

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)

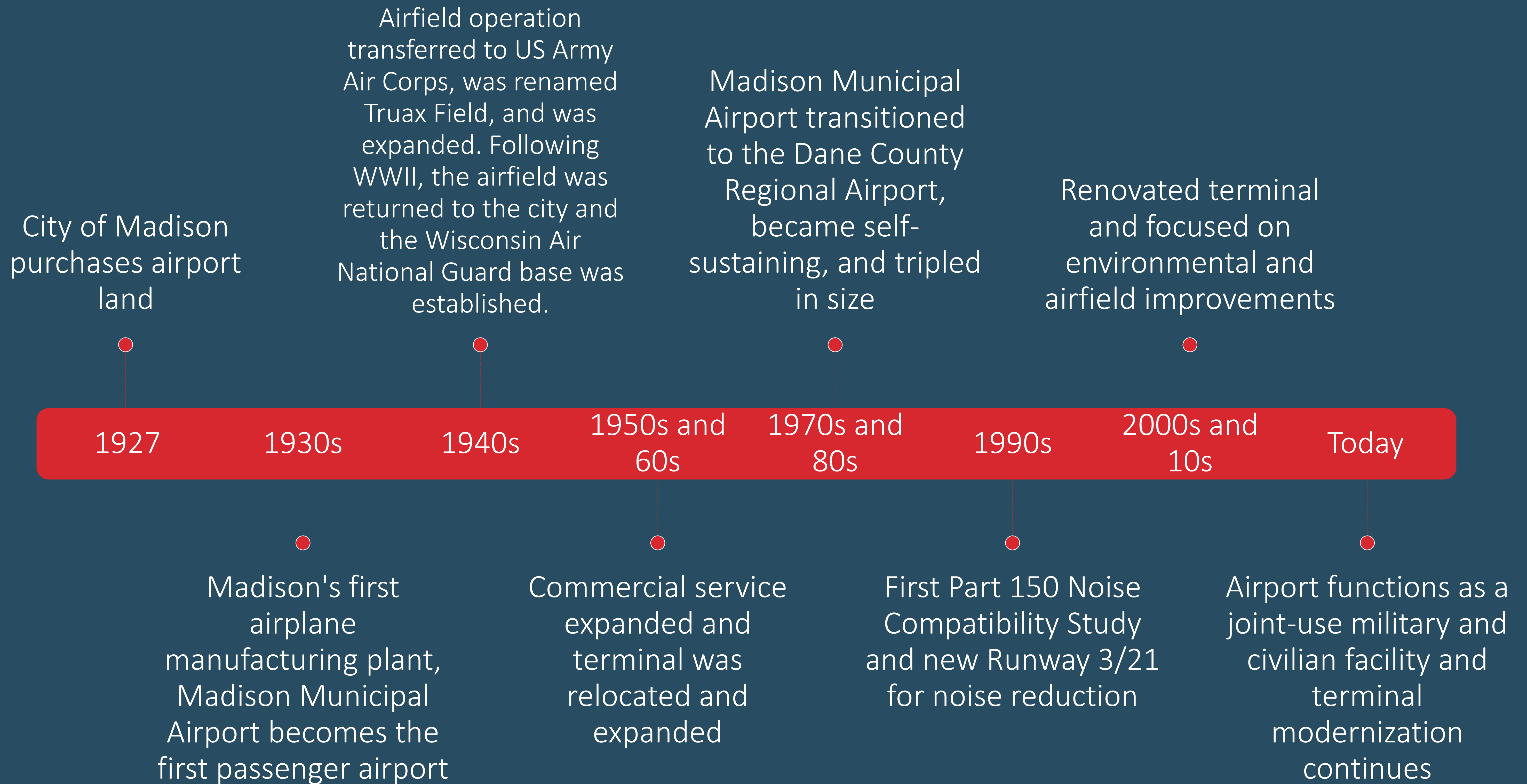
- Chosen to host the F-35A mission and receive a new fleet of F-35A Lightning II aircraft beginning in Spring of 2023

Wisconsin Army National Guard (ARNG) 64th Troop Command

- Operates UH-60 Black Hawk helicopters at Truax Field



Airport History



Source: https://www.msairport.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

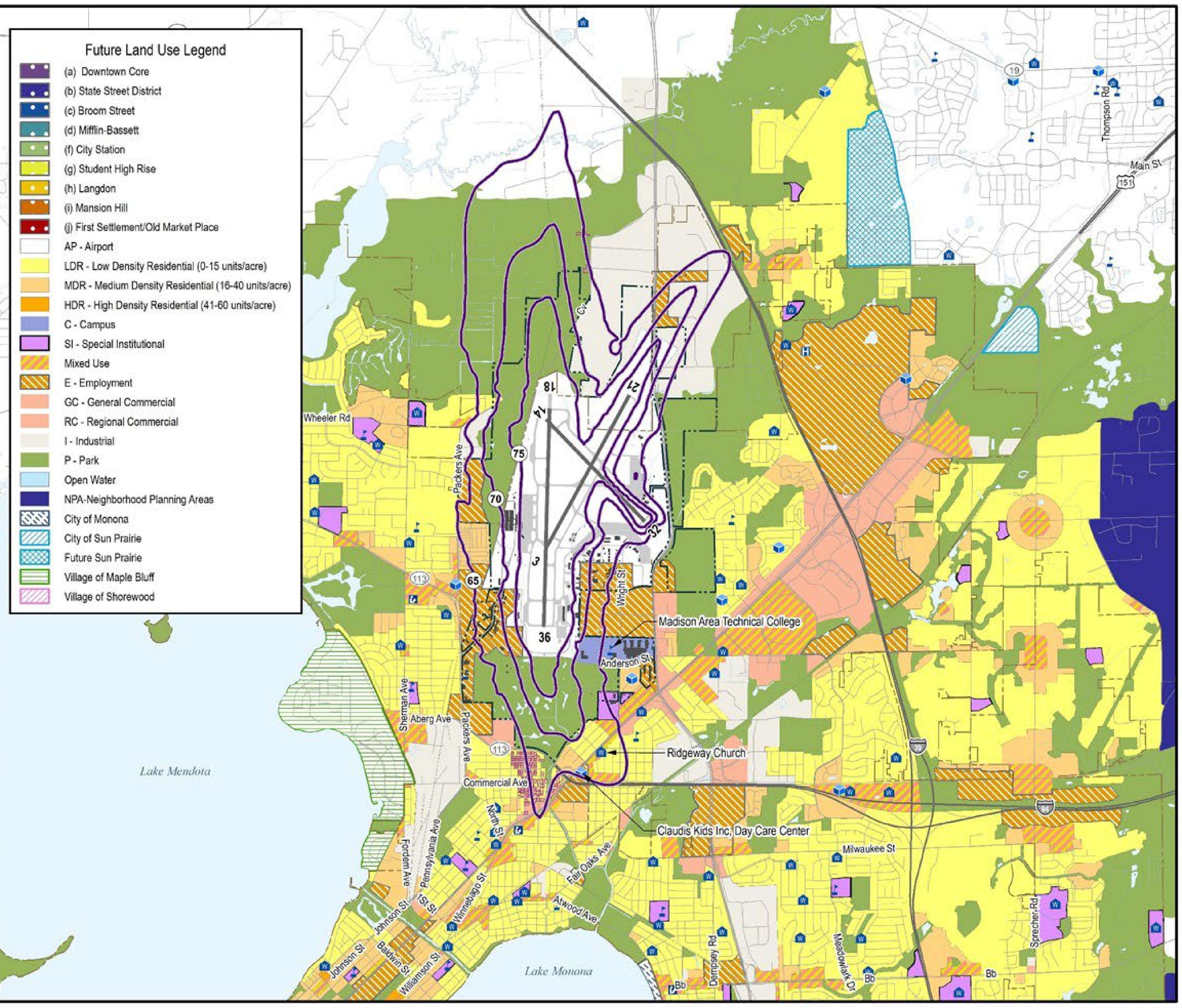
- FAA “accepts” NEM as compliant with Part 150 standards
- NEM must include detailed description of
 - Airport layout, aircraft operations, and other inputs to noise model
 - Aircraft noise exposure in terms of Day-Night Average Sound Level (DNL)
 - Land uses within DNL 65+ decibel (dB) contours
 - Noise / 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

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- Future Land Use Legend**
- (a) Downtown Core
 - (b) State Street District
 - (c) Broom Street
 - (d) Mifflin-Bassett
 - (f) City Station
 - (g) Student High Rise
 - (h) Langdon
 - (i) Mansion Hill
 - (j) First Settlement/Old Market Place
 - AP - Airport
 - LDR - Low Density Residential (0-15 units/acre)
 - MDR - Medium Density Residential (16-40 units/acre)
 - HDR - High Density Residential (41-60 units/acre)
 - C - Campus
 - SI - Special Institutional
 - Mixed Use
 - E - Employment
 - GC - General Commercial
 - RC - Regional Commercial
 - I - Industrial
 - P - Park
 - Open Water
 - NPA-Neighborhood Planning Areas
 - City of Monona
 - City of Sun Prairie
 - Future Sun Prairie
 - Village of Maple Bluff
 - Village of Shorewood



Dane County Regional Airport
Madison, Wisconsin

Figure ES-2:
Forecast Condition (2027)
Noise Exposure Map

- 2027 Forecast Condition DNL Contour (65-75 dB)
- Airport Boundary
- Runway / Taxiway
- Major / Minor Road
- Madison Municipal Boundary
- Avigation Easement
- Single Family Residential
- Multi-Family Residential
- Mobile Home
- Transient Lodging
- Mixed Use
- Public Use 1 (Noncompatible)
- Public Use 2 (Compatible)
- Commercial Use
- Manufacturing and Production
- Lake / Pond
- School
- Place of Worship
- Day Care
- Building
- Railroad
- Agriculture
- Open Land
- Open Space / Recreation
- Woodlands
- Under Construction
- Vacant / Undefined
- Hospital
- Library

Source: County of Dane, Wisconsin; City of Madison, Wisconsin; Wisconsin Department of Natural Resources; ESRI, Inc.,



Land Use Assessment for 2027 Forecast Conditions

- The 2027 Forecast Conditions identified four noise-sensitive sites within the 65 DNL contour:
 - School:** Madison Area Technical College at 1701 Wright St, Madison, WI 53704
 - Place of Worship:** Ridgeway Church at 3245 E Washington Ave, Madison, WI 53704
 - Day Care:** Claudi’s Kids Inc-Day Care Center at 3131 E Washington Ave, Madison, WI 53704
 - Transient Lodging:** Spence Motel at 3575 E Washington Ave, Madison, WI 53704

Forecast 2027 Combined 65 – 75 DNL Contours			
	<i>Population Census 2020</i>	<i>Housing Units</i>	<i>Area (Acres)</i>
65-70 DNL	2,424	1,227	1,823.31
70-75 DNL	57	23	935.53
>75 DNL	0	0	971.30
Total	2,481	1,250	3,730.14



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
- **Mitigate** exposure where it cannot be reduced to compatible levels
- **Limit** growth in exposure over incompatible uses
- **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		Status
NA-1	Continue the existing runway use program	Implemented
NA-2	Continue requiring aircraft departing on Runway 31 to pass through 2,500 feet MSL (1,600 feet above ground level) before turning left	Implemented
NA-3	Establish visual approach and departure corridors for helicopters	Implemented
NA-4	Encourage use of noise abatement departure procedures by operators of jet aircraft	Implemented
NA-5	Encourage Air National Guard to construct a hush house for F-16 engine maintenance runups prior to converting its fleet	Implemented
NA-6	Build new 6,500-foot Runway 3-21	Implemented
NA-7	Adopt runway use system preferring departures on Runways 3, 31, and 36 and arrivals on Runways 13, 18, and 21	Implemented
NA-8	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	Implemented
NA-9	Require all aircraft exceeding 12,500 pounds and departing Runway 21 to turn left 10 degrees as soon as safe and practicable	Implemented
LU-1	Maintain existing compatible zoning in the airport vicinity	Implemented
LU-2	Define "airport affected area" for purposes of implementing Wisconsin Act 136	Implemented
LU-3	Adopt airport noise overlay zoning	Not Implemented
LU-4	Amend subdivision regulations to require dedication of noise and aviation easements of plat notes on final plat	Implemented
LU-5	Consider amending County subdivision regulations to prevent subdivision of land zoned A-1 Agriculture	Not Implemented
LU-6	Amend building codes to provide soundproofing standards for noise-sensitive development in airport noise overlay zones	Not Implemented
LU-7	Amend local land use plans to reflect noise compatibility plan recommendations and establish airport compatibility criteria for project review	Implemented
LU-8	Follow through with planned land acquisition in Cherokee Marsh and Token Creek Park areas	Not Implemented
LU-9	Consider expanding land acquisition boundaries in Cherokee Marsh and Token Creek areas	Not Implemented
LU-10	Establish sales assistance or purchase assurance program for homes impacted by noise above 70 Ldn	Implemented
LU-11	Install sound insulation for schools impacted by noise above 65 Ldn	Not Implemented
PM-1	Program monitoring and noise contour updating	Implemented
PM-2	Evaluation and update of the plan	Implemented
PM-3	Noise complaint response	Implemented



Existing Noise Abatement Measures

	Existing Noise Abatement Measures	Status
NA-1	Continue the existing runway use program	Implemented
NA-2	Continue requiring aircraft departing on Runway 31 to pass through 2,500 feet MSL (1,600 feet above ground level) before turning left	Implemented
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Proposed Noise Abatement Measures

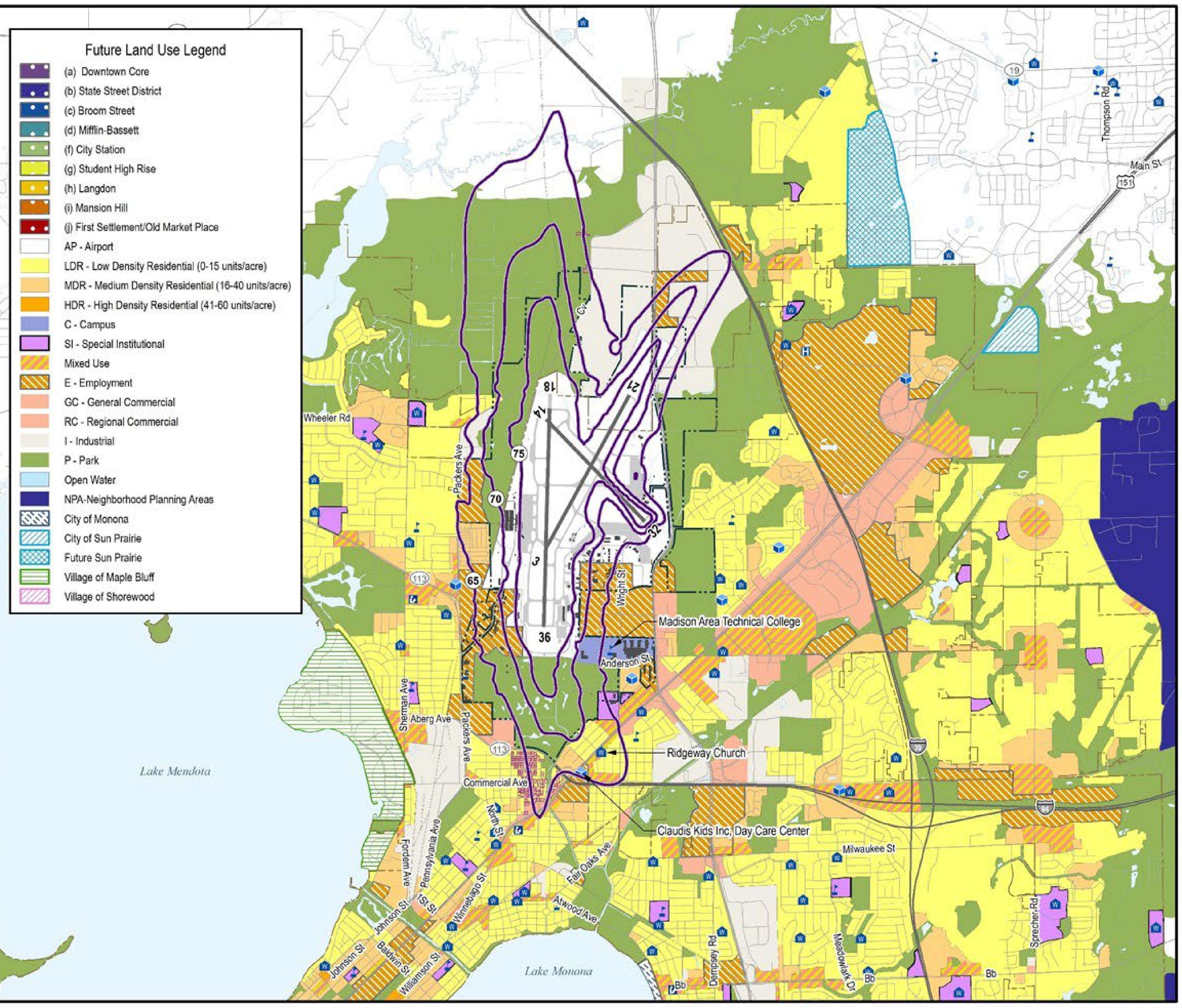
- Flight Tracks
 - Develop and implement preferred flight paths for Runway 18 departures
 - Develop and implement new flight paths to minimize overflying educational facilities
 - Design flight paths that avoid high-density population areas
- Preferential Runway Use
 - Development and implement a preferential 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

Noise Abatement Strategies

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



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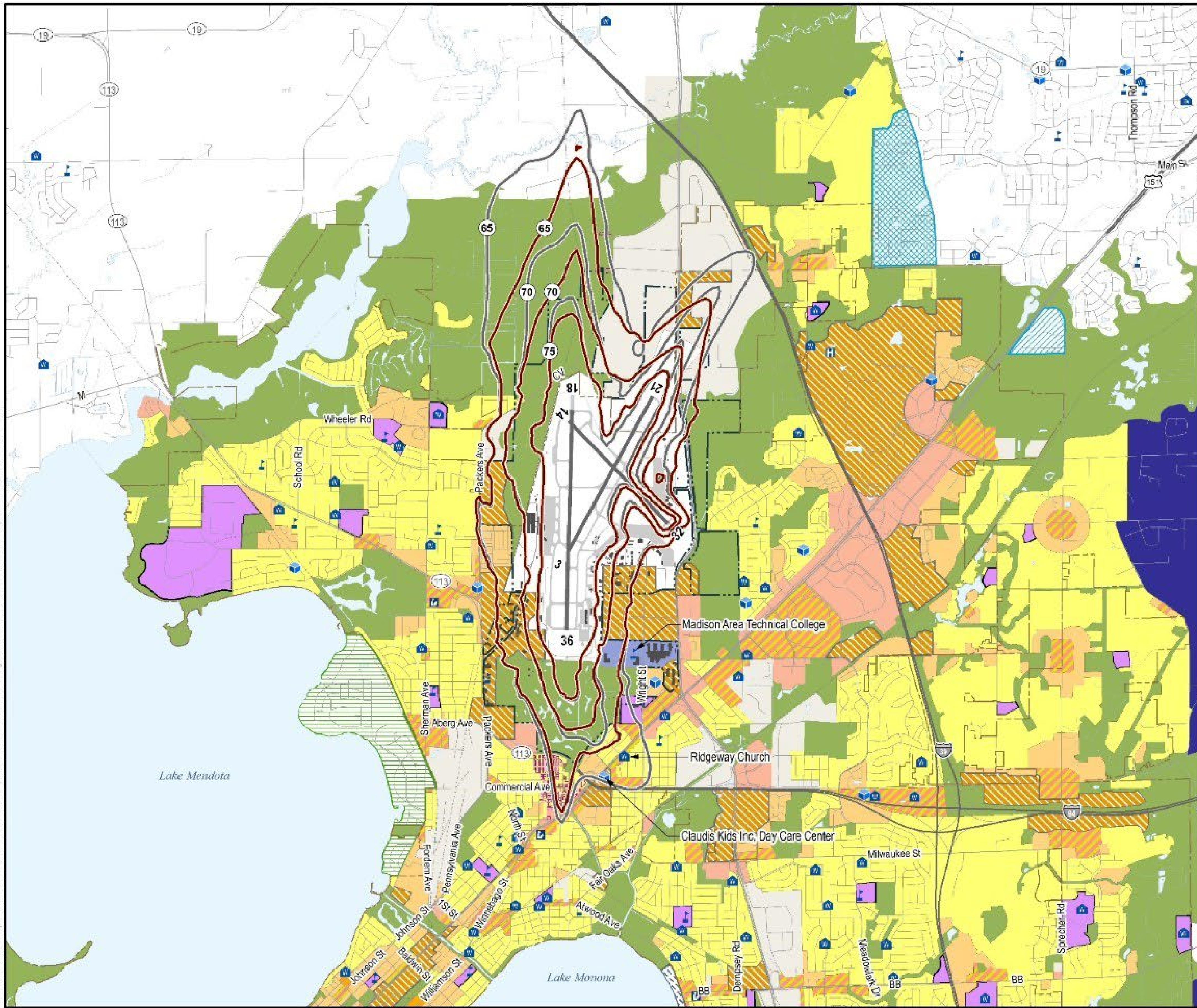
Dane County Regional Airport
Madison, Wisconsin

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Noise Exposure Map

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Source: County of Dane, Wisconsin; City of Madison, Wisconsin; Wisconsin Department of Natural Resources; ESRI, Inc.,





Dane County Regional Airport Madison, Wisconsin

Figure 10:
Comparison of Forecast 2027 NEM
Contour and Alternative 4 "All Non-
Scramble F-35A Departures Use a Mil
Power 300kts Speed Hold Departure"
Contour

- 2027 Alternative 4 "All Non-Scramble F-35A Departures Use a Mil Power 300kts Speed Hold Departure" Contour (65-75 dB)
- 2027 Forecast Condition DNL Contour (65-75 dB)
- Airport Boundary
- Runway / Taxiway
- Major / Minor Road
- Madison Municipal Boundary
- Avigation Easement
- Building
- Railroad

Future Land Use Legend

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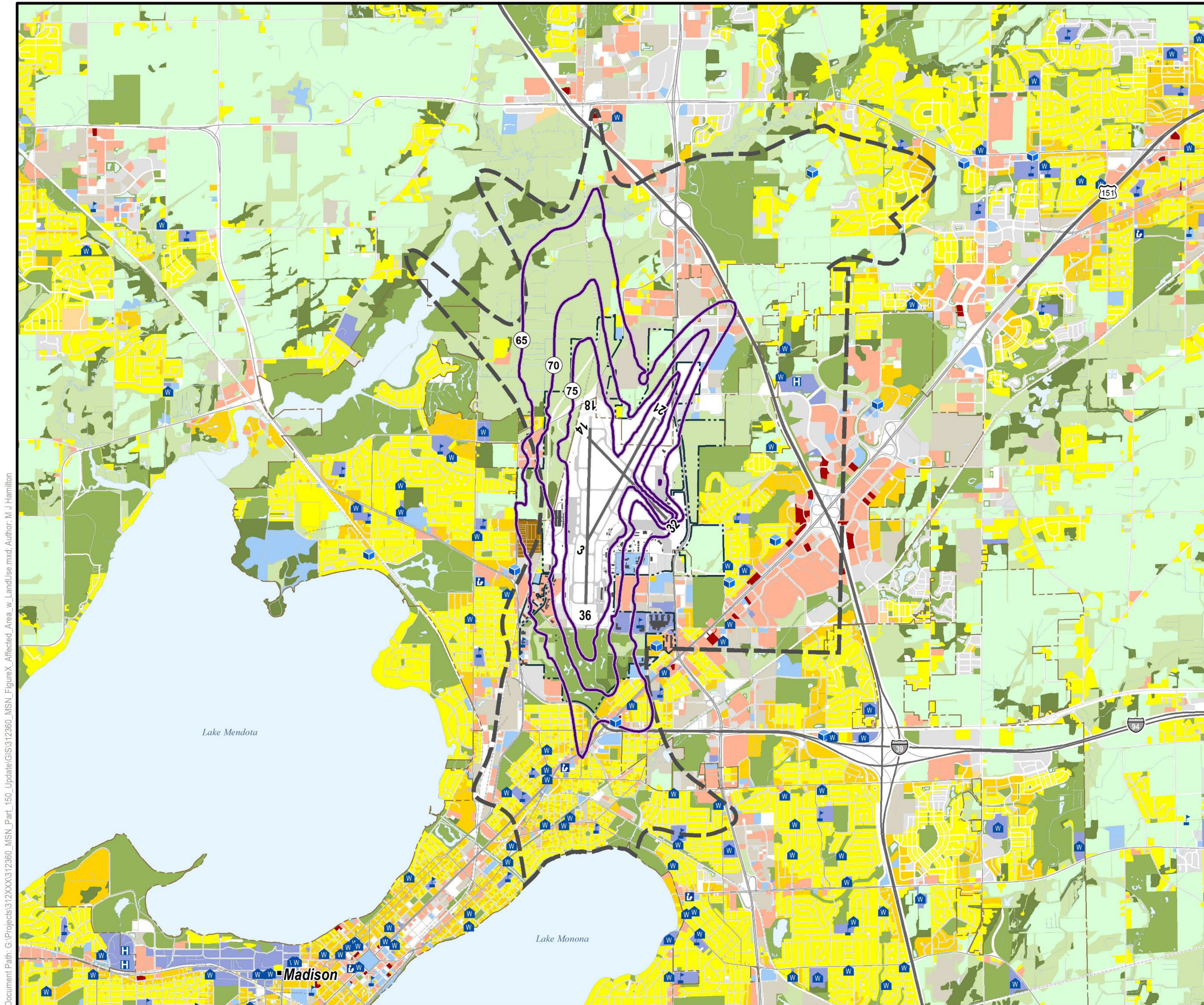
Source: County of Dane, Wisconsin; City of Madison, Wisconsin; Wisconsin Department of Natural Resources; ESRI, Inc.



Existing Land Use Measures

	Existing Land Use Measures	Status
LU-1	Maintain existing compatible zoning in the airport vicinity	Implemented
LU-2	Define “airport affected area” for purposes of implementing Wisconsin Act 136	Implemented
LU-3	Adopt airport noise overlay zoning	Not Implemented
LU-4	Amend subdivision regulations to require dedication of noise and aviation easements of plat notes on final plat	Implemented
LU-5	Consider amending County subdivision regulations to prevent subdivision of land zoned A-1 Agriculture	Not Implemented
LU-6	Amend building codes to provide soundproofing standards for noise-sensitive development in airport noise overlay zones	Not Implemented
LU-7	Amend local land use plans to reflect noise compatibility plan recommendations and establish airport compatibility criteria for project review	Implemented
LU-8	Follow through with planned land acquisition in Cherokee Marsh and Token Creek Park areas	Not Implemented
LU-9	Consider expanding land acquisition boundaries in Cherokee Marsh and Token Creek areas	Not Implemented
LU-10	Establish sales assistance or purchase assurance program for homes impacted by noise above 70 Ldn	Implemented
LU-11	Install sound insulation for schools impacted by noise above 65 Ldn	Not Implemented





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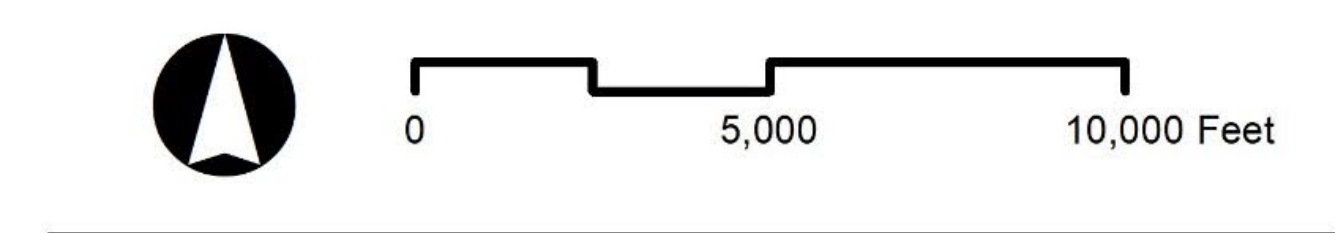


Dane County Regional Airport
Madison, Wisconsin

Figure :
Forecast Condition (2027)
Noise Exposure Map and
Airport Affected Area

- 2027 Forecast Condition DNL Contour (65-75 dB)
- Airport Affected Area (Dane County Ordinance Chapter 78)
- Airport Boundary
- Runway / Taxiway
- Major / Minor Road
- Madison Municipal Boundary
- Single Family Residential
- Multi-Family Residential
- Mobile Home
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Source: County of Dane, Wisconsin; City of Madison, Wisconsin; Wisconsin Department of Natural Resources; ESRI, Inc.,



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

Land Use Strategies

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



Existing Program Management Measures

	Existing Program Management Measures	Status
PM-1	Program monitoring and noise contour updating	Implemented
PM-2	Evaluation and update of the plan	Implemented
PM-3	Noise complaint response	Implemented

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

Programmatic Strategies

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



Proposed Schedule

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

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

