-2	58	-4



# Noise Compatibility Program Screening Overview

- **Five (5) Corrective Land Use Mitigation Alternatives Considered**
  - (1) Sound Insulation Program – single-family and multi-family units (up to 64 units)
  - (2) Property Acquisition Program – single-family units (up to 7 units)
  - (3) Property Acquisition Program – mobile home units (up to 103 units)
  - (4) Avigation Easements – owner occupied single-family units
  - (5) Avigation Easements – owner occupied mobile home units (up to 3 units)
- **All corrective land use mitigation alternatives were recommended for further analysis**



# Noise Compatibility Program Screening Overview

- **Four (4) Preventative Land Use Mitigation Alternatives Considered**
  - (1) Airport Land Use Management District (ALUMD)
  - (2) Update to subdivision regulations if necessary
  - (3) Improved building codes if necessary
  - (4) Voluntary fair disclosure program
- **All preventative land use mitigation alternatives were recommended for further analysis**
- **Three (3) Program Management Alternatives Considered**
  - (1) Continued logging of noise complaints
  - (2) Create community round table to address noise related issues
  - (3) Regular updates to NEMs and NCP
- **All program management alternatives were recommended for further analysis**



# Comments & Questions?

**Please provide comments or questions in the chat functionality**

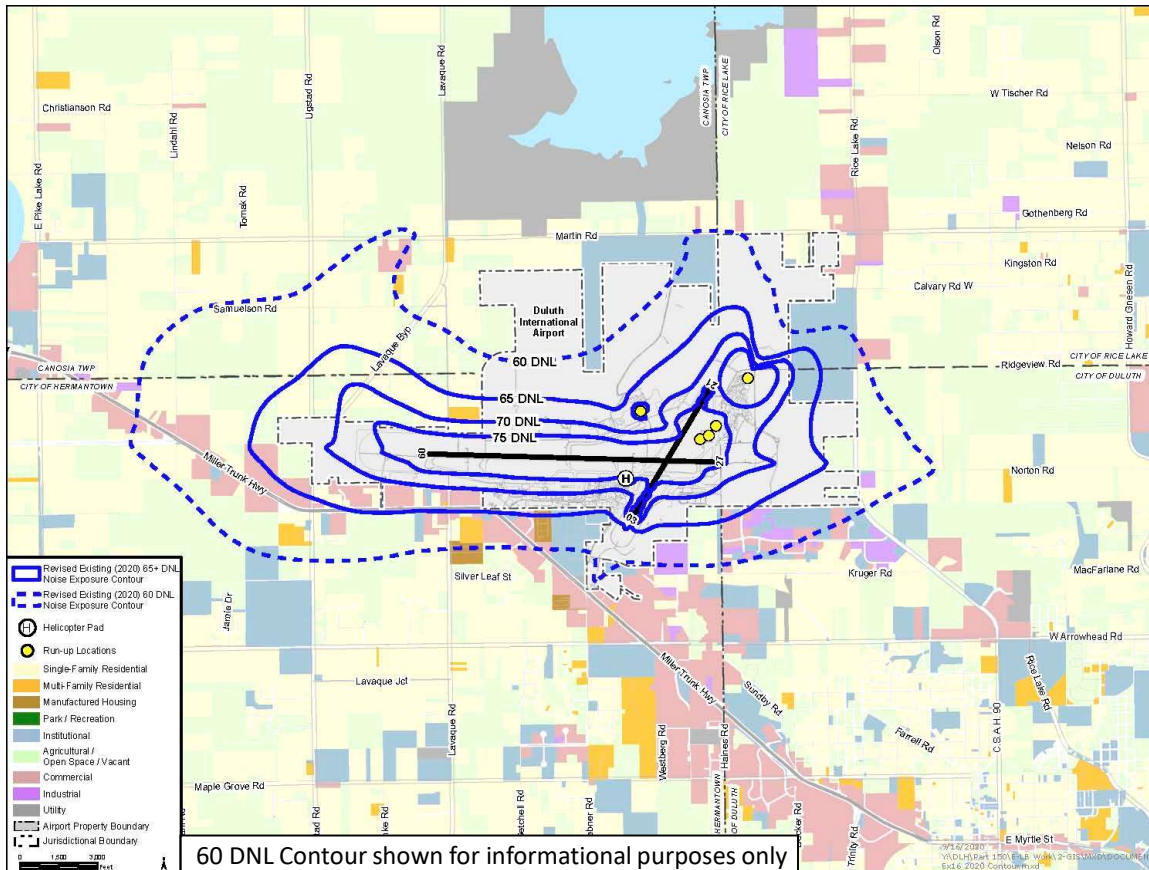
# Revised Existing and Future Baseline Noise Exposure Contours

## Increased Thrust Characteristics

- Based upon ongoing coordination between project staff, 148<sup>th</sup> personnel, and pilot observations.
- Departure thrust values were increased while the aircraft was in afterburner and military power mode, in order to better represent F-16 maximum power flight profiles.
- Afterburner Mode
  - Previous Value (94%)
  - Revised Value (103%)
- Military Power Mode (used for departure and low approach operations)
  - Previous Value (91%)
  - Revised Value (100%)
- Based on these adjusted thrust values changes to the noise contour were anticipated, requiring re-calculation of the Existing (2020) Baseline and Future (2025) Baseline Noise Contours and associated housing and population impacts.



# Revised Existing (2020) Baseline Noise Exposure Contours

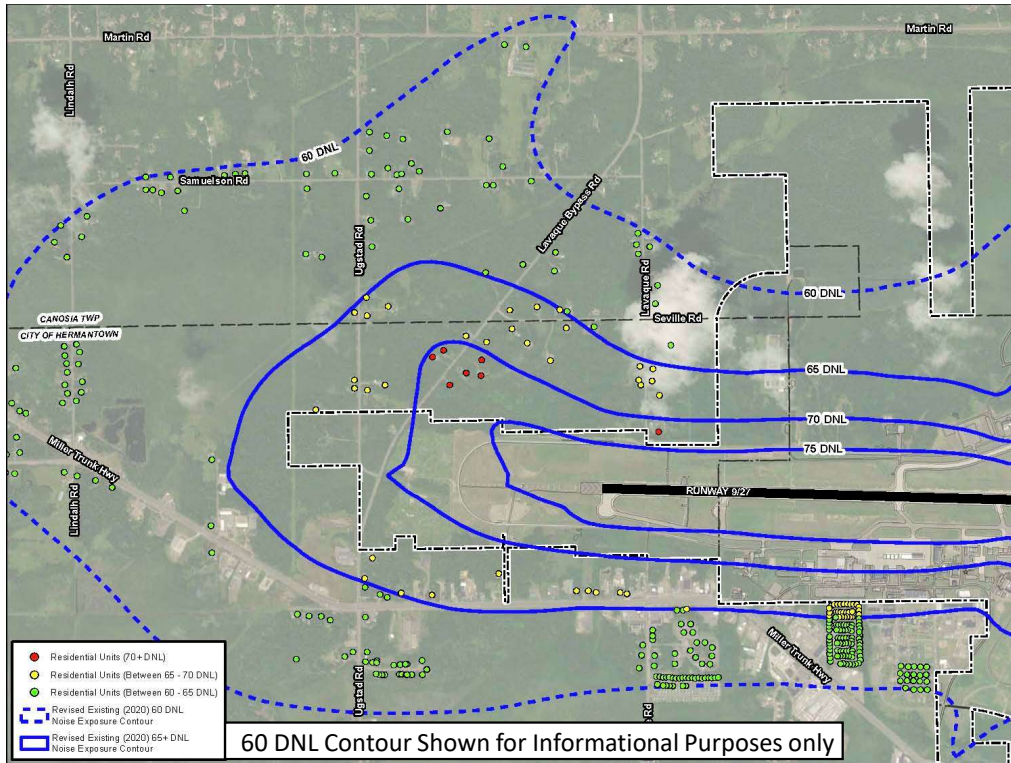


## Contour Input Parameters

- 60,341 annual operations
- 4,916 F-16 annual F-16C operations
- Bombardier CRJ-900/700 and Airbus 319-131 account for 83% (1,792 annually) of all large jets



# Revised Existing (2020) Baseline Noise Impacts

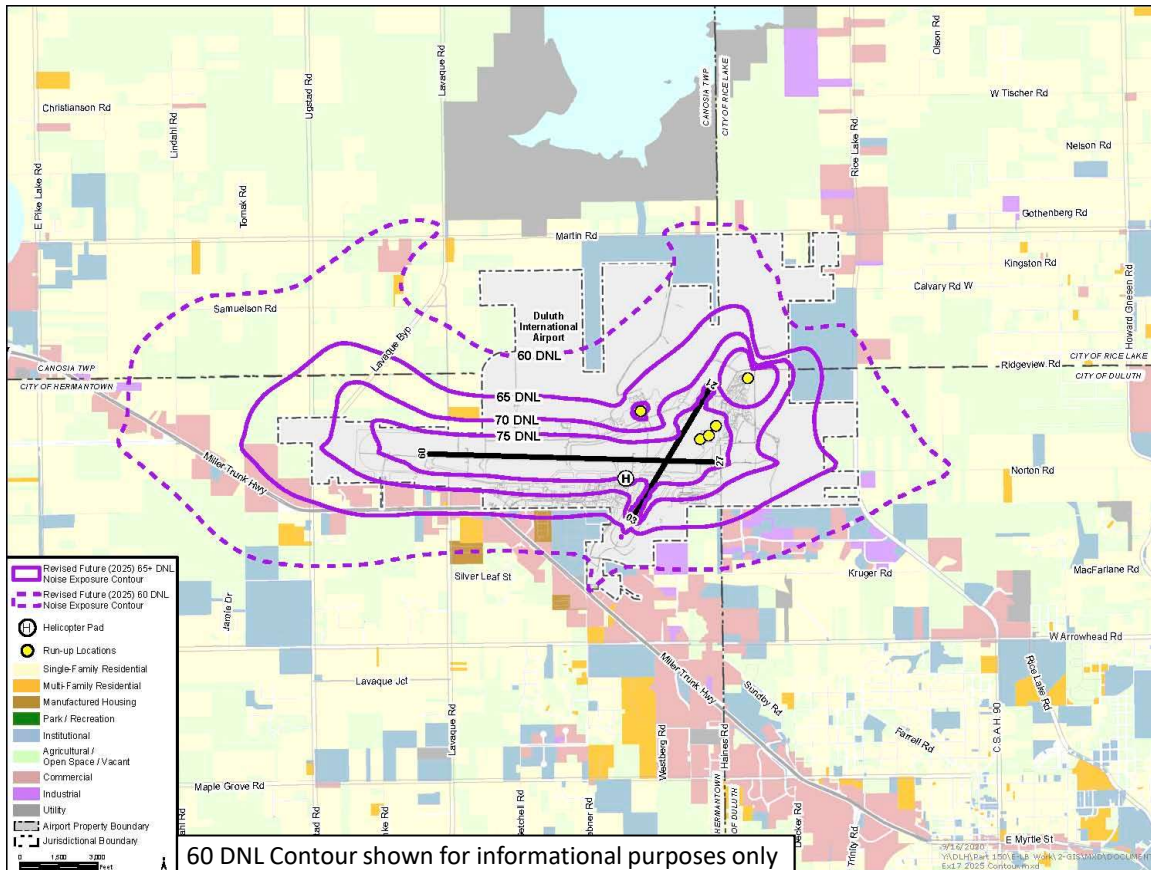


## Impacted Homes and Population

Category	Type	DNL 65-70 dB	DNL 70-75 dB	DNL 75+ dB
Housing	Single-Family Residential	33	7	0
	Multi-Family Residential	2	0	0
	Manufactured Housing	29	0	0
	<b>Total Housing Units</b>	<b>64</b>	<b>7</b>	<b>0</b>
Population	Single-Family Residential	69	14	0
	Multi-Family Residential	4	0	0
	Manufactured Housing	54	0	0
	<b>Total Population</b>	<b>127</b>	<b>14</b>	<b>0</b>

Note: Population estimates are based on the United States Census Bureau 2017 American Community Survey (ACS) average household size per number of housing units per census block group. Prison Housing statistics are not included in impacted housing or population counts.

# Revised Future (2025) Baseline Noise Exposure Contours

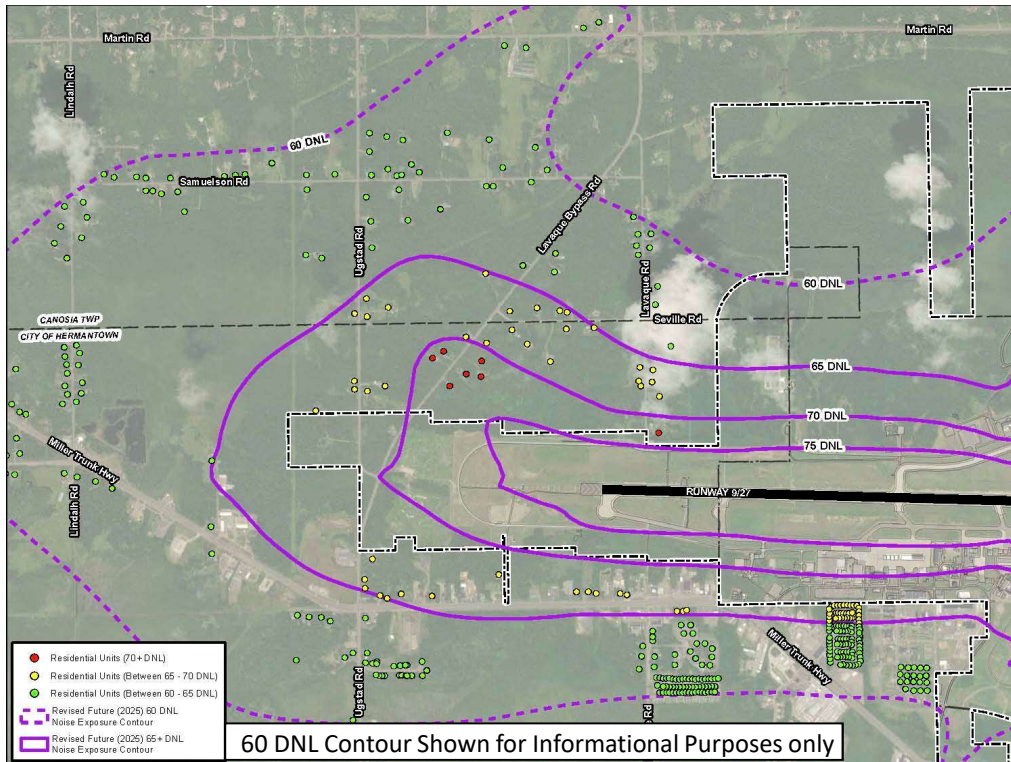


## Contour Input Parameters

- 69,509 forecasted annual operations
- 5,296 forecasted annual F-16C operations
- Bombardier CRJ-900/700 and Airbus 319-131 account for 86% (2,659 annually) of all large jets



# Revised Future (2025) Baseline Noise Impacts

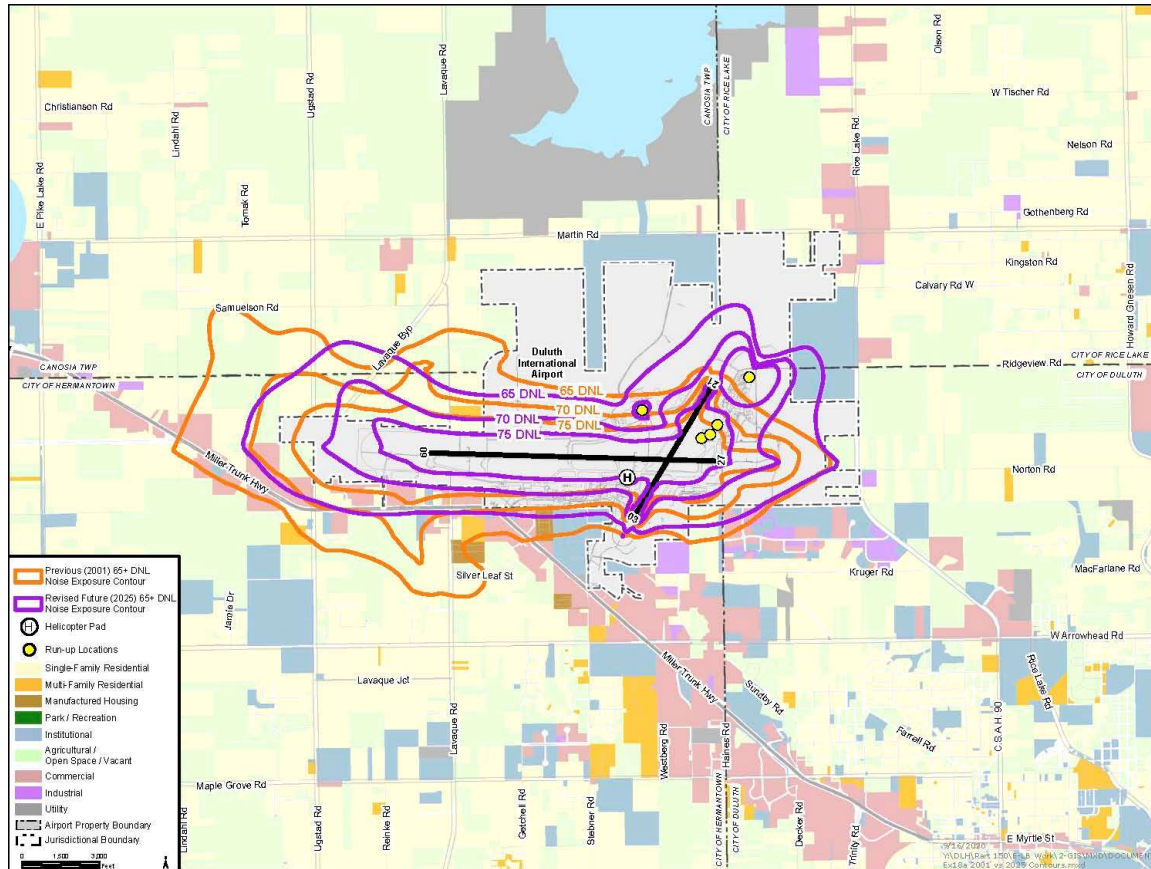


## Impacted Homes and Population

Category	Type	DNL 65-70 dB	DNL 70-75 dB	DNL 75+ dB
Housing	Single-Family Residential	41	7	0
	Multi-Family Residential	2	0	0
	Manufactured Housing	33	0	0
	<b>Total Housing Units</b>	<b>76</b>	<b>7</b>	<b>0</b>
Population	Single-Family Residential	85	14	0
	Multi-Family Residential	4	0	0
	Manufactured Housing	62	0	0
	<b>Total Population</b>	<b>151</b>	<b>14</b>	<b>0</b>

Note: Population estimates are based on the United States Census Bureau 2017 American Community Survey (ACS) average household size per number of housing units per census block group. Prison Housing statistics are not included in impacted housing or population counts.

# Comparison of Future (2001 to 2025) Noise Contours



## Contour Input Parameters

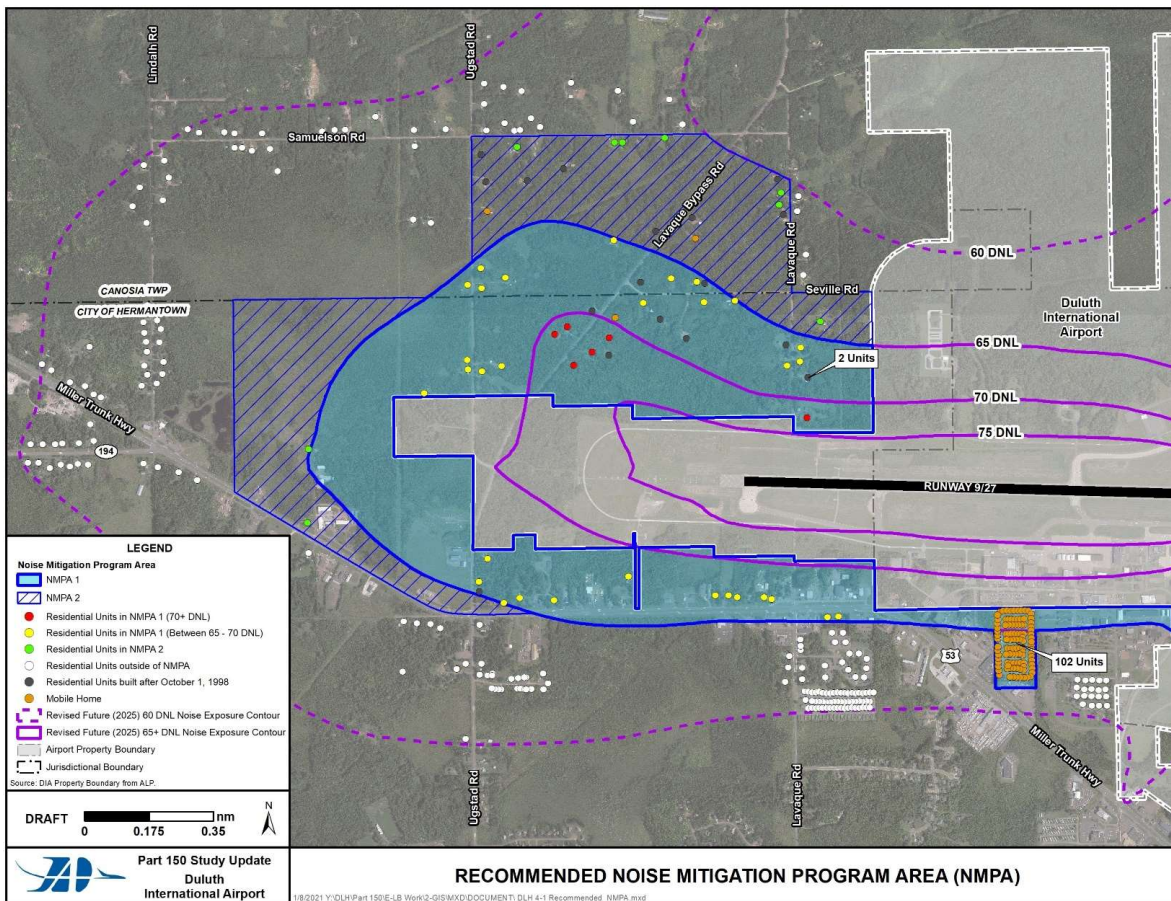
- 60,620 (2001) → 69,509 (2025) forecasted annual ops.
- 12,191 (2001) → 5,296 (2025) forecasted annual F-16C ops.
- 4,373 (2001) → 2,659 (2025) forecasted large jet annual ops.
- 2000 – 99% of large jets are DC9 & B727
- 2025 – 86% of large jets are CRJ-700/900 & A319



# Comments & Questions?

**Please provide comments or questions in the chat functionality**

# Land Use Mitigation - Recommendations



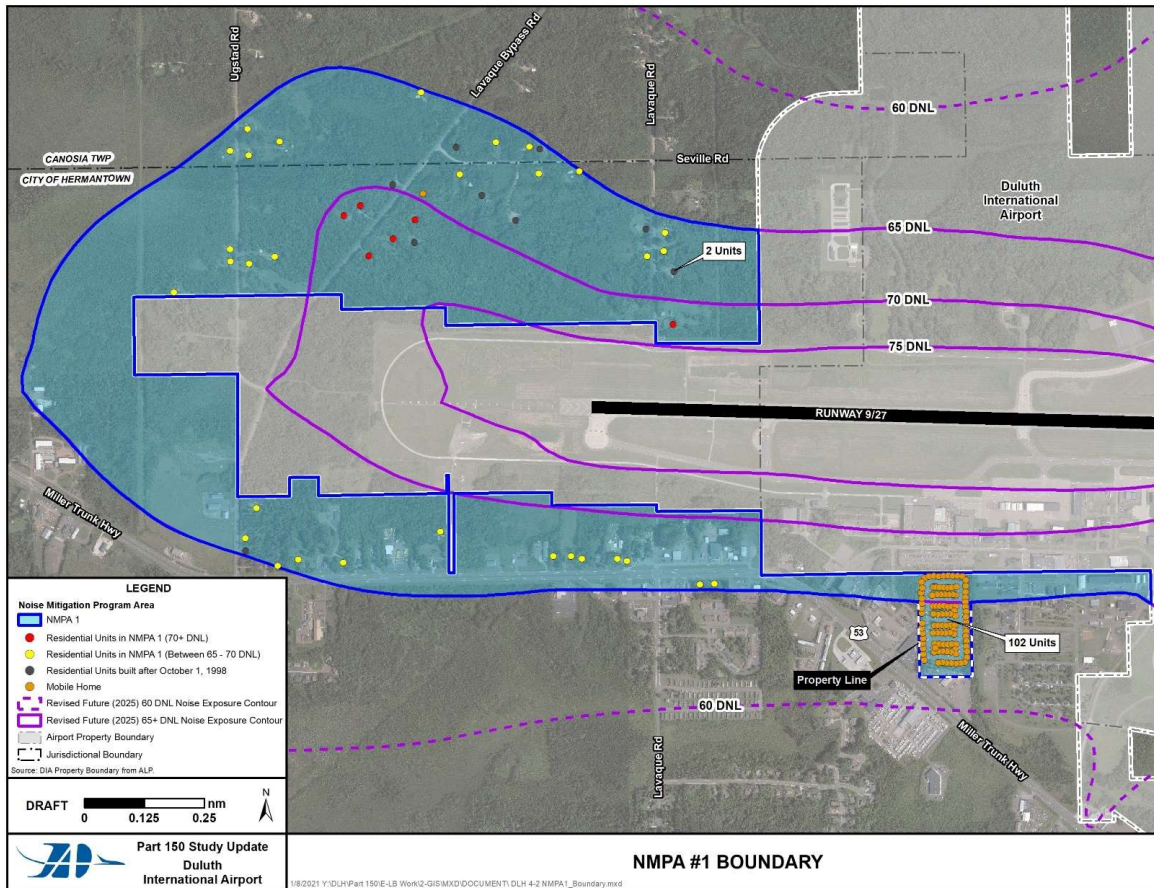
- **Noise Mitigation Program Areas (NMPA)**
  - **NMPA #1** – Area inside 65+ DNL Noise Contour
    - NMPA #1 extended to include entire Birchwood Mobile Estate property
  - **NMPA #2** – Area outside of the 65+ DNL Contour w/ potential FAA funding for mitigation through block rounding
- Not all properties will meet eligibility requirements during testing phases of the Sound Insulation Program

# Land Use Mitigation - Recommendations

LAND USE	NMPA1		NMPA2		TOTAL	
	TOTAL HOUSING UNITS	POPULATION	TOTAL HOUSING UNITS	POPULATION	TOTAL HOUSING UNITS	POPULATION
Single-Family Residential	45	93	17	40	62	133
Multi-Family Residential	2	4	0	0	2	4
Mobile Homes	103	193	2	5	105	198
<b>Total</b>	<b>150</b>	<b>290</b>	<b>19</b>	<b>45</b>	<b>169</b>	<b>335</b>



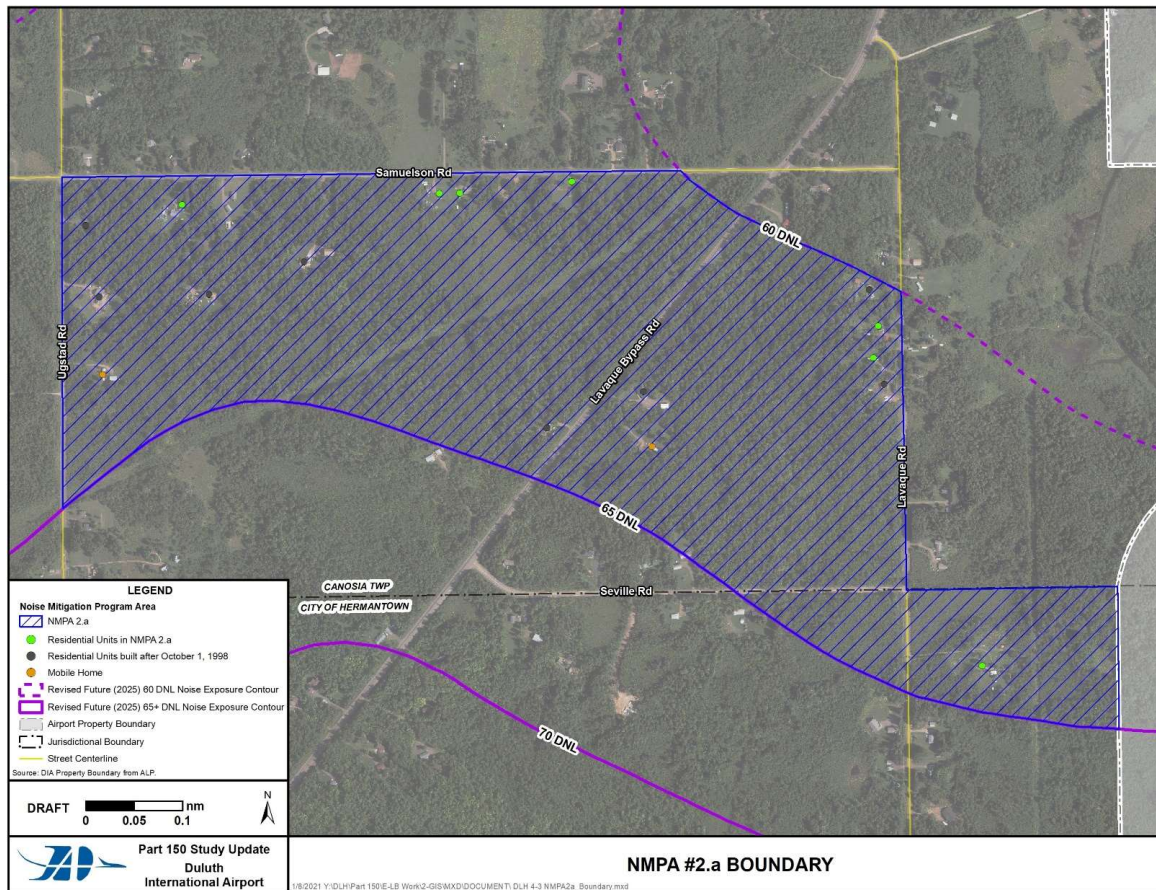
# Land Use Mitigation - Recommendations



## • Proposed NMPA #1

- 45 Single-Family Properties
  - Sound insulation or avigation easement recommended
  - 8 properties with build date after October 1998. May not be eligible for sound insulation, avigation easement recommended.
  - 7 properties within 70 DNL recommended for acquisition. May choose sound insulation/avigation easement instead.
- 1 Multi-Family Property (2 units)
  - Build date after October 1998.
  - Avigation easement recommended.
- 103 Mobile Homes
  - 102 Mobile Homes located in Birchwood Mobile Estates. Acquisition of entire parcel recommended.
  - 1 Mobile Home located to the east of Lavaque Bypass Rd. Acquisition or avigation easement recommended.

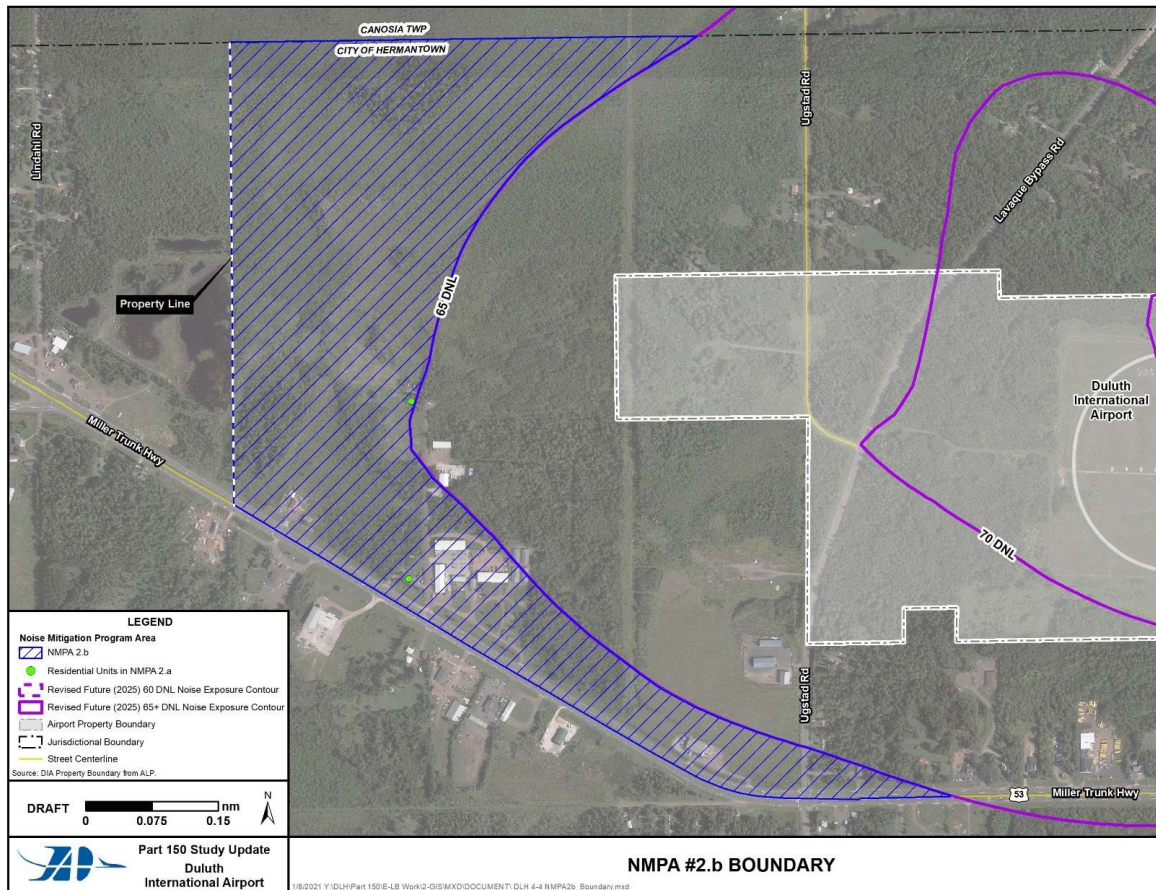
# Land Use Mitigation - Recommendations



## • Proposed NMPA #2.a

- 15 Single-Family Properties
  - 8 properties with build dates after October 1998. May not be eligible for sound insulation, aviation easement recommended.
- 2 Mobile Homes
  - Aviation easement recommended.

# Land Use Mitigation - Recommendations



## • Proposed NMPA #2.b

- 2 Single-Family Home
  - Sound insulation or avigation easement recommended.

# Land Use Mitigation - Recommendations

## Land Use Mitigation Alternatives (Corrective)

- **Measure M-A:** Sound insulate 64 eligible residential units within the 65+ DNL (NMPA #1) and (NMPA #2).
- **Measure M-B:** Acquire 7 single-family homes within 70+ DNL (NMPA#1).
- **Measure M-C:** Acquire 103 mobile homes within NMPA #1.
- **Measure M-D:** Offer avigation easement to owner-occupied single-family homes within NMPA #1 and NMPA #2 if acquisition and/or sound insulation is declined.
- **Measure M-E:** Offer avigation easement to 1 owner-occupied mobile home within NMPA #1 if acquisition is declined. No easements will be offered to the 102 mobile homes located in the Birchwood Mobile Estates.
- **Measure M-F:** Offer avigation easement to 2 owner-occupied mobile homes within NMPA #2.

# Land Use Mitigation - Recommendations

MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS
<b>CORRECTIVE LAND USE MITIGATION MEASURES</b>					
<p><i>(formerly 1997 NCP Measure M-1)</i>  <b>Measure M-A:</b>            Offer Residential Sound Insulation Program to Single- and Multi-Family Homes (47 units) within the 65+ DNL Noise Contour.</p> <p>Offer Residential Sound Insulation Program to Single-Family Homes (17 units) within the Block Rounding Area Outside of the 65 DNL Noise Contour</p>	DAA	<p>It is estimated 47 homes are located within the 65+ DNL noise contour plus an additional 17 homes in the block rounding area outside the 65 DNL. If 100% of all homes participated the cost to insulate all homes is estimated at \$4,000,000 which includes all hard costs (construction) and soft costs (administrative)</p> <p>Federal AIP funding likely available (80% FAA share/20% local airport share)</p>	None	None	<p>This is a measure that was never implemented from the 1997 NCP and should be continued with modification to include all properties identified within the 65+ DNL and the properties identified in the block rounding area outside the 65 DNL.</p>
<p><b>Measure M-B:</b>            Offer Land Acquisition Program to Single-Family Homes (7 homes) within the 70+ DNL Noise Contour</p>	DAA	<p>It is estimated at \$2,450,000 if 100% of homes participated.</p> <p>Federal AIP funding likely available (80% FAA share/20% local airport share)</p>	Loss of tax base	None	<p>This is a new measure</p>
<p><b>Measure M-C:</b>            Offer Land Acquisition Program to Mobile Homes within NMPA #1 (103 Mobile Homes)</p>	DAA	<p>It is estimated at \$11,568,000 depending upon the level of participation. It includes the cost of the 102 mobile homes and loss of income for owner of the mobile home park (cost of mobile homes and mobile home park), and 1 mobile home property located to the east of Lavaque Bypass Road within the 65 DNL contour (cost of single mobile home and property).</p> <p>Federal AIP funding likely available (80% FAA share/20% local airport share)</p>	Loss of tax base	None	<p>This is a new measure</p>

# Land Use Mitigation - Recommendations

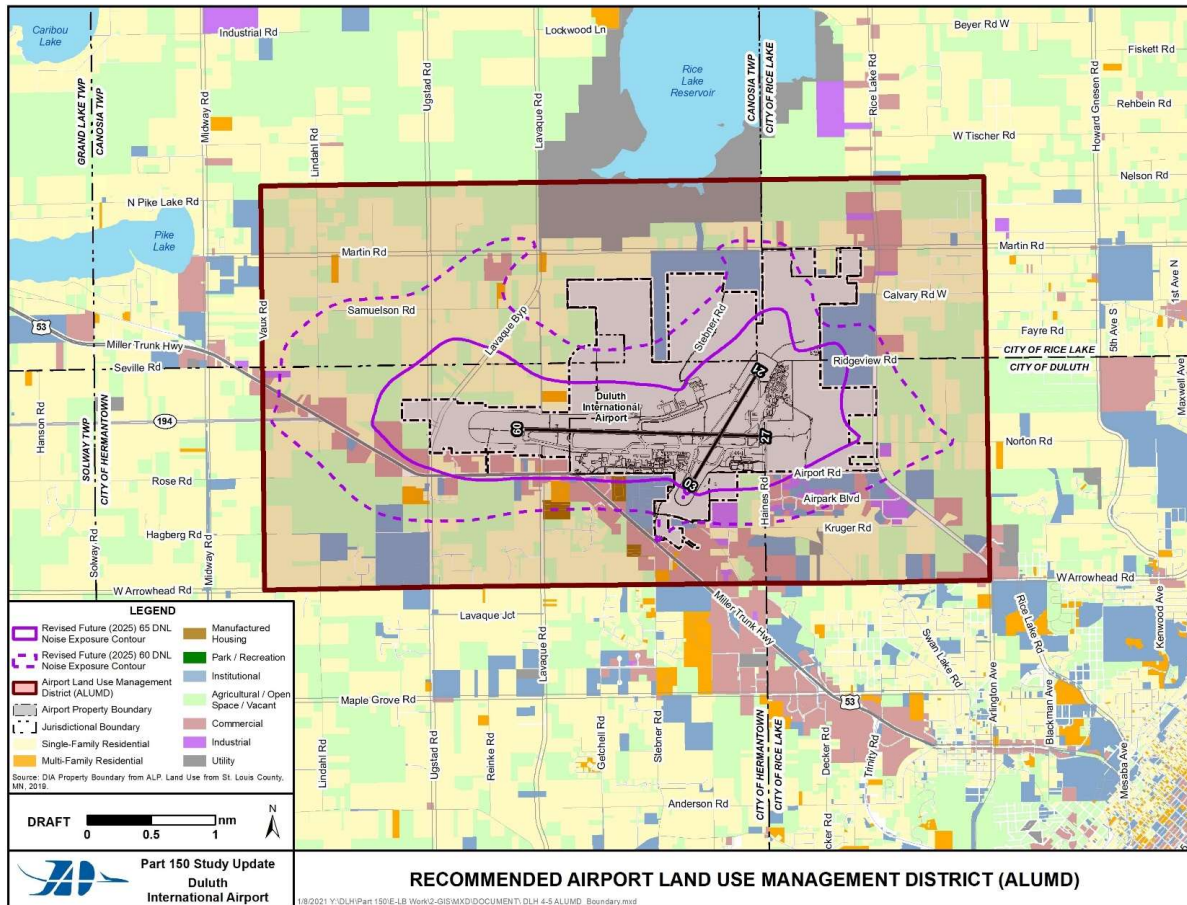
MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS
<b>CORRECTIVE LAND USE MITIGATION MEASURES</b>					
<b>Measure M-D:</b> Offer avigation easement to owner occupied single-family homes within NMPA #1 and NMPA #2 if acquisition and/or sound insulation is declined.	DAA	The estimated cost of each avigation easement is up to \$3,000 per home. Since the final cost of the measure is dependent on the number of property owners that decline acquisition and/or sound insulation an estimated overall total was not calculated.  Federal AIP funding likely available (80% FAA share/20% local airport share)	None	None	This is a new measure
<b>Measure M-E:</b> Offer avigation easement to 1 owner occupied mobile home within NMPA #1 if acquisition is declined.	DAA	The estimated cost of each avigation easement is up to \$3,000 per home.  Federal AIP funding likely available (80% FAA share/20% local airport share)	None	None	This is a new measure
<b>Measure M-F:</b> Offer avigation easement to 2 owner occupied mobile homes within NMPA #2.	DAA	The estimated cost of each avigation easement is up to \$6,000 (\$3,000 max per mobile home).  Federal AIP funding likely available (80% FAA share/20% local airport share)	None	None	This is a new measure



# Comments & Questions?

**Please provide comments or questions in the chat functionality**

# Land Use Mitigation - Recommendations



## • Proposed Airport Land Use Management District (ALUMD)

- West Boundary – Vaux Rd. & Ext.
- South Boundary – Arrowhead Rd.
- East Boundary – Drake Rd. & Ext.
- North Boundary – Nelson Rd. & Ext.

# Land Use Mitigation - Recommendations

## Land Use Mitigation Alternatives (Preventative)

- **Measure M-G: Review & Adopt Boundaries of ALUMD**
  - The ALUMD would encompass the area to implement Measures M-H, M-I and M-J.
- **Measure M-H: Updated Subdivision Regulations**
  - Review of plats and site plans by public entities
  - Increased open space
  - Reduced development density
  - Planned infrastructure
- **Measure M-I: Improved Building Codes**
  - Update existing building codes to meet current sound insulation guidelines
  - Reduces interior noise levels
  - For new development or major remodeling
- **Measure M-J: Voluntary Fair Disclosure Program**
  - Property sales subjected to notification
  - Probability of safety or aircraft noise impacts
  - Formal measure would require recording of a notice either on plat of new subdivisions or notice at time of sale
  - Informal measure could be mailings of disclosure notices within community



# Land Use Mitigation - Recommendations

MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS
<b>PREVENTATIVE LAND USE MITIGATION MAEASURES</b>					
<i>(formerly 1997 NCP Measure M-1)</i> <b>Measure M-G:</b> Develop an Airport Land Use Management District (ALUMD)	DAA, Cities of Duluth, Hermantown, Rice Lake, Saint Louis County	Minimal costs of up to \$50,000	None	None	This is a new measure
<b>Measure M-H:</b> Adopt Updated Subdivision Regulations	DAA, Cities of Duluth, Hermantown, Rice Lake, Saint Louis County	Minimal costs of up to \$50,000	Loss of tax base	None	This is a new measure
<b>Measure M-I:</b> Adopt Improved Building Codes	DAA, Cities of Duluth, Hermantown, Rice Lake, Saint Louis County	Minimal costs of up to \$50,000	Minimal administrative costs	None	This is a new measure
<b>Measure M-J:</b> Develop a Voluntary Fair Disclosure Program	Duluth Board of Realtors, Lake Superior Area Realtors, Cities of Duluth, Hermantown, Rice Lake, Saint Louis County	Minimal costs of up to \$50,000	Minimal administrative costs	None	This is a new measure

# Comments & Questions?

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## Program Management Alternatives - Recommendations

- **Measure P-A:** Continued Logging of Noise Complaints
  - *Develop a more formal procedure for logging noise complaints by both airport and Minnesota Air National Guard (MnANG) staff to identify any potential noise issues*
- **Measure P-B:** Initiate Community Roundtable or Noise Abatement Committee
  - *Brings together all interested parties, on a regular basis, to discuss noise issues*
- **Measure P-C:** Perform Regular Updates to NEM and Review of NCP
  - *Ensures NEM/NCP remains up to date and adapts to changing conditions*

# Program Management Alternatives - Recommendations

MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS
<b>PROGRAM MANAGEMENT MEASURES</b>					
<i>(formerly 1997 NCP Measure A-1)</i> <b>Measure P-A:</b> Continue Logging of Noise Complaints	DAA and MnANG	Minimal administrative costs to answer telephones and to log noise complaints	None	None	This is a continuation of the existing process with a slight modification to be undertaken by the DAA and MnANG
<i>(formerly 1997 NCP Measure A-2)</i> <b>Measure P-B:</b> Initiate Community Roundtable or Noise Abatement Committee	DAA	Minimal administrative costs to participate on a regular basis	Minimal administrative costs to participate on a regular basis	None	This is considered a new measure since it was never implemented in the previous NCP.
<b>Measure P-C:</b> Perform regular updates to the NEMs and review of NCP	DAA	NEM Update: \$350,000 to \$400,000  NEM/NCP Update: \$650,000 to \$750,000  Federal AIP funding likely available (80% FAA share/20% local airport share)	Minimal administrative costs to participate in study	None	This is a new measure

# NCP Estimated Total Cost

TYPE OF MEASURE	DIRECT COST (TOTAL)	DIRECT COST TO FAA (80% SHARE)	DIRECT COST TO AIRPORT (20% SHARE)	DIRECT COST TO LOCAL GOVERNMENT	DIRECT COST TO USERS
Land Use Mitigation Alternatives (Corrective)	\$18,000,000	\$14,400,000	\$3,600,000	None	None
Land Use Mitigation Alternatives (Preventative)	\$200,000	\$160,000	\$40,000	Minimal	None
Program Management Alternatives	\$350,000 - \$750,000	\$280,000 - \$600,000	\$70,000 - \$150,000	Minimal	None
<b>TOTAL</b>	Approximately \$19,000,000 - plus administrative costs	Approximately \$15,200,000 plus administrative costs	Approximately \$3,800,000 plus administrative costs	Minimal administrative costs; plus potential loss of tax base	None

- **DAA is actively seeking funding support from the 148<sup>th</sup> Fighter Wing**
  - Assistance in funding 20% local share if NCP measures are approved by FAA and awarded AIP funding at a later date.
  - 148<sup>th</sup> funding assistance is vital to fully implementing land use mitigation measures.

# Comments & Questions?

**Please provide comments or questions in the chat functionality**

# Next Steps

- **Collect comments from public workshop (30 day comment period)**
- **Prepare Draft NEM and NCP documentation**
- **Prepare materials for Public Hearing**
- **Comments and questions related to the Public Information Workshop may be submitted for a period of 30 days online at: <https://DuluthAirport.com/noise-study/> or emailed to [DAA@DuluthAirport.com](mailto:DAA@DuluthAirport.com)**