Appendices to the Noise Compatibility Program

Pursuant to Title 14 of the Code of Federal Regulations Part 150

Dane County Regional Airport

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Appendix A: Dane County Regional Airport/Truax Field FAA Acceptance of Noise Exposure Maps

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U.S. Department
of Transportation
Federal Aviation Administration

Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, IL 60018
Phone: (847) 294-7336
Fax: (847) 294-7046

December 21, 2023

Kimberly S. Jones
Airport Director
Dane County Regional Airport/Truax Field
4000 International Lane
Madison, WI 53704

Dear Ms. Jones:

Dane County Regional Airport/Truax Field
FAA Acceptance of Noise Exposure Maps

This letter is to notify you that the Federal Aviation Administration (FAA) has evaluated and accepted the Noise Exposure Maps and supporting documentation dated December 28, 2022, for the Dane County Regional Airport/Truax Field. In accordance with 49 U.S.C. Section 47503 (formerly the Aviation Safety and Noise Abatement Act of 1979), as amended, we have determined that:

1. The 2022 noise contours and supporting documentation meet the requirements for the current Noise Exposure Map as of the date of submission as set forth in Title 14, Code of Federal Regulations (CFR), Part 150, Airport Noise Compatibility Planning, Section 150.21, and are accordingly accepted under this Part.

2. The projected aircraft operations, the 2027 noise contours and supporting documentation are accepted as the description of the future conditions as set forth in Part 150 and are accordingly accepted under this Part.

3. The documentation provides sufficient evidence consultation was accomplished in accordance with section 150.21(b).

FAA's acceptance of the Noise Exposure Maps is limited to the determination that the maps were developed in accordance with the procedures contained in Appendix A of Part 150. Such acceptance does not constitute approval of your data, information, or plans.

The FAA will publish a notice in the Federal Register announcing the acceptance of the Noise Exposure Maps for the Dane County Regional Airport/Truax Field. The FAA's acceptance of these Noise Exposure Maps under Part 150 in no way approves or endorses a Noise Compatibility Program, potential related Federal funding of projects identified in such a program, or any related operating restrictions at the subject airport.

Should any questions arise concerning the precise relationship of specific properties to noise exposure contours depicted on the Noise Exposure Maps, you should note that the FAA will not be involved in any way in the determination of relative locations of specific properties with regard to the depicted noise contours, or in interpreting the maps to resolve questions concerning, for example, which properties should be covered by the provision of 49 U.S.C. 47506. These functions are inseparable from the ultimate land use

control and planning responsibilities of local government. These local responsibilities are not changed in any way under Part 150 or through FAA's acceptance of your Noise Exposure Maps Update. Therefore, the responsibility for the detailed overlaying of noise contours onto the maps depicting properties on the surface rests exclusively with you the airport operator, or those public agencies and planning agencies with which consultation is required under 49 U.S.C 47503. The FAA relies on the certification by you under 150.21 of FAR Part 150, that the statutorily required consultation has been accomplished. (14 C.F.R. 150.5)

Your notice of this determination, and the availability of the Noise Exposure Maps, which when published at least three (3) times in a newspaper of general circulation in the county where the affected properties are located, will satisfy the requirements of 49 U.S.C. 47506 of the Act.

Your attention is called to the requirements of Section 150.21(d) of Part 150, involving the prompt preparation and submission of revisions to these maps, if any actual or proposed change in the operation of the subject airport might create any substantial, new noncompatible land use in any areas depicted on the maps, or if there would be a significant reduction in noise over existing incompatible land uses that is not reflected in either map already on file with the FAA.

Thank you for your continued interest in noise compatibility planning.

Sincerely,

DEBRA L BARTELL
Digitally signed by DEBRA L BARTELL
Date: 2023.12.21 07:54:11 -06'00'

Deb Bartell
Manager
Chicago Airports District Office

Appendix B: Dane County Regional Airport NCP Record of Approval (1993)

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Memorandum

U.S. Department
of Transportation

**Federal Aviation
Administration**

Subject: **ACTION:** Transmittal of the Approved Part 150 Program for the Dane County Regional Airport (Truax Field) Madison, Wisconsin

Date: JAN 26

Reply to
Attn. of:

From: Manager, Community and Environmental Needs Division, APP-600

To: Manager, Great Lakes Region, AGL-600

Attached is the approval package for the subject Noise Compatibility Program. Please send us a copy of your signed letter to the sponsor for our records.

Lynne Sparks Pickard
Lynne S. Pickard

Attachment

cc: AEE-300(info)

Memorandum

U.S. Department
of Transportation

**Federal Aviation
Administration**

Subject: **ACTION:** FAR Part 150 Noise Compatibility Program for Dane County Regional Airport (Truax Field) Madison, Wisconsin

Date: ... 25

From: Director, Office of Airport Planning and Programming, APP-1

Reply to Attn. of:

To: Assistant Administrator for Airports, ARP-1

Attached for your action is the Noise Compatibility Program (NCP) for the Dane County Regional Airport (Truax Field) Madison, Wisconsin (MSN) under FAR Part 150. The Great Lakes Region, in conjunction with Federal Aviation Administration (FAA) Headquarters has evaluated the program and recommends action as set forth below.

On July 26, 1992, the FAA determined that the Noise Exposure Maps (NEM's) for MSN are in compliance with the requirements of Section 103(a) of the Aviation Safety and Noise Abatement Act of 1979 (ANSA) and Title 14, CFR Part 150. At the same time, the FAA made notification in the Federal Register of the formal 180 day review period for MSN's proposed program under the provisions of section 104(a) of ANSA and FAR Part 150. The 180-day formal review period ends January 25, 1993. If the program is not acted on by the FAA by that date, it will automatically be approved by law, with the exception of flight procedures.

The MSN program describes the current and future noncompatible land uses. The NCP proposes several measures to remedy existing noise problems and prevent noncompatible land uses. Each measure is described in the attached Record of Approval.

The Assistant Administrator for Policy, Planning, and International Aviation and the Chief Counsel have concurred with the recommendations of the Great Lakes Region. If you agree with the recommended FAA determinations, you should sign the "approve" line on the attached signature page. I recommend your approval.

Paul L. Galis

Paul L. Galis

Attachments

RECORD OF APPROVAL

FAR PART 150 NOISE COMPATIBILITY PROGRAM

DANE COUNTY REGIONAL AIRPORT

MADISON, WISCONSIN

		CONCUR	NONCONCUR
Dale D. McDaniel Assistant Administrator for Policy, Planning and International Aviation, API-1	1-19-93 Date	✓	
for Chief Counsel, AGC-1	1/25/93 Date	✓	
Assistant Administrator for Airports, ARP-1	1/25/93 Date	✓ Approved	Disapproved

RECORD OF APPROVAL
DANE COUNTY REGIONAL AIRPORT
NOISE COMPATIBILITY PROGRAM

The Noise Compatibility Program (NCP) for Dane County Regional Airport in Madison, Wisconsin, describes the current and future noncompatible land uses based upon the parameters established in FAR Part 150, Airport Noise Compatibility Planning. Dane County recommended twenty-three (23) measures in their NCP to remedy existing noise problems and prevent future non-compatible land uses. These measures are grouped into three categories: Noise Abatement (Measures NA-1 to NA-9), Land Use Management (Measures LU-1 to LU-11) and Continuing Program (Measures CP-1 to CP-3).

Each measure of the recommended Noise Compatibility Program includes a summary of the airport operator's recommendations and a cross reference to page numbers in the NCP where each measure can be found. The NCP Study itself contains additional summary information in Tables 5-C and 5-D, on pages 5-20 and 5-25, respectively. The official Noise Exposure Maps (NEM) are located on pages I-11 and I-12 in the separate NEM Study.

The summary of each measure follows as closely as possible the airport operator's recommendations in the NCP Study. The statements contained within the summarized recommendations and before the indicated FAA approval, disapproval, or other determination do not represent the opinions or decisions of the FAA.

The approvals listed herein include approvals of measures that the airport recommends be taken by the FAA. **It should be noted that these approvals indicate only that the measures would, if implemented, be consistent with the purposes of Part 150. These approvals do not constitute decisions to implement the measures. Later decisions concerning possible implementation of the measures may be subject to applicable environmental or other procedures or requirements.**

NOISE ABATEMENT MEASURES

NA-1. Continue the existing informal runway use program. (Pages 4-5, 5-2, Appendix D-2, Comments 10 and 12 of Responses to FAA Review Comments)

Dane County proposes to continue using a previously established informal Runway Use Program (RUP). It calls for the use of Runways 31 and 36 for takeoff and Runways 18 or 13 for landing by all aircraft over 12,500 pounds. It applies with tailwinds of 5 knots or less, crosswinds of 15 knots or less, and with clear and dry runways. It is

intended to conform to the informal system established under the criteria set forth in FAA Order 8400.9.

Aircraft arrive from the north on Runway 18 and depart to the north on Runway 36. The resultant operation is a head-to-head configuration, wind, weather and air traffic permitting. Air traffic controllers are requested to honor pilot requests for downwind departures on Runway 36 and downwind arrivals on Runway 18. This informal program is set forth in Tower Order 7220.2A, dated Jan 1, 1990.

The effect of this pattern of air traffic control is clearly seen in the Noise Exposure Map contours. The benefit of this method of operation is that the bulk of the noise generated by air carrier jet aircraft in and out of Madison is directed over largely undeveloped park land north of the airport.

APPROVED AS A VOLUNTARY MEASURE, IN PART. This noise abatement measure has worked well for Dane County Regional Airport over the years and does mitigate the level of noise experienced by noise sensitive areas south of the airport. While FAA approves the continuation of the voluntary program presently in place, it does not approve using the model Letter of Agreement (LOA) in Appendix D for implementation. Since a tower order addressing the RUP procedures already exists, implementing the LOA would be redundant.

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. (Pages 4-6, 5-2, 5-3, Appendix D-2, Comment 12 of Responses to FAA Review Comments)

Dane County recommends the Air Traffic Control Tower maintain the existing Runway 31 departure procedure as a beneficial noise abatement measure.

The internal operating procedure requires aircraft departing Runway 31 to pass through 2,500 MSL before turning south of 310 degrees. An early left turn from Runway 31 would place departing aircraft over the Cherokee subdivision west of the airport. By limiting such turns until reaching a specified altitude, population impacted by noise is reduced. This procedure is set forth in Tower Order 7220.2A, dated Jan 1, 1990.

APPROVED IN PART. This noise abatement measure has worked well for Dane County Regional Airport over the years and does mitigate the level of noise experienced by noise sensitive areas west of the airport. While FAA approves continuation of the procedure presently in place, it does not approve using the model Letter of Agreement (LOA) in

Appendix D for implementation. Since a tower order addressing the RUP procedures already exists, implementing the LOA would be redundant.

NA-3. Establish visual approach and departure corridors for helicopters. (Pages 4-6, 4-7, 4-8A, 5-3, Appendix D-4, Comment 13 of Responses to FAA Review Comments)

Since there are significant helicopter operations at the airport from the Wisconsin Army National Guard, Dane County should implement this noise abatement measure by entering into a Letter of Agreement with the Air Traffic Control Tower and the National Guard helicopter unit establishing the noise-compatible helicopter corridors shown in **Exhibit 4B** (page 4-8A of the NCP).

The airport staff have developed a draft procedure designating checkpoints, flight corridors, and air traffic control procedures for helicopter approaches and departures. Three checkpoints should be adopted: **Checkpoint Interstate** at the interchange of Interstates 90/94 and State Highway 30; **Checkpoint River** on the Yahara River northwest of the airport; and **Checkpoint Park** (identified on Exhibit 4B as "New Checkpoint") at the interchange of U.S. Highway 51 (a.k.a. Stoughton Road) and Interstate 90/94 adjacent to Token Creek Park. Helicopters departing to and arriving from the south would fly between the airport and Checkpoint Interstate via State Highway 30. Helicopters departing to and arriving from the north and northwest would fly directly between the airport and Checkpoint River. Helicopters departing to and arriving from the north and northeast would fly directly between the airport and Checkpoint Park. Each of these procedures is dependent on weather and operating conditions and would be subject to the discretion of the pilot-in-command and/or air traffic being able to maintain a safe operation.

The County should encourage the National Guard to prominently display maps of the corridors and to inform its pilots of the procedures. The County should also ensure that the Air Traffic Manager has the information needed to properly brief controllers and to fully implement the procedures. Adoption of a tower order, while not strictly necessary, would assist in the implementation of the procedures. (A model Letter of Agreement is included in **Appendix D.**)

The concern expressed during this study about low-flying helicopters is not so severe as to influence the noise contours, but it is the cause of potentially annoying single events and should be dealt with to the extent feasible. Helicopters often fly lower than fixed-wing aircraft and have a distinctive sound which can prove irritating even at

low sound intensity levels. As it is a good policy to route the helicopters over available noise-compatible corridors, these visual approach procedures should be adopted.

APPROVED IN PART. This measure was reviewed and approved in two parts. Concerning the first part, FAA agrees with and approves the concept of establishing VFR helicopter approach and departure corridors. However, the proposed **Checkpoint Park**, northeast of the airport, will create traffic conflicts with Runway 36 departures. The other two checkpoints will not conflict with traffic flows. Therefore, FAA approves only the remaining two checkpoints, Interstate and River, and their associated corridors.

Concerning the second part, implementation of an effective procedure does not require the formality suggested in Appendix D. A simple Letter of Agreement between the aircraft operator, i.e. the military and the Air Traffic Control Tower, in coordination with Airport Management, will suffice. Therefore, FAA approves the two checkpoints, Interstate and River, and the proposed routings, but disapproves the method of implementing the procedures suggested in Appendix D.

NA-4. Encourage use of noise abatement departure procedures by operators of jet aircraft.
(Pages 4-12 thru 4-14, 5-3)

While it is inappropriate for Dane County Regional Airport to enforce an airport-specific noise abatement departure procedure, Dane County should encourage the airlines, business jet operators and the military to make full use of their own internal noise abatement departure procedures.

Airlines fly a variation of the FAA AC 91-53 noise abatement departure profile. Operators of business jet aircraft can fly the NBAA standard departure procedure. In addition, some manufacturers describe noise abatement departure procedures suitable for their aircraft in the operator's manual. Military jet operators have already indicated an interest in quiet flying techniques when within the airport environs. Even as the military is contemplating the conversion of the relatively quiet A-10s to the louder A-16s, military officials have made inquiries as to the best way to fly the new aircraft in relation to airport neighbors.

Such noise mitigation departure procedures have been shown to be beneficial for noise abatement.

APPROVED AS A VOLUNTARY MEASURE. Noise abatement departure measures are incorporated in the INM departure profiles and

do have a degree of effectiveness.

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.
(Pages 4-17, 5-4)

Dane County should encourage the Guard to follow through with its plans to construct a noise suppression structure, commonly called a "hush house", in anticipation of the increased noise levels from maintenance operations on the new aircraft.

The Air National Guard anticipates an aircraft change in the next few years with the A-10 aircraft being replaced with the A-16 aircraft. Engine maintenance for the A-10 is not unlike engine maintenance for business jet aircraft. Noise from test runups would likely be contained on airport property. The A-16 engine maintenance would be a different story. The noise contours from engine test runups for this aircraft would likely extend well beyond airport property.

Hush houses are extremely effective at attenuating noise. Construction of a hush house for A-16 runups will contain the potentially disturbing noise from these events.

APPROVED AS A VOLUNTARY MEASURE. The effectiveness of hush houses at attenuating noise levels is well documented.

NA-6. Construct new 6,500 foot Runway 3-21.
(Pages 4-15 thru 4-16, 4-19 thru 4-20, 4-23 thru 4-24, 4-27 thru 4-28, 5- 4, Comments 9 and 11 of Responses to FAA Review Comments)

Dane County proposes to construct a new air carrier runway, oriented 3-21, at a length of 6,500 feet. Construction of Runway 3-21 was discussed and evaluated as Alternatives Three and Six (**Exhibits 4E and 4F-3** of the NCP) and as Alternative 10 of the Master Plan study (page 5-6 and **Exhibit 5F**).

Part of the justification for a new Runway 3-21 versus lengthening the existing Runway 4-22 is the fact that lengthening Runway 4-22 will require additional relocation of U.S. Highway 51 (a.k.a. Stoughton Road). A road relocation project was recently completed on U.S. 51 adjacent to the area where further road relocation would be required. It would be very difficult to achieve another relocation of U.S. 51 in the near future. Alternatively, there is sufficient space for a new Runway 3-21 to be built without relocating U.S. 51. Also because of the condition of Runway 4-22, a lengthening project would essentially

involve full reconstruction. Because of this, construction of a completely new runway, oriented 3-21, is essentially equivalent in terms of cost.

The question of the best length for the proposed Runway 3-21 was the subject of discussion and analysis in the Airport Master Plan. While it would be desirable to have greater length, thus enabling use of the runway by the military, the proposed length of 6,500 feet will be sufficient for almost all civilian users. This alone will provide a significant noise benefit. The cost and complexity of building a longer runway was also a consideration. Any additional runway length would require the relocation of U.S. 51. As previously stated, another relocation of U.S. 51 is not considered practical. The highway was just relocated within the last two years to provide clearance off the approach end of Runway 31. That project was approved only after a controversial EIS which raised concerns among residents of neighborhoods immediately to the east. The sponsor's analysis indicated that a runway length of 6,500 feet would be sufficient for most commercial users at the airport, and would thus provide important noise benefits. It was considered unwise and not cost-effective to seek even greater runway length, thus reopening the controversial highway relocation issue.

Construction of a secondary air carrier runway allows the airport to operate for a longer period of time with its present contra-flow method of noise abatement. As has been pointed out, with increasing operations levels the airport will not be able to continue the present procedure of arrivals from the north and departures to the north. This procedure is of particular noise benefit and should be maintained as long as possible. Construction of an alternate runway will enable this.

Using the level-weighted population (LWP) analysis in the Study, an investment of $13.5 million for the new runway will relieve approximately 602 LWP (610 inside DNL 65 dB + 252 inside DNL 70 dB = 862 actual people) out of a total of 3,771 LWP (4,865 inside DNL 65 dB + 835 inside DNL 70 dB = 5,700 actual people) from significant noise impacts. This equates to a reduction of 16 percent. However, when viewed from the perspective of the cost to insulate the 372 homes occupied by the 862 actual people residing inside the DNL 65 dB, a different picture results. Assuming an average cost of $25,000 to $30,000 per house, the total insulation cost would be $9.3 to $11.2 million. Considering the additional time, effort and money to complete an insulation project of this magnitude, the final costs will be comparable to the $13.5 million cost for a new Runway 3-21. Furthermore, when combined with the fact that insulation is only effective when people remain inside their homes, justification for the new runway is even more compelling.

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.
(Pages 4-19 thru 4-20, 4-23 thru 4-24, 5-4 thru 5-5, Appendix D-6, Comments 10 and 12 of Responses to FAA Review Comments)

After Runway 3-21 is constructed, Dane County proposes to modify the existing informal Runway Use Program (RUP) to account for use of the new runway. Departures and arrivals on the new runway would be encouraged to and from the northeast. As with the existing RUP, it applies to all aircraft over 12,500 pounds, when tailwinds are 5 knots or less, crosswinds are 15 knots or less, and the runways are clear and dry. It is intended to conform to the informal system established under the criteria set forth in FAA Order 8400.9.

With Runway 3-21 in place, simultaneous operations are possible. Arrivals on Runway 21 and departures on Runway 36 or arrivals on Runway 18 and departures on Runway 3 are variations of the present contra-flow procedure to and from the north. Wind conditions would allow either of these simultaneous operating configurations about 25 percent of the time. Overall, departures could occur to the north on Runway 3 about 38 percent of the time and departures on Runway 36 could occur about 19 percent for a 57 percent total north departure potential. The winds and runway configuration would allow arrivals from the north about 65 percent of the time, 52 percent for Runway 21 and 13 percent for Runway 18. For 1995 baseline conditions, it was estimated only a 50 percent head-to-head north operating configuration would be possible.

Amendment of the current informal Runway Use Program which favors departures to the north and arrivals from the north would continue to provide noise abatement benefits to the heavily populated areas south of the airport.

APPROVED AS A VOLUNTARY MEASURE, IN PART. As with the existing RUP, this voluntary noise abatement measure will work well for Dane County Regional Airport in mitigating the level of noise experienced by noise sensitive areas south of the airport. While FAA approves the continuation of the voluntary program presently in place, it does not approve using the model Letter of Agreement (LOA) in Appendix D for implementation. Instead, as is done with the existing RUP, the procedures should be set forth in a tower order.

It is also important to note that the proposed operations planned for Runway 3-21 would not be simultaneous operations as defined by FAA. The FAA definition of such operations means that operations occur at the same time on two, different runways. The sponsor's proposed operational scheme would, in reality, be a sequential operation, that is, two operations would occur within the same general time frame on two different runways. To ensure that aircraft separations required by FAA Order 7110.65G are maintained, ATCT will develop procedures for the proposed runway use program.

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 feet MSL before turning right. (Pages 4-20, 5-5, Appendix D-6, Comment 12 of Responses to FAA Review Comments)

The County proposes to encourage the Tower to establish this procedure to avoid departure turns at low altitude over populated areas northeast of the new Runway 3-21. The typical air carrier aircraft would begin the departure turn approximately three nautical miles from the start of the takeoff roll.

The procedure is very similar to the existing requirement for departures from Runway 31 and it would serve a similar purpose in avoiding low overflights of a residential area. Early right turns from Runway 3 could place departing aircraft at low altitudes over populated areas. With the procedure, aircraft would be at 1,600 feet above the ground before initiating right turns.

APPROVED IN PART. As with the existing voluntary noise abatement procedure for departures from Runway 31, here too the procedure could be effectively implemented by an Air Traffic Tower Order. Once coordinated with Airport Management, the procedure could be set forth in Tower Order 7220.2 for internal standardization. Therefore, FAA approves the concept of the proposed measure, but disapproves the Letter of Agreement process suggested in Appendix D.

NA-9. Adopt procedures requiring all aircraft exceeding 12,500 pounds and departing Runway 21 to turn left 10 degrees as soon as safe and practicable. (Pages 4-23 thru 4-24, 5-5, Appendix D-6, Comment 12 of Responses to FAA Review Comments)

Dane County recommends the Air Traffic Control Tower require aircraft exceeding 12,500 pounds and departing from Runway 21 to turn left 10 degrees and climb through 3,000 feet MSL

before turning to course headings.

The County should encourage the Air Traffic Manager to adopt a Tower Order setting forth the procedure. The proposed turn from Runway 21 is not difficult and could be implemented at Tower direction. It is also in line with present airport procedure. Currently, business jets departing on Runway 22 are directed to execute a quick left turn and fly south out of the airport environs.

Straight-out departures and right turns from Runway 21 would cause overflights of residential areas which do not presently experience aircraft overflights. While cumulative noise exposure levels would be quite low, this would likely create new noise complaints from people disturbed by loud single events. The benefits of the new runway would be eroded by introduction of new impacts. Therefore, as part of the operating configuration of the new runway layout, limitations on departures off Runway 21 are appropriate. A 10-degree left turn would place departing aircraft over the noise-compatible corridor extending south-southwest from the airport down toward the isthmus.

APPROVED IN PART. As with the existing voluntary noise abatement procedure for departures from Runway 22, here too the procedure could be effectively implemented through an Air Traffic Tower Order. Once coordinated with Airport Management, the procedure could be set forth in Tower Order 7220.2 for internal standardization. Therefore, FAA approves the concept of the proposed measure, but disapproves the Letter of Agreement process suggested in Appendix D.

LAND USE MANAGEMENT MEASURES

LU-1 City of Madison, Dane County - Maintain Existing Compatible Zoning in the Airport Vicinity
(Pages 4-33, 5-11)

A significant amount of land in the airport vicinity is already zoned for commercial and industrial use. This is shown in Exhibit 4G (following page 4-38 of the NCP). As Exhibit 1H (following page 1-27 of the NEM) shows, there is also a significant amount of open space and recreation zoning in the airport vicinity. Both of these zoning categories are considered compatible with aircraft noise.

Dane County officials recommend they and the City of Madison maintain compatible zoning in the "airport affected area". **Exhibit 5D** (following page 5-12 of the NCP) shows the airport affected area. It is defined by the DNL 60 dB contour, the approach areas southeast of Runway 13-31 and

south of the planned Runway 18L-36R, and the training pattern area for Runway 18L-36R.

Although much of this area is outside the DNL 65 dB contour, it will be subject to moderate levels of aircraft noise and frequent aircraft overflights which some residents could find annoying. The exhibit also shows areas currently zoned for commercial and industrial use, as well as for open space and recreation areas, within the boundaries of the airport affected area. It is important to preserve the existing compatible use zoning in this area.

This proposal is not intended to necessarily lock into place all compatible zoning categories in the area. The two jurisdictions should reserve the flexibility to make zoning changes in these areas as needed, provided that the changes do not create the potential for the development of non-compatible land uses. For example, zoning changes from one commercial district to another or from commercial to industrial would still be acceptable.

An advantage of this measure is that neither Dane County nor Madison have cumulative zoning ordinances, although some residential and noise- sensitive institutional uses are permitted in certain commercial districts in each jurisdiction. The disadvantage to zoning is that the ordinances are subject to amendment.

APPROVED.

LU-2 Dane County, City of Madison, Town of Burke -- Define "Airport Affected Area" for Purposes of Implementing Wisconsin Act 136 (Page 5-11)

Dane County recommends entering into an intergovernmental agreement with Madison and the Town of Burke defining the "airport affected area". The full three mile area specified in the Wisconsin Act 136 statute would cover a very large area, much more than would be significantly affected by aircraft operations at an airport of this size. By defining a somewhat smaller area, it should make compliance with the requirements of the Act more manageable for the airport staff as well as the County, Town, and City planning staffs.

In 1985, the Wisconsin legislature adopted Wisconsin Act 136, Wis. Stat. 66.31, to promote the public interests in aviation. The law has three key provisions. First, each municipality with a development plan must show the location of any publicly owned airport and "airport affected areas". These are defined as areas within three miles of the airport, although smaller areas can be defined through intergovernmental agreements. Second, the municipality with zoning authority must notify the airport owner of proposed

zoning changes within the "airport affected area". Third, if the airport owner objects to the proposed zoning change, a two-thirds vote of the municipal governing body is required to approve the change.

For purposes of implementing and administering Act 136 in the Madison area, it would be acceptable to define the "airport affected area" as shown in **Exhibit 5D.** The area is based on a composite of the DNL 60 dB contour for 1995 baseline conditions and for noise abatement plan conditions. It also includes an approximation of the training pattern area for the proposed parallel runway (18L-36R). The training pattern area extends 8,000 feet off each end and 10,000 feet east of the proposed runway.

APPROVED.

LU-3 Dane County, City of Madison -- Adopt Airport Noise Overlay Zoning
(Pages 4-35, 5-11 thru 5-12, Appendix D-8)

Dane County officials propose they and the City of Madison consider the adoption of airport noise overlay zoning. One overlay district should be established with the boundaries corresponding to a composite of the DNL 65 dB noise contours for the 1995 baseline conditions and the 1995 noise abatement plan conditions. That is, the boundary should be the outermost line defined by overlaying the DNL 65 dB contours for 1995 conditions with and without the noise abatement plan. (Suggested language for noise overlay zoning is in **Appendix D.**)

Airport noise overlay zoning establishes special standards within a noise- impacted area to help mitigate the problems caused by noise. These provisions supplement the standards of the underlying zoning classifications and would apply only to new development.

Proposed overlay zone boundaries are shown in **Exhibit 5E** (following page 5-12 of the NCP). It is recognized that the local jurisdictions may wish to make adjustments to these boundaries to relate better to local land use planning needs. For example, they may wish to adjust the boundaries to follow streets, railroads, section lines, quarter-section, and quarter-quarter-section lines in order to facilitate agreement as to the precise location of the boundaries and to simplify administration of the regulations.

Within the noise overlay zoning district, it is proposed that the development of new noise-sensitive land uses would be prohibited. This would include residential uses, churches, schools, nursing homes, day care centers, and

hospitals and clinics. Exceptions would be made for existing lots of record. Noise-sensitive uses could be permitted on existing lots of record provided that the structures are sound-insulated to achieve an outdoor to indoor noise level reduction of 25 decibels.

The intent of the lot of record provision is to avoid creating severe hardships for the owners of undeveloped and platted lots. It is also intended to permit the owners of structures which may be destroyed to rebuild them.

Considerable developed land in Madison, south of the airport, is within the boundaries of the airport noise overlay zone. In order to prevent the regulations from causing problems for existing homes, which would be considered legal non-conforming uses under the terms of the proposed noise overlay zoning ordinance, language should be adopted to exempt existing homes from the effect of the regulations. It is not intended that the regulations should be interpreted to require sound insulation, for example, for existing homes undergoing expansion or remodeling.

The airport noise overlay zoning provisions also should include a requirement to notify the airport management of any land use development proposals within the overlay zone which require discretionary review or approval by the zoning boards of appeals, the planning commissions, the county board, or the city council. This is intended to give the airport management an opportunity to review and comment on applications for variance, conditional use, rezoning, and subdivision plat approval. This special notification requirement is not intended to apply to simple applications for building and zoning permits and occupancy certificates.

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 (Pages 4-37 thru 4-38, 5-12 thru 5-13, Appendix D-13)

Dane County proposes they, along with the City of Madison, consider amending their subdivision regulations to require the dedication of noise and avigation easements for any new subdivisions within an airport compatibility overlay zone. While the noise overlay zoning regulations should restrict the opportunities for land subdivision, this measure is recommended to provide some back-up protection in the event of unforseen events. (Suggested language for the subdivision regulation amendment is in **Appendix D.**)

The purpose of the noise and avigation easements is to put owners of property on notice that their land is subject to

frequent aircraft overflight and potentially disturbing levels of aircraft noise. The easement also would protect the airport proprietor, i.e. Dane County, from lawsuits claiming damages for noise or other airport activities. (This protection from suit would benefit only the airport proprietor, not private individuals or corporations.)

While this easement dedication requirement is considered fair and justified, both in terms of protecting the airport and in terms of providing a means of disclosing important information about a property, it may be sensitive from a legal standpoint. The consultant is unaware of any specific litigation, in any state, on the legality of dedicated noise and avigation easements. Based on a broad interpretation of the general welfare criterion, and based on longstanding legal traditions in land use control, the dedication of noise and avigation easements is clearly defensible. On the other hand, recent decisions of the U.S. Supreme Court indicate that the court is beginning to scrutinize land use controls and development exactions with a view toward vigorous protection of private property rights. (See, for example, **Nollan v. California Coastal Commission**, 107 S. Ct. 3141, 1987.) **It is important that the City and County attorneys carefully review this easement dedication proposal before it is adopted.**

If the County and City should determine that the required dedication of noise and avigation easements is not legally acceptable, they should consider a back-up measure requiring notices of potentially high noise levels to be placed on the final plat of subdivisions within the noise overlay zone. This would serve as a limited means of providing fair disclosure of the potential for disturbance caused by aircraft noise.

APPROVED.

LU-5 Dane County -- Consider Amending Subdivision Regulations to Prevent Subdivision of Land Zoned A-1 Agriculture (Pages 4-37 thru 4-38, 5-13)

Dane County proposes amending its subdivision regulations to prevent the subdivision of land zoned A-1, agriculture. This is envisioned as a means of protecting prime farmland and for urban growth management. To the extent this measure would apply to areas within the noise overlay zone and outlying areas subject to frequent aircraft overflights, it would also promote airport land use compatibility.

APPROVED.

LU-6 Dane County, City of Madison -- Amend Building Codes to

Provide Soundproofing Standards for Noise-Sensitive Development in Airport Noise Overlay Zones (Pages 4-39 thru 4-40, 5-13, Appendix D-16)

Dane County officials recommend they and the City of Madison consider adopting local amendments to the building code to provide soundproofing standards to apply within the airport noise overlay zone. This would implement the sound insulation standards contained in the overlay zoning ordinance. Since non-compatible development would be permitted only on existing lots of record, it is anticipated that these standards would receive only limited use. (Suggested language for the building code amendment is in **Appendix D.**)

It will be important for the City and County to adequately train their inspections staffs to be able to perform satisfactory inspections of sound insulation improvements. This may require special training. It may also require extra administration and extra inspections as construction occurs. The City and County should pass on any additional costs to the builder/developer through the inspections fees.

APPROVED.

LU-7 Dane County, City of Madison, Town of Burke -- Amend Local Land Use Plans to Reflect Noise Compatibility Plan Recommendations and Establish Airport Compatibility Criteria for Project Review (Pages 4-41 thru 4-42, 5-13 thru 5-14)

Dane County officials recommend they, the City of Madison and the Town of Burke amend their land use plans to reflect the recommendations of the Noise Compatibility Plan. The Noise Compatibility Plan sets forth a plan for the airport area which has been coordinated with all of the jurisdictions as well as with the airport staff. It can continue to be important in ensuring land use planning coordination in the airport area. It is important for all jurisdictions in the airport study area to officially acknowledge their separate and mutual interests in order to facilitate coordination in this important area.

While the proposed ordinance amendments will go far to ensure land use compatibility in the area, the land development process is not static. Over time, situations will arise requiring local planning staffs, planning commissions, and governing boards to make decisions on land use changes in the area. The adoption of project review criteria as part of the local land use plans, requiring the consideration of airport noise and land use compatibility, would help ensure that this important concern is not neglected during future land use deliberations.

The following guidelines will be considered. They should apply within all areas subject to noise above DNL 60 dB.

A. Determine the sensitivity of the subject land use to aircraft noise exposure levels. The F.A.R. Part 150 land use compatibility table can be used for this purpose.

B. Advise the airport management of development proposals involving noise-sensitive land uses within the DNL 60 dB noise contour.

C. Locate noise-sensitive public facilities outside the DNL 65 dB contour, if possible. Otherwise, encourage building construction to attenuate interior noise levels to DNL 45 dB.

D. Discourage the approval of urban service area amendments, rezonings, exceptions, variances, and conditional uses which introduce noise-sensitive development into areas impacted by noise exceeding DNL 65 dB. Consider similar limitations in areas impacted by noise above DNL 60 dB.

E. Where development within the DNL 60 dB contour must be permitted. encourage developers to incorporate the following measures into their site designs.

(1) Where noise-sensitive uses will be incorporated into a larger, mixed use building, locate noise-sensitive activities on the side of the building opposite the airport or, if the building is beneath a flight track, opposite the prevailing direction of aircraft flight.

(2) Where noise-sensitive uses are part of a larger mixed use development, use the height and orientation of compatible uses, and the height and orientation of landscape features such as natural hills, ravines and manmade berms, to shield noise-sensitive uses from ground noise generated at the airport.

APPROVED.

LU-8 Dane County -- Follow through with Planned Land Acquisition in Cherokee Marsh and Token Creek Park Areas (Pages 4-45 thru 4-46, 5-14 thru 5-15, Comment 20 of Responses to FAA Review Comments)

Dane County proposes the purchase of the three unlabeled parcels (pink with green border, north and northwest of the

airport) shown on **Exhibit 5F** (following page 5-14 of the NCP). The three areas, which total approximately 178 acres, are eligible for FAA funding assistance through the noise set-aside of the Airport Improvement Program since they lie within the DNL 65 dB contour and are presently zoned single family residential according to **Exhibit 1H** (following page 1-27 of the NEM).

Exhibit 5F also shows existing park and open space land on the north side of the airport. Most of this is in the Cherokee Marsh Open Space Area. The Cherokee Marsh Revised Long-Range Open Space Plan (September 1981) proposes the acquisition of all of the shaded area as indicated on the exhibit. The Noise Abatement Plan calls for the use of the north side of the airport in order to reduce to the degree possible noise over developed areas to the south. By following through with the Cherokee Marsh Open Space program, the County will be helping to promote airport land use compatibility while also achieving the direct objective of the Open Space Plan.

APPROVED. However, a caveat is added concerning the potential non-compatibility of some "parks/open space" with aeronautical activities. Park uses sensitive to noise such as the congregation of people for educational, entertainment or camping activities or uses increasing bird activity such as wetland enhancement may not be compatible land uses.

LU-9 Dane County -- Consider Expanding Land Acquisition Boundaries in Cherokee Marsh and Token Creek Areas (Pages 4-45 thru 4-46, 5-15 Comment 20 of Responses to FAA Review Comments)

Dane County proposes to purchase the three parcels, B, C, and D, depicted on **Exhibit 5F** for parks and open space expansion. Parcel B is approximately 30 acres in size, Parcel C approximately 190 acres, and Parcel D approximately 50 acres. All are within the DNL 65 dB contour of the 1995 Noise Abatement Plan and presently zoned single family residential. Thus, acquisition costs would be eligible for FAA funding assistance through the noise set-aside of the Airport Improvement Program.

APPROVED. However, a caveat is added concerning the potential noncompatibility of some "parks/open space" with aeronautical activities. Park uses sensitive to noise such as the congregation of people for educational, entertainment or camping activities or uses increasing bird activity such as wetland enhancement may not be compatible land uses.

LU-10 Dane County -- Establish Sales Assistance or Purchase Assurance Program for Homes Impacted by Noise Above

DNL 70 dB (Pages 4-48 thru 4-51, 5-15)

Dane County recommends establishing a sales assistance or purchase assurance program which would apply to single-family homes within the DNL 70 dB contour, generally based on a combination of the 1995 baseline and noise abatement plan contours. **Exhibit 5G** shows the areas which would be affected. The boundaries have been squared off to follow lot lines and streets. South of the airport, the qualifying area is bounded by Aberg Avenue on the north, Washington Avenue on the east and south, and Pawling and North Lawn Avenue on the west. To the north, a few scattered homes on County Road CV and Hoepker Road are included. An estimated 216 homes are within the entire area, including 210 on the south side and 6 on the north side.

The intent of these programs would be to provide homeowners who are severely disturbed by noise the assurance that they could leave the neighborhood without risking financial penalty. With a purchase assurance program, the County would be the buyer of last resort. If, after a given period of time on the market, the homeowner was unable to sell the home for fair market value, as determined through professional appraisals, the County would buy the home. Program guidelines protecting the interests of the County and making the program fair and reasonable in scope would be adopted. The County would then retain a noise and avigation easement and sell the home, accepting a loss if necessary to put the home back on the tax rolls. While the property were under public ownership, it could be soundproofed or otherwise rehabilitated, if housing rehab were an objective.

A drawback of this program is the need for potentially significant administrative support. The program also raises the risk that the airport will have to be involved in property ownership and management with the various problems that entails, such as security and maintenance.

The net costs of a purchase assurance program are impossible to estimate. However, for planning purposes a total cost estimate of $17.9 million has been made. This assumes the net cost to the airport would be 10 percent of the appraised value of the homes. The cost is based on a 100 percent participation rate, so it should describe an extreme, and ultimately unrealistically high situation, although it is an estimate of the County's potential financial involvement.

A sales assistance program would operate in a similar fashion, but the County would never take title to the property. The County would make up the difference between fair market value and the best purchase offer made on the home. The County would secure a noise and avigation easement from homeowners in return for their participation in the program.

In order to prevent collusion between buyer and seller, to the detriment of the County, the airport would approve the listing price for a home and any downward adjustments of that price. This program would achieve generally the same objectives as the purchase assurance program and would probably be easier to administer. It would, however, lack the potential to facilitate housing rehabilitation and soundproofing as easily. Total costs are estimated to be equivalent to the purchase assurance program.

Purchase assurance and sales assistance programs are limited measures which are intended to provide a means of responding to the most heavily impacted people without demolishing neighborhoods and permanently disrupting the tax base. The programs are unlikely to be used by everyone who potentially may qualify which has the added advantage of keeping the cash flow requirements manageable.

It is intended that any given home would only be eligible for this program once. After the County has secured a noise and avigation easement from a home, it would no longer be eligible for the program.

APPROVED.

LU-11 Dane County -- Install Sound Insulation for Schools Impacted by Noise Above DNL 65 dB (Pages 4-51 thru 4-53, 5-16)

Dane County proposes sound insulation for two schools impacted by noise above DNL 65 dB, based on 1995 baseline conditions. These are Holy Cross Lutheran School on Milwaukee Avenue and Lowell School, just north of Lake Monona. It is proposed that sound insulation be installed in both schools.

For planning purposes, soundproofing costs have been estimated at $500,000 for Lowell School and $300,000 for Holy Cross School. While these should be good enough for planning purposes, reliable estimates can only be developed after a detailed inspection of the buildings by a qualified acoustical engineer.

It is recommended Dane County cooperate with the owners, the school district and the church, to arrange for these projects. It is important for both school operators to understand that effective sound insulation depends on the schools keeping their windows closed. This could result in higher heating and cooling costs. While the capital costs of the sound insulation project are eligible for 90% FAA funding assistance, all operating costs must be borne by the school operators. These important cost implications should

be given serious attention before the school operators commit to sound insulation.

APPROVED.

CONTINUING PROGRAM

CP-1 Program Monitoring And Contour Updating (Pages 5-16 thru 5-17)

Dane County recommends that airport management maintain communications with the Madison city planning department and the Dane County Regional Planning Commission to follow their progress in implementing the land use management plan.

The airport management also must take steps to monitor compliance with the noise abatement plan. This includes checking periodically with the air traffic control tower regarding compliance with the air traffic control procedures. The airport management should also check with air carriers, business users, and military users. This can serve as a friendly reminder as to the importance which the airport management places on the program while providing an opportunity to find out about any difficulties with the application of the noise abatement measures.

Noise contour maps should be updated approximately every five years, or more often if equivalent operations levels change significantly in comparison with existing or forecast conditions. As a rule of thumb, the trigger for determining the need for contour updating is a 17% change in equivalent operations by jet aircraft, based on the FAA's Area Equivalency Method (AEM) for estimation of noise contour areas. To calculate "equivalent operations", all nighttime operations, (between 10:00 p.m. and 7:00 a.m.) must be multiplied by ten and added to daytime operations. Noise contours should be mapped and compared to previously calculated noise contours to identify significant changes, namely changes exceeding DNL 1.5 dB.

APPROVED.

CP-2 Evaluation and Update of the Plan (Page 5-17)

Dane County proposes to periodically review the Noise Compatibility Plan and consider revisions and refinements as necessary. It is important that any proposed changes be reviewed by the FAA and all affected aircraft operators and local agencies. Proposed changes should be submitted to FAA for approval after local consultation and a public hearing

in order to comply with F.A.R. Part 150.

It is anticipated that a complete plan update will be needed periodically to respond to changing conditions in the local area and in the aviation industry. A plan update can be anticipated every six to eight years. An update may be needed sooner, however, if major changes occur and later if conditions at the airport and in the surrounding area remain stable.

APPROVED.

CP-3 Complaint Response (Page 5-17)

Dane County recommends that airport management acknowledge and respond to noise complaints, even if it is not possible to take remedial action. It should be recognized that complaints are only an imperfect indicator of noise problems. The tendency of an individual to file a complaint depends on many personal variables including socioeconomic status, feelings about the aviation industry, expectations about overall neighborhood livability, housing tenure, and sensitivity to noise. Recognizing that complaints are limited in their ability to clearly elucidate the existence of noise problems, the staff should nevertheless periodically analyze the complaint records. If the geographic pattern of complaints, or the causes of complaints, indicate that consistent problems exist, the airport management should investigate and, if possible, seek corrective action.

The airport has a well-organized system of recording and responding to noise complaints. The staff has recently computerized the noise complaint records, enabling analysis of complaint trends to be handled relatively easily. The airport should maintain and enhance this system as necessary. The airport management should also be sure to get copies of any noise complaints received by the air traffic control tower.

APPROVED.

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Appendix C: Order MSN ATCT 8400.9I

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ORDER

MSN ATCT
8400.9I

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
AIR TRAFFIC CONTROL TOWER
MADISON, WISCONSIN

SUBJ: Informal Runway Use Noise Abatement Program, Converging Flow Operations and Opposite Direction

1. PURPOSE. This order establishes facility policy and procedures used for the Converging Flow Operations and the Informal Runway Use Program.

2. DISTRIBUTION. This order is distributed to AGL-530, Wisconsin Terminal Hub, and all facility personnel via facility binders.

3. CANCELLATION. MSN ATCT Order 8400.9H Informal Runway Use Noise Abatement Program and Converging Flow Operations dated September 26, 2002

4. EFFECTIVE DATE. December 17, 2012

5. BACKGROUND. Converging Flow exists (except when applying the provisions of FAA7110.65, par. 5-8-4) if a departing aircraft has the potential of passing within 3 miles of an arriving aircraft.

   Madison's Part 150 Noise Study identifies the most effective noise abatement procedure as placing aircraft over the less densely populated areas north of the airport. This often requires converging flow operations. Due to high closure rates and the low altitude of participating aircraft, converging flow operations require intense air traffic direction and have little margin for error.

   Additionally, converging flow operations may be conducted for reasons other than noise abatement (practice approaches, pilot request, etc.). Therefore, converging flow operations and noise abatement are interdependent but addressed separately.

6. POLICY. It is the policy of the FAA and this facility to help reduce aircraft noise to the extent practical and consistent with safety.

7. PROCEDURES. Noise abatement shall be accomplished using the methods described below as safety allows. Traffic permitting, turbojet aircraft exceeding 12,500 pounds or more departing runway 3, should climb on runway heading to 2,500 feet before turning east or southbound. Turbojet aircraft exceeding 12,500 pounds or more departing runway 32 should climb on runway heading to 2,500 feet before turning southwest bound. Turbojet aircraft 12,500 pounds or more departing runway 21 should be turned to a 200º heading as soon as practicable. Turbojet intersection departures are not authorized except runway 32 from E, runway 36 from A6, and runway 18 from A2. The most effective noise abatement method is to take-off runway 36, 32 and 3, land runway 18, 14 and 21.

   a. Noise Abatement - If aircraft will not be placed in a converging flow situation, the following items apply:
      (1) These procedures apply to all turbojet aircraft 12,500 pounds or heavier.
      (2) Unreasonable delays are defined as a delay exceeding 5 minutes.
      (3) There should be no significant wind shear or thunderstorms, which affect the use of the selected runways such as:
         (a) That reported by the Weather System Processor.
         (b) Pilot reported wind shear.
         (c) No thunderstorms on the initial takeoff departure path or final approach path (within 5 NM) of the selected runway(s).
      (4) When utilizing landing runways associated with this program the visibility shall not be less then one statute mile (RVR 5000).
      (5) There should be no snow, slush, ice, or standing water present or reported (other than isolated patches which do not impact braking effectiveness) on that width of the applicable runway(s). Braking effectiveness must be "good" and no reports of hydroplaning or unusually slippery runway surfaces.

(6) Wind (see appendix 1)
(a) Clear and dry runways.
1. The crosswind component, including gust values, must not exceed 20 knots.
2. The tailwind component must not exceed 5 knots.
(b) Runways not clear or not dry.
1. The crosswind component, including gust values, must not exceed 15 knots.
2. No tailwind component may be present except winds reported as "calm" (0-3 knots) may be considered to have no tailwind component.
3. The runway must be grooved (36, 32 and 21).

b. Converging Flow Requirements – Before placing aircraft in a converging flow situation ensure that the following additional safety parameters exist, otherwise hold traffic until the converging flow aircraft is no longer a factor:
(1) Ceiling and visibility allow the Local Controller a clear view of the inbound aircraft from a point not less than 5 miles from the airport, to the landing runway.
(2) Traffic advisories are exchanged between participating aircraft.

8. CONVERGING FLOW:

a. NORTH TRAFFIC OPERATIONS (RWY 36/32/3) – The operation is conducted per Local Control's approval and restrictions. Approach Controller(s) should determine if the proposed converging flow operation is warranted with regard to traffic and weather conditions. If the operation seems feasible it should be APREQed with Local Control when the aircraft is 20 - 25 miles out. The outcomes are as follows:
(1) LC approves the aircraft "direct." Required phraseology "(*acid*), DIRECT APPROVED". This aircraft is expected to be controlled so as to proceed directly to the specified runway without delay.
(2) LC approves the converging flow runway with restrictions. Required phraseology is "(*acid*) (*restrictions)* APPROVED." Radar shall vector the converging flow arrival so as not to be a factor to LC until on final (i.e. stay wide or maintain an altitude above the departure area).
(3) LC denies approach's request.

b. SOUTH TRAFFIC OPERATIONS (RWY 18/14/21) – The operation is conducted per the Radar Controller(s) approval and restrictions. Ground Control shall APREQ converging flow departures with Local Control prior to taxi. Local Controller must determine the feasibility of the converging flow departure. Aircraft should not be west of the runway 14 final until above 2,500 MSL. The outcomes are as follows:
(1) Radar releases the aircraft.
(a) Required phraseology is, "(heading/on course), (other restrictions as applicable) RELEASED."
(b) The local controller releasing a converging flow departure shall coordinate said release with the receiving radar controller and advise the other radar controller. Advising the other radar controller may be omitted if the departure will not be within 3 NM of that controller's airspace 5 miles after departure, (i.e. a R/W 32 departure enroute to LNR, the East controller need not be advised).
(2) Radar approves the request, but does not release the aircraft.
(a) Required phraseology, "APPROVED HOLD FOR RELEASE"
(b) The aircraft is taxied to runway 36, 32 or 3 and local reinitiates coordination for the actual release.
(3) Radar denies the request.

9. OPPOSITE DIRECTION

a. General:

(1) The initiating area of specialization is responsible for making all verbal coordination required to accomplish an opposite direction arrival or departure.
(2) All coordination must be on a recorded line and must state "opposite direction".
(3) All coordination must include call-sign, aircraft type and arrival or departure runway.

Example-
"RADAR LOCAL APPREQ, OPPOSITE DIRECTION CHQ5018, EMBRAER RUNWAY 36."

LOCAL RADAR APPREQ, OPPOSITE DIRECTION DAL420, AIRBUS, RUNWAY 18."

(4) The cutoff points for the MSN ATCT are the 10 mile final to all runways.
(5) Restrict opposite direction same runway operations with opposing traffic inside the applicable cutoff point unless an emergency exists.
(6) Traffic advisories shall be given to both the arriving and departing aircraft.

Example-
"OPPOSITE DIRECTION TRAFFIC (DISTANCE) MILE FINAL (type aircraft)."

"OPPOSITE DIRECTION TRAFFIC DEPARTING RUNWAY (number), (type aircraft)."

b. Opposite Direction Departures:

(1) The tower must verbally request all opposite direction departures from radar, stating the aircraft call-sign, aircraft type and departure runway.
(2) The tower must ensure that required longitudinal or lateral separation exists before any other type of separation is applied (i.e. Visual Separation).
(3) The tower must ensure that the departing aircraft becomes airborne and has been issued a turn to avoid conflict prior to the cutoff point.

c. Opposite Direction Arrivals:

(1) Radar must verbally request all opposite direction arrivals from the tower, stating the aircraft call-sign, aircraft type and arrival runway.
(2) Radar must ensure that an opposite direction arrival aircraft will not cross the cutoff point prior to an aircraft crossing the opposite runway threshold.
(3) The tower must ensure that the departing aircraft becomes airborne and has been issued a turn to avoid conflict prior to the cutoff point.

Dennis J Vincent
Air Traffic Manager
MSN ATCT

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Appendix D: Stakeholder Consultation Materials

This appendix includes:

- TAC Meetings 4, 5, and 6 Presentations and Summaries
    - TAC meeting 6 will be included in the Final NCP.

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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 4 Summary

Meeting Date: Tuesday March 7, 2023

Reference: HMMH Project Number 312360

TAC Member Attendance:

Organization	TAC Member	Attendance
MSN staff	Michael Kirchner	Yes
WBOA staff	Max Platts	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
FAA Air Traffic Control Tower (ATCT)	Daniel Hesch	Yes
FAA Air Traffic Control Tower (ATCT)	Courtney Hill	Yes
FAA Air Traffic Control Tower (ATCT)	Jake Deaner	Yes
Wisconsin Air National Guard; 115th Fighter Wing (FW) Representative	Lt Col Dan Statz	Yes
Wisconsin Air National Guard; 115th Fighter Wing Representative	Lt Col Ben Gerds	No
Wisconsin Air National Guard; 115th Fighter Wing Representative	Tony “Ike” Russo	Yes
Wisconsin Air National Guard; 115th Fighter Wing Representative	Additional rep.	Yes
Army Guard	Major Lucas Sivertson	Yes, virtually
Delta Airlines	Abby McCoy	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

Organization	TAC Member	Attendance
MSN staff	Tomasz Pajor	Yes
MSN staff	Lowell Wright	No
MSN staff	Chad Rasmussen	No
Jones Payne Group	Diane Carter	Yes
Jones Payne Group	Brianna Whiteman	No
HMMH	Tim Middleton	Yes
HMMH	Eugene Reindel	Yes
HMMH	Julia Nagy	Yes
HMMH	Brandon Robinette	Yes
HMMH	Dan Botto	Yes
HMMH	Paul Krusell	Yes
HMMH	Patrick Generose	Yes, virtually
Mead & Hunt	Chris Reis	No
Mead & Hunt	Ryan Hayes	No
Mead & Hunt	Kate Andrus	Yes, virtually
Mead & Hunt	Greg Stern	Yes
Mead & Hunt	Levy Ney	Yes

Meeting summary notes:

Tim Middleton provided opening remarks, after which the TAC, study team members, and supporting staff introduced themselves. He explained that we are now moving into Phase 2 of the Part 150 process – NCP Phase. He explained the objectives of the meeting.

Middleton reviewed the roles and responsibilities for the various stakeholders including the airport, consultant team, FAA, Technical Advisory Committee (TAC), and public. He explained that the goal is to come to consensus as a group on recommended NCP measures.

Middleton reviewed the Part 150 study process. We are now in the NCP Phase of the Part 150 process and will consider the three categories of potential measures to reduce noncompatible land use: noise abatement, land use, and programmatic measures. Part 150 follows a prescriptive process based on the regulations. The consultant team brings experience from working on these types of studies at many airports.

Middleton provided an overview of the objectives of the NCP and proposed measures. He reviewed how potential measures are evaluated. FAA will review each proposed measure and approve or disapprove on a measure-by-measure basis. Tim noted that the programmatic strategies cover some of the efforts that the airport is already doing such as managing noise complaints.

Eugene Reindel reviewed that we want to cover noise abatement measures first to remove noncompatible land uses from the 65 DNL contour. Noise abatement measures could reduce all noncompatible land use (never usually entirely likely, but theoretically could). Then consider land use measures to mitigate incompatible land uses not addressed through noise abatement measures and prevent new noncompatible land uses.

Reindel noted that Runway 03/21 was built as a noise abatement runway based on the 1991 NCP. FAA paid to construct the runway. FAA helps maintain primary runways, and crosswind and secondary runways if eligible. The Part 150 study includes an airfield planning analysis related to Runway 03/21. This airfield analysis study was intended to justify whether the runway is eligible for federal funding to maintain.

Greg Stern provided a summary of the airfield planning analysis results. Runway 18/36 is designated as the primary runway given its length, approach capability, and proximity to the terminal. As Runway 18/36 does not provide 95% wind coverage for the 12.5 knot wind condition, a crosswind runway is eligible at MSN. Runway 14/32 is identified as the crosswind runway given the wind coverage it provides, the size of the critical aircraft it is intended to serve and its proximity to the general aviation areas. The planning analysis identifies Runway 03/21 as having a secondary runway designation. This designation is not based on capacity needs or level of operations, but rather on its function as a noise abatement runway. Runway 3/21 currently provides a noise benefit and increased usage of the runway would further this benefit.

Dan McAuliffe: When we look at the noise modeling, were operations on 3/21 justified to benefit noise conditions?

Reindel: We have to rely on justifying it as a noise runway.

Lt Col Dan Statz: What is the viability of decoupling Runway 03/21 from Runway 18/36 and extending it to accommodate more F-35A operations?

Reindel: *One of the options is to put more operations on Runway 03/21;* we will need to have M&H further evaluate runway configuration and use options. This is the time to perform that analysis.

Kate Andrus: There is potential to decouple Runway 3/21 from Runway 18/36. This would require a shift of the highway. Need to coordinate with the 115th FW on what is needed and the ATCT to determine what is possible.

Middleton reviewed the existing NCP, starting with noise abatement measures. Reindel noted that although some are implemented, initial HMMH analysis showed that there may be low compliance for the measures. The measures should be fully implemented with high compliance to justify they remain in the NCP; some may require modification to get higher compliance. Increased compliance would involve continued conversations with the FAA Air Traffic Control Tower (ATCT).

Middleton discussed the land use measures and the airport overlay zone and how to modify it to reflect the current state of land use planning. Reindel added that the public expressed concern about building noise sensitive properties within the 65 DNL contour. The public expressed support for some type of overlay zone.

Middleton reviewed the program management measures and discussed that there were some additional suggestions from the public.

Julia Nagy reviewed the recommended NCP measures derived from public comments submitted on the Noise Exposure Map (NEM) document. Reindel mentioned that the public suggested initiating a noise monitoring program and a flight tracking system.

Reindel discussed the first hypothetical noise abatement measure to *move all Runway 18 F-35A departures to Runway 03.* This change would remove more than 800 housing units from the 65 DNL contour. The other hypothetical is *for F-35A departures on Runway 18 to use afterburner* which could reduce housing units in the 65 DNL contour by about 400. Both of these measures could reduce noncompatible land use.

McAuliffe: The City of Madison is considering the quantity of future residents and future housing needs. They seek to ensure new construction in areas near the airport include sound insulation. The City is concerned about future residents; an important area of focus for development for the City of Madison is along East Washington Avenue.

Reindel: For the noise abatement measures we have to address flight tracks, preferential runway use, arrival/ departure procedures, airport layout modifications, and use restrictions. We need to consider existing measures to remove, existing measures to amend, and new measures to propose.

Statz: F-35A aircraft require significant ground time to boot up. Is there a way to optimize where this is happening to reduce noise impacts? *For the airport layout, the 115th FW may want to consider an area off of taxiway F as a centrally located noise abatement area. Reindel said we could model where those ground movements are in existing or potential areas.*

Tony Russo: Runway 03 as an alternative to Runway 18, based on wind and direction. Looking at Air Force procedures, there is some risk with the shortness of the runway. Due to the length and slope of Runway 03, there may be increased risk in departing Runway 03. Is Runway 03 preferred over Runway 36?

Reindel: We could consider moving some operations onto Runway 36. In calm winds, can Runway 03 be an alternate?

Jake Deaner: Explained that decoupling the runways results in some issues related to displaced thresholds, performance planning – *potentially removing the upslope and extending the runway approximately 1,600 ft*. He asked whether airlines have been invited to the TAC for collaboration. There have been some issues with close operations at other airports and we do not want to create risk. We have implemented various measures to be proactive.

Middleton: Airlines have not been able to attend the TAC but have been invited.

Russo: From the noise modeling perspective, *does Runway 21 provide a better scenario than Runway 18?* From a traffic standpoint, plan to mitigate risk from traffic and from noise.

Reindel discussed implications of shifting noise from one neighborhood to another. Noise should not be shifted from one neighborhood to another; FAA may question those results during review.

McAuliffe: Showing the hypotheticals could be helpful for public engagement.

Reindel: The lobe in the noise contour to the south of the airfield is partially due to commercial operations. ***Action:*** The team will need to set up a meeting to talk to airlines about operations to the south.

Deaner: Airport layout modifications and restructuring of the taxiways to minimize impacts took place about 7 years ago.

Courtney Hill: FAA ATCT has concern related to departing from Runway 03 and coordinating with Runway 18. Potentially allow only F-35A operations. Runways 21 and 18 could work in synergy with each other.

Daniel Hesch: The F-35As cannot depart Runway 21 or land on Runway 03. It is too risky.

Statz: *Possible NCP Measures to consider: decouple Runways 3/21 and 18/36, flatten and extend Runway 3/21, add a cable to Runway 21, and put some Runway 18 arrivals on Runway 21.*

Reindel: Introduced the land use measures. Diane Carter reviewed some of the prior land use measures from the 1991 NCP. She provided an overview of the land use strategies and what they entail.

Reindel: Noted that some overlay zones use number above contours. *One possibility is to create a maximum noise level (Lmax) contour related to the F-35A.*

Statz: Expressed concern about using a metric different than DNL. Public may not understand the difference. Communication would be a concern.

Reindel: Since people do not hear DNL, they may appreciate an Lmax contour.

McAuliffe: Land acquisition would not generally be supported by the City. *The City is supportive of sound insulation. Avigation easements are a concern for future renters and the fact that they would not benefit future homeowners.* Land use controls provide more flexibility in the undeveloped areas. Undeveloped areas are being studied by the City. East-Washington corridor is a challenge because the City has invested in mass transit and encourages density there. It is not clear how the City would enforce real estate disclosures.

Carter: With real estate disclosures, the airport would need to coordinate with the real estate board.

Reindel: Easements don't solve the problem by themselves. A combination of easements and sound insulation is preferred.

McAuliffe: For current easements, if the environment has changed, can we capture this in the easement?

Carter: *For easements we could consider using a trigger that could break the easement (e.g. if the contour shows a 1.5+ dB increase over a plot, the easement is reconsidered)*

McAuliffe: Overlay zones are used to restrict certain uses. The City currently has some restricted zones already. If we do an overlay district, what does that actually change? There are sites where we anticipate a lot of growth. What would the overlay would accomplish?

Statz: Throughout the EIS process, the community was concerned about affordable housing and houses being torn down.

Todd Violante: The concept of the overlay district currently exists for height limitations. *He could envision that certain requirements could be considered to ensure sound insulation or certain requirements within structures.* For real estate disclosures, notice on the deed, development approval, title searches for noise parameters. In the context of litigation, the avigation easements are helpful.

Carter: Overlay districts, within the zone, could you require certain improvements?

McAuliffe: We are in a min/ max building code where we can only require what the state requires.

Reindel: An overlay can be very specific to the localized areas and include various zones.

Reindel turned the conversation back to the public recommended measures.

McAuliffe: Building codes can only be changed under state regulations and would require support from state senators.

Michael Riechers: We could discuss with state senators to see how we could potentially suggest changes.

Reindel: This is rare but it could be a recommended measure.

There was a question about sound walls to reduce noise. Reindel: Sound walls only impact noise on the ground.

Statz: *Could the trailer park area be an area where a sound wall is beneficial? This is a sensitive population that did not want to be moved.*

Conversation moved to programmatic measures. Middleton discussed the various categories of programmatic strategies. *Recommendations from the public included a flight tracking system.* FAA can fund this as an NCP measure. These are good tools for monitoring compliance with flight procedures and complaints. Military flights will not appear in monitoring systems in an off-the-shelf NOMs system. Noise monitoring systems cannot be used to restrict operations. The reporting is only useful to the public but does not have enforcement abilities. The FAA generally recommends NEMs to be updated every 5 years or if there is a significant change.

Reindel: Would a flight tracking system be beneficial or not due to the F-35A lack of data? Noise monitoring is a challenge because they are expensive to maintain and cannot be used to determine the extent of the noise exposure contours in the NEM.

Tim: *Another option is to purchase portable noise monitors.*

Reindel: FAA pays for installation of the systems but not the maintenance of the monitoring systems. Does the benefit outweigh the costs? Portable noise monitors are also very labor intensive but can be responsive to the community needs.

Carter: Burlington International Airport (BTV) obtained a flight tracking and noise monitoring system. The community is still frustrated that the F-35A flight tracks do not show. The Department of Defense (DoD) has not supported showing these tracks in Burlington. The data exists but the DoD has not approved sharing it publicly.

Middleton: Even with a delay, the DoD does not provide the data.

McAuliffe: *Noise monitors could show the F-35A data due to the high levels of noise. Could the monitoring be used to inform local land use? It could be used to show the higher noise levels.*

Middleton: *Sometimes airports will include Fly Quiet programs and associated awards for lower noise levels. This would require airline collaboration, i.e. fleet mixes with quieter aircraft.*

Reindel: Another programmatic measure is to consider regular updates of the NEM.

McAuliffe: I think regular NEM updates would be useful and could be beneficial.

Reindel: Another option is to update the NEM after the F-35As are operating.

Middleton: *Another consideration for the programmatic measures is to include regular outreach or creation of a noise or advisory group.*

Reindel: It could include other outreach efforts such as a land use planning meeting annually. Ensure consideration of stakeholders and how to formalize some of the practices that could improve coordination.

Middleton: Moved conversation to discuss schedule. The next TAC meeting is being targeted for the end of June – Tuesday, June 27th. We are planning on holding an additional meeting with the public to discuss potential NCP measures and obtain input from the public on the same day as the TAC meeting; similar to the schedule for TAC Meeting #1 and the first public workshop. HMMH will plan to model additional hypothetical measures. We want to capture all potential measures, please share any additional feedback or schedule additional calls beyond the TAC meetings. Once submitted, the FAA has 180 days for review of the NCP.

Reindel: HMMH is going to draft a memo related to the measures discussed. We want to use the next three months to complete additional analysis on the potential measures. Then we plan to obtain input from the public in June. We need to document why we are not recommending certain measures. We owe the public a response to documenting why publicly suggested measures are not recommended.

Bobb Beauchamp: No update on the NEM acceptance schedule at this point.

Statz: Asked about Senator Tammy Baldwin's press release related to funding for community outreach and noise mitigation planning. He asked for help from the airport with identifying lines of efforts between Part 150 process and the grant funding. Statz and Mike Kirchner to coordinate on the topic.

MSN Part 150 Study

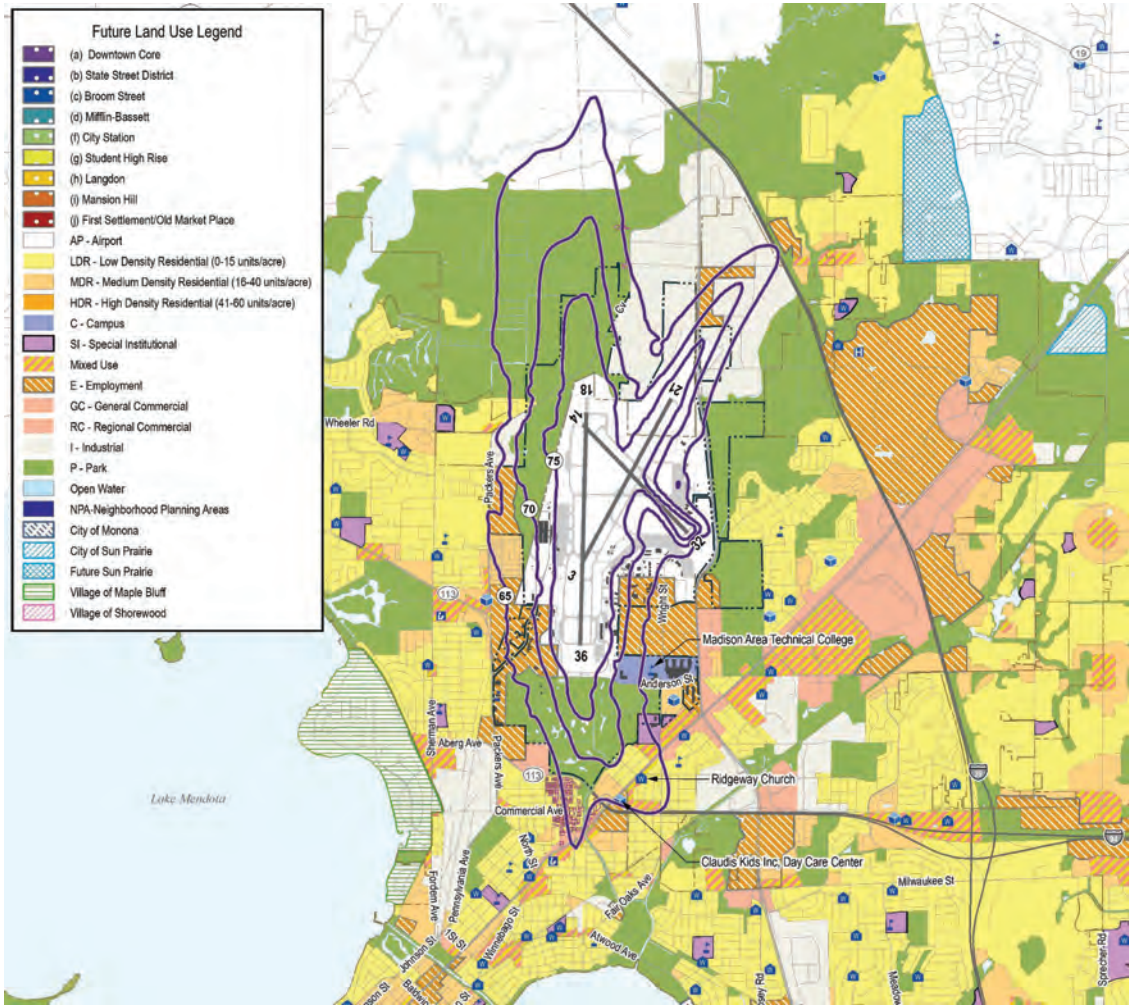
Dane County Regional Airport

Technical Advisory Committee Meeting #4

March 7, 2023

TAC #4 Agenda

- Introductions
- Roles & Responsibilities
- Part 150 Overview
- NCP Overview
- NCP Measures Brainstorm and Discussions
- Schedule
- Wrap up



2022 MSN NEM Forecast Condition (2027)

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	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
- Review proposed flight procedures
- 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

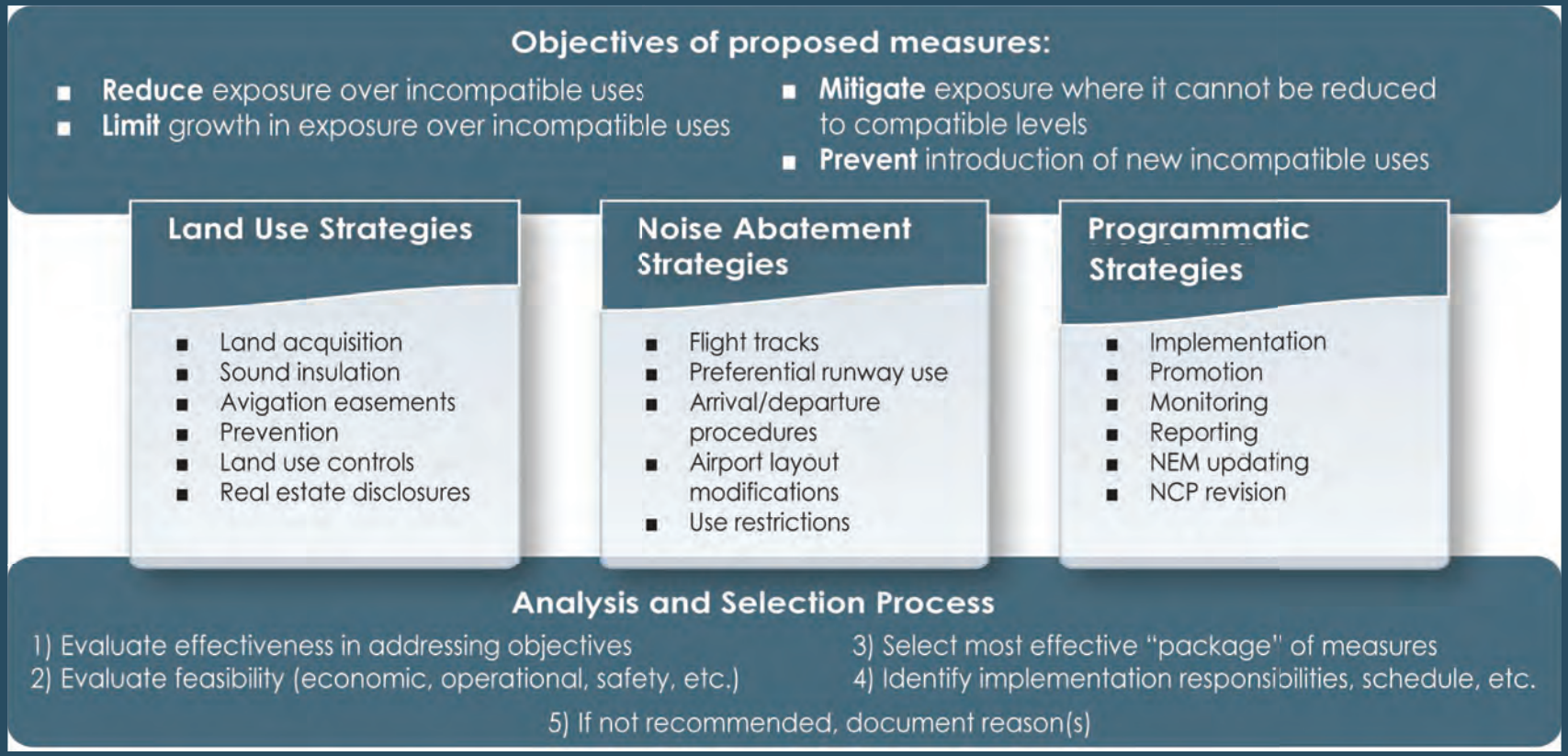
Develop NCP

- 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

NCP Overview



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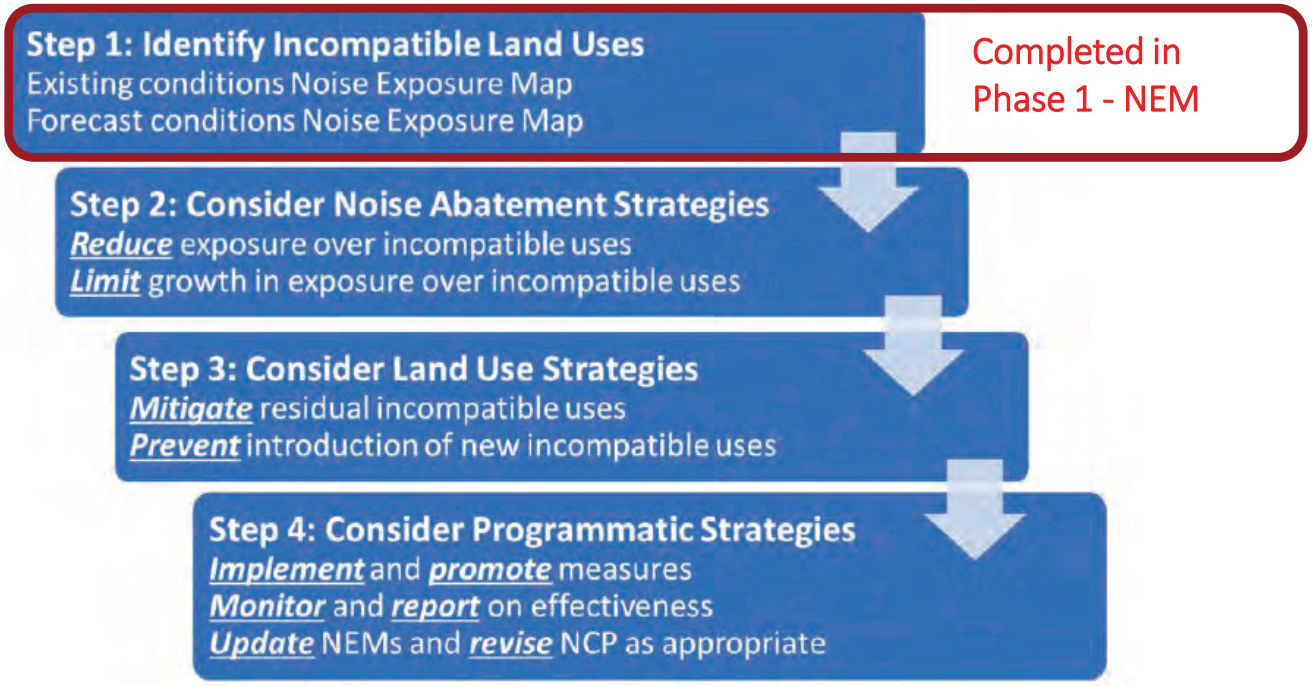
Part 150 Overview: Noise Compatibility Program

- 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



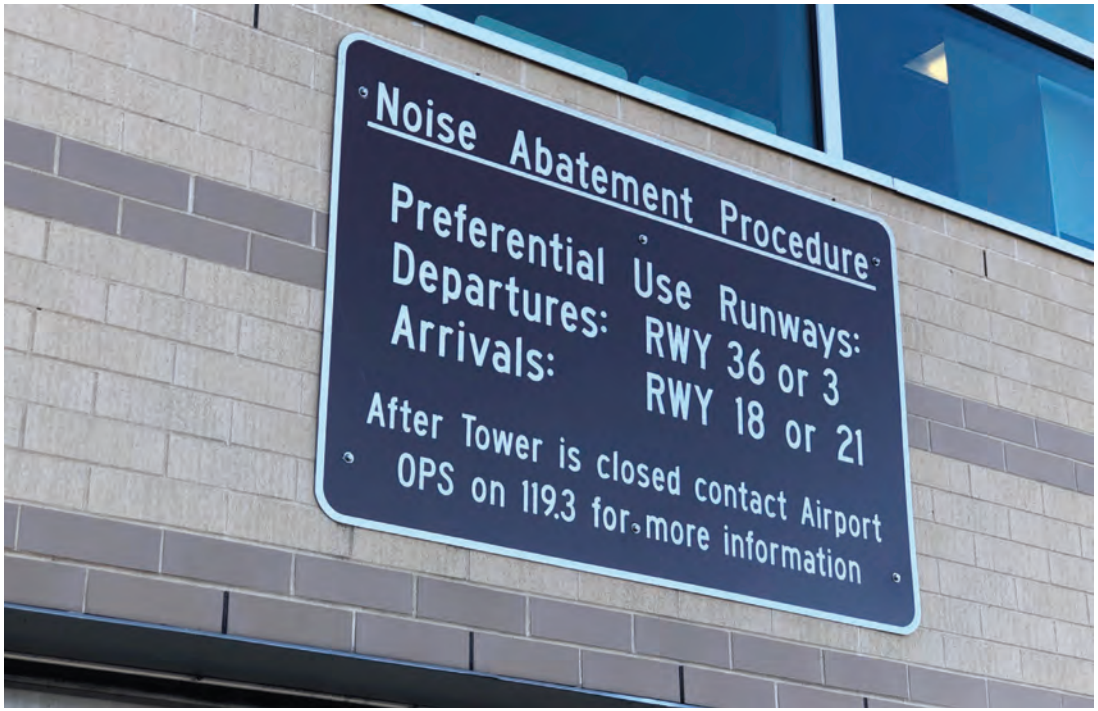
Airfield Planning Analysis Results

- Analysis based on Table G-1 of *Airport Improvement Program (AIP) Handbook (*FAA Order 5100.38D) Runway Type Categories
- Results indicate:
  - Runway 18/36 is the Primary runway, Runway 14/32 is the Crosswind, and Runway 3/21 is the Secondary, with no runway meeting the Additional category
  - Runway 03/21 continues to have noise benefits as purposed from the 1991 NCP
  - Increased utilization of Runway 03/21 will have noise benefits

Runway	Runway Type	Description	Federal Funding
18/36	Primary	A single runway is eligible for development consistent with FAA design and engineering standards	Eligible
14/32	Crosswind	Either the primary runway crosswind coverage is less than 95% and/or the airport is operating at 60% or more of ASV	Eligible if justified
3/21	Secondary	The primary runway is operating at 60% or more of ASV and/or it has been determined that the runway is required for airfield operation	Eligible if justified
Note: ASV is the Annual Service Volume at the airport.			

NCP Review: Results

- 1991 MSN NCP included:
  - 9 Noise abatement measures
    - *All implemented*
  - 11 Land use measures
    - *Four implemented*
  - 3 Programmatic measures
    - *All implemented*



Noise Abatement Measures (NA)

	Noise Abatement Measure	Implementation Status
NA-1	Continue the existing informal runway use program.	Replaced by NA-7
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.	Implemented
NA-3	Establish visual approach and departure corridors for helicopters.	Implemented
NA-4	Encourage use of noise abatement departure procedures by operators of jet aircraft.	Implemented
NA-5	Encourage Air National Guard to follow through with its plans to construct a hush house for A-16 engine maintenance runups prior to converting its fleet.	Implemented
NA-6	Construct new 6,500-foot Runway 3-21.	Implemented
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.	Implemented
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.	Implemented
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.	Implemented

Land Use/Noise Mitigation Measures(LU)

	Land Use Measure	Implementation Status
LU-1	City of Madison, Dane County – Maintain Exiting Compatible Zoning in the Airport Vicinity.	Implemented
LU-2	Dane County, City of Madison, Town of Burke – Define "Airport Affect Area" for Purposes of Implementing Wisconsin Act 136.	Implemented
LU-3	Dane County, City of Madison – Adopt Airport Noise Overlay Zoning.	Not implemented
LU-4	Dane County, City of Madison – Amend Subdivision Regulations to Require Dedication of Noise and Avigation Easements or Plat Notes on Final Plat.	Implemented
LU-5	Dane County – Consider Amending Subdivision Regulations to Prevent Subdivision of Land Zoned A-1 Agriculture	Not implemented
LU-6	Dane County, City of Madison – Amend Building Codes to Provide Soundproofing Standards for Noise-Sensitive Development in Airport Noise Overlay Zones.	Not implemented
LU-7	Dane County, City of Madison, Town of Burke – Amend Local Land Use Plans to Reflect Noise Compatibility Plan Recommendations and Establish Airport Compatibility Criteria for Project Review.	Not implemented
LU-8	Dane County – Follow through with Planned Land Acquisition in Cherokee Marsh and Token Creek Park Areas.	Not implemented
LU-9	Dane County – Consider Expanding Land Acquisition Boundaries in Cherokee Marsh and Token Creek Park Areas.	Not implemented
LU-10	Dane County – Establish Sales Assistance or Purchase Assurance Program for Homes Impacted by Noise Above DNL 70 dB.	Implemented
LU-11	Dane County – Install Sound Insulation for Schools Impacted by Noise Above DNL 65 dB	Not implemented

Program Management Measures (PM)

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

NCP Measures Recommended via Public Comment

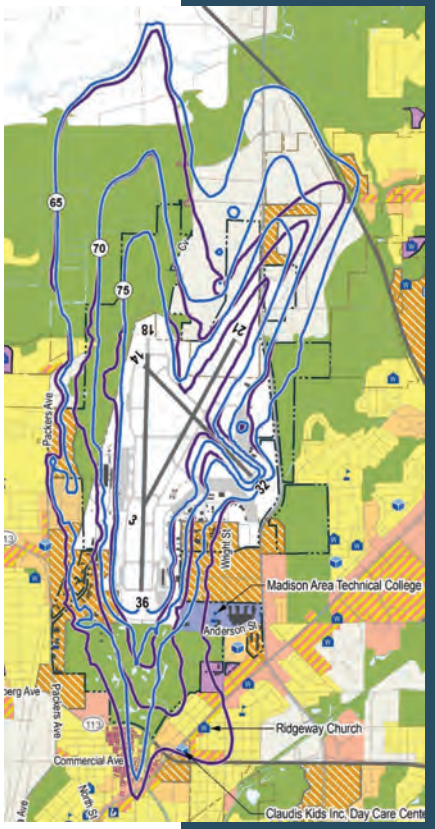
- Noise Abatement Measures Recommended
  - Design flight paths that avoid schools and high-density population areas
  - Minimize F-35 operations during times when children are outside the schools
    (arriving to school, leaving school and school recesses)
  - Reduce nighttime (after 10 pm) operations
  - Use Runway 3/21 for all WIANG departure scrambles
- Program Management Measures Recommended
  - Institute a noise monitoring program/system
  - Install a flight tracking system
  - Update the NEM on a regular basis
- Land Use/Noise Mitigation Measures Recommended
  - Consider low-income and EJ communities
  - Restrict introduction of low-income and other residential developments within the 65 dB DNL noise contour or adjacent to the airport
  - Consider elementary schools and noise effects on children's learning
  - Establish an airport affected area
  - Report alternative metrics and consider use of lower DNL threshold
  - Implement a residential sound insulation program
  - Implement a sales assistance program
  - Implement a land acquisition and relocation program
  - Implement a sound insulation program for schools
  - Change building codes to support sound proofing

Hypothetical Noise Abatement Measure
Move Runway 18 F-35A Departures to Runway 03

Goal: Reduce noncompatible land use south of the airport

Results:

Contour Interval	Population (Census 2020)			Housing Units		
	Forecast 2027 NEM	Hypothetical	Change	Forecast 2027 NEM	Hypothetical	Change
65-70 DNL	2,424	887	-1,537	1,227	418	-809
70-75 DNL	57	14	-43	23	3	-20
>75 DNL	0	0	0	0	0	0
Total	2,481	901	**-1,580**	1,250	421	**-829**

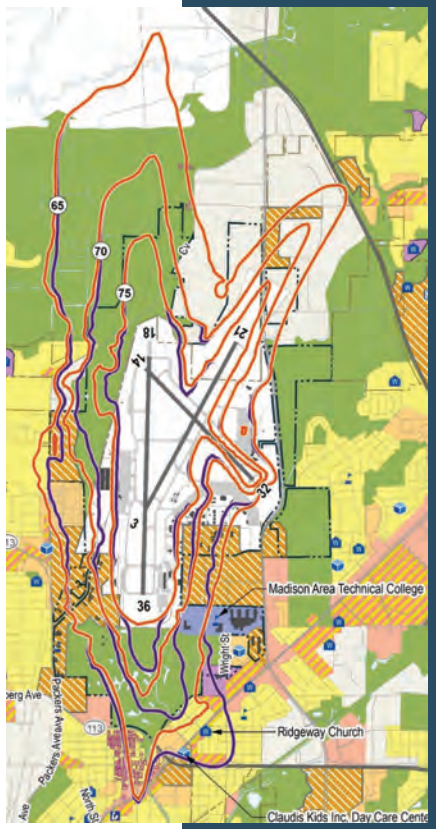


Hypothetical Noise Abatement Measure
F-35A Departures on Runway 18 use Afterburner

Goal: Reduce noncompatible land use south of the airport

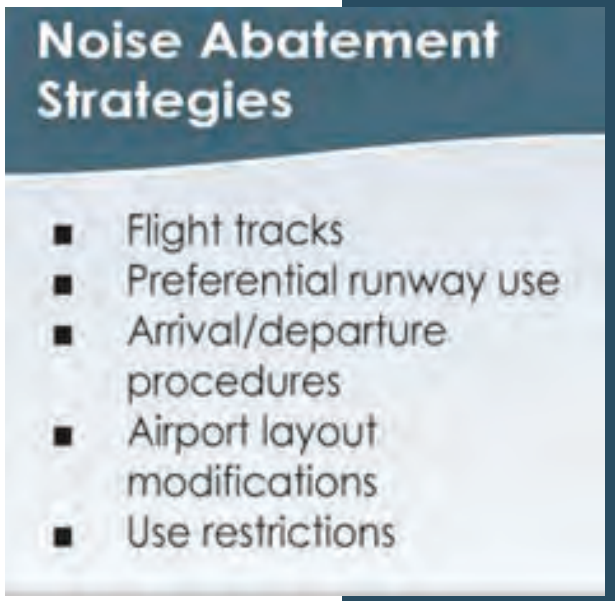
Results:

Contour Interval	Population (Census 2020)			Housing Units		
	Forecast 2027 NEM	Hypothetical	Change	Forecast 2027 NEM	Hypothetical	Change
65-70 DNL	2,424	1,697	-727	1,227	838	-389
70-75 DNL	57	14	-43	23	3	-20
>75 DNL	0	0	0	0	0	0
Total	2,481	1,711	**-770**	1,250	841	**-409**



Brainstorm: Noise Abatement Measures

- Any existing measures to remove from NCP?
- Any existing measures to amend/update?
- Any new measures to propose



- Purpose: to reduce exposure over incompatible land uses

Brainstorm:
Land Use/Mitigation Measures

- Any existing measures to remove from NCP?
- Any existing measures to amend/update?
- Any new measures to propose

- Purposes: (1) to mitigate incompatible land uses and
  (2) to prevent the introduction of new incompatible land uses

Brainstorm: Program Management Measures

- Any existing measures to remove from NCP?
- Any existing measures to amend/update?
- Any new measures to propose

- Purposes: (1) to implement and promote the NCP measures, (2) to monitor and report on effectiveness of NCP measures, and (3) to update NEMs and revise NCP when appropriate

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Upcoming Schedule: Technical Advisory Committee

Meeting / Activity	Anticipated Purpose	Anticipated Time Frame
5th Technical Advisory Committee Meeting	Evaluation results of the proposed Noise Compatibility Program measures	June 2023
6th Technical Advisory Committee Meeting	Presentation of the draft Noise Compatibility Program Update	September 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	*Completed*: 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.	*Completed*: 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

Airport considering adding a public meeting June 2023 to present NCP measures under consideration and solicit other ideas

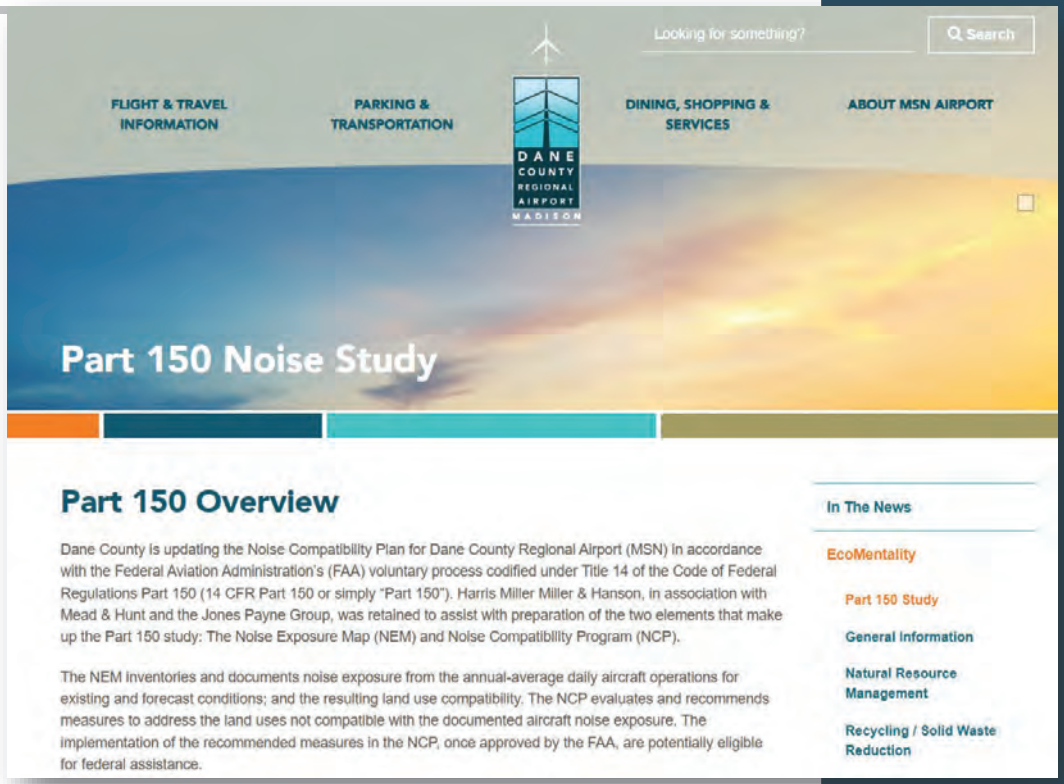
Note: Schedule is subject to change

Wrap-Up and Discussion

- TAC questions, comments, and discussion
- Set TAC meeting #5?
  - Proposed date and time in June or July
- 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

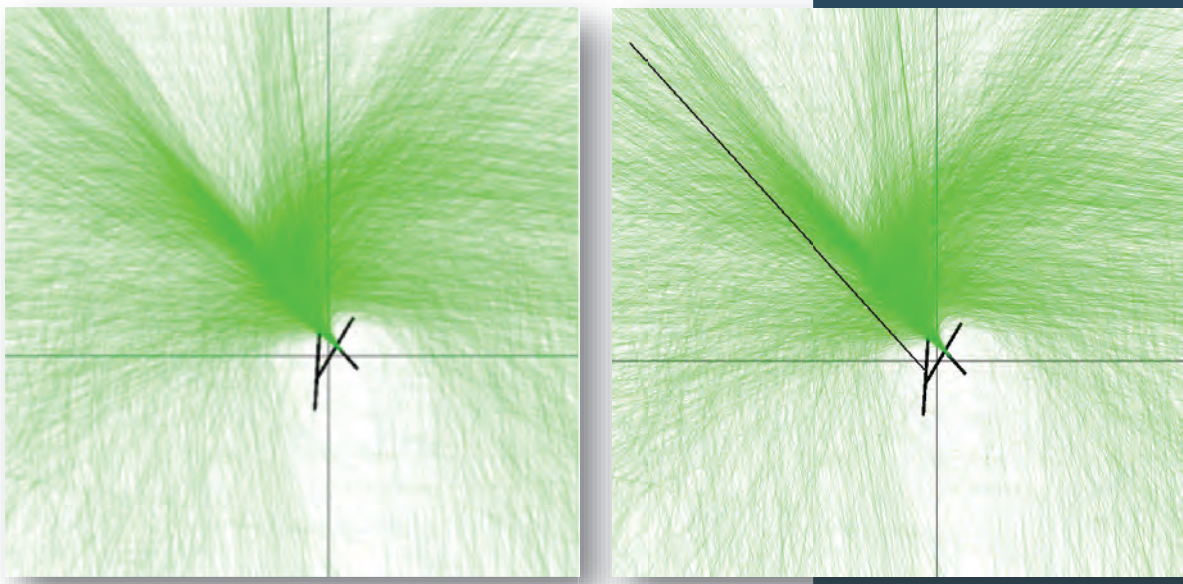
Compliance:
N/A

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:
Implemented

Compliance:
Low (54%)



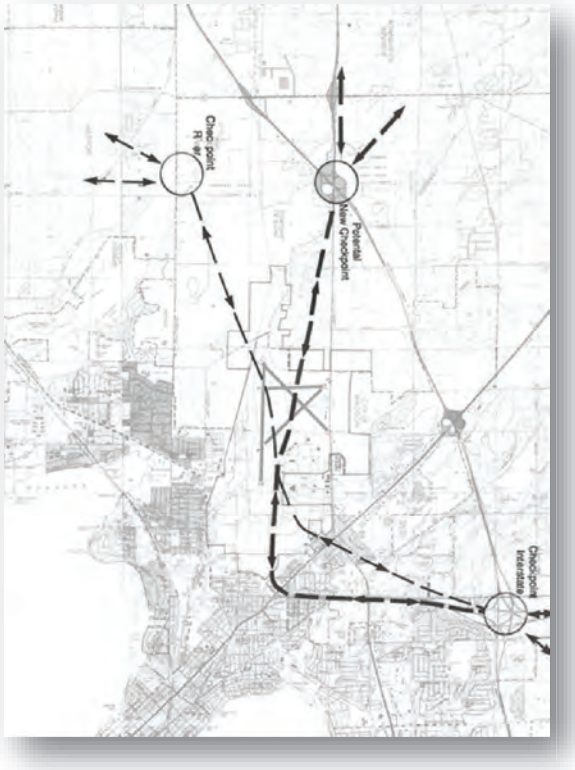
Departure Flight Tracks on Runway 32 with (right) and without (left) the Analysis Gate
Source: HMMH

NA-3: Establish Visual Approach Corridors for Helicopters

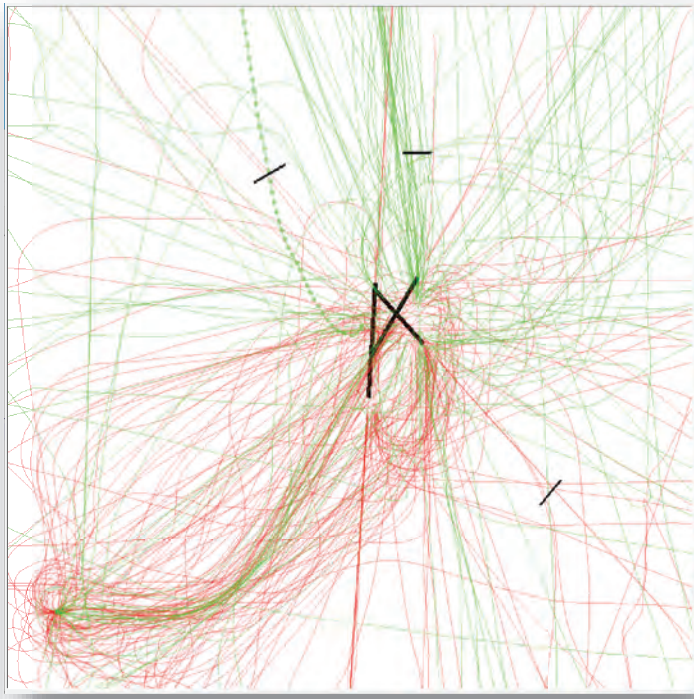
- Three corridors were gated for compliance in helicopter operations
- Compliance is below 5% of helicopter operations

Implementation Status:
Implemented

Compliance:
Low



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



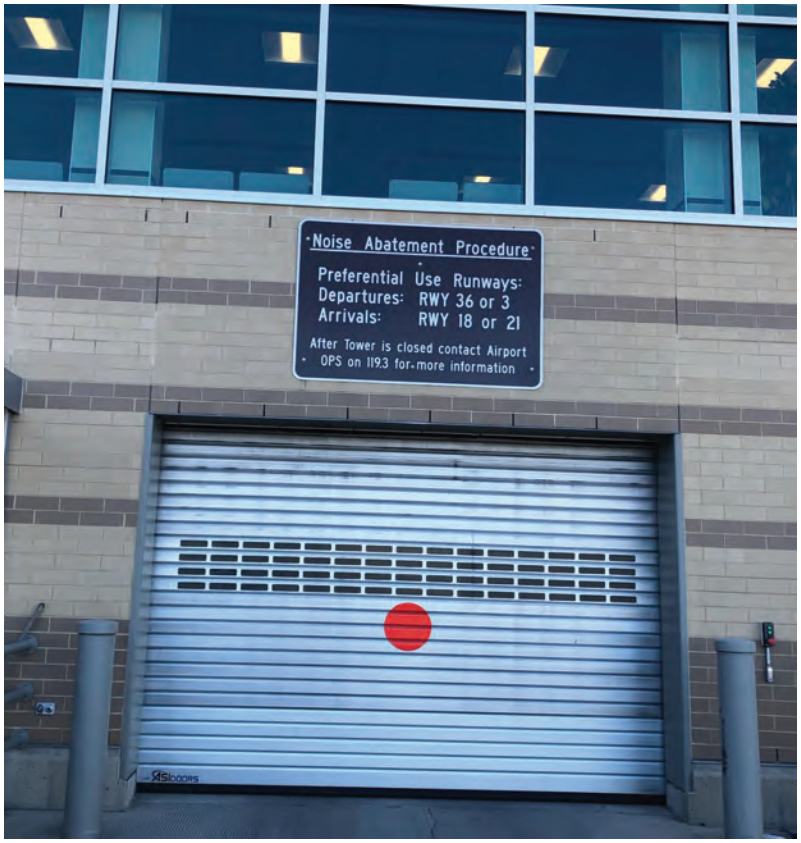
Helicopter Operations, with Gates corresponding to NA-3 Checkpoints
Source: HMMH, 2022

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:
High



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:
High

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

- Runway was constructed as planned

Implementation Status:
Implemented

Compliance:
N/A

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

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:
Implemented

Compliance:
Moderate

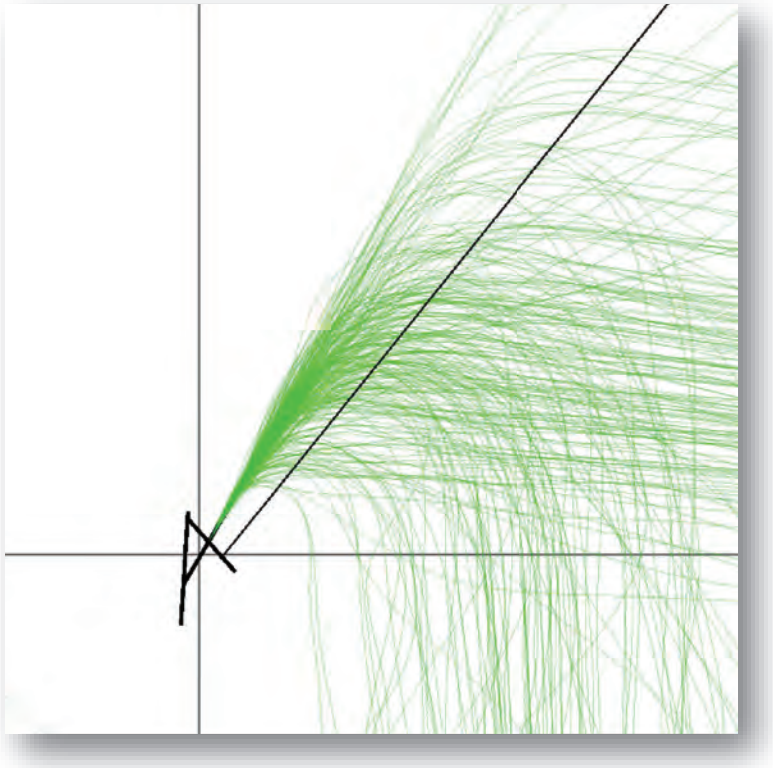
Runway	Number of Departures	Departure Percentage	Number of Arrivals	Arrival Percentage
3	363	2%	450	3%
14	52	0%	346	2%
18	5,570	35%	5,791	37%
21	2,182	14%	1,658	11%
32	1,913	12%	517	3%
36	5,738	36%	6,897	44%
Total	15,818	100%	15,659	100%

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:
High (88%)



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:
Implemented

Compliance:
Low

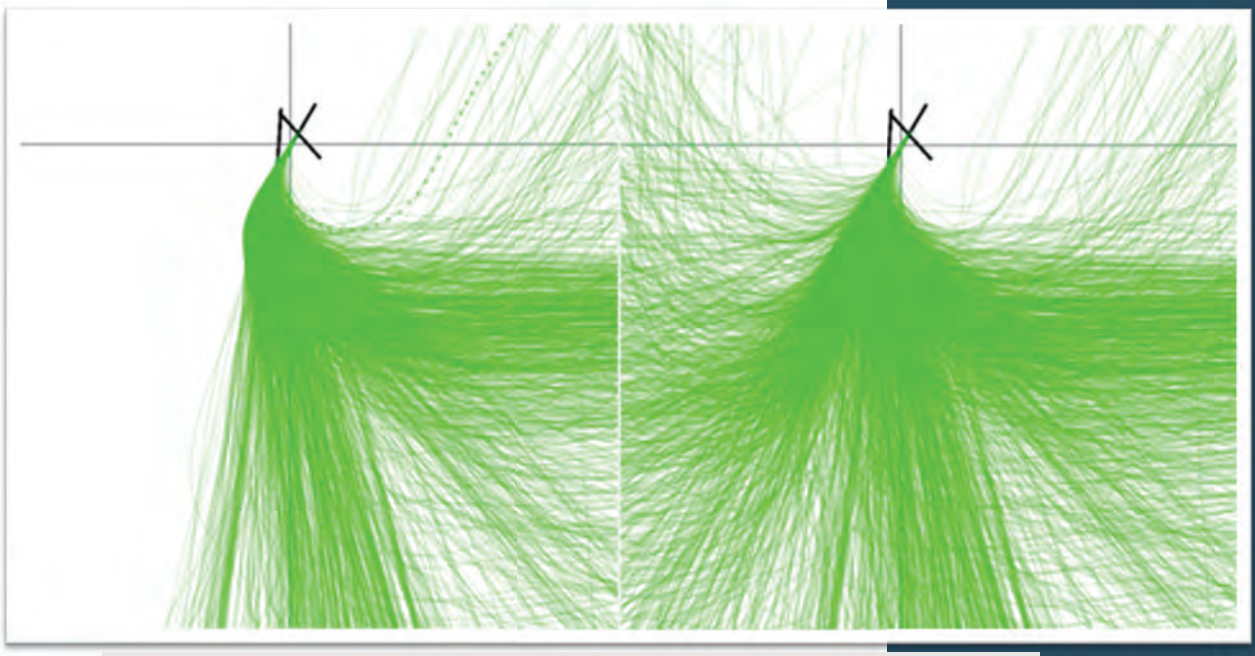
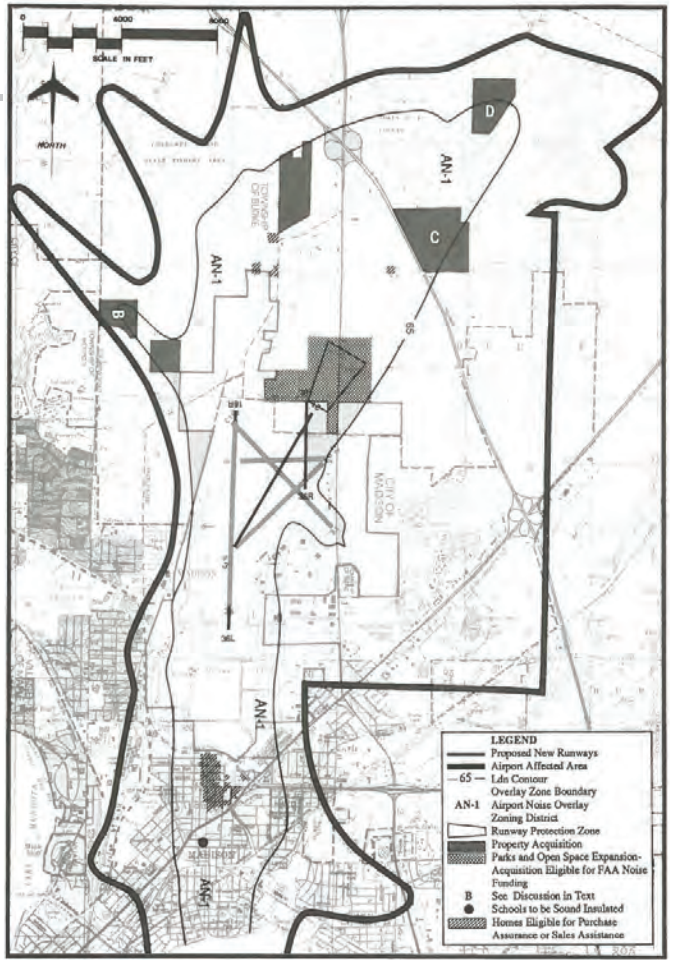


Figure: Departures above 12,500 lbs. on Runway 21
Left: Compliant aircraft which completed the 10-degree turn.
Right: All departures above 12,500 lbs.
Source: HMMH

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 5 Summary

Meeting Date: Tuesday June 27, 2023

Reference: HMMH Project Number 03-12360

TAC Member Attendance:

Organization	TAC Member	Attendance
MSN staff	Michael Kirchner	Yes
WBOA staff	Max Platts	Yes
WBOA staff	Kelly Halada	Yes
WBOA staff	Mallory Palmer	Yes
WBOA staff	Matt Messina	Yes
Federal Aviation Administration (FAA) Airport District Office (ADO)	Bobb Beauchamp	Yes, virtually
FAA Air Traffic Control Tower (ATCT)	John Vagedes	No
FAA Air Traffic Control Tower (ATCT)	Daniel Hesch	Yes, virtually
FAA Air Traffic Control Tower (ATCT)	Courtney Hill	No
FAA Air Traffic Control Tower (ATCT)	Jake Deaner	No
Wisconsin Air National Guard; 115th Fighter Wing (FW) Representative	Lt Col Dan Statz	No
Wisconsin Air National Guard; 115th Fighter Wing Representative	Lt Col Ben Gerds	Yes
Wisconsin Air National Guard; 115th Fighter Wing Representative	Tony “Ike” Russo	No
Wisconsin Air National Guard; 115th Fighter Wing Representative	Lt Col Ryan Gaffney	Yes
Army Guard	Major Lucas Sivertson	Yes, virtually
Delta Airlines	Abby McCoy	No
Wisconsin Aviation	Brian Olson	No
City of Madison Planning Division	Dan McAuliffe	Yes
Dane County Department of Planning and Development	Todd Violante	No

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
MSN staff	Kim Jones	Yes
Jones Payne Group	Diane Carter	Yes
Jones Payne Group	Brianna Whiteman	Yes
HMMH	Tim Middleton	Yes
HMMH	Eugene Reindel	Yes
HMMH	Julia Nagy	Yes
HMMH	Brandon Robinette	No
HMMH	Dan Botto	Yes
HMMH	Paul Krusell	Yes
Mead & Hunt	Chris Reis	Yes
Mead & Hunt	Ryan Hayes	No
Mead & Hunt	Kate Andrus	Yes
Mead & Hunt	Greg Stern	No
Mead & Hunt	Rob Sims	Yes
Mead & Hunt	Levy Ney	Yes

Other attendees:

Leslie A. Westmont, DMA
Leah Moore, DMA
Bridget Esser, DMA

Meeting summary notes:

Tim Middleton provided opening remarks, after which the TAC, study team members, and supporting staff introduced themselves. He explained the objectives of the meeting and laid out the agenda.

Middleton reviewed the roles and responsibilities for the various stakeholders including the airport, consultant team, FAA, Technical Advisory Committee (TAC), and public. He explained that a goal for the meeting is to have a discussion as a group on potential recommended NCP measures.

Middleton reviewed the Part 150 study process. We are now in the NCP Phase of the Part 150 process and will consider the three categories of potential measures to reduce noncompatible land use: noise abatement, land use, and programmatic measures. Part 150 follows a prescriptive process based on the regulation. The consultant team brings experience from working on these types of studies at many airports.

Middleton provided an overview of the objectives of the NCP and proposed measures. He reviewed how potential measures are evaluated. FAA will review each proposed measure and approve or disapprove on a measure-by-measure basis. He provided an overview of the three categories of measures. He noted that the programmatic strategies cover some of the efforts that the airport is already doing such as managing noise complaints.

Middleton reviewed the NCP development process and where we are, as shown on slide 9.

Middleton reviewed the existing MSN NCP measures and reiterated the purpose of the meetings today, to obtain feedback from the TAC and the public on potential NCP measures. As a TAC, we will walk through the potential measures that have been considered and analyzed by the consultant team up to this point.

Eugene Reindel reviewed the NCP measures that were implemented versus not implemented and their compliance. The study team has reviewed the measures but now we need to determine how to reduce non-compatible land use.

Reindel provided an overview of the measures proposed via public comment.

Middleton commented that we will walk through each measure during this meeting and the intent is to have an open conversation.

Middleton provided an overview of the FAA requirements according to the NCP checklist and what needs to be considered. Middleton reviewed that we want to cover noise abatement measures first to control noise at the source and modify noise exposure to remove noncompatible land uses from the 65 DNL contour. Middleton provided an overview of all of the potential types of noise abatement measures.

Middleton provided an introduction to noise abatement flight tracks.

Paul Krusell provided an overview of Runway 18 noise abatement flight tracks (Slide 14).

Reindel stated this potential measure could be seen as a shifting of noise but in terms of non-compatible land use this does reduce the size of the contours and residential properties within them. It shifts the noise towards the Oscar Mayer rail yard.

Lt. Col Ben Gerds asked whether the noise model takes into account the terrain, including flying over the lake and the associated noise.

Reindel confirmed that the model does include terrain and water considerations.

Gerds confirmed that the change is still beneficial from a noise perspective.

Dan McAulliffe expressed his surprise at how little the contours shrank from the [Department of Defense] Environmental Impact Statement (EIS). The City of Madison is planning growth in the Oscar Meyer area near the

railyard. They want to grow residential density along transit corridors such as the Bus Rapid Transit routes and are planning on land use changes in the future.

Middleton stated that one intent of the Part 150 process is to prevent future non-compatible land use and provide an understanding of long-term land use.

Reindel stated that there is an airport affected area that has been in existence since the previous Part 150. We should enhance this so that there is smart growth near the airport.

McAulliffe East-Washington and Oscar Meyer are two major corridors that we need for residential development. It is important for the transit offerings. Starting in 2024, the city will have Bus Rapid Transit lines along East-Washington and in the future, Packers Ave to reduce greenhouse gas (GHG) emissions and car dependence. There are only a few options for routes and growth opportunities. The City of Madison maintains land use jurisdiction. The county does not have land use jurisdiction over the city.

Reindel confirmed that shifting operations shift the contours since they represent where aircraft fly. We moved the operations which moved the contours.

McAulliffe expected the Noise Exposure Map (NEM) contour to shrink due to the reduction in operations from the EIS to the NEM. Shifting the noise presents a challenge since future zoning has been changed for those industrial areas near the railyard.

Krussel and Reindel introduced notional noise abatement flight paths to avoid schools and dense residential areas, as suggested by the public.

Daniel Hesch stated that the development of new special procedures on would have to go through the standard FAA Safety Risk Management (SRM) process. It is not a local decision.

Reindel we would design arrival and departure paths to avoid the buildings. We recognize that it is an 18 to 24 month process to get a flight path change through the FAA.

Middleton explained that this measure was received through the public comments. The NCP document will include a write up of the analysis and whether or not the measure would be recommended by the airport depending on the ability to implement the measures.

Reindel reiterated that we need to know today if there are major challenges with implementation of the proposed measures that TAC members are seeing so that the airport considers all pertinent issue while deciding on what measures to recommend in the NCP.

Krusell discussed preferential runway use measures. He explained the benefits of shifting Runway 18 departures to Runway 03 and how it would provide benefits to the south in terms of avoiding non-compatible land use.

Reindel reminded the group that we discussed this scenario last meeting and understand that the runway would need to be extended for it to accommodate the F-35As.

Krusell explained slide 24 and the changes that occurred with the afterburner use and potential contour changes and that it results in bulge of the contour to the west.

Reindel explained that we worked with the 115th FW to come up with potential departure profiles. The goal is to develop a noise abatement departure profile (NADP) for the F-35As.

Krusell explained the measure on slide 25 which would increase noise to the west of the airport due to the use of afterburner.

Gerds asked about the population counts and changes within each of the scenarios.

Krusell confirmed that we did look at those changes but they are not included on the slides and HMMH can share with the TAC following the meeting.

Krusell explained slide 27 and the contour changes, along with the information on the slide.

Gerds has been flying the F-35 for the past few weeks and has been using the profile/ procedures on slide 27. Speed hold 300 kts is executable and repeatable and does not require use of afterburner.

Dan Botto asked about use of afterburner.

Gerds following mandate for use of afterburner; Runway 03 would mandate afterburner use and with the shorter runway could increase risk.

McAuliffe asked about afterburner takeoffs; are these reducing noise overall but increasing intensity of noise events?

Reindel explained the contour changes associated with afterburner use.

McAuliffe asked about peak exposure and how to potentially reduce that.

Middleton noted that new procedures for non-military operators have not been proposed.

Rob Sims moved discussion to alternatives related to airport layout modifications (slide 28). He explained that they transition from simple to more complex in terms of potential alternatives. He covered Alternative 1 and explained the benefits and challenges as described on slide 30. He covered Alternative 2 and explained some of the trade-offs as outlined on slide 31. He explained Alternatives 3 and 4 and their similarities. Runway 03 threshold is complex so modifications would have a lot of ripple effects. The safety areas would be shifted out over Highway 51. Hanson Road would need to be relocated due to the tunnel. Alternative 3 and 4 address Highway 51 in two different ways. Alternative 3 describes the use of a tunnel to have space for the safety area. Alternative 4 would include relocation of the highway.

Kate Andrus noted that you have to look at runway extensions as a component of the Part 150. That is why we looked at these options for potential alternatives within the constraints that exist.

Hesch asked a question about Alternative 3 and the associated runway lengths.

Sims explained that the Runway 03 takeoff direction dictates the 8,000 ft.

Middleton noted that Runway 03/21 is identified as the noise abatement runway for the airport. Routing more operations to fly over compatible land use to the north would be ideal.

Reindel explained that if you put all Runway 18 departures onto Runway 03, it pushes the contour north which was the impetus for considering these extensions.

Reindel moved discussion to use restrictions (slide 34). Since Part 161[1], there have been no successful use restrictions put into place. The chance of being able to implement these are very slim but need to be considered since they were suggested by the public.

Reindel explained slide 35 which does not show reductions to noncompatible land use.

Reindel explained slide 36 which does not show reductions to noncompatible land use.

McAuliffe asked about nighttime operations.

[1] https://www.faa.gov/airports/environmental/airport_noise

Gerds replied that scheduled flights are typically prior to 10 pm. He confirmed that they avoid flying overnight unless it is a scramble or other special operation.

Middleton explained some of the potential use restrictions that may exist at other airports.

Reindel noted that the NCP could include a measure for the 115th FW to avoid flying at night since it is something that they already seek to do. It could be beneficial to include this agreement within the NCP. Reindel explained the nighttime definition for FAA is 10PM to 7AM.

Gerds confirmed that they will fly in the dark but not later than 10 pm.

Reindel confirmed that the airport will consider and show the combined measures (slide 37). Reindel showed some of the combined measures that were presented on the slides.

Reindel opened the conversation on the noise abatement measures.

Gerds noted that if the F-35As could take off Runway 36 they would try to do it more often if the winds are compatible. Is there are any potential to take off to the north more often?

Hersh responded that the Air Traffic Control Tower (ATCT) cannot reduce the separation due to FAA requirements. When a pilot calls for clearance, we can try to consider that. The tower cannot offer Runway 36, but the pilot can request Runway 36. ATCT can make that approval but there may be delays. We can make adjustments to traffic to make it more efficient.

Gerds stated that we have experienced longer delays in the past. We will call early to request Runway 36, and be given a time estimate. We can start executing that immediately: request Runway 36 and fly it when granted.

Reindel noted that it would be great to track this and use of runways. We want to wrap this up and if we have data that is helpful.

Middleton asked if the group could be updated on the delivery of the fleet of F-35As.

Gerds noted that the 115th FW expects to receive all 20 aircraft by this time next year and currently have 5 aircraft.

Gerds clarified the use of Runway 36 vs. Runway 18; Runway 18 departures only occur if Runway 36 is not an option.

Diane Carter introduced land use measures (slide 43). Once the final contours are generated from the noise abatement measures, the team will determine how to address the remaining non-compatible land use after expected changes resulting from noise abatement measures/ contour changes. She introduced land acquisition measures that were proposed as outlined on slide 44. Land acquisition could be appropriate for those properties within the 70 dB DNL; in that case, airport would purchase home and change zoning. Carter explained the option to acquire the mobile home park on the west side of the airport since the airport cannot sound insulate this type of resident under FAA guidance. The airport would need to acquire the homes, relocate the residents, and rezone.

McAuliffe possible acquisition within the 70 dB DNL – if this were to occur the only real use would be open space. Not sure of potential to rezone. The mobile home park is a large political conversation and there is a large shortage of housing in Madison. Could the mobile home park be relocated? I don't expect we will want to be in the position of forcing people out.

Carter Under Part 150 the airport cannot provide sound insulation to mobile home residences.

Kim Jones stated that this would be hugely political and the airport would want to avoid relocation.

Carter introduced sound insulation measures that were proposed as outlined on Slide 45. She explained the sound insulation requirements for testing of noise sensitive sites and that there is a qualifying step. Likely not all of the

buildings would be eligible for sound insulation since it requires meeting certain standards. She mentioned Environmental Justice concerns.

Reindel noted that this was a comment received from the public and the study team needs to provide feedback in the NCP analysis that we considered these measures.

McAuliffe stated that the City of Madison is supportive of a sound insulation program. Avigation easements are a current concern. Preference for avigation easement to be tied to a certain db DNL level. Changes in noise should be considered within avigation easements. Mitigation at Hawthorne Elementary would also be supported by the City.

Brianna Whiteman described preventative land use measures proposed, as shown on slide 46. She explained the airport affected area and how we may want to potentially redefine it to the 65 dB DNL contour. If we cannot limit non-compatible land use, need to consider land use controls.

McAuliffe does not see potential for changing the building codes from the state law. The issue is not unique to Madison. City would be supportive of this change but state politics would be challenging. He is unsure of the appetite to try to change state codes.

Jones asked whether there may be an opportunity for the city to say to a developer that they need to require certain standards even if it is not in the building code. The airport cannot support sound insulation of housing that is slated to be built within the known NEM contour.

McAuliffe – City council acknowledges that they can strongly recommend certain requirements.

Carter – Is there an opportunity to use building codes to require more energy efficient building materials, these often have noise benefits.

McAuliffe – The building code restricts the requirement for building materials.

Kirchner – Encouraging more efficient building envelopes has additional benefits.

McAuliffe – The city can encourage best practices but cannot require them.

Riechers – Can it be incentivized?

McAuliffe – Additional techniques have been used for sound insulation. Avoiding problems is top of mind. The challenge is funding for these changes. We have an area where growth makes sense as a City but the challenge is related to the potential future noise impacts.

Carter – Another measure that was proposed by the public is related to environmental justice which is not required under Part 150.

Bobb Beauchamp noted that the some of the recommended measures in the NCP may need to be approved through the NEPA process prior to implementation, which may include Environmental Justice analysis.

Carter explained slide 49 and potential measures related to alternative metrics and lower DNL thresholds.

Jones recalled the use of covenants for the Truax Air Park. Could the City create covenants that could require noise insulation before construction was done?

McAuliffe noted that this is unclear to him; from his understanding covenants are a civil law so they are not enforceable by the city.

Reindel noted that guidance from FAA states that any home built after October 1, 1998 (or the date of the first published contour, whichever is later) are not eligible for sound insulation.

Jones noted that any new construction built within the contours is not eligible now that there are new NEMs.

McAuliffe noted that the city understands this and that Part 150 funds can only be used for existing residents.

Middleton stated that airport sound insulation programs often share resources with developers proactively to strongly suggest certain sound insulation options even if there are not building code changes possible.

Carter added real estate disclosures as an item of conversation. These could be a potential option based on challenges with building code changes.

Middleton introduced the proposed program management measures and purpose of these measures (Slide 51). Monitoring options include ensuring that noise abatement measures are being complied with. Middleton explained flight track monitoring systems that show when and where aircraft fly. Flight track monitoring systems are available to the public through online portals but military operations are not included in the data which limits the benefits for an airport like MSN. The other option is a noise monitoring system.

Reindel noted that these suggestions were presented by the public so they need to be assessed. Since the major noise issue of concern is the F-35As and this information would not be included in the flight tracking system it would limit the value of the system to the public and may not justify the expenses associated with maintenance of the system.

McAuliffe shared that noise monitoring would be beneficial to ground proof whether the patterns of noise are following the expected patterns that generated the noise contours.

Reindel explained that you cannot use noise monitoring data to create NEMs under FAA requirements, noise modeling is required to create contours.

Middleton explained the reporting measure proposed by the public (slide 53). The NCP could include a recommendation to have a noise advisory group and lay out some of the detail for it.

Kirchner stated that the airport plans to resume the noise abatement technical committee once the Part 150 study ends.

Jones explained that the noise technical committee is a subcommittee of the airport commission. These meetings were held twice a year to share updates from the airport.

Reindel noted that we will need to document in the NCP how the airport wants to proceed with the noise abatement technical committee.

Lowell Wright explained that the committee includes representatives from various airport stakeholders including military and civilian operators, along with citizens.

Reindel noted that the final recommendation under consideration is to update the NEM periodically, especially if the airport seeks FAA funding for noise mitigation like sound insulation.

Middleton explained that program management measures should be included to show how the airport plans to implement the measures in the NCP.

Reindel noted that once the measures in the other categories are recommended, then the program management measures should align with how to implement and manage those measures.

Middleton added that noise complaint tracking and monitoring is another component of this group of measures. There is a potential for a more robust complaint response program. The public often appreciates the increased transparency associated with reporting and managing complaints.

Middleton moved on to discuss the TAC schedule. The plan is to have a 6th TAC meeting in Fall 2023. The schedule depends on the airport's decision on recommended measures and whether we receive additional input from the public for more measures to look at.

Reindel noted that at this point he is hesitant to schedule next meeting since a lot of work/ iteration is required for the airport to clarify their recommendations for NCP measures. The public meeting tonight is focused on any other potential recommendations from the public for additional NCP measures to consider.

Middleton reiterated the purpose of the public workshop was to meet the needs of the public who wanted periodic updates on the Part 150 study.

Meeting adjourned.

MSN Part 150 Study

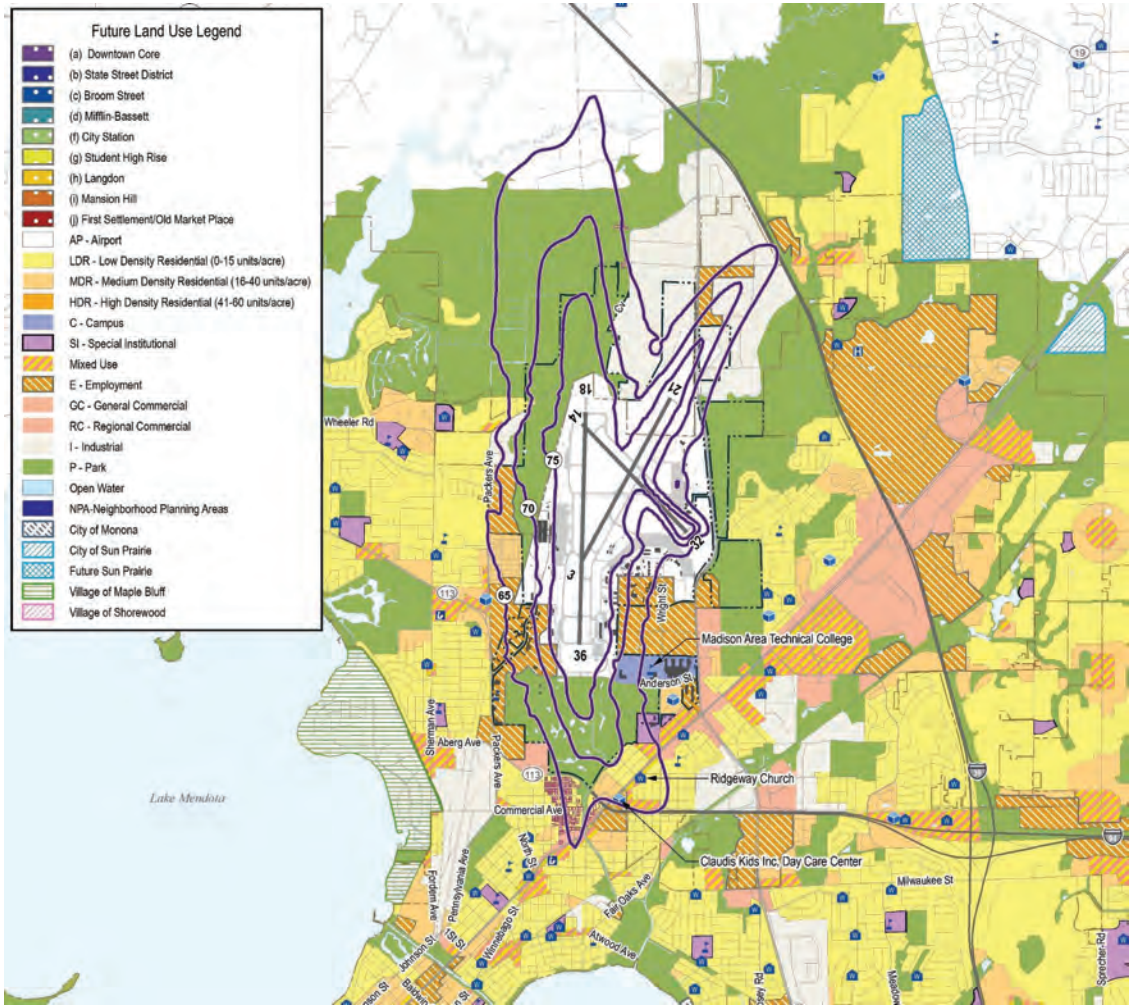
Dane County Regional Airport

Technical Advisory Committee Meeting #5

June 27, 2023

TAC #5 Agenda

- Introductions
- Roles & Responsibilities
- Part 150 Overview
- NCP Overview
- Evaluation Results of NCP Measures under consideration
  - Noise Abatement
  - Land Use
  - Program Management
- Schedule
- Wrap up



2022 MSN NEM Forecast Condition (2027)

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	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 noncompatible 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
- Review proposed flight procedures
- 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

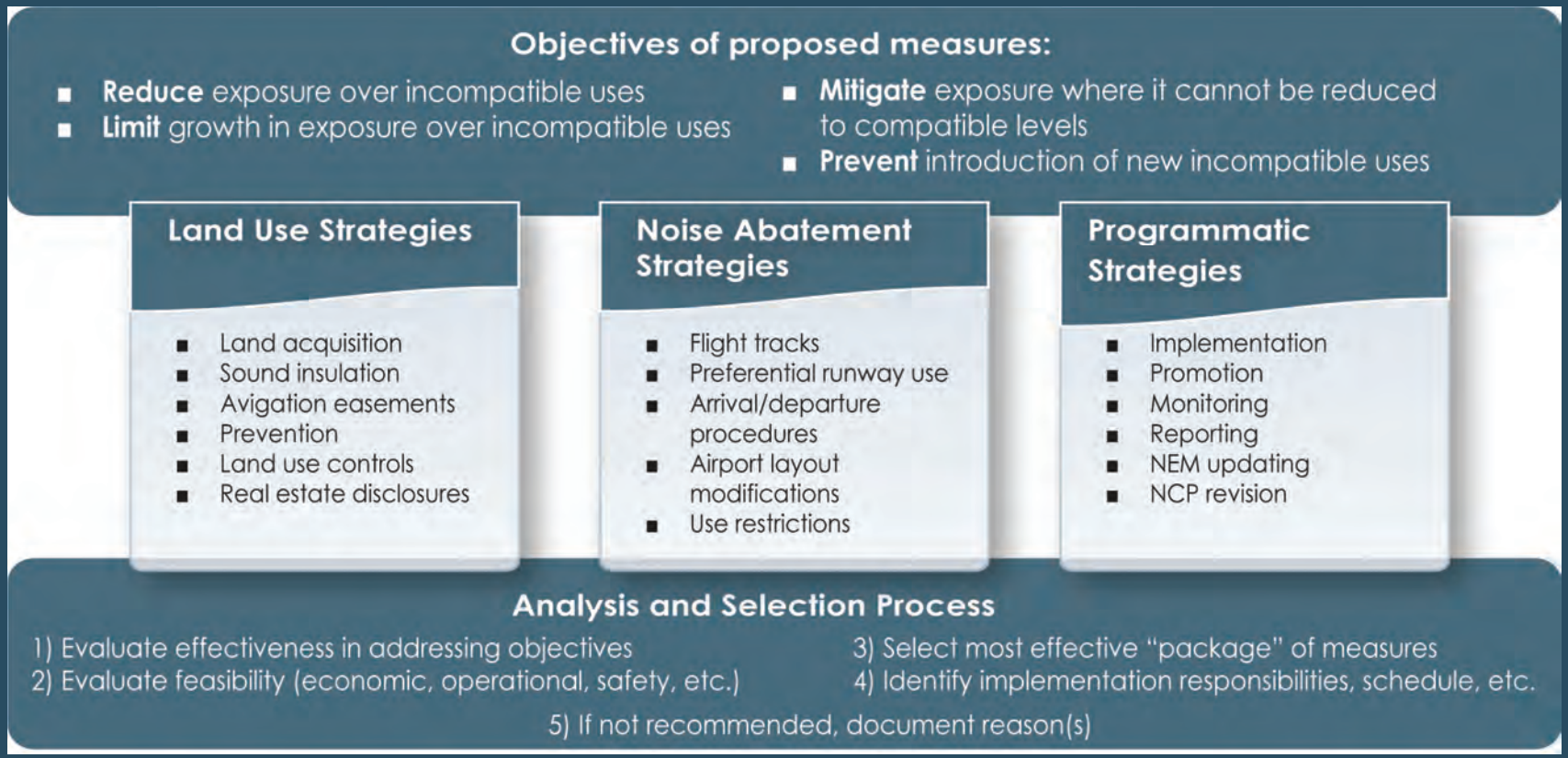
Develop NCP

- 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

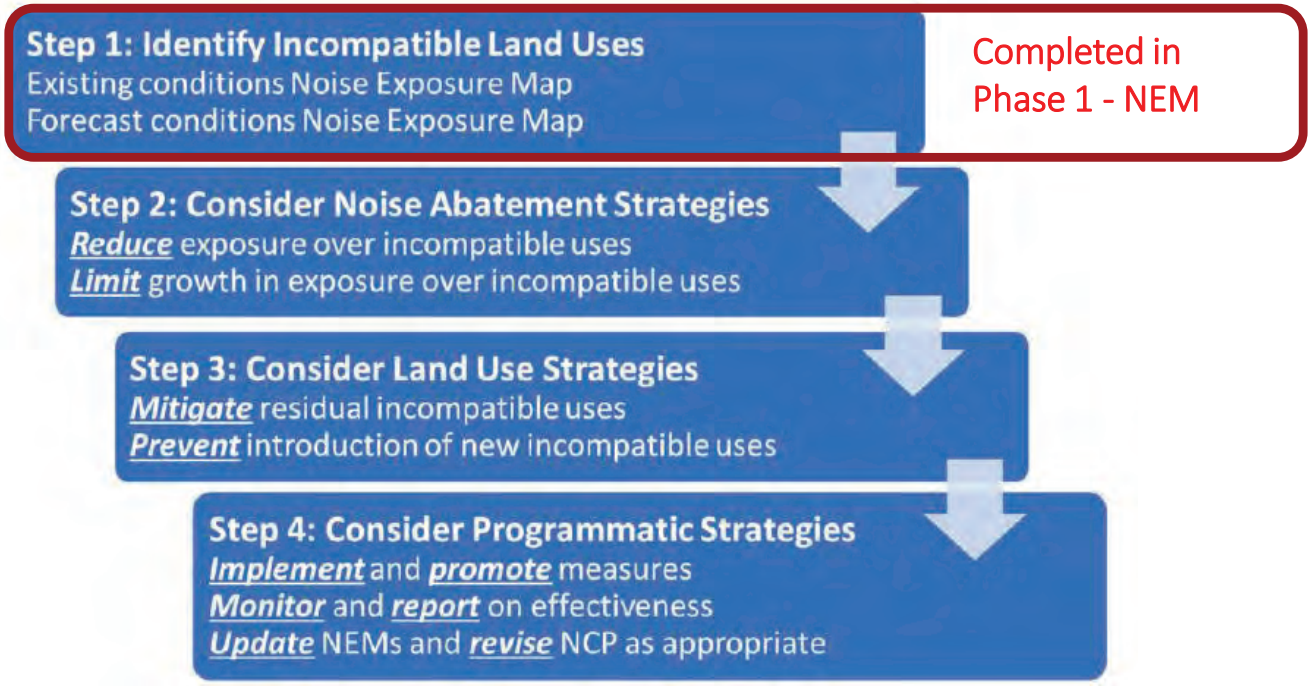
NCP Overview



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



Existing MSN NCP

- 1991 MSN NCP included:
  - Noise abatement measures (9)
  - Land use measures (11)
  - Programmatic measures (3)
- NCP Review
  - Determine implementation status of each existing measure
  - Determine compliance with the measures if implemented
  - Determine if existing measures should be:
    - Continued as written
    - Continued with modifications
    - Eliminated
  - Determine whether additional measures are needed to address the noncompatible land uses identified in the 2022 NEMs

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

NCP Measures Proposed via Public Comment

- Noise Abatement Measures Under Consideration
  - Design flight paths that avoid schools and high-density population areas
  - Minimize F-35 operations during times when children are outside the schools
    (arriving to school, leaving school and school recesses)
  - Reduce nighttime (after 10 pm) operations
  - Use Runway 3/21 for all WIANG departure scrambles
- Program Management Measures Under Consideration
  - Institute a noise monitoring program/system
  - Install a flight tracking system
  - Update the NEM on a regular basis
- Land Use/Noise Mitigation Measures Under Consideration
  - Consider low-income and EJ communities
  - Restrict introduction of low-income and other residential developments within the 65 dB DNL noise contour or adjacent to the airport
  - Consider elementary schools and noise effects on children's learning
  - Establish an airport affected area
  - Report alternative metrics and consider use of lower DNL threshold
  - Implement a residential sound insulation program
  - Implement a sales assistance program
  - Implement a land acquisition and relocation program
  - Implement a sound insulation program for schools
  - Change building codes to support sound proofing

Potential New Noise Abatement Measures

Flight Tracks

Preferential Runway Use

Arrival / Departure Procedures

Airport Layout Modifications

Use Restrictions
(FAA required to consider – nearly impossible to implement)

Noise Abatement Flight Tracks

Under consideration:

- Develop and implement preferred flight paths for Runway 18 departures
- Develop and implement new flight paths to minimize overflying educational facilities
- Design flight paths that avoid high-density population areas

Runway 18 Noise Abatement Flight Tracks

- The proposed model flight tracks (red) departing Runway 18 pass over the Railyard southwest of the airfield, over Lake Mendota, and fly north over North Bay to reduce aircraft noise to the southeast.

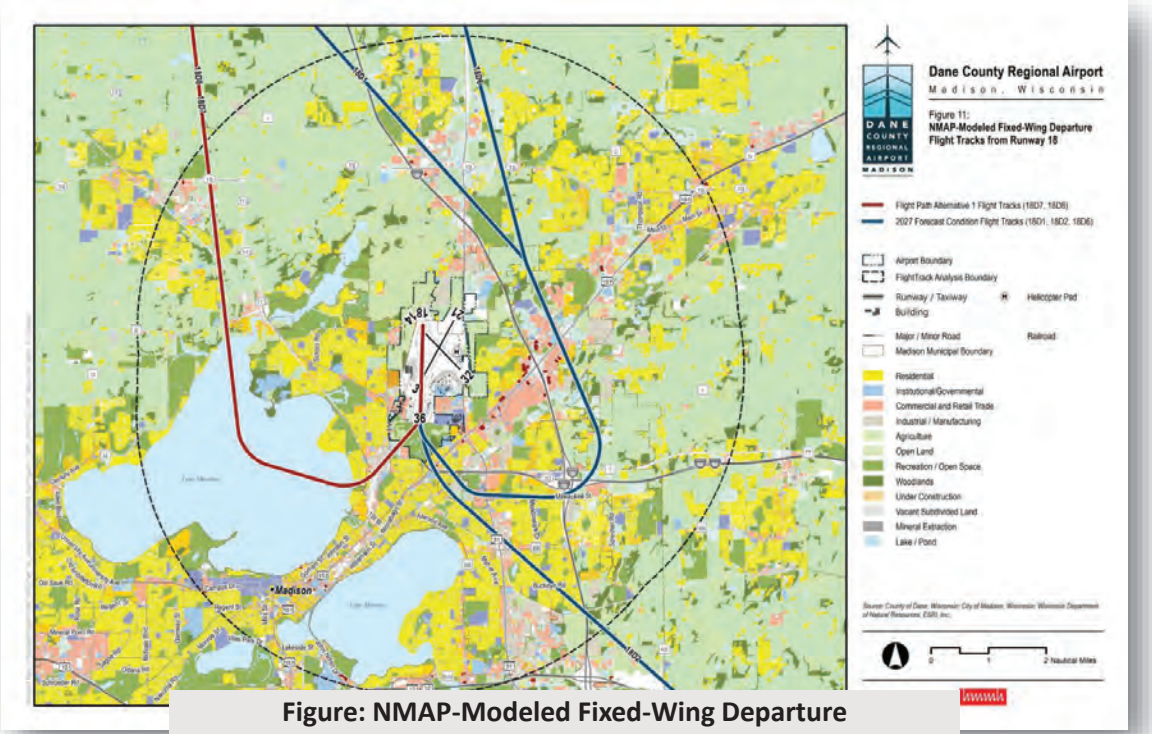


Figure: NMAP-Modeled Fixed-Wing Departure Flight Tracks from Runway 18

Departure Flight Tracks Designed to fly over compatible land use southwest of the airfield

Source: HMMH

50 Percent of Runway 18 Non-Scramble F-35 Departures Turn Southwest over the OM Station Railyard

- Only F-35A aircraft
- By routing half of non-scramble departures on Runway 18 over the railyard southwest of the airfield, this measure helps reduce noncompatible land use to the south and southeast of the runway.
- Splits departures such that half turn to the east after liftoff and half to the west

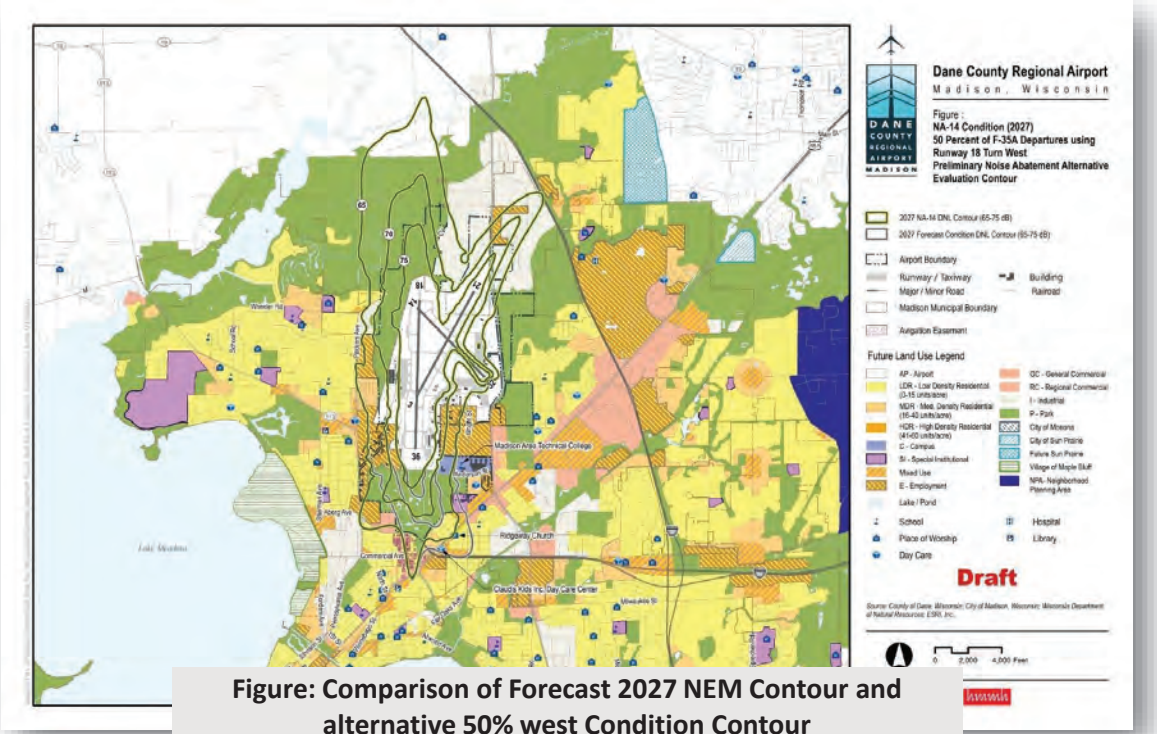


Figure: Comparison of Forecast 2027 NEM Contour and alternative 50% west Condition Contour
This condition increases the footprint to the southwest of the airport but reduces the footprint in noncompatible land areas to the south and southeast of the airport.
Source: HMMH

50 Percent of Runway 18 Non-Scramble Military and Civilian Departures Turn Southwest over the OM Station Railyard

- Military AND Civilian
- By routing half of non-scramble departures on Runway 18 over the railyard southwest of the airfield, this measure helps reduce noncompatible land use to the south and southeast of the runway.
- Splits departures such that half turn to the east after liftoff and half to the west

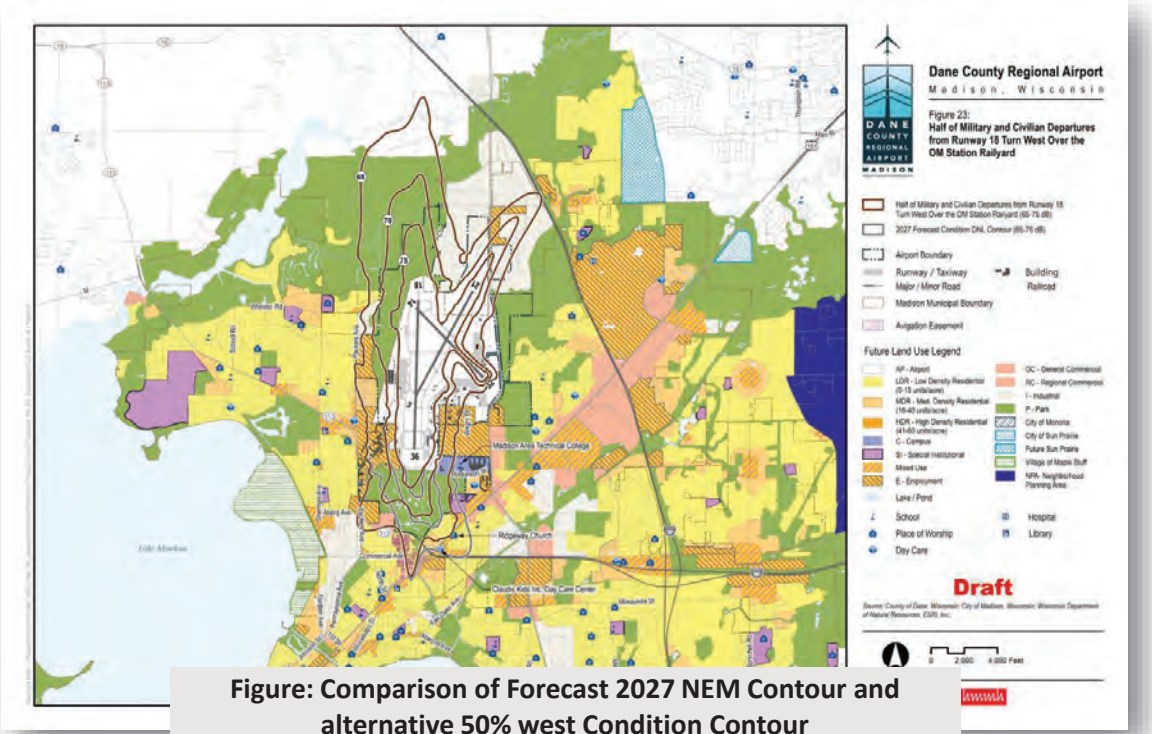


Figure: Comparison of Forecast 2027 NEM Contour and alternative 50% west Condition Contour
This condition increases the footprint to the southwest of the airport but reduces the footprint in noncompatible land areas to the south and southeast of the airport.
Source: HMMH

100% of Runway 18 Non-Scramble F-35 Departures turn Southwest over the OM Station Railyard

- Only F-35A Aircraft
- By routing all non-scramble departures on Runway 18 over the railyard southwest of the airfield, this measure helps reduce noncompatible land use to the south and southeast of the runway.
- Splits departures such that half turn to the east after liftoff and half to the west

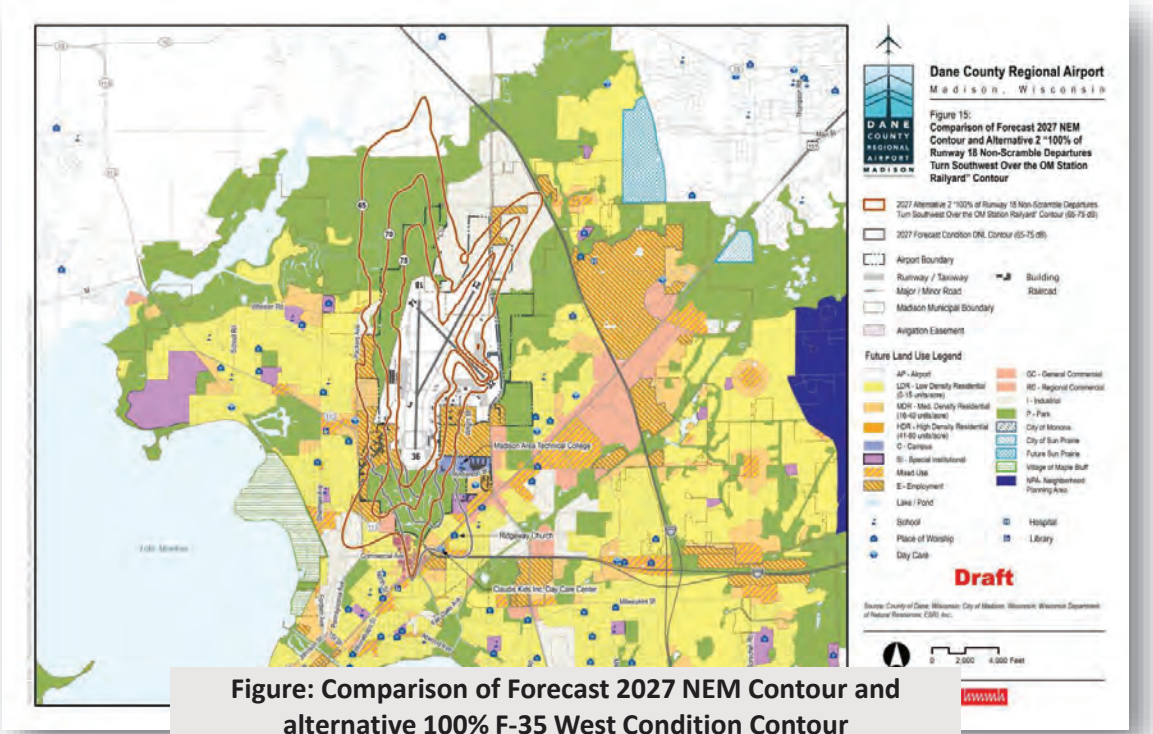


Figure: Comparison of Forecast 2027 NEM Contour and alternative 100% F-35 West Condition Contour
This alternative further increases the footprint to the southwest of the airport but greatly reduces the footprint in noncompatible land areas to the south and southeast of the airport.
Source: HMMH

100% of Runway 18 Non-Scramble Military and Civilian Departures turn Southwest over the OM Station Railyard

- Military AND Civilian
- By routing all non-scramble departures on Runway 18 over the railyard southwest of the airfield, this measure helps reduce noncompatible land use to the south and southeast of the runway.
- Splits departures such that half turn to the east after liftoff and half to the west

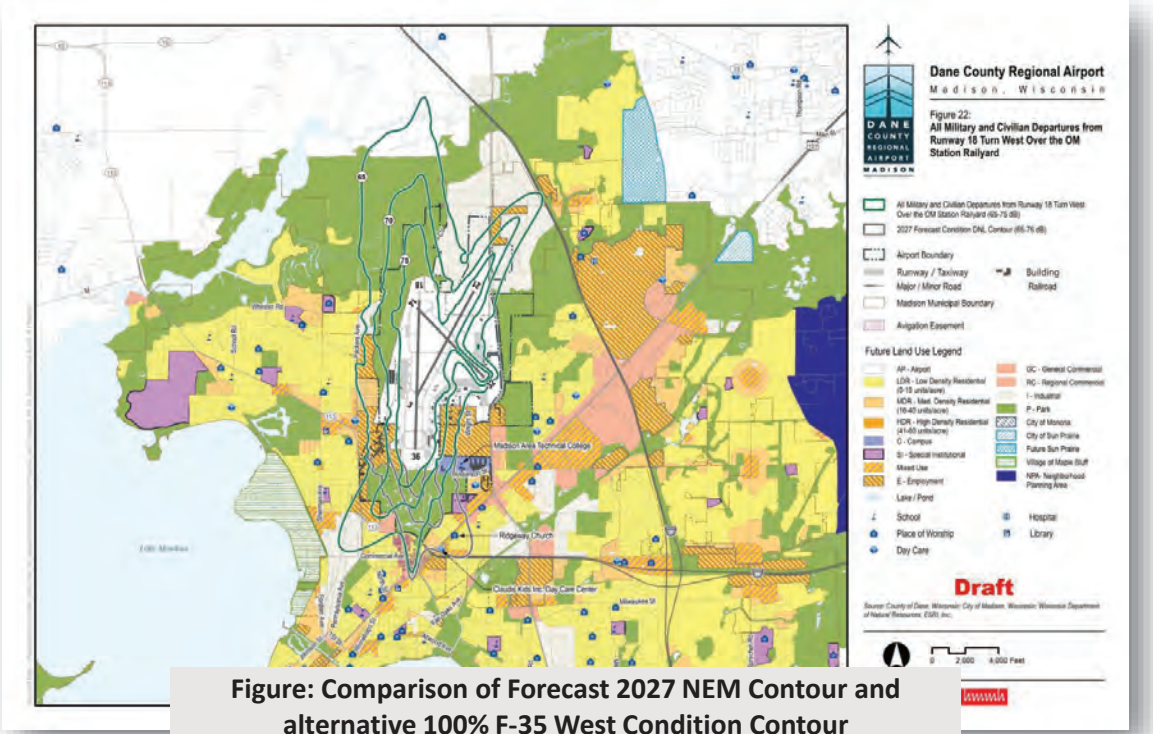
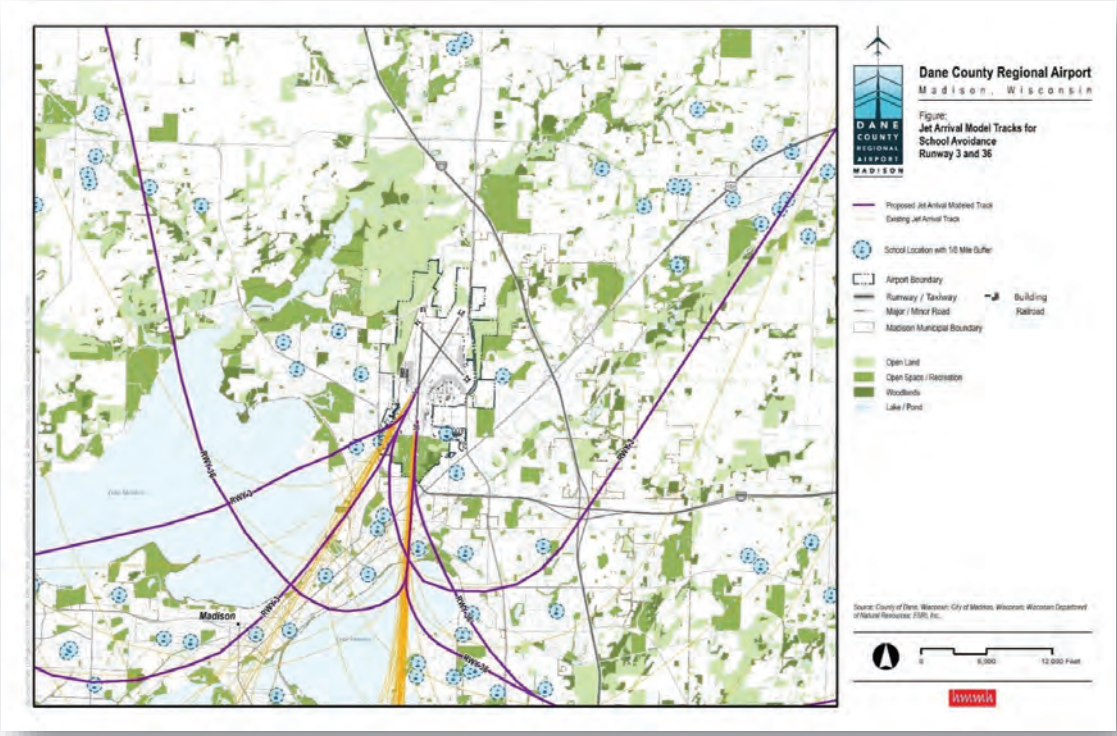


Figure: Comparison of Forecast 2027 NEM Contour and alternative 100% F-35 West Condition Contour
This alternative further increases the footprint to the southwest of the airport but greatly reduces the footprint in noncompatible land areas to the south and southeast of the airport.
Source: HMMH

Noise Abatement Flight Paths to avoid schools and areas of higher population density

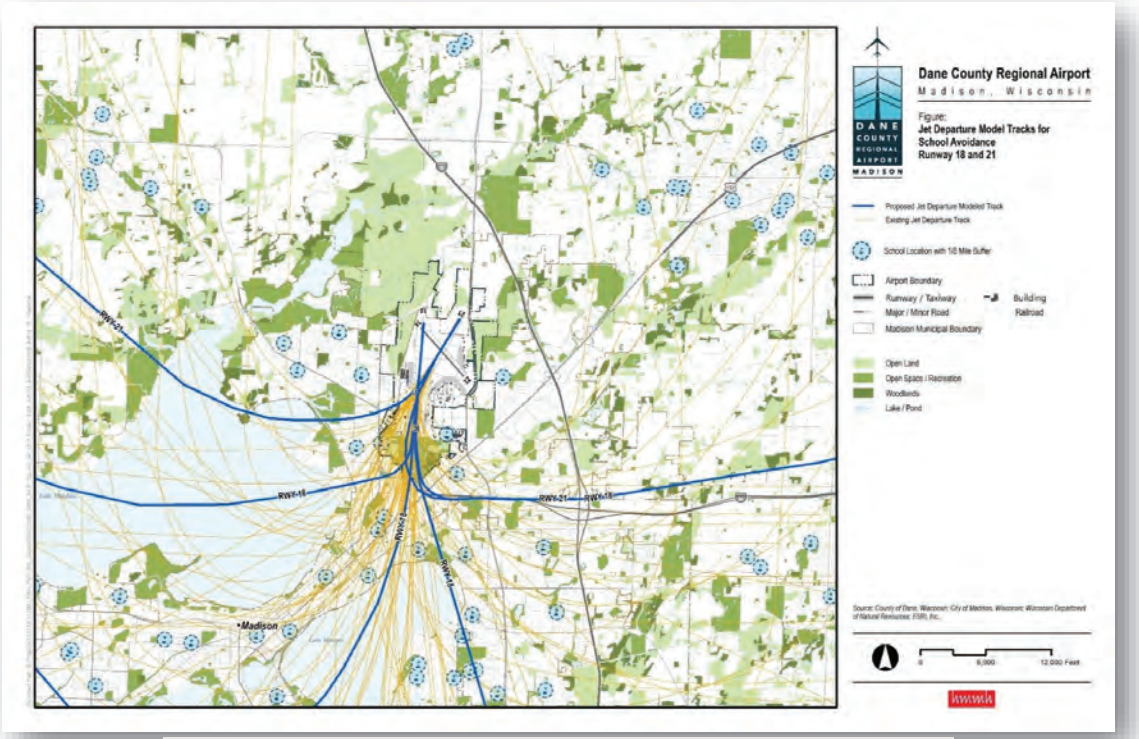
- Avoid using Runway 3 for arrival operations to prevent school overflights.
- Arrivals to Runway 36 should be aligned to the runway prior to reaching the northern shore of Lake Monona, which will prevent overflights of Lowell Elementary School while also allowing enough time to line up with the runway.



Jet Arrival Flight Tracks for School Avoidance Runways 3 and 36
Arrival flight tracks designed to avoid schools near MSN.
Source: HMMH

Noise Abatement Flight Paths to avoid schools and areas of higher population density

- Departures from Runway 21 should make either a slight right turn after departure to pass over Warner Park and Lake Mendota, or a slight left turn and follow a 180-degree heading to Highway 30, then turn east and follow the highway.
- Departures from Runway 18 should make a turn to 90 or 270 degrees at Highway 30 or make a slight offset turn upon takeoff to avoid Lowell Elementary School before crossing over Lake Monona.



Jet Departure Flight Tracks for School Avoidance Runways 18 & 21
Departure flight tracks designed to avoid schools near MSN.

Source: HMMH

Preferential Runway Use

Under consideration:

- Development and implement a preferential runway use program for F-35A aircraft operations
- Use Runway 3/21 for all WIANG departure scrambles

Shift all Runway 18 F-35A Departures to Runway 03

- Primary noise contributors to the significant amount of noncompatible land uses come from F-35A departures from Runway 18
- This measure would shift those operations to runway 3, resulting in a changed contour with more compatible land use

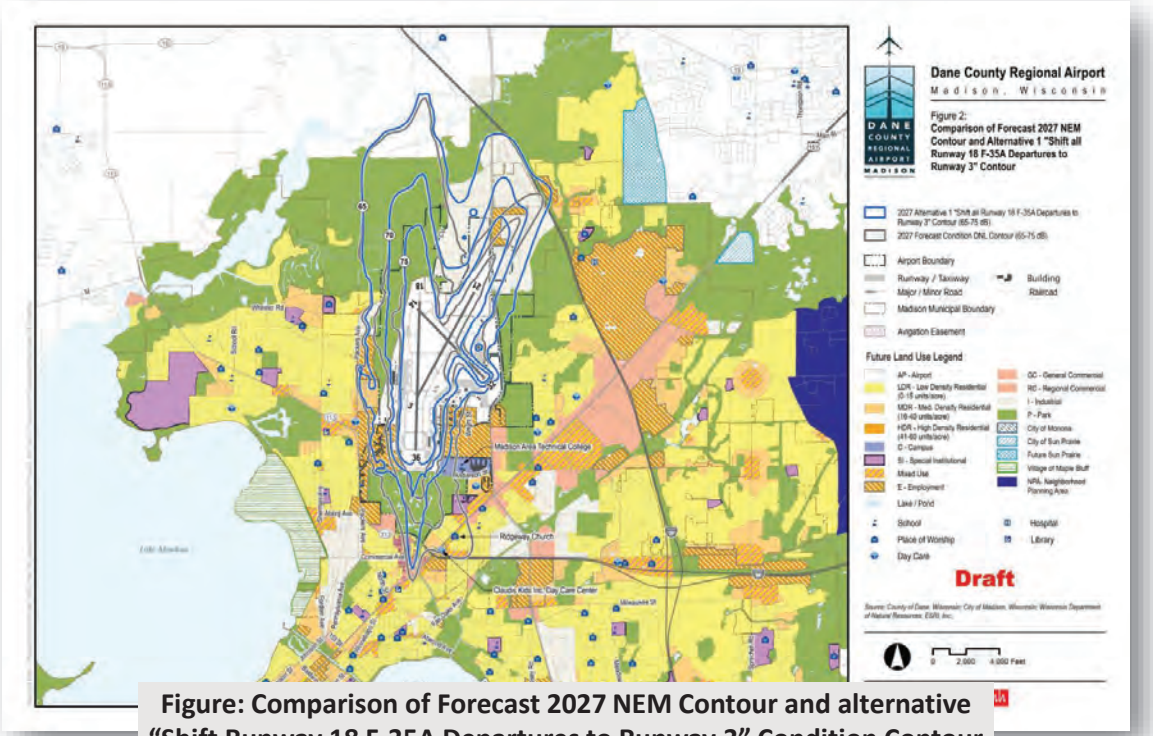


Figure: Comparison of Forecast 2027 NEM Contour and alternative "Shift Runway 18 F-35A Departures to Runway 3" Condition Contour
These conditions move the noise footprint from the south of the airport to the northeast of the airport.
Source: HMMH

Arrival / Departure Procedures

Under consideration:

- Develop and implement an F-35A aircraft noise abatement departure profile (NADP)

Modify all Runway 18 F-35A Departures to use Afterburner

- Analysis of F-35A departure profiles at MSN indicate that Mil power (full power, no afterburner) departures are louder than afterburner departures.
- Afterburner is only used on the runway to help aircraft gain altitude faster. Once the aircraft leaves the airport boundary, both departure profiles use Mil power.
- Afterburner profiles are higher off the ground after leaving airport property, leading to reduced noise levels.

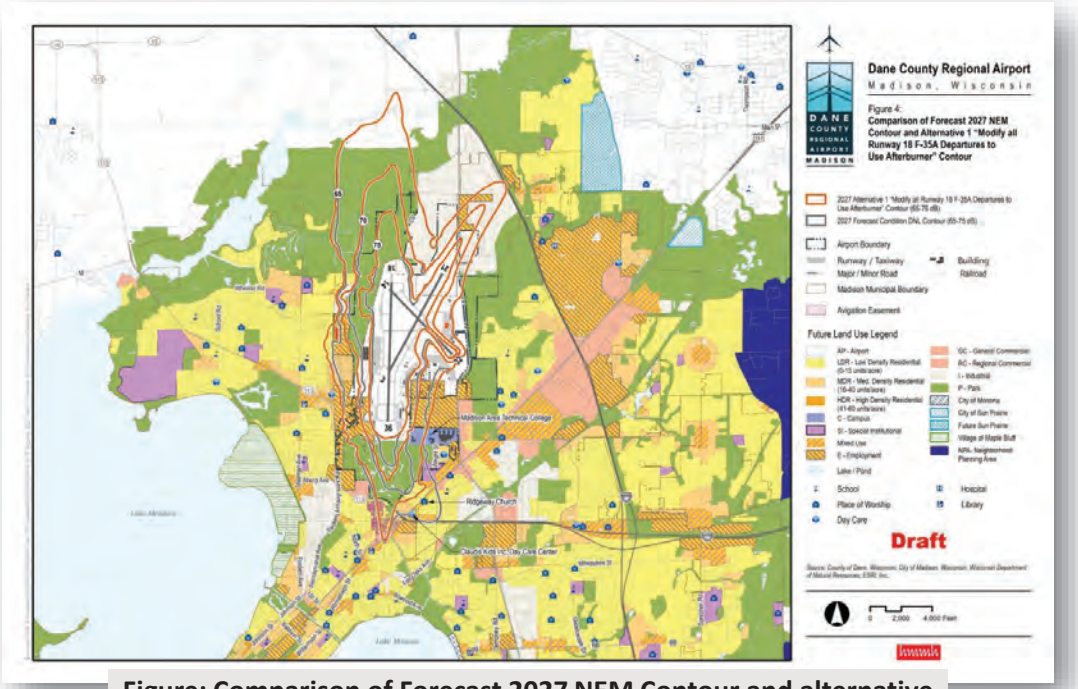


Figure: Comparison of Forecast 2027 NEM Contour and alternative "F-35A Runway 18 Departures use Afterburner" Condition Contour
These conditions increase the footprint in some areas of the airport but reduce the footprint in noncompatible land areas to the south of the airport.
Source: HMMH

All F-35A Departures use Afterburner and Climb Out at 300kts

- HMMH collaborated with the 115th FW to test several safe departure profiles which could also decrease noise around the airport by increasing the angle of climb of the F-35A departures compared to the 2027 forecast scenario.
- Steep climb angle of these profiles increases the distance between the aircraft and the ground, lowering noise levels in noncompatible areas
- Afterburner usage only while on the runway allows greater speeds and altitude gain when leaving the airport

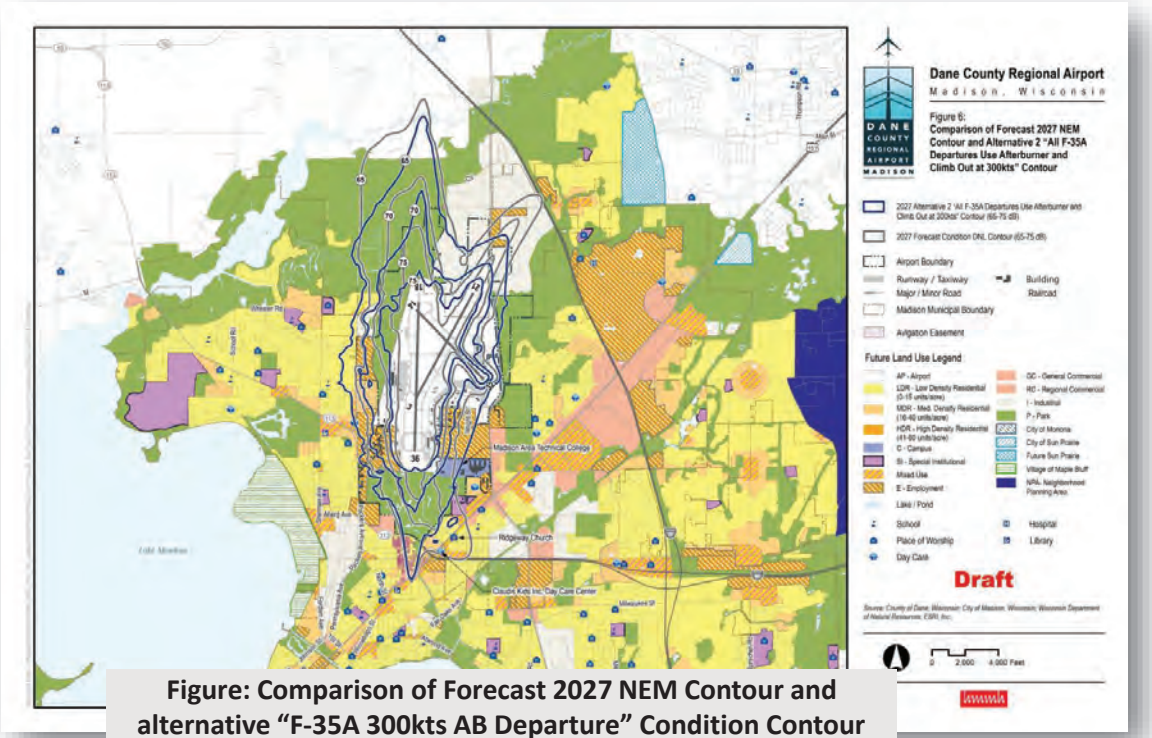


Figure: Comparison of Forecast 2027 NEM Contour and alternative "F-35A 300kts AB Departure" Condition Contour
These conditions increase the footprint in some areas of the airport but reduce the footprint in noncompatible land areas to the south of the airport.
Source: HMMH

All F-35A Departures use Afterburner and Climb out at 350kts

- HMMH collaborated with the 115th FW to test several safe departure profiles which could also decrease noise around the airport by increasing the angle of climb of the F-35A departures compared to the 2027 forecast scenario.
- Steep climb angle of these profiles increases the distance between the aircraft and the ground, lowering noise levels in noncompatible areas
- Afterburner usage only while on the runway allows greater speeds and altitude gain when leaving the airport

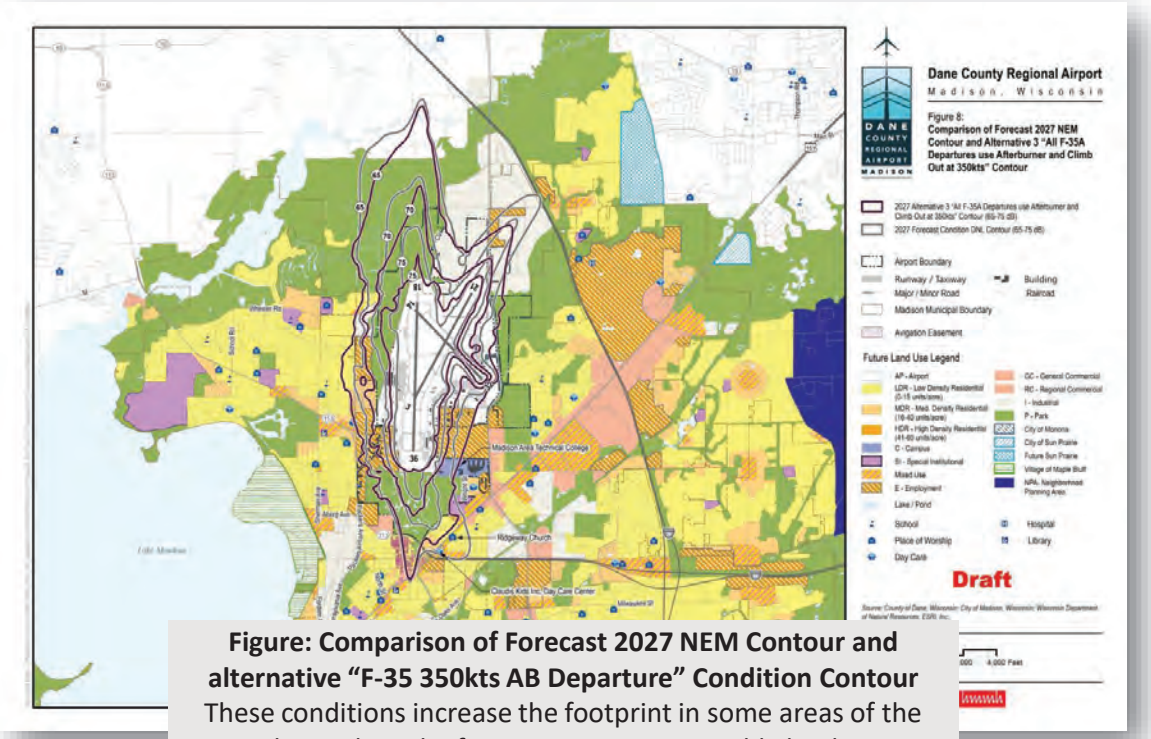


Figure: Comparison of Forecast 2027 NEM Contour and alternative "F-35 350kts AB Departure" Condition Contour
These conditions increase the footprint in some areas of the airport but reduce the footprint in noncompatible land areas to the south of the airport.
Source: HMMH

All Non-Scramble F-35A Departures use a Mil Power 300kts Speed Hold Departure

- In Speed Hold Departures, an on-board computer controls engine power to maintain speed. This results in reduced engine power required for takeoff.
- Scramble departures would use the AB350 profile, which climbs out at 350 kts after takeoff
- Reduced engine power combined with an increased takeoff angle contributes to reduced noise levels

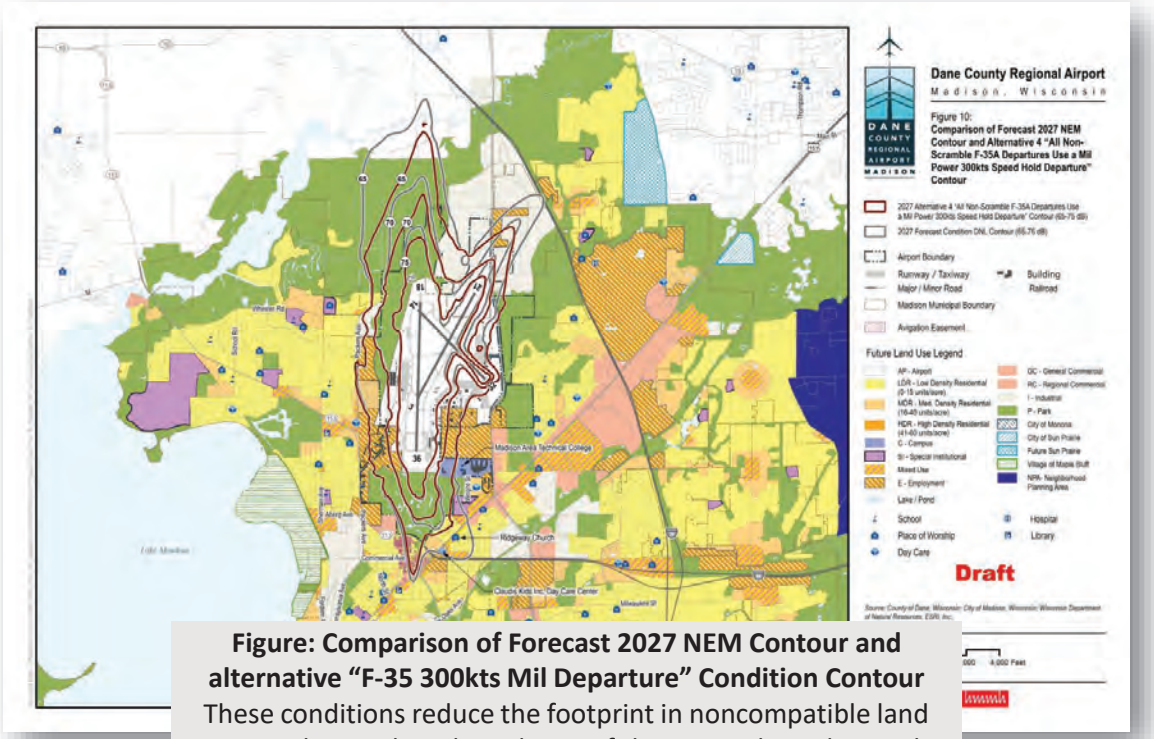


Figure: Comparison of Forecast 2027 NEM Contour and alternative "F-35 300kts Mil Departure" Condition Contour
These conditions reduce the footprint in noncompatible land areas to the south and southeast of the airport by reducing the overall power required for takeoff.
Source: HMMH

Airport Layout Modifications

Under consideration:

- Lengthen Runway 3/21 to allow more F-35A Operations
- Install arresting gear on both ends of 3/21 to allow for more F-35A arrivals

Increase Use of Runway 3/21

- Moving more F-35A departures to Runway 3 greatly improves land use compatibility
- The Guard stated they would need Runway 3 to be 8,000 feet to use more than for scramble flights
- As a result of TAC discussions, four alternatives were analyzed:
  - Alternative One – Relocate Taxiway B3
  - Alternative Two – Extend Runway 3 North and South
  - Alternative Three – Extend Runway 3 North with Tunnel
  - Alternative Four – Extend Runway 3 North & Relocate Highway

Alternative One – Relocate Taxiway B3

- Relocating Taxiway B3 allows simultaneous operations on Runaway 18/36 during Air National Guard takeoffs on Runway 3
  - New or relocated taxiway connector between Runway 3/21 and Taxiway B
  - Total cost estimate: $5,265,000
- Benefits:
  - Minimal modifications to airfield geometry and configuration
  - Allows aircraft to enter Runway 3 for takeoff without entering the RSA for Runway 18/36
- Challenges:
  - Reduces the effective takeoff length for Runway 3 to less than 7,000 feet and does not meet goal of 8,000 feet of take off length on Runway 3

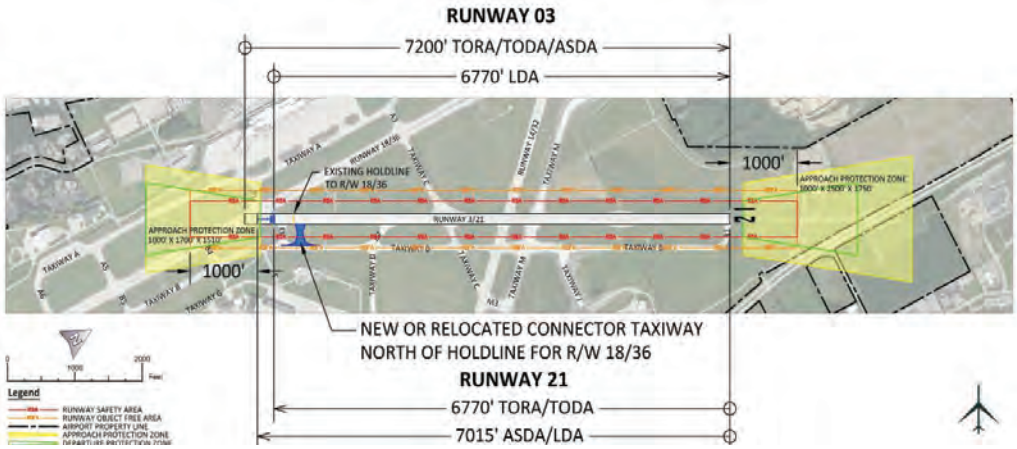


Figure: Alternative One – Relocate Taxiway B3
Source: Mead & Hunt

Alternative Two – Extend North and South – Runway 3

- Includes a 650-ft extension to the south end of Runway 3, as well as a 150-ft extension to the north end of Runway 21.
  - Taxiway B and Taxiway A reconfigurations
  - Relocated MALSR Building and perimeter road
  - Total cost estimate: $15,083,438
- Benefits:
  - Provides 8,000 feet of take-off length for Runway 3
  - Runway 3 departure RPZ would be entirely contained within the Runway 21 approach RPZ, resulting in no additional land use conflicts.
  - Encourages aircraft take-offs to the north on Runway 3 due to increased takeoff distance, potentially reducing noise levels
- Challenges:
  - Reduces the effective takeoff length for Runway 3 to less than 7,000 feet and does not meet goal of 8,000 feet of take off length on Runway 3
  - Runway 3 approach threshold would not move in order to keep the RPZ in place
  - RSA/ROFA would extend over Taxiway A near Runway 21 threshold, requiring additional coordination by airport traffic control during aircraft taxi within this area
  - RSA to be extended 1,000 feet beyond the departure end of the runway which would require the relocation of the perimeter road on the north side
  - Additional taxiway connection needed for Runway 3 threshold. Given the proximity of the runway to Taxiway A, this would require a more than 90-degree turn to threshold
  - FAA and Wisconsin Bureau of Aeronautics coordination/approval would likely be required due to the introduction of intersecting runways

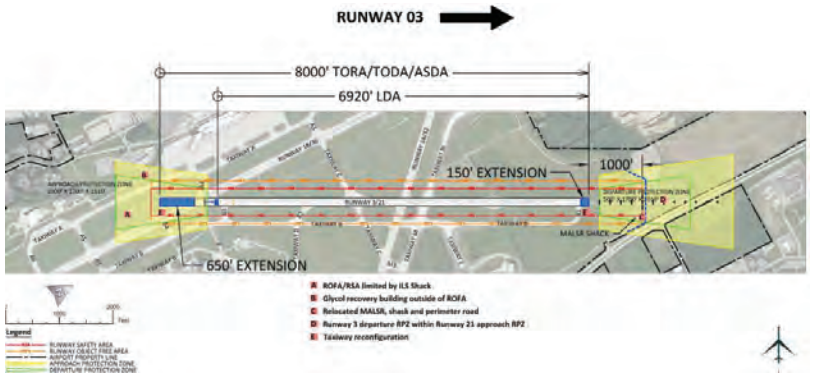


Figure: Alternative Two – Extend North and South – Runway 3
Source: Mead & Hunt

Figure: Alternative Two – Extend North and South – Runway 21
Source: Mead & Hunt

Alternative Three – Extend North with Tunnel – Runway 3

- Illustrates the tunnel addition to highway, and the impacts/modifications to existing airfield configurations
  - Runway 3/21 extension 800-feet to the north
  - Taxiway reconfiguration
  - Relocated MALSR Building and perimeter road
  - ROFA & RSA over highway tunnel
  - Total cost estimate: $62,358,750
- Benefits:
  - Provides 8,000 feet of take-off length for Runway 3
  - The departure RPZ would be contained within the Runway 21 approach RPZ
- Challenges:
  - A tunnel would need to be constructed over US Highway 51 to maintain a clear RSA/ROFA
  - Cost for tunnel is estimated at $18.5 million
  - The intersection between US Highway 51 and Hanson Road would need to be relocated to the north
  - Additional airport property acquisition could be required for airport ownership of RPZ
- Another alternative to a tunnel or highway would be an engineered materials arresting system (EMAS) off the departure end of Runway 3
  - This option is not illustrated, but would avoid impacts to US Highway 51, and would have similar costs to tunnel construction.

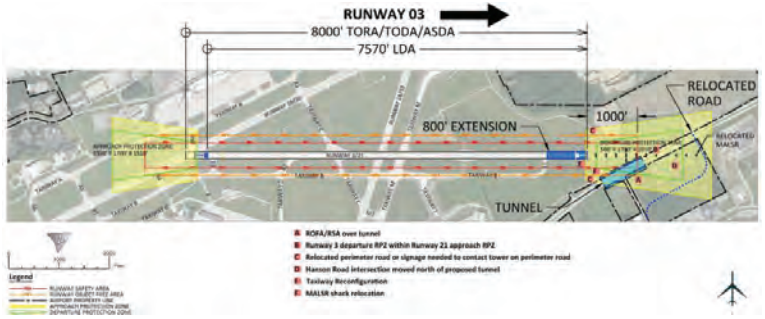


Figure: Alternative Three – Extend North with Tunnel – Runway 3
Source: Mead & Hunt

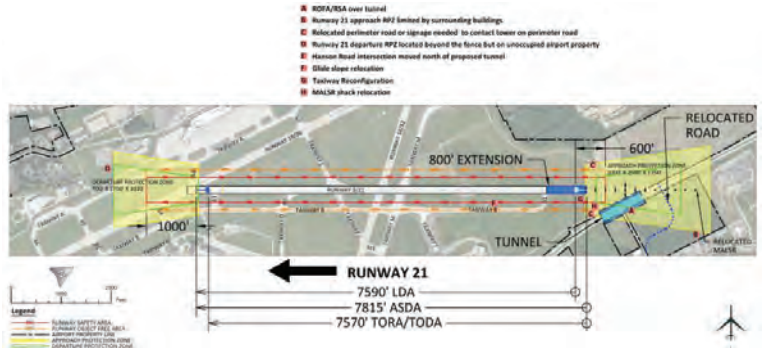


Figure: Alternative Three – Extend North with Tunnel – Runway 21
Source: Mead & Hunt

Alternative Four – Extend North, Relocate Highway – Runway 3

- Instead of tunneling the highway, Alternative Four would relocate the highway to meet RSA and ROFA clearance requirements
  - Runway 3/21 extension 800-feet to the north
  - Taxiway reconfiguration
  - Relocated perimeter road, MALSR system and Building and US Highway 51
  - Total cost estimate: $33,373,406
- Benefits:
  - Provides 8,000 feet of take-off length for Runway 3
  - Runway 3 departure RPZ would be entirely contained within the Runway 21 approach RPZ
  - Less roadway within the Runway 21 RPZ compared to Alternative Three
- Challenges:
  - Due to proposed RSA and ROFA existing within US Highway 51, the highway would need to be rerouted outside of the ROFA and RSA
  - Requires US Highway 51 relocation at an estimated cost of $9.1 million

Figure: Alternative Four – Extend North, Relocate Highway – Runway 3
Source: Mead & Hunt

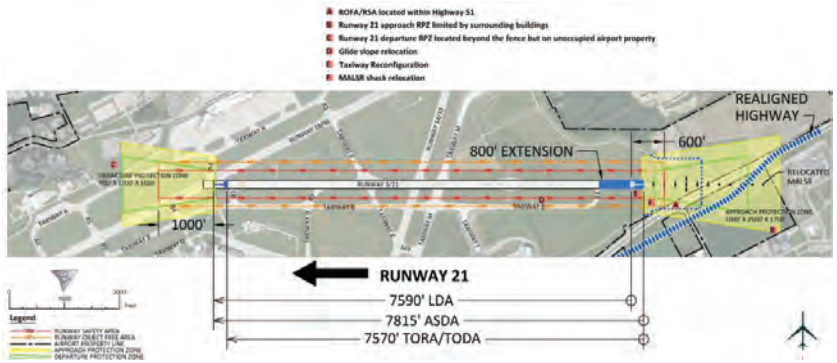


Figure: Alternative Four – Extend North, Relocate Highway – Runway 21
Source: Mead & Hunt

Use Restrictions

Under consideration:

- Minimize F-35 training flights during times when children are traveling to and from school or outside for recess
- Reduce nighttime F-35A operations

Voluntary Minimization of F-35 training flights during times when children are travelling to and from school or outside for recess

- Between Physical Education and Recess, it can be estimated that there will be students outside for most of the school day at elementary schools near the airport
- According to Madison Metropolitan School District, morning school bus pick-up begins at 6:30am, and afternoon drop-off ends at 5:30pm, with both periods lasting up to 3 hours
  - This measure would force F-35A training flights to operate at evening or nighttime hours, resulting in greater disruption to home and quiet hours
  - This measure would reduce the time available for these flights, resulting in increased frequency within a smaller window of time
  - Nighttime operations may actually increase DNL levels within the contour

This measure would not lead to reductions in overall measurable noise levels as the F-35A training syllabus would still require the same number of average daily and annual flights and may increase the DNL levels as more flights shift into the nighttime period of 10:00 p.m. to 7:00 a.m.

Eliminate F-35A Nighttime Training Ops

- The DNL calculation adds a 10-decibel weighting to flight operations occurring between 10:00 p.m. and 7:00 a.m. to account for increased sensitivity to noise during the night.
- Of the almost 4,200 annual F-35A operations, only 126 are forecast to occur at night.
  - Analysis shows that replacing nighttime F-35A operations with daytime F-35A operations would decrease the DNL by fewer than 0.3 dB

This measure would not lead to meaningful reduction in noncompatible land use since approximately 3 percent of the F-35A operations occur during the nighttime period

Combined Noise Abatement Measures

Under consideration:

- Develop and implement an F-35A aircraft NADP with noise abatement flight tracks

All Non-Scramble F-35A Departures use a Mil Power 300 kts Speed Hold Departure and 50 Percent of Runway 18 F-35A Departures Turn Southwest over the OM Station Railyard

- Only F-35A Departures
- Redirects half of F-35A traffic over compatible railyard to the southwest to reduce traffic over the noncompatible areas to the south and southeast
- Speed Hold Departure along with increased takeoff angle reduces engine power required and puts aircraft at a higher altitude when leaving the airfield

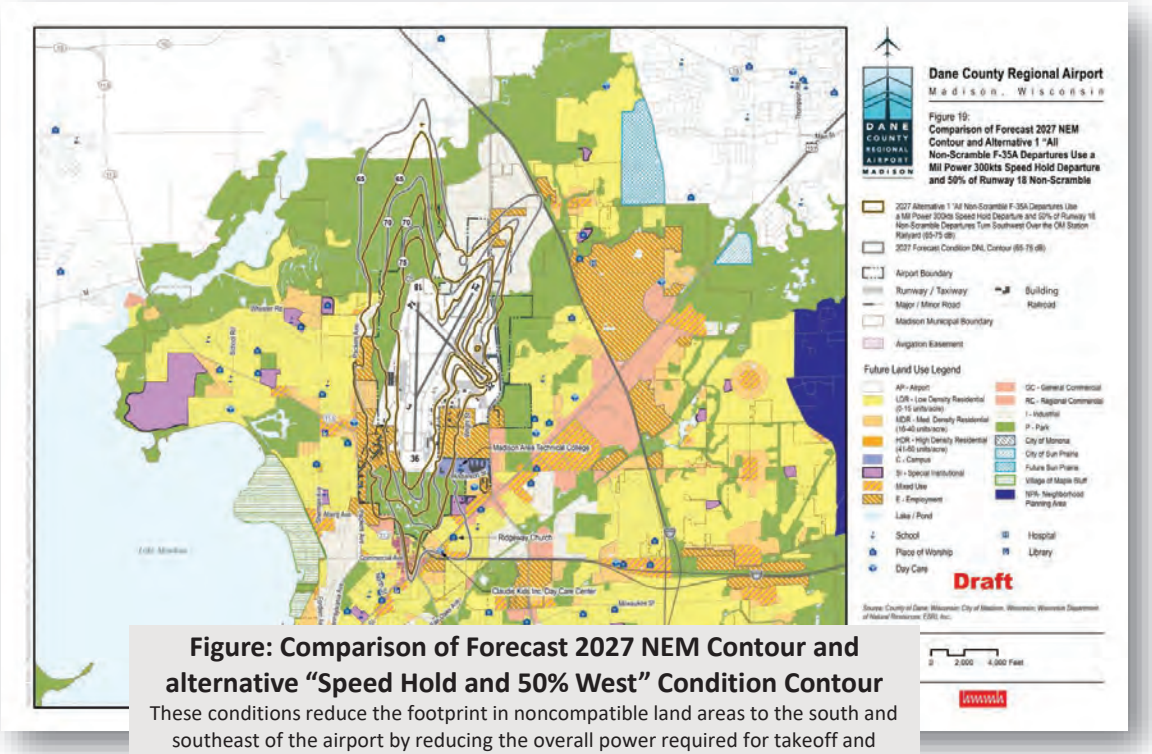


Figure: Comparison of Forecast 2027 NEM Contour and alternative "Speed Hold and 50% West" Condition Contour
These conditions reduce the footprint in noncompatible land areas to the south and southeast of the airport by reducing the overall power required for takeoff and redirecting 50% of F-35 Non-Scramble Runway 18 departures to the southwest of the airport.
Source: HMMH

All Non-Scramble F-35A Departures use a Mil Power 300 kts Speed Hold Departure and 50 Percent of Runway 18 Military and Civilian Departures Turn Southwest over the OM Station Railyard

- Military AND Civilian
- Redirects half of F-35A traffic over compatible railyard to the southwest to reduce traffic over the noncompatible areas to the south and southeast
- Speed Hold Departure along with increased takeoff angle reduces engine power required and puts aircraft at a higher altitude when leaving the airfield

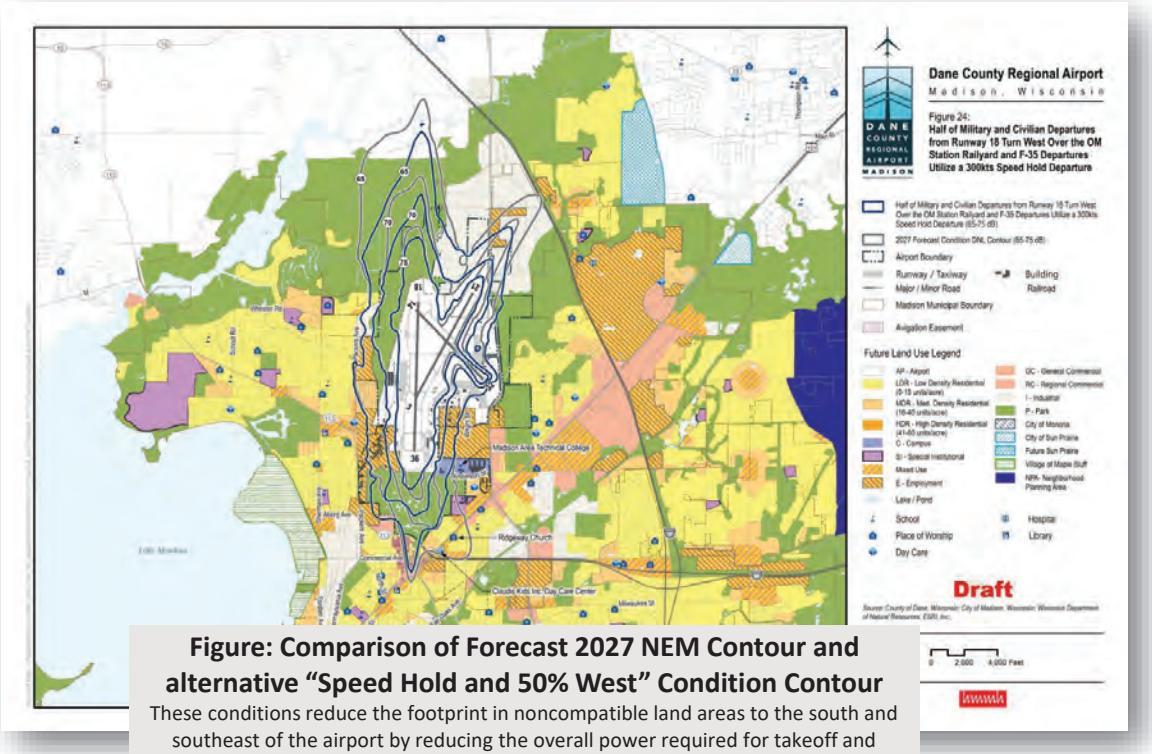


Figure: Comparison of Forecast 2027 NEM Contour and alternative "Speed Hold and 50% West" Condition Contour

These conditions reduce the footprint in noncompatible land areas to the south and southeast of the airport by reducing the overall power required for takeoff and redirecting 50% of Non-Scramble Runway 18 departures to the southwest of the airport.

Source: HMMH

All Non-Scramble F-35A Departures use a Mil Power 300 kts Speed Hold Departure and 100% of Runway 18 F-35A Departures Turn Southwest over the OM Station Railyard

- Only F-35A Departures
- Redirects all F-35A traffic over compatible railyard to the southwest to reduce traffic over the noncompatible areas to the south and southeast
- Speed Hold Departure along with increased takeoff angle reduces engine power required and puts aircraft at a higher altitude when leaving the airfield

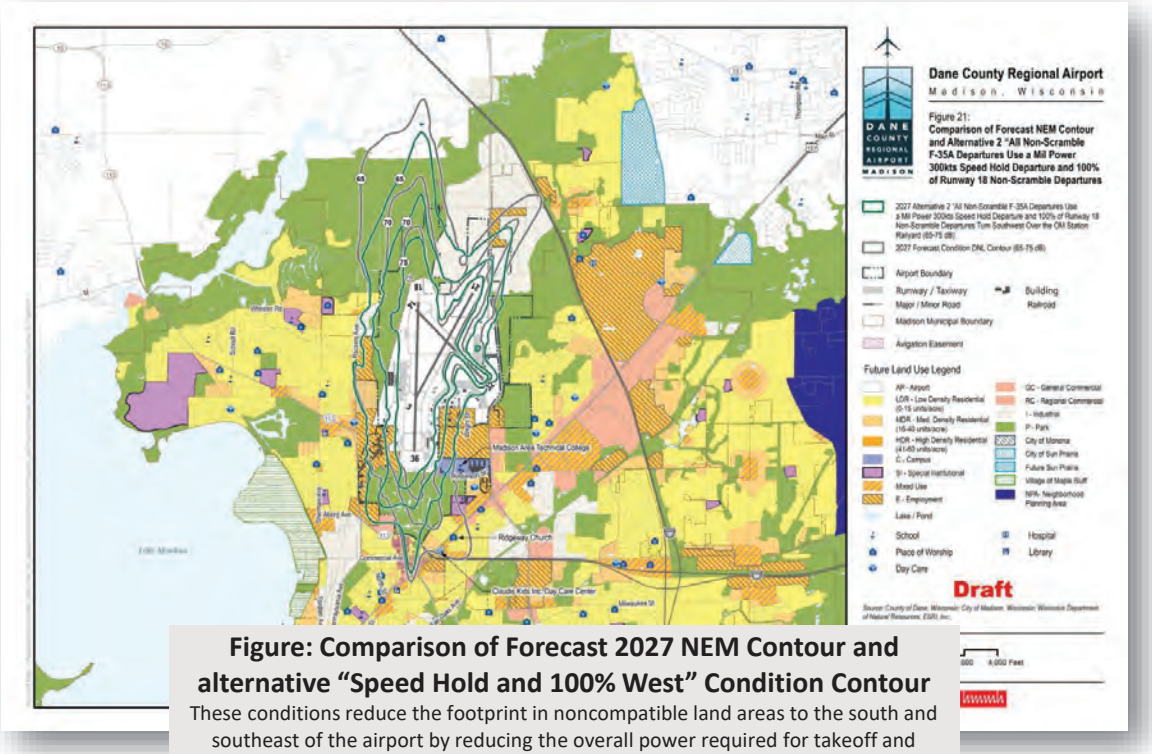


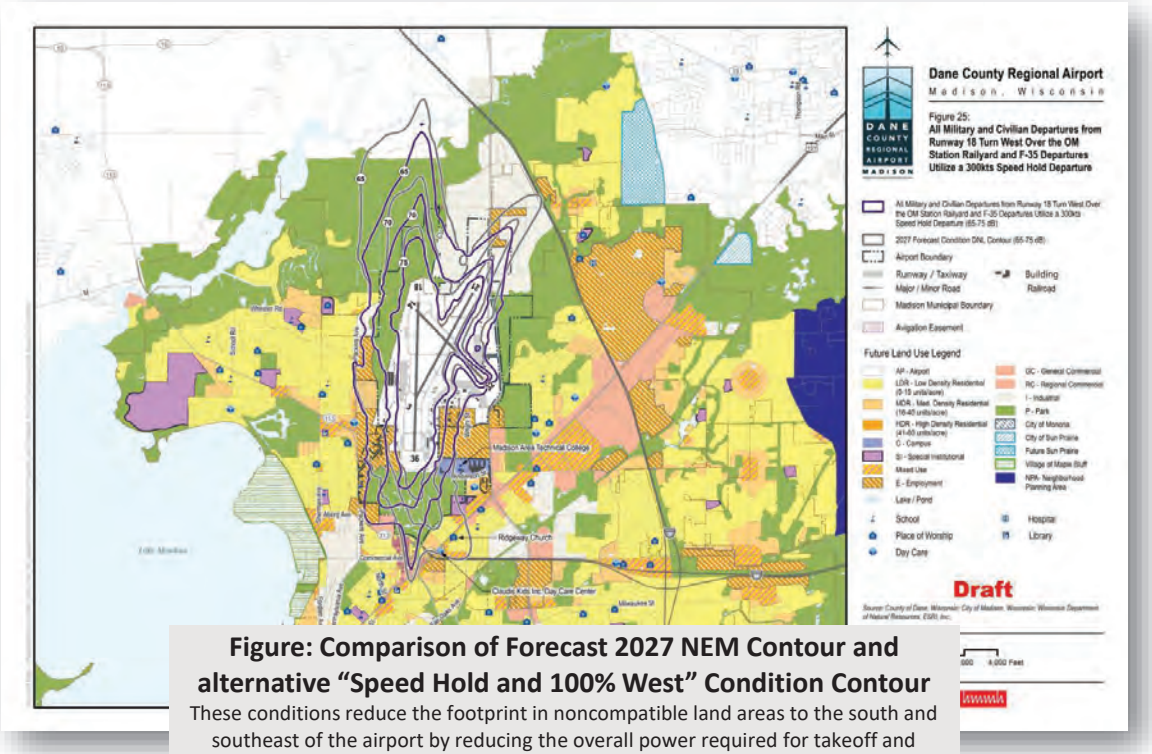
Figure: Comparison of Forecast 2027 NEM Contour and alternative "Speed Hold and 100% West" Condition Contour

These conditions reduce the footprint in noncompatible land areas to the south and southeast of the airport by reducing the overall power required for takeoff and redirecting 100% of F-35 Non-Scramble Runway 18 departures to the southwest of the airport.

Source: HMMH

All Non-Scramble F-35A Departures use a Mil Power 300 kts Speed Hold Departure and 100% of Runway 18 Military and Civilian Departures Turn Southwest over the OM Station Railyard

- Military AND Civilian
- Redirects all F-35A traffic over compatible railyard to the southwest to reduce traffic over the noncompatible areas to the south and southeast
- Speed Hold Departure along with increased takeoff angle reduces engine power required and puts aircraft at a higher altitude when leaving the airfield



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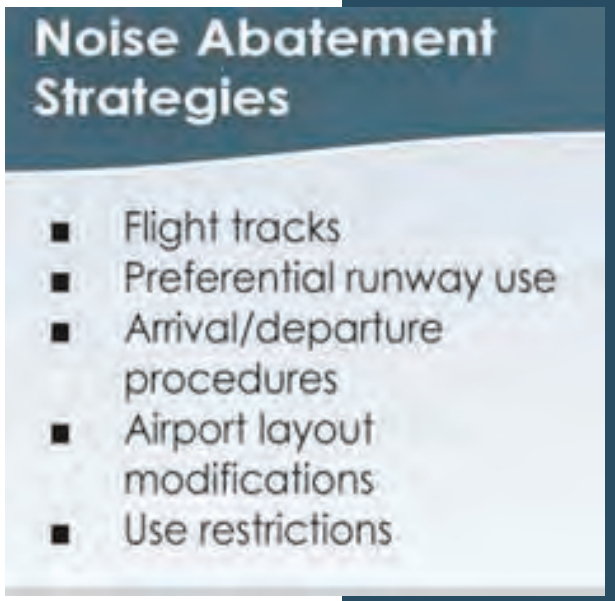
These conditions reduce the footprint in noncompatible land areas to the south and southeast of the airport by reducing the overall power required for takeoff and redirecting 100% of Non-Scramble Runway 18 departures to the southwest of the airport.
Source: HMMH

Brainstorm: Noise Abatement Measures

- Any existing measures to remove from NCP?
- Any existing measures to amend/update?
- Any new measures to propose



- Purpose: to reduce exposure over noncompatible land uses

Proposed Land Use Measures

Land Acquisition

Sound Insulation

Avigation Easements

Prevention

Land Use Controls

Land Acquisition

Under consideration:

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

Sound Insulation

Under consideration:

- Implement a residential sound insulation program
- Implement a sound insulation program at schools and other noise sensitive buildings
- Consider elementary schools and noise effects on children's learning

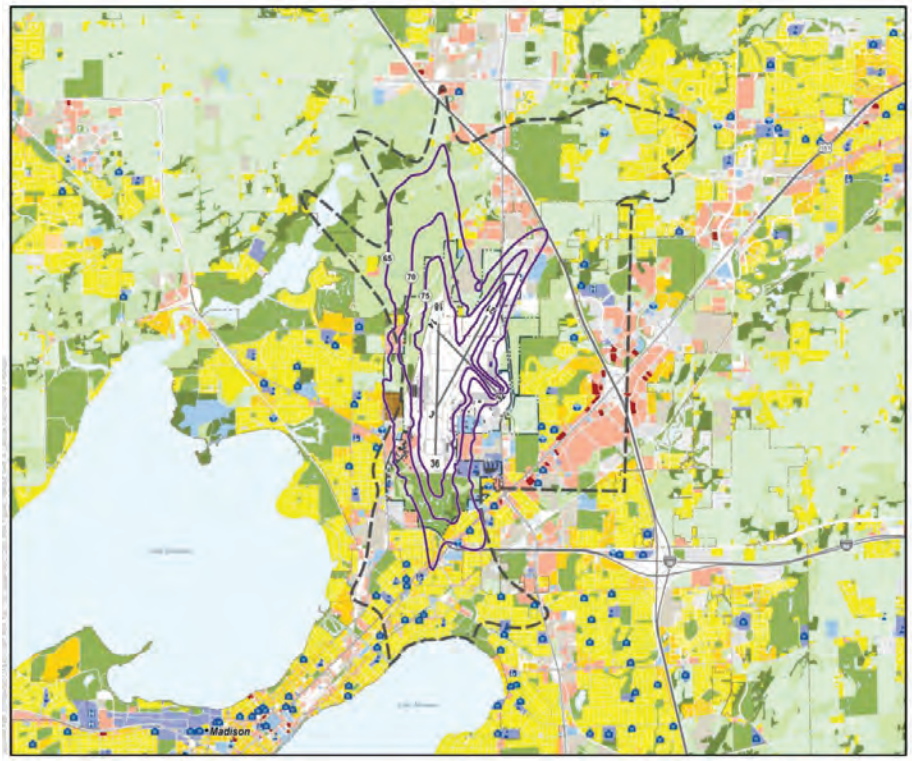
Prevention

Under consideration:

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

Airport Affected Area

- Dane County currently has an Airport Affected Area enacted through Ordinance Chapter 78 – see dashed line in figure to the right
- MSN may opt to update during NCP update process
- Encourage Dane County and the City of Madison to enact updated Airport Affected Area and restrict all noise-sensitive land uses within the boundary



Land Use Controls

Under consideration:

- Change building codes to support sound proofing
- Consider environmental justice and low-income communities

Other Ideas

Under consideration:

- Report alternative metrics and consider use of lower DNL threshold
- Implement a Home Sales Assistance Program

Brainstorm: Land Use/Mitigation Measures

- Any existing measures to remove from NCP?
- Any existing measures to amend/update?
- Any new measures to propose

- Purposes: (1) to mitigate noncompatible land uses and (2) to prevent the introduction of new noncompatible land uses

50

Proposed Program Management Measures

Implementation

Promotion

Monitoring

Reporting

NEM Updating

NCP Revision

Monitoring

Under consideration:

- Install a flight track monitoring system
- Install a noise monitoring system

Reporting

Under consideration:

- Create a noise advisory group

NEM Updating

Under consideration:

- Update the NEM on a regular basis

Brainstorm: Program Management Measures

- Any existing measures to remove from NCP?
- Any existing measures to amend/update?
- Any new measures to propose

- Purposes: (1) to implement and promote the NCP measures, (2) to monitor and report on effectiveness of NCP measures, and (3) to update NEMs and revise NCP when appropriate

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Upcoming Schedule: Technical Advisory Committee

Meeting / Activity	Anticipated Purpose	Anticipated Time Frame
5th Technical Advisory Committee Meeting	Evaluation results of the proposed Noise Compatibility Program measures	June 2023
6th Technical Advisory Committee Meeting	Presentation of the draft Noise Compatibility Program Update	Fall 2023
NCP Public Comment Period, 4th 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	***Completed***: 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.	***Completed***: December 2022
NCP Public Comment Period, 4th 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

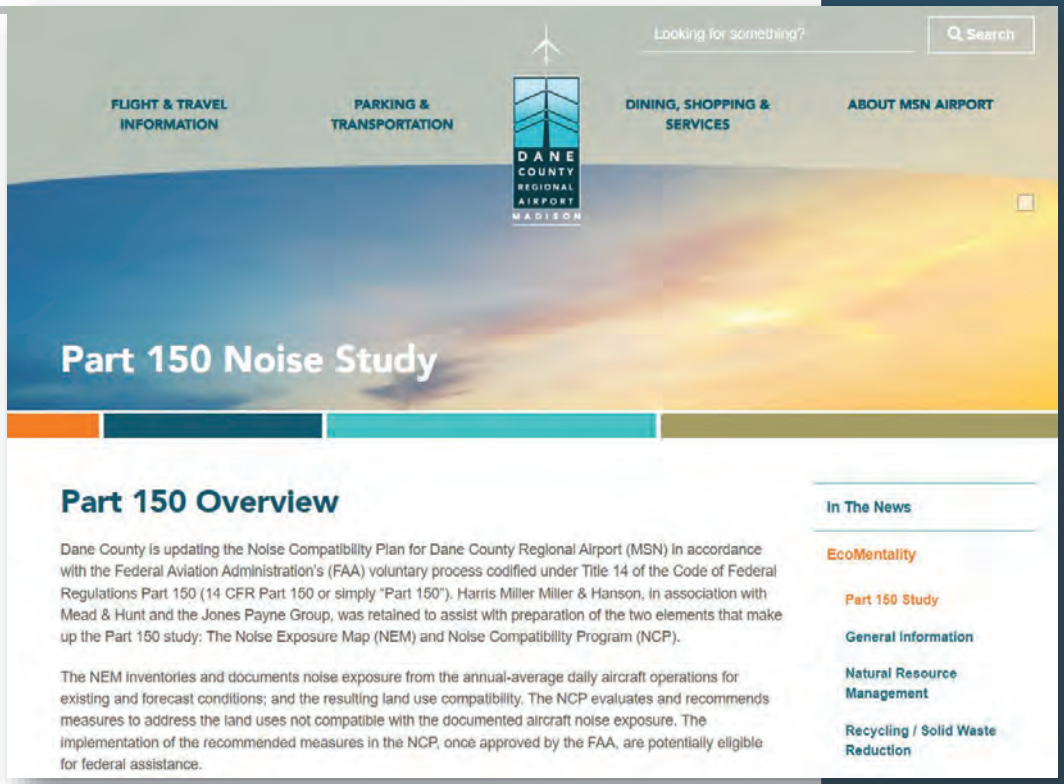
Additional public meeting added for June 27, 2023, to present NCP measures under consideration and solicit additional ideas from the public

Wrap-Up and Discussion

- TAC questions, comments, and discussion
- TAC meeting #6
  - Fall 2023
- 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



Appendix E: Public Consultation Materials

This appendix includes:

- Public Open House 3 Boards (PowerPoint)
- Public Open House 4 Boards (PowerPoint) *(To be included in the Final NCP.)*
- Newsletter 3
- Newsletter 4 *(To be included in the Final NCP.)*
- MSN Part 150 Website Information

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Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House

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)

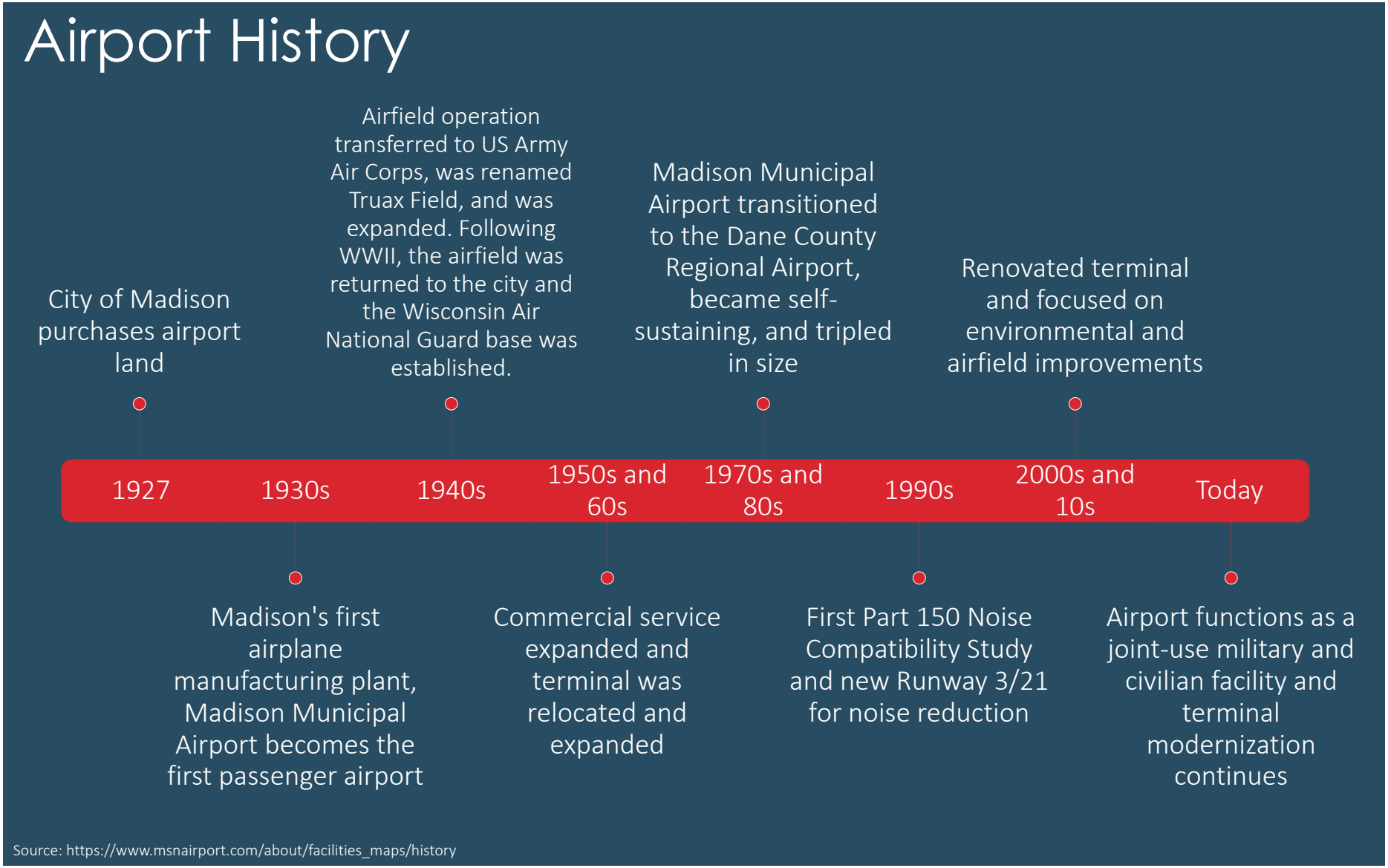
- Chosen to host the F-35A mission and receive a new fleet of F-35A Lightning II aircraft beginning in Spring of 2023

Wisconsin Army National Guard (ARNG) 64th Troop Command

- Operates UH-60 Black Hawk helicopters at Truax Field

DANE COUNTY REGIONAL AIRPORT MADISON

Airport History



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

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

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

Airport

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

Consultant Team

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

FAA

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

Technical Advisory Committee

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

Public

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

Part 150 Overview: Noise Exposure Map

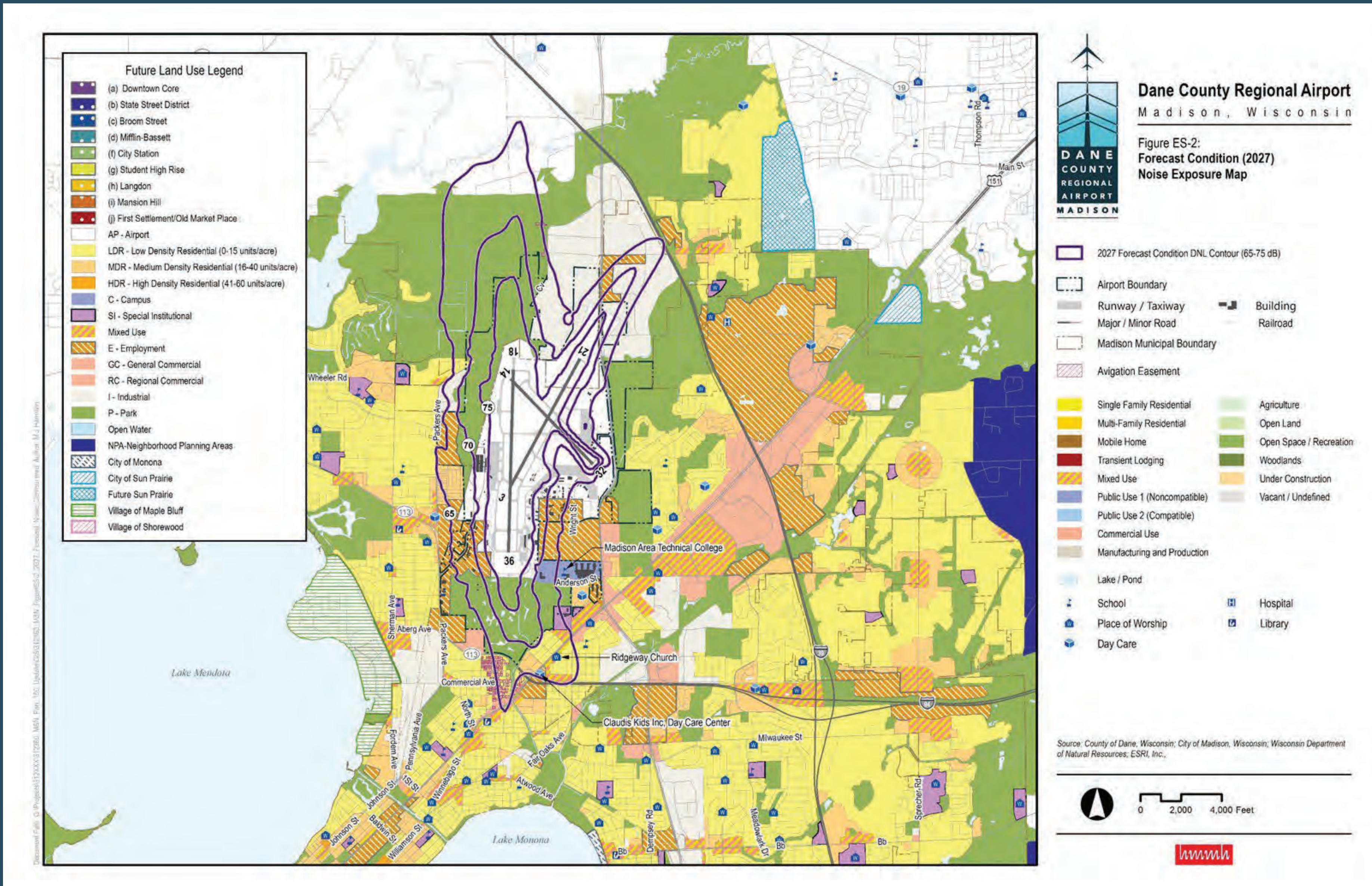
- FAA "accepts" NEM as compliant with Part 150 standards
- NEM must include detailed description of
  - Airport layout, aircraft operations, and other inputs to noise model
  - Aircraft noise exposure in terms of Day-Night Average Sound Level (DNL)
  - Land uses within DNL 65+ decibel (dB) contours
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

DANE COUNTY REGIONAL AIRPORT MADISON

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


Dane County Regional Airport
Madison, Wisconsin
Figure ES-2:
Forecast Condition (2027)
Noise Exposure Map
Future Land Use Legend
(a) Downtown Core
(b) State Street District
(c) Broom Street
(d) Miffin-Bassett
(f) City Station
(g) Student High Rise
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Open Water
NPA-Neighborhood Planning Areas
City of Monona
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Village of Maple Bluff
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Airport Boundary
Runway / Taxiway
Building
Major / Minor Road
Railroad
Madison Municipal Boundary
Avigation Easement
Single Family Residential
Multi-Family Residential
Mobile Home
Transient Lodging
Mixed Use
Public Use 1 (Noncompatible)
Public Use 2 (Compatible)
Commercial Use
Manufacturing and Production
Agriculture
Open Land
Open Space / Recreation
Woodlands
Under Construction
Vacant / Undefined
Lake / Pond
School
Place of Worship
Day Care
Hospital
Library
Source: County of Dane, Wisconsin; City of Madison, Wisconsin; Wisconsin Department of Natural Resources; ESRI, Inc.
0
2,000
4,000 Feet
Madison Area Technical College
Ridgeway Church
Claudis Kids Inc. Day Care Center
Lake Mendota
Lake Monona
Wheeler Rd
Packers Ave
Sherman Ave
Aberg Ave
Commercial Ave
Anderson St
Wright St
Milwaukee St
Sprecher Rd
Dempsey Rd
Fair Oaks Ave
Atwood Ave
Main St
Thompson Rd
18
36
14
32
3
21

Land Use Assessment for 2027 Forecast Conditions

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

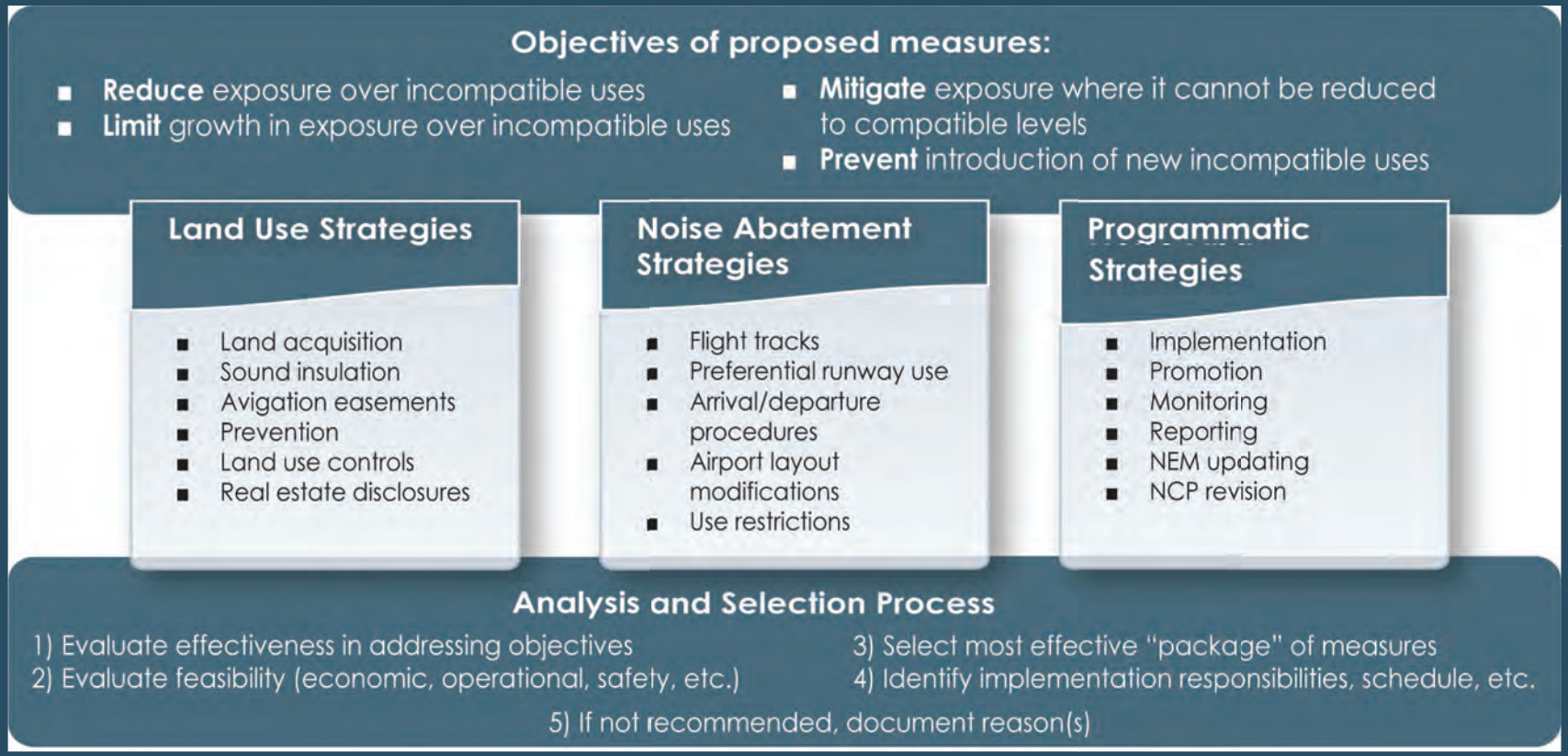
Forecast 2027 Combined 65 – 75 DNL Contours			
	Population Census 2020	*Housing Units*	*Area (Acres)*
65-70 DNL	2,424	1,227	1,823.31
70-75 DNL	57	23	935.53
>75 DNL	0	0	971.30
Total	2,481	1,250	3,730.14

Part 150 Overview: Noise Compatibility Program

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

DANE COUNTY REGIONAL AIRPORT MADISON

NCP Overview



DANE COUNTY REGIONAL AIRPORT MADISON

Existing MSN NCP

- 1991 MSN NCP included:
  - Noise abatement measures (9)
  - Land use measures (11)
  - Programmatic measures (3)
- NCP Review
  - Determine implementation status of each existing measure
  - Determine compliance with the measures if implemented
  - Determine if existing measures should be:
    - Continued as written
    - Continued with modifications
    - Eliminated
  - Determine whether additional measures are needed to address the noncompatible land uses identified in the 2022 NEMs
    - *Comments from the public*

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

DANE COUNTY REGIONAL AIRPORT MADISON

Existing Noise Abatement Measures

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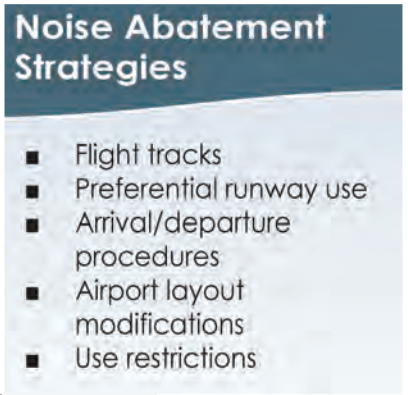
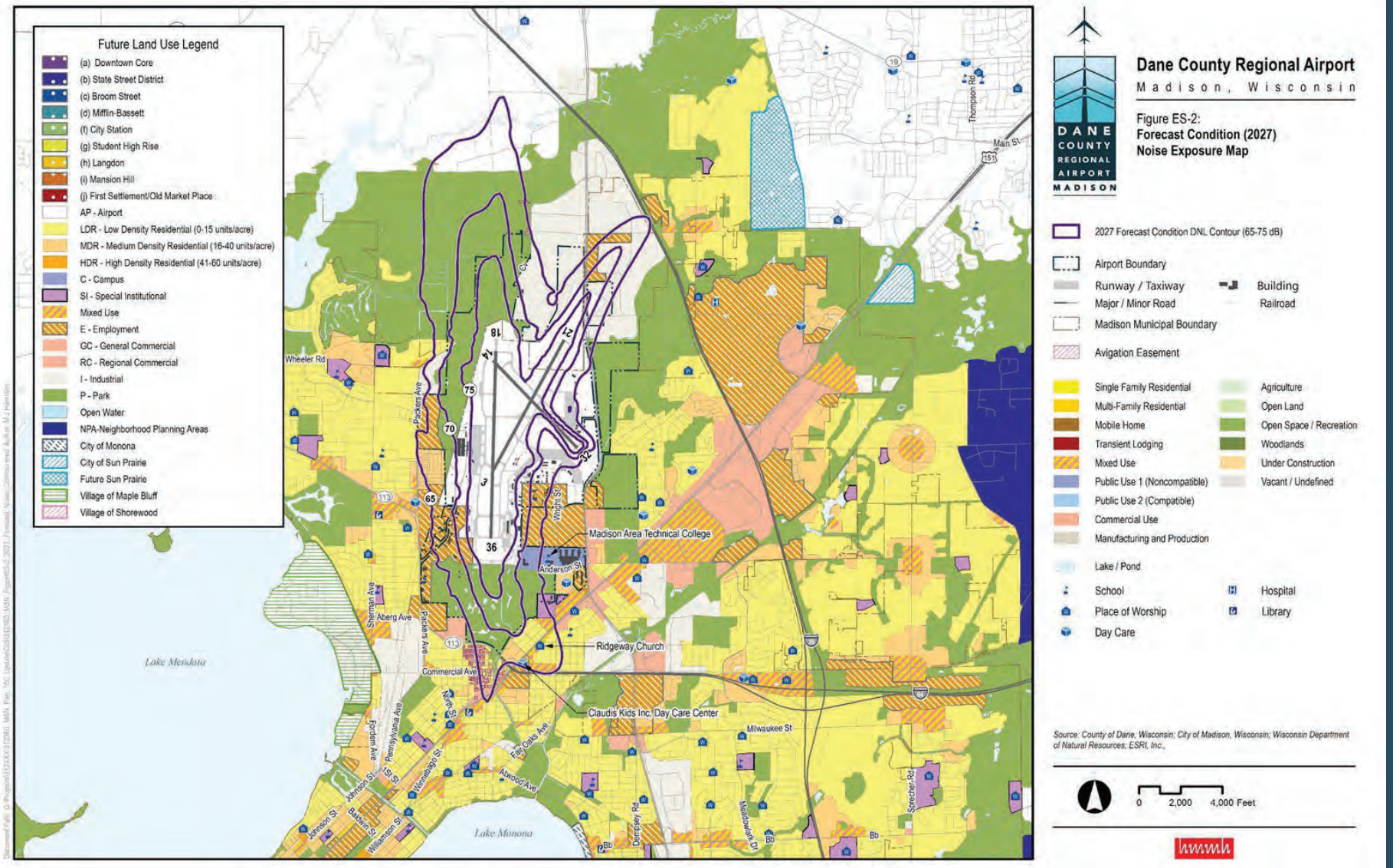
DANE COUNTY REGIONAL AIRPORT MADISON

Proposed Noise Abatement Measures



- Flight Tracks
  - Develop and implement preferred flight paths for Runway 18 departures
  - Develop and implement new flight paths to minimize overflying educational facilities
  - Design flight paths that avoid high-density population areas
- Preferential Runway Use
  - Development and implement a preferential runway use program for F-35A aircraft operations
  - Use Runway 3/21 for all WIANG departure scrambles
- Arrival/Departure Procedures
  - Develop and implement an F-35A aircraft noise abatement departure profile (NADP)
- Airport Layout Modifications
  - Lengthen Runway 3-21 to allow more F-35A operations
- Use Restrictions
  - Minimize F-35 training flights during times when children are traveling to and from school or outside for recess
  - Reduce nighttime F-35A operations

DANE COUNTY REGIONAL AIRPORT MADISON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Wheeler Rd
Packers Ave
Sherman Ave
Aberg Ave
Commercial Ave
Northport Dr
Pennsylvania Ave
Fair Oaks Ave
Atwood Ave
Johnson St
Baldwin St
Williamson St
Wright St
Anderson St
Madison Area Technical College
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Thompson Rd
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2027 Forecast Condition DNL Contour (65-75 dB)
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Madison Municipal Boundary
Avigation Easement
Building
Railroad
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Multi-Family Residential
Mobile Home
Transient Lodging
Mixed Use
Public Use 1 (Noncompatible)
Public Use 2 (Compatible)
Commercial Use
Manufacturing and Production
Lake / Pond
School
Place of Worship
Day Care
Agriculture
Open Land
Open Space / Recreation
Woodlands
Under Construction
Vacant / Undefined
Hospital
Library
Source: County of Dane, Wisconsin; City of Madison, Wisconsin; Wisconsin Department of Natural Resources; ESRI, Inc.,
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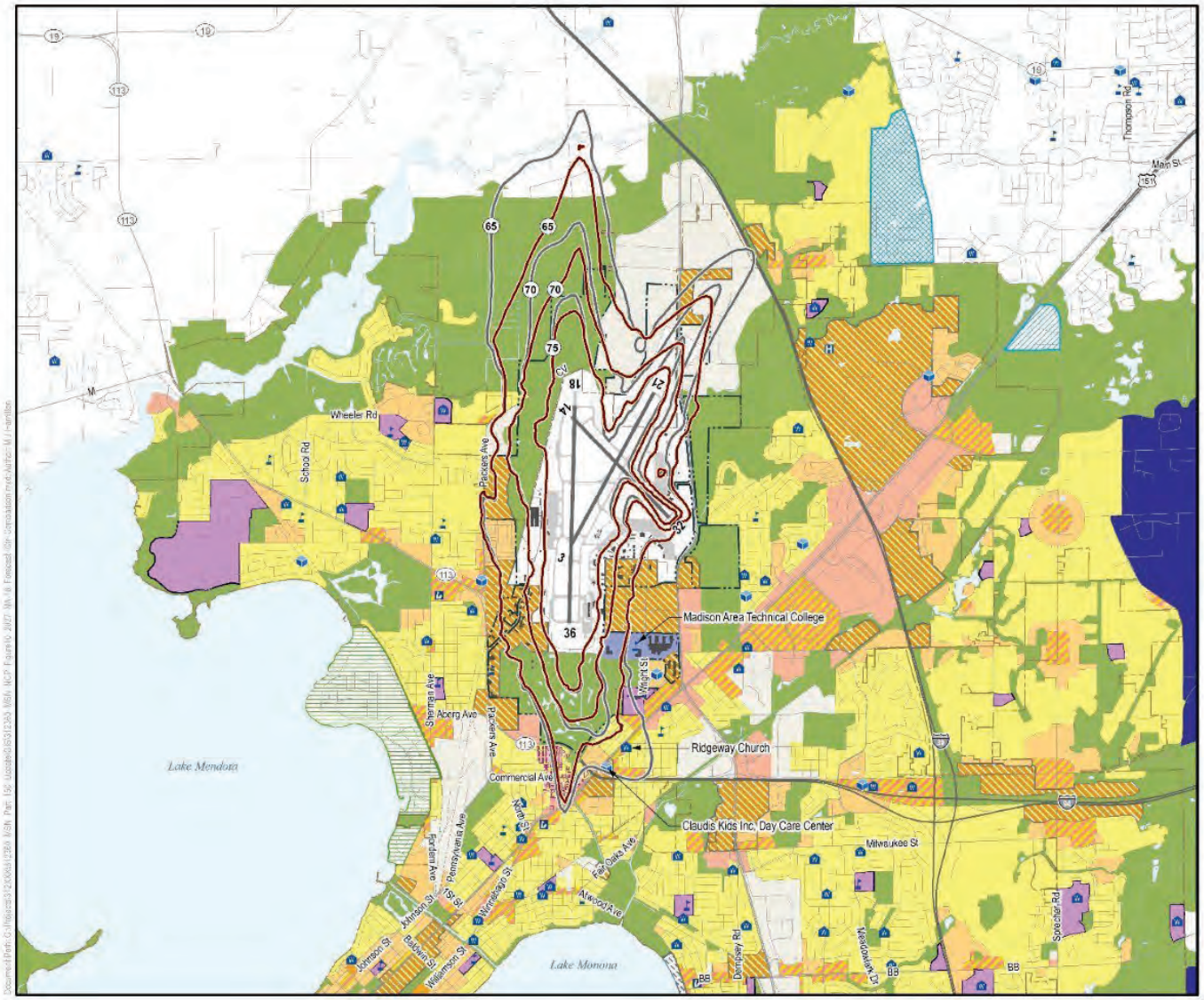

Dane County Regional Airport
Madison, Wisconsin

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

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

Future Land Use Legend

- AP - Airport
- LDR - Low Density Residential (0-15 units/acre)
- MDR - Med. Density Residential (16-40 units/acre)
- HDR - High Density Residential (41-60 units/acre)
- C - Campus
- SI - Special Institutional
- Mixed Use
- E - Employment
- Lake / Pond
- GC - General Commercial
- RC - Regional Commercial
- I - Industrial
- P - Park
- City of Monona
- City of Sun Prairie
- Future Sun Prairie
- Village of Maple Bluff
- NPA- Neighborhood Planning Area
- School
- Hospital
- Place of Worship
- Library
- Day Care

Draft

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

0 2,000 4,000 Feet

hmmh

Existing Land Use Measures

	Existing Land Use Measures	Status
LU-1	Maintain existing compatible zoning in the airport vicinity	Implemented
LU-2	Define “airport affected area” for purposes of implementing Wisconsin Act 136	Implemented
LU-3	Adopt airport noise overlay zoning	Not Implemented
LU-4	Amend subdivision regulations to require dedication of noise and avigation easements of plat notes on final plat	Implemented
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LU-9	Consider expanding land acquisition boundaries in Cherokee Marsh and Token Creek areas	Not Implemented
LU-10	Establish sales assistance or purchase assurance program for homes impacted by noise above 70 Ldn	Implemented
LU-11	Install sound insulation for schools impacted by noise above 65 Ldn	Not Implemented

DANE COUNTY REGIONAL AIRPORT MADISON

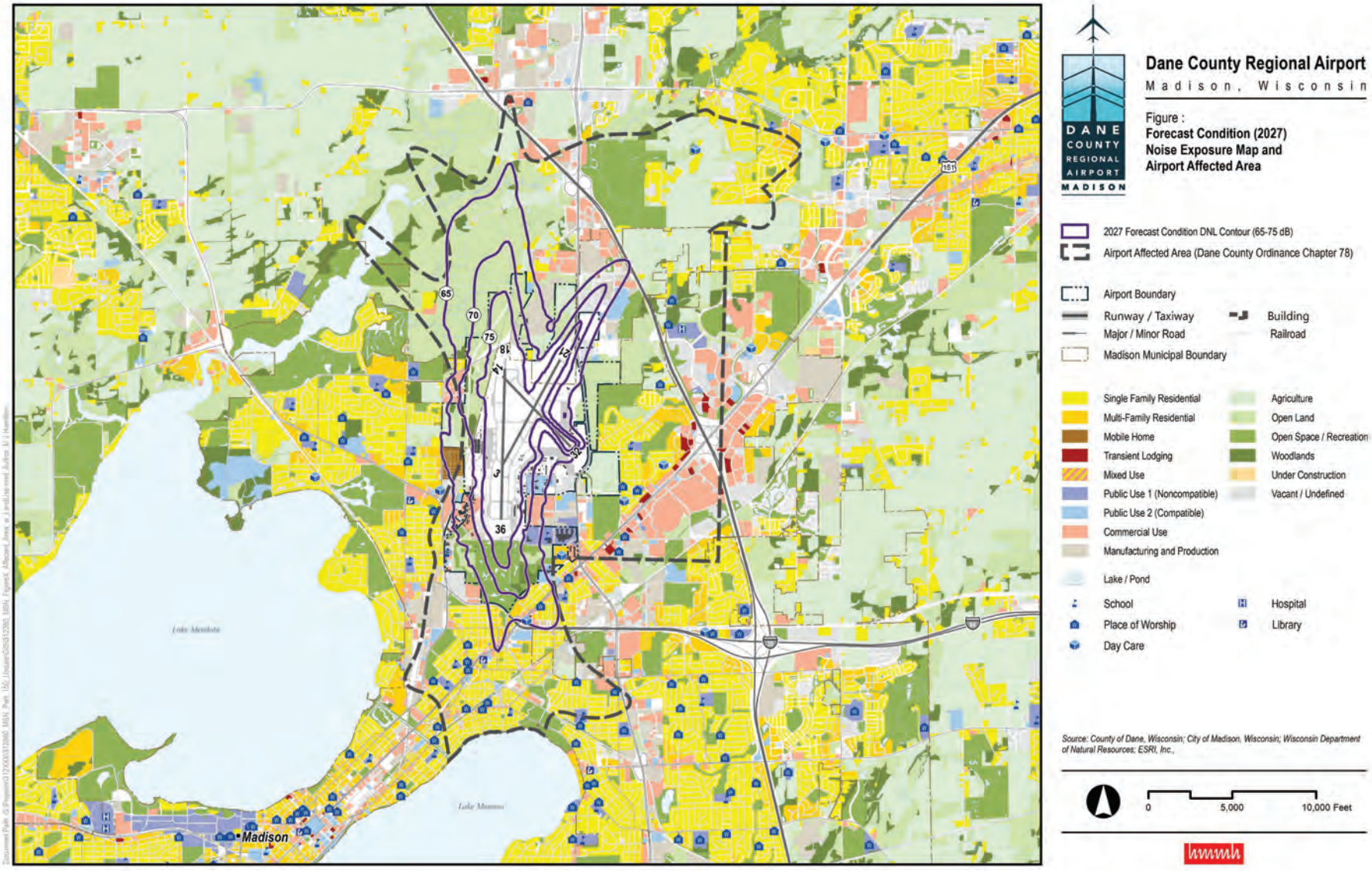
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Figure :
Forecast Condition (2027)
Noise Exposure Map and
Airport Affected Area
DANE COUNTY REGIONAL AIRPORT MADISON
2027 Forecast Condition DNL Contour (65-75 dB)
Airport Affected Area (Dane County Ordinance Chapter 78)
Airport Boundary
Runway / Taxiway
Major / Minor Road
Madison Municipal Boundary
Building
Railroad
Single Family Residential
Multi-Family Residential
Mobile Home
Transient Lodging
Mixed Use
Public Use 1 (Noncompatible)
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Manufacturing and Production
Lake / Pond
Agriculture
Open Land
Open Space / Recreation
Woodlands
Under Construction
Vacant / Undefined
School
Place of Worship
Day Care
Hospital
Library
Source: County of Dane, Wisconsin; City of Madison, Wisconsin; Wisconsin Department of Natural Resources; ESRI, Inc.,
0
5,000
10,000 Feet
Madison
Lake Mendota
Lake Monona
65
70
75
36

Proposed Land Use Measures

- Land Acquisition
  - Implement a land acquisition and relocation program
  - Acquire the mobile home park and relocate the residents
  - Implement a sales assistance program
- Sound Insulation
  - Implement a residential sound insulation program
  - Implement a sound insulation program at schools and other noise sensitive buildings
  - Consider elementary schools and noise effects on children's learning
- Avigation Easements
- Prevention
  - Establish an airport affected area
  - Restrict future introduction of low-income and other residential developments within the 65 dB DNL noise contour or adjacent to the airport
- Land Use Controls
  - Change building codes to support sound proofing
  - Consider environmental justice and low-income communities
- Other Ideas
  - Report alternative metrics and consider use of lower DNL threshold
  - Implement a Home Sales Assistance Program

DANE COUNTY REGIONAL AIRPORT MADISON

Existing Program Management Measures

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

Proposed Program Management Measures

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

Proposed Schedule

Meeting / Activity	Anticipated Purpose	Time Frame
Kick-Off Meeting with MSN and the Part 150 Team	Define organizational and procedural matters and public outreach, review and refine scope and schedule details.	*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	*Completed*: 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.	*Completed*: December 2022
3rd Public Open House*	Solicit public input on potential NCP measures for MSN consideration. **Additional open house added to schedule.*	June 27, 2023
NCP Public Comment Period, 4th Public Open House and NCP Hearing	NCP thirty-day public comment period and fourth 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

DANE COUNTY REGIONAL AIRPORT MADISON

Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House Sign-in Sheet # _____

June 27, 2023

Name	Email Address	Address	Phone Number
Jeanne Korzuda	jeannek914@gmail	914 Mayfair Ave.	(608) 246-2046
Anna Lainfiesta	annafiestaada@gmail.com	1317 Carpenter	919 601 6272
Dennis Noonan	dennisknoonan@gmail.com	1942 Sachtjen St	608 244-8473
Joyce Brischke	joyb74@charter.net	1937 Sachtjen St	608 244-1529
KEN CROES		2730 MOLAND ST. 53704	
Mary Makarushka	croes.makarushka@gmail.com	2730 Moland	608-819-0404
James + Brooke Boelman	bechenb@gmail.com	4417 Prairieview Drive	608-574-5405
Kevin Powell		2529 Fairfield Pl Mdsn 53704	
Joyce Wells		3301 Quincy Ave 53704	
Lucas Robinson	lrobinson@madison.com	1901 Fish Hatch Rd.	608-252-6186
Casimiro Salas	casales56@gmail.com	6089 Danielle Rd Deforest	608-347-4035
Cindy + Dave Kwiatkowski	c_kwiatkowski@yahoo.com	6093 Danielle Rd Deforest	608-516-1627

Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House Sign-in Sheet # _____

June 27, 2023

Name	Email Address	Address	Phone Number
Dorothy M. GORMAN		3409 Kipling 53704 Madison	608 259-6026
Cynthia Rose		3014 Anthem Dr. Madison WI 53704	(608) 234-5706
MALLORY PALMER			608 772 0166
Lauenco		3149 Clove 53704	608 658-3844
ANTONIO TESTOLIN		237 N. MARQUETTE	608 575 8390
PATTY & DAN DORAN	~~PADORAN~~ PADORAN@SBCGLOBAL.NET	1921 GULSETH ST.	608 658-8125
Ray Muller Kathleen Howe	RM2907@YAHOO.COM	1941 Sachtjen Street Madison, 53704	570-681-6052
Marybeth Wilk	marybethwilk@charter.net	29N 7th St. Madison 53704	608 220-6207
Bernie Conley	bernie4723@gmail.com		
Rick Soletski	dpenguin11@hotmail.com	3352 QUINCY AV MADISON WI	608.770 1478
DARREN HELGESEN MICHELLE VOIGTS	dhelgesen42@gmail.com	1950 MELROSE ST. MADISON, WI 53704	608 663-1780
JANE H. KAVALOSKI	jhkavaski@gmail.com	57 LANSING MADISON, WI 53714	608 341-9166

Noise Compatibility Planning Study

Dane County Regional Airport

Public Open House Sign-in Sheet # _____

June 27, 2023

Name	Email Address	Address	Phone Number
Cyndi Isetts	cyndik@gmail.com	1033 Melvin Ct.	
Jeanne Hansen	JeanneHansen@Gmail.com	824 Jackson ave 53714	608-244-5094
Kelly Kezras	Kezras@uwalumni.com	1329 Crowley Ave 53704	608.345 7144
Tom McClintock	"	"	"

DANE COUNTY REGIONAL AIRPORT
NOISE COMPATIBILITY PLANNING STUDY

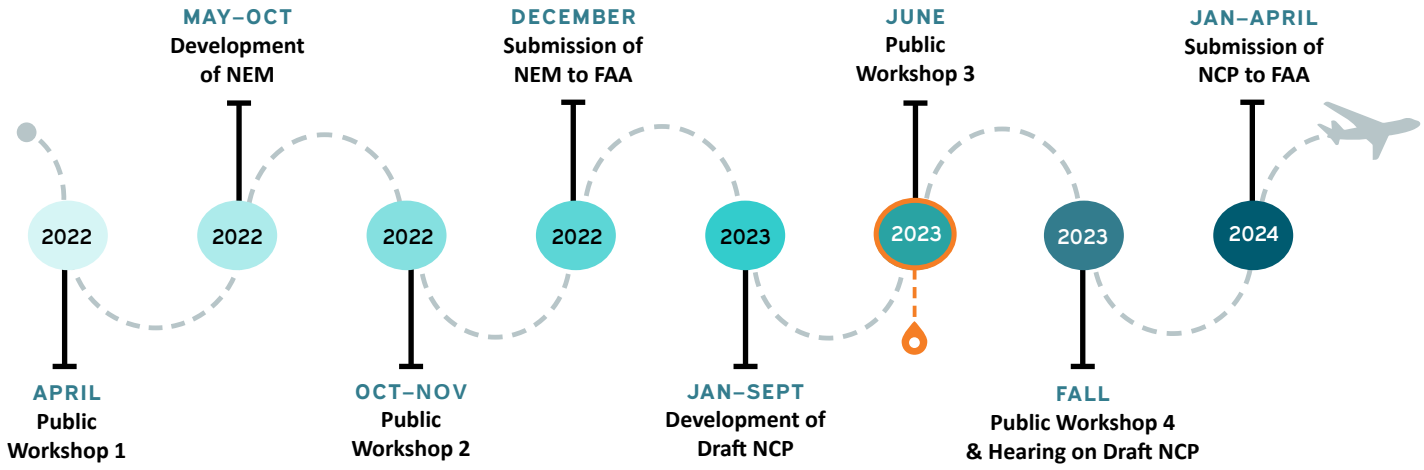
Summer 2023 Newsletter

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 Study includes two major elements: (1) a Noise Exposure Map (NEM) and (2) a Noise Compatibility Program (NCP). The NEM was recently submitted to the Federal Aviation Administration (FAA), and MSN is now focused on the development of the updated NCP, which will also be subject to FAA acceptance and approval. The NCP is a list of actions an airport proprietor recommends to address existing and future land use incompatibilities resulting from the noise of aircraft operations.

Part 150 describes a formal process for airport operators to address aircraft 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 to implement their noise program including FAA-approved measures recommended to reduce or eliminate incompatible land use. This Study is expected to be completed in 2024.

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 occurring 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 3

We have added an open house to the schedule and you're invited! This is an opportunity for you to provide feedback on possible NCP measures for MSN consideration.

When: Tuesday, June 27, 5:30 p.m. – 7:30 p.m.

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

Noise Compatibility Program

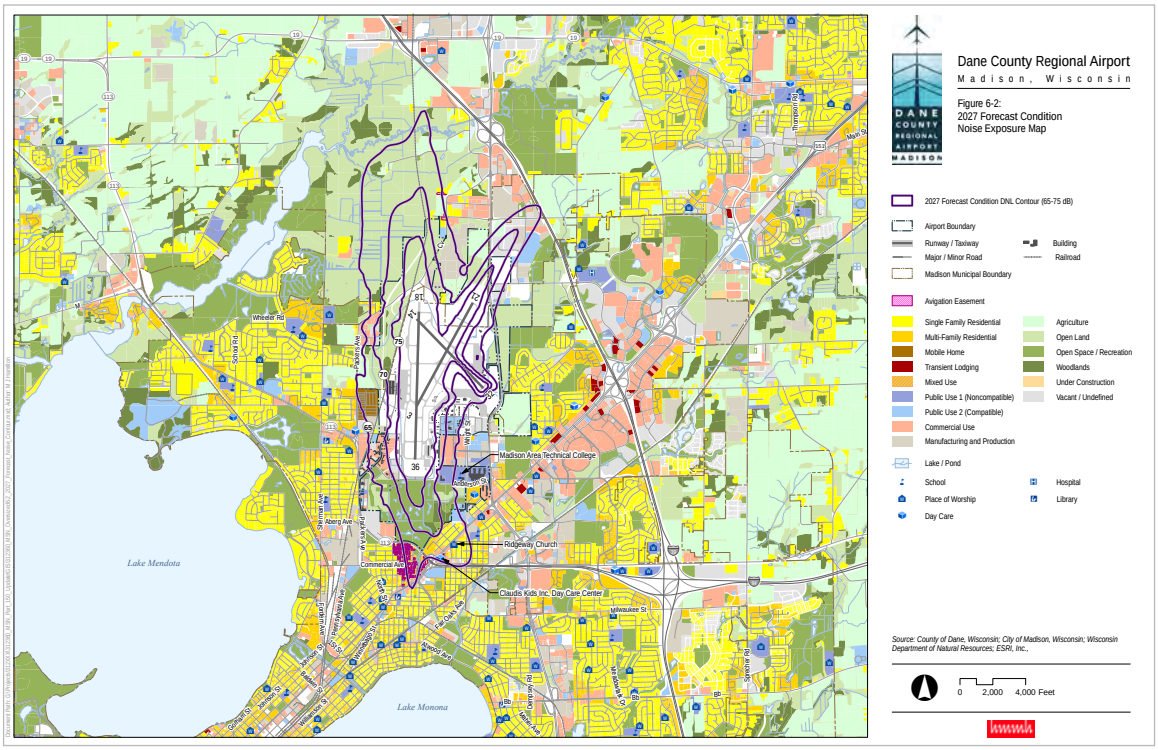
As required in the Part 150 regulation, the NCP must address three major categories of proposed actions:

1. Noise Abatement Measures
2. Compatible Land Use Measures
3. Program Management Measures

These proposed actions will be documented in an NCP report, subject to FAA acceptance and approval, and will include the following elements:

- The development of the program.
- Each measure considered by MSN, with reasoning for recommending or excluding each measure.
- The entities responsible for implementing each recommended measure.
- Implementation and funding mechanisms.
- The predicted effectiveness of both the individual measures and the overall program.

The FAA reviews and approves specific measures based on information contained in the NCP report. Dane County may apply for grant funding for implementation of FAA-approved measures. A Dane County-recommended and FAA-approved measure does not require implementation of the measure, but merely demonstrates that the measure is in compliance with Part 150. Additionally, if a measure requires subsequent FAA action, its implementation may require environmental study under the National Environmental Policy Act of 1969.



2027 Forecast Condition Noise Exposure Map, generated by a computer modeling program called AEDT, which is the modeling program prescribed by the FAA for noise studies.

Find Out More

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

part150study@msnairport.com

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).

Phase one of the Part 150 study focused on updating and completing the NEM. 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 NEM and its appendices have been completed and submitted to the FAA; those documents can be reviewed here:

Final NEM Report:

2022 MSN NEM Report (Revision 1, PDF)

NEM Appendices:

Appendix A (PDF)

Appendix B (PDF)

Appendix C (PDF)

Appendix D-1 (PDF)

Appendix D-2 (Revision 1, PDF)

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

Appendix F: Public Comments

Public comments will be included in this appendix after the public review period.

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