Noise Compatibility Planning Study
Dane County Regional Airport

Public Open House
Airport Facility Overview

MSN
- Covers 3,500 acres and serves over 2.2 million commercial passengers each year
- Fixed-Base Operator Wisconsin Aviation is located on the east side of the airport

115th Fighter Wing of the Wisconsin Air National Guard (ANG)
- Chosen to host the F-35A mission and receive a new fleet of F-35A Lightning II aircraft beginning in Spring of 2023

Wisconsin Army National Guard (ARNG) 64th Troop Command
- Operates UH-60 Black Hawk helicopters at Truax Field
Airport History

- **1927**: City of Madison purchases airport land.
- **1927**: Madison's first airplane manufacturing plant, Madison Municipal Airport becomes the first passenger airport.
- **1930s**: Madison Municipal Airport becomes the first passenger airport.
- **1940s**: Airfield operation transferred to US Army Air Corps, was renamed Truax Field, and was expanded. Following WWII, the airfield was returned to the city and the Wisconsin Air National Guard base was established.
- **1950s and 60s**: Commercial service expanded and terminal was relocated and expanded.
- **1970s and 80s**: Madison Municipal Airport transitioned to the Dane County Regional Airport, became self-sustaining, and tripled in size.
- **2000s and 10s**: Renovated terminal and focused on environmental and airfield improvements.
- **Today**: Airfield functions as a joint-use military and civilian facility and terminal modernization continues.

Source: https://www.msnairport.com/about/facilities_maps/history
Part 150 Overview: Study Process

**Develop Study Protocol**
- Finalize methodology
- Establish Technical Advisory Committee
- Develop project schedule and milestones

**Verification**
- Existing Noise Exposure Maps, planning, and environmental documents
- Noise complaint data
- GIS and land use data
- Flight track, operations, and noise data
- FAA activity forecasts

**Develop NEMs**
- Develop noise contours for existing and 5-year forecast conditions
- Review land use data & policies
- Noise impact evaluation for DNL 65-75 dBA
- Identify incompatible land uses and review existing NCP
- Prepare maps in accordance with 14 CFR Part 150

**Develop NCP**
- Consider noise abatement strategies
- Consider land use strategies
- Consider programmatic strategies
- Update NCP in accordance with 14 CFR Part 150

**Stakeholder Engagement and Public Outreach**
Technical Advisory Committee • Public Meetings/Hearings • Public Website Materials and Newsletters
Part 150 Study Team

Dane County Regional Airport Team

- Wisconsin Department of Transportation Bureau of Aeronautics
  - Matt Messina – Airport Development Engineer
- Airport (MSN)
  - Kim Jones – Airport Director
  - Michael Kirchner – Engineering Director
  - Lowell Wright – Airport Noise Abatement / Environmental Officer

Project Team

- HMMH
  - Gene Reindel – Principal-in-Charge
  - Tim Middleton – Project Manager
  - Julia Nagy – Assistant Project Manager
- Mead & Hunt
  - Kate Andrus – Project Lead, Airport Planning and Forecasts
  - Ryan Hayes – Airport Planning and Forecasts
  - Chris Reis – Local Client Lead
- The Jones Payne Group
  - Diane Carter – Project Lead, Principal-in-Charge
  - Brianna Whiteman – Assistant Project Manager, QA/QC
Roles and Responsibilities

Airport
- Project sponsor
- Certification that documentation is true and accurate
- Recommend measures to address incompatible land use

Consultant Team
- Overall project management, documentation, and outreach
- Aircraft noise analysis and abatement planning
- Noise compatibility analysis and planning
- Aviation forecast and airfield analysis

FAA
- Certification that the documentation meets federal regulations and guidelines
- Approval of Airport-recommended measures

Technical Advisory Committee
- Review study inputs, assumptions, analyses, documentation, etc.
- Input, advice, and guidance related to NEM and NCP development

Public
- Provide input on study during comment period
- Review public draft documents
Part 150 Overview: Noise Exposure Map

- FAA “accepts” NEM as compliant with Part 150 standards
- NEM must include detailed description of
  - Airport layout, aircraft operations, and other inputs to noise model
  - Aircraft noise exposure in terms of Day-Night Average Sound Level (DNL)
  - Land uses within DNL 65+ decibel (dB) contours
  - Noise / land use compatibility statistics within DNL 65+ dB contours
- NEM must address two calendar years
  - Year of submission (2022)
  - Forecast (at least five years from year of submission; 2027)
  - FAA reviews forecasts for consistency with Terminal Area Forecast (TAF)
Noise Modeling Process
For Commercial and General Aviation Operations

- Base Year – 2021
  - Obtained, processed and analyzed 12 months of flight track and aircraft identification data
  - Developed modeled flight tracks
  - Determined day-night aircraft operations, fleet mix and runway use
- Existing and Forecast Conditions – 2022 & 2027
  - Confirmation of the FAA’s Terminal Area Forecast (TAF)
  - Scaled base year operations and updated aircraft fleet to 2022 and 2027 TAF
  - No changes to flight tracks, runway use
The 2027 Forecast Conditions identified four noise-sensitive sites within the 65 DNL contour:

1. **School:** Madison Area Technical College at 1701 Wright St, Madison, WI 53704
2. **Place of Worship:** Ridgeway Church at 3245 E Washington Ave, Madison, WI 53704
3. **Day Care:** Claudi’s Kids Inc-Day Care Center at 3131 E Washington Ave, Madison, WI 53704
4. **Transient Lodging:** Spence Motel at 3575 E Washington Ave, Madison, WI 53704

<table>
<thead>
<tr>
<th>Forecast 2027 Combined 65 – 75 DNL Contours</th>
<th>Population Census 2020</th>
<th>Housing Units</th>
<th>Area (Acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65-70 DNL</td>
<td>2,424</td>
<td>1,227</td>
<td>1,823.31</td>
</tr>
<tr>
<td>70-75 DNL</td>
<td>57</td>
<td>23</td>
<td>935.53</td>
</tr>
<tr>
<td>&gt;75 DNL</td>
<td>0</td>
<td>0</td>
<td>971.30</td>
</tr>
<tr>
<td>Total</td>
<td>2,481</td>
<td>1,250</td>
<td>3,730.14</td>
</tr>
</tbody>
</table>
Part 150 Overview: Noise Compatibility Program

- NCP must address three major categories of proposed actions
  1. Noise abatement measures
  2. Compatible land use measures
  3. Program management/administrative measures
- FAA accepts NCP as compliant with Part 150 standards
- FAA reviews and approves or disapproves proposals as compliant with Part 150 standards on a measure-by-measure basis
NCP Overview

Objectives of proposed measures:
- **Reduce** exposure over incompatible uses
- **Limit** growth in exposure over incompatible uses
- **Mitigate** exposure where it cannot be reduced to compatible levels
- **Prevent** introduction of new incompatible uses

Land Use Strategies
- Land acquisition
- Sound insulation
- Avigation easements
- Prevention
- Land use controls
- Real estate disclosures

Noise Abatement Strategies
- Flight tracks
- Preferential runway use
- Arrival/departure procedures
- Airport layout modifications
- Use restrictions

Programmatic Strategies
- Implementation
- Promotion
- Monitoring
- Reporting
- NEM updating
- NCP revision

Analysis and Selection Process
1) Evaluate effectiveness in addressing objectives
2) Evaluate feasibility (economic, operational, safety, etc.)
3) Select most effective “package” of measures
4) Identify implementation responsibilities, schedule, etc.
5) If not recommended, document reason(s)
Existing MSN NCP

1991 MSN NCP included:
- Noise abatement measures (9)
- Land use measures (11)
- Programmatic measures (3)

NCP Review
- Determine implementation status of each existing measure
- Determine compliance with the measures if implemented
- Determine if existing measures should be:
  - Continued as written
  - Continued with modifications
  - Eliminated
- Determine whether additional measures are needed to address the noncompatible land uses identified in the 2022 NEMs
  - Comments from the public

### Existing NCP Measures

<table>
<thead>
<tr>
<th>Measure</th>
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<tbody>
<tr>
<td>NA-1</td>
<td>Continue the existing runway use program</td>
</tr>
<tr>
<td>NA-2</td>
<td>Continue requiring aircraft departing on Runway 31 to pass through 2,500 feet MSL (1,600 feet above ground level) before turning left</td>
</tr>
<tr>
<td>NA-3</td>
<td>Establish visual approach and departure corridors for helicopters</td>
</tr>
<tr>
<td>NA-4</td>
<td>Encourage use of noise abatement departure procedures by operators of jet aircraft</td>
</tr>
<tr>
<td>NA-5</td>
<td>Encourage Air National Guard to construct a hush house for F-16 engine maintenance runups prior to converting its fleet</td>
</tr>
<tr>
<td>NA-6</td>
<td>Build new 6,500-foot Runway 3-21</td>
</tr>
<tr>
<td>NA-7</td>
<td>Adopt runway use system preferring departures on Runways 3, 31, and 36 and arrivals on Runways 13, 18, and 21</td>
</tr>
<tr>
<td>NA-8</td>
<td>Require east and southbound aircraft exceeding 12,500 pounds and departing on Runway 3 to climb on runway heading through 2,500 feet MSL before turning right</td>
</tr>
<tr>
<td>NA-9</td>
<td>Require all aircraft exceeding 12,500 pounds and departing Runway 21 to turn left 10 degrees as soon as safe and practicable</td>
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<tr>
<td>LU-1</td>
<td>Maintain existing compatible zoning in the airport vicinity</td>
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<td>Amend subdivision regulations to require dedication of noise and avigation easements of plat notes on final plat</td>
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<td>Amend building codes to provide soundproofing standards for noise-sensitive development in airport noise overlay zones</td>
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<td>Amend local land use plans to reflect noise compatibility plan recommendations and establish airport compatibility criteria for project review</td>
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<td>Follow through with planned land acquisition in Cherokee Marsh and Token Creek Park areas</td>
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<td>Consider expanding land acquisition boundaries in Cherokee Marsh and Token Creek areas</td>
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<td>LU-10</td>
<td>Establish sales assistance or purchase assurance program for homes impacted by noise above 70 Ldn</td>
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<td>LU-11</td>
<td>Install sound insulation for schools impacted by noise above 65 Ldn</td>
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## Existing Noise Abatement Measures

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Proposed Noise Abatement Measures

- **Flight Tracks**
  - Develop and implement preferred flight paths for Runway 18 departures
  - Develop and implement new flight paths to minimize overflying educational facilities
  - Design flight paths that avoid high-density population areas
- **Preferential Runway Use**
  - Development and implement a preferential runway use program for F-35A aircraft operations
  - Use Runway 3/21 for all WIANG departure scrambles
- **Arrival/Departure Procedures**
  - Develop and implement an F-35A aircraft noise abatement departure profile (NADP)
- **Airport Layout Modifications**
  - Lengthen Runway 3-21 to allow more F-35A operations
- **Use Restrictions**
  - Minimize F-35 training flights during times when children are traveling to and from school or outside for recess
  - Reduce nighttime F-35A operations
Figure 10: Comparison of Forecast 2027 NEM Contour and Alternative 4 “All Non-Scaleable F-35A Departures Use a M1 Power 300Kts Speed Hold Departure” Contour

Insert map showing departure flight tracks that avoid schools and/or high population areas.
## Existing Land Use Measures

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Proposed Land Use Measures

• Land Acquisition
  • Implement a land acquisition and relocation program
  • Acquire the mobile home park and relocate the residents
  • Implement a sales assistance program

• Sound Insulation
  • Implement a residential sound insulation program
  • Implement a sound insulation program at schools and other noise sensitive buildings
  • Consider elementary schools and noise effects on children’s learning

• Avigation Easements

• Prevention
  • Establish an airport affected area
  • Restrict future introduction of low-income and other residential developments within the 65 dB DNL noise contour or adjacent to the airport

• Land Use Controls
  • Change building codes to support sound proofing
  • Consider environmental justice and low-income communities

• Other Ideas
  • Report alternative metrics and consider use of lower DNL threshold
  • Implement a Home Sales Assistance Program
# Existing Program Management Measures

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Proposed Program Management Measures

- Implementation
- Promotion
- Monitoring
  - Install a flight track monitoring system
  - Install a noise monitoring system
- Reporting
  - Create a noise advisory group
- NEM Updating
  - Update the NEM on a regular basis
- NCP Revision
# Proposed Schedule

<table>
<thead>
<tr>
<th>Meeting / Activity</th>
<th>Anticipated Purpose</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kick-Off Meeting with MSN and the Part 150 Team</td>
<td>Define organizational and procedural matters and public outreach, review and refine scope and schedule details.</td>
<td><strong>Completed:</strong> January 20, 2022</td>
</tr>
<tr>
<td><strong>1st</strong> Public Open House</td>
<td>Introduction to Part 150, set expectations, discuss stakeholder roles, identify issues of concern</td>
<td><strong>Completed:</strong> April 26, 2022</td>
</tr>
<tr>
<td>NEM Public Comment Period, 2nd Public Open House</td>
<td>NEM thirty-day public comment period and second Public Open House</td>
<td><strong>Completed:</strong> November 2022</td>
</tr>
<tr>
<td>MSN to Submit Final NEM to FAA</td>
<td>MSN submits final updated NEM to FAA for review and approval. Respond to FAA questions as needed.</td>
<td><strong>Completed:</strong> December 2022</td>
</tr>
<tr>
<td><strong>3rd</strong> Public Open House*</td>
<td>Solicit public input on potential NCP measures for MSN consideration. *Additional open house added to schedule.</td>
<td>June 27, 2023</td>
</tr>
<tr>
<td>NCP Public Comment Period, 4th Public Open House and NCP Hearing</td>
<td>NCP thirty-day public comment period and fourth Public Open House and NCP Hearing.</td>
<td>4th Quarter 2023</td>
</tr>
<tr>
<td>MSN to Submit Final NCP to FAA</td>
<td>MSN submits final updated NCP to FAA for review and approval. Respond to FAA questions as needed.</td>
<td>1st Quarter 2024</td>
</tr>
</tbody>
</table>

*Note: Schedule is subject to change*
MSN Part 150 Study Website and Project Contacts

• Website: https://www.msnairport.com/about/ecomentality/Part-150-Study

• Project email address: part150study@msnairport.com

• Tim Middleton – HMMH Project Manager, Contact: tmiddleton@hmmh.com