Noise Compatibility Planning Study
Dane County Regional Airport

Public Open House
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  
Part 150 Study

**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
Airport History

- **1927**: City of Madison purchases airport land
- **1930s**: Madison's first airplane manufacturing plant, 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
- **1990s**: First Part 150 Noise Compatibility Study and new Runway 3/21 for noise reduction
- **2000s and 10s**: Renovated terminal and focused on environmental and airfield improvements
- **Today**: Airport functions as a joint-use military and civilian facility and terminal modernization continues

Source: https://www.msnairport.com/about/facilities_maps/history
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
Noise Terminology

- Maximum Noise Level ($L_{\text{max}}$)
- Sound Exposure Level (SEL)
- Equivalent Sound Level ($L_{\text{eq}}$)
- Day-Night Average Sound Level (DNL)

![Graph showing noise levels over time]

- $L_{\text{eq}} = 96.5 \text{ dB}$
- $L_{\text{max}} = 102.5 \text{ dB}$
- $\text{SEL} = 108.0 \text{ dB}$

![Graph showing A-weighted sound levels over time]

- DNL = 66 dB
- 10 dB WEIGHING
- Duration

![Graph showing time in hours]

- 7am, 10am, 1pm, 4pm, 7pm, 10pm, 1am, 4am, 7am
Noise Terminology

- The decibel is a complex logarithmic quantity based on sound pressure
- A-weighted decibels correlate well with how we hear
- Noise levels can be expressed many ways depending on their purpose, including but not limited to:
  - Instantaneous maximum noise levels ($L_{\text{max}}$)
  - Single event dose (SEL)
  - Long-duration exposure (DNL)
- FAA requires use of DNL in a Part 150 study
- FAA Part 150 land use compatibility guidelines:
  - All land use is compatible with aircraft noise less than DNL 65 dB
  - Land use compatibility assessments use 5-dB contour bands
    - 65 to 70 dB
    - 70 to 75 dB
    - Greater than 75 dB
Part 150 Overview: Major Elements

- FAA created in response to Federal Aviation Safety and Noise Abatement Act of 1979 (ASNA)
- Codified under Title 14 of the Code of Federal Regulations Part 150
  - Formal citation is “14 CFR Part 150,” informal is “Part 150”
- Two primary elements
  - Noise Exposure Map (NEM)
  - Noise Compatibility Program (NCP)
  - Detailed FAA guidance available at www.faa.gov/airports/environmental/airport_noise/
- Consultation required with:
  - All local, state, and federal entities with control over land use within DNL 65+ dB
  - FAA regional officials, regular aeronautical users of the airport
  - All parties interested in review of and comment on the draft
- Opportunity must be offered for a final public hearing on the NCP
- MSN will exceed all consultation requirements
  - Improved stakeholder relations is typically one of the most valuable study results
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 evaluation for DNL 65-75 dB
- 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 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)
Part 150 Overview: Draft Study Area
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
### Proposed Schedule

<table>
<thead>
<tr>
<th>Meeting / Activity</th>
<th>Anticipated Purpose</th>
<th>Anticipated Time Frame</th>
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<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>January 20, 2022</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Public Open House</td>
<td>Introduction to Part 150, set expectations, discuss stakeholder roles, identify issues of concern</td>
<td>April 26, 2022</td>
</tr>
<tr>
<td>NEM Public Comment Period, 2&lt;sup&gt;nd&lt;/sup&gt; Public Open House</td>
<td>NEM thirty-day public comment period and second Public Open House</td>
<td>Sep-Oct 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>December 2022</td>
</tr>
<tr>
<td>NCP Public Comment Period, 3&lt;sup&gt;rd&lt;/sup&gt; Public Open House and NCP Hearing</td>
<td>NCP thirty-day public comment period and third Public Open House and NCP Hearing.</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; Quarter 2023</td>
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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

• Michael Riechers – MSN Director of Marketing and Communications, Contact: Riechers.Michael@msnairport.com