Appendix D-1 Stakeholder Consultation

This appendix includes:

- TAC Meeting 1, 2, and 3 Presentations and Summaries
- Public Open House 1 and 2 Boards (PowerPoints)
- Social Media Postings
- Newsletter 1
- Newsletter 2
- Public Open House 2 Postcard

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Noise Compatibility Planning Study

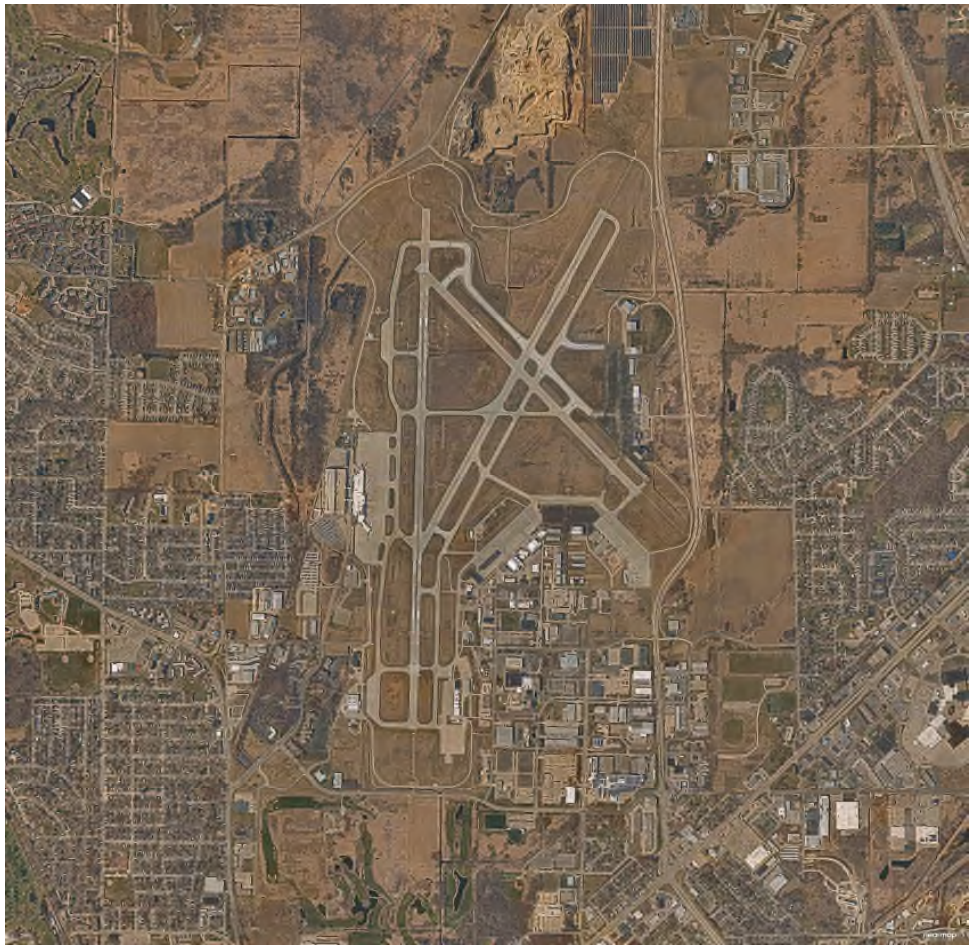
Dane County Regional Airport

Technical Advisory Committee Meeting #1

April 26, 2022

TAC#1 Agenda

- Introductions
- Roles and Responsibilities
- Airport Overview
- Aircraft Noise Terminology
- Airport Noise Compatibility Planning
- Schedule and Meeting Topics
- Project Contacts and Website
- TAC Member Discussion
- Wrap-up



Source: NearMap USA, April 2021

Introductions – 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
  - Ryk Dunkelberg - Vice President
- The Jones Payne Group
  - Diane Carter – Project Lead, Principal-in-Charge
  - Brianna Whiteman – Assistant Project Manager, QA/QC

Introductions – TAC Members

Organization	TAC Member
MSN staff	Michael Kirchner
WBOA staff	Matt Messina
FAA Airport District Office (ADO)	Bobb Beauchamp
FAA Air Traffic Control Tower (ATCT)	John Vagedes
Wisconsin Air National Guard; 115th Fighter Wing Representative	Lt Col Daniel Statz
Army Guard	Major Lucas Sivertson
Delta Airlines	Jason Pace
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City of Madison Planning Division	Dan McAuliffe
Dane County Department of Planning and Development	Todd Violante

Roles and Responsibilities
Airport Noise Compatibility

Stakeholder	Responsibilities
Federal government (FAA)	Regulate source noise emissions, air traffic control, funding, and safety oversight
Airport operators	Plan and implement noise compatibility measures
State and local government	Compatible land use planning and control
Aircraft operators	Develop noise-sensitive schedules, cockpit procedures, and fleet improvements
Air travelers and shippers	Bear the costs (through ticket tax)
Current and potential residents	Seek to act in an informed manner

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

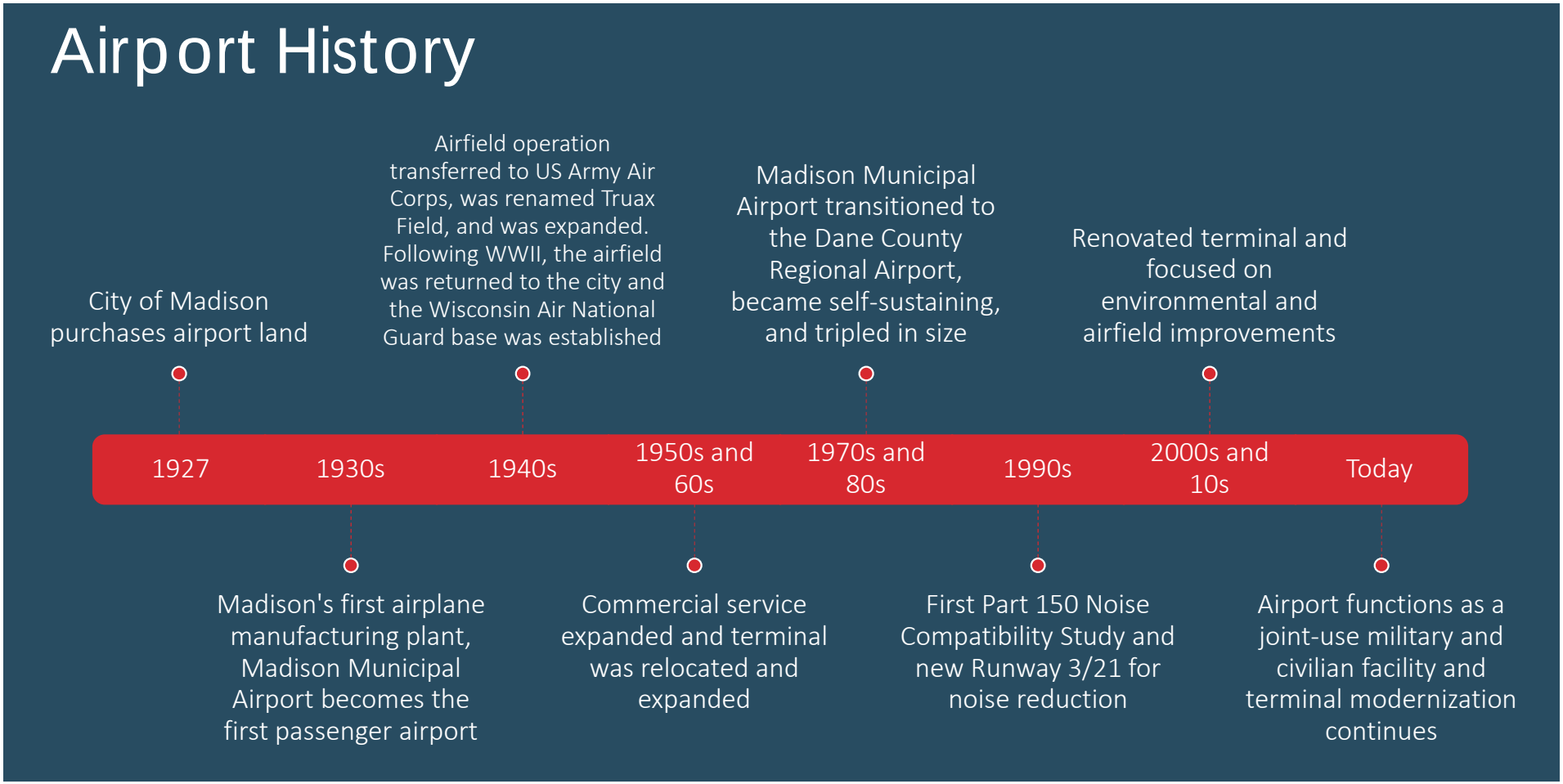
Roles and Responsibilities
Technical Advisory Committee

- The TAC is advisory to MSN solely for purposes of the MSN Part 150 Study, including:
  - Review of study inputs, assumptions, analyses, documentation, etc.
  - Input, advice, and guidance related to NEM and NCP development
- TAC provides two-way communication between the committee and their respective organizations / constituents
- MSN shall respect and consider TAC input, but must retain overall responsibility for the Part 150 Study and NCP recommendations
- The TAC and MSN recognize FAA is responsible for accepting NEM and NCP submissions and for approving NCP proposals

TAC Participation Agreement

- Participation Agreement was sent with TAC invitations
  - Describes TAC's role, member responsibilities, participation expectations, etc.
- Six to eight meetings anticipated - approximately one every two to three months for approximately 2 years
  - Agendas and background material will be provided in advance of each meeting
  - Dates and times will be sought that are convenient to a majority of members
  - Meetings are expected to be two to three hours in length

Airport History



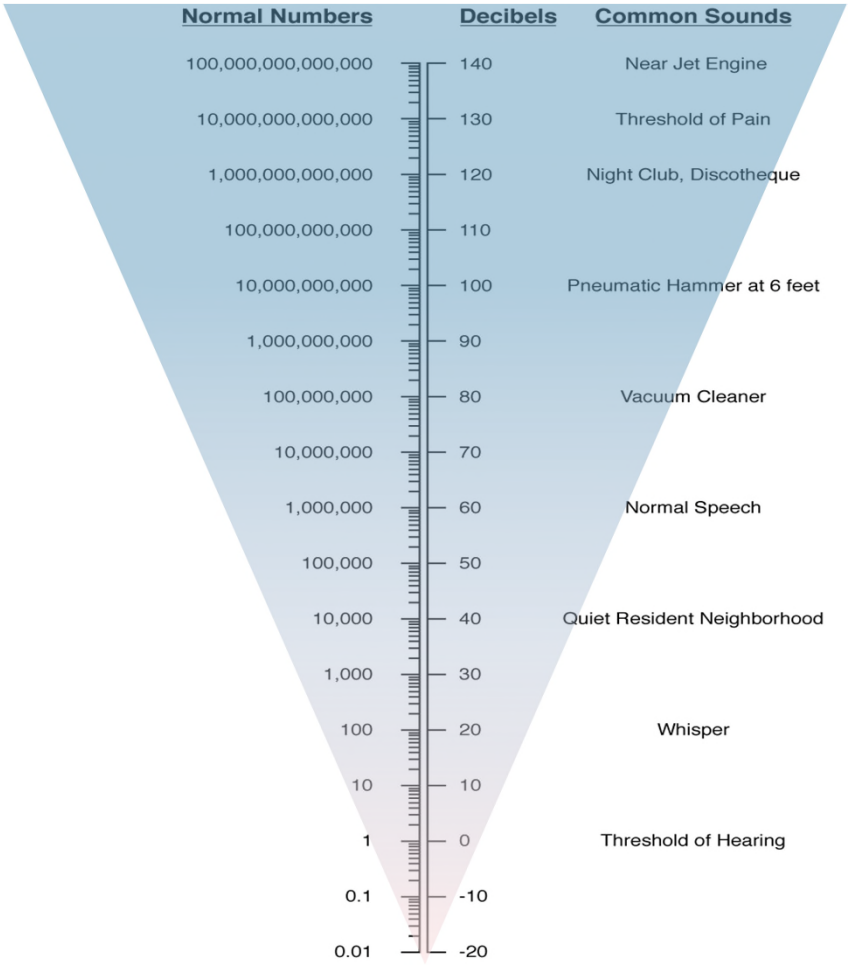
Airport Facility Overview

- 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

Aircraft Noise Terminology

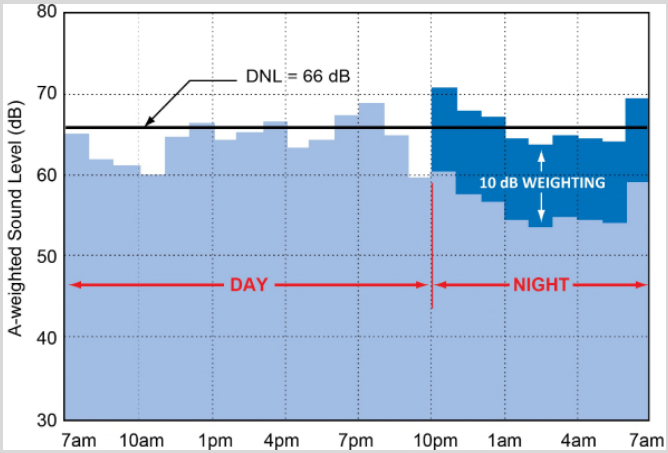
Noise Terminology

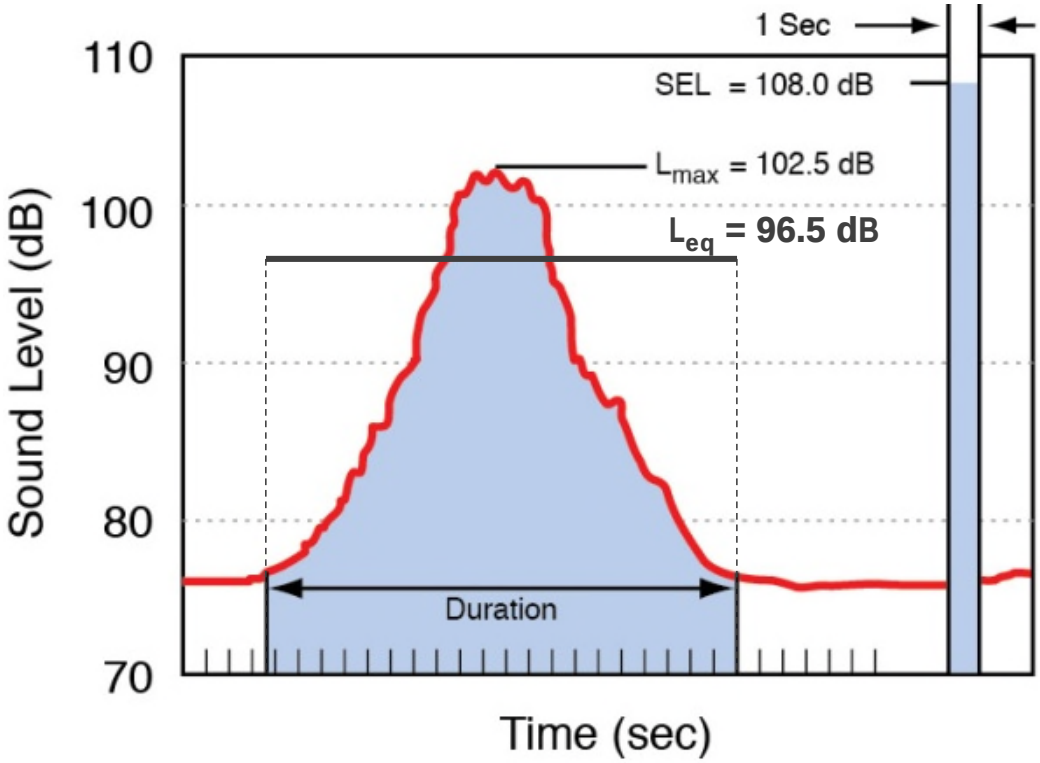
- Reported in A-weighted decibels (dB)
  - Logarithmic scale base 10
  - We hear sound pressures over a large range
  - We perceive sounds in decibels



Noise Terminology

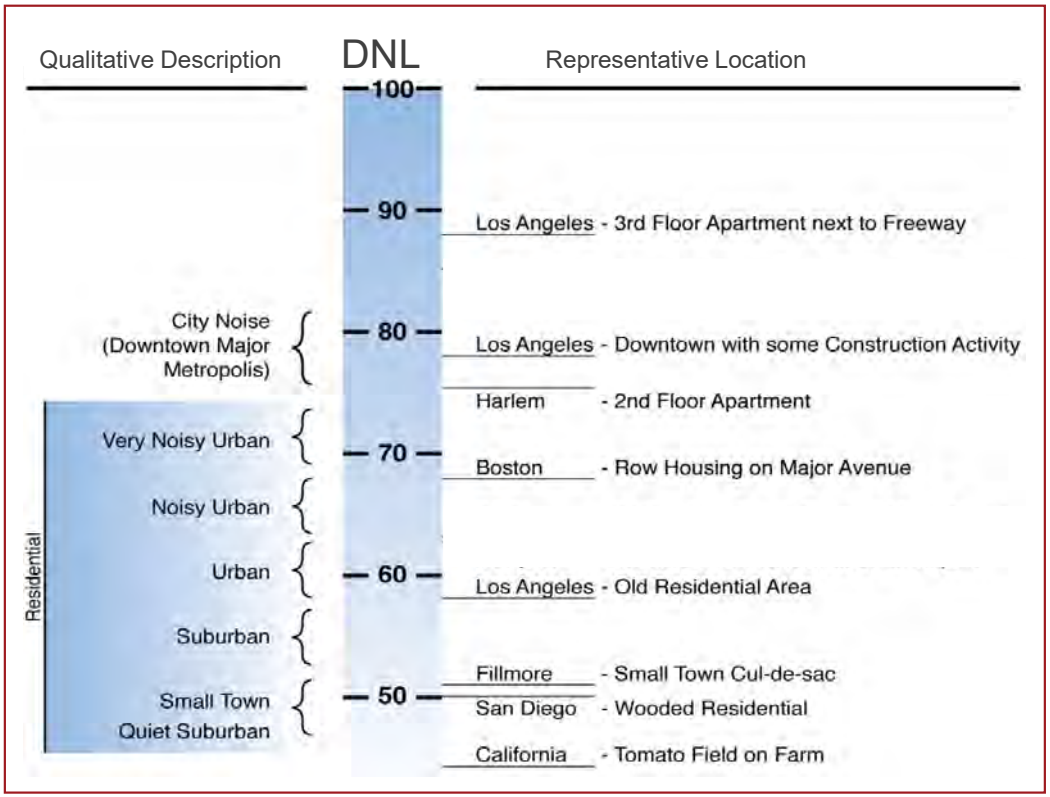
- Maximum Noise Level (L_{max})
- Sound Exposure Level (SEL)
- Equivalent Sound Level (L_{eq})
- Day-Night Average Sound Level (DNL)





Noise Terminology

- FAA 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



Source: United States Environmental Protection Agency, Information on Levels Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974, p. 14.

Noise Terminology Summary

- 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, including but not limited to:
  - Instantaneous maximum noise levels (Lmax)
  - Single event dose (SEL)
  - Long-duration exposure (DNL)
- Best metric to use depends on purpose
- FAA requires use of DNL in a Part 150 study
- Part 150 guidelines consider all land uses compatible below 65 dB DNL

Airport Noise Compatibility Planning

Title 14 of the Code of Federal Regulations Part 150

Airport Noise Compatibility Planning

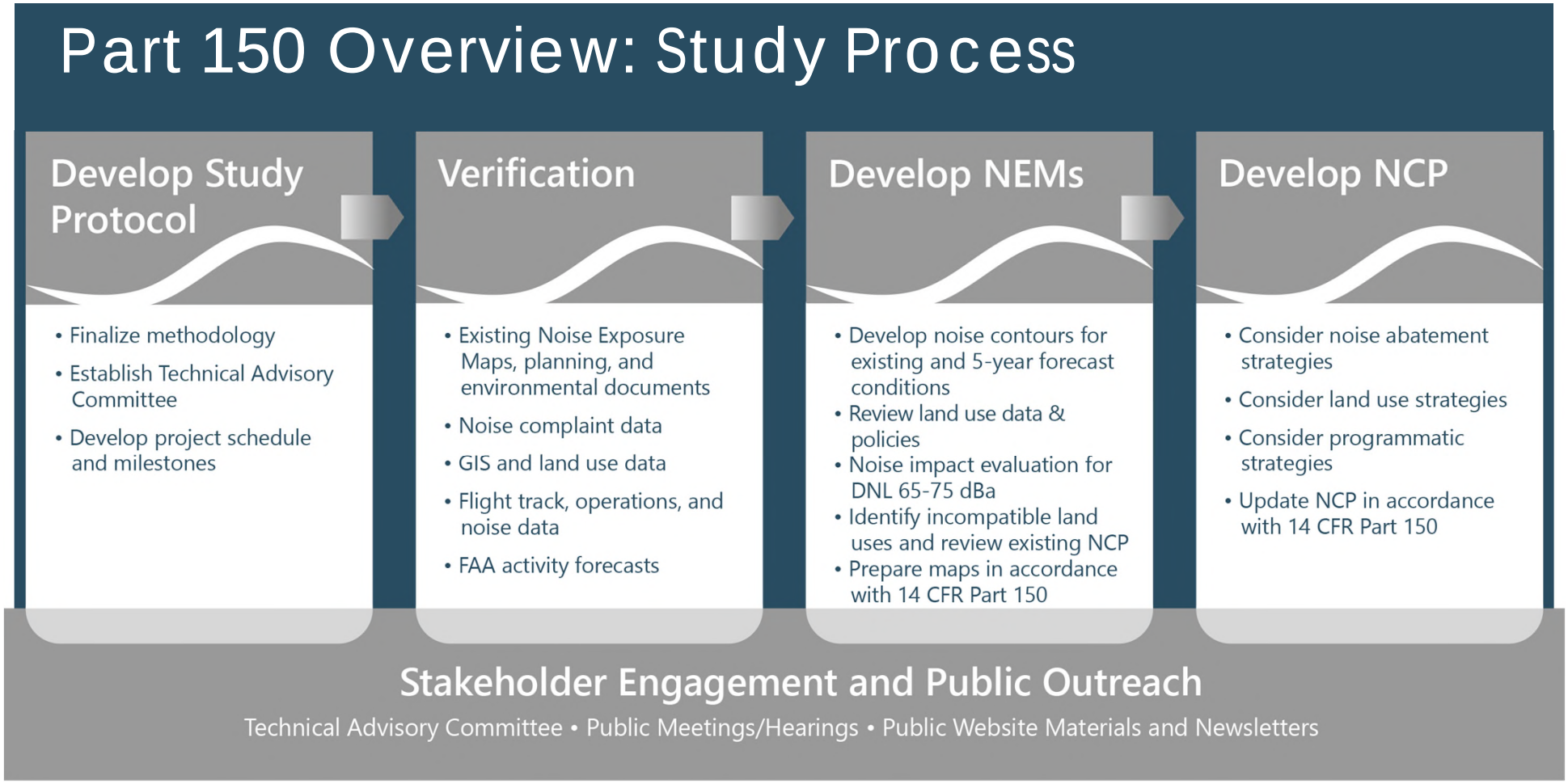
- FAA created in response to Federal Aviation Safety and Noise Abatement Act of 1979 (ASNA)
- Codified under Title 14 of the Code of Federal Regulations Part 150
  - Formal *citation* is "14 CFR Part 150," informal is "Part 150"
- *Voluntary* FAA-defined process for airport noise studies
  - 250+ airports have participated
- *Why do airports participate*? Primary reasons include:
  - Provides access to FAA funding of some approved measures
  - Well-established, understood, accepted, and comprehensive process

Part 150 Overview: Major Elements

- Two primary elements
  - Noise Exposure Map (NEM)
  - Noise Compatibility Program (NCP)

  Detailed FAA guidance 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

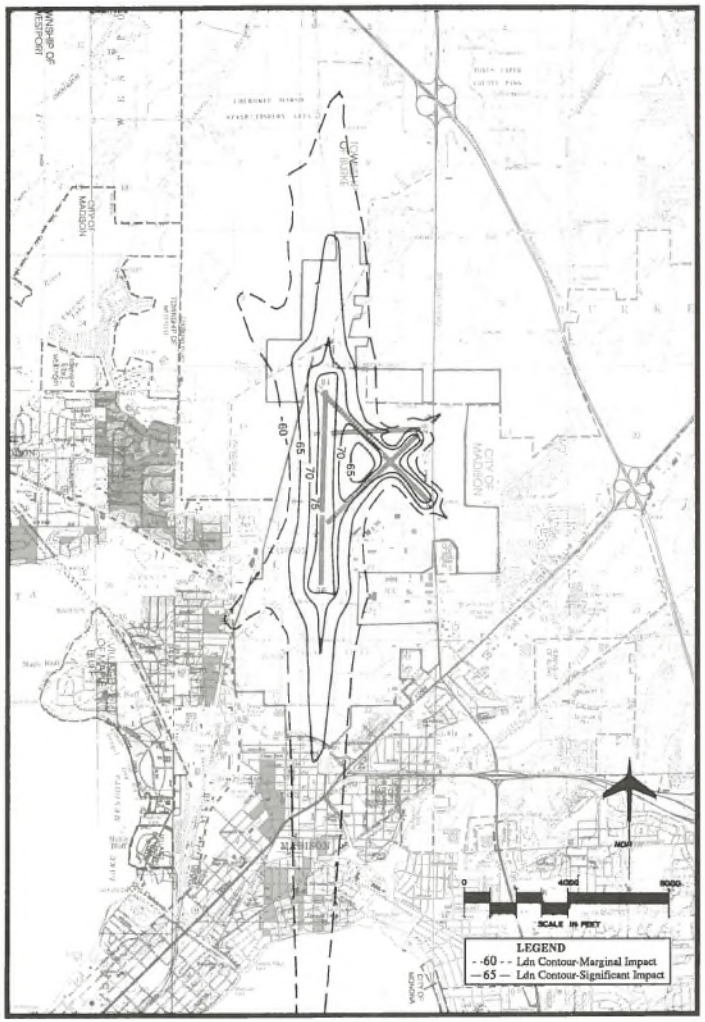


Part 150 Overview: Noise Exposure Map

- 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: Noise Exposure Map Development

- ✓ Develop noise contours for existing (2022) and 5-year forecast (2027) conditions
- ✓ Collect land use data and policies
- ✓ Assess noise compatibility for aircraft exposure of DNL 65 dB and greater
- ✓ Prepare documentation in accordance with 14 CFR Part 150

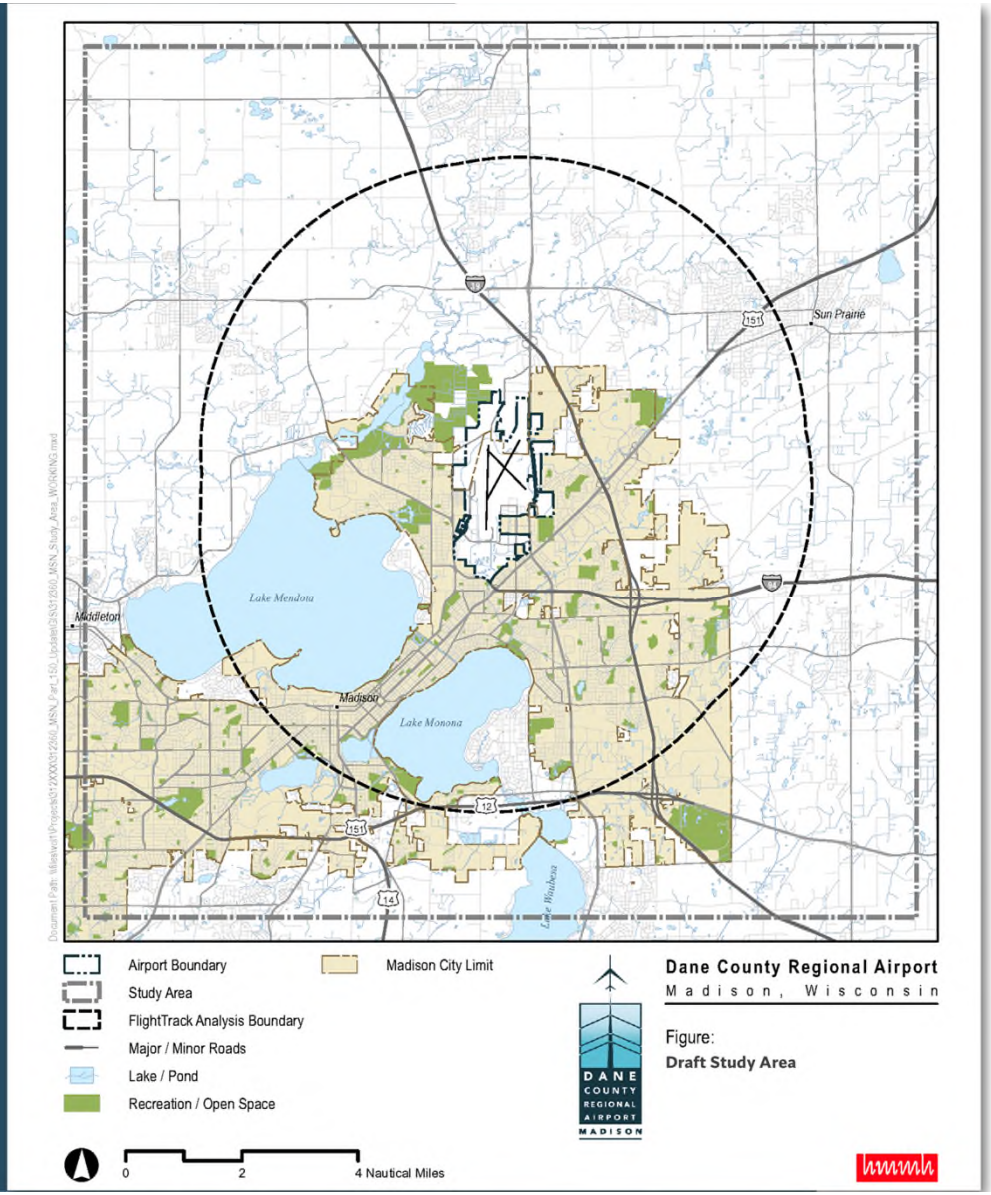


2010 BASELINE NOISE EXPOSURE

Part 150 Overview: NEM Data Sources

- Best available source(s) will be used for each specific category
  - *Airport layout* - MSN drawing files, FAA airport diagram, MSN Airport Layout Plan (ALP)
  - *Meteorological* - NOAA National Climatic Data Center
  - *Terrain* - U.S. Geological Survey
  - *Baseline operations* - 2021 FAA National Offload Program (NOP) data
  - *Forecast operations* - FAA's Terminal Area Forecast (TAF)
  - *Flight tracks, profiles, and runway use* - 2021 FAA National Offload Program (NOP) data
- Data will be compared to formal and informal procedures
  - FAA Standard Instrument Departure (SID) and approach procedures (APs), etc.
  - MSN and industry noise abatement procedures
- Modeling assumptions will be documented in detail and shared with:
  - All interested stakeholders at workshops and on website
  - TAC members - *Please offer feedback on sources or assumptions at any time*

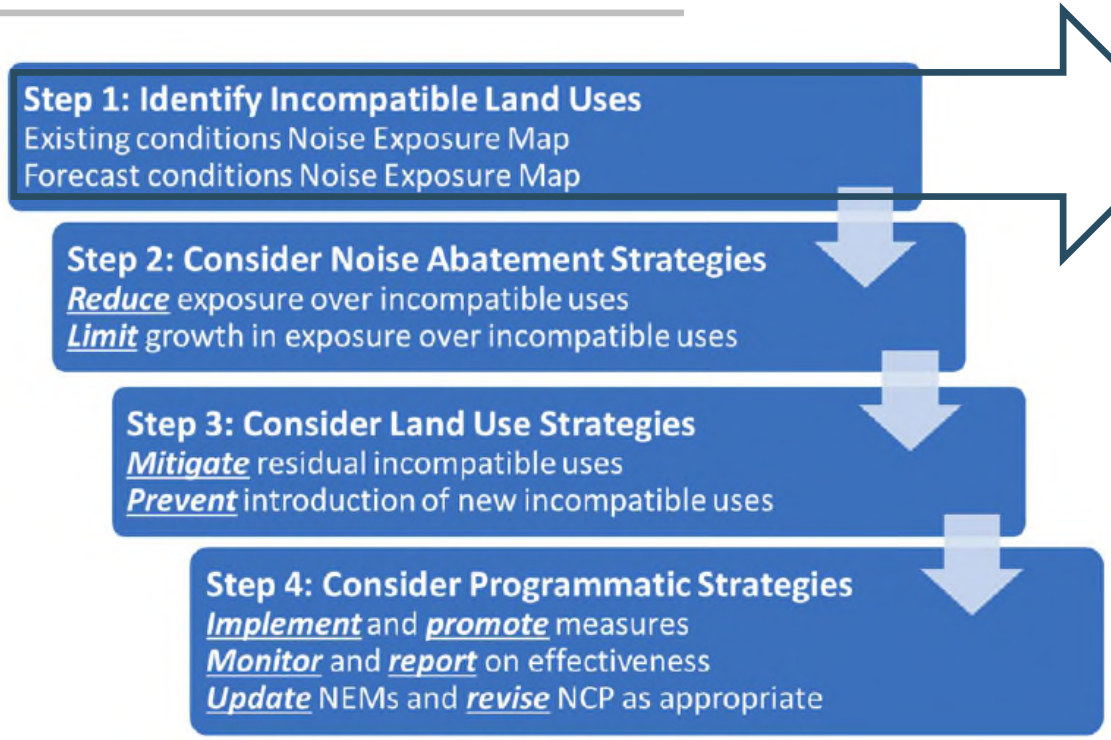
Part 150 Overview: Draft Study Area



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

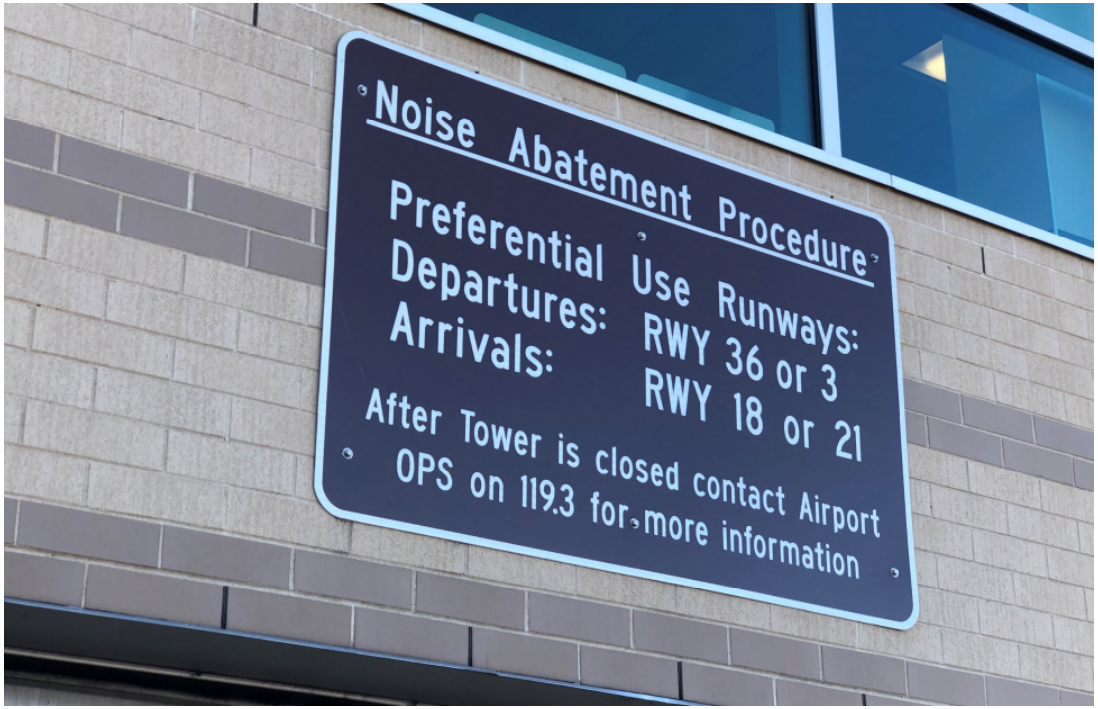
Part 150 Overview:
Noise Compatibility Program Development



This step occurs in Phase 1/ NEM

Existing NCP Measures at MSN

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



Schedule and Meeting Topics

Proposed Schedule: Phase 1

Meeting / Activity	Anticipated Purpose	Anticipated 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.	January 20, 2022
1st Technical Advisory Committee Meeting	Introduction to Part 150, discuss stakeholder roles, identify issues of concern	April 26, 2022
1st Public Open House	Introduction to Part 150, set expectations, discuss stakeholder roles, identify issues of concern	April 26, 2022
2nd Technical Advisory Committee Meeting	Discussion on Aviation forecasts, F35 Operations, and noise modeling inputs	July 2022
3rd Technical Advisory Committee Meeting	Noise modeling results and presentation of the draft NEM Update	September 2022
NEM Public Comment Period and 2nd Public Open House	NEM thirty-day public comment period and second Public Open House	Sep-Oct 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.	December 2022

Note: Schedule is subject to change

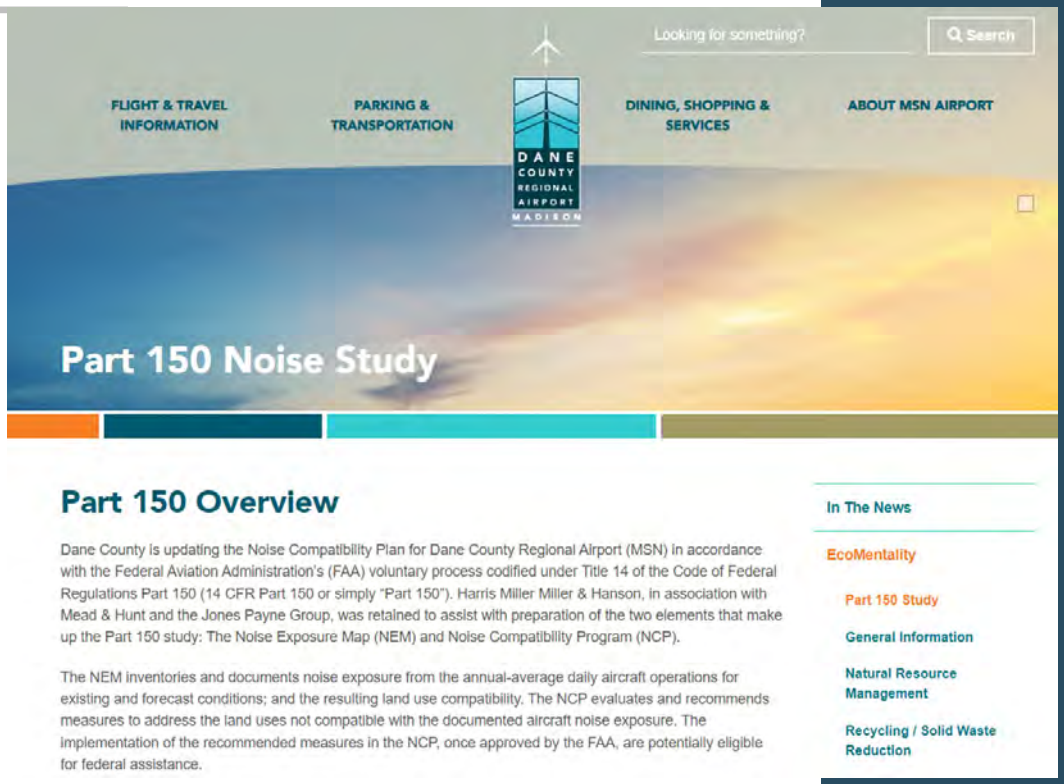
Proposed Schedule: Phase 2

Meeting / Activity	Anticipated Purpose	Anticipated Time Frame
4th Technical Advisory Committee Meeting	Review of the existing Noise Compatibility Program (NCP) and discussion of Potential changes to the Noise Compatibility Program	1st Quarter 2023
5th Technical Advisory Committee Meeting	Evaluation results of the proposed Noise Compatibility Program measures	2nd Quarter 2023
6th Technical Advisory Committee Meeting	Presentation of the draft Noise Compatibility Program Update	3rd Quarter 2023
NCP Public Comment Period, 3rd Public Open House, and NCP hearing	NCP thirty-day public comment period and third Public Open House and NCP Hearing.	4th 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.	1st 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 339.234.2816
- Michael Kirchner – MSN Engineering Director, Contact: kirchner@msnairport.com 608.279.0449



TAC Member Discussion

Wrap Up

- Next TAC meeting:
  - Date: July 2022 (actual date to be determined)
  - Location: Dane County Regional Airport
  - Primary topics:
    - Aviation forecasts
    - Military aircraft operations/noise modeling
    - Overview of noise modeling process and inputs

HMMH
700 District Avenue, Suite 800
Burlington, MA 01803
781.229.0707

MEMORANDUM

Subject: Dane County Regional Airport
Part 150 Study
TAC Meeting 1 Summary

Meeting Date: April 26, 2022

Reference: HMMH Project Number 312360

TAC Member Attendance:

Organization	TAC Member	Attendance
MSN staff	Michael Kirchner	Yes
WBOA staff	Matt Messina	Yes
Federal Aviation Administration (FAA) Airport District Office (ADO)	Bobb Beauchamp	No
FAA Air Traffic Control Tower (ATCT)	John Vagedes	No
Wisconsin Air National Guard; 115th Fighter Wing Representative	Lt Col Dan Statz	Yes
Army Guard	Major Lucas Sivertson	Alternate – Henderson in attendance
Delta Airlines	Jason Pace	No
Wisconsin Aviation	Brian Olson	No
City of Madison Planning Division	Dan McAuliffe	Yes
Dane County Department of Planning and Development	Todd Violante	Yes

Study Team Members Attendance:

Organization	TAC Member	Attendance
MSN staff	Michael Riechers	Yes
MSN staff	Tomasz Pajor	Yes
Jones Payne Group	Diane Carter	Yes
HMMH	Tim Middleton	Yes
HMMH	Gene Reindel	Yes
HMMH	Julia Nagy	Yes
Mead & Hunt	Chris Reis	Yes
Mead & Hunt	Levi Ney	Yes
Mead & Hunt	Ryk Dunkelberg	Yes

Meeting summary notes follow.

Summary Notes:

Mike Kirchner provided welcome remarks to the TAC and Tim Middleton introduced the Part 150 Process.

TAC Members and Study Team Members went around the room and introduced themselves and their role on the project.

Action: Lt Col Dan Statz asked that for future meetings and documentation that the team refer to the 115th Fighter Wing of the Wisconsin Air National Guard that is stationed at Truax Field.

Tim Middleton provided an overview of roles and responsibilities for various stakeholders, including the consultant team and the FAA, throughout the Part 150 process. He provided an overview of the consultant's roles and expertise that HMMH, Mead & Hunt, and Jones-Payne will bring to various components of the project. Tim explained the components of the project that involve FAA approval. Tim shared TAC roles and responsibilities.

TAC members agreed that it is important for the TAC to review technical information and ensure accuracy and consensus before any data or study results are shared with the public." It was agreed that the TAC meetings will be invite only and that the public will be able to participate through public comments, public meeting notices, and attendance at public open-houses throughout the study process.

The Airport asked if it would be beneficial to share the previous Part 150 documentation with the TAC members.

Action: HMMH responded to the affirmative and agreed to share prior Part 150 documentation with the TAC prior to 2nd TAC Meeting.

Tim Middleton provided an overview of the airport related to airport operations, history, and noise compatibility planning. He shared some context that building new runways at airports for noise abatement in the 80s and 90s was more common but now it is more difficult to do that.

Lt Col Dan Statz emphasized the importance of including the history of the airport and the military's historic presence at the airport in the Part 150 documentation. Tim Middleton confirmed that the NEM documentation will include this information and HMMH will coordinate with TAC members to ensure accuracy of historic information.

Tim Middleton provided a noise methodology and noise metrics overview and shared that single event sound levels versus DNL (Day-Night Average Sound Level) is often a question from the public related to noise studies.

There was a question about whether noise from local highways/freeways, other city sounds, etc. will be represented in this study. Tim Middleton replied that the only inputs are related to aircraft for this study and Gene Reindel added context related to considerations for sound insulation.

Tim Middleton provided a noise terminology summary explaining that long duration exposure is used for land use compatibility planning and provides a holistic view. The FAA requires the use of the DNL metric. Tim explained Airport Noise Compatibility Planning under Part 150 and shared that it is important for the public to understand what the airport can and cannot do under the regulation. Tim reviewed the Part 150 process and the steps it includes. Tim introduced the Terminal Area Forecast (TAF) and enplanements and emphasized that for this study, it is critical to work with the military to understand their operations. Military representatives confirmed that they will work with the team on this item.

Tim Middleton explained the process for developing baseline and future military operations and that the HMMH team will summarize this information in a noise modeling memo for military review. Tim provided an overview of what is included in the Noise Exposure Map (NEM) and shared that the consultant team will need input from the TAC to determine the who, what, when, why, of aircraft operations at the airfield. Tim then discussed the NEM

data sources and noise model inputs. He discussed how flight track and aircraft identification data is used in noise modeling.

There was a question about how the model includes aircraft operations that do not land on runways, i.e. helicopters. Tim replied that HMMH will coordinate with the Army Guard and other tenants that operate helicopters to determine where and how helicopters arrive and depart. He explained that typically helicopter operations do not influence the DNL noise exposure contours. Aircraft engine run-ups will likely be modeled if there are maintenance activities. TAC members then discussed military engine run-ups.

Tim Middleton presented the draft study area and explained how the study area boundaries are determined.

There was a question about whether HMMH has access to the EIS data. Tim replied that HMMH is in contact with Cardno, the consultant that worked with the government to conduct the EIS for the F35s, to obtain the noise modeling data. HMMH expects that EIS projections will be different from the Part 150 forecasts. There was discussion that the NEM document should provide clear information about the differences between military modeling for the EIS purposes versus the Part 150 study and how that may influence the size of the contours.

Tim Middleton provided an overview of the Noise Compatibility Program (NCP) and how review of the NCP occurs. Gene Reindel discussed the various types of NCP measures and the NCP's objective of preventing future incompatible land uses. Tim provided an overview of the Part 150 schedule. He discussed agenda items for TAC meeting 2 and critical work over the next few months.

Action: Set future TAC meeting dates within the next month.

Tim Middleton provided overview of the study website and project contacts. There was discussion about setting up a file sharing site for TAC members.

Action: HMMH to create a Sharepoint folder that only TAC members have permission to access.

There was discussion about the open house format for the first public meeting and the objectives of the meeting. There was discussion that the team should be prepared for questions from the public related to other topics, including the EIS and F-35s.

Tim Middleton briefed the baseline year is the year of submission (CY22) and the future model year is 5-years later (CY27). There was a discussion that CY21 might be a better baseline year due to F-16 drawdown in CY22 and DCRA Runway construction in CY22.

Action: HMMH is to request FAA approval for CY21 baseline year vs. CY22.

There was discussion of public perception of military noise, afterburner use, transient military operations, possible public mistrust of study results, and housing concerns from the public.

Tim Middleton reviewed next steps in the study process and what to expect at the next TAC meeting.

Action: The TAC agreed on July 12th for the next TAC meeting date.

Meeting adjourned.

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MSN Part 150 Study

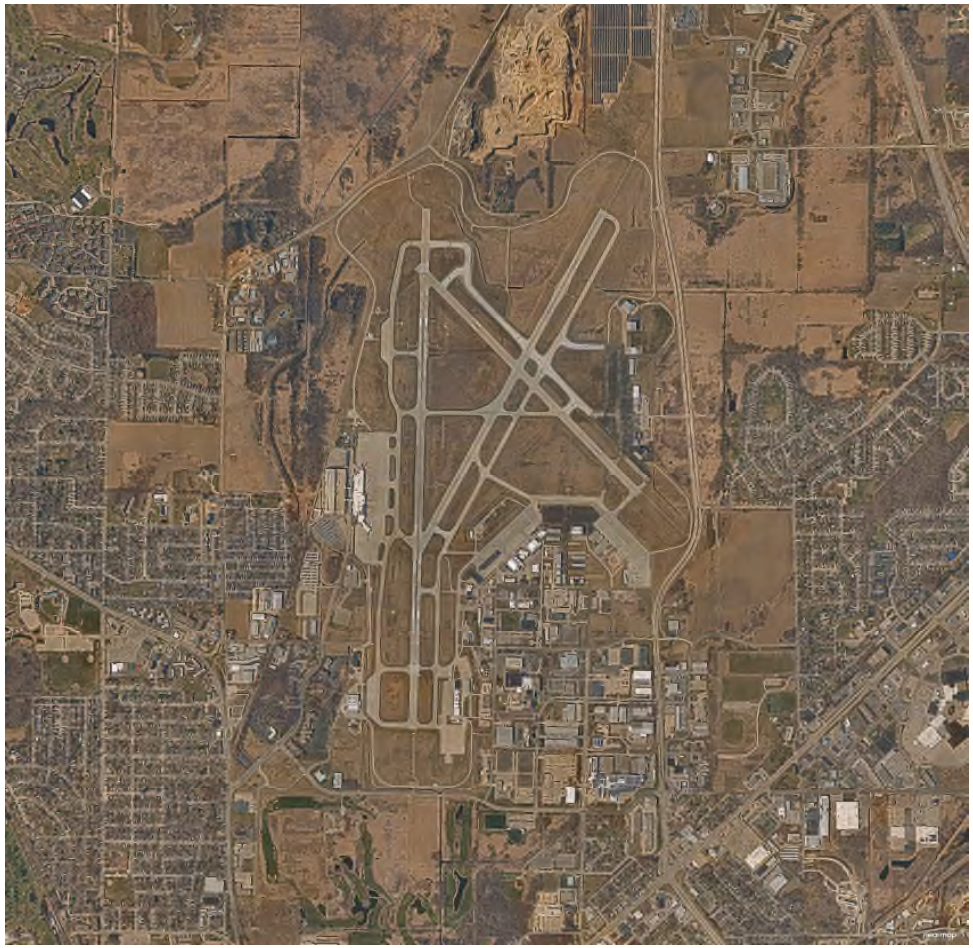
Dane County Regional Airport

Technical Advisory Committee Meeting #2

July 26, 2022

TAC #2 Agenda

- Introductions
  - Study Team, TAC Members, Roles & Responsibilities
  - Airport Facility Overview
- Operations Forecast
  - FAA TAF Confirmation
- Noise Model Inputs
  - Noise Modeling Process
- Runway Use
- Flight Track Review
  - Noise Model Flight Track Development
- Military Noise Modeling
- Land Use
- NCP Review
- Next Steps
  - TAC Member Discussion
  - Wrap-up



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Town of Burke	

Roles and Responsibilities Airport Noise Compatibility

Stakeholder	Responsibilities
Federal government (FAA)	Regulate source noise emissions, air traffic control, funding, and safety oversight
Airport operators	Plan and implement noise compatibility measures
State and local government	Compatible land use planning and control
Aircraft operators	Develop noise-sensitive schedules, cockpit procedures, and fleet improvements
Air travelers and shippers	Bear the costs (through ticket tax)
Current and potential residents	Seek to act in an informed manner

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Airport

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- Overall project management, documentation, and outreach
- Aircraft noise analysis and abatement planning
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FAA

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Technical Advisory Committee

- Review study inputs, assumptions, analyses, documentation, etc.
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Public

- Provide input on study during comment period
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  - Review of study inputs, assumptions, analyses, documentation, etc.
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  - Fixed-Base Operator Wisconsin Aviation is located on the east side of the airport
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  - Chosen to host the F-35A mission and receive a new fleet of F-35A Lightning II aircraft beginning in Spring of 2023
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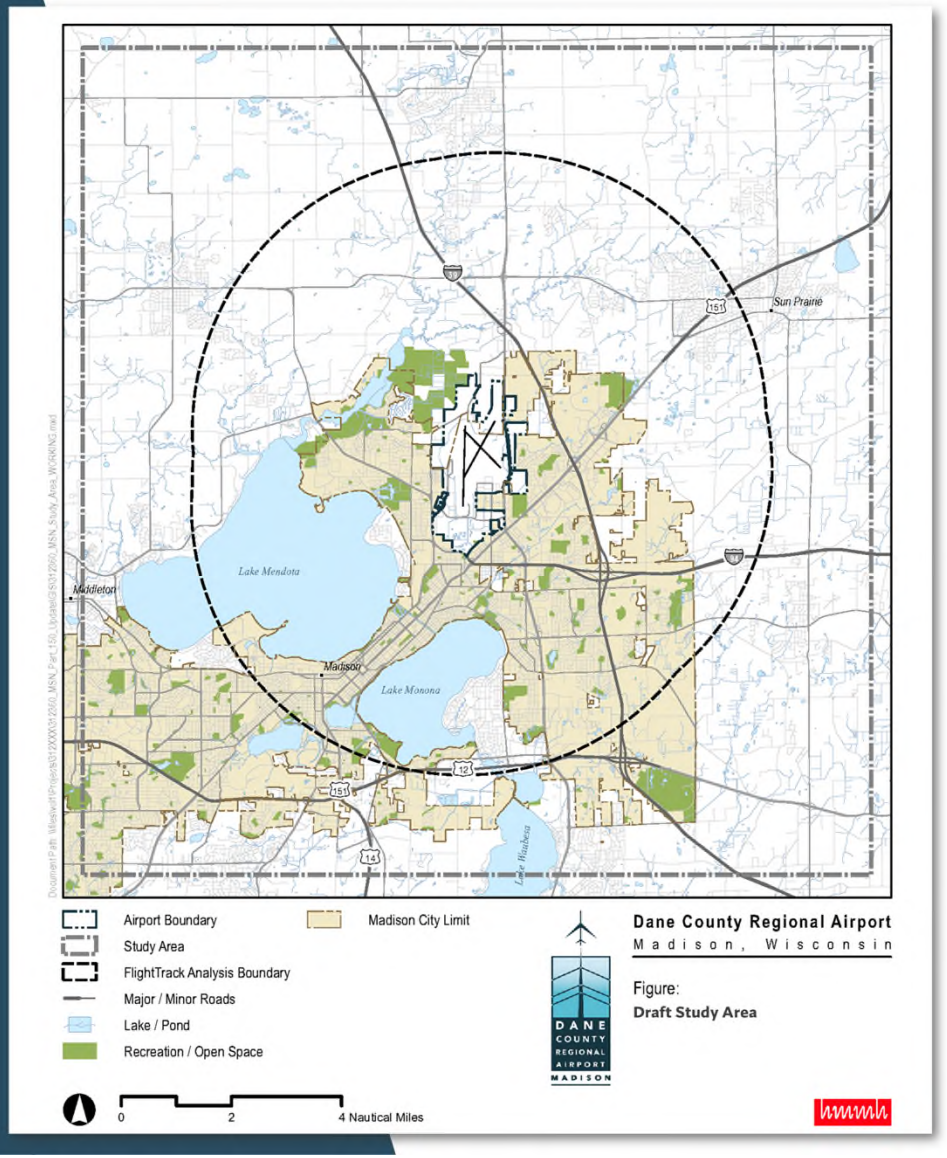


Part 150 Components

- Part 1: Noise Exposure Map (NEM)
  - Define an existing (2022) and forecast (2027) aircraft noise exposure
  - Assess land use compatibility with the aircraft noise exposure
- Part 2: Noise Compatibility Program (NCP)
  - The Airport's program to address noncompatible land use identified in the NEM

Operations Forecast

For NEM Years 2022 and 2027

FAA Terminal Area Forecast (TAF)

- The Terminal Area Forecast (TAF) is the official FAA forecast of aviation activity for U.S. airports
  - The TAF contains active airports in the National Plan of Integrated Airport Systems (NPIAS)
  - Forecasts are prepared for major users of the National Airspace System including air carrier, air taxi/commuter, general aviation, and military
  - The forecasts are prepared to meet the budget and planning needs of the FAA and provide information for use by state and local authorities, the aviation industry, and the public
- The Part 150 will use the 2021 (published March 2022) FAA TAF as the basis for the forecast aircraft operations at MSN
  - The TAF has been validated
  - Detailed aircraft operations as required in Part 150 are being developed from the TAF

Source: https://www.faa.gov/data_research/aviation/taf

FAA TAF Confirmation

- Passenger Enplanements Forecast Results:
  - Trend and regression forecasts completed
  - Multi-variable regression showed strong correlation
  - TAF enplanement projections (5.56% CAGR) reaching 1.6M enplanements by 2042 considered reasonable
- Aircraft Operations Forecast Results:
  - Regression not used – poor historical correlation
  - Trend forecast shows aircraft operations to remain relatively flat
  - TAF operations projections (1.79% CAGR), exceeding 109,000 operations by 2042 considered reasonable

Historic Enplanements

FY 2012-2021 MSN Passenger ENPLANEMENT Data Comparison – TAF and Airport Records

Fiscal Year	TAF	Airport Data	Difference
2012	779,010	801,674	-2.91%
2013	815,913	834,622	-2.29%
2014	828,052	835,753	-0.93%
2015	827,520	842,419	-1.80%
2016	882,228	906,994	-2.81%
2017	927,071	952,504	-2.74%
2018	1,005,835	1,032,948	-2.70%
2019	1,142,812	1,184,493	-3.65%
2020	633,489	646,222	-2.01%
2021	551,317	560,152	-1.60%
CAGR '12-'21	-3.8%	-3.9%	N/A
Sources: 2021 TAF, Dane County Regional Airport			

Historic Operations

FY 2012-2021 MSN Aircraft OPERATIONS Data Comparison – TAF and Airport Records

Fiscal Year	Total Operations		
	TAF	Airport Data	Difference
2012	84,853	84,695	0.19%
2013	83,926	83,926	0.00%
2014	80,585	80,584	0.00%
2015	77,716	77,667	0.06%
2016	80,631	80,631	0.00%
2017	83,889	83,874	0.02%
2018	85,893	85,902	-0.01%
2019	82,085	82,261	-0.21%
2020	73,170	73,170	0.00%
2021	75,957	76,035	-0.10%
CAGR '12-'21	-1.2%	-1.2%	N/A
Sources: 2021 TAF, Dane County Regional Airport			

Historic Socioeconomic Growth Rates

Historical Madison, WI MSA Socioeconomics (2012-2021)

CY	Population	Income/ Capita	Gross Regional Product	Total Earnings	Total Retail Sales	Total Employment
2012	608,979	60,035	48,257	29,428	15,962	462
2013	614,364	60,573	49,829	30,756	16,369	468
2014	619,677	61,819	52,949	31,413	16,845	478
2015	626,171	64,671	56,011	32,990	17,257	489
2016	636,340	65,690	58,005	34,055	17,635	502
2017	642,550	66,903	58,180	34,988	18,107	507
2018	648,478	68,625	59,507	35,803	18,633	514
2019	655,592	70,074	61,372	36,945	19,025	522
2020	661,424	71,241	62,796	37,782	19,665	529
2021	671,135	72,461	64,308	38,672	20,059	537
CAGR '12-'21	**1.1%**	**2.1%**	**3.2%**	**3.1%**	**2.6%**	**1.7%**

Sources: Wisconsin Department of Administration, Woods & Poole Economics, Inc.

Projected Socioeconomic Growth Rates

Projected Madison, WI MSA Socioeconomics (2021-2041)

CY	Population	Income/Capita	Gross Regional Product	Total Earnings	Total Retail Sales	Total Employment
2021	671,135	72,461	64,308	38,672	20,059	537
2026	694,664	78,509	71,828	43,096	22,005	572
2031	719,018	84,753	79,775	47,775	23,841	605
2036	739,715	91,385	88,358	52,842	25,702	638
2041	761,008	98,551	97,782	58,425	27,690	672
CAGR	0.6%	1.5%	2.1%	2.1%	1.6%	1.1%

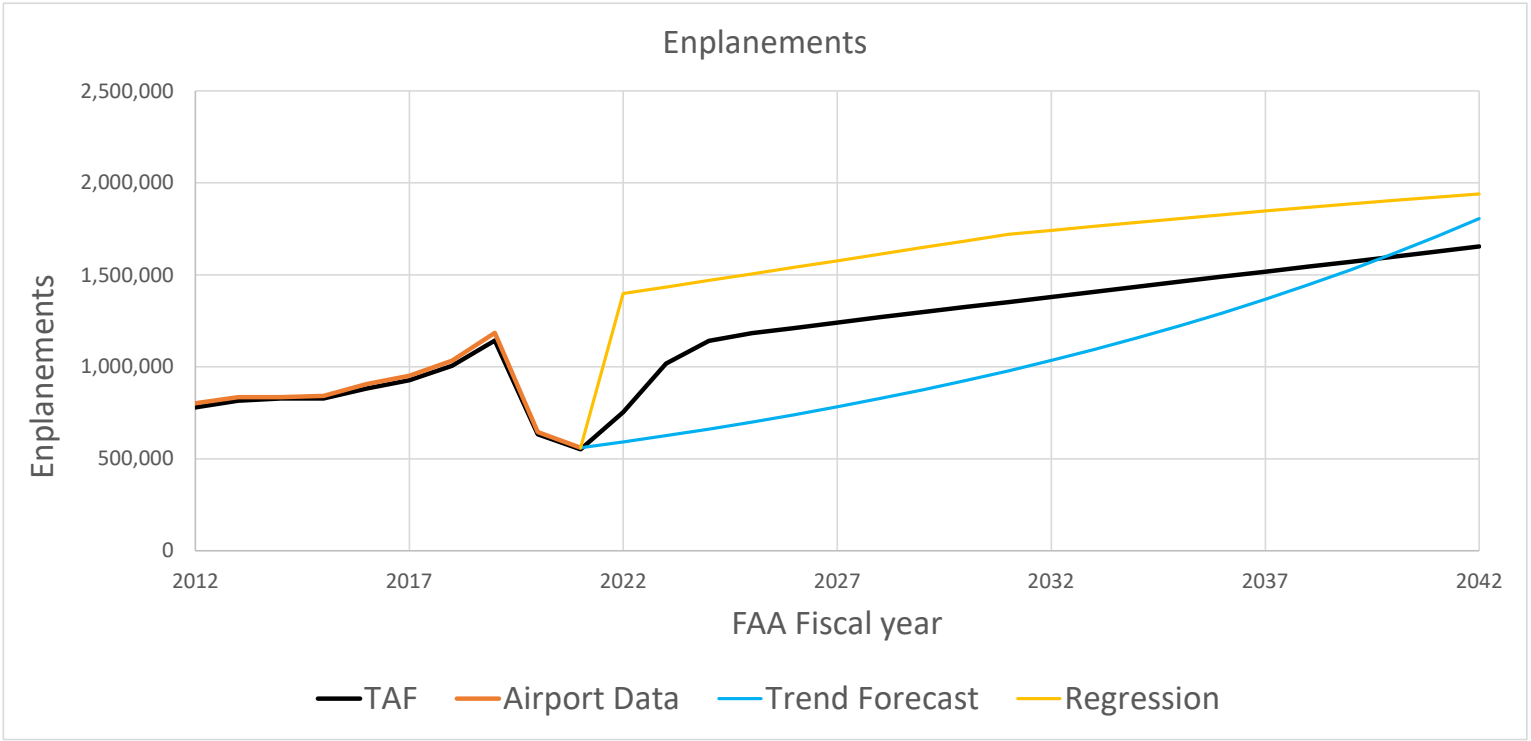
Sources: Wisconsin Department of Administration, Woods & Poole Economics, Inc.

Correlation Analysis

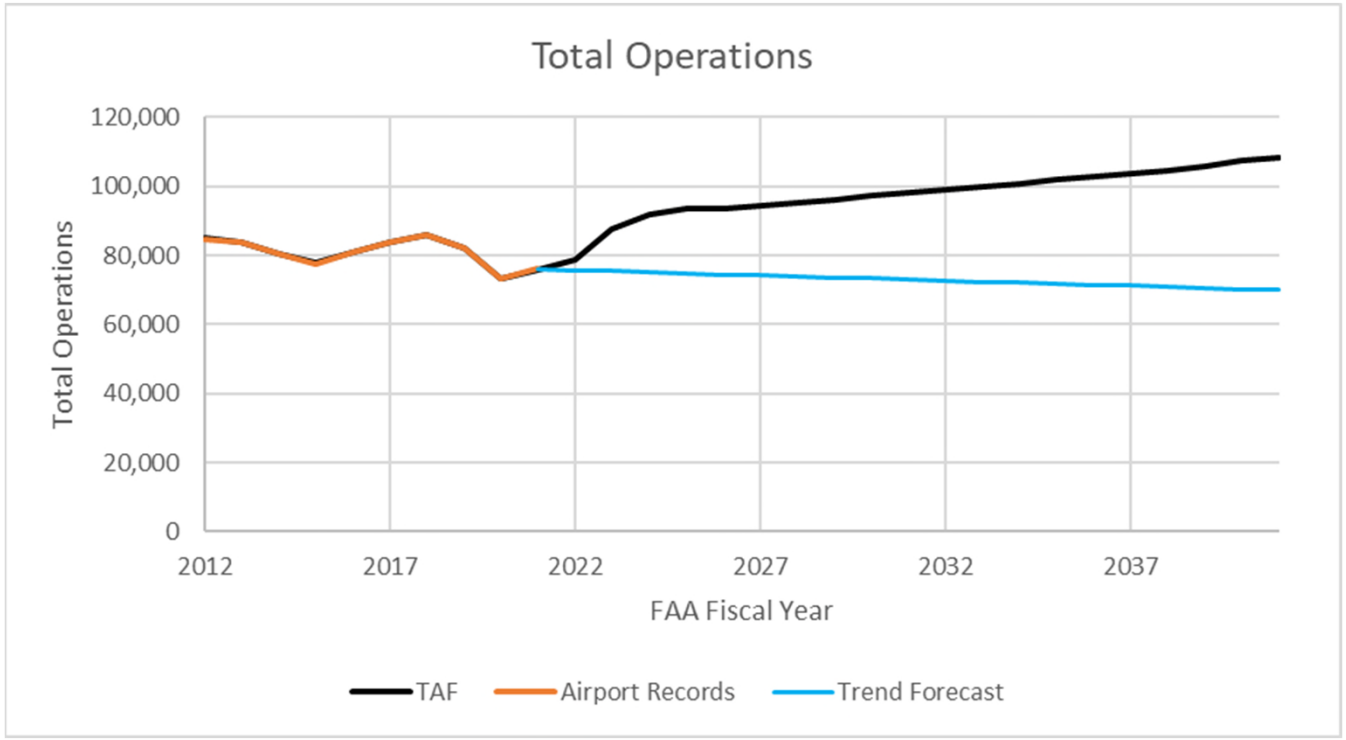
2012-2021 MSN Passenger Enplanement and Total Aircraft Operations Correlation Analysis

Correlation Coefficient						
Regression Analysis	Population	Income/Cap	GRP	Earnings	Sales	Employment
Enplanements	0.922	0.906	0.834	0.902	0.921	0.893
Total Operations	0.103	0.040	-0.116	0.031	0.074	0.034

Enplanement Forecast Methods Comparison



Total Aircraft Operations Forecast Comparison



2021 FAA Terminal Area Forecast for MSN

FY	Enplanements	ITINERANT					LOCAL			Total Operations
		AC	AT	GA	MI	Total	Civil	Military	Total	
2019	1,142,812	24,284	11,655	28,689	4,713	69,341	12,468	276	12,744	82,085
2021	551,317	17,728	6,747	29,916	4,855	59,246	16,541	170	16,711	75,957
2027	1,211,674	33,841	6,935	31,797	4,855	77,428	15,977	170	16,147	93,575
2032	1,352,756	37,150	6,941	32,773	4,855	81,719	16,219	170	16,389	98,108
2037	1,491,362	40,079	7,362	33,778	4,855	86,074	16,464	170	16,634	102,708
2042	1,626,176	43,877	7,781	34,814	4,855	91,327	16,713	170	16,883	108,210
CAGR										
'21-'41	5.56%	4.64%	0.72%	0.76%	0.00%	2.19%	0.05%	0.00%	0.05%	1.79%

Source: 2021 FAA Terminal Area Forecast

Operations Forecast Summary

Summary of Aircraft Operations Forecast by Aircraft Category

Aircraft Operation Category	2019 Baseline Year	2022 Year of Submission	2027 Forecast Year
Air Carrier	24,284	19,702	34,654
Air Taxi	11,655	7,231	6,606
General Aviation	41,157	46,917	48,015
Military	4,989	5,025	5,025
Total Operations	82,085	78,875	94,300

2019 Source: Dane County Regional Airport
2021 Source: FAA OpsNet
2027 Sources: FAA TAF
Note: calendar year operations were used for 2021 as they are the most recent 12 months of available data.

Detailed Forecast Data

- Base fleet mix developed from flight track and aircraft identification data
- Fleet mix then assigned to Air Carrier, Air Taxi, General Aviation and Military
- Base fleet mix then scaled to the 2022 and 2027 Forecast levels for each category.
- Military operations will be augmented with information from 115th Fighter Wing and Army Guard

Aircraft Operations Forecast by Aircraft Category

Aircraft Operation Category	2019	2022	2027
Air Carrier	24,284	19,702	34,654
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General Aviation	41,157	46,917	48,015
Military	4,989	5,025	5,025
Total Operations	82,085	78,875	94,300

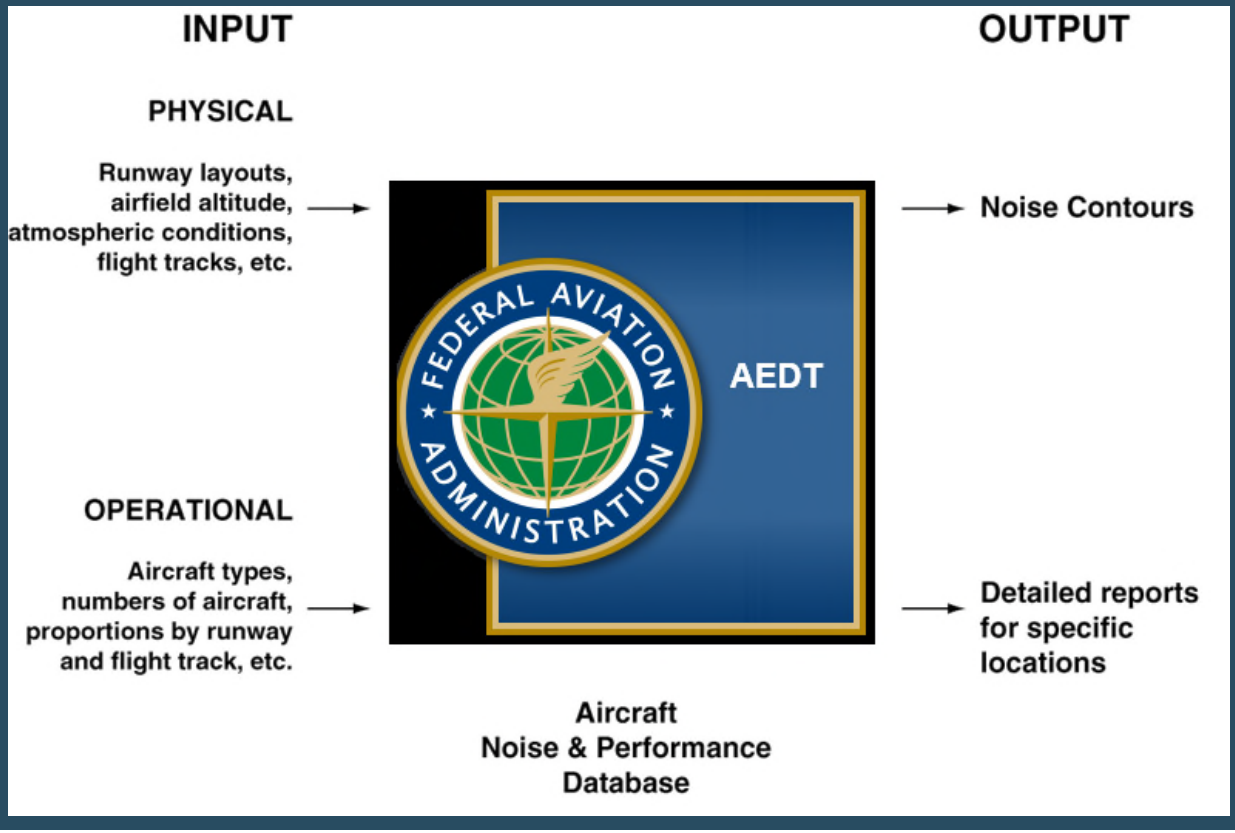
2019 Source: Dane County Regional Airport
2021 Source: FAA OpsNet
2027 Sources: FAA TAF
Note: calendar year operations were used for 2021 as they are the most recent 12 months of available data.

Noise Model Inputs

Noise Modeling Overview

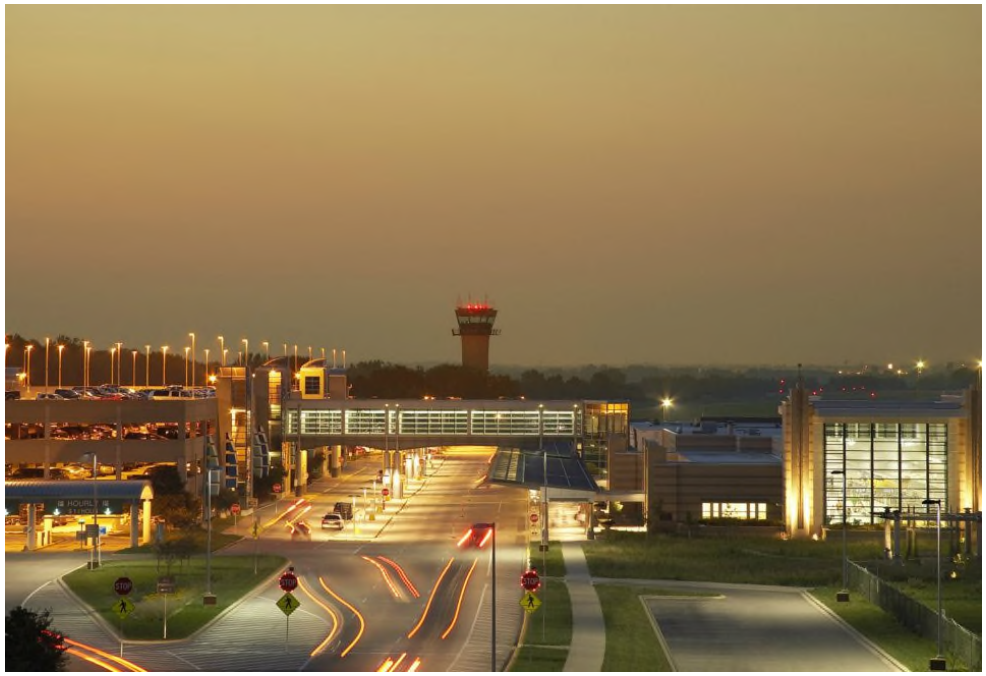
- Use of FAA's Aviation Environmental Design Tool (AEDT) noise modeling software is required
  - Version 3d SP2: https://aedt.faa.gov/
- AEDT requires noise model input data in three categories:
  1. Aircraft noise and performance data
     - Aircraft performance profiles
     - Noise level vs. distance curves
  2. Airport physical inputs
  3. Aircraft operational inputs
     - Number of aircraft operations
     - Aircraft fleet mix
     - Day-night split of operations
     - Runway utilization
     - Flight track geometry and utilization

How AEDT Works



Physical Input Requirements

- Airport layout
  - Runway configuration (including displaced landing or takeoff thresholds)
- Flight tracks
- Airport elevation
  - Terrain data were obtained from the United States Geological Survey National Elevation Dataset
- Airport weather
  - The AEDT database includes 30-year average weather for each airport.
    - Temperature
    - Station pressure
    - Relative humidity
    - Dew point
    - Wind speed
- Related requirements:
  - runway use rates
  - flight track use rates



Operational Input Requirements

- Total operations
  - Existing year 2022
  - Forecast year 2027
- Aircraft Type
  - Jet, Turboprop, Helicopter, Prop
- AEDT Equipment Type (~4,600 airframe/engine combinations)
  - 737800, A320-200, CRJ800, etc.
- Day-Night Split
  - Day 7:00AM-10:00PM
  - Night 10:00PM-7:00AM
- Stage length
  - Surrogate for aircraft weight; determined by distance from departure to destination airport
- Runway utilization rates by aircraft categories
- Flight track geometry and use by aircraft categories

Additional Operational Inputs

Helicopter Operations

- Civilian operations on the East Ramp, near Wisconsin Aviation
- Military operations based on operational discussions with Army Guard

Runups

- Very few civilian annual run-ups
- Military run-ups on ANG (restricted area)

Noise Modeling Process

- Study years for this Part 150 Update: 2022, 2027
  - First step, analyze existing radar data
- Base Year (year of data obtained) - 2021
- Existing Condition (year of submittal) – 2022
  - Determine base year AEDT inputs
  - Develop base year conditions and DNL/Ldn contours
  - Utilize a 12-month set of flight tracks from 2021
- Forecast Condition (five years from year of submittal) - 2027
  - TAF Confirmation
  - No changes to flight tracks, runway use
  - Mostly a process of scaling aircraft operations and updating the fleet mix

AEDT Data

- Arrivals
  - AEDT noise and performance database has standard arrival profiles
- Departures
  - AEDT noise and performance database has departure profiles by stage length; all small aircraft are assumed to fly less than 500 nm
  - Stage lengths for modeling will be determined based on analysis of radar data that includes city pair information
- Fixed wing touch & go pattern (circuit) profiles
- Engine Run-ups
  - Location, duration, power setting, heading, time of day

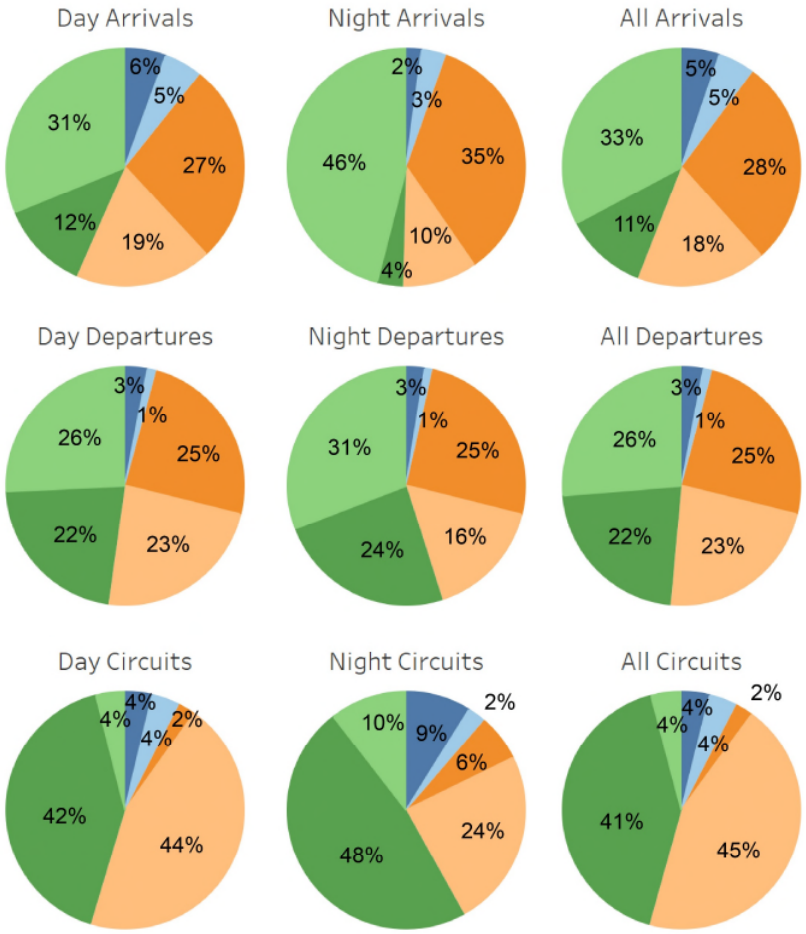
Runway Use

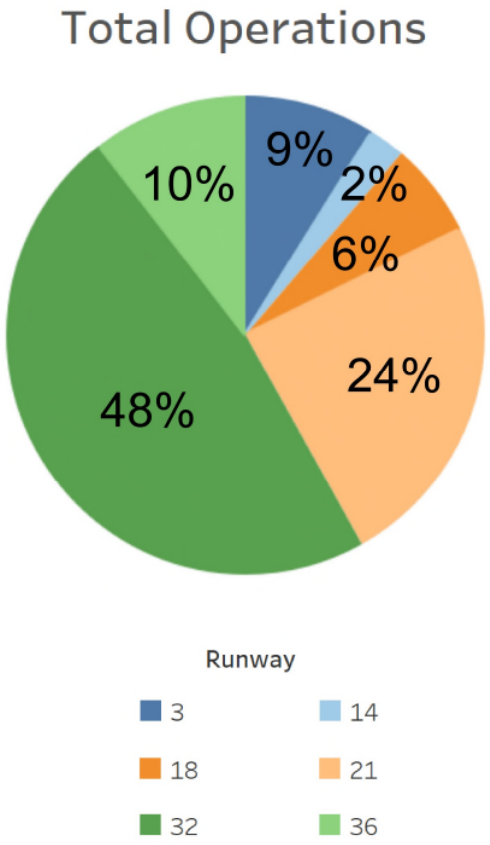
12 months of flight track data – 2021 (baseline)

Runway Use

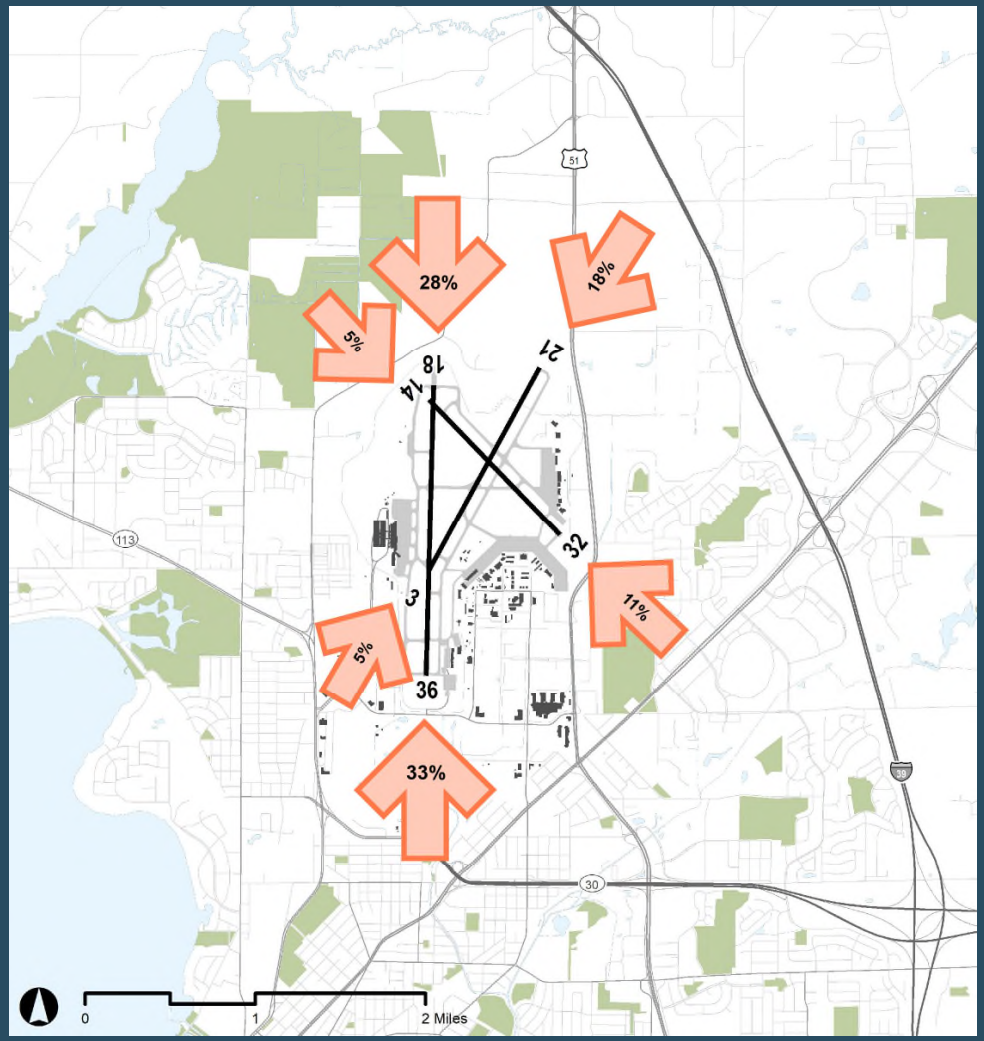
- Graphical summaries in the form of “pie charts” depicting percentage runway use on each of the six runway ends
  - Pie charts are used to provide a clear visual basis for comparison of relative runway use
- Further analyzed by Runway End Usage, and Time of Day
- Developed from 2021 FAA NOP Data and SWIM data
  - NOP: National Offload Program
  - SWIM: System Wide Information Management System

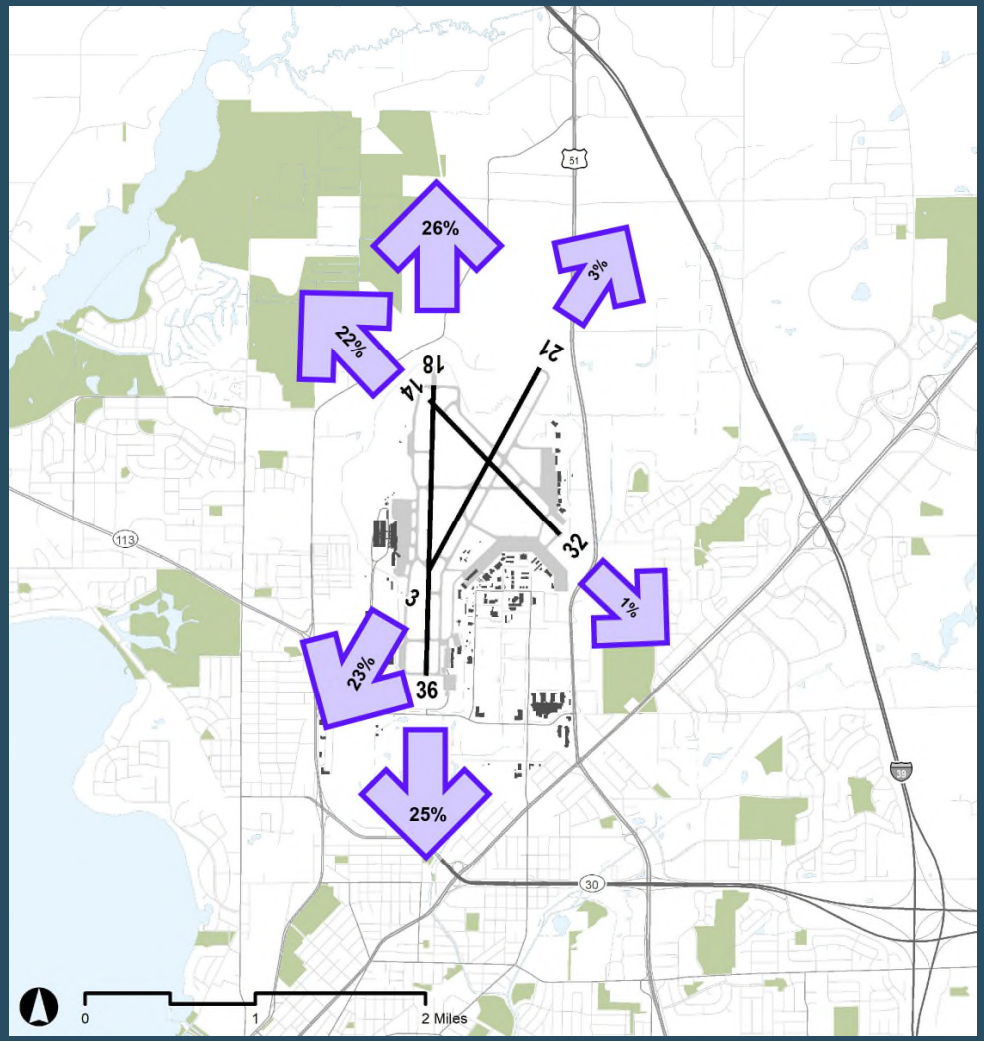
Runway Use Summary



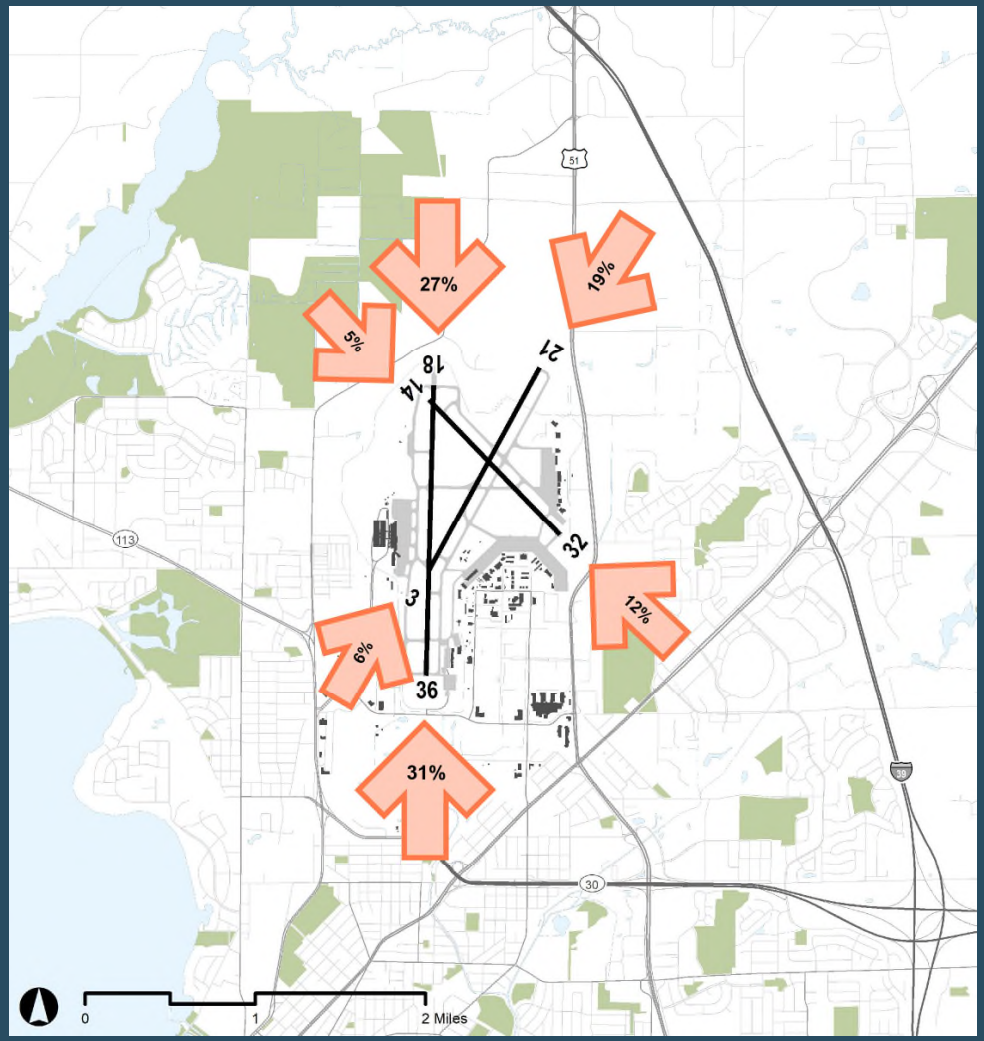


Runway Use – All Arrivals



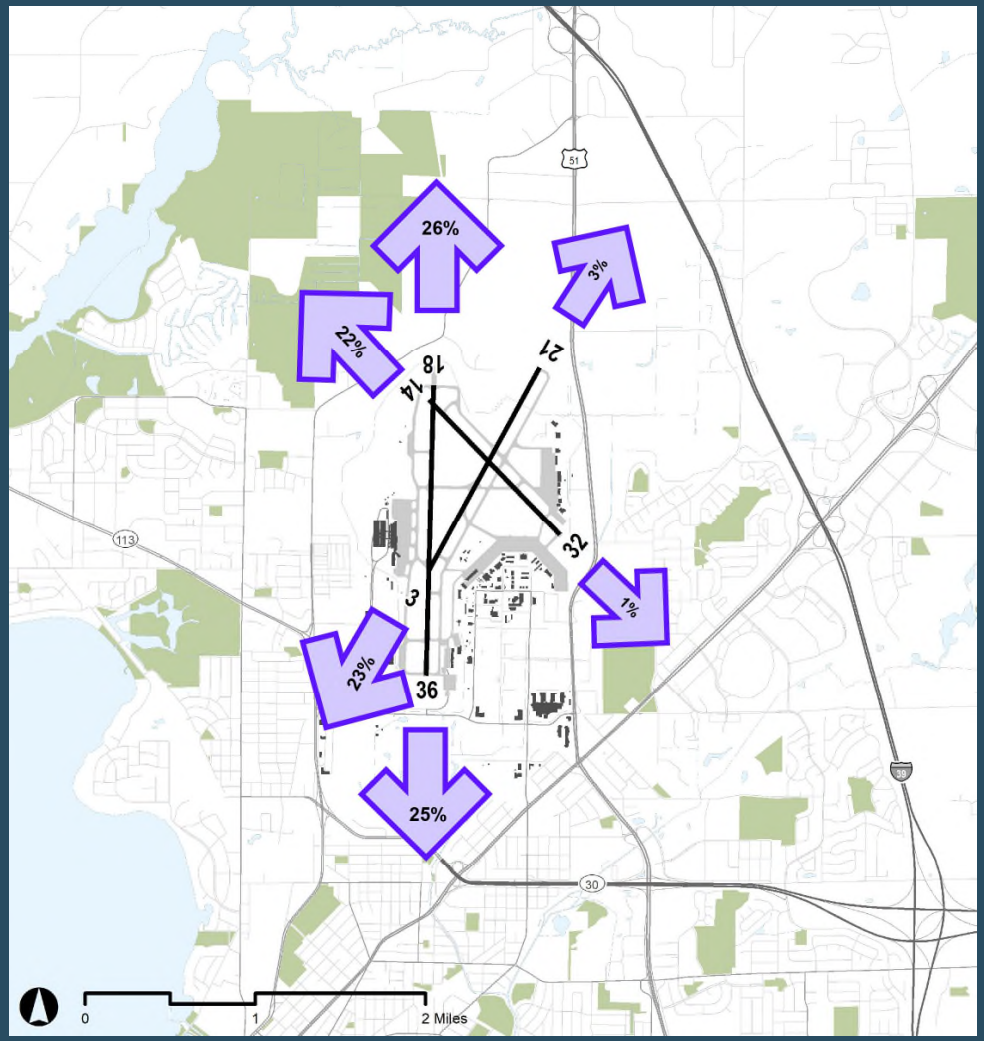


Runway Use – All Departures

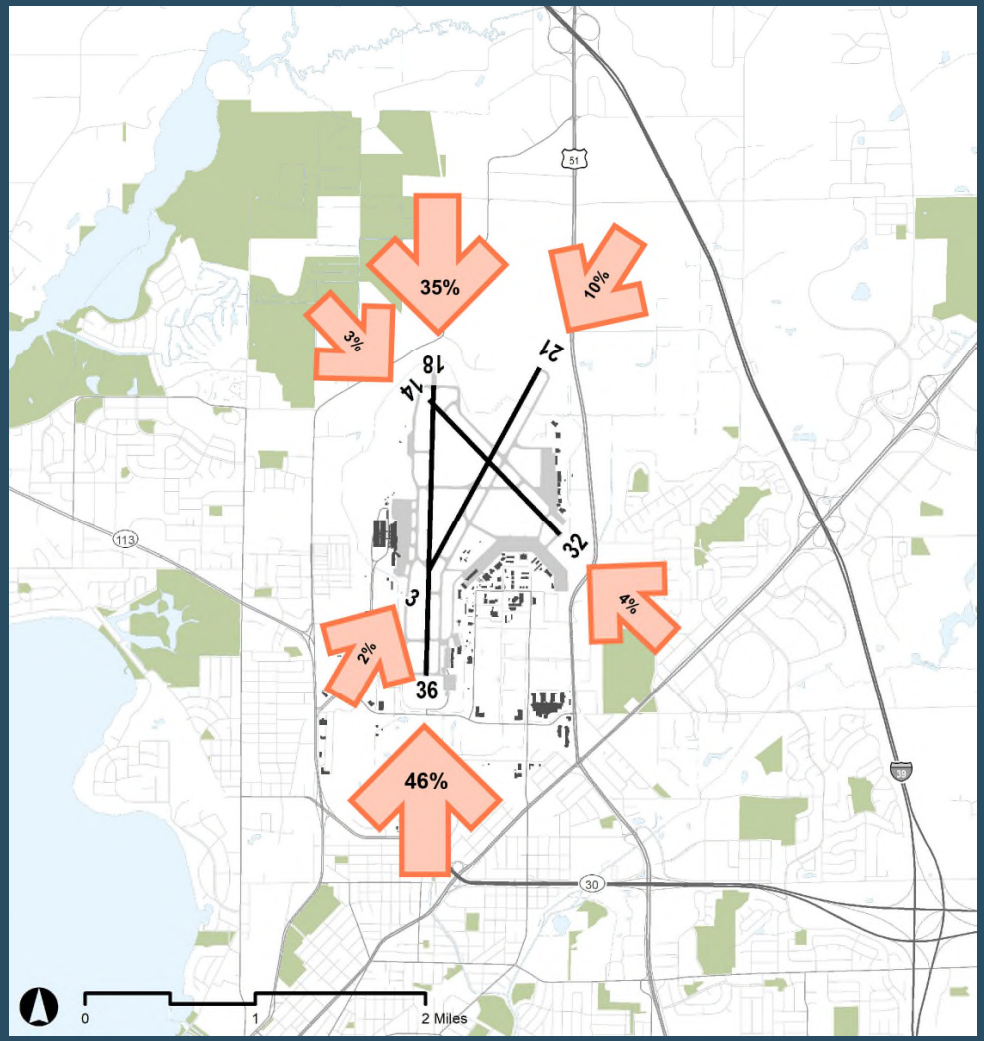


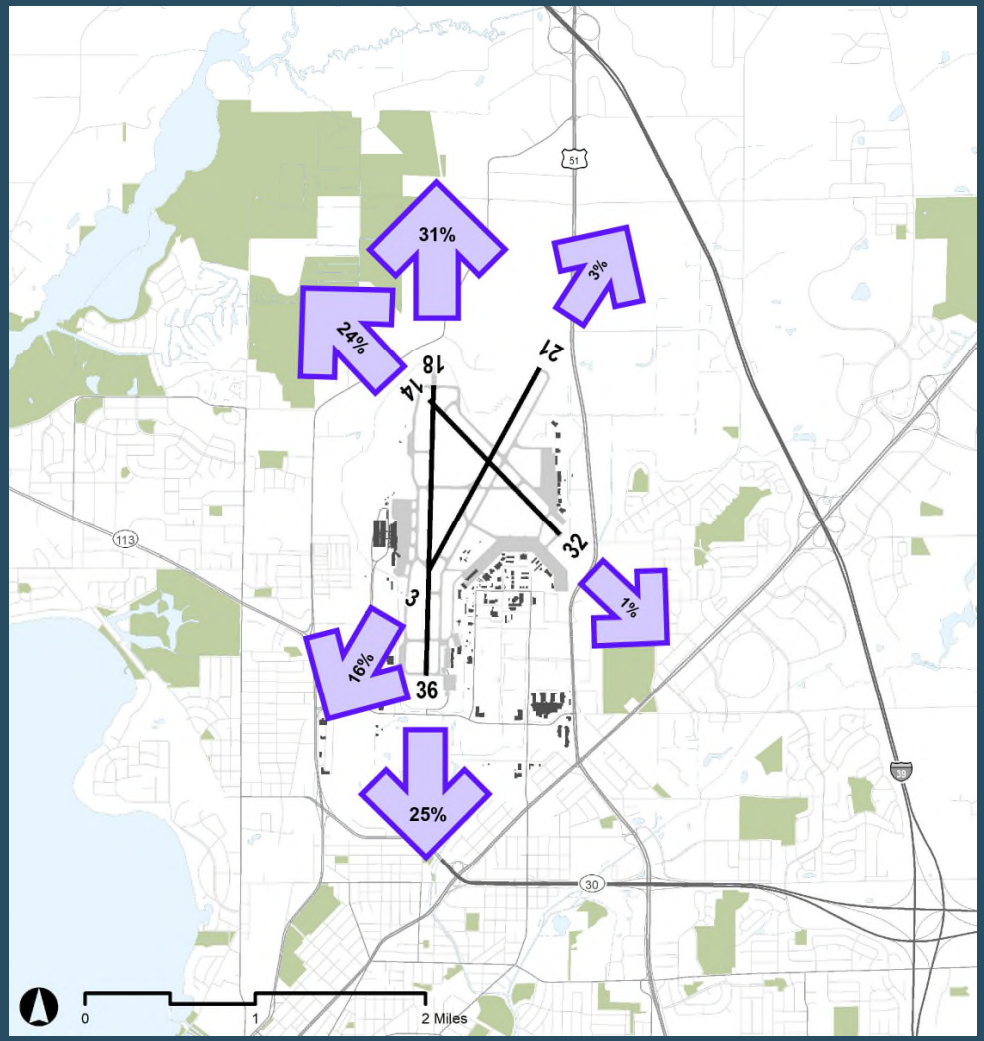
Runway Use – Day Arrivals

Runway Use – Day Departures



Runway Use – Night Arrivals



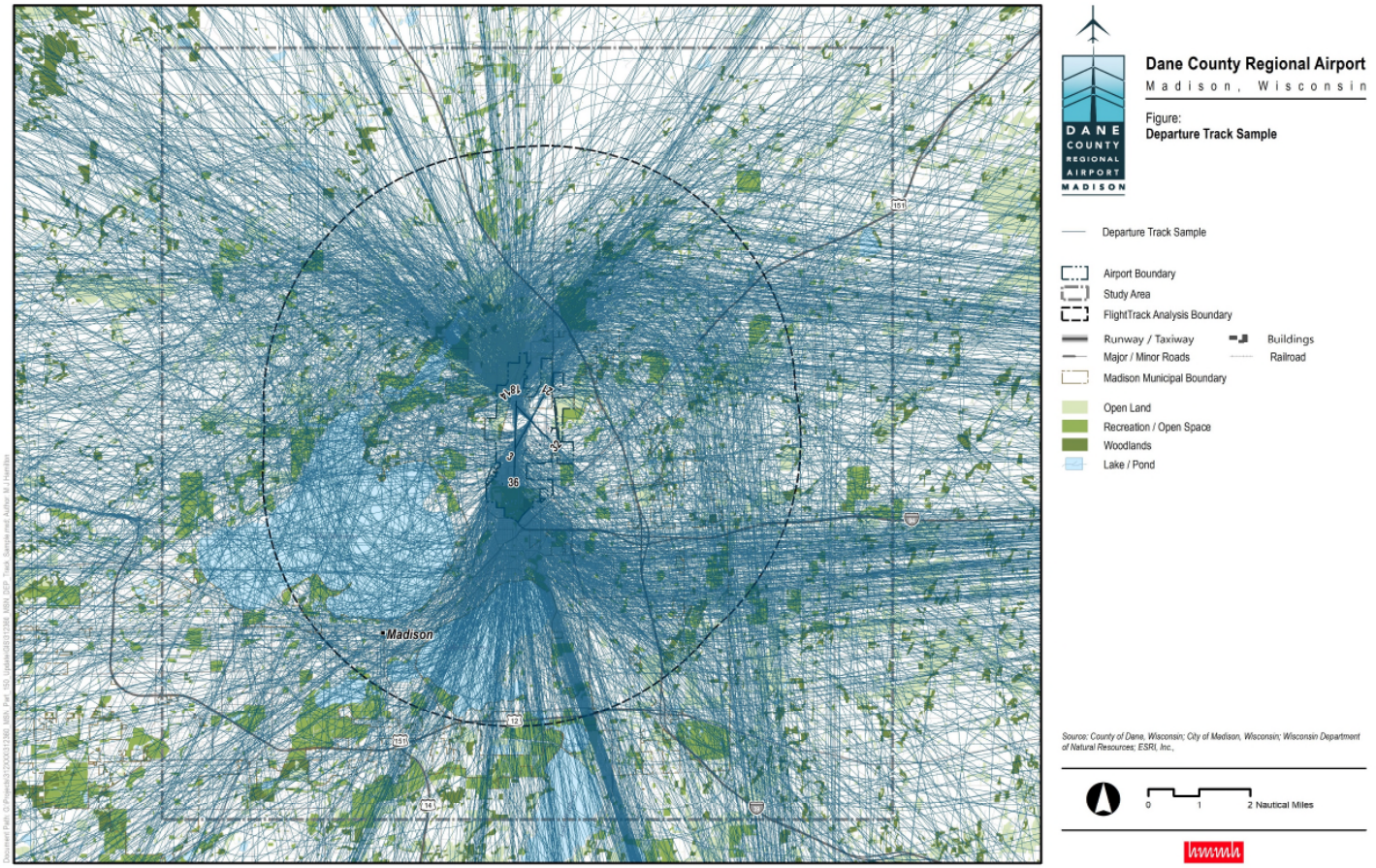


Runway Use – Night Departures

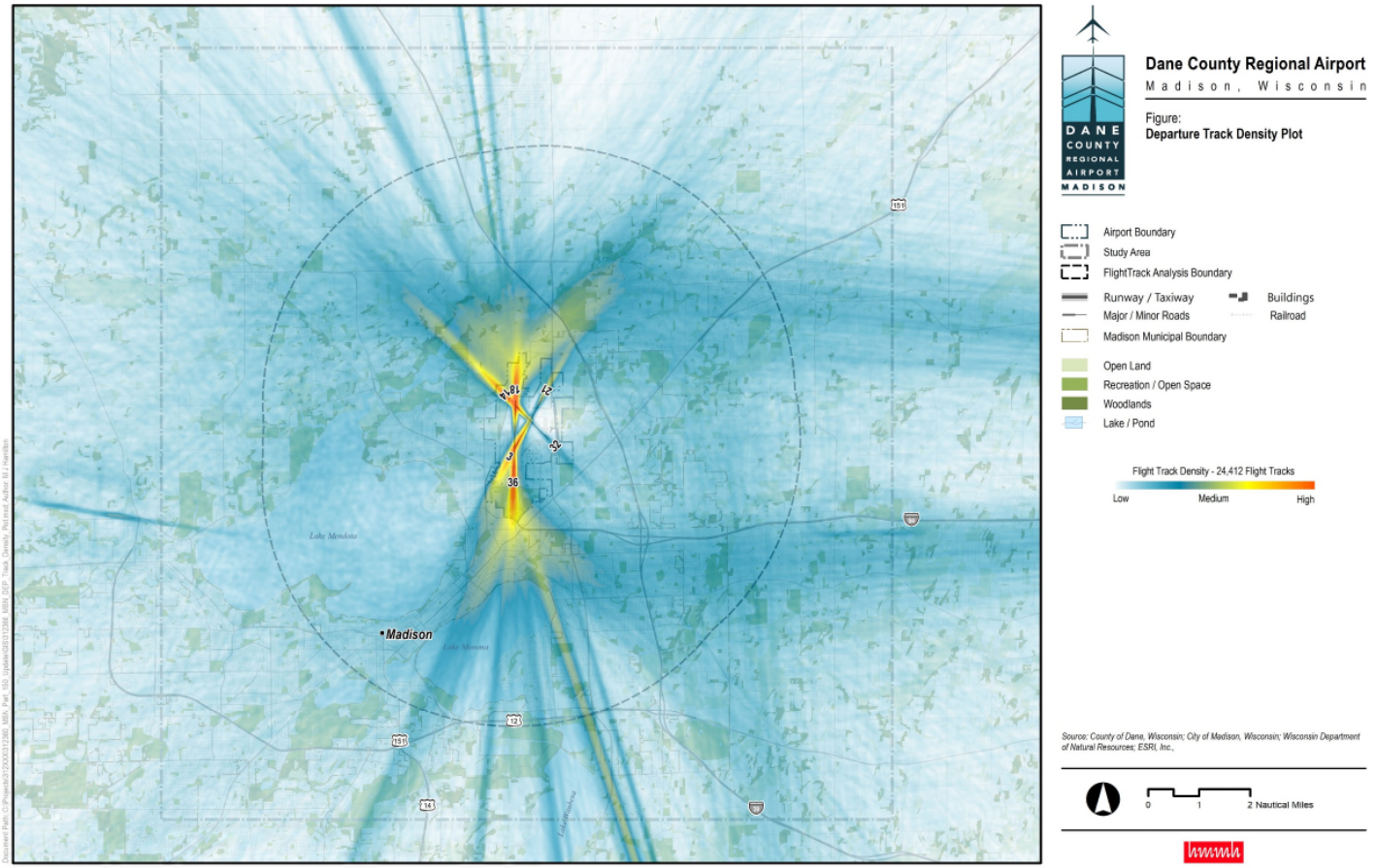
Noise Modeling Flight Track Development

- Tracks have been developed for arrivals and departures
- “Backbone” tracks are developed for major origin/destination directions
- Subsequent slides
  - Illustrate the results of HMMH development of model tracks
  - Present overall arrival and departure flight track figures for each aircraft group

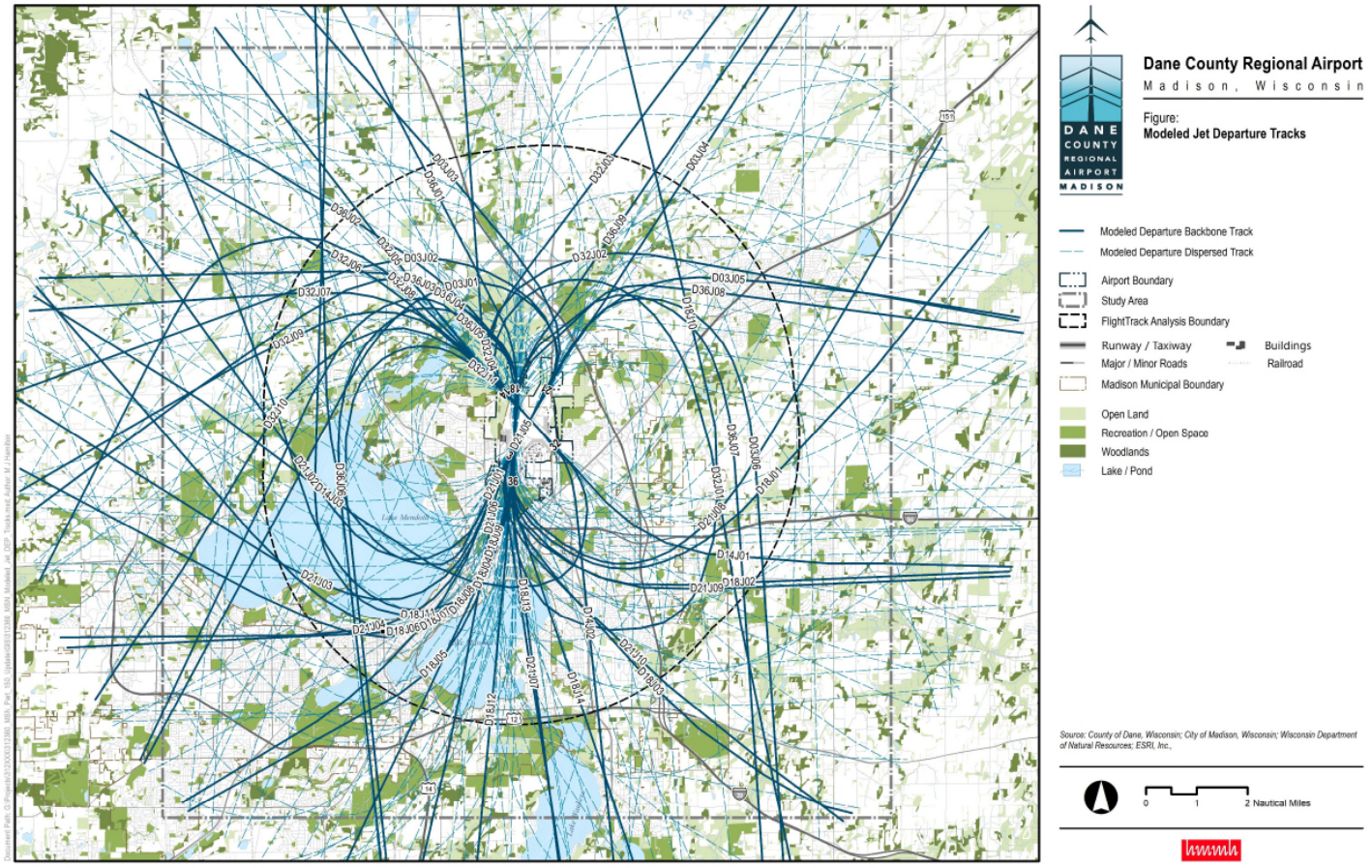
Departure Tracks Sample



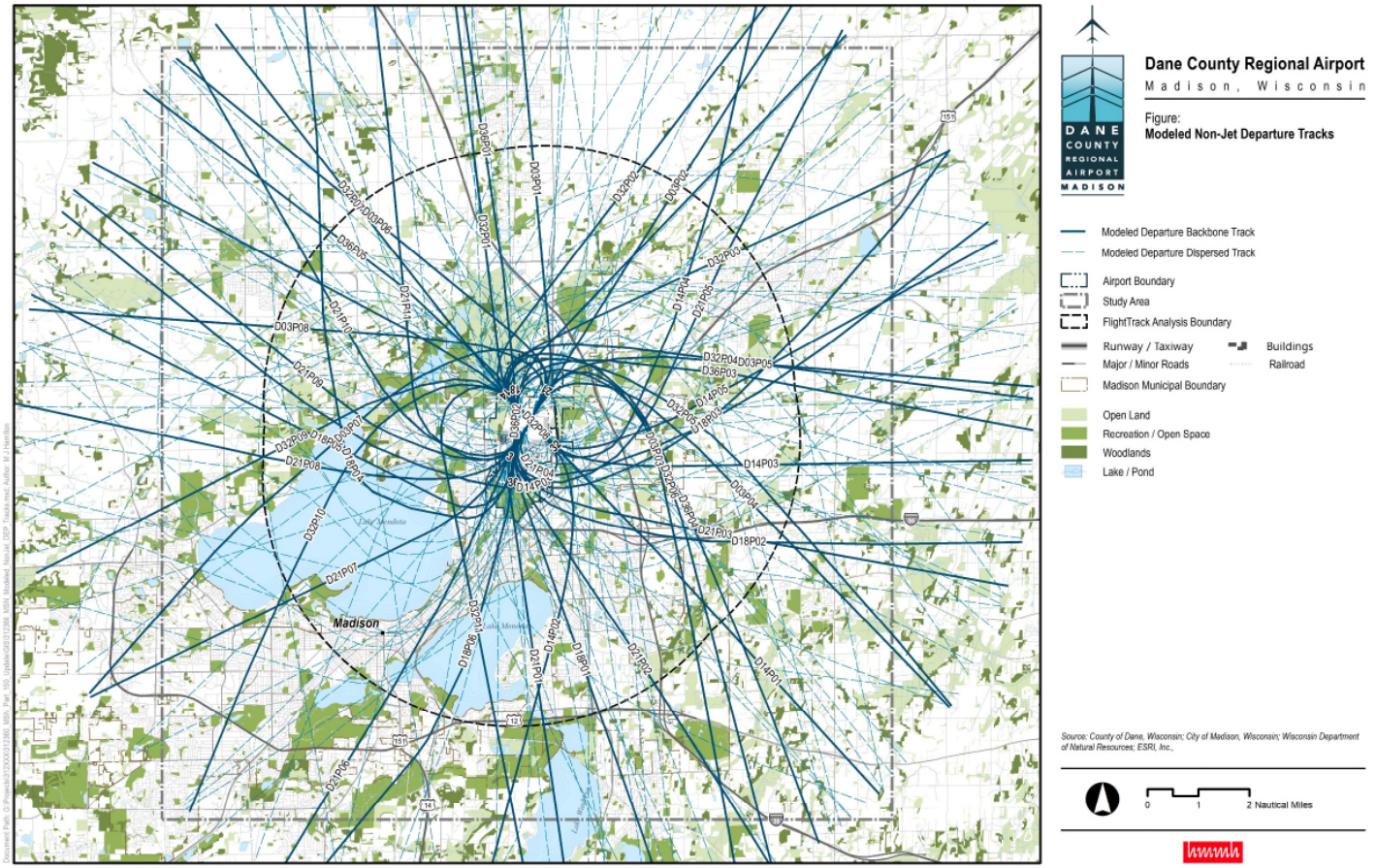
Departure Track Density



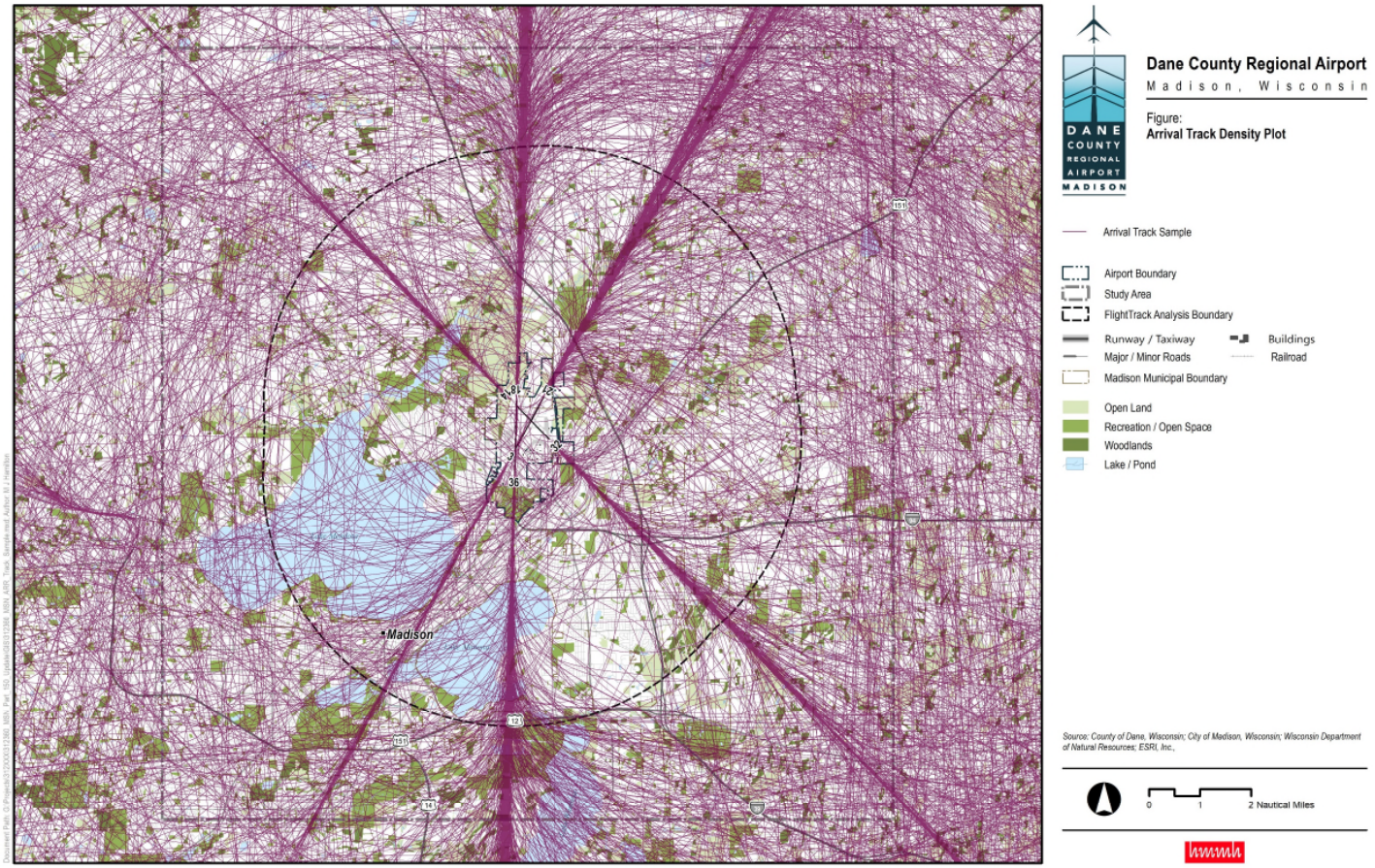
Jet Departure Model Tracks



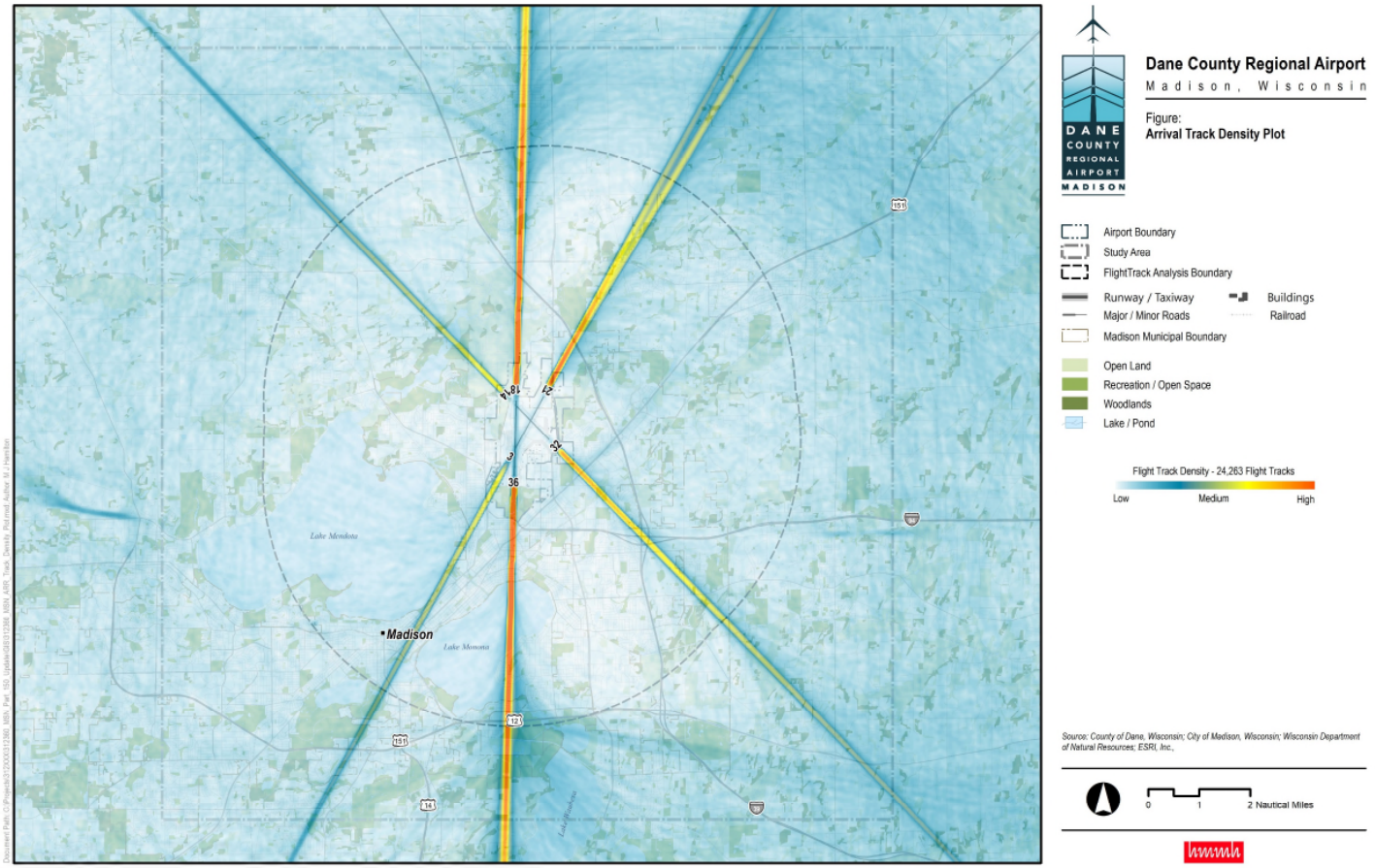
Non-Jet Departure Tracks



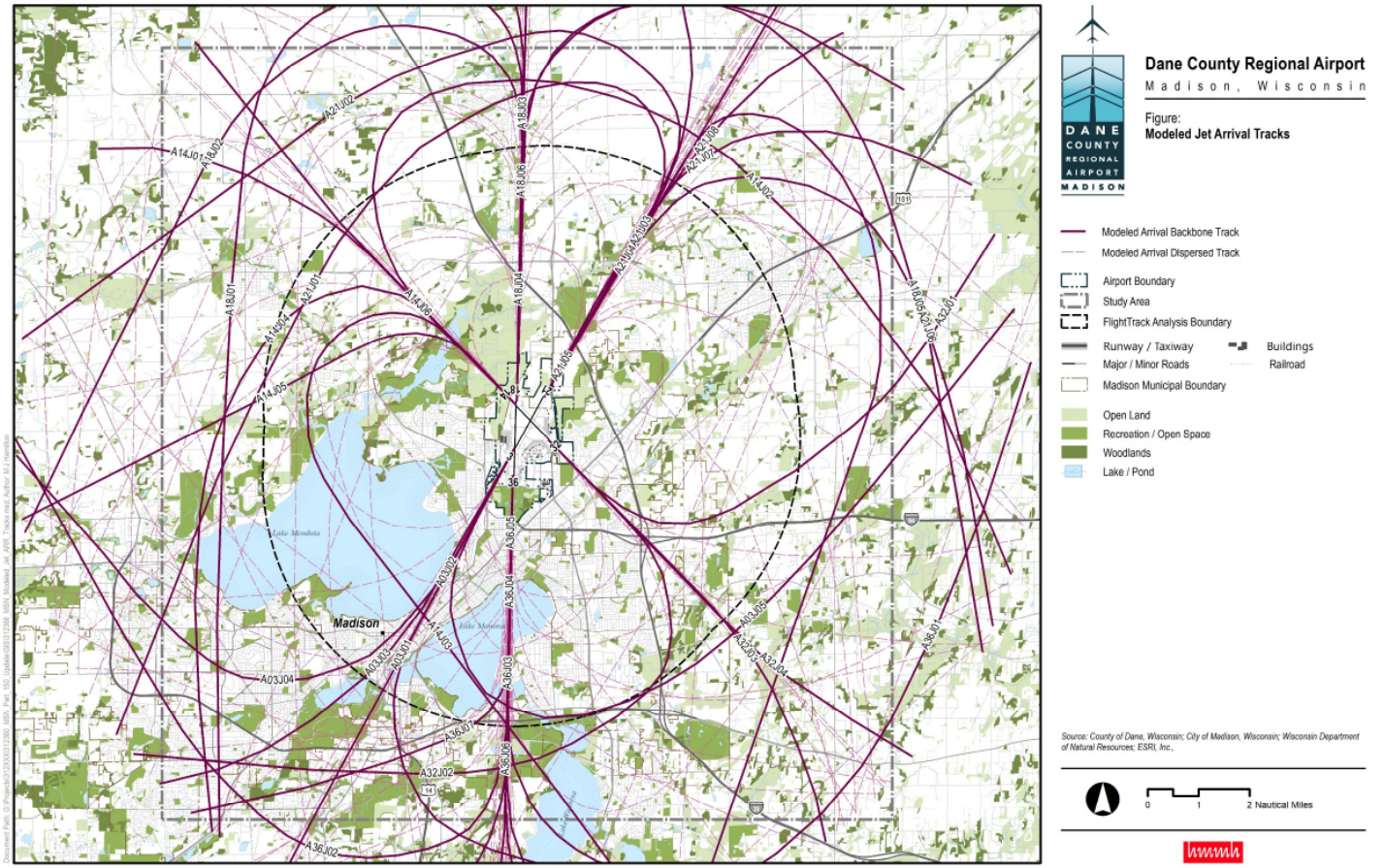
Arrival Tracks Sample



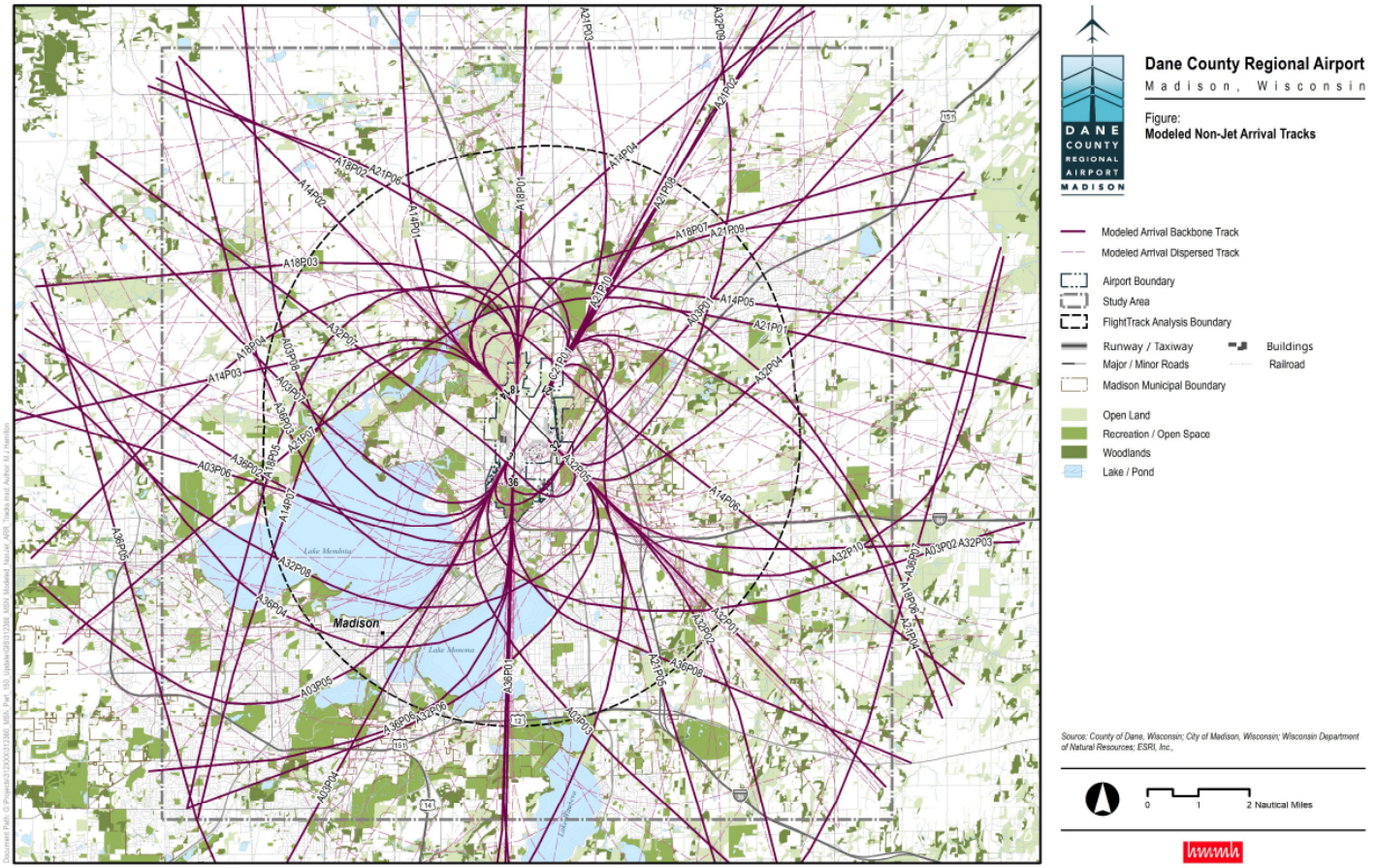
Arrival Track Density



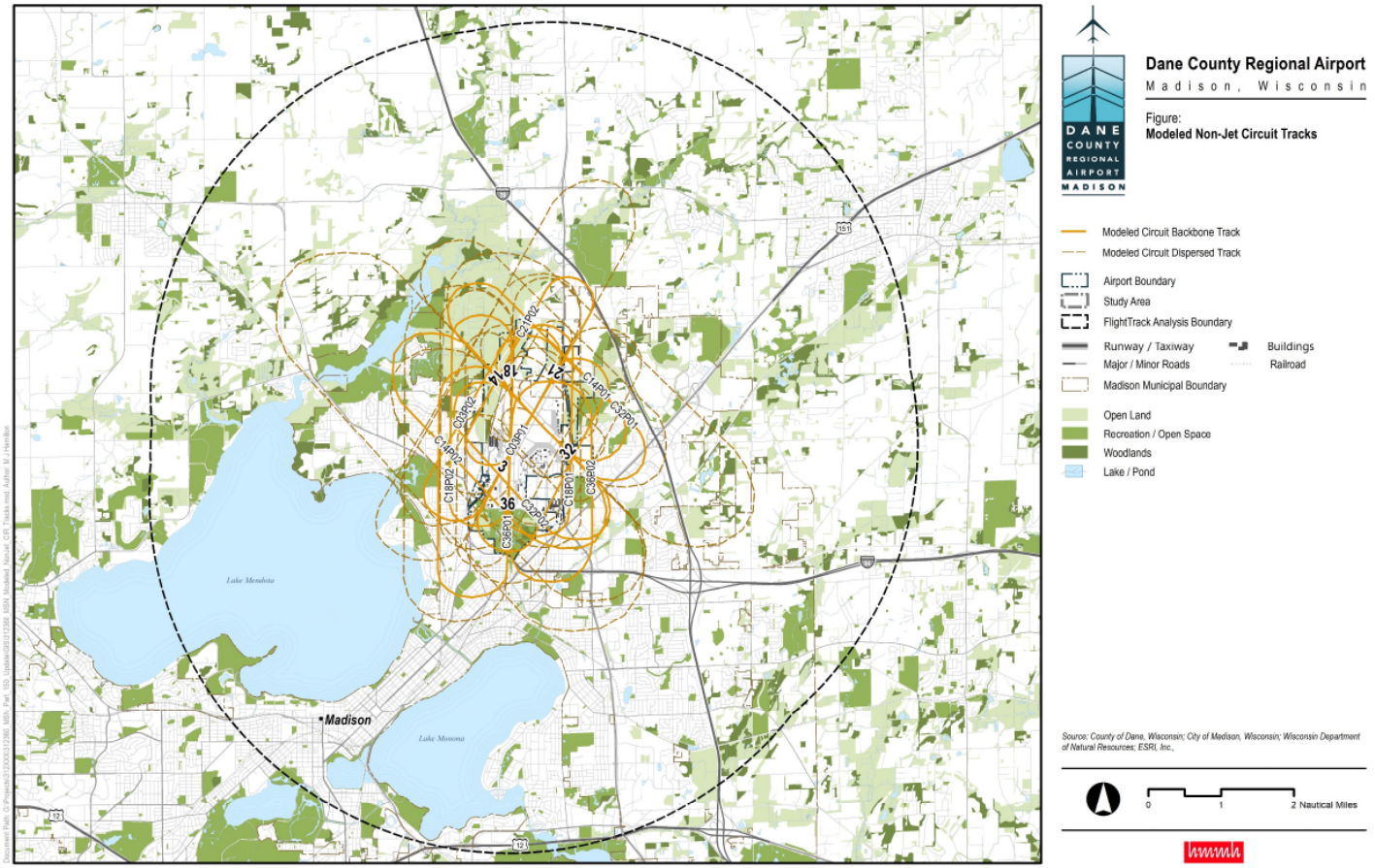
Jet Arrival Model Tracks



Non-jet Arrival Tracks



Non-Jet Circuit Tracks



Model Track Development Summary

- Process is repeated for arrivals and departures for each runway, aircraft type, direction, and track group
  - 724 tracks have been developed: 198 backbone and 526 sub-tracks

Runway	Arrival Tracks		Departure Tracks		Circuit Tracks	
	Back-bone	Sub-tracks	Back-bone	Sub-tracks	Back-bone	Sub-tracks
03	13	26	14	30	2	4
21	19	50	21	68	1	2
18	13	38	20	56	2	4
36	15	48	14	42	2	2
14	13	26	9	24	2	4
32	14	38	22	60	2	4
H1	1	0	1	0	0	0
Total	87	226	100	280	11	20

2022 Detailed Fleet Mix – Air Carrier

- *2022 Existing Year/Year of Submission Fleet Mix Assumptions*

Category	ANP ID	Aircraft Type	Total Operations
AC	A300-622R	Airbus widebody	771
AC	757PW	Boeing narrowbody	243
AC	757RR	Boeing narrowbody	233
AC	A320-271N	Airbus narrowbody	333
AC	A319-131	Airbus narrowbody	1,874
AC	A320-211	Airbus narrowbody	331
AC	717200	Boeing narrowbody	1,429
AC	737800	Boeing narrowbody	853
AC	CRJ9-ER	Canadair Regional Jet	10,293
AC	EMB170	Embraer Regional Jet	703
AC	EMB175	Embraer Regional Jet	2,638
TOTAL			19,702

Source: Mead & Hunt and HMMH

2022 Detailed Fleet Mix – Air Taxi

- *2022 Existing Year/Year of Submission Fleet Mix Assumptions*

Category	ANP ID	Aircraft Type	Total Operations
AT	EC130	C130 air taxi	17
AT	CNA182	Cessna piston	676
AT	CNA208	Cessna Piston	450
AT	FAL20	Business Jet	35
AT	BEC58P	Beechcraft piston	11
AT	CNA208	Cessna turboprop	434
AT	SD330	Short turboprop	501
AT	CNA680	Cessna Business Jet	917
AT	CL600	Canadair Regional Jet	553
AT	CNA55B	Cessna Business Jet	938
AT	CL600	Canadair Regional Jet	1,310
AT	EMB14L	Embraer Regional Jet	1,387
TOTAL			7,231

Source: Mead & Hunt and HMMH

2022 Detailed Fleet Mix – General Aviation

- *2022 Existing Year/Year of Submission Fleet Mix Assumptions*

Category	ANP ID	Aircraft Type	Total Operations
GA	A109	Helicopter	465
GA	MU3001	Mitsubishi Business Jet	401
GA	CNA525C	Cessna Business Jet	1,815
GA	CNA55B	Cessna Business Jet	618
GA	CNA560U	Cessna Business Jet	794
GA	CNA560XL	Cessna Business Jet	566
GA	CNA680	Cessna Business Jet	799
GA	CL600	Canadair Business Jet	652
GA	CL601	Canadair Business Jet	416
GA	EMB145	Embraer Business Jet	595
GA	CNA750	Cessna Business Jet	656
GA	FAL900EX	Falcon Business Jet	514
GA	GIV	Gulfstream Business Jet	547
GA	LEAR35	Lear Business Jet	1,684
GA	GASEPV	Single engine piston	4,851
GA	GASEPF	Single engine piston	5,569
GA	CNA172	Cessna piston	9,410
GA	CNA182	Cessna Piston	1,607
GA	BEC58P	Beechcraft piston	2,611
GA	PA28	Piper piston	7,738
GA	COMSEP	Single engine piston	1,237
GA	DHC6	DeHaviland turboprop	1,710
GA	CNA441	Cessna turboprop	680
GA	CNA208	Cessna turboprop	982
TOTAL			**46,917**

Source: Mead & Hunt and HMMH

Military Noise Modeling

Modeling 115 FW Operations

- Develop NoiseMap inputs
- Review EIS modeling files
- Current plan for operations/differences from EIS

Source: United States Air Force F-35A Operational Beddown - Air National Guard Environmental Impact Statement, Final – February 2020

115 FW and Transient Military Data Needs

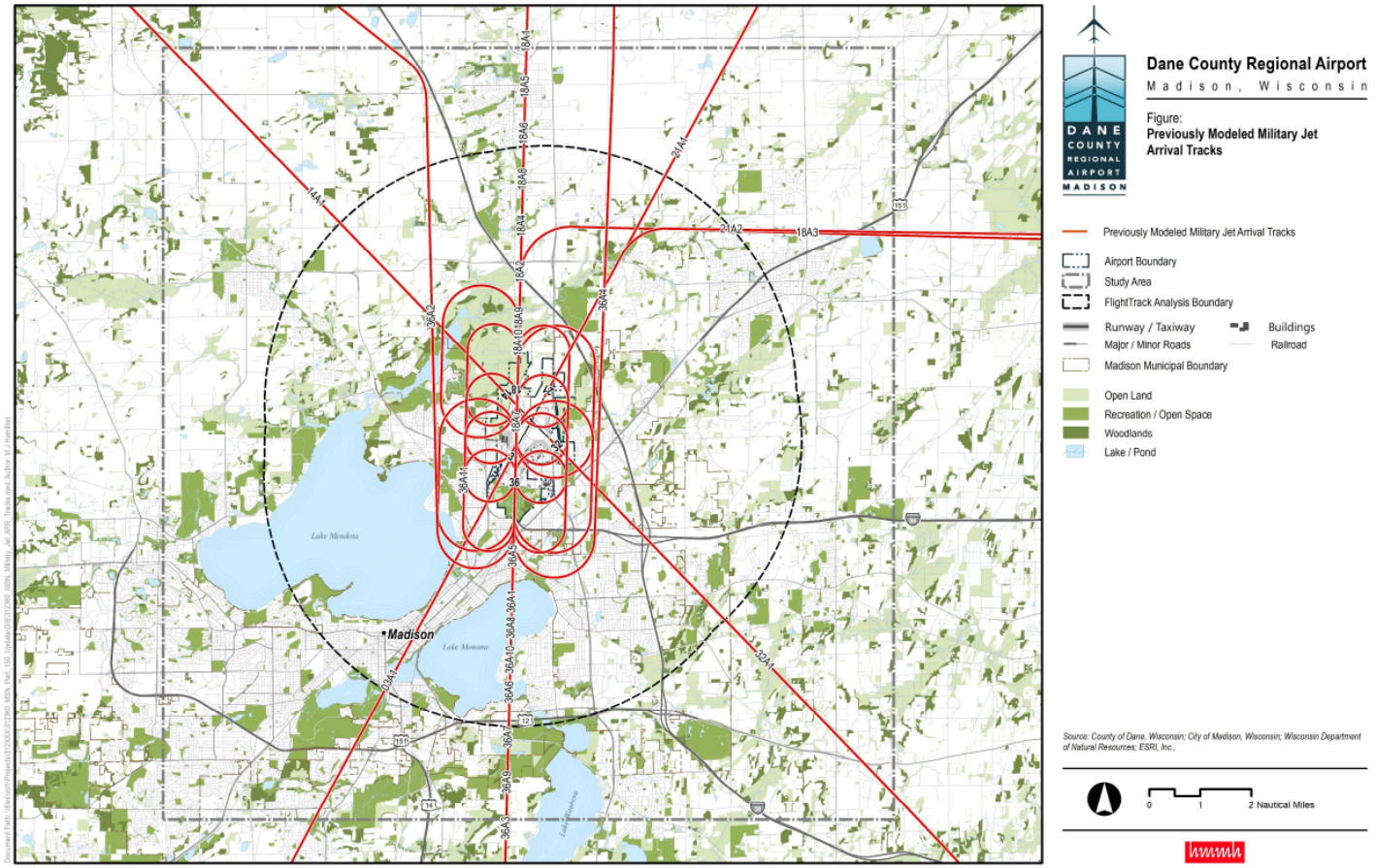
- **Who** is involved with the flights/ops:
  - Specified flying units
  - Maintenance
  - Transient aircraft
- **What** flights occur:
  - By aircraft/engine type
  - By operation type (departure, arrival, closed pattern, etc.)
  - Runup operations
- **When** flights occur:
  - Day (0700-2200), night (2200-0700)
- **Where** flights occur:
  - Flight tracks and track utilization
  - Runways/pads and utilization
- **How** flights operate:
  - Flight profiles – engine power, altitude, airspeed
  - Distribution (e.g., AB vs Mil)
  - Noise abatement procedures

Detailed Fleet Mix – Military

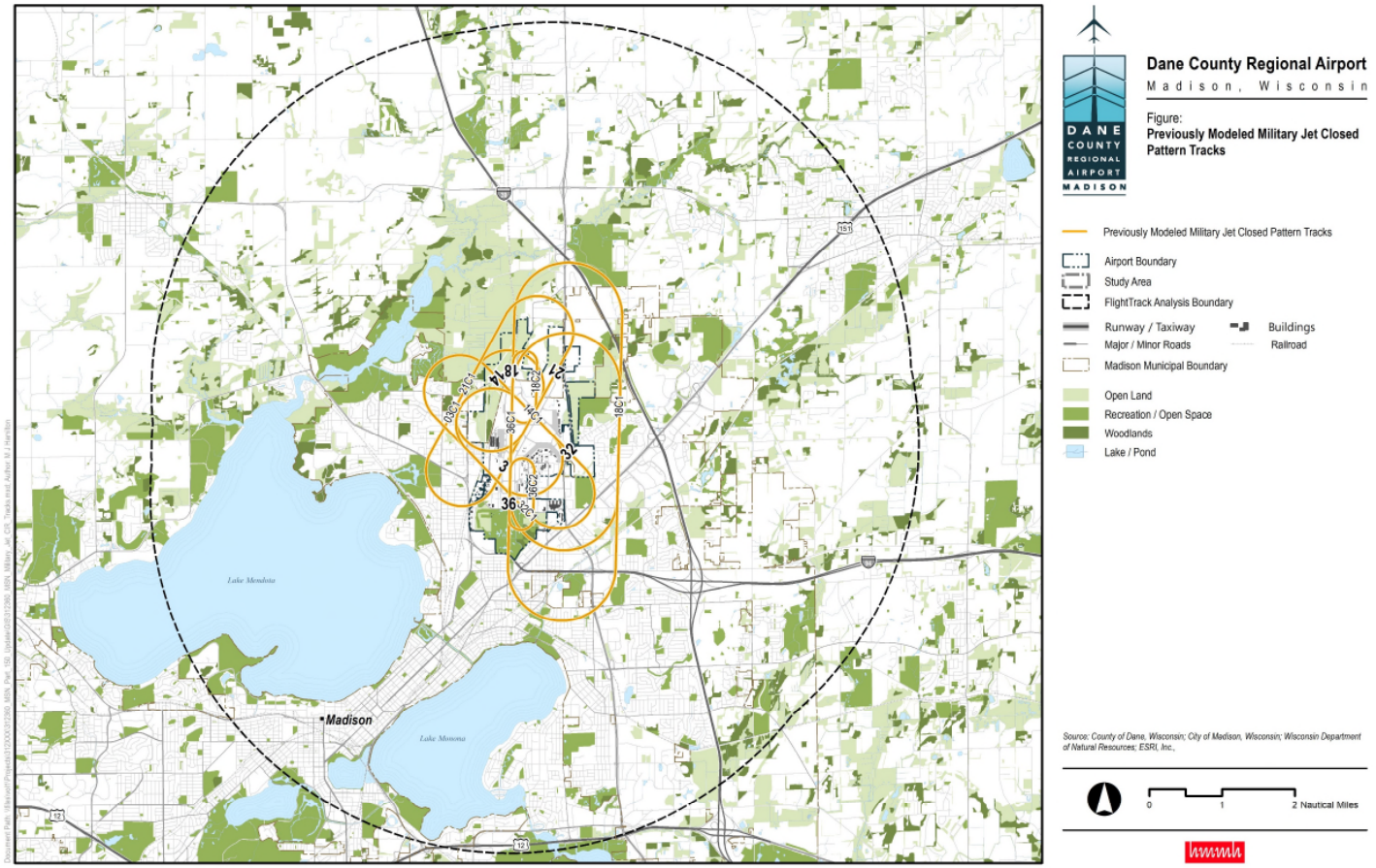
EIS Alt	Based/ Transient	Aircraft
EIS Existing Condition / No Action	Based	F-16C (F110-GE-100)
		C-26
		RC-26
		UH60A
	Transient	TransFtr (F-16C, F110-GE-100)
		TransHvyCargo (C-17)
		TransHvyProp (C-130)
		TransTanker (KC-135)
EIS Proposed Action	Based	F-35A
		F-16C (F110-GE-100)
		C-26
		RC-26
		UH60A
	Transient	TransFtr (F-16C, F110-GE-100)
		TransHvyCargo (C-17)
		TransHvyProp (C-130)
		TransTanker (KC-135)
NEM Existing 2022	Based	F-35A
		F-16C (F110-GE-100) - CY22 Actual
		F-16C (F110-GE-100) - Pre-Drawdown
		C-26
		RC-26
		UH60A
	Transient	TransFtr (F-16C, F110-GE-100)
		TransHvyCargo (C-17)
		TransHvyProp (C-130)
		TransTanker (KC-135)
NEM Forecast 2027	Based	F-35A
		F-16C (F110-GE-100)
		C-26
		RC-26
		UH60A
	Transient	TransFtr (F-16C, F110-GE-100)
		TransHvyCargo (C-17)
		TransHvyProp (C-130)
		TransTanker (KC-135)

Military Jet Departure Tracks

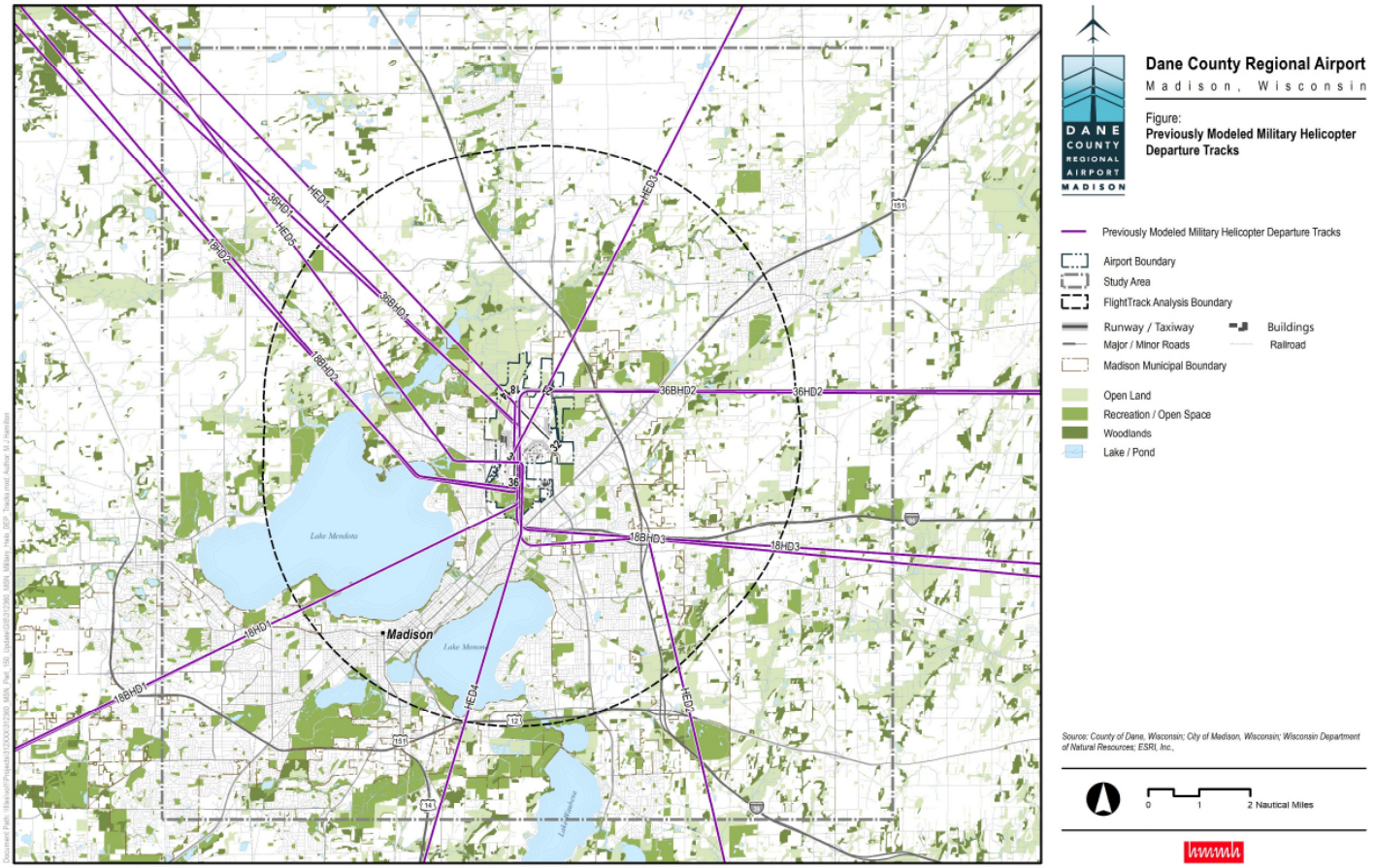
Military Jet Arrival Tracks



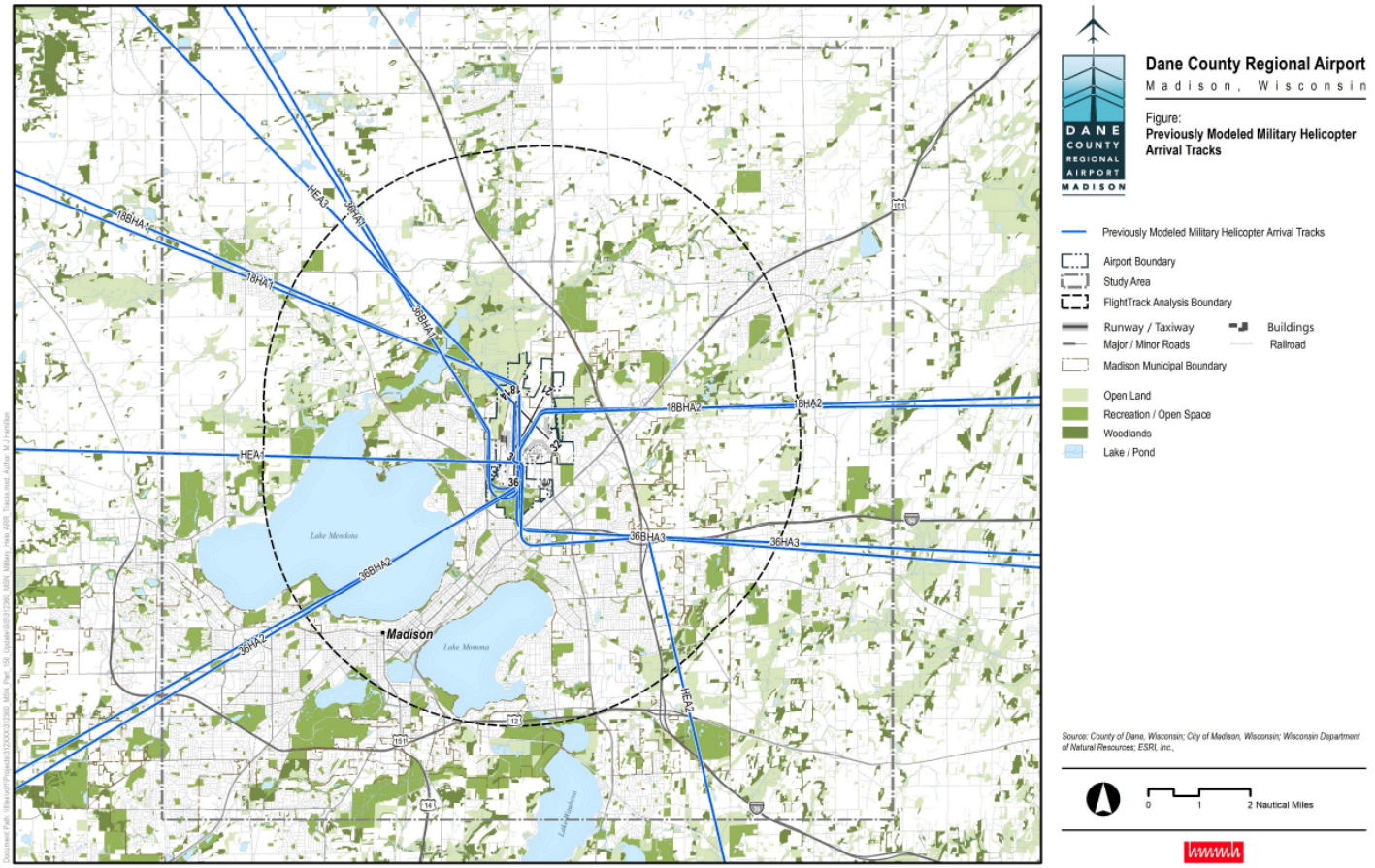
Military Jet Pattern Tracks



Military Helicopter Departure Tracks

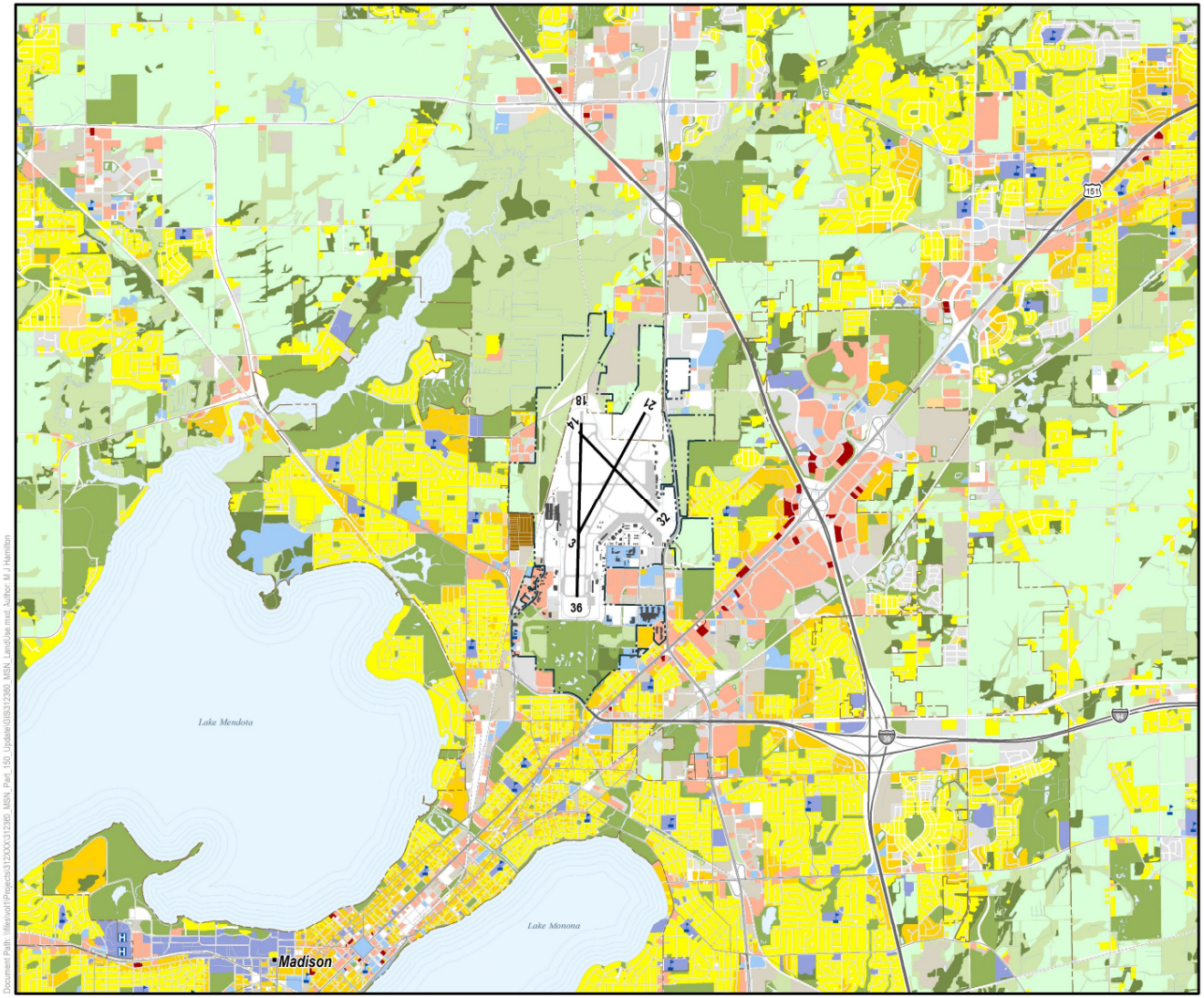


Military Helicopter Arrival Tracks



Land Use

- Primary data collection steps include:
  - Assemble and review land use, zoning, and population data
  - Identify any local land use policies that address airport operations
  - Create existing land use maps
- Locations of noise-sensitive sites (churches and schools) are noted
- Local jurisdictions to review maps and advise of necessary corrections
  - Assess any deficiencies of land use data and corrective approaches
- After DNL contours have been generated, the Study Team will survey and confirm land use within the 65 DNL contours



Dane County Regional Airport

Madison, Wisconsin

Figure:
Existing Land Use

- Airport Boundary
- Runway / Taxiway
- Major / Minor Roads
- Madison Municipal Boundary
- Buildings
- Railroad

- Single Family Residential
- Multi-Family Residential
- Mobile Home
- Transient Lodging
- Mixed Use
- Public Use 1 (Non-Compatible)
- Public Use 2 (Compatible)
- Commercial Use
- Manufacturing and Production
- Agriculture
- Open Land
- Open Space / Recreation
- Woodlands
- Under Construction
- Vacant / Undefined
- Lake / Pond
- School
- Hospital

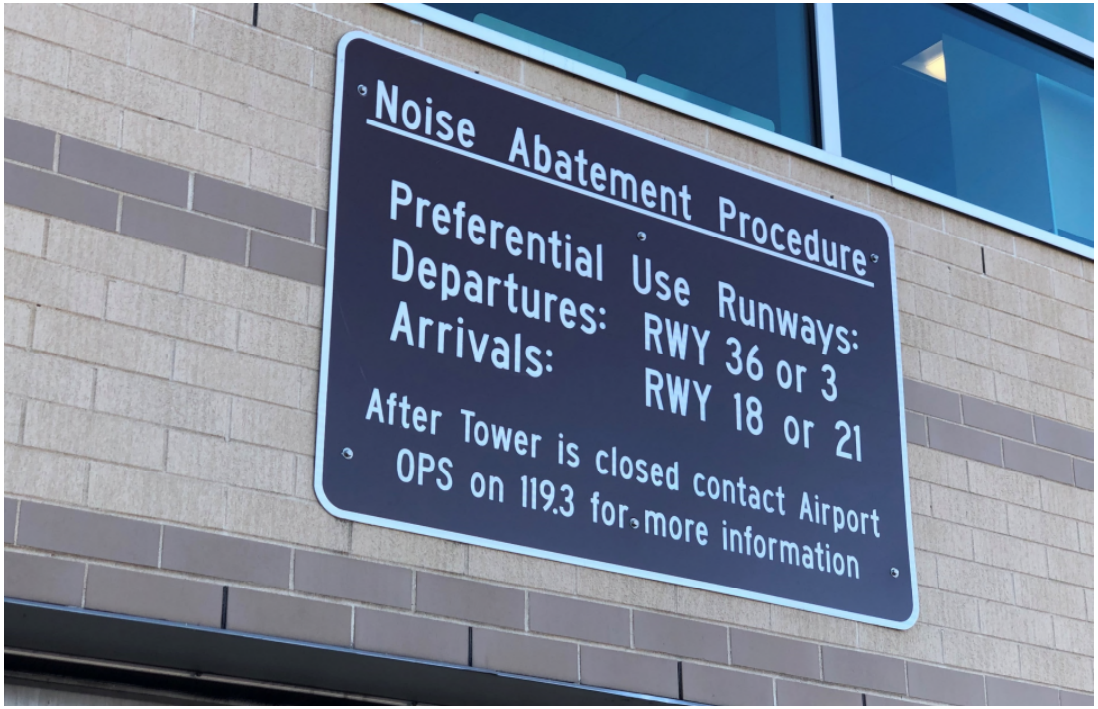
Source: County of Dane, Wisconsin; City of Madison, Wisconsin; Wisconsin Department of Natural Resources; ESRI, Inc.,

0 5,000 10,000 Feet

hmmh

NCP Review

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



Noise Abatement Measures (NA)

	Name	Approval Status
NA-1	Continue the existing informal runway use program.	Approved as a voluntary measure, in part
NA-2	Maintain internal tower directive requiring aircraft departing on Runway 31 to pass through 2,500 feet MSL (1,600 feet AGL) before turning left.	Approved in part
NA-3	Establish visual approach and departure corridors for helicopters.	Approved in part
NA-4	Encourage use of noise abatement departure procedures by operators of jet aircraft.	Approved as a voluntary measure
NA-5	Encourage Air National Guard to follow through with its plans to construct a hush house for A-16 engine maintenance runups prior to converting its fleet.	Approved as a voluntary measure
NA-6	Construct new 6,500-foot Runway 3-21.	Approved
NA-7	Adopt an informal preferential runway use system which encourages departures on Runways 3, 31, and 36 while preferring arrivals on Runways 13, 18, and 21.	Approved as a voluntary measure, in part
NA-8	Adopt procedures requiring east and southbound aircraft exceeding 12,500 pounds and departing Runway 3 to climb on runway heading through 2,500 feel MSL before turning right.	Approved in part
NA-9	Adopt procedures requiting all aircraft exceeding 12,500 pounds and departing Runway 21 to turn left 10 degrees as soon as safe and practicable.	Approved in part

Land Use Measures(LU)

	Name	Approval Status
LU-1	City of Madison, Dane County – Maintain Exiting Compatible Zoning in the Airport Vicinity.	Approved
LU-2	Dane County, City of Madison, Town of Burke – Define "Airport Affect Area" for Purposes of Implementing Wisconsin Act 136.	Approved
LU-3	Dane County, City of Madison – Adopt Airport Noise Overlay Zoning.	Approved
LU-4	Dane County, City of Madison – Amend Subdivision Regulations to Require Dedication of Noise and Avigation Easements or Plat Notes on Final Plat.	Approved
LU-5	Dane County – Consider Amending Subdivision Regulations to Prevent Subdivision of Land Zoned A-1 Agriculture	Approved
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LU-8	Dane County – Follow through with Planned Land Acquisition in Cherokee Marsh and Token Creek Park Areas.	Approved
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LU-10	Dane County – Establish Sales Assistance or Purchase Assurance Program for Homes Impacted by Noise Above DNL 70 dB.	Approved
LU-11	Dane County – Install Sound Insulation for Schools Impacted by Noise Above DNL 65 dB	Approved

Program Management Measures (PM)

- 1991 MSN NCP titled PM measures as “Continuing Program” measures

	Name	Approval Status
CP-1	Program Monitoring and Contour Updating	Approved
CP-2	Evaluation and Update of the Plan	Approved
CP-3	Complaint Response	Approved

Next Steps

- Finalize noise model inputs after FAA forecast approval
- Generate noise contours with AEDT and NoiseMAP
- Assess land use and population within contours
- Develop draft Noise Exposure Maps and report
- Review existing noise abatement measures
- Review existing land use measures
- Review existing programmatic measures
- Develop NCP Update

Proposed Schedule: Phase 1

Meeting / Activity	Anticipated Purpose	Anticipated 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.	January 20, 2022
1st Technical Advisory Committee Meeting	Introduction to Part 150, discuss stakeholder roles, identify issues of concern	April 26, 2022
1st Public Open House	Introduction to Part 150, set expectations, discuss stakeholder roles, identify issues of concern	April 26, 2022
2nd Technical Advisory Committee Meeting	Discussion on Aviation forecasts, F35 Operations, and noise modeling inputs	July 2022
3rd Technical Advisory Committee Meeting	Noise modeling results and presentation of the draft NEM Update	October 2022
NEM Public Comment Period and 2nd Public Open House	NEM thirty-day public comment period and second Public Open House	Oct/Nov 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.	December 2022

Note: Schedule is subject to change

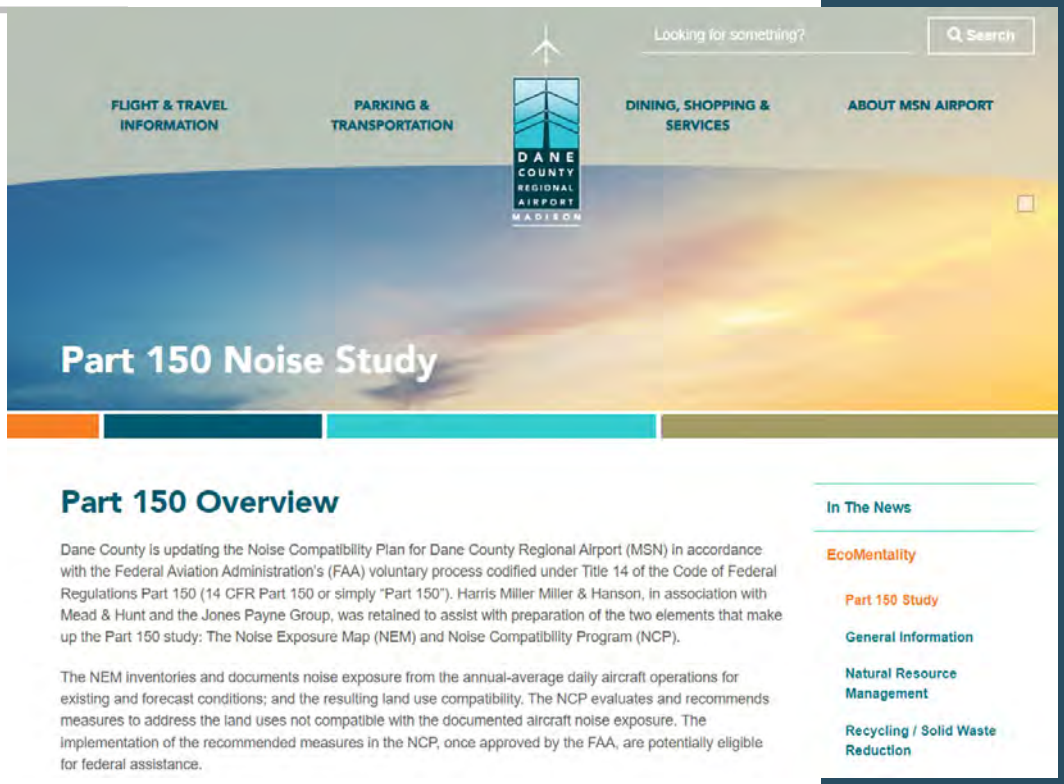
Proposed Schedule: Phase 2

Meeting / Activity	Anticipated Purpose	Anticipated Time Frame
4th Technical Advisory Committee Meeting	Review of the existing Noise Compatibility Program (NCP) and discussion of Potential changes to the Noise Compatibility Program	1st Quarter 2023
5th Technical Advisory Committee Meeting	Evaluation results of the proposed Noise Compatibility Program measures	2nd Quarter 2023
6th Technical Advisory Committee Meeting	Presentation of the draft Noise Compatibility Program Update	3rd Quarter 2023
NCP Public Comment Period, 3rd Public Open House, and NCP hearing	NCP thirty-day public comment period and third Public Open House and NCP Hearing.	4th 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.	1st 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 339.234.2816
- Michael Kirchner – MSN Engineering Director, Contact: kirchner@msnairport.com 608.279.0449



Wrap Up

- Next TAC meeting:
  - October/November 2022
  - Location: Dane County Regional Airport
  - Primary topic – Presentation of the existing and five-year condition Noise Exposure Maps (NEMs) and brainstorming of NCP measures (followed by the NEM workshop)
- TAC questions, comments, and discussion
- Public Comments

TAC Member Discussion

HMMH
700 District Avenue, Suite 800
Burlington, MA 01803
781.229.0707

MEMORANDUM

Subject: Dane County Regional Airport
Part 150 Study
TAC Meeting 2 Summary

Meeting Date: Tuesday July 26th, 2022

Reference: HMMH Project Number 312360

TAC Member Attendance:

Organization	TAC Member	Attendance
MSN staff	Michael Kirchner	Yes
WBOA staff	Matt Messina	Yes
WBOA staff	Kelly Halada	Yes
WBOA staff	Mallory Palmer	Yes
Federal Aviation Administration (FAA) Airport District Office (ADO)	Bobb Beauchamp	Yes, virtually
FAA Air Traffic Control Tower (ATCT)	John Vagedes	Yes, virtually
Wisconsin Air National Guard; 115th Fighter Wing Representative	Lt Col Dan Statz	Yes
Wisconsin Air National Guard; 115th Fighter Wing Representative	Lt Col Ben Gerds	Yes
Army Guard	Major Lucas Sivertson	Yes
Delta Airlines	Jason Pace	No
Wisconsin Aviation	Brian Olson	No
City of Madison Planning Division	Dan McAuliffe	No
Dane County Department of Planning and Development	Todd Violante	Yes

Study Team Members Attendance:

Organization	TAC Member	Attendance
MSN staff	Michael Riechers	Yes
MSN staff	Tomasz Pajor	No
Jones Payne Group	Diane Carter	Yes
Jones Payne Group	Brianna Whiteman	Yes
HMMH	Tim Middleton	Yes
HMMH	Gene Reindel	Yes
HMMH	Julia Nagy	No

Mead & Hunt	Chris Reis	Yes
Mead & Hunt	Ryan Hayes	Yes
Mead & Hunt	Kate Andrus	No
Mead & Hunt	Levi Ney	No
Mead & Hunt	Ryk Dunkelberg	No

Meeting summary notes:

Tim Middleton (HMMH) provided opening remarks, after which the TAC and study team members introduced themselves. Middleton then began the presentation by reviewing the overall Part 150 study process and the roles & responsibilities of the TAC members. He provided some background details on Dane County Regional Airport (MSN) and reiterated that the assignment of F-35s to the 115th Fighter Wing was the reason the airport decided to move forward with an NEM and NCP update.

Ryan Hayes (Mead & Hunt) then discussed the operations forecast for the NEM existing year (2022) and forecast year (2027). He explained that the Terminal Area Forecast (TAF) is the FAA's official operations forecast, and that per Mead & Hunt's analysis, the TAF is a valid forecast for MSN. He went on to explain that while the TAF is valid, it does not account for nighttime airport operations when the ATCT is closed (11:00 pm to 6:00 am), which is about 2% of operations.

Action: As nighttime operations (between 10:00pm and 7:00am) receive a 10 dB penalty in DNL metrics, it is particularly important nighttime operations are included in the NEM. Hayes confirmed nighttime operations will be included.

Hayes continued on to explain the process of the TAF verification and provided details to the TAC regarding forecasted passenger enplanements, operations, and economic growth. He confirmed the TAF information was compared to MSN records and aviation trends forecasts. He also confirmed that the while the military numbers are based on TAF data, those numbers will be refined based on conversations with the ATCT and 115th Fighter Wing as part of the NEM update.

Lt Col Dan Statz inquired as to how the impact of COVID-19 is reflected in the TAF, and how it will be reflected in the NEM update. Hayes confirmed the FAA revised the TAF to account for pandemic affects.

Action: Gene Reindel and Middleton verified that the study team will request the FAA consider the impacts of COVID in similar fashion as they do with a runway closure and recommend to the FAA that the NEM show operations reflective of when the 115th Fighter Wing was operating at full capacity, and not associated with the draw-down of the F-16 as well.

Michael Riechers asked if newly added gates and additional capacity will be included in the forecast. Hayes confirmed both will be included.

Middleton then gave a noise modeling overview. He explained that the use of FAA's Aviation Environmental Design Tool (AEDT) noise modeling software is required for civilian modeling. Per Reindel, the Air Force NoiseMap software will be used to model military operations.

A discussion was held regarding the anticipated differences between the EIS projections and the NEM forecasts. Lt Col Statz inquired as how the study will show the different software used for each study isn't responsible for variance. Middleton confirmed the software used for the EIS will not be used by the study team for comparison's sake, and that the reasons for variance will need to be clearly explained to the public.

Reindel confirmed that ground noise sources such as run ups will be included in the modeling; F-35s have a longer run up time of 20-30 minutes. Middleton confirmed helicopters will also be included in the noise modeling.

Middleton then reviewed the modeling process, explaining how AEDT creates a grid with points, and that the software operates by connecting the points to create the noise contours. He further reviewed the AEDT physical input and operational requirements. While reviewing runway use, he explained that modeling begins and ends 30,000 feet in flight track length from each end of a runway, and that civilian runway use modeling is developed from National Offload Program (NOP) data and System Wide Information Management (SWIM) data. The TAC confirmed preferential north flow is a current noise abatement procedure, and that Runway 18/36 was closed for part of this year; as inputs are developed from 2021 operation levels, this Runway closure does not impact the modeling process.

The TAC confirmed MSN has an airport field elevation (AFE) of 880 ft. The 115th Fighter Wing confirmed there is a hush house, but asserted less maintenance is needed for the F-35s versus the F-16s.

Riechers asked how a new airline joining MSN might affect the study, and if it would throw off the modeling. Per Middleton it would not, because the TAF generally includes industry trends and the model is focused on aircraft types rather than specific airlines that may fly such aircraft. Per Hayes, the commercial operations forecast takes such changes into account. Reindel added that such changes are also the basis of the FAA's recommendation that the NEM be updated every 5 years, or when significant changes to operations occur.

Middleton then reviewed preliminary flight track modeling. Lt Col Statz asked how these flight tracks compare with those in the EIS. Middleton replied that the tracks shown are only civilian, not military.

Action: HMMH comparison of EIS tracks is forthcoming. Per Reindel, this level of detail isn't FAA-required but is provided to address community concerns and provide transparency.

Middleton continued through a review of the different types of tracks developed and the fleet mix that was analyzed.

Following a short break, Middleton resumed the meeting with an overview of the modeling efforts for the 115th Fighter Wing as well as transient military operations. The modeling is based on known operations; Middleton asserted that any additional information and input from the 115th allows for the development of potentially better noise abatement measures.

Reindel requested the 115th's percentage use of afterburners.

Action: Lt Col Ben Gerds stated the 158th Fighter Wing (based at BTV) has only used afterburners once. For the 115th Fighter Wing a 5% afterburner usage was included in the EIS, but it could be reduced to 1%, and only those aircraft departing Runway 3.

Riechers asked how transient military afterburner usage would be detailed, given that F-18s use afterburners.

Action: HMMH to review internally and report back to TAC.

Middleton concluded the modeling discussion with a review of tracks based off the EIS and conversations with the 115th Fighter Wing. Major Lucas Sivertson confirmed the use of helicopter noise abatement points, used for both arrivals and departures.

The meeting then moved to a discussion of the NCP update. Tim Middleton described the NCP review and update process and confirmed a windshield survey will be performed to verify the land uses as shown in the forecast NEM contour.

Riechers shared that the City of Madison recently voted to rezone land south of MSN; it is anticipated there will be 60 low-income, multifamily units.

Action: MSN to provide article/link.

Michael Kirchner shared that the charter school on MSN property will be expanding. Per Reindel, the school is already considered compatible because it is on MSN property. He continued on to explain that it will be important to verify the noncompatible land uses so that they can be fully addressed in the upcoming NCP update.

Tim Middleton confirmed that NCP measure implementation status, potential changes, and recommendations will be addressed at the next TAC meeting.

Lt Col Gerds emphasized that the NEM contours will likely be significantly different from the EIS, and that there is a potential for the community to be upset. Reindel and Diane Carter agreed that there is a need for clear communication with the public, and a management of community expectations. Carter emphasized that the potentially long life span of MSN's noise mitigation program will need to be understood by the public, citing examples of other noise mitigation programs.

There was a discussion regarding the nature of a Part 150 study, which is focused on land use, not noise annoyance. Reindel confirmed that the NCP will discuss timing of implementation for program measures, as well as funding needs. The schedule of implementation is subject to change and is largely dependent on the availability of funding.

Action: Todd Violante (City of Madison) asked if ideas for land use measures can be sent to the team. It was confirmed ideas should be sent to HMMH for dissemination to the larger study team. New ideas will also be discussed at the next TAC meeting for consideration.

Riechers emphasized that noise monitoring is a big community concern, both politically and for the general public. Reindel asserted that noise monitoring data cannot be used to determine the noise contour. The FAA requires modeling as it is universal at all airports, and because it is impossible to monitor noise at every home or point on the map for an entire year. Middleton elaborated that you cannot measure noise levels of the future, and that modeling allows for only intentional input: no external influences, no non-flight noise, etc.

Middleton then reviewed the project schedule, anticipating the next TAC meeting to be in October and the next Public workshop to be in November, within the 30-day public review period. There was a discussion around how to address public questions & comments; they will be addressed in NEM documentation, but the website can be updated if FAQs need to be added.

Action: Matt Messina suggested, and it was agreed, that the noise study email autoreply should include direction to the project website.

Action: Gene Reindel requested the TAC review the meeting presentation and proposed data to be used in the NEM and provide feedback to the study team within two to three weeks.

Meeting adjourned.

MSN Part 150 Study

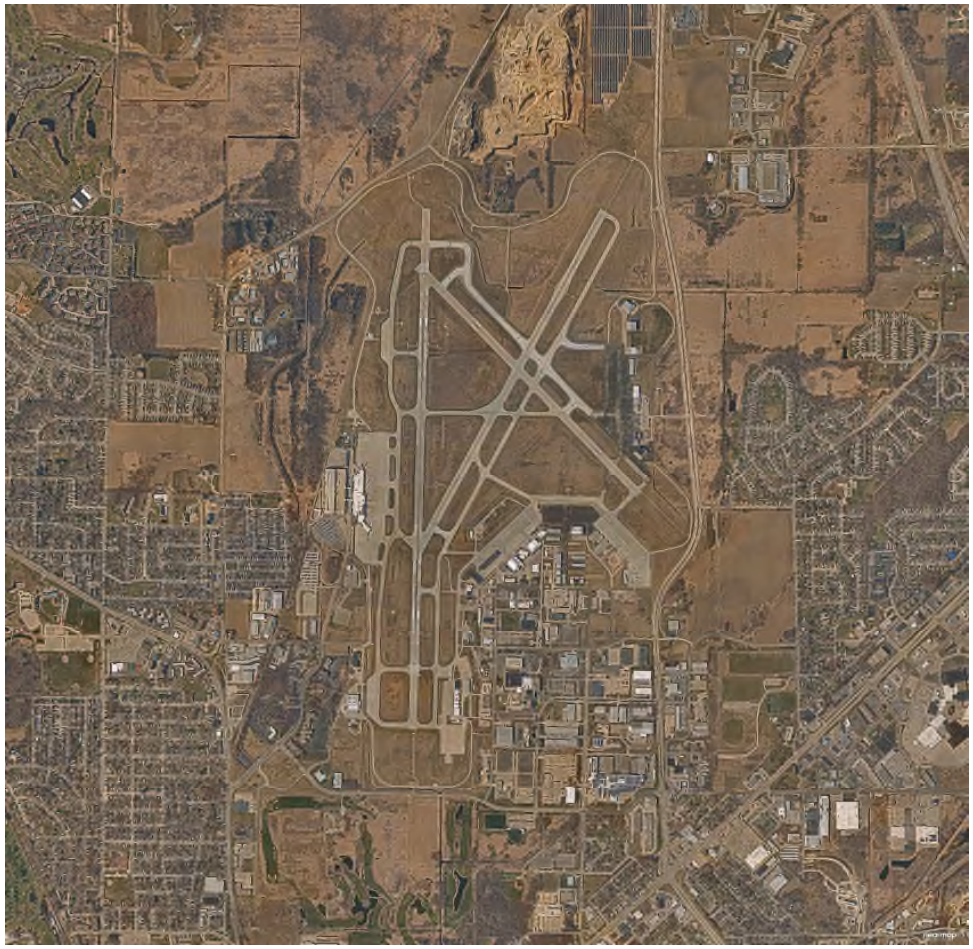
Dane County Regional Airport

Technical Advisory Committee Meeting #3

October 18, 2022

TAC #3 Agenda

- Introductions
- Roles & Responsibilities
- Part 150 Overview
- Land Use
- Implementation Status of NCP Measures
- Noise Model Inputs
- Preliminary Draft Noise Exposure Maps
- NEM Public Workshop #2
- Wrap up & Discussion
- Review Current NCP Measures (time permitting)



Source: NearMap USA, April 2021

Introductions – 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
  - Ryk Dunkelberg - Vice President
- The Jones Payne Group
  - Diane Carter – Project Lead, Principal-in-Charge
  - Brianna Whiteman – Assistant Project Manager, QA/QC

Introductions – TAC Members

Organization	TAC Member
MSN staff	Michael Kirchner
WBOA staff	Matt Messina
FAA Airport District Office (ADO)	Bobb Beauchamp
FAA Air Traffic Control Tower (ATCT)	John Vagedes
Wisconsin Air National Guard; 115th Fighter Wing Representative	Lt Col Daniel Statz
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Delta Airlines	Abby McCoy and Rodney Dunkel
Wisconsin Aviation	Brian Olson
City of Madison Planning Division	Dan McAuliffe
Dane County Department of Planning and Development	Todd Violante
Town of Burke	

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: Study Process

We are here!

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 Overview: Noise Exposure Map

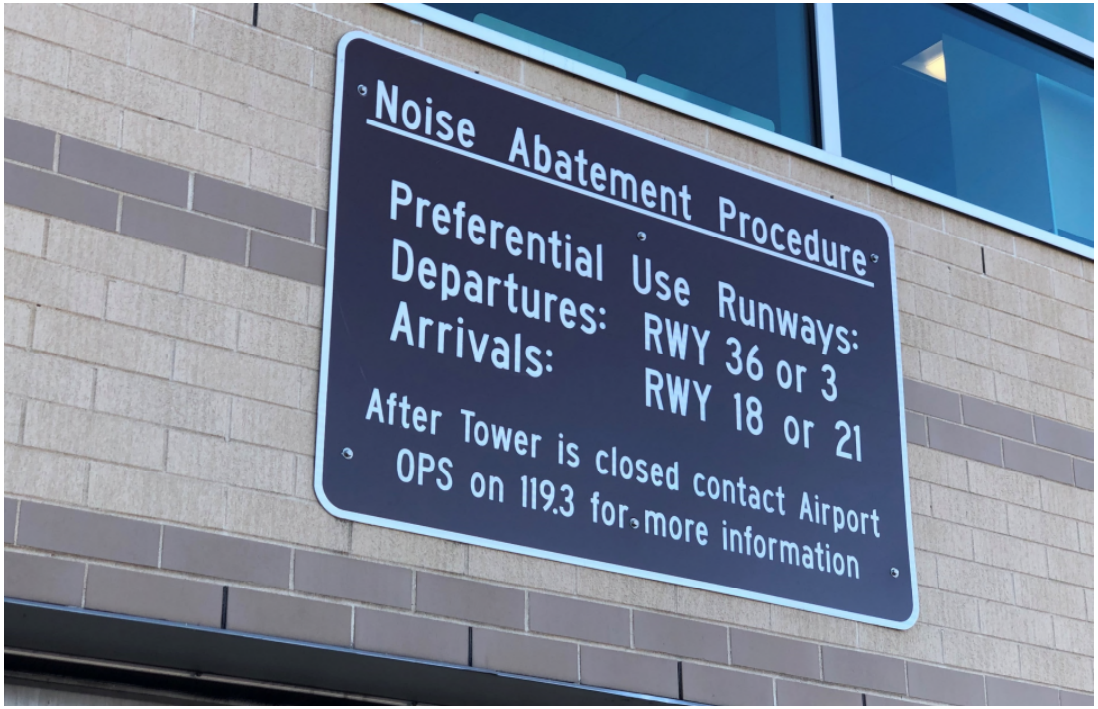
- FAA “accepts” NEM as compliant with Part 150 standards
- NEM must include detailed description of
  - Airport layout, aircraft operations, and other inputs to noise model
  - Aircraft noise exposure in terms of Day-Night Average Sound Level (DNL)
  - Land uses within DNL 65+ decibel (dB) contours
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

Land Use

- Part 150 requires the review of existing land uses surrounding an airport to determine land use compatibility associated with aircraft activity at the airport.
- The FAA has published land use compatibility designations, as set forth in Part 150, Appendix A, Table 1.
- The FAA generally considers all land uses to be compatible with aircraft-related DNL below 65 dB, including residential, hotels, retirement homes, intermediate care facilities, hospitals, nursing homes, schools, preschools, and libraries.

NCP Review: Results

- 1991 MSN NCP included:
  - Noise abatement measures (9)
  - Land use measures (11)
  - Programmatic measures (3)
- NCP Review
  - Has the measure been implemented?
  - If so, compliance with the measure was determined (how well is the measure being adhered to?)



Noise Abatement Measures (NA)

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LU-11	Dane County – Install Sound Insulation for Schools Impacted by Noise Above DNL 65 dB	Not implemented

Program Management Measures (PM)

- 1991 MSN NCP titled PM measures as “Continuing Program” measures

	Name	Implementation Status
PM-1	Program Monitoring and Contour Updating	Implemented
PM-2	Evaluation and Update of the Plan	Implemented
PM-3	Complaint Response	Implemented

Noise Model Inputs

Noise Modeling Inputs: AEDT & NoiseMap

FAA: AEDT (version 3d SP2)

AEDT requires data in three categories:

- Aircraft Noise & Performance
  - Aircraft performance profiles
  - Noise level vs. distance curves
- Airport Physical Inputs
  - Runway coordinates (lat/long)
  - Weather data
  - Terrain shapefiles
- Aircraft Operational Inputs
  - Number of aircraft operations
  - Aircraft fleet mix
  - Day-night split of operations
  - Runway utilization
  - Flight track geometry and utilization

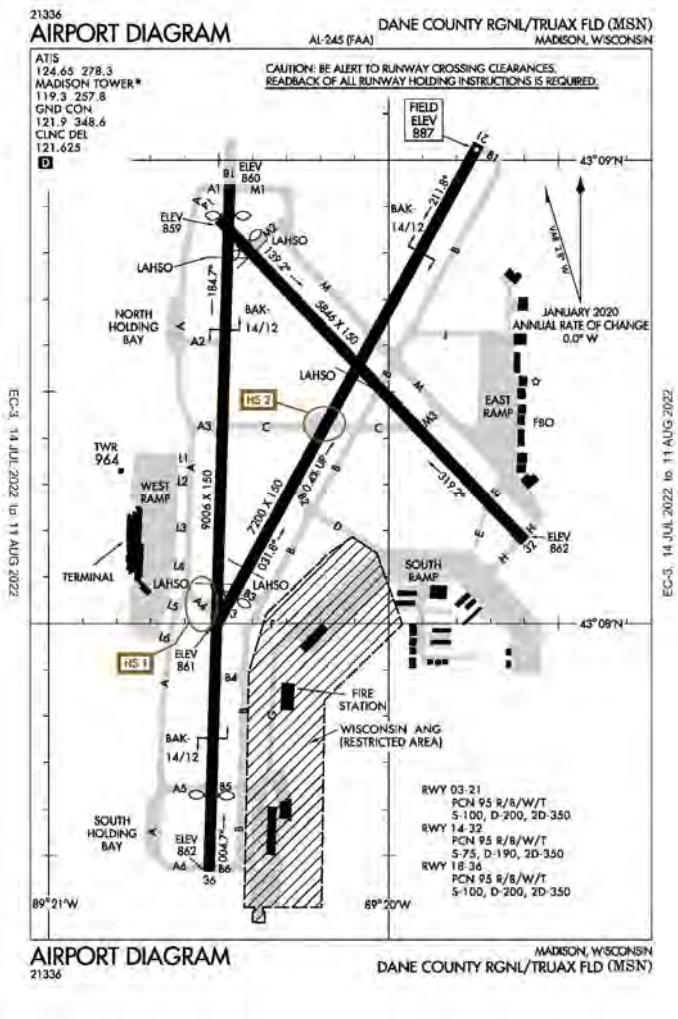
DoD: NoiseMap

NoiseMap requires the following data:

- *Who* is involved with flights/ops
  - Specified flying units, maintenance, transient aircraft
- *What* flights occur
  - By aircraft/engine type, operation type, or runup operations
- *When* flights occur
  - Day (0700-2200), Night (2200-0700)
- *Where* flights occur
  - Flight tracks and track utlization
  - Runway/Pads and utilization
- *How* flights operate
  - Flight profiles – engine power, altitude, airspeed
  - Distribution (e.g., AB vs. Mil)
  - Noise abatement procedures

Physical Input Requirements

- Airport layout
  - Runway configuration (including displaced landing or takeoff thresholds)
- Flight tracks
- Airport elevation
  - Terrain data were obtained from the United States Geological Survey National Elevation Dataset
- Airport weather
  - The AEDT database includes 30-year average weather for each airport.
    - Temperature
    - Station pressure
    - Relative humidity
    - Dew point
    - Wind speed
- Related requirements:
  - Runway use rates
  - Flight track use rates



Operational Input Requirements

- Annual-Average Day Operations
  - Existing year 2022
  - Forecast year 2027
- Aircraft Type
  - Jet, Turboprop, Helicopter, Prop
- AEDT Equipment Type (~4,600 airframe/engine combinations)
  - 737800, A320-200, CRJ800, etc.
- Day-Night Split
  - Day 7:00AM-10:00PM
  - Night 10:00PM-7:00AM
- Stage length
  - Surrogate for aircraft weight; determined by distance from departure to destination airport
- Runway utilization rates by aircraft categories
- Flight track geometry and use by aircraft categories

Additional Operational Inputs

Helicopter Operations

- Civilian operations on the East Ramp, near Wisconsin Aviation
- Military operations based on operational discussions with Army Guard

Runups

- Military run-ups on ANG (restricted area)

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

19

AEDT Aircraft Operations Data

- Arrivals
  - AEDT noise and performance database has standard arrival profiles
- Departures
  - AEDT noise and performance database has departure profiles by stage length; all small aircraft are assumed to fly less than 500 nm
  - Stage lengths for modeling will be determined based on analysis of base year operations data that includes city pair information
- Touch-and-go pattern (circuit) profiles

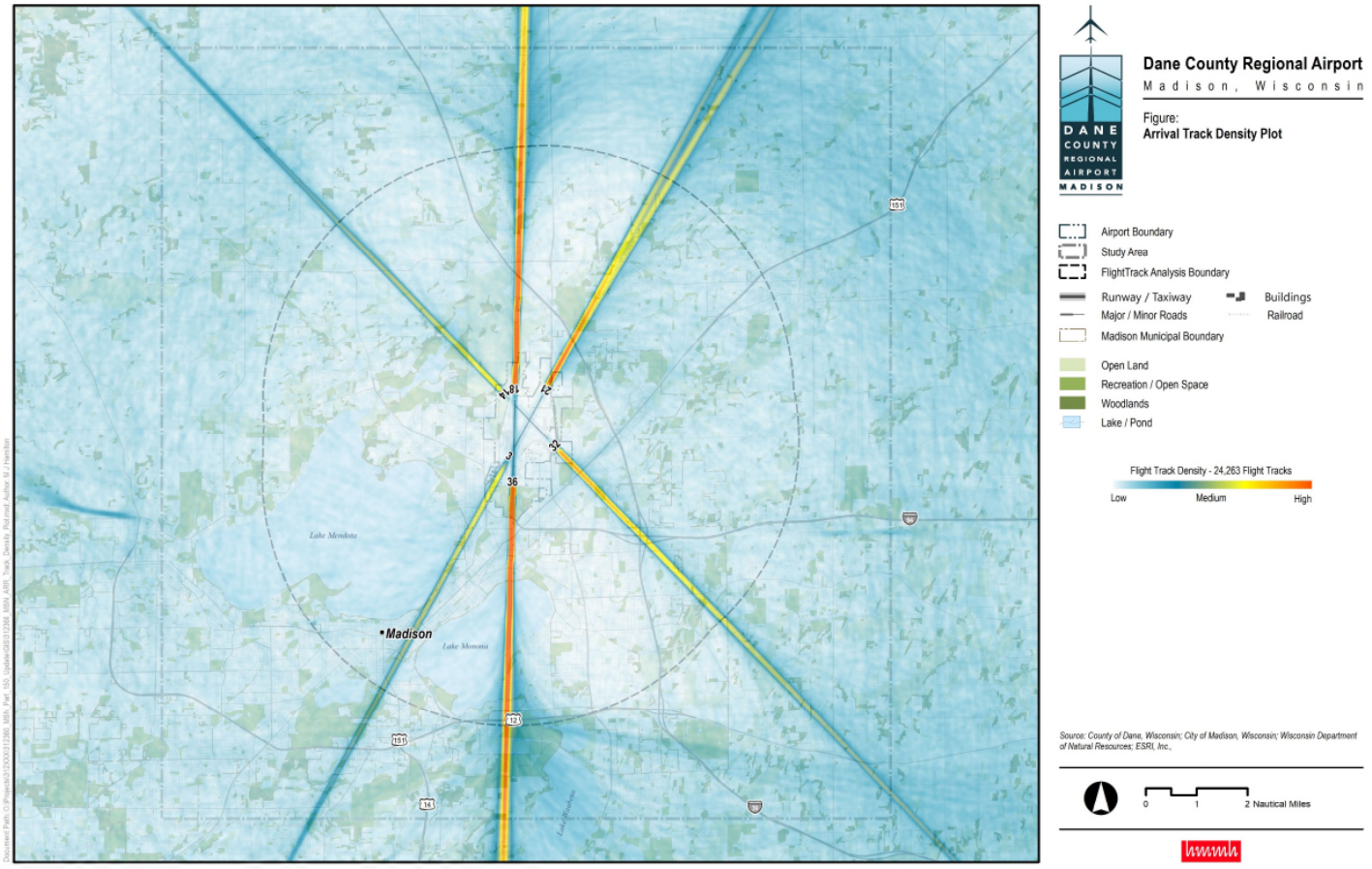
Development of AEDT Modeled Flight Tracks

- Model flight tracks have been developed for arrivals, departures and circuits
- "Backbone" tracks were developed for major origin/destination directions (198)
- Sub-tracks are developed to address flight track dispersion of the predominant paths (526)

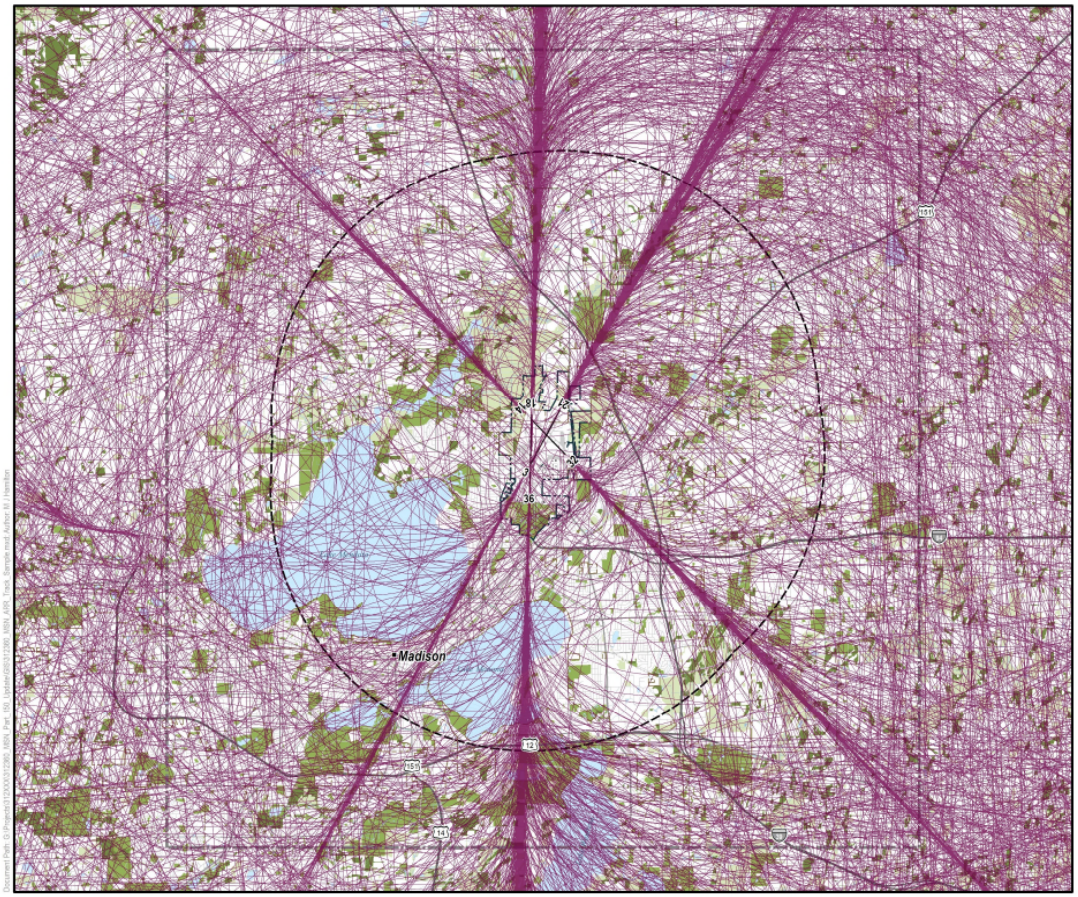
Subsequent slides illustrate the results of the development of model tracks

Runway	Arrival Tracks		Departure Tracks		Circuit Tracks	
	Back-bone	Sub-tracks	Back-bone	Sub-tracks	Back-bone	Sub-tracks
03	13	26	14	30	2	4
21	19	50	21	68	1	2
18	13	38	20	56	2	4
36	15	48	14	42	2	2
14	13	26	9	24	2	4
32	14	38	22	60	2	4
H1	1	0	1	0	0	0
Total	87	226	100	280	11	20

Arrival Track Density



Arrival Tracks Sample



Dane County Regional Airport
Madison, Wisconsin

Figure:
Arrival Track Density Plot

Arrival Track Sample

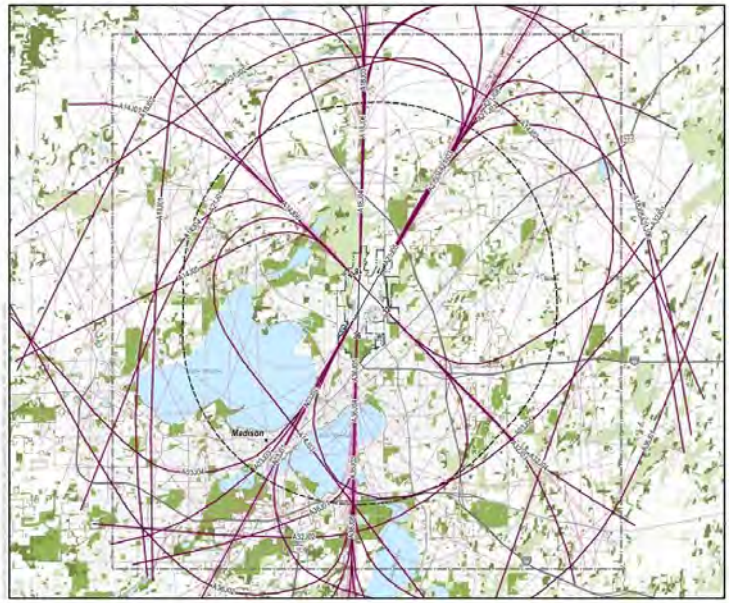
Airport Boundary
Study Area
FlightTrack Analysis Boundary
Runway / Taxiway
Major / Minor Roads
Madison Municipal Boundary
Buildings
Railroad

Open Land
Recreation / Open Space
Woodlands
Lake / Pond

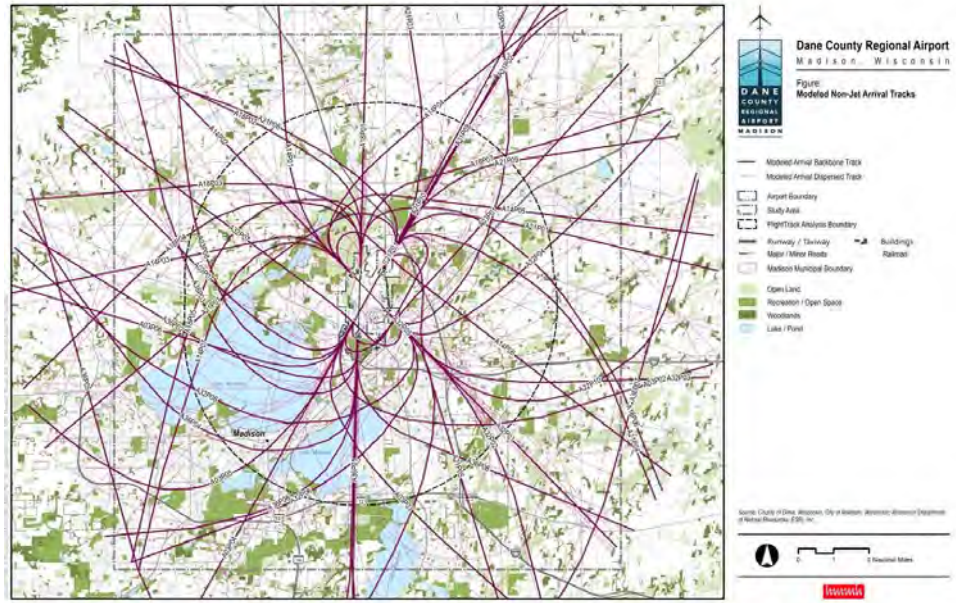
Source: County of Dane, Wisconsin; City of Madison, Wisconsin; Wisconsin Department of Natural Resources; ESRI, Inc.,

0 1 2 Nautical Miles

Model Arrival Tracks: Jets & Non-Jets

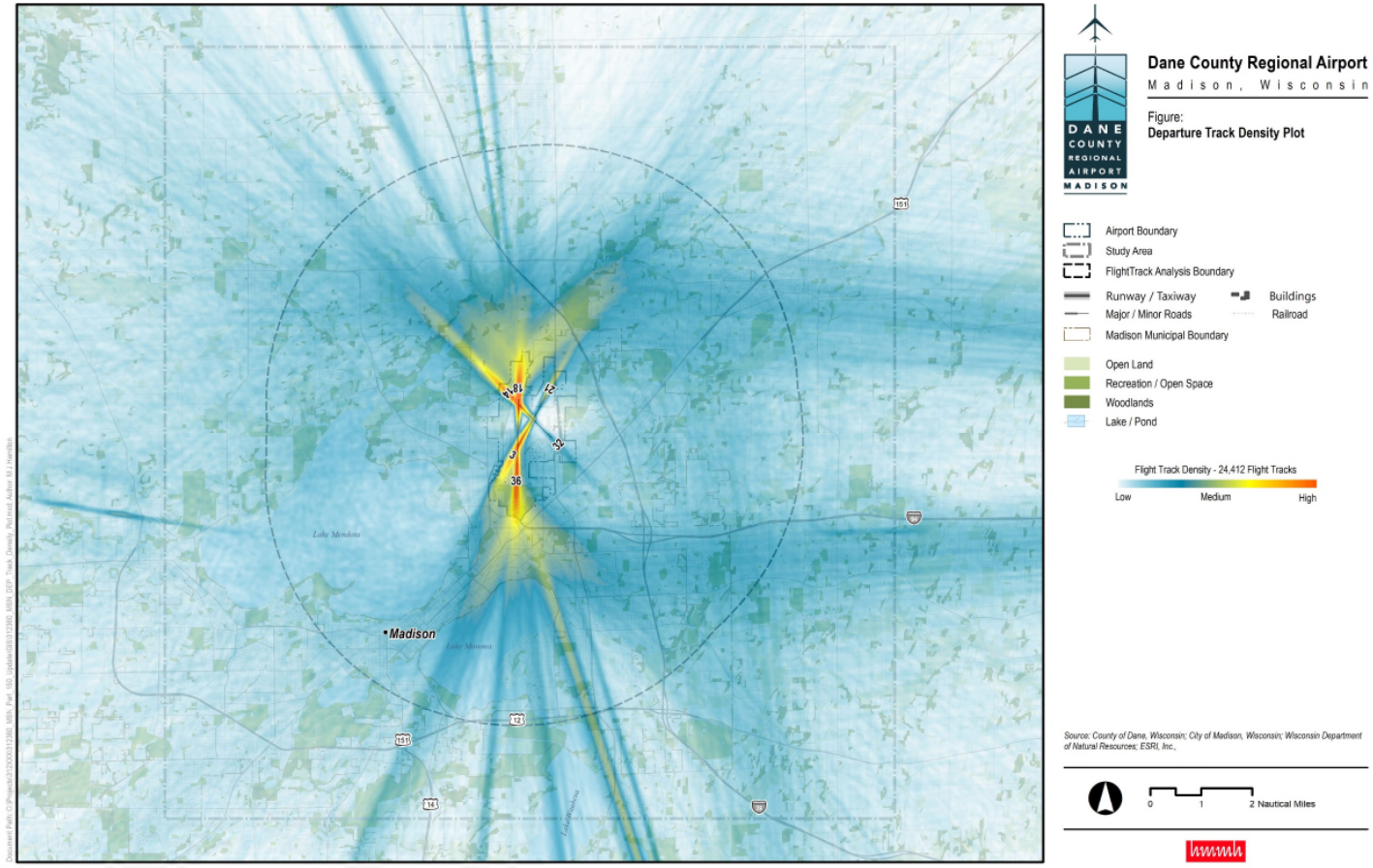


Model Jet Tracks

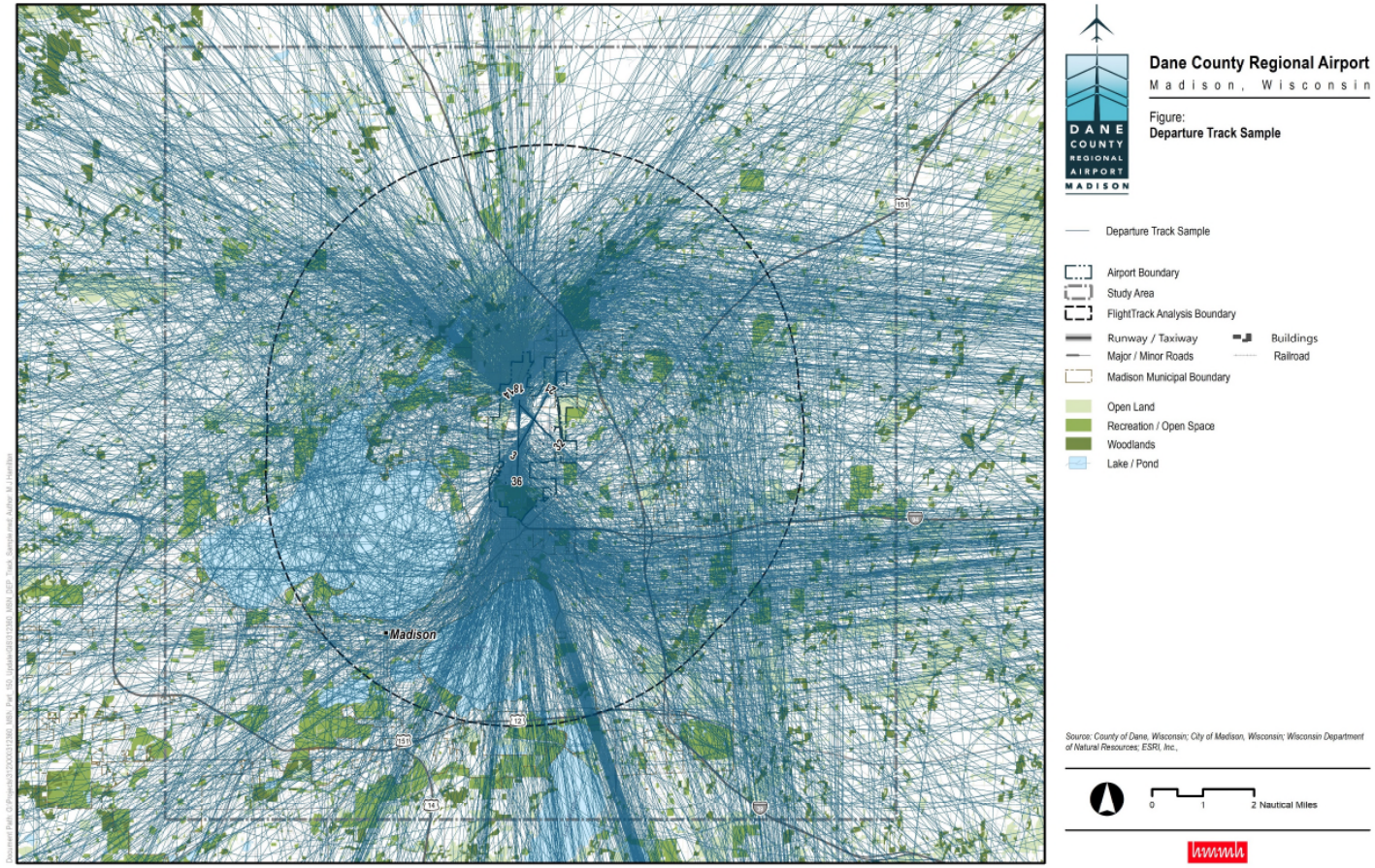


Model Non-Jet Tracks

Departure Track Density

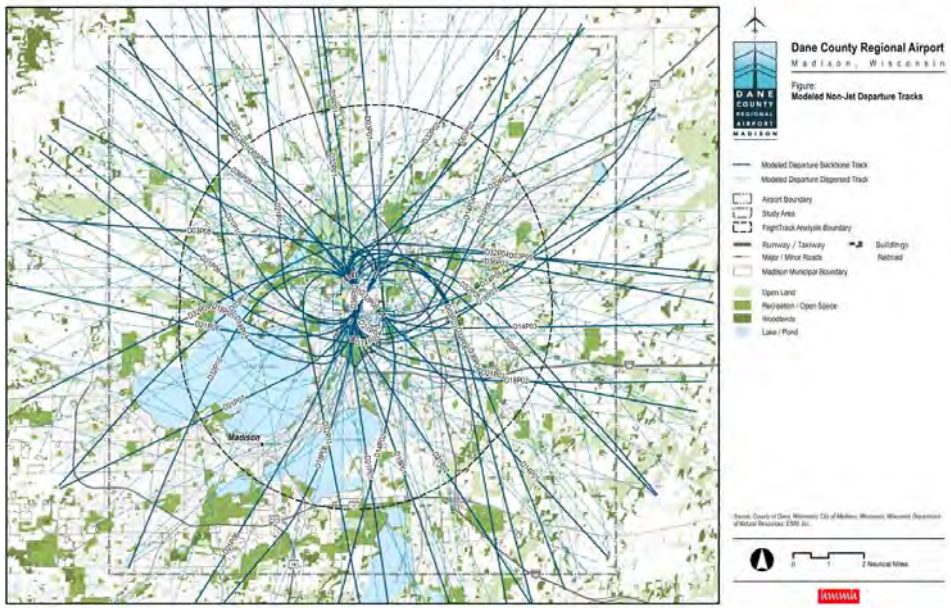


Departure Tracks Sample



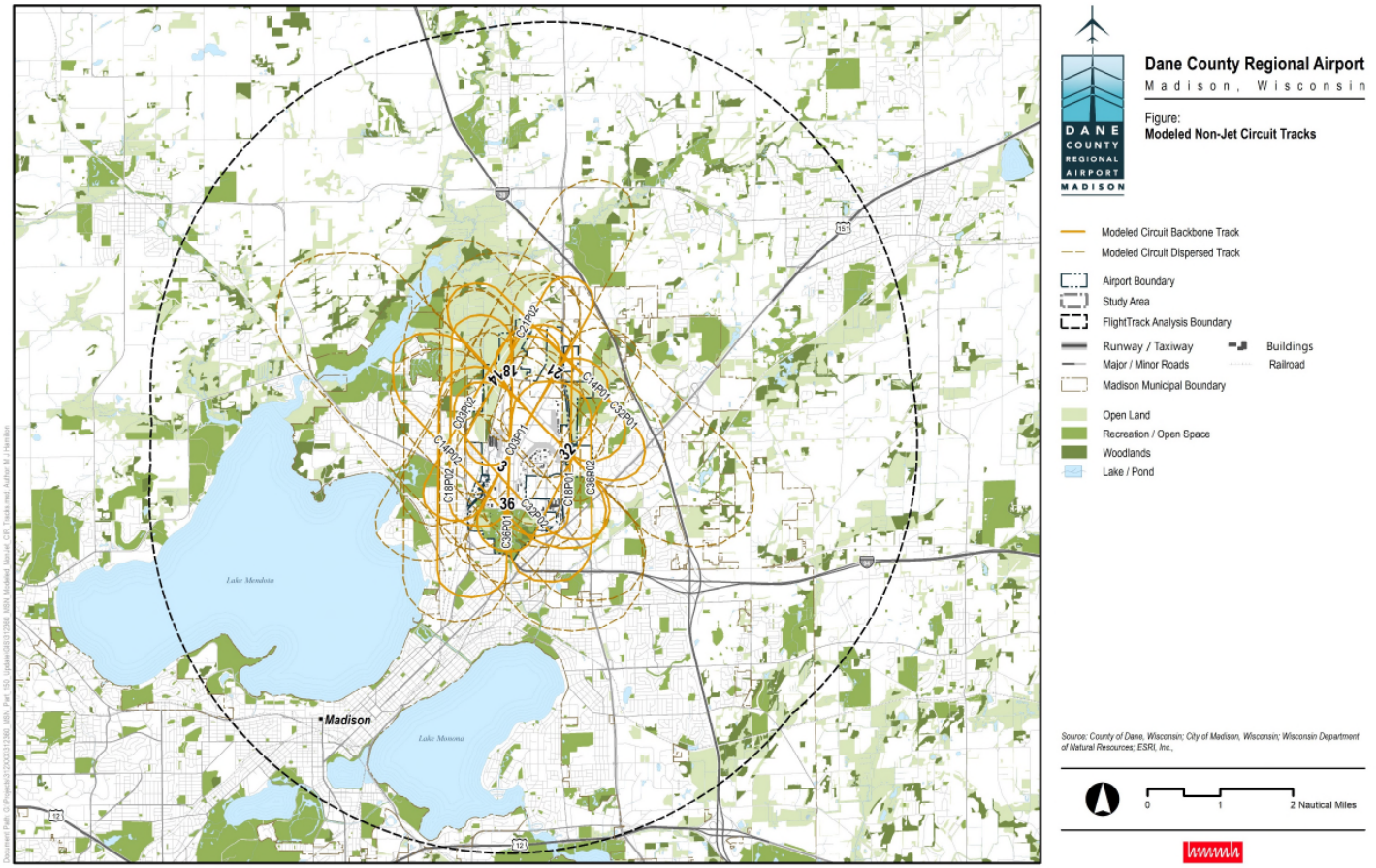
Model Departure Tracks: Jets & Non-Jets

Model Jet Tracks



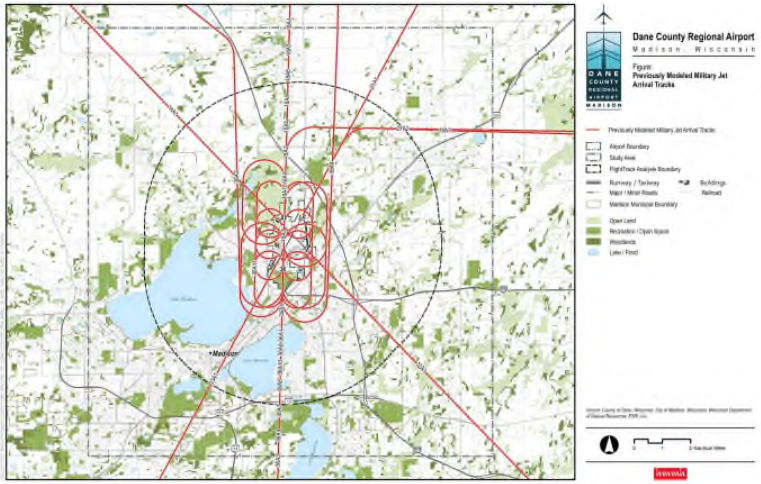
Model Non-Jet Tracks

Non-Jet Circuit Tracks

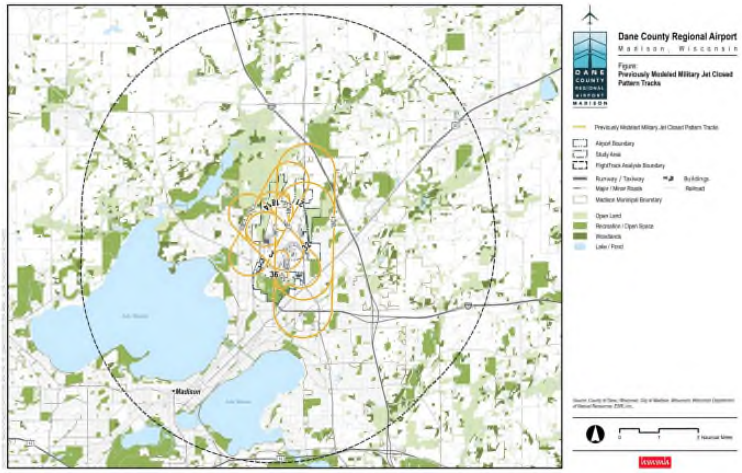


Model Tracks: NoiseMap Inputs

Military Jet Departures

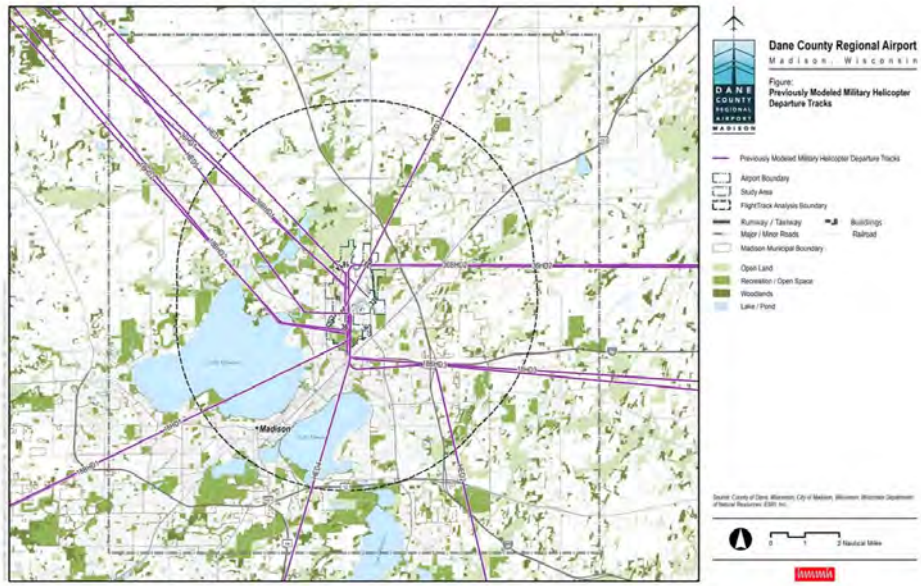


Military Jet Arrivals

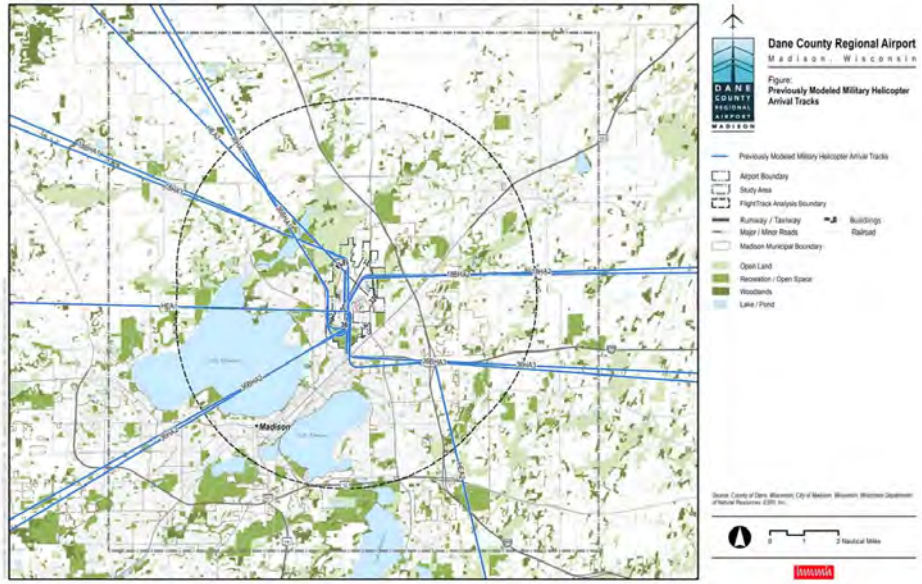


Military Jet Circuits

Model Tracks: NoiseMap Inputs



Military Helicopter Departures



Military Helicopter Arrivals

30

ER0

Operations: Annual Aircraft Inputs

Year	Air Carrier	Air Taxi	General Aviation	Military	Total
2022	20,306	7,395	47,735	6,047	81,483
2027	35,714	6,757	48,852	7,470	98,793

Note: Totals may not match exactly due to rounding.

Runway Use: AEDT Inputs

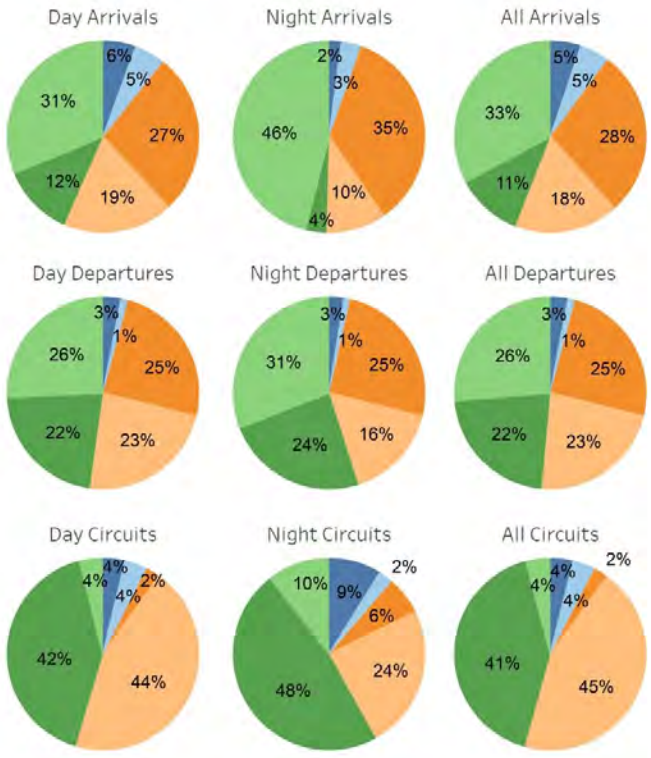
Runway Usage is separated by:

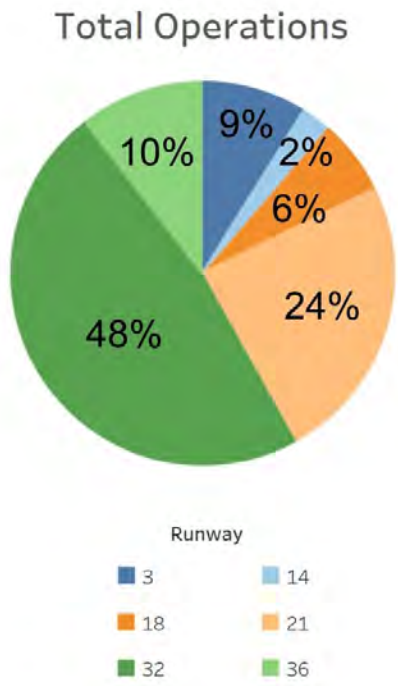
- Runway End
- Type of Operation
- Time of Day

Pie Charts give a reference point to other runways in comparison.

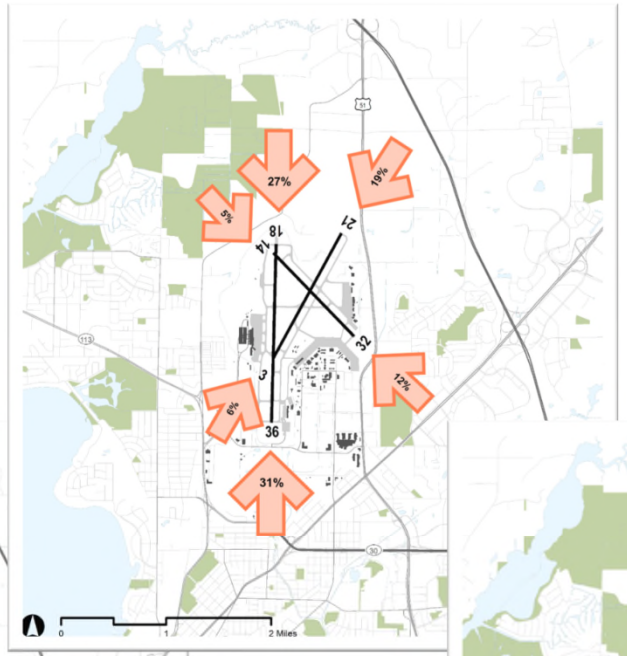
Developed from 2021 FAA NOP Data and SWIM data:

- NOP: National Offload Program
- SWIM: System Wide Information Management System

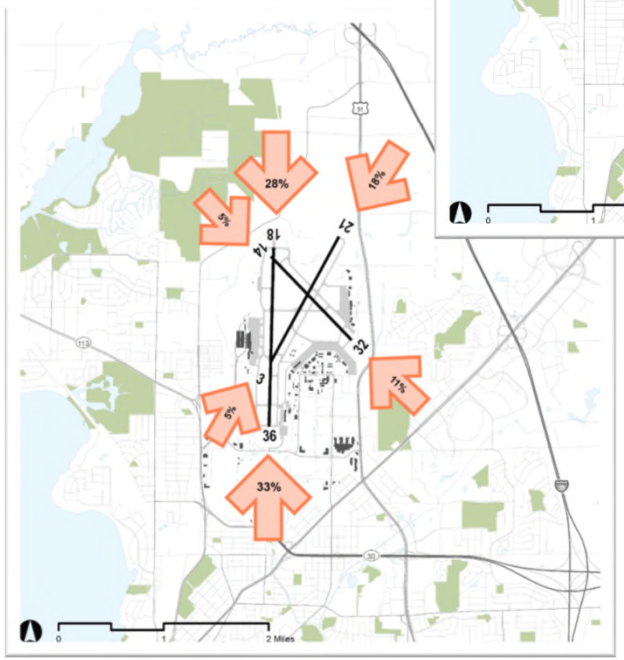




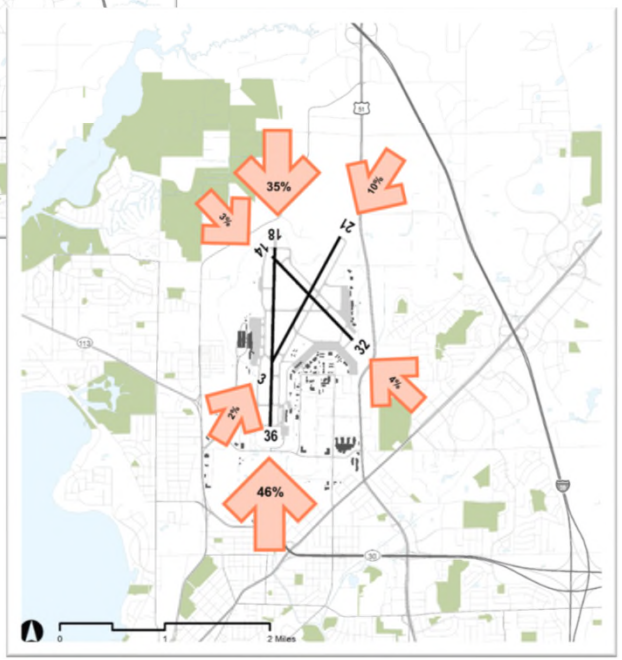
Arrival Runway Use



Day Arrivals

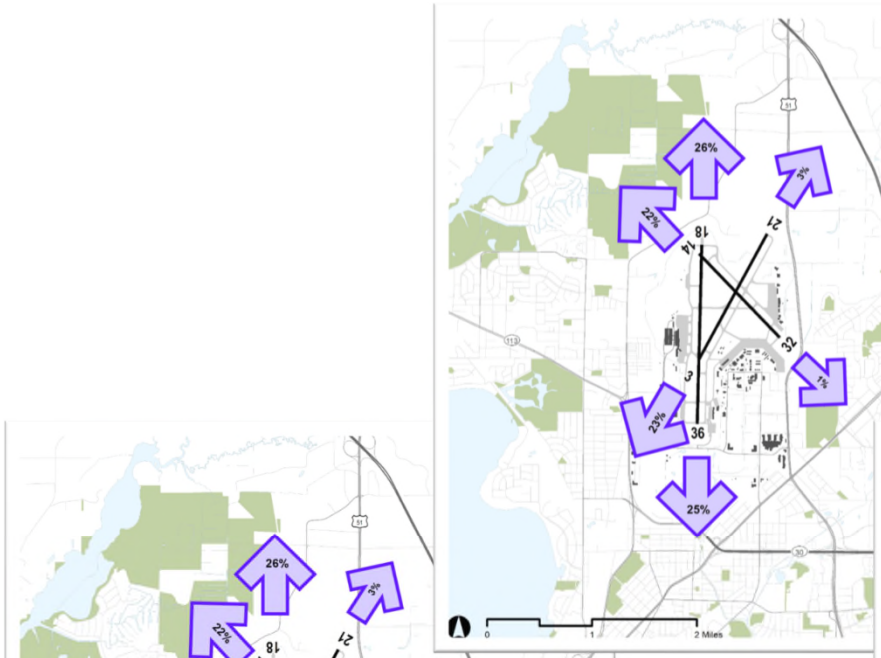


All Arrivals

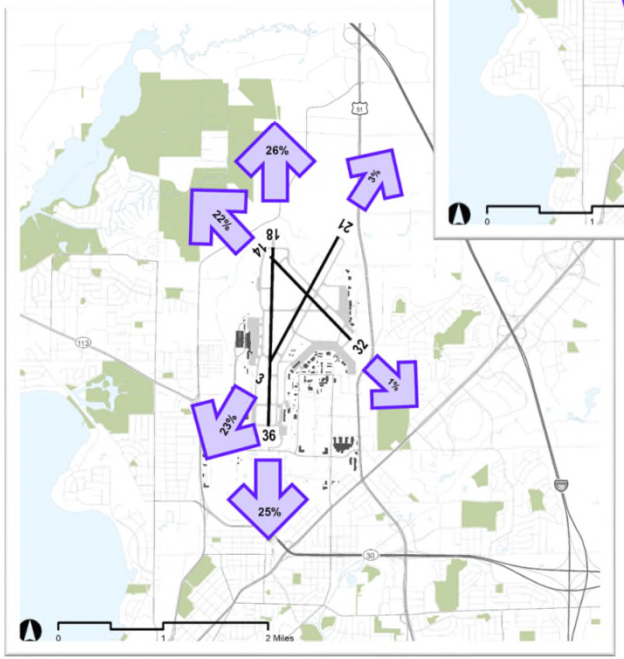


Night Arrivals

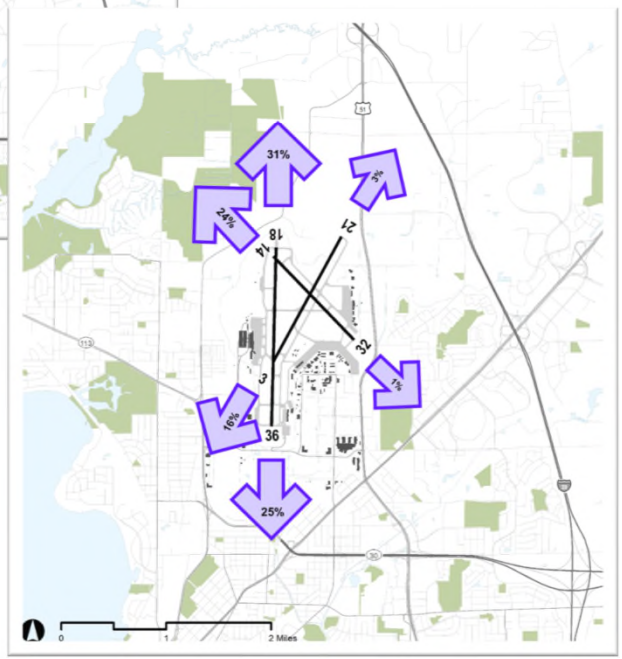
Departure Runway Use



Day Departures



All Departures



Night Departures

NEM Public Workshop #2

- Presentation of draft NEM document
- Request and receive public comments on the draft NEM document

Proposed Schedule: Technical Advisory Committee

Meeting / Activity	Anticipated Purpose	Anticipated Time Frame
4th Technical Advisory Committee Meeting	Review of the existing Noise Compatibility Program (NCP) and discussion of Potential changes to the Noise Compatibility Program	1st Quarter 2023
5th Technical Advisory Committee Meeting	Evaluation results of the proposed Noise Compatibility Program measures	2nd Quarter 2023
6th Technical Advisory Committee Meeting	Presentation of the draft Noise Compatibility Program Update	3rd Quarter 2023
NCP Public Comment Period, 3rd Public Open House, and NCP hearing	NCP thirty-day public comment period and third Public Open House and NCP Hearing.	4th 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.	1st Quarter 2024

Note: Schedule is subject to change

Proposed Schedule: Public Outreach and Submittals

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.	Completed: January 20, 2022
1st Public Open House	Introduction to Part 150, set expectations, discuss stakeholder roles, identify issues of concern	Completed: April 26, 2022
NEM Public Comment Period, 2nd Public Open House	NEM thirty-day public comment period and second Public Open House	Upcoming: 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.	December 2022
NCP Public Comment Period, 3rd Public Open House and NCP Hearing	NCP thirty-day public comment period and third Public Open House and NCP Hearing.	4th 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.	1st Quarter 2024

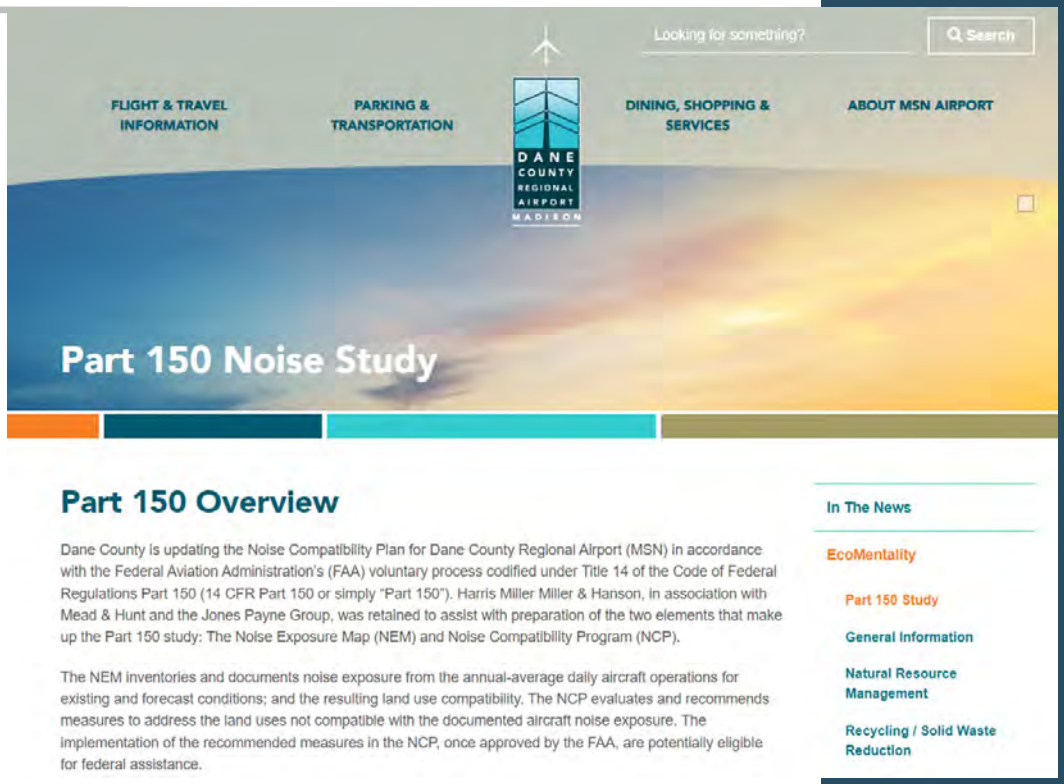
Note: Schedule is subject to change

Wrap-Up and Discussion

- TAC questions, comments, and discussion
- Next Public Meeting: November 15, 2022
  - Can we set?
- Set TAC meeting #4?
  - Proposed date and time in February or March
- Public Comments

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 339.234.2816
- Michael Kirchner – MSN Engineering Director, Contact: kirchner@msnairport.com 608.279.0449



Implementation/Compliance Status of Current NCP Measures

NA-1: Continue the existing runway system

Superseded by NA-7 which includes Runway 03-21

See NA-7 for more details

- Arrivals to Runway 14 or 18 and Departures to Runway 32 or 36
- Only for aircraft >12,500 lbs

Implementation Status:
N/A

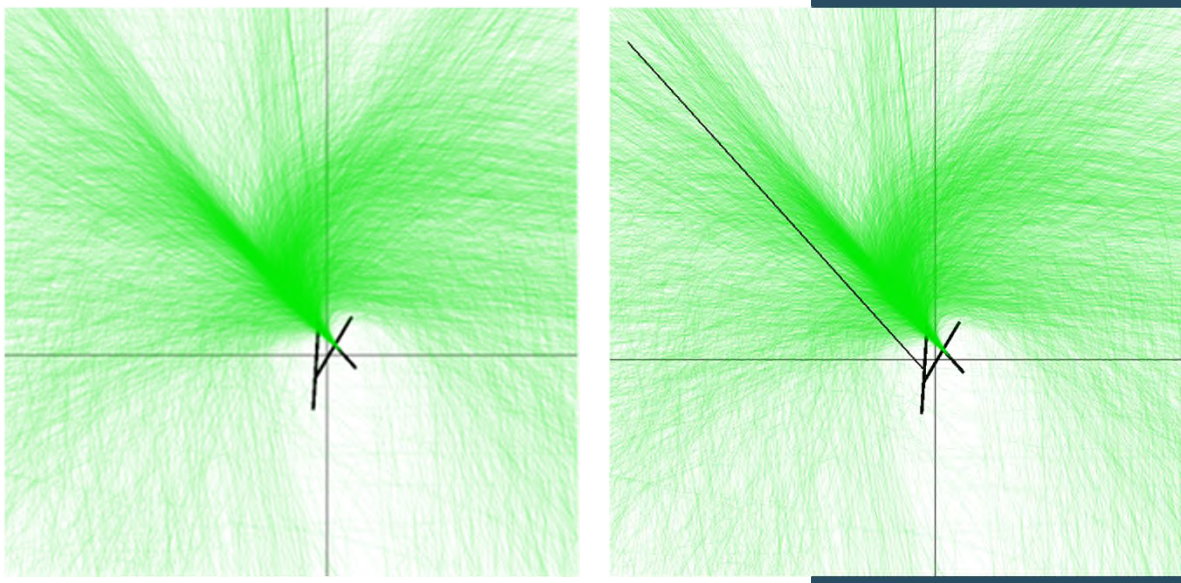
Compliance:
N/A

NA-2: Departures on Runway 31 to pass through 2,500 ft MSL before turning left

- Departures from Runway 32 in 2021 were analyzed using a gate
- Of tracks turning left, 54% were at or above 2,500 ft MSL when passing through the gate

Implementation Status:
Not Implemented

Compliance:
N/A



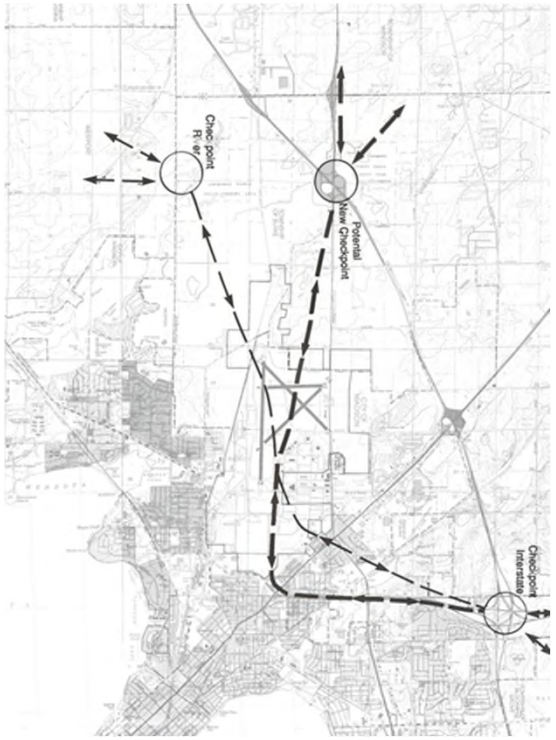
Departure Flight Tracks on Runway 32 with (right) and without (left) the Analysis Gate
Source: HMMH

NA-3: Establish Visual Approach Corridors for Helicopters

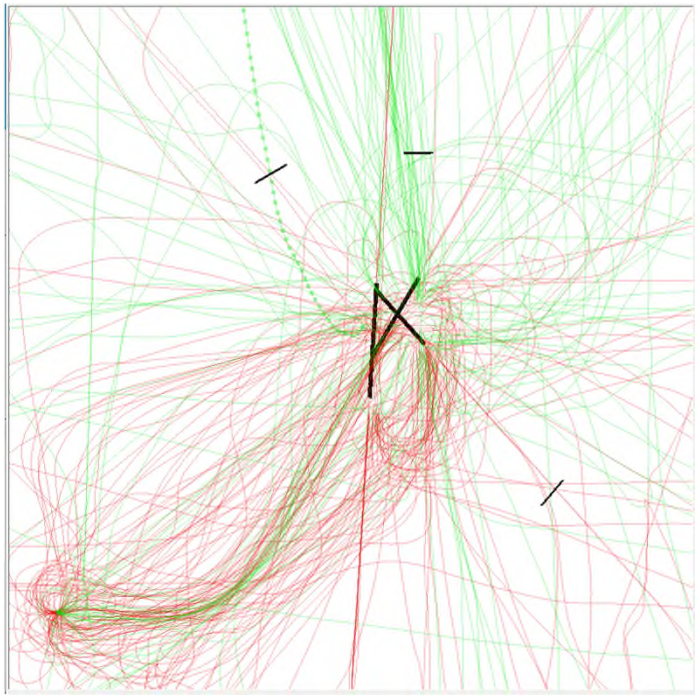
- Three corridors were gated for compliance in helicopter operations
- Compliance is below 5% of helicopter operations

Implementation Status:
Not Implemented

Compliance:
N/A



1991 NA-3 Diagram of Suggested Helicopter Corridors
Source: MSN Part 150 Noise Compatibility Program Summary, February 1991



Helicopter Operations, with Gates corresponding to NA-3 Checkpoints
Source: HMMH, 2022

NA-4: Encourage operators of jet aircraft to follow noise abatement procedures.

- MSN has implemented signage around the airport/runways
- Used whenever possible

Implementation Status:
Implemented

Compliance:
Compliant with signage

NA-5: Air National Guard to construct F-16 hush house for maintenance runups

- Hush House was constructed specifically for F-16 aircraft
- Set to be phased out with the conversion of F-16 aircraft to F-35A
- Upon phaseout of F-16 aircraft, this measure will no longer be applicable

Implementation Status:
Implemented

Compliance:
Compliant

NA-6: Build new 6,500 ft Runway 3-21

- Runway was constructed as planned

Implementation Status:
Implemented

Compliance:
Runway built, but relatively low use of Runway 3-21 (see next slide) for noise purposes except by the ANG

NA-7: Adopt new runway use system

- Prefers Runways 3, 32, 36 for departures and Runways 14, 18, 21 for arrivals
- Among aircraft > 12,500 lbs, compliant runway usage is about 50%

Implementation Status:
Not Implemented

Compliance:
N/A

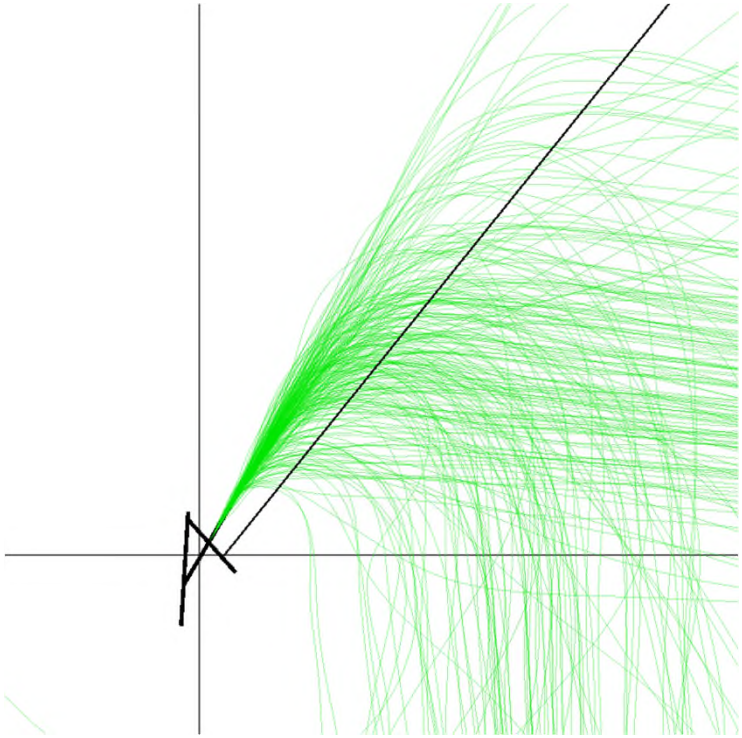
Runway	Number of Departures	Departure Percentage	Number of Arrivals	Arrival Percentage
3	363	2%	450	3%
14	52	0%	346	2%
18	5,570	35%	5,791	37%
21	2,182	14%	1,658	11%
32	1,913	12%	517	3%
36	5,738	36%	6,897	44%
Total	15,818	100%	15,659	100%

NA-8: Require east and southbound aircraft >12,500 lbs. to pass 2,500 ft. MSL before turning right off Runway 3

- Analyzed Runway 3 departures for aircraft above 12,500 lbs which turned right
- Gate returned elevation of flights as they turned right
- 88% of flights that turned right did so after 2,500 ft MSL

Implementation Status:
Implemented

Compliance:
88% Compliant



Departures above 12,500 lbs. turning right on Runway 3
Source: HMMH

NA-9: Require all aircraft >12,500 lbs. departing runway 21 to turn left 10 degrees

- Intended to avoid noise exposure to neighborhoods southwest of the airport
- Departures off of Runway 21 showed no 10-degree turns

Implementation Status:
Not Implemented

Compliance:
N/A

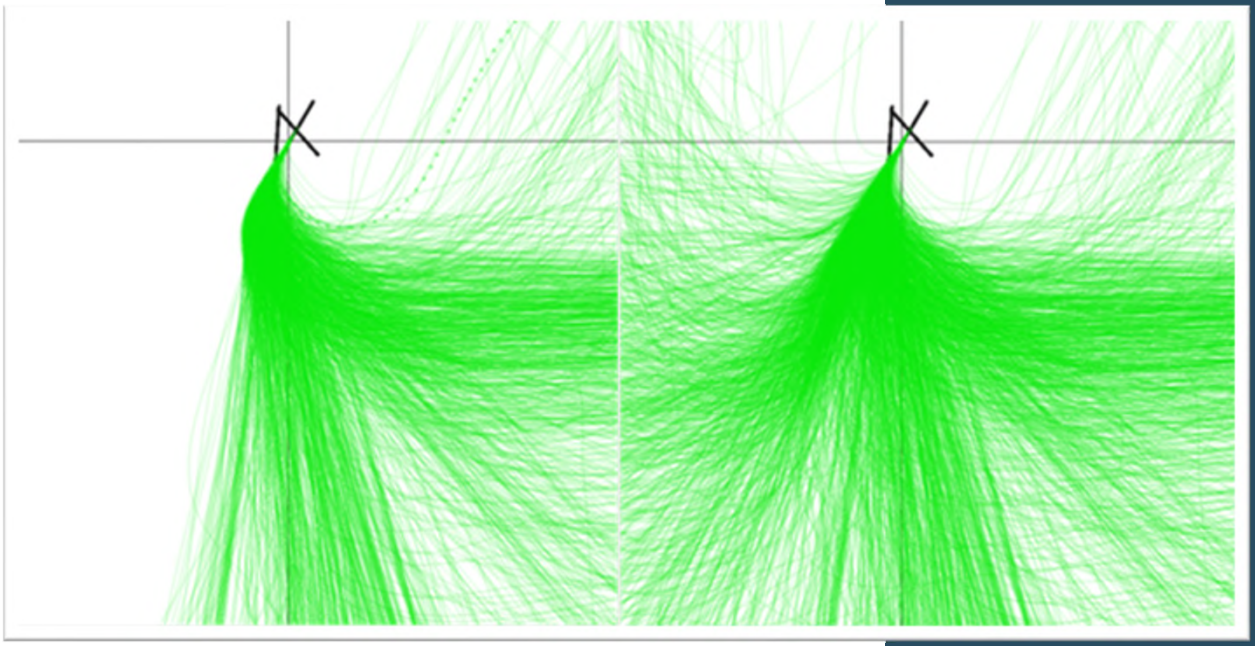
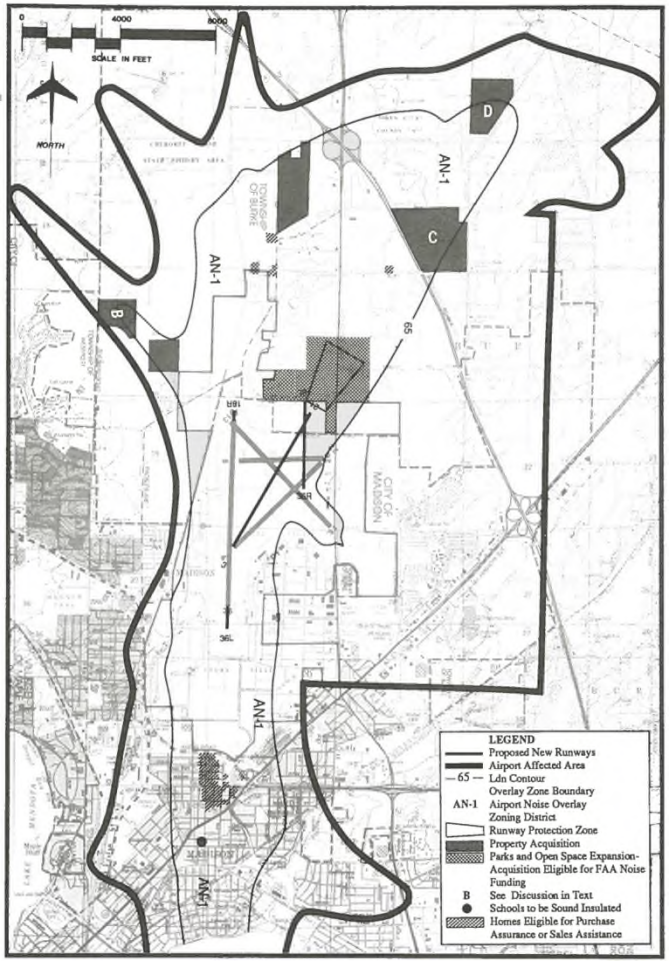


Figure: Departures above 12,500 lbs. on Runway 21
Left: Compliant aircraft which completed the 10-degree turn.
Right: All departures above 12,500 lbs.
Source: HMMH

LU-1: Maintain existing compatible zoning in airport vicinity

Implemented

- Measure implemented through Dane County Ordinance, Chapter 78.
- Best available map of "airport affected area" as defined in the ordinance is shown at right.



Approximate Airport Affected Area as of 1991
Source: 1991 MSN Part 150 Noise Compatibility Study

LU-2: Define "airport affected area" for purposes of implementing Wisconsin Act 136

Implemented

- Measure was implemented through Dane County Ordinance Chapter 78
- Further review will be completed during the Part 150 process

LU-3: Adopt airport noise overlay zoning

Not Implemented

- Measure recommends Dane County and the City of Madison adopt an Airport Noise Overlay Zone
- Zone recommended to encompass projected 1995 65 dB DNL contour
- While there is no specific mention of a Airport Noise Overlay Zone in Chapter 78, the Dane County Ordinance requires any change in land use to be from one compatible use to another

LU-4: Amend subdivision regulations to require dedication of noise and avigation easements

Implemented

- Implemented by Dane County Ordinance, Chapter 75.
- Requires the notification at right to be placed on the plat or survey map for any approved subdivision within the airport affected area

"Lands covered by this [plat/certified study map] are located within an area subject to heightened noise levels emanating from the operation of aircraft and equipment from a nearby airport".

LU-5: Consider amending County Subdivision regulations

Not Implemented

- LU-5 recommends amending zoning regulations to prevent the subdivision of land zoned A-1 (agriculture)
- Goal of the amendment would be to protect farmland, manage growth of urban areas, and ensure land use compatibility
- No such regulation was found within county ordinances

LU-6: Amend building codes to provide soundproofing standards

Not Implemented

- Measure LU-6 assumed establishment of an Airport Noise Overlay Zone, which did not occur
- Recommends including soundproofing standards for new developments in the overlay zone

LU-7: Amend local land use plans to reflect noise compatibility plan recommendations

Implemented

- Measure would additionally establish airport compatibility criteria for project review
- Ongoing support for the airport's promotion of compatible land uses is noted in the Dane County Use Plan
- Dane County Use Plan specifically notes the participation of local municipalities

LU-8: Follow through with planned land acquisition in Cherokee Marsh and Token Creek Park areas

Not Implemented

- Measure notes planned acquisition of land to the north of the airport
- Exhibit 5f of the NCP highlights the proposed acquisition areas
- 3 of the listed areas were eligible for purchase with FAA-funding at the time of the NCP, due to their existence within the 65 dB DNL contour
- Further review will be completed during the Part 150 process – detailed acquisition history will be confirmed by the airport

LU-9: Consider expanding land acquisition boundaries

Not Implemented

- LU-9 is a continuation of measure LU-8, recommending the expansion of the planned land acquisition to the north of the Airport
- More investigation is needed to determine implementation status of this measure
- Land acquisition is noted on the airport website but detailed acquisition history should be confirmed with the airport - Further review will be completed during the Part 150 process

LU-10: Establish sales assistance or purchase assurance program for homes above 70 Ldn

Implemented

- Goal is to provide financial assistance to homeowners wishing to move from the most heavily noise impacted areas
- LU-10 recommends a sales assistance program for single family homes within the 70 dB DNL contour
- Recommended areas shown on NCP Exhibit 5G
- Programs are voluntary and an avigation easement would be conveyed in exchange for Airport's assistance in selling the properties
- Home Sales Assistance program was instituted per the Airport's website

Of 300 eligible parcels, 185 chose avigation easement, while 13 chose sales assistance. 102 parcels did not participate.

LU-11: Install sound insulation for schools impacted by noise above 65 Ldn

Not Implemented

- Measure pinpoints two schools within the contour: Lowell School and Holy Cross School.
- $500,000 and $300,000 was estimated at the time of the NCP to treat Lowell School and Holy Cross School, respectively
- Measure has not been implemented - will be reassessed during the NCP process

PM-1: Program Monitoring and Contour Updating

Implemented

- Airport management maintains continued contact with the City of Madison, Dane County, and the FAA Air Traffic Control Tower
- Noise abatement procedures continue to be an item of importance to all parties
- This Part 150 update results in updated contours

PM-2: Evaluation and Update of the plan

Implemented

- Airport has periodically reviewed the NCP since 1991
- Part 150 Update was initiated due to the 115th Fighter Wing transitioning to model F-35A
- Dane County is currently in the process of updating the MSN Noise Compatibility Planning Study

PM-3: Noise Complaint Response

Implemented

- Airport management has implemented an online noise report form
- Airport determines patterns based on complaints and follows up as appropriate
- Dane County Website includes links to:
  - A "Noise FAQ" page providing answers to common questions
  - A "Noise Report Form" page for submitting noise complaints, questions, or comments

HMMH
700 District Avenue, Suite 800
Burlington, MA 01803
781.229.0707

MEMORANDUM

Subject: Dane County Regional Airport
Part 150 Study
Technical Advisory Committee (TAC) Meeting 3 Summary

Meeting Date: Tuesday October 18, 2022

Reference: HMMH Project Number 312360

TAC Member Attendance:

Organization	TAC Member	Attendance
MSN staff	Michael Kirchner	Yes
WBOA staff	Matt Messina	Yes
WBOA staff	Kelly Halada	Yes
WBOA staff	Mallory Palmer	No
Federal Aviation Administration (FAA) Airport District Office (ADO)	Bobb Beauchamp	Yes, virtually
FAA Air Traffic Control Tower (ATCT)	John Vagedes	No
Wisconsin Air National Guard; 115th Fighter Wing Representative	Lt Col Dan Statz	Yes
Wisconsin Air National Guard; 115th Fighter Wing Representative	Lt Col Ben Gerds	Yes
Army Guard	Major Lucas Sivertson	Yes, virtually
Delta Airlines	Update name	No
Wisconsin Aviation	Brian Olson	No
City of Madison Planning Division	Dan McAuliffe	Yes
Dane County Department of Planning and Development	Todd Violante	Yes

Study Team Members Attendance:

Organization	TAC Member	Attendance
MSN staff	Michael Riechers	Yes
MSN staff	Tomasz Pajor	Yes
MSN staff	Lowell Wright	Yes
MSN staff	Chad Rasmussen	Yes
Jones Payne Group	Diane Carter	Yes
Jones Payne Group	Brianna Whiteman	Yes
HMMH	Tim Middleton	Yes

Organization	TAC Member	Attendance
HMMH	Eugene Reindel	Yes
HMMH	Julia Nagy	Yes
HMMH	Robinette Robinette	Yes, virtually
Mead & Hunt	Chris Reis	Yes
Mead & Hunt	Ryan Hayes	No
Mead & Hunt	Kate Andrus	Yes, virtually
Mead & Hunt	Greg Stern	No
Mead & Hunt	Levy Ney	Yes, virtually

Meeting summary notes:

Gene Reindel (HMMH) provided opening remarks, after which the TAC and study team members introduced themselves. The purpose of the meeting is to present the Aviation Environmental Design Tool (AEDT) and NoiseMap (NMAP) inputs to the TAC.

Reindel continued the presentation by reviewing the overall Part 150 study process and the roles & responsibilities of the airport, the TAC members, the consultant team, and other stakeholders. He introduced that the next public meeting will be in November. He provided a summary of the Part 150 study process. He reviewed the Noise Exposure Map (NEM) requirements and FAA acceptance. The airport plans to submit the NEM in December 2022.

Reindel covered Part 150 requirements details related to inventory and review of existing land use. The land use base map was shown and described. The land uses are categorized and will be provided to the TAC members for review. The study team completed a windshield survey to confirm land uses.

There was a question about the land use. In the prior *United States Air Force F-35A Operational Beddown - Air National Guard Environmental Impact Statement* (USAF F-35 EIS) process, there were some land use changes that weren't accounted for.

Reindel confirmed that the study team drove the study area to confirm the land use in the study area and made some changes to the database based on that survey.

Reindel provided an overview of the Noise Compatibility Program (NCP) review process and the study team's determination of how the measures have been implemented and whether they are being followed. He provided an overview of the noise abatement measures and implementation status, then moved to land use measures, and finally program management measures.

There was a question about the land use and when to provide comments and input.

Reindel explained the inventory process and that the TAC can comment on the existing land use data if there are any suggestions for the map. He then explained the process for reviewing the land use measures in the NCP phase of the study.

Tim Middleton presented on noise model inputs for both AEDT and NMAP. The two models are used to generate the noise contours. Middleton provided an overview of each category of inputs required for the models. He included a description of how terrain influences the contours. Data validation is required for operational inputs, which we have introduced and discussed at prior meetings. All civilian aircraft are modeled in AEDT. The military inputs differ from civilian inputs due to the need to develop flight tracks for military. Civilian flight tracks are based on radar data. The miliary modeling team has coordinated with the military to obtain accurate data for the known missions, flight tracks, and day-night split, etc.

Col. Statz shared that he has worked with the modeling team to capture small differences between USAF F-35 EIS data and the expected operations in Madison. The study team has refined the inputs based on updated information that exist since the USAF F-35 EIS process.

There was a question about flight paths and how those are modeled for the military. Brandon Robinette noted that Noisemap does not have the capability to model dispersion of flight tracks. The modeled flight tracks in Noisemap are intended to represent the average or mean flight path.

Middleton reviewed the physical and operational inputs. He provided an overview of the various categories of aircraft type. AEDT types accurately reflect the fleet in terms of airframe and engine combinations. Stage lengths apply different noise performance characteristics to the model inpuits and are a surrogate for aircraft weight. These are intended to represent long haul vs. shorter haul flights. These inputs refine the model to predict the noise most accurately. Middleton reviewed military operational inputs such as runups. No runups were modeled related to civilian aircraft.

Middleton reviewed the noise modeling base year and the nuances between the existing and forecast conditions. He provided a brief overview of the FAA Terminal Area Forecast (TAF) and how the future year fleet mix is scaled based on the TAF. Known fleet changes were captured based on the knowledge of the study team, such as aircraft retirements, etc. There are no expected changes to flight tracks or runway use for both 2022 and 2027.

Middleton covered the three types of operations an aircraft can fly in AEDT: arrival, departure, touch and go or circuit. Circuits are typically training types of flights.

Middleton covered the development of the AEDT modeled flight tracks. He explained backbones and subtracks. Backbones are developed for major origin/ destination directions and sub-track are used to show dispersion of the major paths (backbones). The ~700 tracks are representative of an annual average day at the airport. He then transitioned to discuss arrival tracks and showed the heat map figure.

Reindel explained that the heat map shows flight track density for an entire year of flight tracks.

There were questions about the boundary shown on the figures and why the flight tracks appear to also follow that 30,000 ft. boundary in terms of turning points.

Reindel: The boundary represents 30,000 ft from the runway ends, as a result of FAA requirements.

Middleton presented the sample of arrival tracks that shows the dispersion. He explained the model arrival tracks and the differences between jets and non-jets. He then moved onto departures and showed the flight track density. He then moved onto the departure track sample. Middleton moved onto explain circuit tracks and explained how those flight tracks operate. Solid lines are backbones and dotted are subtracks. Middleton moved onto military flight tracks discussion.

Robinette explained that the primary characteristic difference for arrivals under VFR conditions is an overhead approach arrival. This is a common procedure for the military.

Middleton continued onto the military helicopter flight tracks. Flight procedures developed with noise abatement in mind. Helicopter departure and arrival tracks are very similar.

Middleton continued with the overview of annual aircraft operations. The categories follow the categories in the TAF. The totals for 2022 and 2027 include the military operations. The TAF does not include detailed military fleet mix. It uses an average number based on prior year flights and is the same number in every year of the TAF. The military operations modeled for this NEM reflect input from conversations with the military at MSN.

Col. Statz requested to review the military operations data.

Robinette added that the Army Guard, 115th FW, and transient military are all included in the operations. He will be sending a data validation package.

Middleton explained the runway use related to AEDT inputs and the charts that show the various percentages of runway use for each runway for various types of operations. Runway use depends on weather and wind. Runway use is representative of an entire year.

Maj. Sivertson noted that military helicopter tracks should be clear.

There was a comment related to noise sensitive sites that a new hospital is expected northeast of the airport.

There was a question about the increase in non-compatible housing, who is affected, and whether the change is primarily due to the F-35. Middleton and Reindel explain that the change between the 2022 and 2027 contours accounts for the change in non-compatible land uses. The changes are predominantly due to the miliary aircraft however the increase in civil operations to the south also account for some of the change in the contours along the runway centerline.

Middleton explained that land use is controlled by local jurisdictions. According to Part 150 any land use outside of the 65 DNL is compatible.

There was a discussion about obligations for developers to disclose information related to aircraft noise. These requirements are up to the local jurisdictions. The City of Madison cannot provide requirements based on current law. A potential option for the NCP is an airport overlay that shows 65 DNL contours. The City of Madison expects more growth to the south. There was a discussion about the F-16 flight tracks in the 2022 input data. The military plans to review input data.

Middleton: Due to weighting in the DNL metric nighttime operations have a greater effect on the contours than daytime operations.

There was discussion about the opportunity for the TAC to review inputs in the NEM document and publication schedule. HMMH will coordinate with MSN on the document publication schedule, with the goal to publish the document for public comment in November.

There was discussion about the public workshop timing and date. The time was determined to be 5:30-7:30 PM. The City of Madison budget deliberations are 11/15-11/17 with the meetings beginning at 6:30 each night. Discussion ensued about potentially moving the date to 11/14 to accommodate the City of Madison. The City of Madison will check with the mayor's office to determine If there is an issue with the open house date. The Dane County supervisors have been sharing 11/15 as the open house date. A Dane County supervisor required that MSN send out flyers to the constituents in the "hot zone". There was discussion about the room that was used for the prior open house and whether it was large enough. Discussion ensued about the location of the public open house. There may be crowds around the NEM results.

Decision: Confirmation from group to use the ticket counter area for the public open house.

Action item: HMMH to send out the database of public comments to the group.

Action Item: March 7th for the next TAC meeting. Middleton to send out calendar hold. March 14th as back-up date.

Discussion on the NEM ended. Reindel provided an overview of the implementation/ compliance status of current NCP measures. He reviewed slides for NA -1 through NA-5.

Col. Statz: F-35s do not require the use of the hush house. That type of maintenance is not required. The hush house will remain on the airport. It could potentially be used for F-16 transient aircraft.

Reindel: Consider a measure about the run-up policy.

Kirchner: Primary and secondary runways are often closed for construction etc.

Reindel: M&H tasked with further use of the runway and validation. This will be a big focus during the NCP phase.

Col. Statz: It would be interesting to see the military departures. Are takeoffs possible for the military from a different runway? Discussion of F-35 data and military plans to come up with a list of ideas to model. This would occur during the NCP phase.

Brianna Whiteman reviewed the land use measures and described the implementation status and shared some of the details associated with each of them. The airport affected area goes out to the 60 DNL in the current NCP but needs to be reviewed for this NCP update. Whiteman continued through the various land use measures.

Discussion on building codes within the City of Madison. State law dictates that local municipalities cannot require anything beyond state code. State may potentially carve out a niche for defining building codes. Bus Rapid Transit and core growth areas will directly intersect the noise contours in the south. The NEM could change way the City of Madison plans to grow the neighborhoods. There is an interest in soundproofing new developments but it would require change in state law.

Whiteman reviewed LU-7 through LU-10.

Discussion ensued about the housing market and the property value and whether that is considered in the NCP process. Part 150 is different than an EIS; Part 150 is not intended to measure a change. There was a discussion on avigation easements vs. sound insulation. Landlords and tenants need to be considered. Future impacts were discussed and how these programs may change over time.

There was a conversation about elementary schools within the 65 DNL noise contour. Block rounding can be used for insulation funding. It is intended to ensure equity. The NEM includes a complete listing of noise sensitive sites.

Reindel reviewed the program management measures.

Middleton reminded the group that the flow of the NCP review is 1) noise abatement measures to reduce noise over noise-sensitive areas, 2) land use measures to mitigate incompatible land uses not able to be reduced from noise abatement measures, and 3) program management measures.

Wright: Interested in runway usage by aircraft type for commercial aviation. What types are using which runways.

Meeting adjourned.

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Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House

DANE COUNTY REGIONAL AIRPORT MADISON

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

DANE COUNTY REGIONAL AIRPORT MADISON

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

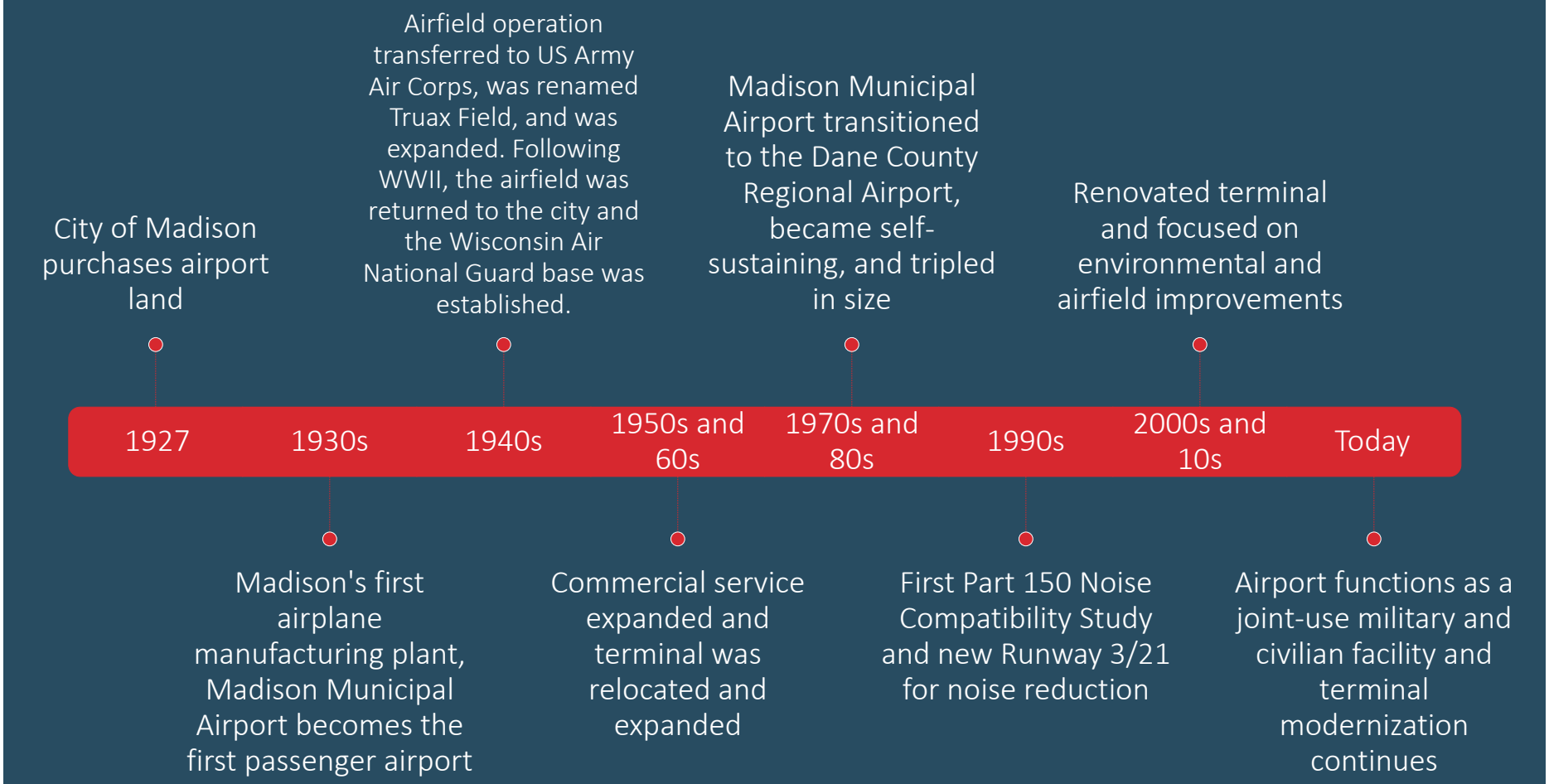
- Review study inputs, assumptions, analyses, documentation, etc.
- Input, advice, and guidance related to NEM and NCP development

Public

- Provide input on study during comment period
- Review public draft documents

DANE COUNTY REGIONAL AIRPORT MADISON

Airport History



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

DANE COUNTY REGIONAL AIRPORT MADISON

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

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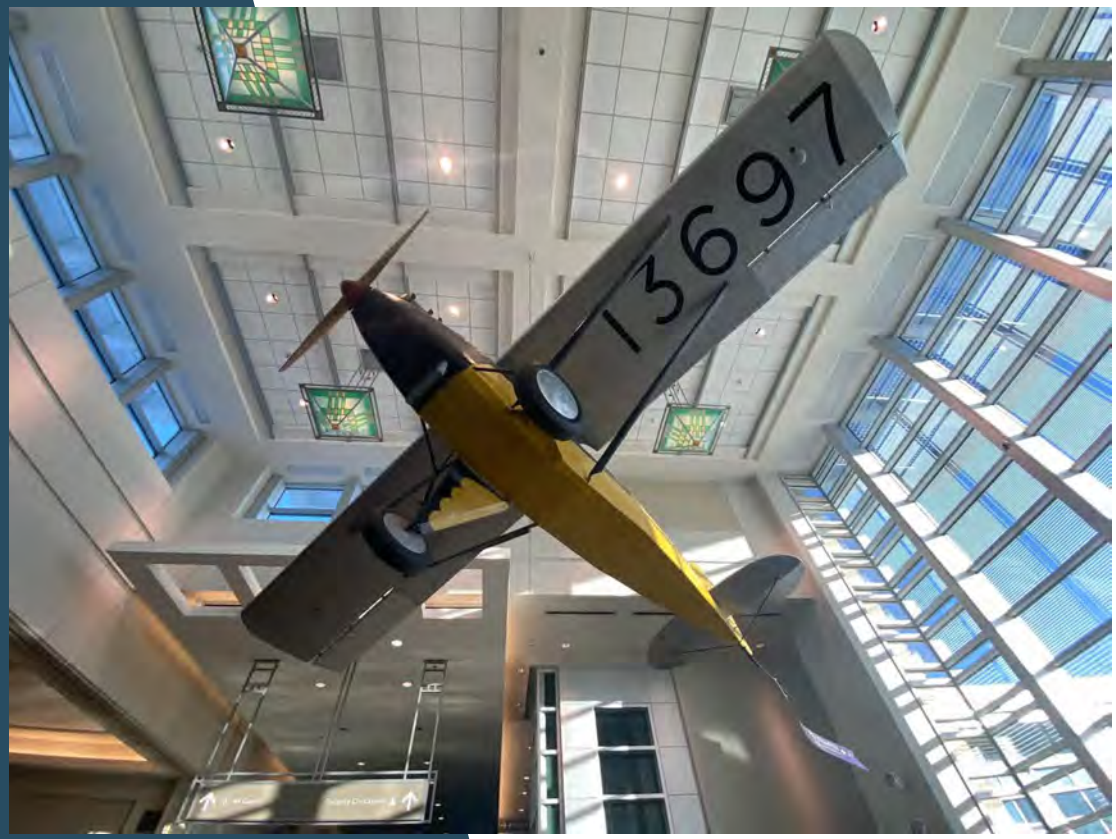
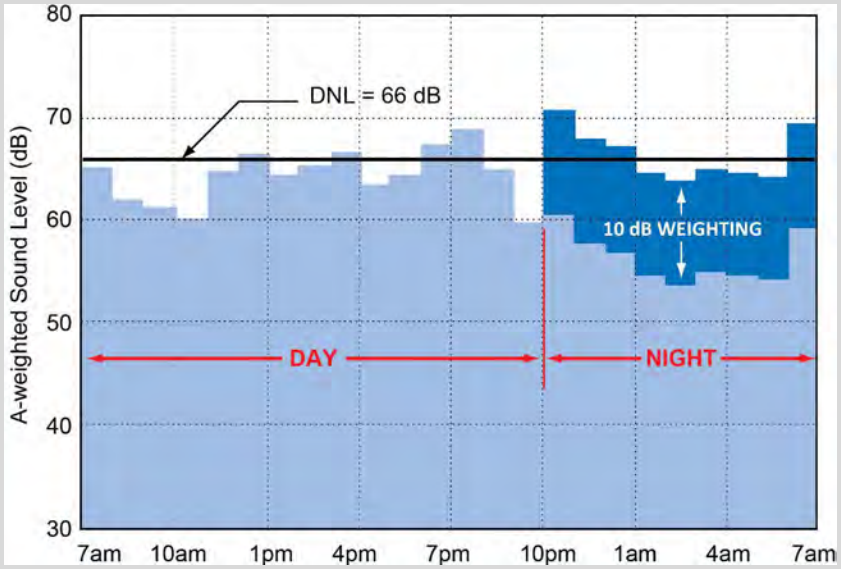
- Operates UH-60 Black Hawk helicopters at Truax Field

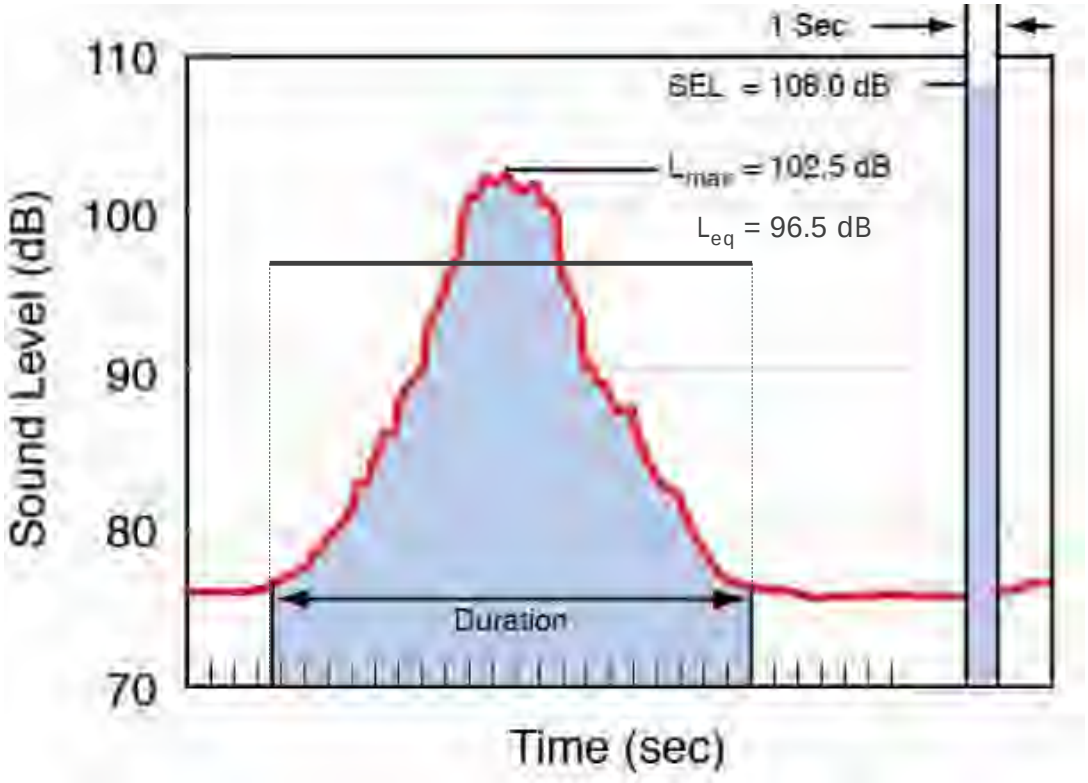


DANE COUNTY REGIONAL AIRPORT MADISON

Noise Terminology

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





DANE COUNTY REGIONAL AIRPORT MADISON

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 (Lmax)
  - 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

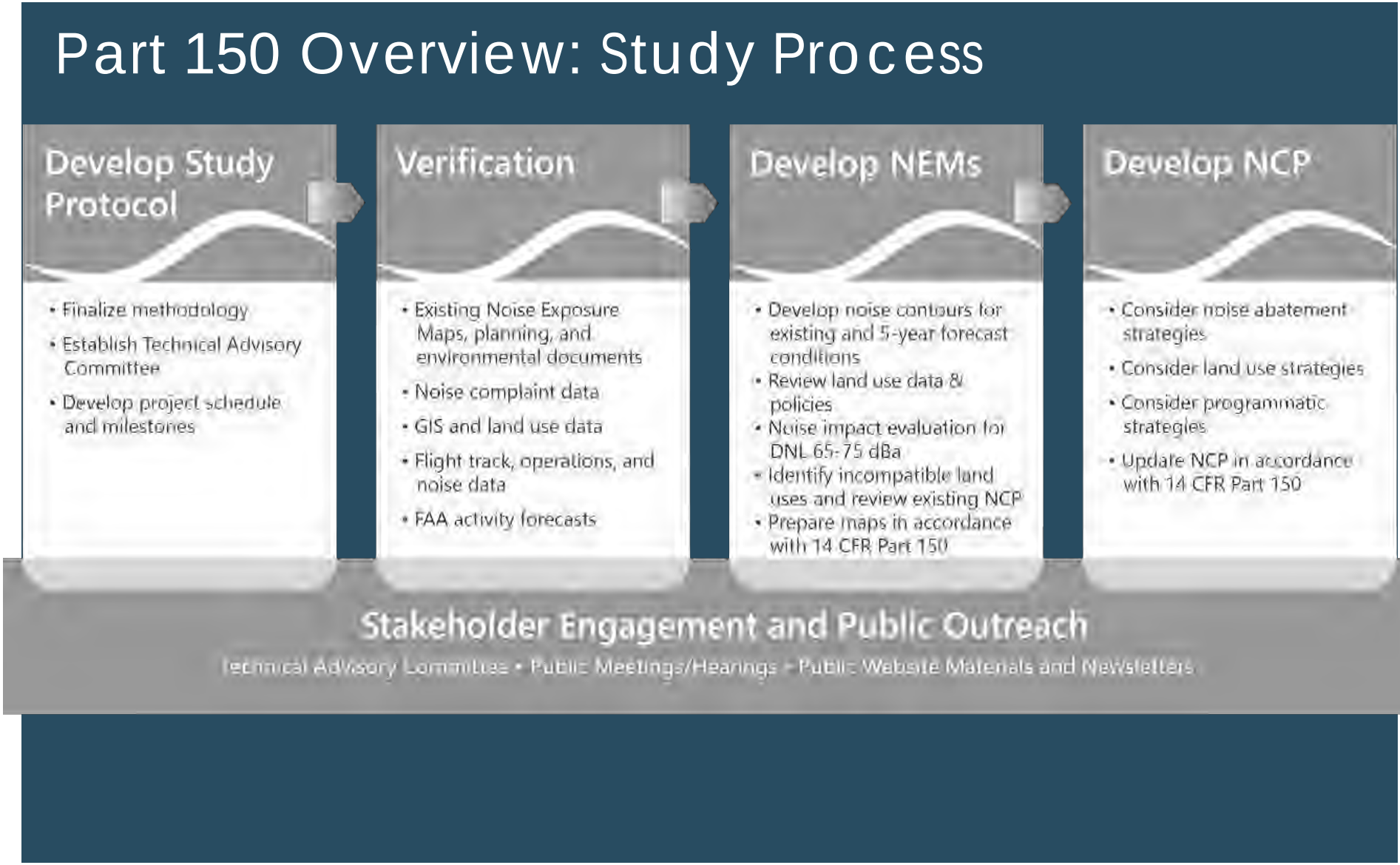
DANE COUNTY REGIONAL AIRPORT MADISON

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

DANE COUNTY REGIONAL AIRPORT MADISON

Part 150 Overview: Study Process



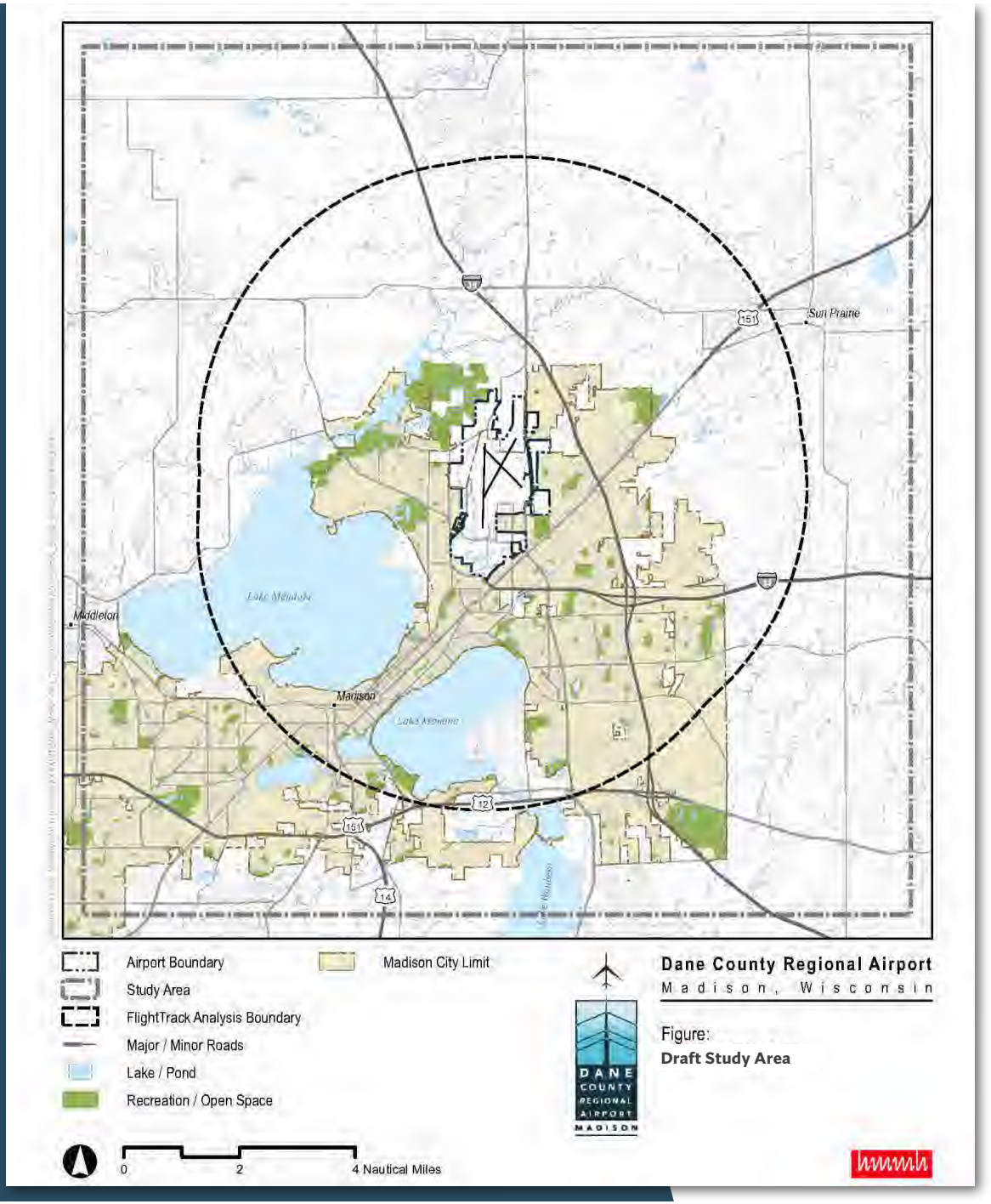
DANE COUNTY REGIONAL AIRPORT MADISON

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)

DANE COUNTY REGIONAL AIRPORT MADISON

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

DANE COUNTY REGIONAL AIRPORT MADISON

Proposed Schedule

Meeting / Activity	Anticipated Purpose	Anticipated 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.	January 20, 2022
1st Public Open House	Introduction to Part 150, set expectations, discuss stakeholder roles, identify issues of concern	April 26, 2022
NEM Public Comment Period, 2nd Public Open House	NEM thirty-day public comment period and second Public Open House	Sep-Oct 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.	December 2022
NCP Public Comment Period, 3rd Public Open House and NCP Hearing	NCP thirty-day public comment period and third Public Open House and NCP Hearing.	4th 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.	1st Quarter 2024

Note: Schedule is subject to change

DANE COUNTY REGIONAL AIRPORT MADISON

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

SCAN HERE
FOR MSN PART 150
WEBSITE

FLOWCODE PRIVACY.FLOWCODE.COM

DANE COUNTY REGIONAL AIRPORT MADISON

Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House Sign-in Sheet

April 26, 2022

#	Name	Email Address	Address	Phone Number
1	Sherrie Johnson	sherrie.and.katie@gmail.com	906 Fairmont Ave Madison	—
2	Tom Boswell	tomboswell2002@yahoo.com	1945 Sachtjen St Madison, 53704	608 718-7312
3	Patricia Rourke	paddyrourke@gmail.com	2442 E. Mifflin St Madison, 53704	608 246-8084
4	David Bierman	dbierman@waco.com	514 Nova Way Madison WI 53704	608-370-5761
5	Rick Soletski	dpenguin@hotmail.com	3322 QUINCY AV	608-244-0330
6	Alder Charles Myadze	District 18@cityofmadison		608-669-6751
7	Supervisor Larry Palm	palm.larry@countyofdane.com		
8	Justin Williams	justin.d.williams1@gmail.com		608 577 8359

D-1-199

Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House Sign-in Sheet

April 26, 2022

#	Name	Email Address	Address	Phone Number
9	Heidi Wegleitner	wegleitner.heidi@countyofdane.com	1941 E. Dayton St.	608-333-3676
10	Kathy + Bill Hutchison	hutch7314@gmail.com	65 Cherokee Ct #203	608-220-0697
11	Linda Hall	lhall34@gmail.com	1934 Ruthledge	608-692-1882
12	Steve Books	Books24U@AOL.com	625 Spruce St.	608-358-7906
13	DAN COX		MADISON	
14				
15				
16				

D-1-200

Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House Sign-in Sheet

April 26, 2022

#	Name	Email Address	Address	Phone Number
1	JANE H KAVALOSKI	Jhkavaloski @gmail.com	57 LANSING ST	608 709-1170
2	Steve Klafka	steven.klafka @gmail.com	508 Elmside Blvd 53704	
3	Peter & Marsha Cannon	APCANNON @ gmail.com	5 Cherokee Cir H202 53704	608-251 1276
4	Melissa Agard	sen.agarde legis.wi.gov	126 South State Capitol	608 - 266-9060
5	Hannah Lee	casaelmilagro @gmail.com	3834 whitman ln. #312 Madison 53704	608- 588- 7365
6	Beth Sluys	sluysbo aol.com	514 NOVA WAY Madison 53704	812 322 5065
7	Jaime Cordova	Cordova.a.jaime @ gmail.com	324 Norris Ct Madison 53703	562 659-4270
8	Joyce Wells	jhould@charter.net	carpenter Ave Madison 53704	—

D-1-201

Noise Compatibility Planning Study

Dane County Regional Airport

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April 26, 2022

#	Name	Email Address	Address	Phone Number
9	Steve Verburg	Steverburg@gmail	1614 Wendy 53716	608 212 9726
10	Dan Statz	dstatz@wisalumni.com	1707 Blue Ridge Pl.	608-245-4386
11	Scott Pigg	ScottKPigg@gmail.com	414 Russell St 53704	608-438-4904
12	Tyson Vitale	tyvitale@gmail.com	518 Mccormick Ave	608-571 6885
13	Ron Schutz	goschut@gmail.com	133 Division St	608 692- 2238 38
14	Kelly Kearns	KEARNS@UWALUMNI.COM	1329 Crowley Ave	608-345-7144
15	Martha Pings	wi218@ameritech.net	218 Oak St 53704	
16	Jodi Wortsman	wortsmanjodi@gmail.com	2610 E. Dayton St. Mad WI 53704	608-358-4331

Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House

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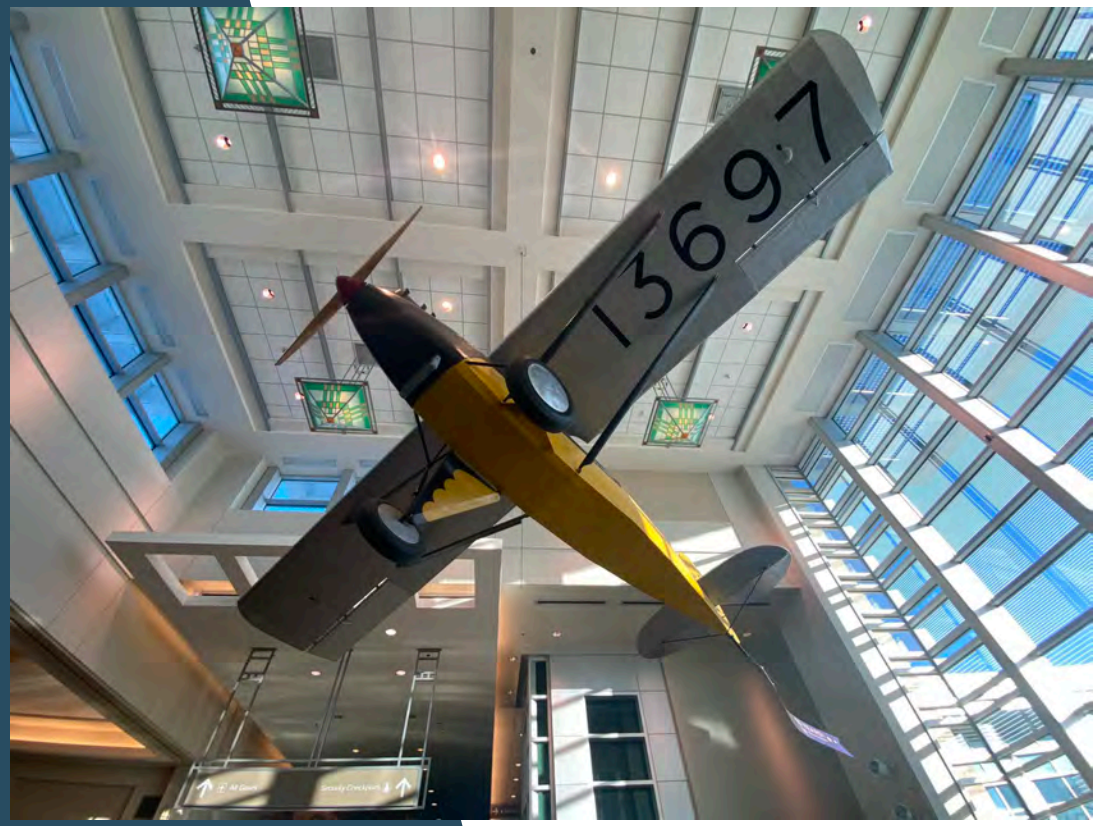
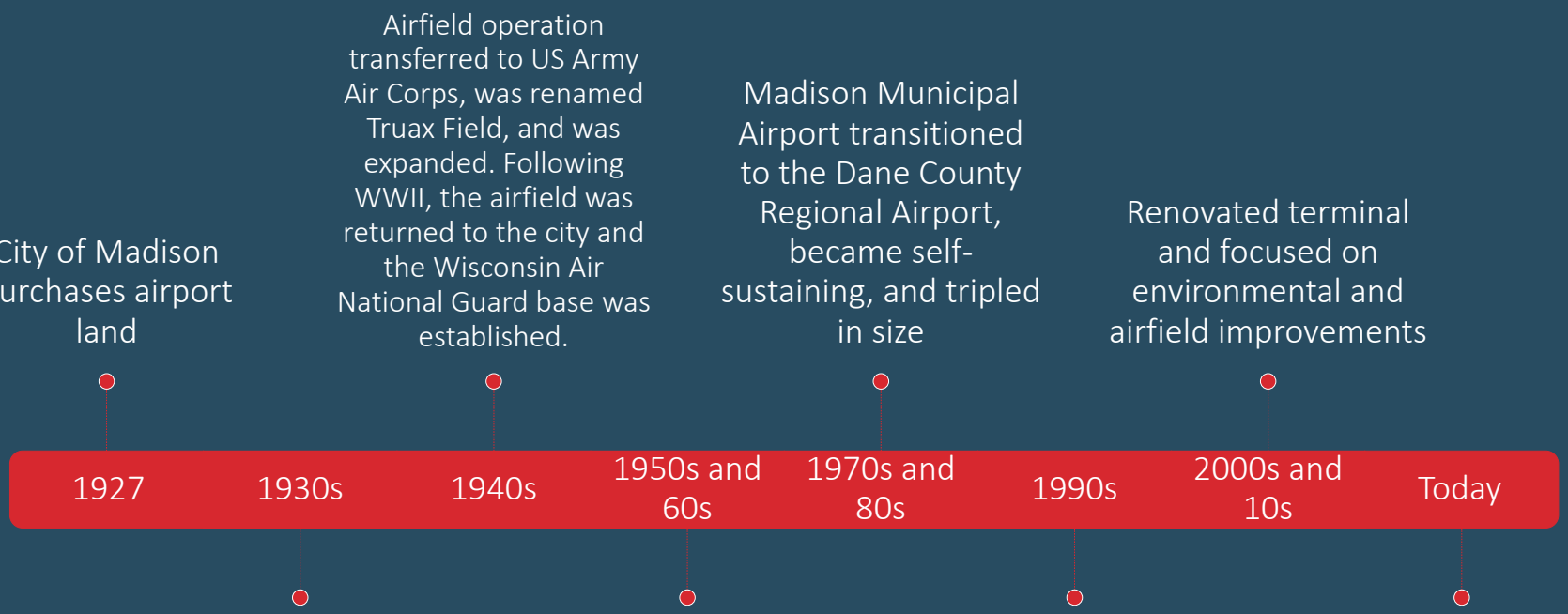


DANE COUNTY REGIONAL AIRPORT MADISON

Airport History



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DANE COUNTY REGIONAL AIRPORT MADISON

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Part 150 Study

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DANE COUNTY REGIONAL AIRPORT MADISON

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

DANE COUNTY REGIONAL AIRPORT MADISON

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DANE COUNTY REGIONAL AIRPORT MADISON

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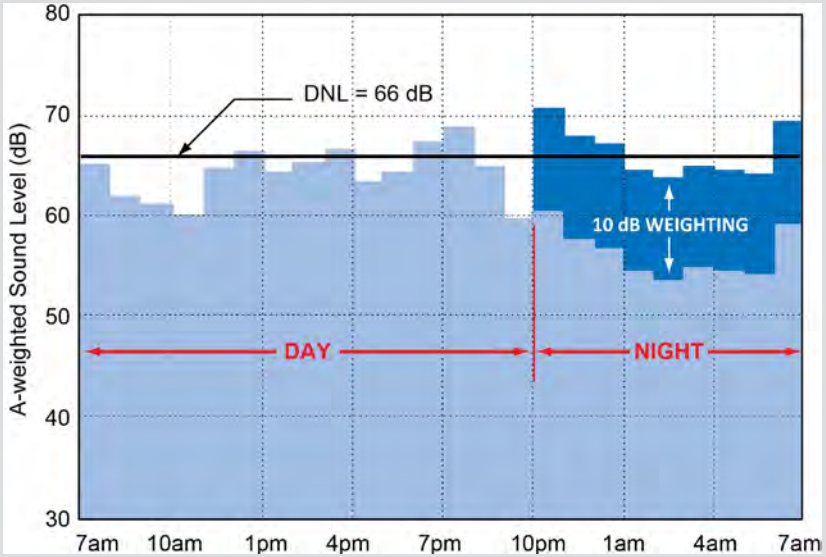
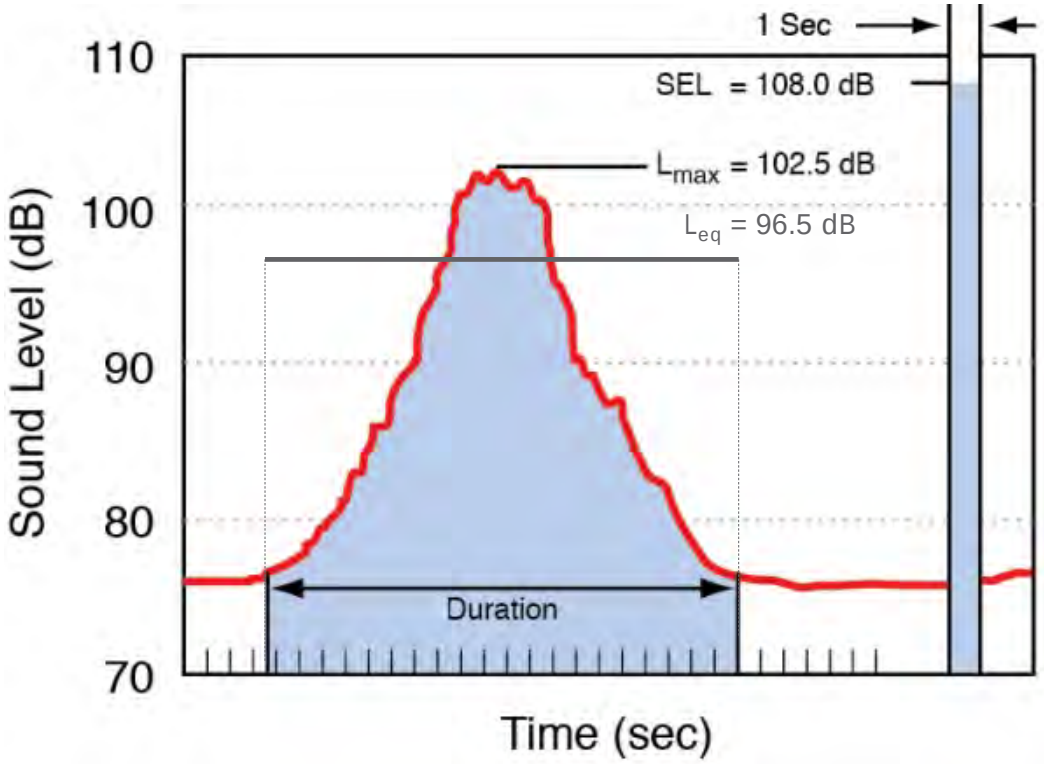
- Day-Night Average Sound Level (DNL)





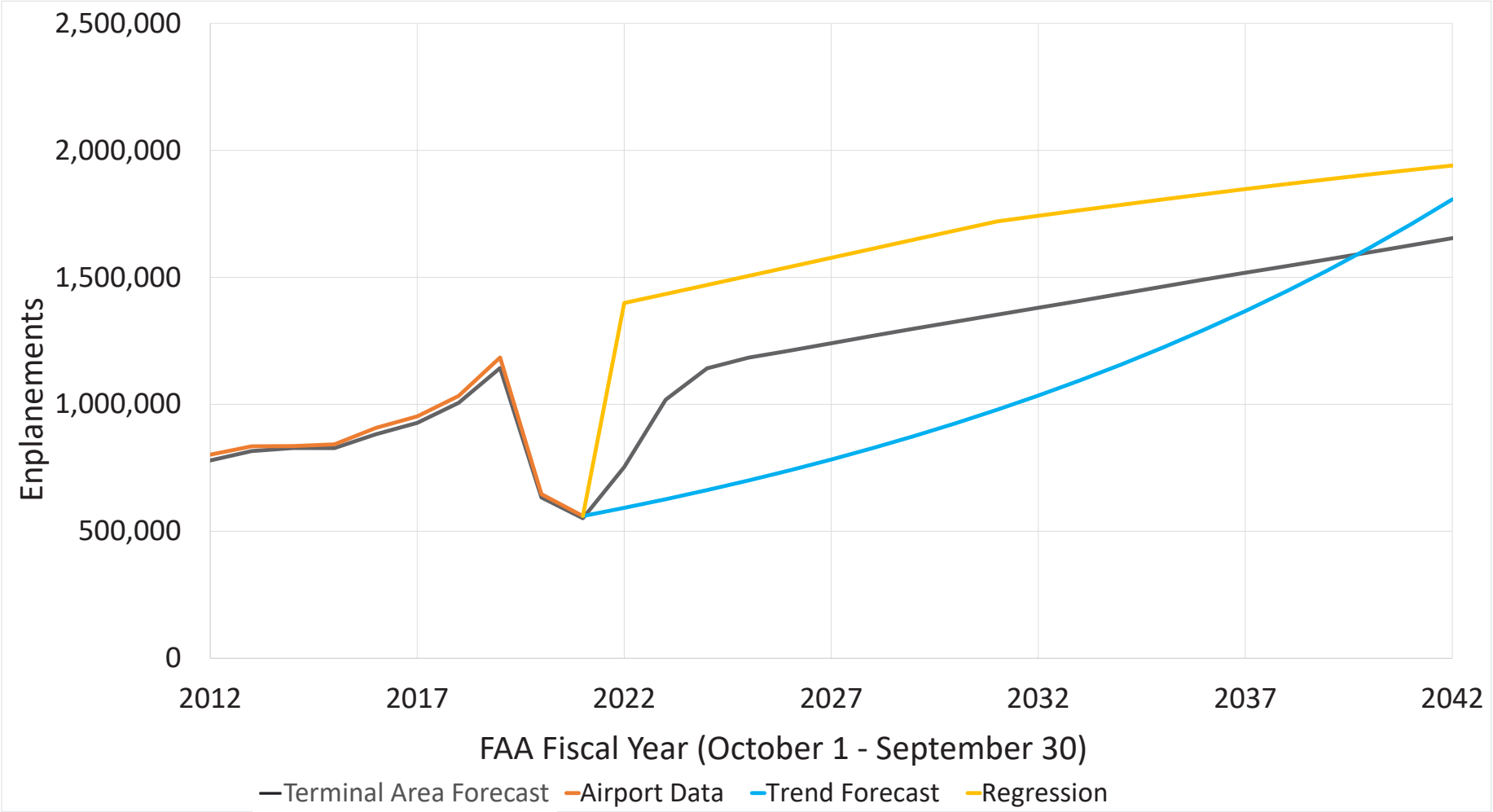
DANE COUNTY REGIONAL AIRPORT MADISON

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 (Lmax)
  - 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

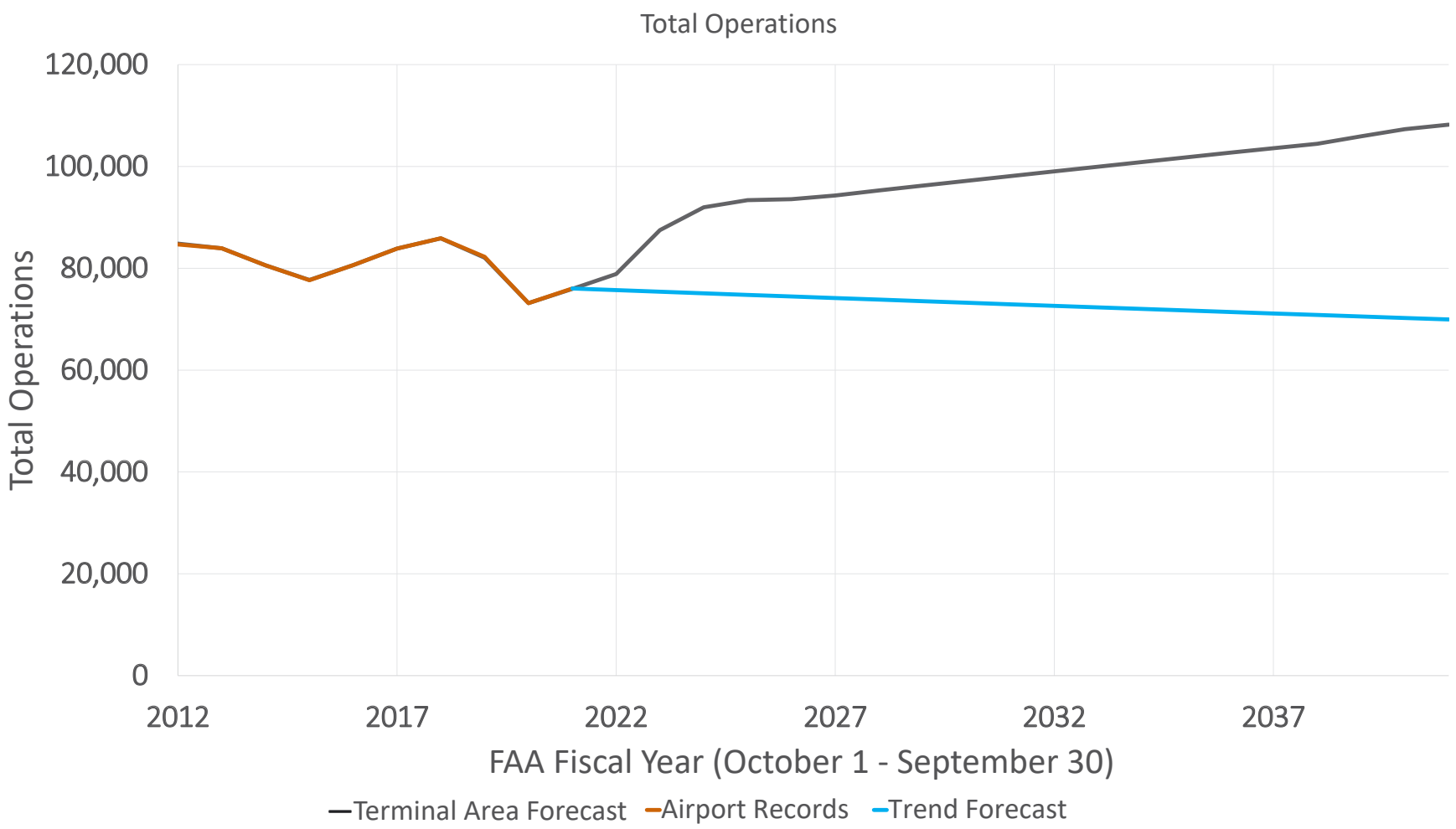
DANE COUNTY REGIONAL AIRPORT MADISON

Enplanement Forecast Methods Comparison



DANE COUNTY REGIONAL AIRPORT MADISON

Total Aircraft Operations Forecast Comparison



DANE COUNTY REGIONAL AIRPORT MADISON

2021 FAA Terminal Area Forecast (TAF) for MSN

Fiscal Year	Enplanements	ITINERANT					LOCAL			Total Operations
		Air Carrier	Air Taxi	General Aviation	Military	Total	Civil	Military	Total	
2019	1,142,812	24,284	11,655	28,689	4,713	**69,341**	12,468	276	**12,744**	**82,085**
2021	551,317	17,728	6,747	29,916	4,855	**59,246**	16,541	170	**16,711**	**75,957**
2027	1,211,674	33,841	6,935	31,797	4,855	**77,428**	15,977	170	**16,147**	**93,575**
2032	1,352,756	37,150	6,941	32,773	4,855	**81,719**	16,219	170	**16,389**	**98,108**
2037	1,491,362	40,079	7,362	33,778	4,855	**86,074**	16,464	170	**16,634**	**102,708**
2042	1,626,176	43,877	7,781	34,814	4,855	**91,327**	16,713	170	**16,883**	**108,210**
Compound Annual Growth Rate (CAGR)										
'21-'41	5.56%	4.64%	0.72%	0.76%	0.00%	**2.19%**	0.05%	0.00%	**0.05%**	**1.79%**

Source: 2021 FAA Terminal Area Forecast (TAF)

DANE COUNTY REGIONAL AIRPORT MADISON

Detailed Forecast Data

- Base fleet mix developed from flight track and aircraft identification data
- Fleet mix then assigned to Air Carrier, Air Taxi, General Aviation and Military
- Base fleet mix then scaled to the 2022 and 2027 Forecast levels for each category
- Military operations augmented with information from 115th Fighter Wing and Army Guard

Aircraft Operations Forecast by Aircraft Category

Aircraft Operation Category	2019	2022	2027
Air Carrier	24,284	20,306	35,714
Air Taxi	11,655	7,395	6,757
General Aviation	41,157	47,735	48,825
Military (Total)	4,989	6,047	7,418
ANG F-16C	-	3,081	-
ANG F-35A	-	-	4,252
Total Operations	82,085	81,483	98,741

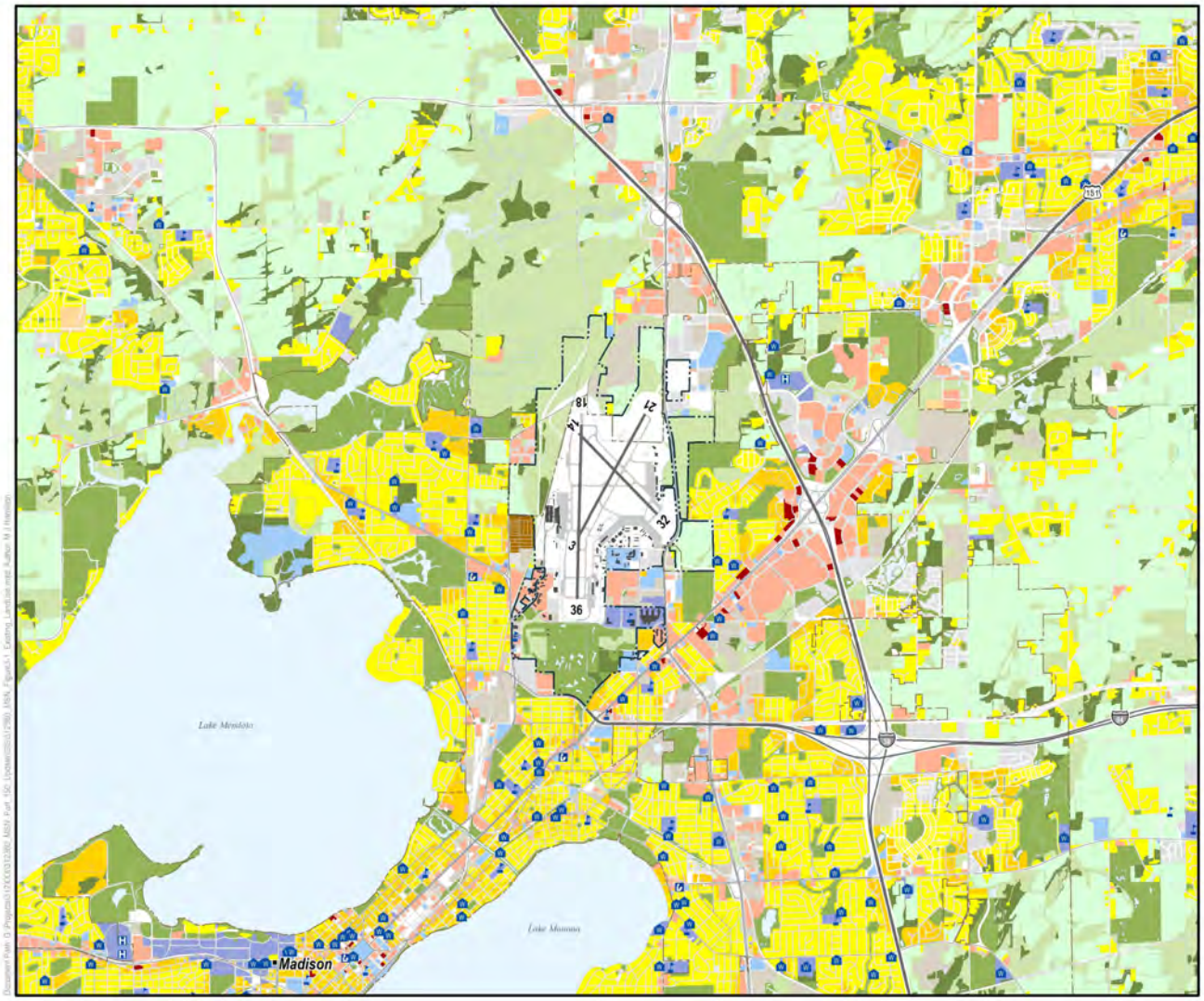
2019 Source: Dane County Regional Airport
2021 Source: FAA OpsNet
2027 Sources: FAA Terminal Area Forecast (TAF)
Note: Calendar year operations were used for 2021 as they are the most recent 12 months of available data.

DANE COUNTY REGIONAL AIRPORT MADISON

Land Use

- Part 150 requires the review of existing land uses surrounding an airport to determine land use compatibility associated with aircraft activity at the airport.
- The FAA has published land use compatibility designations, as set forth in Part 150, Appendix A, Table 1.
- The FAA generally considers all land uses to be compatible with aircraft-related DNL below 65 dB, including residential, hotels, retirement homes, intermediate care facilities, hospitals, nursing homes, schools, preschools, and libraries.

DANE COUNTY REGIONAL AIRPORT MADISON



Dane County Regional Airport

Madison, Wisconsin

Figure 3-1:
Existing Land Use

- Airport Boundary
- Runway / Taxiway
- Major / Minor Roads
- Madison Municipal Boundary
- Buildings
- Railroad
- Single Family Residential
- Multi-Family Residential
- Mobile Home
- Transient Lodging
- Mixed Use
- Public Use 1 (Non-Compatible)
- Public Use 2 (Compatible)
- Commercial Use
- Manufacturing and Production
- Lake / Pond
- School
- Place of Worship
- Hospital
- Library
- Agriculture
- Open Land
- Open Space / Recreation
- Woodlands
- Under Construction
- Vacant / Undefined

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

0 5,000 10,000 Feet

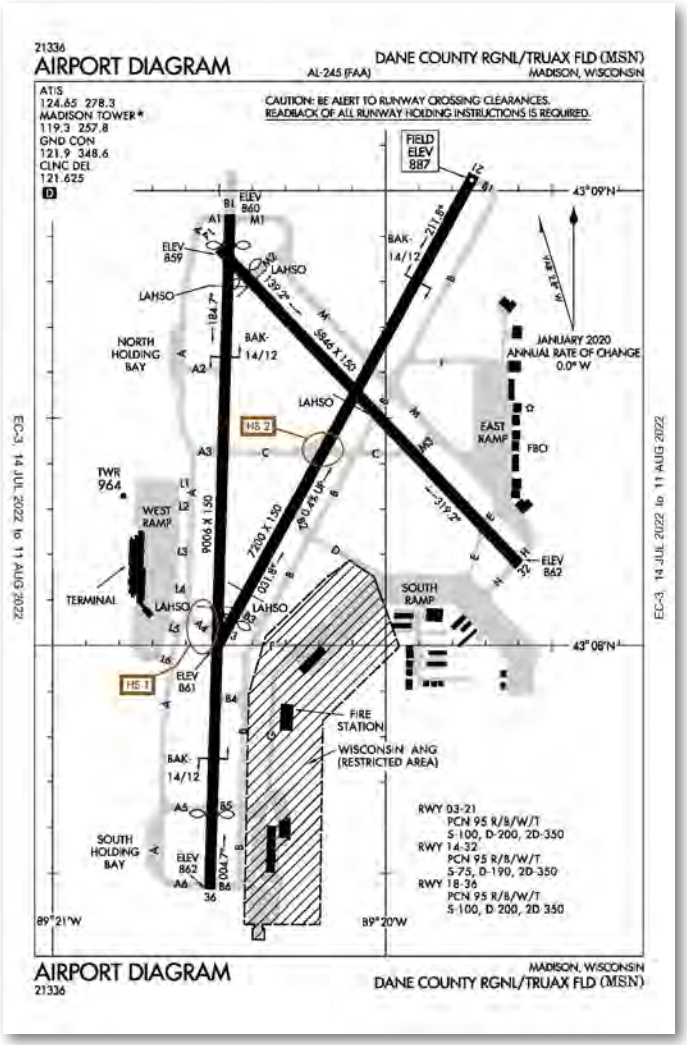
Noise Modeling Process
For Commercial and General Aviation Operations

- 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

DANE COUNTY REGIONAL AIRPORT MADISON

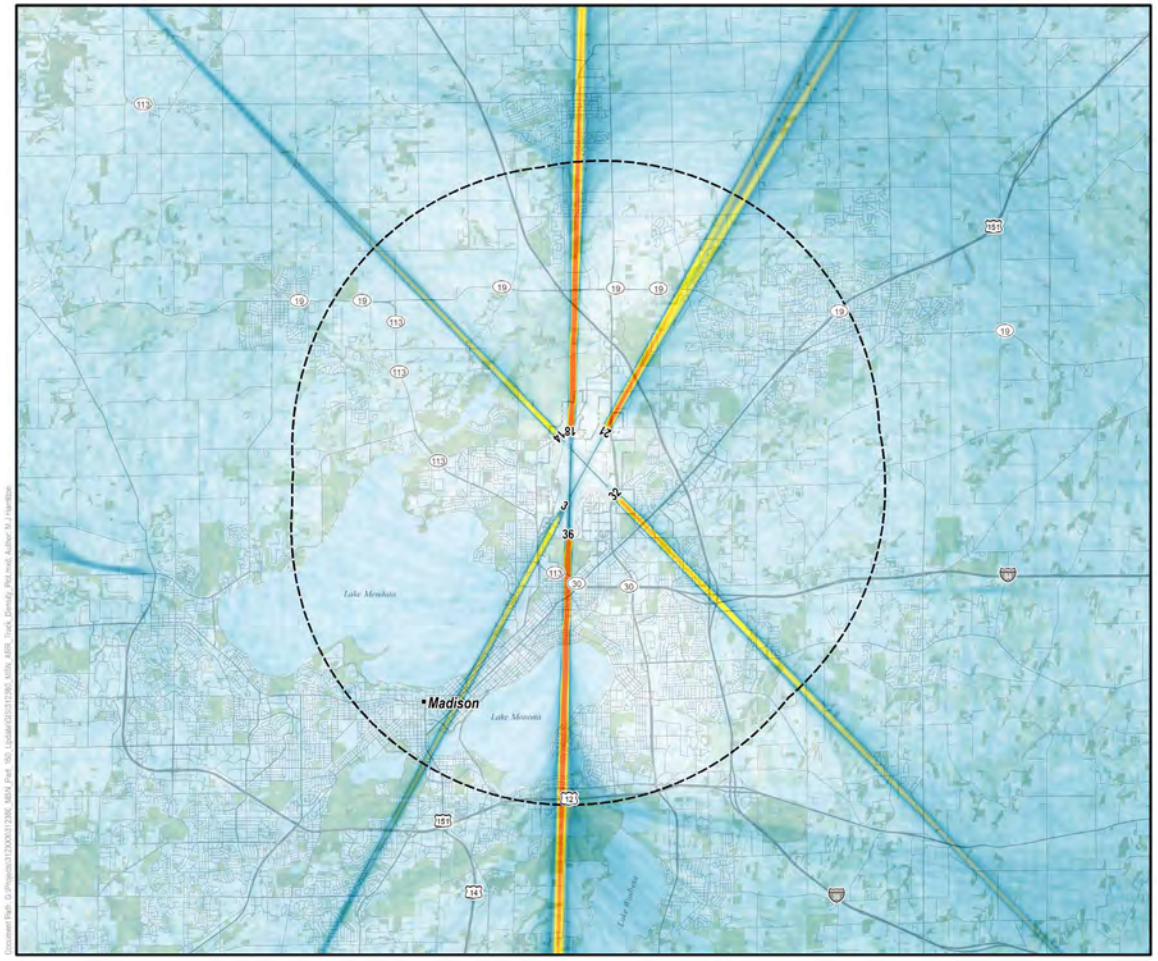
Noise Model Physical Input Requirements

- Airport layout
  - Runway configuration (including displaced landing or takeoff thresholds)
- Flight tracks
- Airport elevation
  - Terrain data were obtained from the United States Geological Survey National Elevation Dataset
- Airport weather (30-year average)
  - Temperature
  - Station pressure
  - Relative humidity
  - Dew point
  - Wind speed
- Aircraft operations data
  - Runway use rates
  - Flight track use rates
  - Numbers flight operations for each aircraft type by day and night



DANE COUNTY REGIONAL AIRPORT MADISON

Arrival Track Density



Dane County Regional Airport
Madison, Wisconsin

Figure:
Arrival Track Density Plot

- Airport Boundary
- FlightTrack Analysis Boundary
- Runway / Taxiway
- Major / Minor Roads
- Madison Municipal Boundary
- Buildings
- Railroad
- Open Land
- Recreation / Open Space
- Woodlands
- Lake / Pond

Flight Track Density - 24,263 Flight Tracks

Low — Medium — High

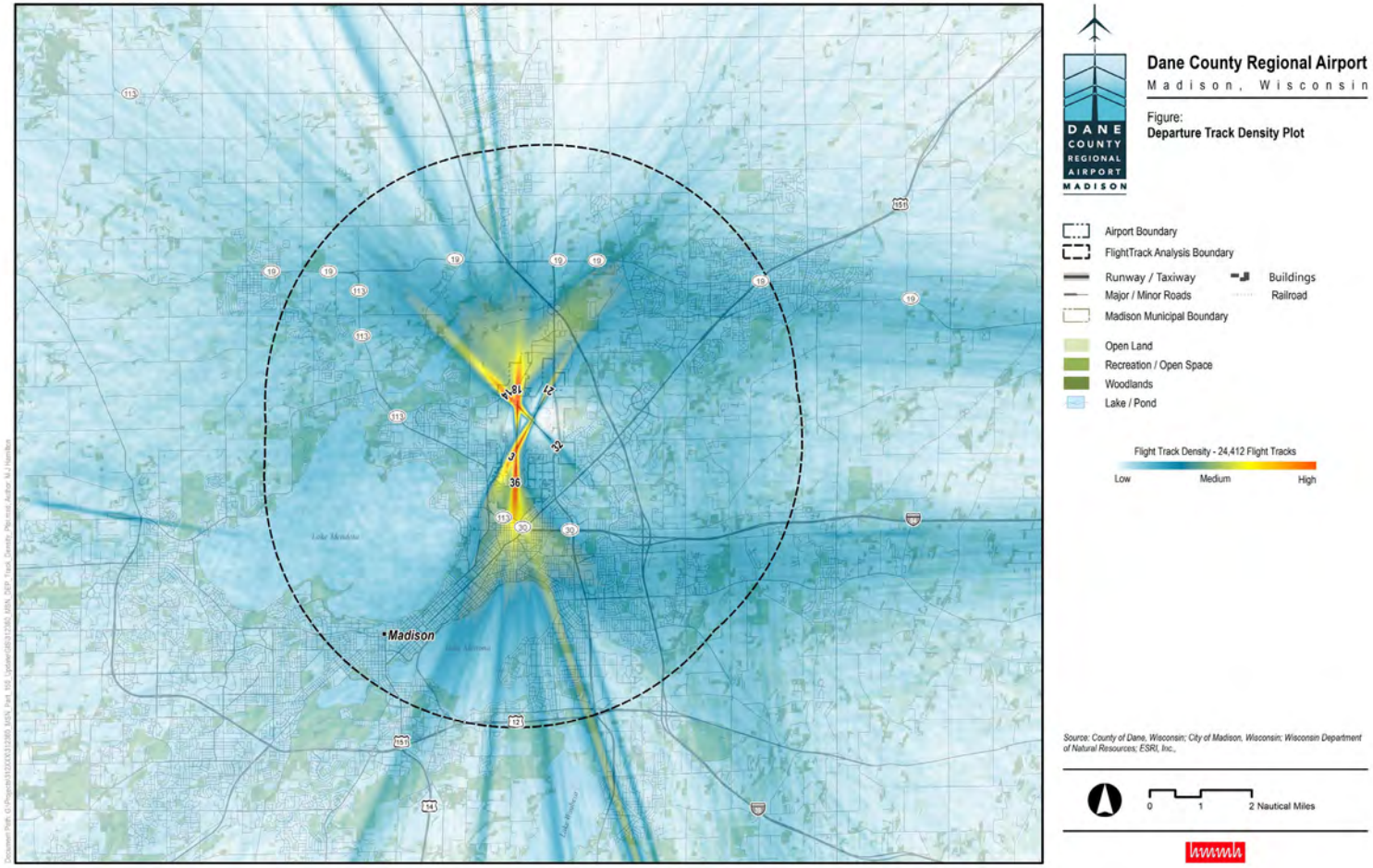
Source: County of Dane, Wisconsin; City of Madison, Wisconsin; Wisconsin Department of Natural Resources; ESRI, Inc.,

0 1 2 Nautical Miles

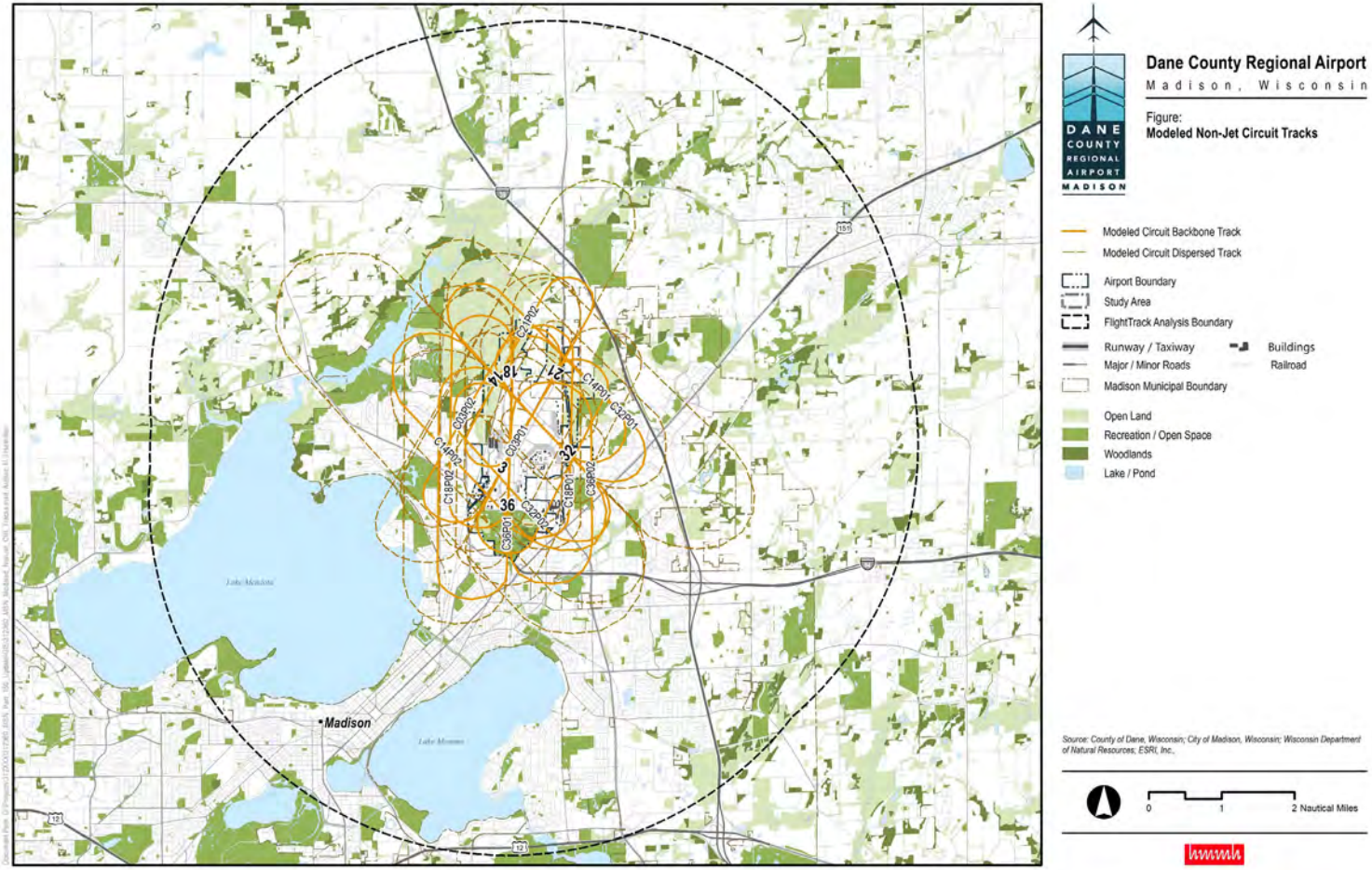
hmmh

DANE COUNTY REGIONAL AIRPORT MADISON

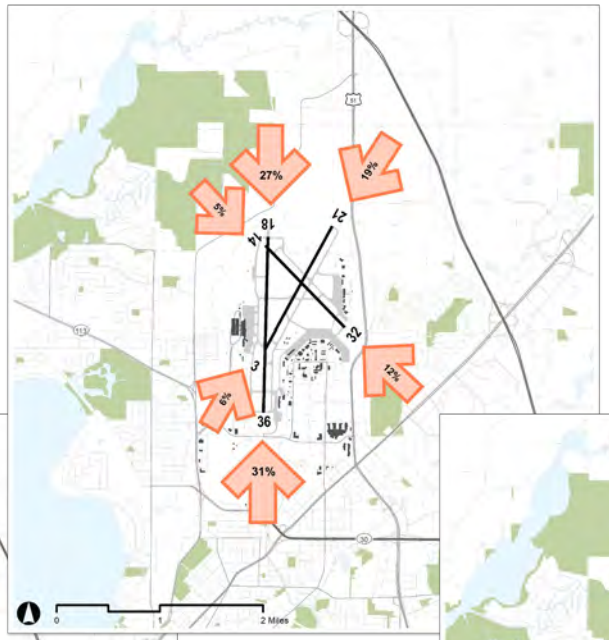
Departure Track Density



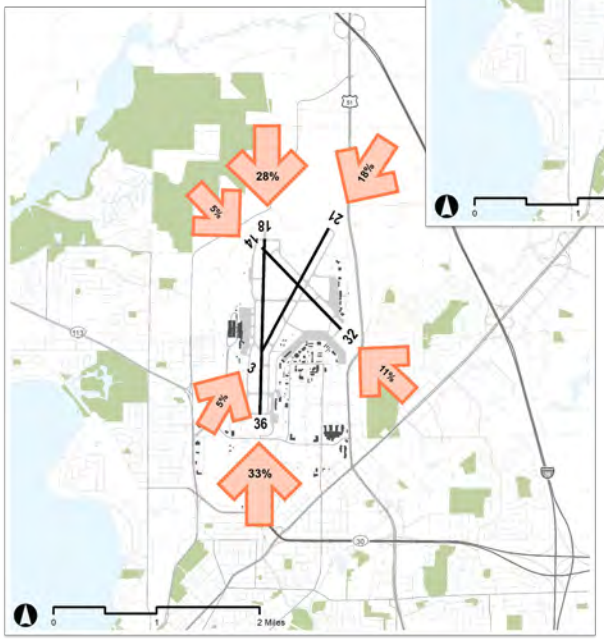
Non-Jet Circuit Tracks



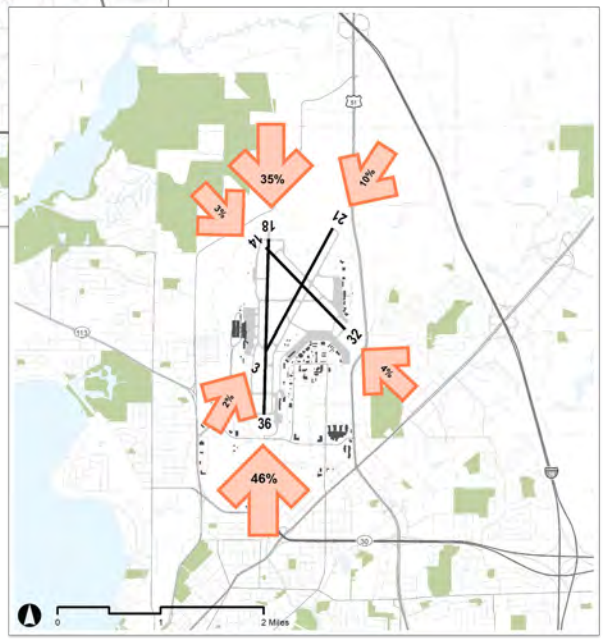
Arrival Runway Use



Day Arrivals



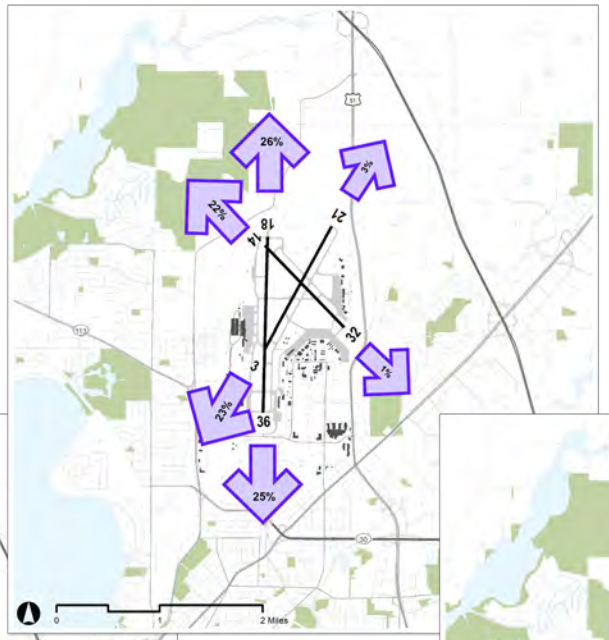
All Arrivals



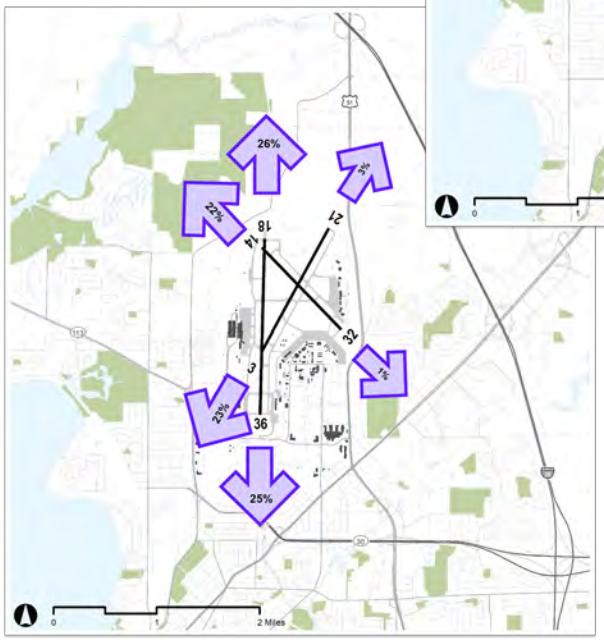
Night Arrivals

DANE COUNTY REGIONAL AIRPORT MADISON

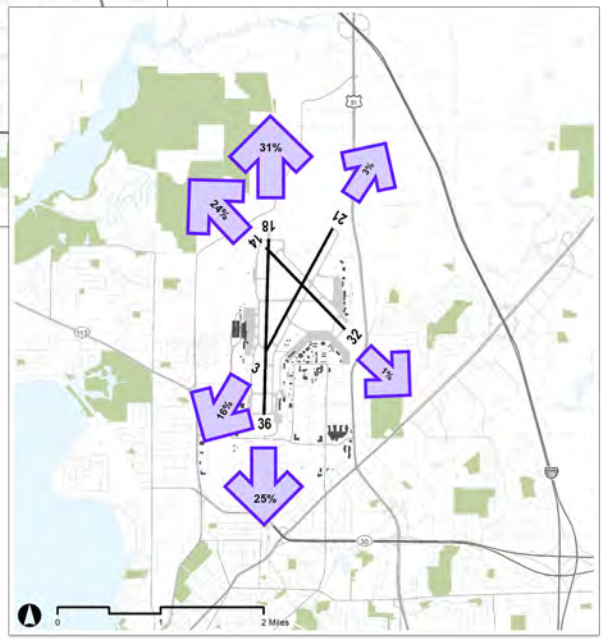
Departure Runway Use



Day Departures



All Departures



Night Departures

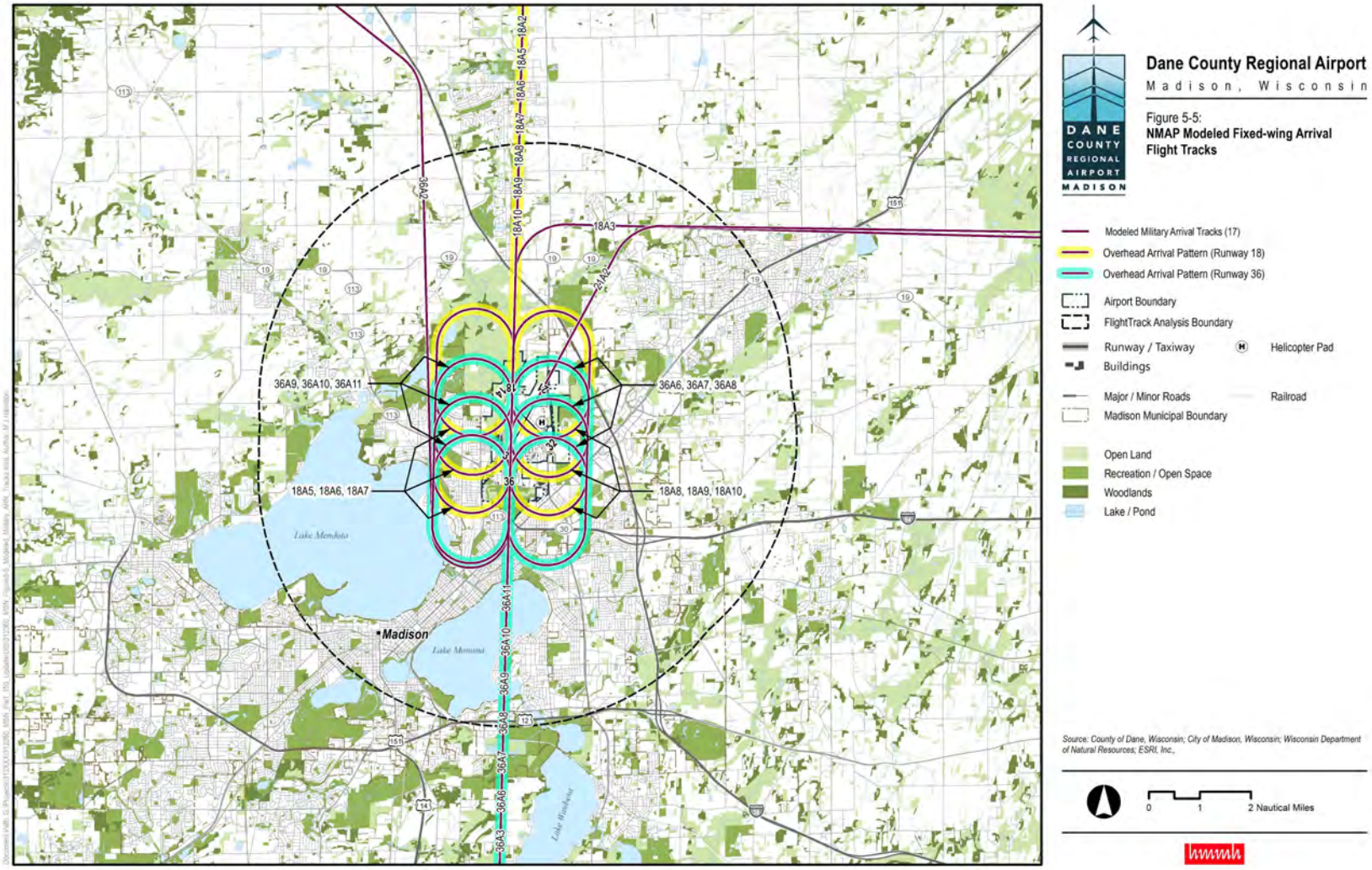
DANE COUNTY REGIONAL AIRPORT MADISON

Noise Modeling Process
For Military Aviation Operations

- Base Year for Air National Guard (ANG) – 2021
  - ANG provided numbers of annual flight F-16C operations
  - ANG reviewed and updated F-16C model input data from the F-35A EIS for use in the Existing NEM
- Existing and Forecast Conditions – 2022 & 2027
  - Army National Guard reviewed and updated UH-60 model input data from the EIS for use in the Exiting and Forecast NEMs
  - ANG F-16C 2021 pre-drawdown operations data used for Existing NEM
  - ANG forecast 2027 annual operations for the F-35A are based on historical average annual operations for the F-16C
  - ANG reviewed and updated F-35A model input data from the EIS for use in the Forecast NEM
  - No changes to flight tracks runway use between Existing and Forecast

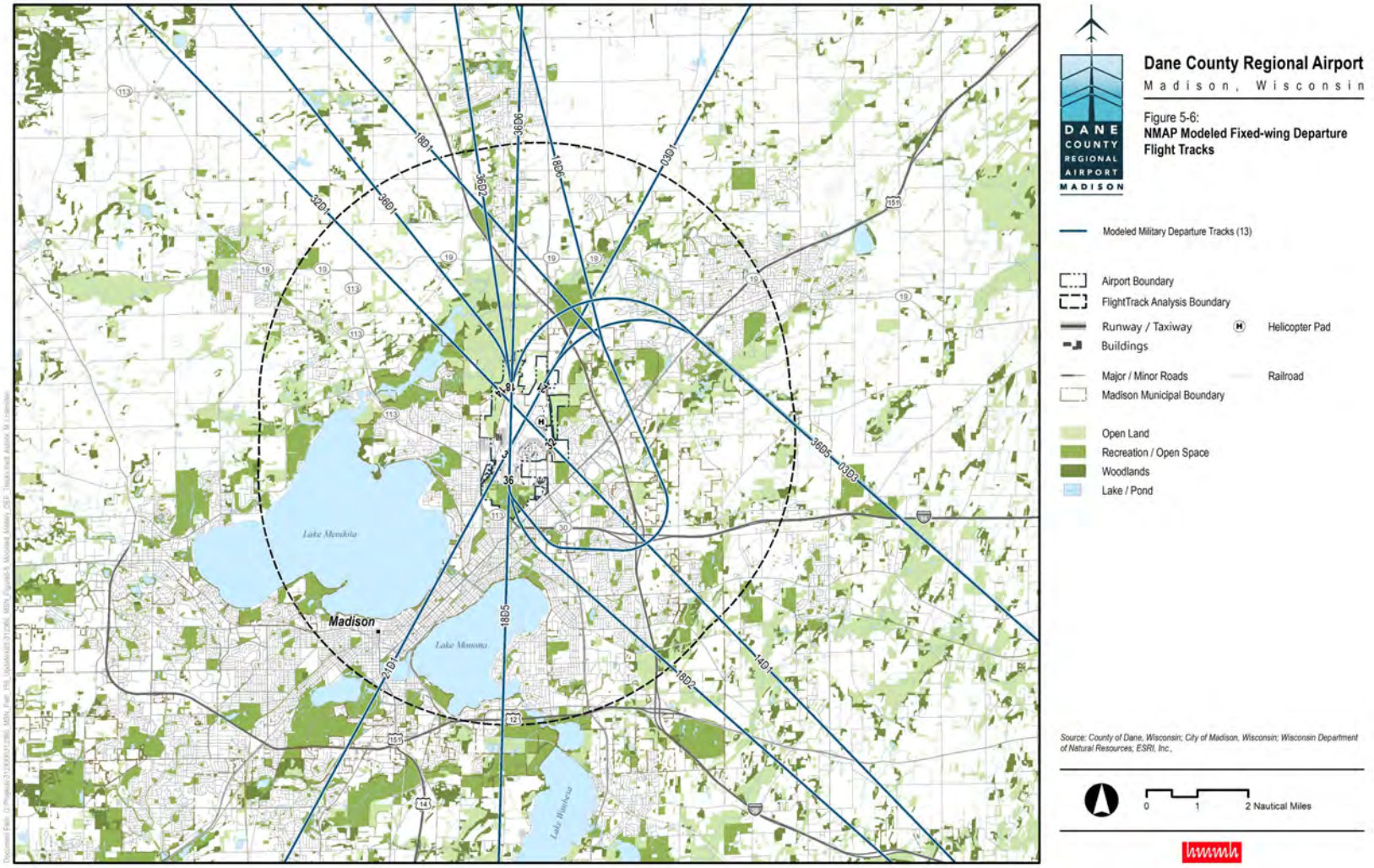
DANE COUNTY REGIONAL AIRPORT MADISON

Model Tracks: NOISEMAP Inputs



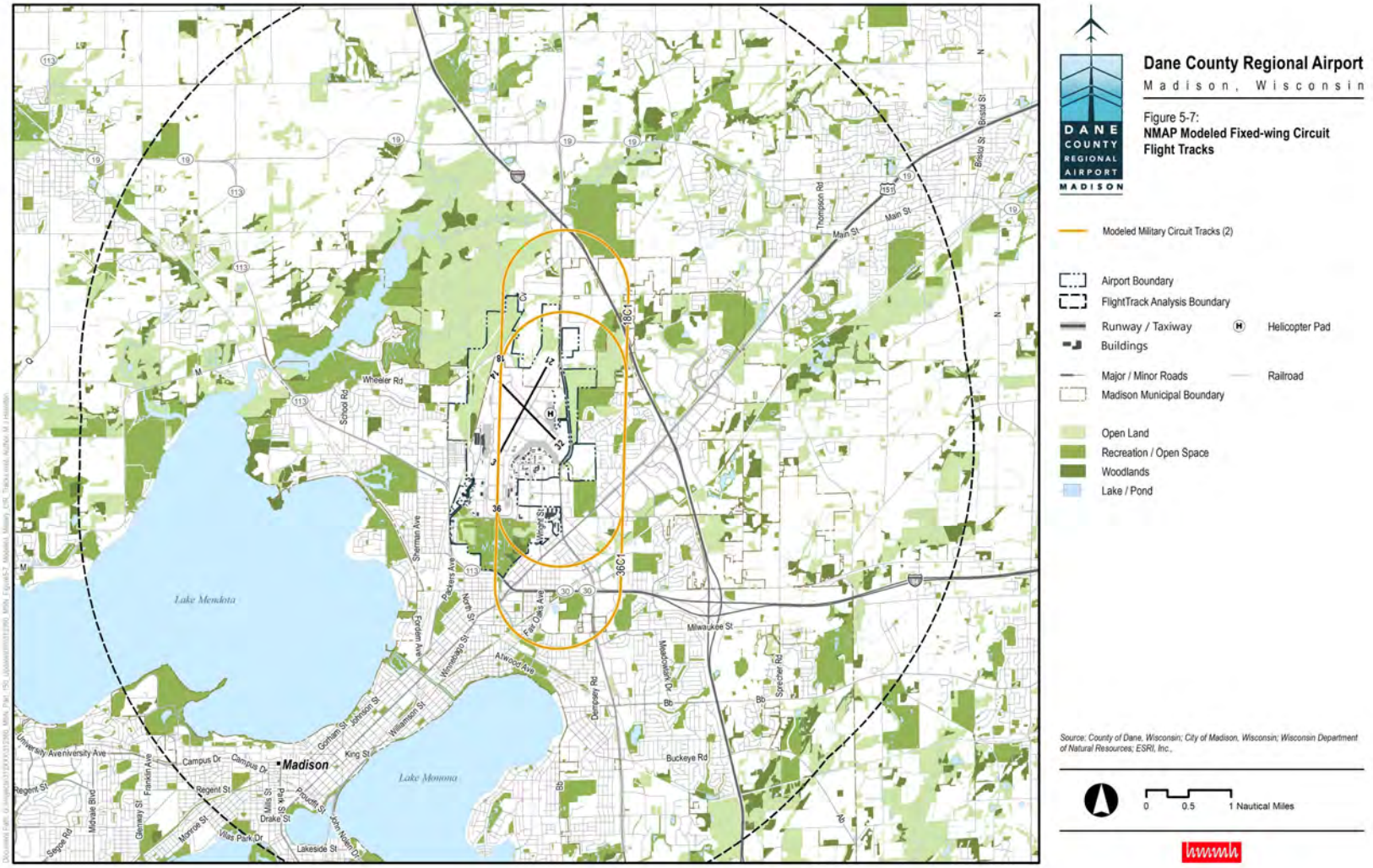
Military Fixed-wing Arrivals

Model Tracks: NOISEMAP Inputs



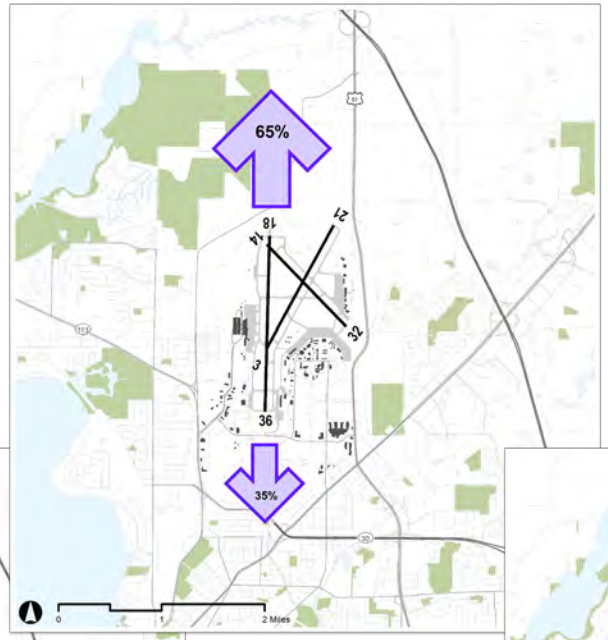
Military Fixed-wing Departures

Model Tracks: NOISEMAP Inputs

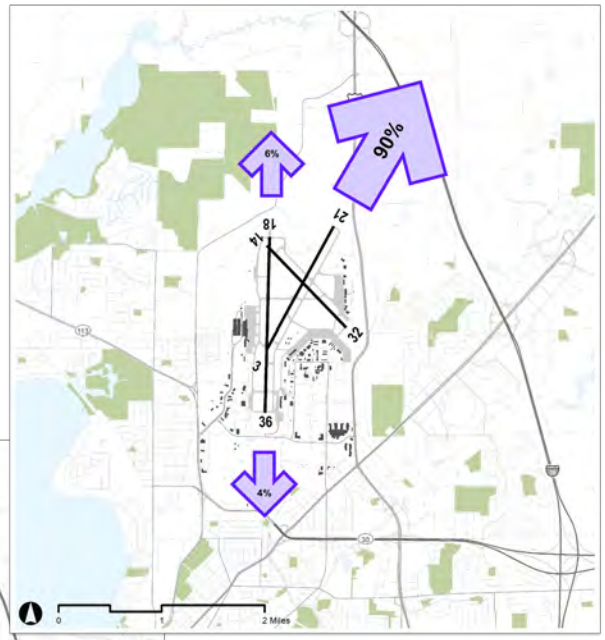


Military Fixed-wing Circuits

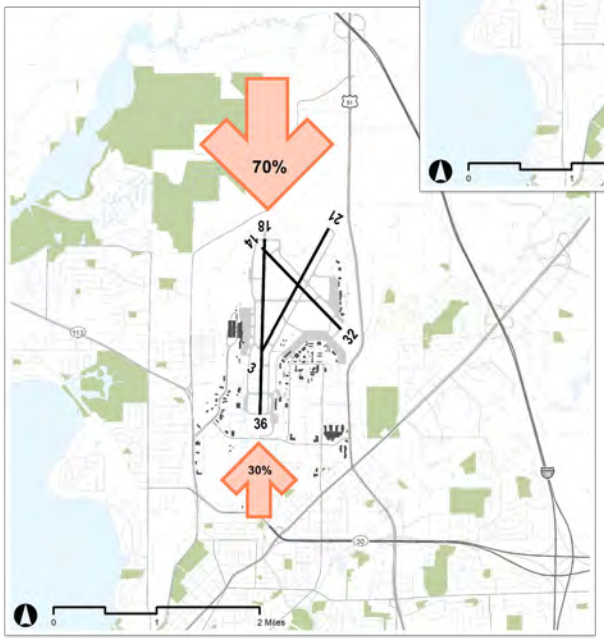
Military Jet Runway Use



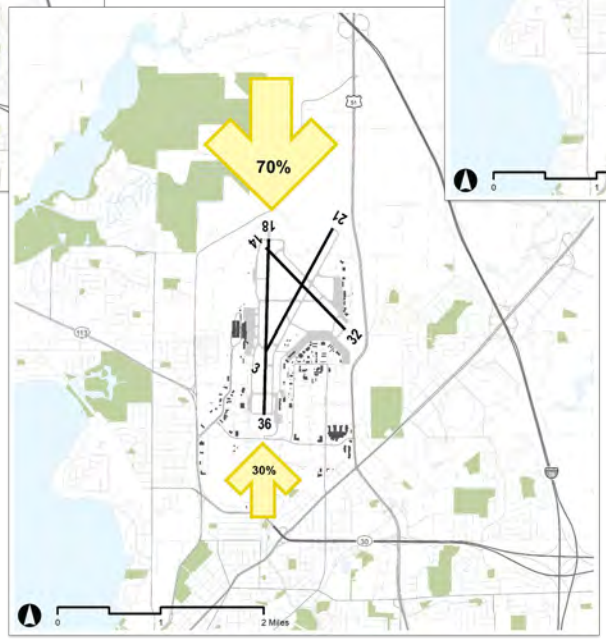
Departures



Departure Scrambles



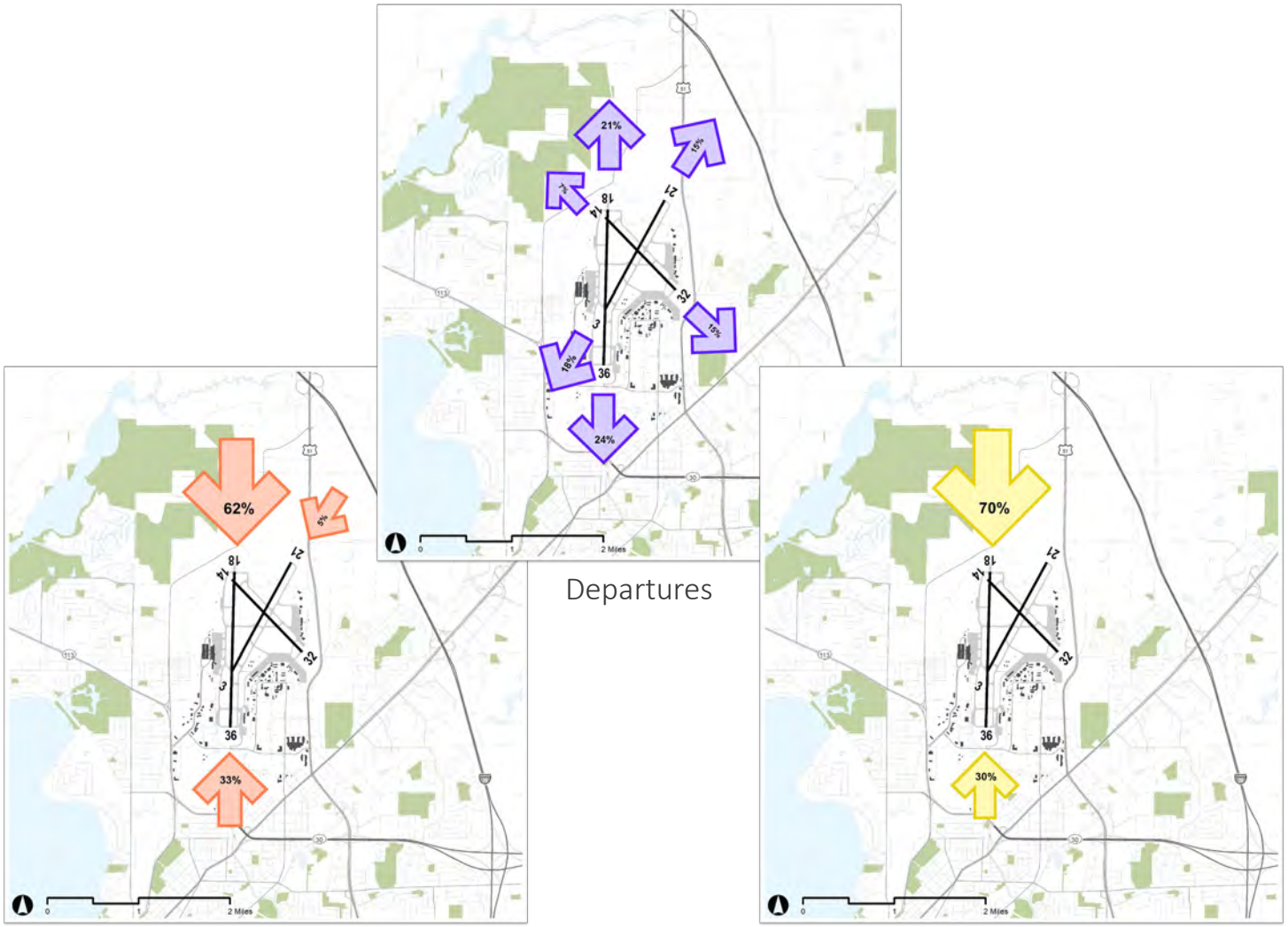
Arrivals



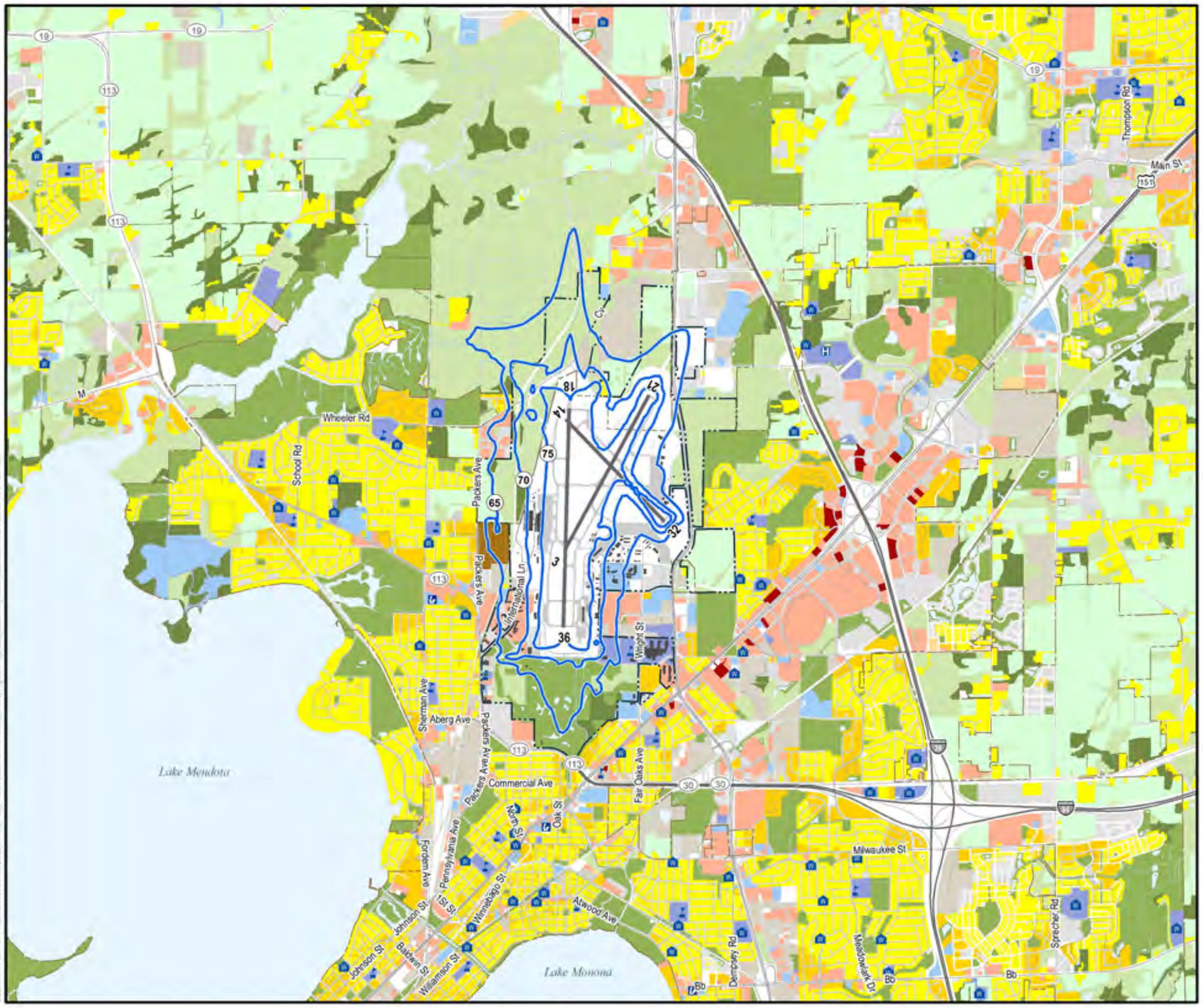
Circuits

DANE COUNTY REGIONAL AIRPORT MADISON

Military Turboprop Runway Use



DANE COUNTY REGIONAL AIRPORT MADISON



Dane County Regional Airport

Madison, Wisconsin

Figure 6-1:
Existing Condition (2022) Noise Exposure Map

- 2022 Existing Condition DNL Contour (65-75 dB)
- Airport Boundary
- Runway / Taxiway
- Buildings
- Major / Minor Roads
- Railroad
- Madison Municipal Boundary
- Single Family Residential
- Multi-Family Residential
- Mobile Home
- Transient Lodging
- Mixed Use
- Public Use 1 (Non-Compatible)
- Public Use 2 (Compatible)
- Commercial Use
- Manufacturing and Production
- Agriculture
- Open Land
- Open Space / Recreation
- Woodlands
- Under Construction
- Vacant / Undefined
- Lake / Pond
- School
- Hospital
- Place of Worship
- Library

Draft

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

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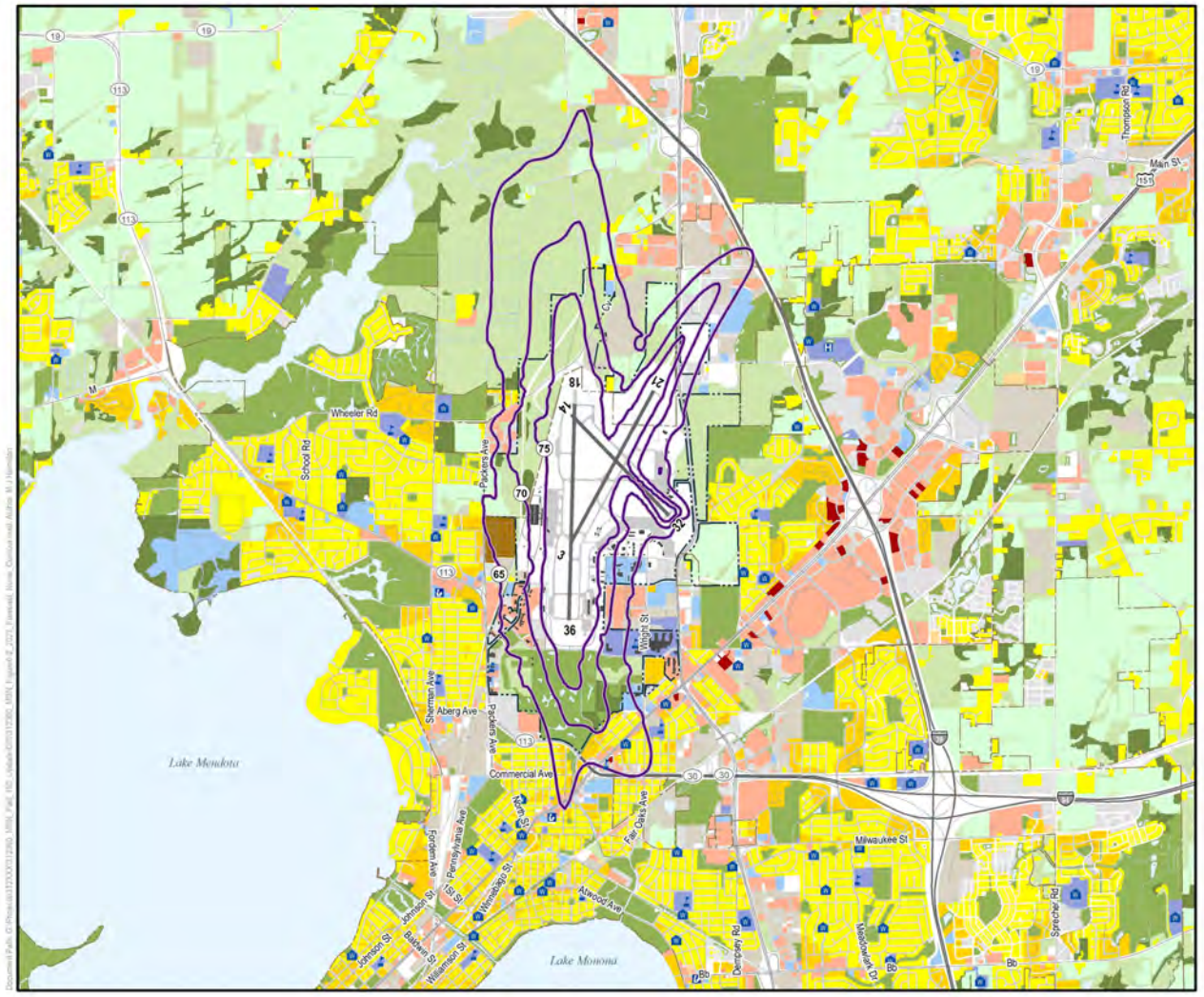
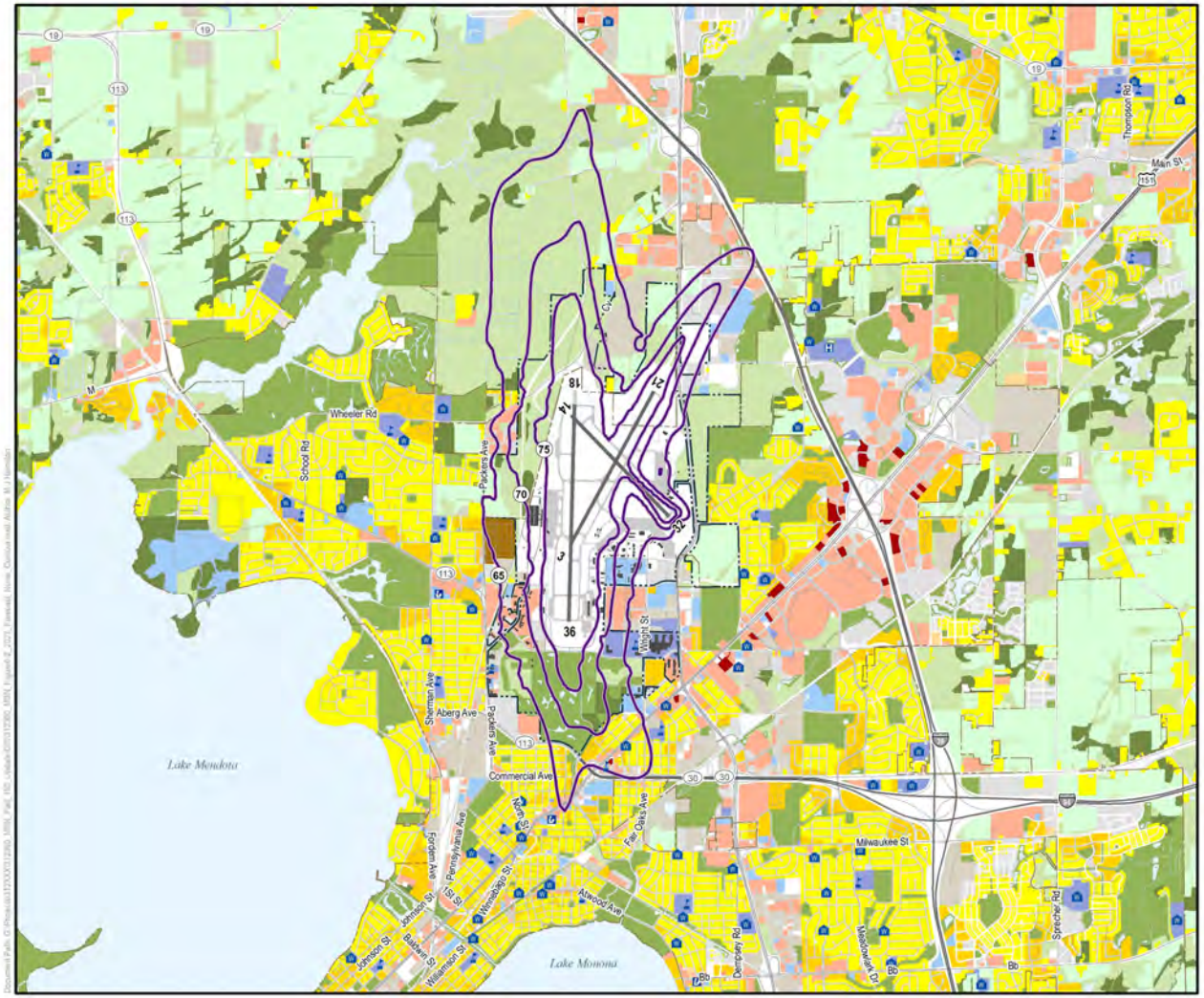

Lake Mendota
Lake Monona
Wheeler Rd
School Rd
Packers Ave
Sherman Ave
Aberg Ave
Commercial Ave
Forden Ave
Pennsylvania Ave
1St St
Johnson St
Butler St
Williamson St
Winnebago St
Atwood Ave
Wright St
Fair Oaks Ave
Milwaukee St
Dempsey Rd
Meadowlark Dr
Sprecher Rd
Thompson Rd
Main St
Dane County Regional Airport
Madison, Wisconsin
Figure 6-2:
Forecast Condition (2027)
Noise Exposure Map
2027 Forecast Condition DNL Contour (65-75 dB)
Airport Boundary
Runway / Taxiway
Major / Minor Roads
Madison Municipal Boundary
Buildings
Railroad
Single Family Residential
Multi-Family Residential
Mobile Home
Transient Lodging
Mixed Use
Public Use 1 (Non-Compatible)
Public Use 2 (Compatible)
Commercial Use
Manufacturing and Production
Lake / Pond
School
Place of Worship
Agriculture
Open Land
Open Space / Recreation
Woodlands
Under Construction
Vacant / Undefined
Hospital
Library
Draft
Source: County of Dane, Wisconsin; City of Madison, Wisconsin; Wisconsin Department of Natural Resources; ESRI, Inc.,
0
2,000
4,000 Feet

Land Use Assessment for Existing and Forecast Conditions

Baseline 2022 Combined 65 – 75 DNL Contours			
	Population Census 2020	*Housing Units*	*Area (Acres)*
65-70 DNL	503	225	1,070.54
70-75 DNL	12	3	534.13
>75 DNL	0	0	626.02
Total	515	228	2,230.69
Noise Sensitive Receptor	Madison Area Technical College		

Forecast 2027 Combined 65 – 75 DNL Contours			
	Population Census 2020	Housing Units	Area (Acres)
65-70 DNL	2,424	1227	1,823.31
70-75 DNL	57	23	935.53
>75 DNL	0	0	917.30
Total	2,481	1,250	3,676.14
Noise Sensitive Receptors	Madison Area Technical College, Claudi's Kids Inc Day Care Center, and Ridgeway Church		

DANE COUNTY REGIONAL AIRPORT MADISON



Dane County Regional Airport

Madison, Wisconsin

Figure 6-2:
Forecast Condition (2027)
Noise Exposure Map

- 2027 Forecast Condition DNL Contour (65-75 dB)
- Airport Boundary
- Runway / Taxiway
- Major / Minor Roads
- Madison Municipal Boundary
- Buildings
- Railroad

- Single Family Residential
- Multi-Family Residential
- Mobile Home
- Transient Lodging
- Mixed Use
- Public Use 1 (Non-Compatible)
- Public Use 2 (Compatible)
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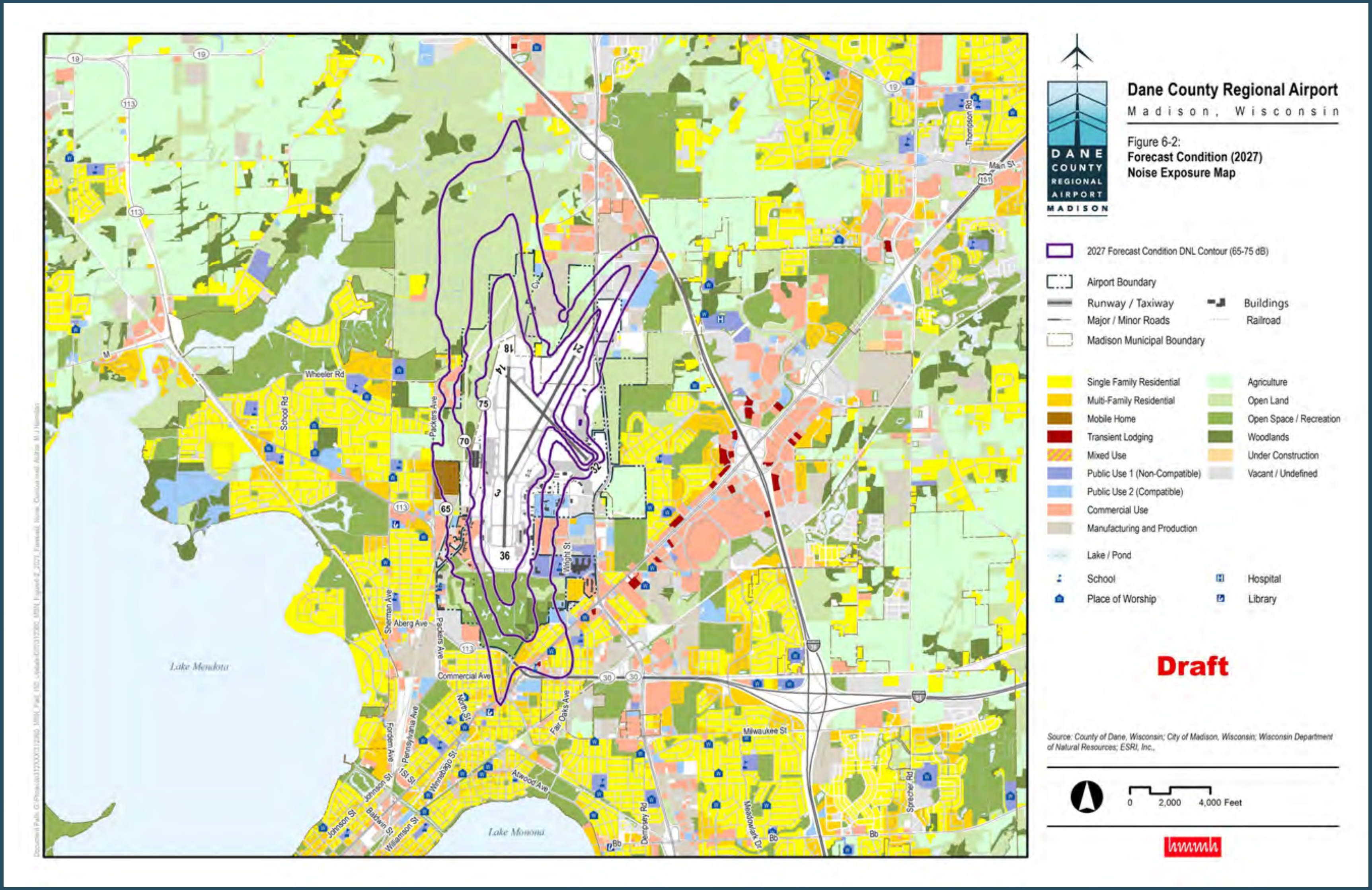
- Hospital
- Library

Draft

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

0 2,000 4,000 Feet

DANE COUNTY REGIONAL AIRPORT MADISON


Dane County Regional Airport
Madison, Wisconsin
Figure 6-2:
Forecast Condition (2027)
Noise Exposure Map
2027 Forecast Condition DNL Contour (65-75 dB)
Airport Boundary
Runway / Taxiway
Major / Minor Roads
Madison Municipal Boundary
Buildings
Railroad
Single Family Residential
Multi-Family Residential
Mobile Home
Transient Lodging
Mixed Use
Public Use 1 (Non-Compatible)
Public Use 2 (Compatible)
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Woodlands
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Vacant / Undefined
Lake / Pond
School
Place of Worship
Hospital
Library
Draft
Source: County of Dane, Wisconsin; City of Madison, Wisconsin; Wisconsin Department of Natural Resources; ESRI, Inc.,
0 2,000 4,000 Feet
Lake Mendota
Lake Monona
Wheeler Rd
School Rd
Packers Ave
Sherman Ave
Aberg Ave
Commercial Ave
Fair Oaks Ave
Milwaukee St
Wright St
Thompson Rd
Main St
Sprecher Rd
Atwood Ave
Dempsey Rd
Meadowlark Dr
Johnson St
Williamson St
Baldwin St
Winnebago St
Pennsylvania Ave
Fordem Ave
Johnson St
18
36
14
32
21
3

Proposed Schedule

Meeting / Activity	Anticipated Purpose	Anticipated 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.	January 20, 2022
1st Public Open House	Introduction to Part 150, set expectations, discuss stakeholder roles, identify issues of concern	April 26, 2022
NEM Public Comment Period, 2nd Public Open House	NEM thirty-day public comment period and second Public Open House	November-December 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.	December 2022
NCP Public Comment Period, 3rd Public Open House and NCP Hearing	NCP thirty-day public comment period and third Public Open House and NCP Hearing.	4th 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.	1st Quarter 2024

Note: Schedule is subject to change

DANE COUNTY REGIONAL AIRPORT MADISON

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

SCAN HERE FOR MSN PART 150 WEBSITE

FLOWCODE PRIVACY.FLOWCODE.COM

DANE COUNTY REGIONAL AIRPORT MADISON

Public Comment Opportunities

- Public comments can be submitted throughout the comment period **(November 14, 2022-December 10, 2022)**
  - In writing at the public open house
  - Through the project email address (part150study@msnairport.com)
- The draft NEM is available for public review at the following locations:
  - On the MSN website:

    https://www.msnairport.com/about/ecomentality/Part-150-Study
  - At the MSN administrative office: 4000 International Lane, Madison, WI 53704, during normal business hours
  - At the Lakeview Branch of the Madison Public Library: 2845 N. Sherman Ave., Madison, WI 53704

DANE COUNTY REGIONAL AIRPORT MADISON

Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House Sign-in Sheet # 1

November 14, 2022

Name	Email Address	Address	Phone Number
Patti Olp	patti@olpllc.net	Madison 5790 Hwy CV	608 209-0032
TOM + SOKSUN BERMAN	BERMANENGRAVING@GMAIL.COM	4375 HOEPKER RD,	608-249-4901
Scott Pigg	ScottKPigg2@gmail.com	414 Russell St	608 438-4904
Kathy Schramm	accessme@gmail.com	4603 Dennis Dr.	
Bonnie Melaby	elfak7@gmail.com		
Cesar Mendez	poTechDD@gmail.com	#1305 Carpenter ST Madison	608-609-4876

Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House Sign-in Sheet # 2

November 14, 2022

Name	Email Address	Address	Phone Number
Anne Tigan	aptigan @tds.net	225 Dunning St. Madison 53704	608 244-2635
Sean Gardner	gardnez7@gmail.com	3030 commercial ave #6 53704	608 513-3677
Richard D. Soletski	dpenguin11@hotmail.com	3327 Quincy Av 53704	608.246 6330

Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House Sign-in Sheet # 3

November 14, 2022

Name	Email Address	Address	Phone Number
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Sara Scott		" "	
Martha Pings	wi218@ameritech.net	218 Oak St 53704	—
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Don Cox	Dragonflyte1@yahoo	2531 Commercial Av.	608. 556.7665
Peter Cannon	PCannon@yahoo.com	5 Cherokee Madison 53704	608-251-1276
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Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House Sign-in Sheet # 4

November 14, 2022

Name	Email Address	Address	Phone Number
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Part 150 Noise Study

Part 150 Overview

Dane County is updating the Noise Compatibility Plan for Dane County Regional Airport (MSN) in accordance with the Federal Aviation Administration's (FAA) voluntary process codified under Title 14 of the Code of Federal Regulations Part 150 (14 CFR Part 150 or simply "Part 150"). Harris Miller Miller & Hanson, in association with Mead & Hunt and the Jones Payne Group, was retained to assist with preparation of the two elements that make up the Part 150 study: The Noise Exposure Map (NEM) and Noise Compatibility Program (NCP).

The NEM inventories and documents noise exposure from the annual-average daily aircraft operations for existing and forecast conditions; and the resulting land use compatibility. The NCP evaluates and recommends measures to address the land uses not compatible with the documented aircraft noise exposure. The implementation of the recommended measures in the NCP, once approved by the FAA, are potentially eligible for federal assistance.

Part 150 regulation prescribes specific standards and systems for:

- Measuring noise
- Estimating cumulative noise exposure
- Describing noise exposure (including instantaneous, single event, and cumulative levels)
- Identifying noncompatible land uses
- Coordinating Noise Compatibility Program development with airport users, the FAA, land use officials and neighbors
- Documenting the analytical process and development of the Noise Exposure Maps and Noise Compatibility Program
- Submitting documentation to the FAA
- Public consultation
- FAA and public review processes
- FAA approval or disapproval of the submission

The MSN Part 150 update will provide multiple opportunities for community engagement. Upcoming public open house dates, locations and materials will be posted on this website throughout the project. Periodic Part 150 newsletters will be prepared to share critical information with the interested public.

Dane County Regional Airport Overview

Dane County, as the owner and operator of Dane County Regional Airport (MSN), is the sponsor of the Study. As representatives of Dane County, MSN staff have final decision-making authority regarding all aspects of the Study, including but not limited to the conduct of the Study; stakeholder engagement; the certification of the accuracy of the documentation submitted to the FAA; and the recommended measures included in the NCP.

The 115th Fighter Wing of the Wisconsin Air National Guard (ANG) is located at Truax Field within MSN. The unit currently has a fleet of F-16C Block 30 fighter aircraft and one RC-26B Metroliner. The Air Force selected the 115th Fighter Wing to host the F-35A mission and receive a new fleet of F-35A Lightning II aircraft beginning in Spring of 2023. The Wisconsin ANG is planning a phased replacement of the F-16 fleet with F-35A aircraft. The Study Team will consult with the Wisconsin ANG to understand their plans for operation of F-35A aircraft during the existing (2022) and forecast year (2027) for the NEM.

MSN Part 150 Resources

Public Open House 1 - 4/26/22

Informational Boards (PDF)

Summer 2022 Part 150 Newsletter

Click Here (PDF)

FAA Part 150 Homepage - https://www.faa.gov/airports/environmental/airport_noise/

In The News

EcoMentality

- Part 150 Study
- General Information
- Natural Resource Management
- Recycling / Solid Waste Reduction
- Energy Conservation / Renewable Energy
- Water Conservation / Quality Improvements
- PFAS Information
- Noise Abatement
- Noise FAQ
- Noise Report Form

Facilities & Maps

Airport Operations

Contact Us

About Us

Need information on Dane County Regional Airport? Click here to learn more about the people who keep things running along with our commitment to environmental sustainability and responsibility. Or need the latest news on airport routes, carriers and special events, you'll find it here.

Read More »

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MSN Airport @MSN_Airport · Apr 21

The Part 150 Noise Study Informational Open House at Dane County Regional Airport will take place Tuesday, April 26th between 5-8 P.M. in Conference Room 1. This event will cover the two-year noise study at the airport. Read more: ow.ly/XIve50IO8JQ

MSN Airport @MSN_Airport · Apr 19

The federal mask mandate at airports has been lifted. MSN Airport will continue our cleaning and sanitizing practices. If you have questions about the new rules, please see @TSA's full statement, or contact your airline. TSA statement: ow.ly/NiFm50IMI3J

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Verizon 2:44 PM

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The Part 150 Noise Study Informational Open House at Dane County Regional Airport will take place Tuesday, April 26th between 5-8 P.M. in Conference Room 1. This event will cover the two-year noise study at the airport. Read more: ow.ly/XIve50IO8JQ

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20

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About

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Dane County Regional Airport
4 hrs ·

Happy Earth Day from Dana and all her friends! Let's celebrate! We're giving away eco-friendly reusable straws and airplane shaped seed packets. Set your profile to public and tag a friend in the comments for a chance to win! We'll message the winners on Monday 4/25.

#MSNAirport #MSN #EarthDay #Contest #Giveaway

3

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Dane County Regional Airport
Yesterday at 10:00 AM ·

The Part 150 Noise Study Informational Open House at Dane County Regional Airport will take place Tuesday, April 26th between 5-8 P.M. in Conference Room 1, adjacent to the baggage claim. This event is open to the public and will cover the two-year noise study at the airport. Read more: http://ow.ly/yB6Y50IO8JS

MSNAIRPORT.COM
Part 150 Noise Study

1

DANE COUNTY REGIONAL AIRPORT
NOISE COMPATIBILITY PLANNING STUDY

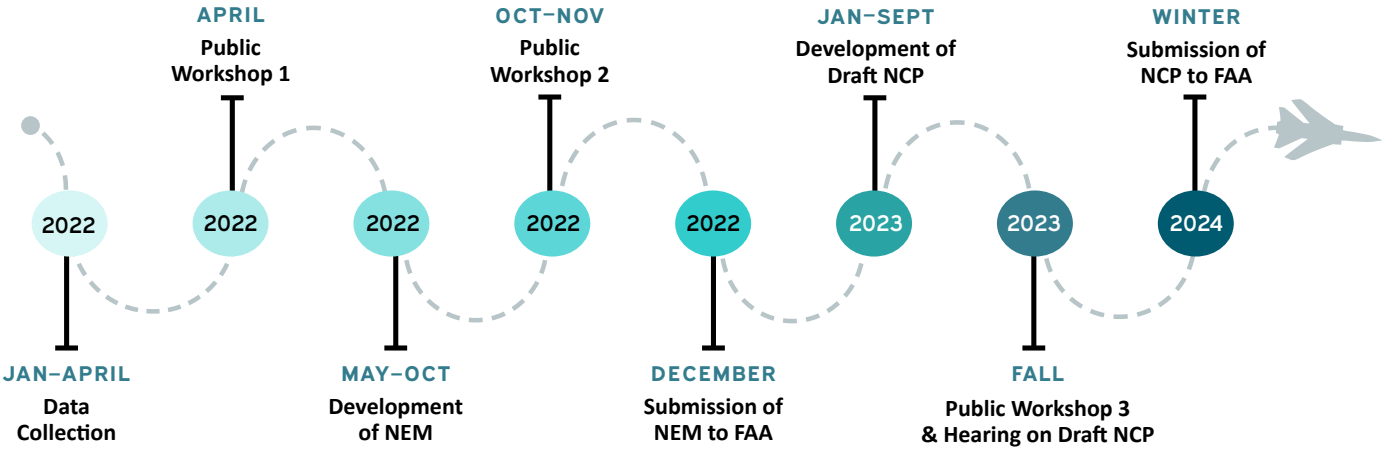
Summer 2022 Newsletter

Study Overview

Dane County Regional Airport (MSN) is undertaking a Noise Compatibility Planning Study in accordance with Title 14 of the Code of Federal Regulation Part 150 (14 CFR Part 150 or "Part 150"). The purpose of the Study is to develop an accurate Noise Exposure Map (NEM) that reflects current and future airport operations; communicate noise levels to the surrounding communities; and collaboratively develop noise abatement, mitigation, and management measures through a Noise Compatibility Program (NCP). The NEM and NCP prepared under this Study will be subject to Federal Aviation Administration (FAA) acceptance and approval, respectively.

Part 150 describes a formal process for airport operators to address airport noise in terms of land use compatibility. The regulation establishes thresholds for aircraft noise exposure for specific land use categories. Part 150 studies are voluntary and allow airports to apply for federal funding for implementation of their noise program including FAA-approved measures recommended to reduce or eliminate incompatible land use. The study is expected to be completed in 2024.

Study Phases Timeline



Public Outreach and Stakeholder Engagement

Stakeholders and those interested in aircraft noise compatibility planning will be afforded an ongoing opportunity to learn about the Study and provide feedback. This will occur through various mechanisms, including a Technical Advisory Committee (TAC), a project website, project newsletters, public draft documents, public open houses, public comment periods, and a public hearing.

First Open House Recap

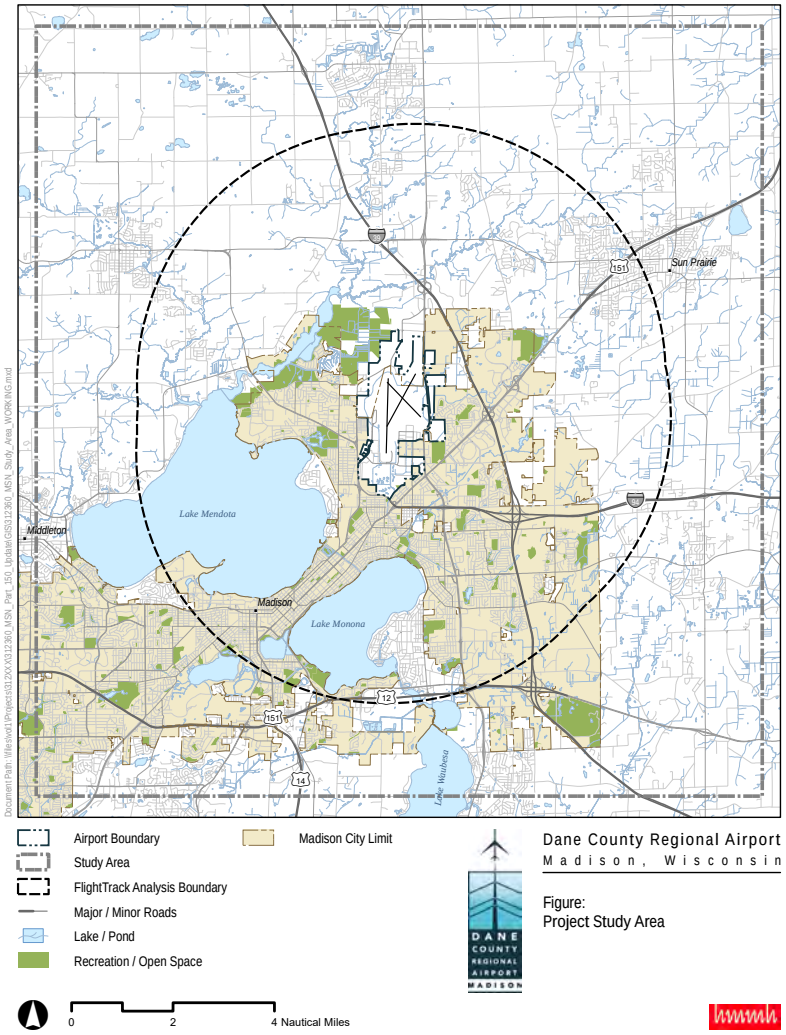
Thank you to everyone who attended the first open house held on April 26, 2022! The presentation boards are available at this link: https://www.msnairport.com/documents/pdf/MSN-20220426-Public-Mtg1-Boards-Final.pdf.

D-1-249

Noise Exposure Map and Noise Compatibility Plan

The NEM documentation describes the airport layout and operation, aircraft-related noise exposure, land uses in the airport environs, and the resulting noise/land use compatibility. The NEM documentation must address two time frames: (1) data representing the year of submission (the "existing conditions") and (2) a forecast year that is at least five years following the year of submission (the "forecast conditions"). Part 150 requires more than simple "maps" to provide all the necessary information in an NEM. In addition to graphics, the NEM documentation presents tabulated data and describes the data collection and analysis undertaken in its development. MSN is working with the Wisconsin Air National Guard (ANG) 115th Fighter Wing concerning the anticipated replacement of the aging F-16 fleet with newer generation F-35 aircraft to ensure that accurate operations data are reflected in the noise modeling completed for the Study.

The NCP is a list of the actions the airport operator recommends to minimize existing and future noise/land use incompatibilities. The NCP documentation must recount the development of the program, including a description of all measures considered, the reasons that individual measures were recommended or not recommended by MSN, how measures will be implemented and funded, and the predicted effectiveness of individual measures and the overall program. Official FAA acceptance of the Part 150 submission and approval of the NCP measures does not eliminate requirements for formal environmental assessment of any proposed actions pursuant to requirements of the National Environmental Policy Act (NEPA). However, acceptance of the submission is a prerequisite to application for funding of implementation actions including NEPA.



Draft Study Area Map

Find Out More

www.msnairport.com/about/ecomentality/Part-150-Study

part150study@msnairport.com

Why is MSN undertaking a Part 150 Study?
MSN strives to be a good neighbor to the communities surrounding the airport. MSN is undertaking this study to develop an accurate NEM that reflects current and future airport operations including the impending F-35 operations, to communicate noise levels to the surrounding communities, and collaboratively develop noise abatement, mitigation, and management measures through an NCP.

How is noise exposure quanitified?
The FAA requires the use of the noise metric Day-Night Average Sound Level (DNL) to quantify noise exposure. DNL uses an average number of operations over a 24-hour period based on one year of aircraft operations data. The sound levels are then averaged (with nighttime noise weighted with an additional 10 decibels [dB]). Nighttime operations are weighted to represent the greater sensitivity for most people by nighttime sounds.

How will the noise contours be developed for the Part 150 Study?
The Noise Exposure Maps will be generated by a computer modeling program (Aviation Environmental Design Tool or "AEDT"), which is the modeling program prescribed by the FAA for noise studies. The input data for the AEDT includes a forecast of aircraft operations, on an annual average day, for each of the study years (broken down between day and night activity), runway utilization rates for aircraft types, flight track geometry for different aircraft types and other factors.

Why is DNL used to develop noise contours rather than the sound level I hear when planes are overhead?
The FAA requires the Noise Exposure Map noise contours to be based on DNL, and for DNL to be used to assess land use compatibility. The advantage of DNL is that it reflects an annual average of 24-hour noise exposure and not just the noise level at a specific moment in time. The noise when aircraft are overhead is averaged with the times during the day when there is less or no aircraft noise, so the DNL level for a particular location is considerably lower than the highest decibel levels that might be heard at that location, or measured on a noise meter, during aircraft overflights.

Does DNL take into account the time of day when noise occurs?
Yes. 10 decibels is added to the noise exposure from each nighttime flight (from 10 p.m. to 7 a.m.). This is mathematically equivalent to counting a single nighttime flight the same as 10 identical day-time flights.

Does DNL take into account weather and topography?
Yes. As required by the FAA, a 30-year average weather history is used to develop the noise exposure contours. Topographic data is also used to accurately account for the distance from the aircraft (noise source) to the receiver on the ground using actual elevations around MSN airport.

Will noise monitors be used in developing the updated noise exposure maps for the airport?
No. The FAA requires DNL contours to be developed through its computer modeling program rather than actual noise measurements. The input into the modeling program is far more comprehensive than could possibly be obtained from field measurements, and modeling is the only practical way of determining the noise that will be experienced at all of the geographic points that are represented in the noise contours. Noise modeling is also necessary to forecast the noise that is expected in the future, as required by Part 150. The FAA noise modeling program has been shown to accurately portray the results from measurements in the field.

Could the Part 150 Study determine that the F-35 aircraft is too loud to operate at MSN?
No. 14 CFR Part 150 is focused on addressing the land use compatibility conditions around an airport based on existing and future operations. The MSN Part 150 Study will include the projected F-35 operations in the forecast NEM to assess land use compatibility as a result of the projected F-35 operations; and then determine NCP measures to address incompatible land uses for that future condition NEM.

How is the study funded?
The FAA provided funding for the study from an Airport Improvement Program (AIP) grant. The AIP grants come from the Airport and Airway Trust Fund. The Trust

Fund was established by Congress in 1970 to provide a dedicated funding source for the U.S. aviation system, and it helps finance the FAA's investment in the nation's airports and airways. The Trust Fund receives funding from taxes on aviation fuel and on commercial airline tickets. The MSN Part 150 Study is not funded with local taxpayer dollars.

Does Part 150 consider health effects and impacts of noise on children's hearing?

No. Part 150 does not consider health effects and impacts of noise on children's hearing. MSN is committed to conducting the Noise Compatibility Planning Study in accordance with Title 14 of the Code of Federal Regulation Part 150 (14 CFR Part 150), following FAA requirements and guidelines limited to land use compatibility around airports. FAA acknowledges that noise or unwanted sound is known to have several adverse effects on humans, such as communication interference, sleep disturbance, physiological responses, and annoyance. The FAA continues to research these topics to inform their aircraft noise policy. A Federal Register noticed published in 2021 summarizes the latest research findings: https://www.federalregister.gov/documents/2021/01/13/2021-00564/overview-of-faa-aircraft-noise-policy-and-research-efforts-request-for-input-on-research-activities. Additional information is available on the FAA website, https://www.faa.gov/regulations_policies/policy_guidance/noise.

How is MSN considering environmental justice in the Part 150 Study?

14 CFR Part 150 does not specifically address environmental justice. As the "airport operator", MSN is responsible for preparing the NEM, recommending NCP measures, pursuing implementation of the adopted NCP measures and managing the consultant team. MSN may apply for grant funding for the implementation of FAA-approved Airport Improvement Program (AIP) eligible measures. A MSN-recommended and FAA-approved measure does not require the implementation of the measure, but merely demonstrates that the measure is in compliance with Part 150 and allows MSN to apply for federal Airport Improvement Program (AIP) grants for measures that are eligible. Additionally, if a measure requires subsequent FAA action, its implementation may require environmental study under the National Environmental Policy Act (NEPA). NEPA requires environmental justice to be analyzed as a resource category. Chapter 12.2 of the FAA 1050.1F Desk Reference (v2) discusses analysis of environmental justice for FAA actions subject to NEPA review: https://www.faa.gov/sites/faa.gov/files/about/office_org/headquarters_offices/apl/12-socioecon-enviro.pdf.

Photos from the first open house held on April 26, 2022

DANE COUNTY REGIONAL AIRPORT
NOISE COMPATIBILITY PLANNING STUDY

Fall 2022 Newsletter

Study Overview

Dane County Regional Airport (MSN) is undertaking a Noise Compatibility Planning Study in accordance with Title 14 of the Code of Federal Regulation Part 150 (14 CFR Part 150 or Part 150). The purpose of the Study is to develop an accurate Noise Exposure Map (NEM) that reflects current and future airport operations, to communicate noise levels to the surrounding communities, and to collaboratively develop noise abatement, mitigation, and/or management measures through a Noise Compatibility Program (NCP). The NEM and NCP prepared under this Study will be subject to Federal Aviation Administration (FAA) acceptance and approval, respectively.

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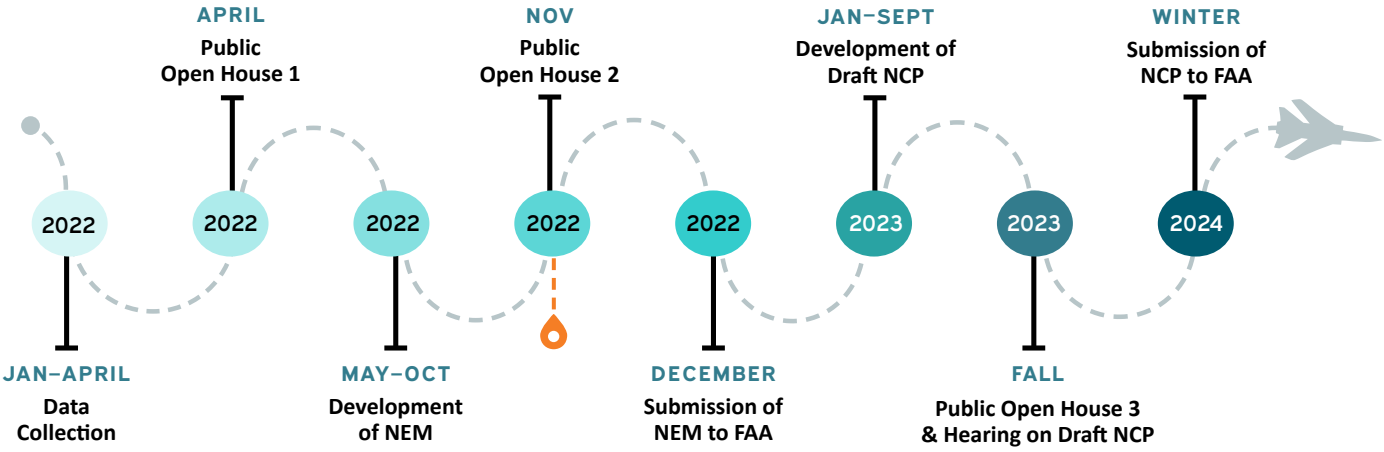
Study Phases Timeline



Public Outreach and Stakeholder Engagement

Stakeholders and those interested in land use compatibility planning have an ongoing opportunity to learn about the Study and provide feedback. This opportunity is occuring through various mechanisms, including a Technical Advisory Committee, a project website, project newsletters, public draft documents, public open houses, public comment periods, and a public hearing.

Public Open House 2

You're invited to receive updates on the Study's progress and provide feedback by attending the upcoming open house.

When: Monday, November 14, 6–8 pm

Where: Dane County Regional Airport lobby between Terminal Doors 1 & 2

D-1-253

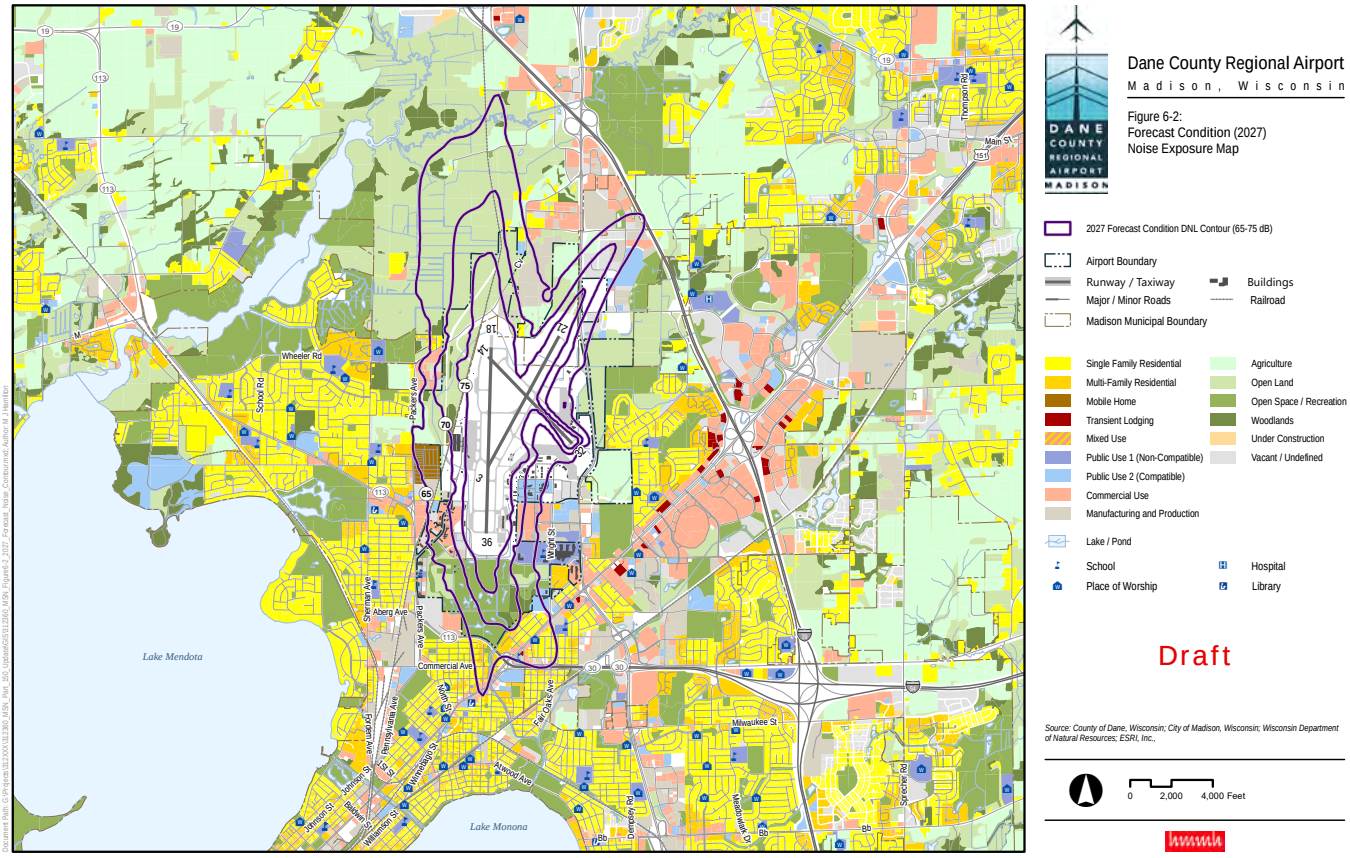
DANE COUNTY REGIONAL AIRPORT
NOISE COMPATIBILITY PLANNING STUDY

Fall 2022 Newsletter

Draft NEM Update

As part of the ongoing Part 150 Study, the noise exposure from MSN aircraft operations has been assessed following the FAA-prescribed Part 150 process, resulting in draft aircraft noise exposure contours depicting the existing condition (2022) and a five-year forecast condition (2027) overlaid on an updated land use map. The draft 2027 Future Condition NEM is provided below, which includes the 65, 70, and 75 decibel (dB) noise exposure contours using the FAA-required Day-Night Average Sound Level (DNL) metric. According to Part 150 regulations, all land uses outside of the 65 DNL contour are compatible.

The land use analysis of the draft 2027 NEM resulted in the identification of 1,250 residential units and three noise-sensitive parcels as potentially incompatible with noise from MSN aircraft operations. The noise-sensitive parcels identified include Madison Area Technical College, Claudi's Kids Inc Day Care Center, and Ridgeway Church.



Find Out More

www.msnairport.com/about/ecomentality/Part-150-Study

part150study@msnairport.com

DANE COUNTY REGIONAL AIRPORT
MADISON

Scan code to learn more about the airport's noise study →

4000 International Lane | Madison, WI 53704 | (608) 246 - 3380 | part150study@msnairport.com

Dane County Regional Airport

WHO
Dane County Regional Airport

WHAT
Open house for public comment on airport noise study

WHEN
Monday, November 14th, 6pm - 8pm

WHERE
Airport lobby between Terminal Doors 1 & 2

WHY
For stakeholders to submit feedback regarding airport noise study

Scan code for more information