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January 8, 2015

Mr. Hans Hilbert
Zoning Inspector
Dane County Zoning Division
Department of Planning and Development
Room 116, City-County Building
Madison, Wisconsin 53703

Subject: **Lakeview Reservoir Reconstruction Project**
Appeal 3662 - Height Limitation Under §78.05 Dane County Ordinance
FAA Determination of No Hazard to Navigation and Supporting Documentation

Dear Mr. Hilbert:

We would like to thank the Dane County Board of Adjustments for the opportunity to present our justification for a variance to the Height Limitation under §78.05 Dane County Ordinance for our Lakeview Reservoir Project. We have previously submitted a letter to the Board of Adjustments dated November 20, 2014 as a part of our testimony at the Board meeting on November 20th, copy attached. Since that meeting we have obtained a "Determination of No Hazard to Air Navigation" for the project from the FAA, copy attached. A copy of our comment letter to the FAA along with other supplemental information submitted to the FAA is also attached for your information and use. We have also received a letter from the Wisconsin DOT concerning the project which is also attached for your information and use.

The Lakeview Reservoir has now been studied twice by the FAA, once in 2002 and then again in 2014 and in both cases it was determined to not be a hazard to navigation around Dane County Regional Airport. The top of the proposed tower and any attached antenna would be more than 300 feet below the Dane County Airport traffic pattern airspace and would have no impact on MSN aircraft operations. There are no plans to modify existing runways or add runways that would result in an approach or takeoff that would bring aircraft in the vicinity of the existing or proposed tower.

The Lakeview water tower has served the north part of the City of Madison since 1938 and provides needed water supply, fire protection capacity and it is a critical communication hub for the Dane County 911 emergency radio system and the City emergency radio system.

Project Background

Water Utility Distribution System: The Lakeview Reservoir (Madison Water Utility designation "Reservoir 113") provides drinking water storage for emergency backup, pressure stabilization, and fire protection for Pressure Zone 5. Pressure Zone 5 encompasses the top of Lake View Hill and provides service to approximately 190 homes and the Dane County Human Services Campus. The proposed water reservoir will also provide drinking water storage to Pressure Zone 6, an area that covers the majority of the east and north sides of the City of Madison. The Lakeview Reservoir is essential to providing a reliable water supply and fire protection to the area.

Dane County 911 Radio System: The Lakeview Reservoir is a critical radio hub for the 911 emergency radio system, the Dane County Sheriff's office, Dane County Regional Airport Security, Madison Police Department and the Madison Fire Department. The communication system relies on the Lakeview tower for coverage in the north part of the metropolitan area and is critical to the public safety network for ambulance, fire and rescue, and police rapid response.

The proposed project will replace the aging reservoir with a new tank of equivalent elevation with increased water storage capacity. The diameter of the proposed reservoir will be approximately twice the existing tank diameter. All of the existing City Radio antennas and cell carriers will relocate to the new reservoir.

Hazard to Air Navigation

The proposed water tower located 1.43 NM due west of MSN will be essentially the same elevation as the existing tank which has been there since 1938. The proposed water tank will underlie the MSN traffic pattern airspace and will not penetrate a plane 300 feet beneath the MSN airport traffic pattern altitude. The reservoir would have no impact on MSN aircraft operations.

MSN has three runways as identified on the MSN web page, Runway 18/36; Runway 3/21; and Runway 14/32. None of these runway bearings result in either a landing approach or takeoff path that would route aircraft within one NM of the proposed water tower. We are not aware of any plans by MSN either to realign any of the existing runways or to add a 4th runway that would have a bearing that would result in an air traffic pattern in the area of the proposed water tower.

The proposed water tower will have no impact on VFR traffic navigation or airport operations. The proposed water tower will have no impact on any MSN air traffic or any air navigation equipment or procedures.

Alternatives Considered to the Proposed Project

As stated in our November 20, 2014 letter, due to the hydraulic requirements of the water system on the north end of the City of Madison and the local topography, there are no alternative sites available that would facilitate construction of a water storage reservoir that would serve either Pressure Zone 5 or Pressure Zone 6 in the north end of the water service area.

DNR code NR 811 Subchapter IX: 811.62 (3) indicates a requirement for elevated storage for any service area that provides water service for greater than 50 homes. To provide gravity fed storage to either Pressure Zone 5 or Pressure Zone 6, an elevated tank will be required with a top elevation that would exceed the height limitation elevation of 1072. This height limitation on the proposed water reservoir would result in the use of a pumping station to provide service to the north end of the City of Madison. This alternative does not meet basic operational standards for a service area of this size. Due to the undesirable nature of using a pumping station, this alternative was considered to be unfeasible.

The Lakeview Reservoir is unique in that it provides a key location for the Dane County 911 radio system. Any alternative radio tower site for the 911 radio system on the north side would exceed the 1072 height limitation. To facilitate the 911 radio system, a site on the north end outside of the airport height restriction zone would be required. A remote site of this nature would require significant infrastructure investment and could impact radio coverage and reliability.

Unnecessary Hardship Imposed on Madison Water Utility and Dane County 911 System

MWU and the Dane County 911 radio system would suffer hardship due to the fact that water service to the north side of the City of Madison would be compromised and fire flow capacity may be impacted. The Dane County 911 radio system that provides critical communication coverage for police, fire, ambulatory, airport security, and other systems would be impacted and forced to relocate and reconfigure their system.

What are the Unique Physical Characteristics of the Project?

This project is unique in that it is a combination public water utility and public emergency radio tower project providing for the public need and necessity with the objective of sustaining and improving public safety. The water tower is a critical component of the north side water distribution and supply system. The water tower provides reliable fire fighting capacity and supply. The tower also provides a critical communication node for the 911 emergency radio system serving the police, fire, ambulatory, security, and other governmental agency functions around the County. This project is being proposed by a public utility owned by the City of Madison and will benefit Dane County and the Dane County Regional Airport. No other agency, private party, or organization will be looking to construct a project of this type or magnitude.

What would be the effect on the property, community, neighborhood, and the general public interest if the variance were granted?

The Lake View Hill Park site has been water tower site since 1938. Rebuilding on the existing site will have no impact either negative or positive on the property, community, neighborhood, park users, or the general public. Rebuilding the water tower on the existing site at the same elevation will have no adverse impact on Dane County Regional Airport.

The new water tower will have a positive impact on property, community, neighborhood, and the general public. Additional storage capacity will improve water system reliability, increase fire flow supply capacity in both Pressure Zone 5 and Pressure Zone 6. Continuing to operate this critical communication node of the Dane County 911 emergency radio system and the City emergency radio system will provide for the public good and support and sustain the public safety and rescue system.

Would granting this variance request set a negative precedent and undermine §78 the HLZO of the Dane County Zoning Code?

Granting a variance for the reconstruction of the Lakeview Reservoir will not set a negative precedent and it will not undermine the authority of Chapter 78 of the Dane County Zoning Code. This project is a public works water supply system project that is unique and would only be proposed by a public water utility. It is anticipated that this reservoir will meet the water storage needs of the area for the next 75 to 100 years.

In January 1993, the Dane County Board of Adjustments granted a variance for Madison Water Utility High Crossing Reservoir, Reservoir 315. Reservoir 315 is located just north and east of the I-94 Highway 151 interchange approximately 2.36 NM from the airport. Reservoir 315 rises to the same elevation as the proposed Lakeview Reservoir and also lies within the Dane County Height Limitation Zone. The variance, copy attached, was granted based on an FAA Determination of No Hazard to Air Navigation. Reservoir 315 is more than 300 feet below the traffic pattern altitude of the airport and is not on a runway path. Height restriction variances of this type have been granted for water towers across the State of Wisconsin with no negative impact on height restriction ordinances or authority.

Why is the approval of this variance request in the best interests of the citizen's of the City of Madison and of Dane County?

The Lakeview Reservoir provides critical water supply infrastructure to the Madison water supply and distribution system. The reservoir provides fire fighting capacity for Pressure Zone 5 and with the addition of storage capacity for Pressure Zone 6 will provide needed storage for the majority of the north side of the City of Madison. All properties on the north side of Madison

Hans Hilbert, Zoning Inspector
Madison Water Utility Lakeview Reservoir Reconstruction
Board of Adjustments Appeal 3662
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including the Dane County Regional Airport, Dane County Human Services, residential, commercial, and industrial areas will benefit from this project.

The emergency radio system that provides critical communication capability for the Dane County 911 emergency radio system to provide service for police, fire, ambulatory, and security function will also benefit from this project. It is in the best interests of Dane County and the City of Madison to proceed with this project for the benefit of the public safety, fire, and rescue systems of the area.

Action Requested

We are asking that the Dane County Board of Adjustments approve our request for a variance to allow the construction of the Lakeview Reservoir to proceed. This is in the best interests of the citizens of Dane County and the City of Madison and will have a positive impact on the area.

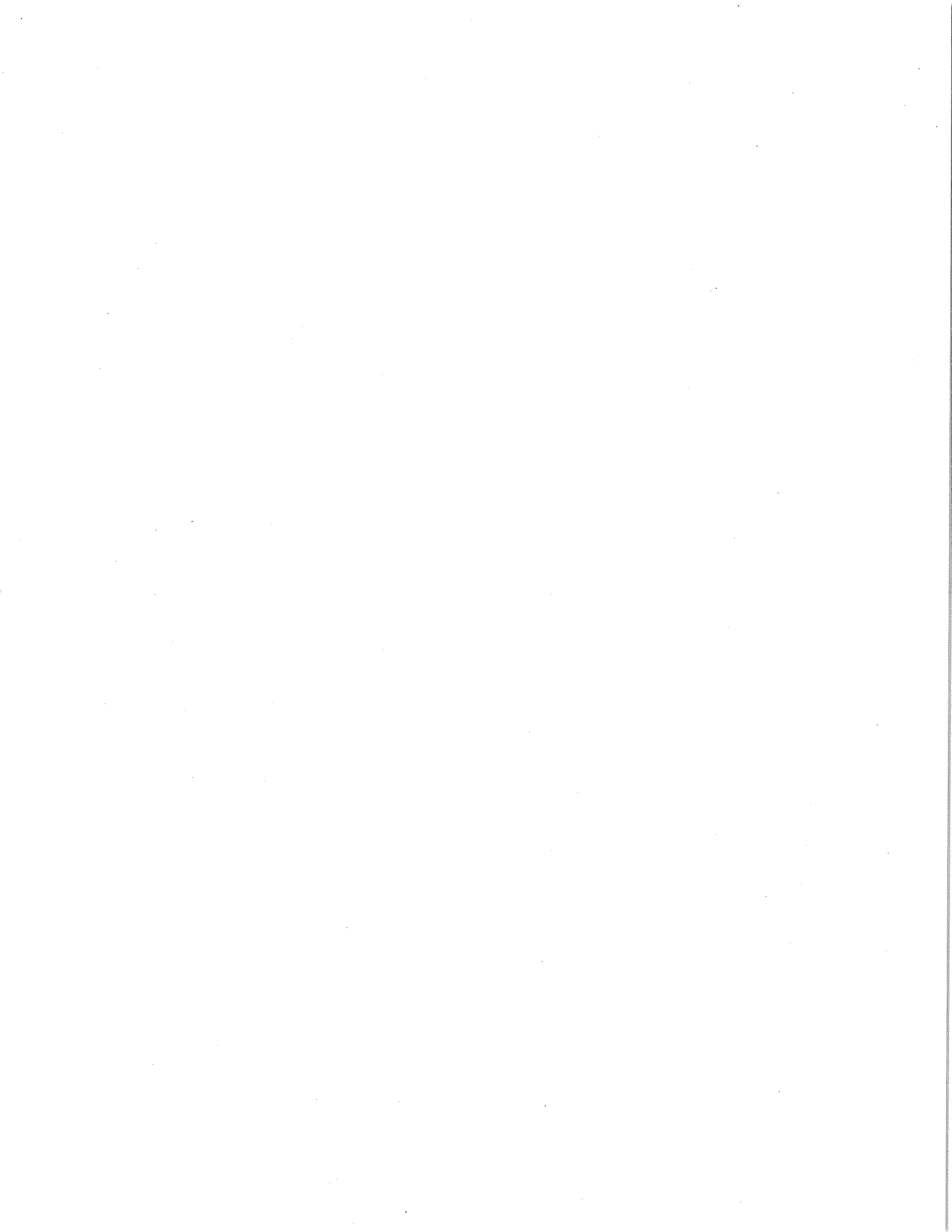
We look forward to your favorable review of our request. We are happy to provide you with any additional information you need regarding this issue. Please call me at 608-266-4653 or via email at alarson@madisonwater.org with any questions.

Sincerely,

MADISON WATER UTILITY



Alan L. Larson, PE, BCEE
Principal Engineer - Water





Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
2601 Meacham Boulevard
Fort Worth, TX 76193

Aeronautical Study No.
2014-AGL-10297-OE

Issued Date: 12/22/2014

Dennis Cawley, PE
Madison Water Utility
119 East Olin Avenue
Madison, WI 53713

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Water Tank Madison Lake View Reservoir 113
Location: Madison, WI
Latitude: 43-08-19.21N NAD 83
Longitude: 89-22-24.89W
Heights: 1015 feet site elevation (SE)
145 feet above ground level (AGL)
1160 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is marked/lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, paint/red lights - Chapters 3(Marked),4,5(Red),&12.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
 Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 06/22/2016 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before January 21, 2015. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted to the Manager, Airspace Regulations & ATC Procedures Group, Federal Aviation Administration, 800 Independence Ave, SW, Room 423, Washington, DC 20591.

This determination becomes final on January 31, 2015 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. For any questions regarding your petition, please contact Airspace Regulations & ATC Procedures Group via telephone -- 202-267-8783 - or facsimile 202-267-9328.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Vivian Vilaro, at (847) 294-7575. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-AGL-10297-OE.

Signature Control No: 228503665-238322581

(DNH)

John Page

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Additional information for ASN 2014-AGL-10297-OE

AERONAUTICAL STUDY NO. 2014-AGL-10297-OE

Abbreviations

VFR - Visual Flight Rules	AGL - Above Ground Level	RWY - runway
IFR - Instrument Flight Rules	MSL - Mean Sea Level	nm - nautical mile
AMSL - above mean sea level	MDA - Minimum Descent Altitude	

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Objects Affecting Navigable Airspace

1. LOCATION OF PROPOSED CONSTRUCTION

This proposal is for a Water Tank at 145 feet AGL/1160 feet AMSL that has been identified as an obstruction under the standards of Title 14, code of Federal Regulations (CFR) Part 77, as applied to Dane County Regional-Truax Field (MSN) in Madison, WI. The structure would be located approximately 8,717 feet (1.43 nm) west of the existing RWY 03 threshold of the MSN Airport. MSN elevation is 886 feet MSL.

2. OBSTRUCTION STANDARDS EXCEEDED

Section 77.19(a)-- A horizontal plane 150 feet above established airport elevation, the perimeter of which is constructed by swinging arcs of a specified radii from the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs. The proposed water tank would exceed the MSN horizontal surface by 124 feet.

3. EFFECTS ON AERONAUTICAL OPERATIONS

- a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR follows: Study for possible VFR effect disclosed that the proposed water tank would have no effect on any existing or proposed arrival or departure VFR operations or procedures. Even though the structure exceeds the obstruction standards, Section 77.19(a) (horizontal surface) by 124 feet; it would not conflict with airspace required to conduct normal VFR traffic pattern operations at MSN or any other known public use or military airports. At 145 feet AGL the proposed water tank would not have a substantial adverse effect on VFR en route flight operations.
- b. The impact on arrival, departure and en route procedures for aircraft operating under IFR follows: Aeronautical study disclosed that the water tank would have no effect on any existing or proposed arrival or en route IFR operations or procedures.
- c. The impact on all planned public-use airports and aeronautical facilities follows: Study did not disclose any adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposed water tank affect the capacity of any known existing or planned public-use or military airport.
- d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures follows: The cumulative impact of the proposed water tank when combined with other proposed and existing structure, is not considered to be significant.

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circularized for public comments on November 11, 2014. Two letters in favor of this water tank were received as a result of the circularization.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

It is determined that the proposed water tank would not have a substantial adverse effect on the safe and efficient use of navigable airspace by aircraft.

6. CONDITIONS

The structure shall be marked and lighted as outlined in chapters 3(Marked) 4, 5(Red) and 12, of the Advisory Circular AC 70/7460-1K. The advisory circular is available online at https://oeaaa.faa.gov/oeaaa/external/content/AC70_7460_1K.pdf. It is also free of charge, from the Department of Transportation, Subsequent Distribution Section, M-494.3, 400 7th Street, SW, Washington, DC 20590

Within five days after the structure reaches its greatest height, proponent is required to file Part II of the FAA form 7460-2. This Actual Construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national database.



December 11, 2014

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
2601 Meacham Boulevard
Fort Worth, TX 76193

Attention: Vivian Vilaro

Subject: Water Tank Madison Lake View Reservoir 113 – Madison Wisconsin
Comments for the Study
Aeronautical Study No. 2014-AGL-10297-OE

Dear Ms. Vilaro:

The City of Madison Water Utility is proposing to replace an aging water reservoir that was constructed in 1938 to a height of approximately 130 feet above ground level or a MSL elevation of 1145. For the last 20+ years, the reservoir has been used for an antenna site for the City/County Emergency Services Radio system and for several Cell Carriers. The highest existing antenna is approximately 143 feet above ground level or at a MSL of 1158. The water reservoir reconstruction project would be located on the existing site which is approximately 1.43 nautical miles due west of the existing RWY 03 of the Dane County Regional Airport – Truax Field Airport, Madison, WI. MSL elevation is 886 feet and the MSL horizontal surface elevation is 1036.

The FAA found a “Determination of No Hazard to Air Navigation” for the reservoir to an elevation of 1158 MSL on April 11, 2002. (Aeronautical Study No. 2002-AGL-285-OE) Copy attached for informational purposes.

(The following material in italics has been taken from FAA correspondence)

The proposal exceeds the obstruction standards of Federal Aviation Regulations, Part 77, as follows:

Part 77 -Title 14 Code of Federal Regulations (CFR)Part 77, Objects Affecting Navigable Airspace. The preliminary FAA study has disclosed that this proposed Water Tank: at 145 feet AGL/1160 feet AMSL has been identified as an obstruction under the standards of Title 14, code of Federal Regulations (CFR) Part

December 11, 2014

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77, as applied to Dane County Regional-Truax Field (MSN).in Madison, WI.

Section 77.19(a)--A horizontal plane 150 feet above established airport elevation, the perimeter of which is constructed by swinging arcs of a specified radii from the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs. The proposed Water Tank would exceed the MSN horizontal surface elevation of 1036 by 124 feet if constructed to a MSL elevation of 1160.

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria); the proposal would have the following IFR impact:

Increase CAT B/C/D circling MDA for all procedures by 60 feet from 1460 feet MSL to 1520 feet MSL. The not exceed height for the proposed water tower would be 1157 feet MSL (142 feet AGL). With the submission of a 2C accuracy survey the structure would have no IFR effect.

(Also) If the structure were, reduced in height so as not to exceed 145 feet above ground level (1160 feet above mean sea level), and a 2C certified survey is provided, it would not have a significant adverse impact and a favorable determination could subsequently be issued. The survey we require must be developed by a registered surveying firm in the state the survey is performed. Survey data must be based on the North American Datum of 1983, provided in geographic latitude and longitude coordinates (degrees, minutes, seconds to the hundredth of a second). The site, elevation must be based on North American Vertical Datum of 1988. The survey letter must certify accuracy of at least plus or minus 50 feet for horizontal and 20 feet for vertical data.

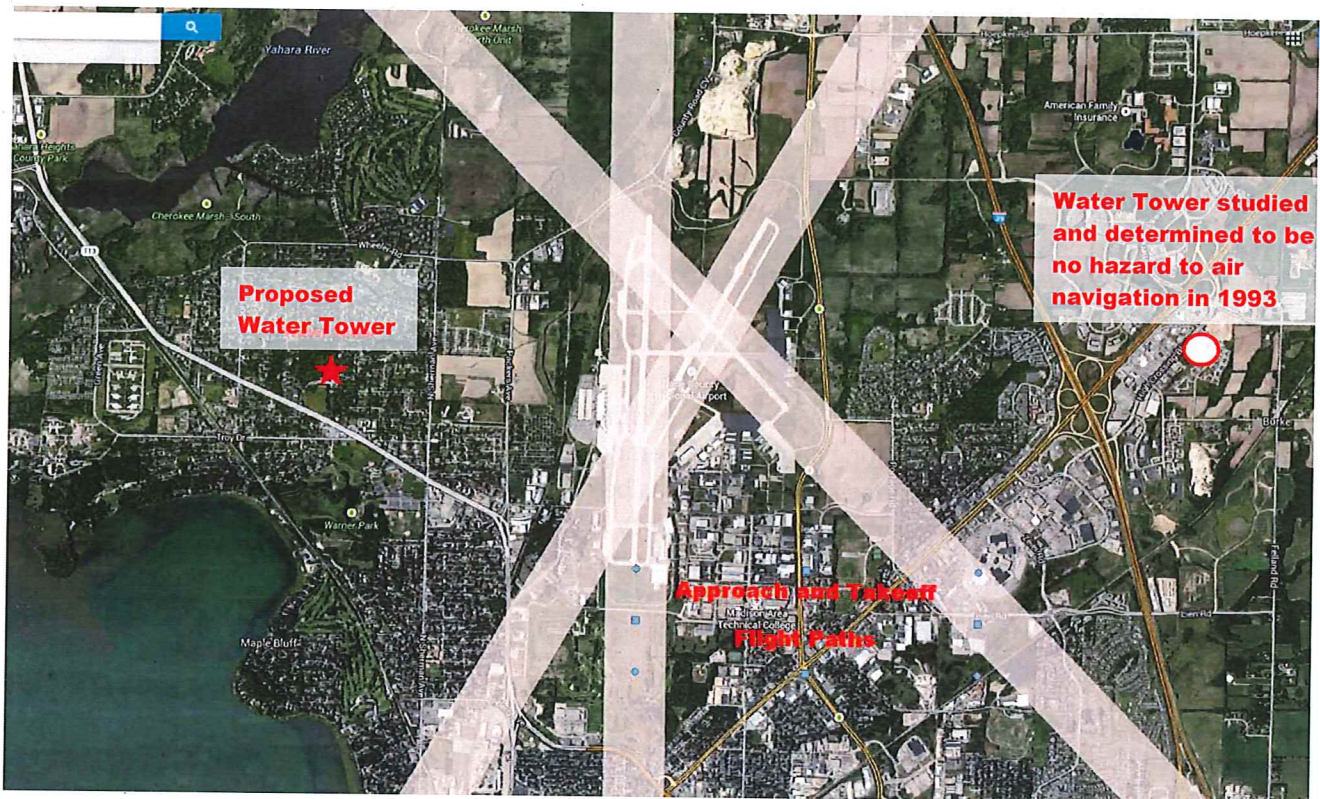
A 1-A Certification survey was filed on April 6, 2000 by Bernklau Surveying on behalf of Ameritech Mobile Communications for the existing water tower, see attached (Aeronautical Study No. 2002-AGL-285-OE). A 1-A Certification survey was filed on August 21, 2014 by Quantum Land Survey and Design on behalf of Madison Water Utility for the existing water tower, see attached (Aeronautical Study No. 2014-AGL-10297-OE). The submitted survey's established the ground elevation at the water tower site at approximately 1014 MSL. The April 2000 1-A survey established the height of the highest antenna on the water tower at 142.9 feet AGL or a MSL of 1157.6. With the submittal of the 1-A Certified Survey and a reduction of the permitted height to 1157 MSL with the adjustments noted above, it is our understanding that the proposed elevated water reservoir would have no impact on IFR navigation.

EFFECTS ON AERONAUTICAL OPERATIONS (taken from the FAA Public Notice)

- a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR follows: Under Investigation*
- b. The impact on arrival, departure and en route procedures for aircraft operating under IFR follows: No impacts to any instrument approach procedure minimums at MSN.*
- c. The impact on all planned public-use airports and aeronautical facilities follow: Under investigation*

- d. *The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures follows: Under investigation*

As indicated above, VFR navigation is being reviewed as a part of this additional study. For background information with regard to MSN airport operations, we reference Aeronautical Study No. 92-AGL-2524-OE completed March 9, 1993. In that study the FAA made a Determination of No Hazard to Navigation for another Madison Water Tower located 2.36 NM southeast of MSN that exceeded the conical surface by 56 feet. See the note on the aerial photo below. That study provides information regarding flight pattern altitude and VFR navigation around MSN that can be applied to Study No. 2014-AGL-10297-OE.



Both the existing and proposed water tower located 1.43 NM due west of MSN being evaluated in this study will be essentially the same elevation as the tower evaluated in the 1993 study and determined to be no hazard to navigation. It is argued that as stated in the Aeronautical Study No. 92-AGL-2524-OE, the proposed water tank will underlie the MSN traffic pattern airspace for Category "C" and "D" aircraft. Additionally the proposed water tower will not penetrate a plane 300 feet beneath the MSN airport traffic pattern altitude and would have no impact on MSN aircraft operations. At 142 feet above ground level, the tower will not penetrate altitudes considered available for VFR en route operations.

Information taken from the MSN web page regarding the airport, copy attached, indicates a airport traffic pattern altitude restricted to 2500 feet. This would translate to a MSL elevation of 3387, well above

the proposed tank. The lowest possible general airport traffic pattern altitude referenced by the FAA indicates 600 feet AGL or an MSL elevation of 1487 with reference to the MSN of 887 MSL elevation. The proposed tank is still well over 300 feet below this altitude.

MSN has three runways as identified on the MSN web page and in the facility diagram, attached for reference, Runway 18/36; Runway 3/21; and Runway 14/32. None of these runway bearings result in either a landing approach or takeoff path that would route an aircraft within one NM of the proposed water tower as noted in the aerial photo above. We are not aware of any plans by MSN neither to realign any of the existing runways nor to add a 4th runway that would have a bearing that would result in an air traffic pattern in the area of the proposed water tower.

The proposed water tower will have no impact on VFR traffic navigation or airport operations. The proposed water tower will have no impact on any MSN air traffic or any air navigation equipment or procedures. This opinion is supported by the facts presented above and the fact that the elevated tank has been located at this spot since 1938.

Need and Benefit to Public Safety and Public Service of the Project

The Lakeview water tower provides critical drinking water storage capacity to the north end of the City of Madison. The existing water tower provides fire protection capacity and emergency water supply to Pressure Zone 5 within the Madison System. The existing water tower is undersized and does not meet current requirements for firefighting capacity and emergency supply reserves and needs to be upgraded. Additionally, a water storage capacity deficiency has been identified for the north side of Madison that is compromising the system's ability to meet emergency and fire fighting water capacity requirements. The proposed water tower would mitigate these deficiencies and would provide the necessary water storage for the next 75 to 100 years. Providing adequate fire fighting capacity and emergency water supply reserves to the area is critical to public safety and public service.

The Lakeview Reservoir is a critical hub for the 911 emergency radio system, the Dane County Sheriff's office, Dane County Regional Airport Security, Madison Police Department and the Madison Fire Department. The architecture of the emergency communication system relies on the Lakeview position for coverage in the north part of the Dane County area and is critical to the public safety network for airport security, ambulance, fire, rescue, and police rapid response.

This project is unique in that it is a combination public water utility and public emergency radio tower project providing for the public need and necessity with the objective of sustaining and improving public safety. The water tower is a critical component of the north side water distribution and supply system. The water tower provides reliable fire fighting capacity and supply. The tower also provides a critical communication node for the 911 emergency radio system serving the police, fire, ambulatory, security, airport, and other governmental agency functions around the County.

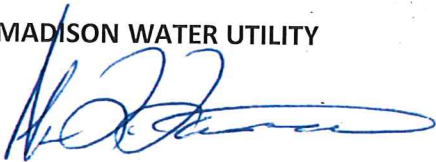
Summary

Based on all of the information presented on the proposed water tower project, considering this is a replacement of a structure that has been at this location since 1938, based on an opinion of no impact to MSN flight operations, in light of the fact the proposed tower will not penetrate a horizontal plane over 300 feet below the MSN air traffic pattern altitude, based on the fact that the tower is not located in any of the three MSN landing or takeoff corridors, and considering the importance to the public safety, public service, and drinking water system, we respectfully request that you grant a determination of no impact to air navigation and permit the project to proceed to construction.

We look forward to your favorable review of our application. We are happy to provide you with any additional information you need regarding this issue. Please contact me at 608-266-4653 or via email at alarson@madisonwater.org with any questions.

Sincerely,

MADISON WATER UTILITY



Alan L. Larson, PE, BCEE
Principal Engineer – Water



Federal Aviation Administration
Great Lakes Regional Office
2300 East Devon Avenue-AGL-520
Des Plaines, IL 60018

Aeronautical Study No.
2002-AGL-285-OE
Prior Study No.
1996-AGL-4085-OE

Issued Date: 4/11/2002

HEIDI FISCHER
MADISON MUNICIPAL BUILDING
215 MARTIN LUTHER KING, JR. BLVD.
MADISON, WI 53701

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Water Tank
Location: MAPLE BLUFF, WI
Latitude: 43-8-19.3 NAD 83
Longitude: 89-22-25
Heights: 143 feet above ground level (AGL)
1158 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does exceed obstruction standards but would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure should continue to be marked and/or lighted utilizing red lights.

This determination expires on 10/11/2003 unless:

- (a) extended, revised or terminated by the issuing office.
- (b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

This aeronautical study included evaluation of a 143 foot AGL structure that exists at this time. Action will be taken to ensure aeronautical charts are updated to reflect this existing height and the most current coordinates/elevation as indicated in the above description.

If we can be of further assistance, please contact our office at (847)294 7566. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2002-AGL-285-OE.

Signature Control No: 57937-80168

(EBO)

Bridgitt S. Arledge
Specialist

Attachment(s)
Frequency Data

cc: NACO w/map

Frequency Data for ASN 2002-AGL-285-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
824	896	MHz	300	W
2	0	GHz	80	dBm
6	0	GHz	80	dBm
10	0	GHz	80	dBm
11	0	GHz	80	dBm
18	0	GHz	80	dBm
23	0	GHz	80	dBm

171
Ameritech Mobile Communications, Inc.
2000 W. Ameritech Center Drive
Hoffman Estates, IL 60195-5000

1-A CERTIFICATION

For: AMCI ✓

Site Name: Mad, MP-138

Site Address/Location: 122 Northport, Madison, WI

CENTER OF EXISTING WATER TOWER:

NAD 1983

Latitude: 43°08'19.3"

Longitude: 89°22'25.0"

Ground Elevation: 1014.7
(NGVD 1929)

AGL Tower: 124.4

AGL Beacon: 127.1

AGL Omni Antenna: 131.8

AGL Unknown Antenna: 142.9

This is to certify that the above information is accurate to within:

+/- 20 feet horizontal

+/- 3 feet vertical

Wisconsin Registered Land Surveyor No. 2147
Thomas M. Bernklau

Date 4/6/2000

BSI Project No. 1104-00

Bernklau Surveying, Inc.
N60 W25864 Walnut Road
Sussex, WI 53089
phone/fax (262) 538-0718



August 21, 2014



Land Survey & Design
4020 Technology Parkway
Sheboygan, WI 53083
P: 920.457.3631
F: 920.457.0410
www.quantumspatial.com

1A CERTIFICATION

For: Verizon

SITE NAME: Human Services

SITE NUMBER: N/A

SITE ADDRESS: 1202 Northport Drive, Madison, Wisconsin 53704

REQUEST DATE: August 15, 2014

DUE DATE: August 22, 2014

CENTER OF PROPOSED WATER TOWER:
(NAD 1983/2011)

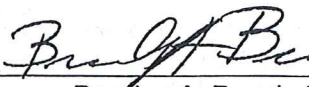
- LATITUDE: 43°-08'-19.21"
- LONGITUDE: 89°-22'-24.89"

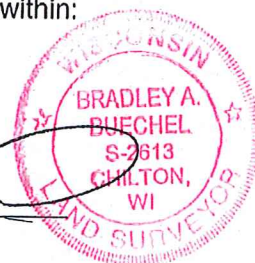
ELEVATION OF EXISTING GROUND: 1013.6"
(NAVD 1988 DATUM)

This is to certify that the above information is accurate to within:

- ± 15 Feet in the Horizontal
- ± 3 Feet in the Vertical

Professional Land Surveyor


Bradley A. Buechel



State of Wisconsin Registration No. S-2613

Date: August 21, 2014





US Department of Transportation

Federal Aviation Administration

GREAT LAKES REGION/AGL-530
2300 East Devon Avenue
Des Plaines, Illinois 60018

IN REPLY REFER TO
AERONAUTICAL STUDY
NO. 92-AGL-2524-0E

DETERMINATION OF NO HAZARD TO AIR NAVIGATION

SPONSOR	Mr. James R. Blotz Madison Water Utility 523 East Main Street Madison, WI 53703		CONSTRUCTION LOCATION	
			PLACE NAME Madison, WI	
			LATITUDE 43° 08' 30"	LONGITUDE 89° 17' 00"
			HEIGHT (IN FEET)	
CONSTRUCTION PROPOSED	DESCRIPTION Water Tank	ABOVE GROUND 125	ABOVE MSL 1145	

An aeronautical study of the proposed construction described above has been completed under the provisions of Part 77 of the Federal Aviation Regulations. Based on the study it is found that the construction would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the construction would not be a hazard to air navigation provided the following conditions are met:

Conditions:

The structure is lighted in accordance with Chapters 4, 8, and 13 of FAA Advisory Circular AC 70/7460-1, "Obstruction Marking and Lighting."

Supplemental notice of construction is required any time the project is abandoned (use the enclosed FAA form), or

- At least 48 hours before the start of construction (use the enclosed FAA form).
- Within five days after the construction reaches its greatest height (use the enclosed FAA form).

This determination expires on OCT 18 1994 unless:

- (a) extended, revised or terminated by the issuing office;
- (b) the construction is subject to the licensing authority of the Federal Communications Commission and an application for a construction permit is made to the FCC on or before the above expiration date. In such case the determination expires on the date prescribed by the FCC for completion of construction, or on the date the FCC denies the application.

NOTE: Request for extension of the effective period of this determination must be postmarked or delivered to the issuing office at least 15 days prior to the expiration date.

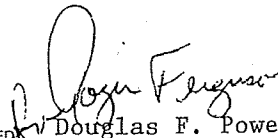
This determination is subject to review if an interested party files a petition on or before APR 05 1993. In the event a petition for review is filed, it should be submitted in triplicate to the Manager, Flight Information and Obstructions Branch, AAT-210, Federal Aviation Administration, Washington, D.C. 20591, and contain a full statement of the basis upon which it is made.

This determination becomes final on APR 15 1993 unless a petition for review is timely filed, in which case the determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review.

An account of the study findings, aeronautical objections, if any, registered with the FAA during the study, and the basis for the FAA's decision in this matter will be found on the following page(s).

If the structure is subject to the licensing authority of the FCC, a copy of this determination will be sent to that Agency.

This determination, issued in accordance with FAA Part 77, concerns the effect of this proposal on the safe and efficient use of the navigable airspace by aircraft and does not relieve the sponsor of any compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

SIGNED  TITLE Manager, System Management Branch, AGL-530

ISSUED IN Des Plaines, Illinois ON MAR 09 1993

The proposed construction would be located approximately 2.36 nautical miles east of Dane Co. Regional - Truax Field Airport, Madison, WI.

The proposal exceeds the obstruction standards of Federal Aviation Regulations, Part 77, as follows:

Section 77.23(a)(5) by 56' - a height exceeding a conical surface as applied to Dane Co. Airport.

The proposal was circularized for public comment by letter dated January 26, 1993. No letters of objection were received as a result of circularization.

Wisconsin Department of Transportation noted that the proposal would exceed a local height limitation law. This would be a matter to be settled between the proponent and the legal entity having jurisdiction in the matter.

Aeronautical study disclosed the proposal would have no effect on any existing or planned instrument flight rules (IFR) operations, procedures, minimum flight altitudes, or air navigation and communication facilities.

Study for visual flight rules (VFR) effect disclosed that the proposal would underlie traffic pattern airspace for Category "C" and "D" aircraft. However, the structure does not penetrate a plane 300 feet beneath the airport traffic pattern altitude and would have no impact on these aircraft operations. At 125 feet above ground level, the antenna tower would not penetrate altitudes considered available for VFR enroute operation.

The cumulative impact resulting from the proposed construction, when combined with the impact of other existing or proposed structures, was negligible.

Therefore, it is determined that the proposed structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities and would not be a hazard to air navigation.

This decision is based solely on the foregoing description of the structure, which includes location, height, ERP, and operating frequency.

The FAA hereby requests that proper notice be given for any future construction or alteration that would exceed the above described heights, including any increase to the ERP, alteration to the transmitting frequency, and/or the addition of any transmitting devices.

This determination does not include temporary construction equipment such as cranes, derricks, etc., which may be used during the actual construction phase of this proposal. Such equipment which has a height greater than the proposed structure and a height which would exceed the notice standards of Part 77 of the Federal Aviation Regulations requires separate notice. If prior notice for temporary construction equipment is required, please complete and return the enclosed FAA Form 7460-1.

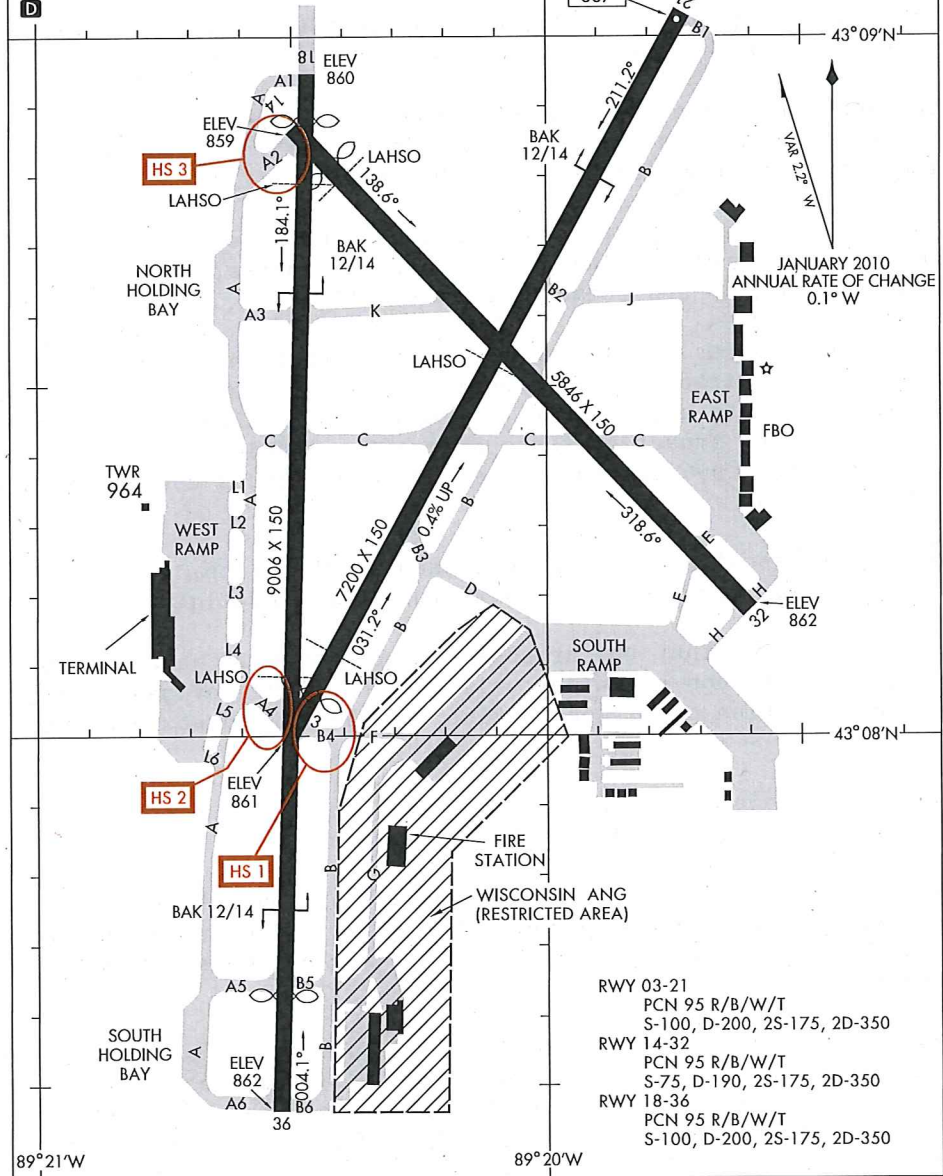
14261
AIRPORT DIAGRAM

DANE COUNTY RGNL TRUAX FIELD (MSN)
 MADISON, WISCONSIN

AL-245 (FAA)

ATIS
 124.65 278.3
 MADISON TOWER*
 119.3 257.8
 GND CON
 121.9 348.6
 CLNC DEL
 121.62

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES.
 READBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED.



EC-3, 13 NOV 2014 to 11 DEC 2014

EC-3, 13 NOV 2014 to 11 DEC 2014

14261
AIRPORT DIAGRAM

MADISON, WISCONSIN
 DANE COUNTY RGNL TRUAX FIELD (MSN)

RWY 03-21
 PCN 95 R/B/W/T
 S-100, D-200, 2S-175, 2D-350
 RWY 14-32
 PCN 95 R/B/W/T
 S-75, D-190, 2S-175, 2D-350
 RWY 18-36
 PCN 95 R/B/W/T
 S-100, D-200, 2S-175, 2D-350

AIRNAV.COM



- Airports
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 - Airspace Fixes
 - Aviation Fuel
 - iPhone App
 - My AirNav
- 1347 users online [LOGIN](#)

KMSN Dane County Regional Airport-Truax Field

Madison, Wisconsin, USA



GOING TO MADISON?

Reserve a Hotel Room

Reserve Online

Reserve Online

FAA INFORMATION EFFECTIVE 13 NOVEMBER 2014

[Loc](#) | [Ops](#) | [Rwys](#) | [IFR](#) | [FBO](#) | [Links](#)
[Com](#) | [Nav](#) | [Svcs](#) | [Stats](#) | [Notes](#)

Location

FAA Identifier: MSN
 Lat/Long: 43-08-23.5649N / 089-20-15.0161W
 43-08.392748N / 089-20.250268W
 43.1398791 / -89.3375045
 (estimated)
 Elevation: 886.6 ft. / 270.2 m (surveyed)
 Variation: 00E (1990)
 From city: 5 miles NE of MADISON, WI
 Time zone: UTC -6 (UTC -5 during Daylight Saving Time)
 Zip code: 53704

Is Your FBO Safety 1st?

- Online Training
- Seminars
- SMS Resources
- Webinars
- Ground Audit Standard

Airport Operations

Airport use: Open to the public
 Activation date: 09/1937
 Sectional chart: [CHICAGO](#)
 Control tower: yes
 ARTCC: CHICAGO CENTER
 FSS: GREEN BAY FLIGHT SERVICE STATION
 NOTAMs facility: MSN (NOTAM-D service available)
 Attendance: CONTINUOUS
 Pattern altitude: OVERHEAD TFC PAT ALT RSTD TO 2500 FT, RY 18-36 LEFT TURN.
 Wind indicator: lighted
 Segmented circle: no
 Lights: WHEN ATCT CLSD HIRL RY 18/36 PRESET ON LOW INTST, TO INCR INTST & ACTVT REIL RY 03; HIRL RY 03/21; REIL RY 32; HIRL RY 14/32; MALSR RY 18/36; MALSR RY 21; HIRL RY 18/36 - CTAF.
 Beacon: white-green (lighted land airport)
 Operates sunset to sunrise.
 Fire and rescue: ARFF index C



Road maps at: [MapQuest](#) [Bing](#) [Google](#) [Yahoo!](#)

Aerial photo

WARNING: Photo may not be current or correct



Photo by Gary Chambers

Airport Communications

CTAF: 119.3
 UNICOM: 122.95
 ATIS: 124.65 278.3
 WX ASOS: PHONE 608-249-0615
 MADISON GROUND: 121.9 348.6 [0600-2300]
 MADISON TOWER: 119.3 257.8 [0600-2300]
 MADISON APPROACH: 120.1(EAST) 135.45(WEST) 343.7 WEST
 350.3(EAST) [0600-2300]
 MADISON DEPARTURE: 120.1(EAST) 135.45(WEST) 318.1 [0600-2300]
 CLEARANCE DELIVERY: 121.62
 ANG OPNS: 138.45 379.5
 ANG OPS: 123.4 299.9 40.8
 CLASS C: 120.1(EAST) 135.45(WEST) 350.3(EAST)
 CLASS C IC: 343.7 WEST
 EMERG: 121.5 243.0
 RDR: 126.85
 WX AWOS-3 at C29 (9 nm W): 118.675 (608-833-1686)

- ARMY OPERATION CALL 'FIREFLY'. 0730-1600 LCL.
- APCH/DEP SERVICE PROVIDED BY CHICAGO ARTCC ON FREQS 133.3/380.35 (LONE ROCK RCAG) & 135.45 WHEN MADISON APCH CTL CLSD.
- CALL MADISON OPS.
- 3RD PARTY 16 JUN 2011

Nearby radio navigation aids

VOR radial/distance	VOR name	Freq	Var
MSN at field	MADISON VORTAC	108.60	03E
DLL r140/30.9	DELLS VORTAC	117.00	03E
LNR r105/36.0	LONE ROCK VOR/DME	112.80	00E
JVL r341/36.4	JANESVILLE VOR/DME	114.30	03E

NDB name	Hdg/Dist	Freq	Var	ID
MONAH	005/4.6	400	00E	MS -- . . .
ROCK RIVER	267/26.9	371	01W	RYV
JUNEAU	239/32.7	344	01W	UNU
JANESVILLE	335/34.1	375	03E	JVL

Airport Services

Fuel available: 100LL JET-A
 AV FUEL REFUELING AVBL ON EAST OR SOUTH APRON ONLY.

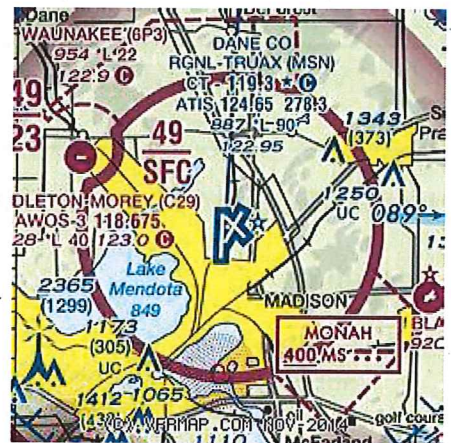
Parking: hangars
 Airframe service: MAJOR
 Powerplant service: MAJOR
 Bottled oxygen: HIGH/LOW
 Bulk oxygen: NONE

Runway Information

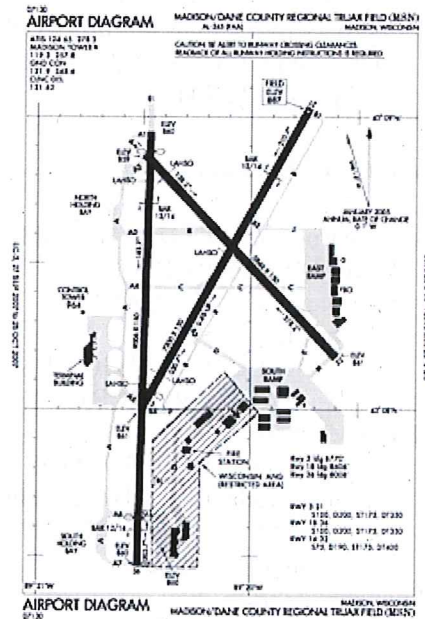
Runway 18/36

Do you have a better or more recent aerial photo of Dane County Regional Airport-Truax Field that you would like to share? If so, please [send us your photo](#).

Sectional chart



Airport diagram



[Download PDF](#)
 of official airport diagram from the FAA

Airport distance calculator

Flying to Dane County Regional Airport-Truax Field? Find the distance to fly.

From _____ to KMSN

Dimensions: 9006 x 150 ft. / 2745 x 46 m

Surface: concrete/grooved, in good condition

Weight bearing capacity: PCN 95 /R/B/W/T

Single wheel: 100.0

Double wheel: 200.0

Double tandem: 350.0

Runway edge lights: high intensity

RUNWAY 18

Latitude: 43-08.948228N

Longitude: 089-20.461530W

Elevation: 860.3 ft.

Traffic pattern: left

Runway heading: 182

Displaced threshold: 400 ft.

Declared distances: TORA:9006

TODA:9006

ASDA:9006 LDA:8606

Markings: precision, in good condition

Visual slope indicator: 4-light PAPI on left (3.00 degrees glide path)

OPERATES CONTINUOUSLY.

RVR equipment: touchdown, rollout

Approach lights: MALSR: 1,400 foot medium intensity approach lighting system with runway alignment indicator lights

Runway end identifier lights: no

Centerline lights: yes

Touchdown point: yes, no lights

Instrument approach: ILS

Obstructions: 50 ft. hill, 1634 ft. from runway, 689 ft. left of centerline, 28:1 slope to clear

APCH RATIO 40:1 FM DSPLCD THR.

RUNWAY 36

Latitude: 43-07.466638N

Longitude: 089-20.529960W

Elevation: 862.0 ft.

left

002

1001 ft.

TORA:9006

TODA:9006

ASDA:9006

LDA:8006

precision, in good condition

4-light PAPI on left (3.00 degrees glide path)

OPERATES CONTINUOUSLY.

touchdown, rollout

MALSR: 1,400 foot medium intensity approach lighting system with runway alignment indicator lights

no

yes

yes, no lights

ILS

none

Sunrise and sunset

Times for 11-Dec-2014

	Local (UTC-6)	Zulu (UTC)
Morning civil twilight	06:48	12:48
Sunrise	07:20	13:20
Sunset	16:21	22:21
Evening civil twilight	16:54	22:54

Current date and time

Zulu (UTC)	11-Dec-2014 22:10:19
Local (UTC-6)	11-Dec-2014 16:10:19

METAR

KMSN 112153Z 31005KT 6SM HZ FEW250 M01/M06 A3022 RMK AO2 SLP247 T10111056

KC29 112150Z AUTO 30005KT 7SM CLR 9nm W 00/M04 A3022 RMK AO1 T10021045

TAF

KMSN 111927Z 1119/1218 26004KT P6SM BKN012 FM112000 26004KT P6SM SCT012 FM112300 28005KT P6SM BKN015 FM120200 28005KT P6SM OVC008

NOTAMS

[Click for the latest NOTAMS](#)

NOTAMS are issued by the DoD/FAA and will open in a separate window not controlled by AirNav.

Runway 3/21

Dimensions: 7200 x 150 ft. / 2195 x 46 m

Surface: concrete/grooved, in good condition

Weight bearing capacity: PCN 95 /R/B/W/T

Single wheel: 100.0

Double wheel: 200.0

Double tandem: 350.0

Runway edge lights: high intensity

RUNWAY 3

Latitude: 43-07.998117N

Longitude: 089-20.505437W

Elevation: 860.8 ft.

RUNWAY 21

Latitude: 43-09.034818N

Longitude: 089-19.720958W

Elevation: 886.6 ft.

Traffic pattern: left	left
Runway heading: 029	209
Displaced threshold: 431 ft.	no
Declared distances: TORA:7200	TORA:6770 TODA:6770
TODA:7200	ASDA:7015 LDA:7015
ASDA:7200	
LDA:6770	
Markings: precision, in good condition	precision, in good condition
Visual slope indicator: 4-light PAPI on left (3.00 degrees glide path)	4-light PAPI on left (3.00 degrees glide path)
OPERATES CONTINUOUSLY.	OPERATES CONTINUOUSLY.
Approach lights:	MALSR: 1,400 foot medium intensity approach lighting system with runway alignment indicator lights
Runway end identifier lights: yes	
Touchdown point: yes, no lights	yes, no lights
Instrument approach:	ILS/DME
Obstructions: 72 ft. trees, 2760 ft. from runway, 460 ft. left of centerline, 35:1 slope to clear RY 03 APCH RATIO 41:1 FM DSPLCD THLD.	19 ft. road, 2050 ft. from runway

Runway 14/32

Dimensions: 5846 x 150 ft. / 1782 x 46 m
 Surface: concrete/grooved, in good condition
 Weight bearing capacity: PCN 95 /R/B/W/T
 Single wheel: 75.0
 Double wheel: 190.0
 Double tandem: 350.0

Runway edge lights: high intensity	RUNWAY 14	RUNWAY 32
	Latitude: 43-08.874538N	43-08.177185N
	Longitude: 089-20.493760W	089-19.588083W
	Elevation: 858.9 ft.	861.5 ft.
Traffic pattern: left	left	left
Runway heading: 136	136	316
Displaced threshold: 477 ft.	no	no
Declared distances: TORA:5845	TORA:5845	TORA:5845 TODA:5845
TODA:5845	ASDA:5845	ASDA:5845 LDA:5845
ASDA:5845		
Markings: nonprecision, in good condition	nonprecision, in good condition	nonprecision, in good condition
Visual slope indicator: 4-light PAPI on left (3.00 degrees glide path)	4-light PAPI on left (3.00 degrees glide path)	4-light PAPI on left (3.00 degrees glide path)
OPERATES CONTINUOUSLY.	OPERATES CONTINUOUSLY.	OPERATES CONTINUOUSLY.

CONTINUOUSLY.

Runway end identifier lights: yes	yes
Touchdown point: yes, no lights	yes, no lights
Obstructions: none	112 ft. tree, 4047 ft. from runway, 440 ft. right of centerline, 34:1 slope to clear

Airport Ownership and Management from official FAA records

Ownership: Publicly-owned
 Owner: DANE COUNTY
 4000 INTERNATIONAL LANE
 MADISON, WI 53704
 Phone 608-246-3380
 Manager: BRADLEY S. LIVINGSTON, AAE
 4000 INTERNATIONAL LANE
 MADISON, WI 53704
 Phone 608-246-3380

Airport Operational Statistics

Aircraft based on the field: 148	Aircraft operations: avg 236/day *
Single engine airplanes: 79	33% transient general aviation
Multi engine airplanes: 15	21% local general aviation
Jet airplanes: 17	21% air taxi
Helicopters: 15	18% commercial
Military aircraft: 22	6% military

* for 12-month period ending 31 May 2014

Additional Remarks

E60-BAK-14 BAK-12(B) (1620).

21

E60-BAK-14 BAK-12(B) (1900 FT).

18

E60-BAK-14 BAK-12(B) (1750 FT).

36

- TWY F, TAXITRACK GRSTRD TO MILITARY.
- GA ACCESS AND PARKING TO WEST ACR RAMP IS PROHIBITED.
- ANG; PPR ALL ACFT DSN 724-8506, C608-245-4506, HOURS OF OPNS 1300-2230++ MON-FRI. CALL FOR RCR & BASH.
- AVOID OVERFLIGHT OF YAHARA RIVER INVOF ARPT BLO 2000 FT AGL.
- RY 18 & RY 14 APCH ENDS ARE CLOSELY ALIGNED. VERIFY CORRECT RY AND COMPASS HEADING PRIOR TO DEP.
- THE EAST RAMP AND TAXIWAYS 'B2', 'B5', 'E', 'J' & 'K' CLSD TO AIRCRAFT WITH A WINGSPAN GREATER THAN 118 FT.
- NOISE ABATEMENT PROCEDURES ARE IN EFFECT CTC ARPT OPNS. DEP ACFT USE RY 36 AND RY 03 TO MAX EXTENT POSSIBLE FOR NS ABMT. LDG ACFT USE RY 18 AND RY 21 TO MAX EXTENT POSSIBLE FOR NOISE ABMT.
- SOUTH RAMP WEST OF TWY HRSTD TO ACFT LESS THAN 12,500 LBS.
- ARNG: PPR, ARNG COPTER RQR SVC, CTC ARMY OPS, LTD TRAN SVC, OPR 1300-2200Z++ MON, TUE; 1300-0400Z++ WED-FRI, CLSD SAT, SUN DSN 745-8310, C608-301-8310.
- PPR FOR HIGH RISK FLT TEST 608-246-3397.
- TWY A HOLD BAYS RSTRD TO DESIGN GROUP III ACFT WITH WINGSPAN OF 117

FT OR LESS.

- HIGHSPEED ENGINE RUNUP PERMITTED IN THE NORTH HOLD BAY ONLY.
- BARRICADES ALONG WEST EDGE OF SOUTH APN ADJ TO MIL APN.
- WEST RAMP UNCONTROLLED; PUSHBACK IS AT PILOT'S DISCRETION.
- ACR & TURBO JET TRNG FLGTS PROHIBITED.
- BIRDS ON & INVOF ARPT.
- RY 18 ACFT ARRESTING DEVICE BAK 12/14 LCTD 1500 FT FM THR; RY 36 BAK 12/14 LCTD 750 FT FM THR; RY 21 BAK 12/14 LCTD 1620 FT FM THR.

Instrument Procedures

NOTE: All procedures below are presented as PDF files. If you need a reader for these files, you should [download](#) the free Adobe Reader.

NOT FOR NAVIGATION. Please procure official charts for flight.

FAA instrument procedures published for use between 11 December 2014 at 0901Z and 8 January 2015 at 0900Z.

IAPs - Instrument Approach Procedures

ILS OR LOC RWY 21	download
ILS OR LOC/DME RWY 18	download
ILS OR LOC/DME RWY 36 **CHANGED**	download
RNAV (GPS) RWY 03	download
RNAV (GPS) RWY 14	download
RNAV (GPS) RWY 18	download
RNAV (GPS) RWY 21	download
RNAV (GPS) RWY 32	download
RNAV (GPS) RWY 36	download
VOR/DME OR TACAN RWY 14	download
VOR/DME OR TACAN RWY 18	download
VOR/DME OR TACAN RWY 32	download
VOR RWY 14	download
VOR RWY 18	download
VOR RWY 21	download
VOR RWY 32	download
VOR RWY 36	download
HI-TACAN RWY 18	download
HI-TACAN RWY 36	download
Radar Approach Procedures available	download (46KB)
NOTE: Special Alternate Minimums apply	download
NOTE: Special Take-Off Minimums/Departure Procedures apply	download (201KB)

Other nearby airports with instrument procedures:

- [87Y](#) - Blackhawk Airfield (7 nm E)
- [C29](#) - Middleton Municipal Airport - Morey Field (9 nm W)
- [91C](#) - Sauk-Prairie Airport (21 nm NW)
- [61C](#) - Fort Atkinson Municipal Airport (25 nm SE)
- [C47](#) - Portage Municipal Airport (26 nm N)

FBO, Fuel Providers, and Aircraft Ground Support

Business Name	Contact	Services / Description	Fuel Prices	Comments
		Airport management, Aviation fuel, Oxygen service, Aircraft parking		

[Wisconsin Aviation-Madison](#)

608-268-5000 (ramp or tiedown), Hangars,
 toll-free 1-800-594-5359 Hangar leasing / sales, GPU /
[\[web site\]](#) Power cart, ...
[\[email\]](#)

Avfuel
 100LL Jet A
 FS \$5.39 \$4.54
 Updated 10-Dec-2014

★★★★★
 26 [read write](#)

More info about
 Wisconsin Aviation-
 Madison

FS=Full service

UPDATE PRICES

Where to Eat: Catering, Restaurants, Food shops

Business Name	Contact	Services / Description	Distance	Comments
		no information available		
Pat O'Malley's Jet Room	608-268-5010	If you are affiliated with Pat O'Malley's Jet Room and would like to show here your services, contact info, web link, logo, and more, click here	on airport	not yet rated 1 read write

Where to Stay: Hotels, Motels, Resorts, B&Bs, Campgrounds

In this space we feature lodging establishments that are convenient to the Dane County Regional Airport-Truax Field. If your hotel/inn/B&B/resort is near the Dane County Regional Airport-Truax Field, provides convenient transportation, or is otherwise attractive to pilots, flight crews, and airport users, consider listing it here.

FEATURE A LODGING ESTABLISHMENT

AirNav users who flew into KMSN have stayed at...

	Miles	Price (\$)
CROWNE PLAZA HOTEL MADISON	1.6	140-190
COMFORT INN & SUITES MADISON - AIRPORT	1.9	84-85
HOWARD JOHNSON PLAZA HOTEL MADISON	1.7	63-64
DAYS INN MADISON NORTHEAST	3.7	67-85
COURTYARD MADISON EAST	2.4	179-217
RESIDENCE INN BY MARRIOTT MADISON EAST	1.9	159-160
MOTEL 6 MADISON EAST, WI	1.7	71-86

**Hotels in other cities near
 Dane County Regional
 Airport-Truax Field**

2 in Windsor	7 in Middleton
50 in Madison	2 in Verona
2 in De Forest	2 in Stoughton

Other hotels near Dane County Regional Airport-Truax Field

	Miles	Price (\$)
MOTEL 6 MADISON NORTH	1.7	54-57
ECONO LODGE MADISON	1.8	54-55
HAMPTON INN MADISON EAST TOWNE MALL AREA	1.9	101-169
RED ROOF INN MADISON, WI	1.9	65-75
RODEWAY INN & SUITES WI MADISON-NORTHEAST	1.9	58-80
SUPER 8 MADISON EAST	1.9	59-71
BEST WESTERN EAST TOWNE SUITES	2.0	85-90
ANNIE'S BED AND BREAKFAST	2.1	189-190
HOLIDAY INN MADISON AT THE AMERICAN CENTER	2.1	170-185
CAMBRIA SUITES MADISON	2.1	99-129
MICROTEL INN & SUITES BY WYNDHAM MADISON EAST	2.3	51-96
LA QUINTA INN & SUITES MADISON AMERICAN CENTER	2.4	95-105

FAIRFIELD INN & SUITES BY MARRIOTT MADISON EAST	2.4	149-169
GRANDSTAY RESIDENTIAL SUITES - MADISON EAST	2.5	94-104

Distances are approximate, and may vary depending on the actual route traveled and the location of the travel start on the airport.

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If your business provides an interesting product or service to pilots, flight crews, aircraft, or users of the Dane County Regional Airport-Truax Field, you should consider listing it here. To start the listing process, click on the button below

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Other Pages about Dane County Regional Airport-Truax Field

- [www.msnairport.com](#)
- [www.co.dane.wi.us/airport](#)
- [Page from the Wisconsin airport directory \(PDF\)](#)

[UPDATE, REMOVE OR ADD A LINK](#)

MARK POCAN
2ND DISTRICT, WISCONSIN

COMMITTEE ON OVERSIGHT
AND GOVERNMENT REFORM

COMMITTEE ON THE BUDGET

ASSISTANT WHIP



10 EAST DOTY STREET, SUITE 405
MADISON, WI 53703
(608) 258-9800

313 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-2906

POCAN.HOUSE.GOV

UNITED STATES
HOUSE OF REPRESENTATIVES

December 17, 2014

Federal Aviation Administration
Attention: Ms. Vivian Vilaro
Southwest Regional Office
Obstruction Evaluation Group
2601 Meacham Boulevard
Fort Worth, TX 76193

Subject: Water Tank Madison Lake View Reservoir 113 – Madison, Wisconsin
Aeronautical Study No. 2014-AGL-10297-OE

Dear Ms. Vilaro,

Madison Water Utility, in an effort to renew and upgrade its aging water system infrastructure, is proposing to replace a water tower on the north side of the City. This water tower has served the residents of the City of Madison and Dane County since 1938, and provides emergency water supply and firefighting capacity to the area. The tower is also used as a radio tower for the City of Madison and Dane County emergency radio system and the 911 emergency response systems. The combination of water supply and emergency response system infrastructure make this a critical infrastructure component in the public safety and public service network for the north end of Madison and Dane County.

The tower was originally built at this location in 1938 and it is proposed to replace the water tower in the same location with a structure of the same height with a larger diameter to provide necessary additional capacity. Madison Water Utility was notified by the FAA on November 7, 2014 that the proposed tower was a "Presumed Hazard" to air navigation. The proposed tower has been identified as an obstruction under the standards of Title 14, code of Federal Regulations (CFR) Part 77, as applied to Dane County Regional-Truax Field (MSN) in Madison, WI. Madison Water Utility has requested that additional study be completed in regard to the project.

The FAA determined that the existing tower was not a hazard to air navigation in April 2002 (Aeronautical Study No. 2002-AGL-285-OE). The proposed tower will not penetrate a horizontal plane 300 feet beneath the airport traffic pattern altitude for MSN and will have no impact on aircraft operations. The tower is located due west of the airport and is not in any of the landing approach or takeoff corridors of any of the three runways that currently exist at MSN. We have no knowledge of any plan to construct an additional runway or reconfigure any existing runway that would cause the proposed tower to be in a landing approach or takeoff corridor.

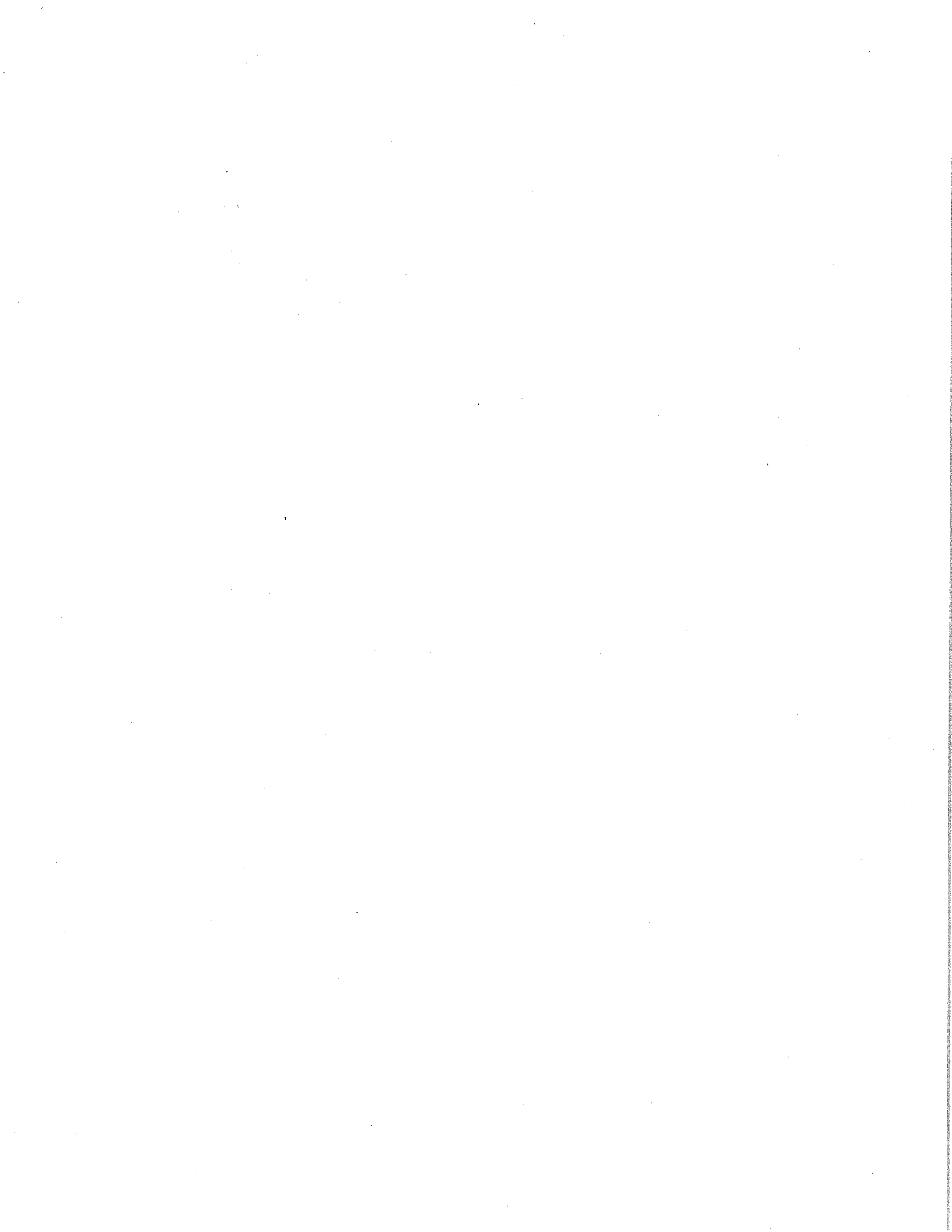
Based on the critical need and significant benefit to the area that exists with this project with regard to public service and public safety, I ask for the FAA to give full and fair consideration to the request for a determination of no impact to air navigation for the proposed tower, in hopes to allow the project to proceed to construction.

If you have any questions please contact Al Larson, Principal Engineer, at Madison Water Utility at 608-266-4653 or at allarson@cityofmadison.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mark Pocan".

Mark Pocan





Traffic Engineering and Parking Divisions

David C. Dryer, P.E., CAPP City Traffic Engineer and Parking Manager

Madison Municipal Building, Suite 100
215 Martin Luther King, Jr. Boulevard
P.O. Box 2986
Madison, Wisconsin 53701-2986
Phone: (608) 266-4761
Fax: (608) 267-1158
traffic@cityofmadison.com
www.cityofmadison.com

December 16, 2014

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
2601 Meacham Boulevard
Fort Worth, TX 76193

Attention: Vivian Vilaro

RE: Water Tank Madison Lakeview Reservoir 113 – Madison Wisconsin
Aeronautical Study No. 2014-AGL-10297-OE

On November 7, 2014, the City of Madison Water Utility received a “Notice of Presumed Hazard” from the FAA regarding the Lakeview Reservoir project. That notice was based on the fact that the proposed tank exceeds FAA obstruction standards established for the Dane County Regional Airport.

The City of Madison Lakeview Water Tower location has been the site for Public Safety Radio Systems since 1973 when an antenna was added for the Madison Police Department. The former UHF radio system for the City police and fire departments was put into service in 1988, and in 2001, that UHF system was replaced with the current 800 MHz Trunked Radio System.

The Lakeview Water Tower is a critical transmit site for the north side of the City Madison. Through the Dane County 911 Communications Center, this radio system provides critical communication capabilities for City of Madison Police, Fire & EMS, and Public Works, as well as assisting the Dane County Sheriff's Department in providing airport security. The current tower location is a mission critical facility, necessary to insure public safety as well as the safety and protection of aviators in the event of an incident at the Dane County Airport. The current location provides one aggregate point for many different uses and users, resulting in one known historical tower location rather than several discrete towers providing these services scattered on the north side of the City of Madison.

On April 11, 2002, the City of Madison received a notice of “Determination of No Hazard to Air Navigation” from the FAA (Aeronautical Study No. 2002-AGL-285-OE). This study had been conducted at the request of cell carriers wanting to locate equipment on the reservoir. The report approved the existing tank and listed an approved elevation of 1158 MSL, indicating there was no hazard to air navigation.

There has been a water tower at the Lakeview Hill site since 1938, and the FAA has determined in the past that this location was not a hazard to air navigation. The water tower is not in the flight patterns for any of the three runways at the Dane County Regional Airport, nor has it been reported as an obstruction to air navigation since the height restriction ordinance was instituted by Dane County in 1976.


December 16, 2014

Page 2

It is imperative to the operations of the current public safety radio system that a tower at the current height of the Lakeview Reservoir be maintained on the north side of Madison. The airport height restriction area encompasses almost the entire north side of the City of Madison. We respectfully request that the FAA grant the request for a determination of no impact to air navigation for the water tower replacement project.

Please contact David Nachreiner, Communications Operations Supervisor with the Traffic Engineering Division at 608-266-4768 or dnachreiner@cityofmadison.com with questions or concerns regarding the public safety radio system.

Sincerely,



David Dryer, P.E., CAPP
City Traffic Engineer and Parking Manager



Division of Transportation
Investment Management
PO Box 7914
Madison, WI 53707-7914

Scott Walker, Governor
Mark Gottlieb, P.E., Secretary
Internet: www.dot.wisconsin.gov

Telephone: 608-266-3351

Facsimile (FAX): 608-267-6748

January 6, 2015

MR. HANS HILBERT, ZONING INSPECTOR
DANE COUNTY ZONING DIVISION
DEPARTMENT OF PLANNING AND DEVELOPMENT
ROOM 116, CITY-COUNTY BUILDING
MADISON, WI 53703

Dear Mr. Hilbert,

We have recently reviewed a determination from the FAA for Madison Water Utility to replace an existing water tower northwest of the Dane County Regional Airport, aeronautical study number 2014-AGL-10297-OE.

Based on the location of 43° 08' 19.21" N Latitude 89° 22' 24.89" W Longitude the water tower would be in an area where Dane County has enacted and enforces a height limitation zoning ordinance (HLZO) protecting the airspace around the airport. At the planned site, the HLZO allows a maximum of 1072 ft above mean sea level (AMSL). At the planned height of 1160 ft, the water tower would exceed the allowed maximum by 88 feet. Two possible courses of action could be taken for there to be compliance with the HLZO: 1) lowering/relocating the water tower to comply with the HLZO, or 2) requesting a variance to the HLZO requesting the water tower be built as planned.

The decision to grant a variance to the HLZO is a local decision. Since the FAA's airspace study found there to be no hazard to air navigation, we will have no objection to the proposed structure so long as there are no objections from the Dane County Regional Airport. We do strongly encourage you to work closely with the Dane County Regional Airport to weigh the benefits of the structure to the community vs. the impact on the airport. Without careful and consistent regulation, variances can weaken the protective nature of the HLZO and create unintended negative consequences.

Sincerely,

A handwritten signature in black ink, appearing to read "Justin Hetland".

Justin Hetland
Airspace Safety Program Manager

CC:
Tim Butcher
Airport Operations Manager
Dane County Regional Airport



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
2601 Meacham Boulevard
Fort Worth, TX 76193

Aeronautical Study No.
2013-AGL-10284-OE

Issued Date: 12/19/2013

Jim Haberkost
Fulton Technologies
160 North Garden Ave
Roselle, IL 60172

****DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Monopole City of Madison-Lakeview WT Temp Relo
Location: Madison, WI
Latitude: 43-08-18.78N NAD 83
Longitude: 89-22-24.08W
Heights: 1007 feet site elevation (SE)
150 feet above ground level (AGL)
1157 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does exceed obstruction standards but would not be a hazard to air navigation provided the following condition(s), if any, is (are) met:
As a condition to this Determination, the structure is marked/lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, paint/red lights - Chapters 3(Marked),4,5(Red),&12.

This determination expires on 06/19/2015 unless extended, revised, or terminated by the issuing office.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed within 5 days after the temporary structure is dismantled.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. Any changes in coordinates and/or heights will void this determination. Any future construction or alteration, including increase to heights, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as

indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination did not include an evaluation of the permanent structure associated with the use of this temporary structure. If the permanent structure will exceed Title 14 of the Code of Federal Regulations, part 77.9, a separate aeronautical study and FAA determination is required.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (847) 294-7575. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2013-AGL-10284-OE

Signature Control No: 200036131-204075358

(TMP)

Vivian Vilaro

Specialist

cc: FCC

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November 20, 2014

Mr. Hans Hilbert
Zoning Inspector
Dane County Zoning Division
Department of Planning and Development
Room 116, City-County Building
Madison, Wisconsin 53703

Subject: **Appeal 3662 – Height Limitation Under §78.05 Dane County Ordinance
FAA Aeronautical Study No. 2014-AGL-10297-OE
Additional Information for Board of Adjustments**

Dear Mr. Hilbert:

As part of our testimony to the Dane County Board of Adjustments, Madison Water Utility would like to expand on the information we submitted to further support and promote our request for a variance from the maximum allowable height of a structure permitted within the Dane County Regional Airport Height Limitation Zone as provided under §78.05, Dane County Code of Ordinances. Our Lakeview water tower has served the north part of the City of Madison since 1938 and provides needed water supply, fire protection capacity and it is a critical communication hub for the Dane County 911 emergency radio system and the City emergency radio system. The tower was determined to be a non-hazard to air navigation by the FAA in 2002, copy attached, and we are confident that the FAA will find that the proposed tower is not a hazard to air navigation when they complete their aeronautical study of the proposal at the end of December 2014.

Background Information

Ground Elevation:	1014.7 MSL
Height to Roof Line of Existing 1938 Tank:	Approximately 124.4' AGL
Estimated Height to Peak of Existing 1938 Tank (+/- 5')	Estimated to be 130' AGL
Height of Highest Existing Antenna (4/6/2000 1-A Certification Survey)	Approximately 142.9' AGL
Existing 1938 Tank Roof Line Estimated Elevation:	1139.1 MSL
Elevation of Peak of Existing 1938 Tank Structure	1144.7 MSL
Top of Highest Existing Antenna:	1157.6 MSL
Existing 1938 Tank diameter at Roof Line	Estimated at 30 feet

Minimum Water Pressure

To meet established standard level of service, a water system is required by State regulation to provide minimum water pressure at the service connection. Pressure within the water system is determined by height of the water above the ground surface. A minimum pressure of 35 pounds per square inch (psi) requires a water height of 81 feet. At Lakeview this would equate to an elevation of 1096 MSL for Pressure Zone 5. The existing hydraulic grade line for Pressure Zone 5 has been established since 1938 at elevation 1138 MSL to meet minimum supply and fire fighting requirements. This provides a minimum pressure within Pressure Zone 5 of 54 psi. A pressure range of between 50 and 60 psi is considered normal for water systems. For fire protection capacity the minimum required pressure is reduced to 20 psi however the total quantity of water available at the hydrant is dependent upon the size of the pipe and the pressure available in the system.

Fire Protection Capacity

Minimum fire flow capacity required at 20 psi by Wisconsin DNR per NR §811.70 is 500 gallons per minute (gpm). The DNR also states that the minimum fire flow capacity be established by the type of buildings to be protected. Madison Water Utility (MWU) has established minimum fire flow requirements of 1,000 gpm for single family residential development and 2,500 to 3,500 gpm for Community Mixed use such as that found at the Dane County Human Services Campus. It is required that both of these flows be provided for a minimum of 2 hours.

Currently within Pressure Zone 5 the system has a fire supply deficiency that was identified in the 2006 Water Master Plan. Providing the required fire protection supply capacity for both the residential development within the zone and the institutional development, Dane County Human Services, requires significantly higher water storage volumes. Additionally it was identified that Pressure Zone 6, which covers much of the north side of Madison, also had a water storage deficiency.

To limit the number of reservoirs in the airport height limitation area and to minimize impact on the community, it was decided to build both tanks on the existing site. This provides the needed water storage within the constraints of the current Lake View Reservoir site. Rebuilding on the current site has minimal impact on the Lake View Hill Park and the Dane County Human Services campus.

Hazard to Air Navigation

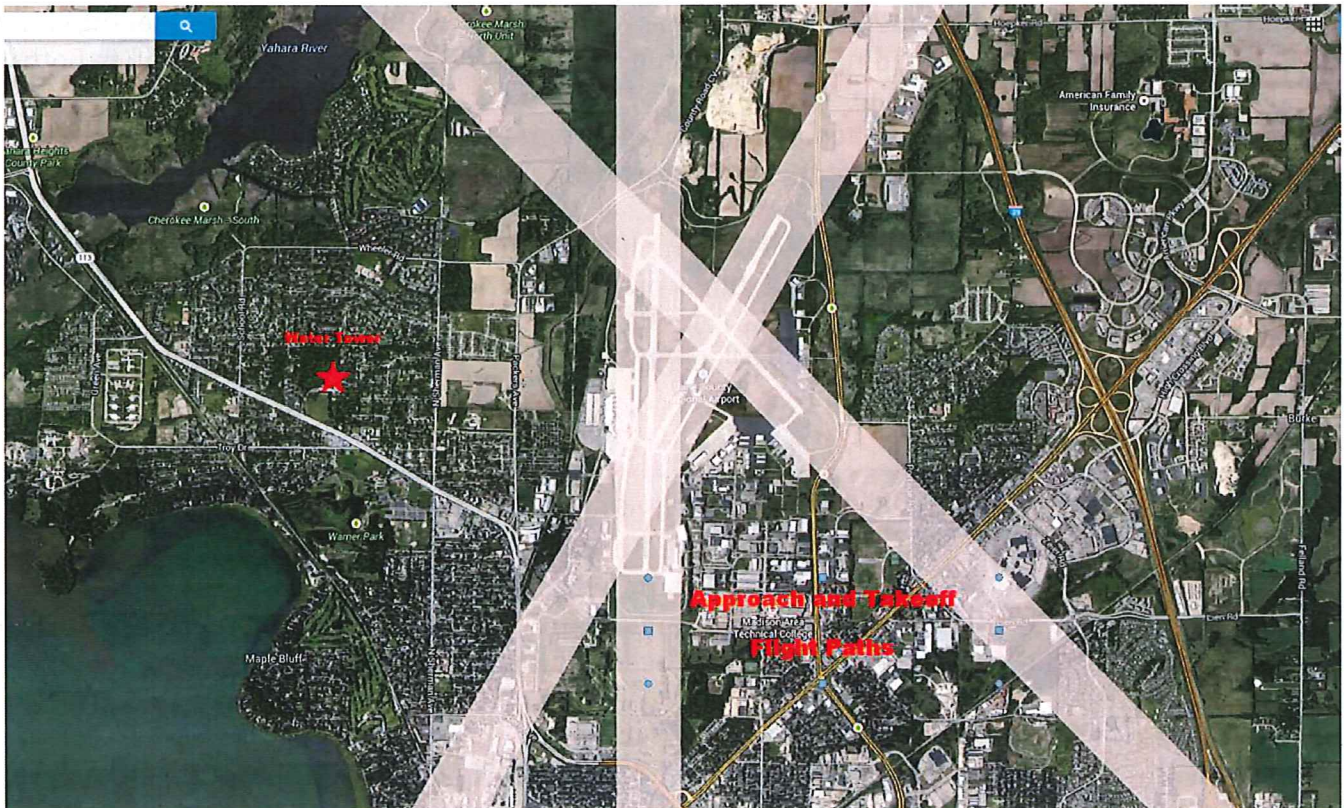
On November 7, 2014 MWU received a "Notice of Presumed Hazard" from the FAA regarding the Lakeview Reservoir project. That notice was based on the fact that the proposed tank exceeds FAA obstruction standards established for the Dane County Regional Airport. MWU has requested that the FAA conduct a study of the structure to determine if in fact it is a hazard to air navigation. The comment period for that study will conclude on December 19, 2014. We expect a finding shortly after the first of the year.

On April 11, 2002, the City of Madison received a notice of "Determination of No Hazard to Air Navigation" from the FAA for the existing tank that listed an approved elevation of 1158 MSL. The

study of the structure was conducted in 2002 at the request of cell carriers wanting to locate their equipment on the reservoir. No significant changes have been made to the reservoir since that determination of no hazard to air navigation in 2002.

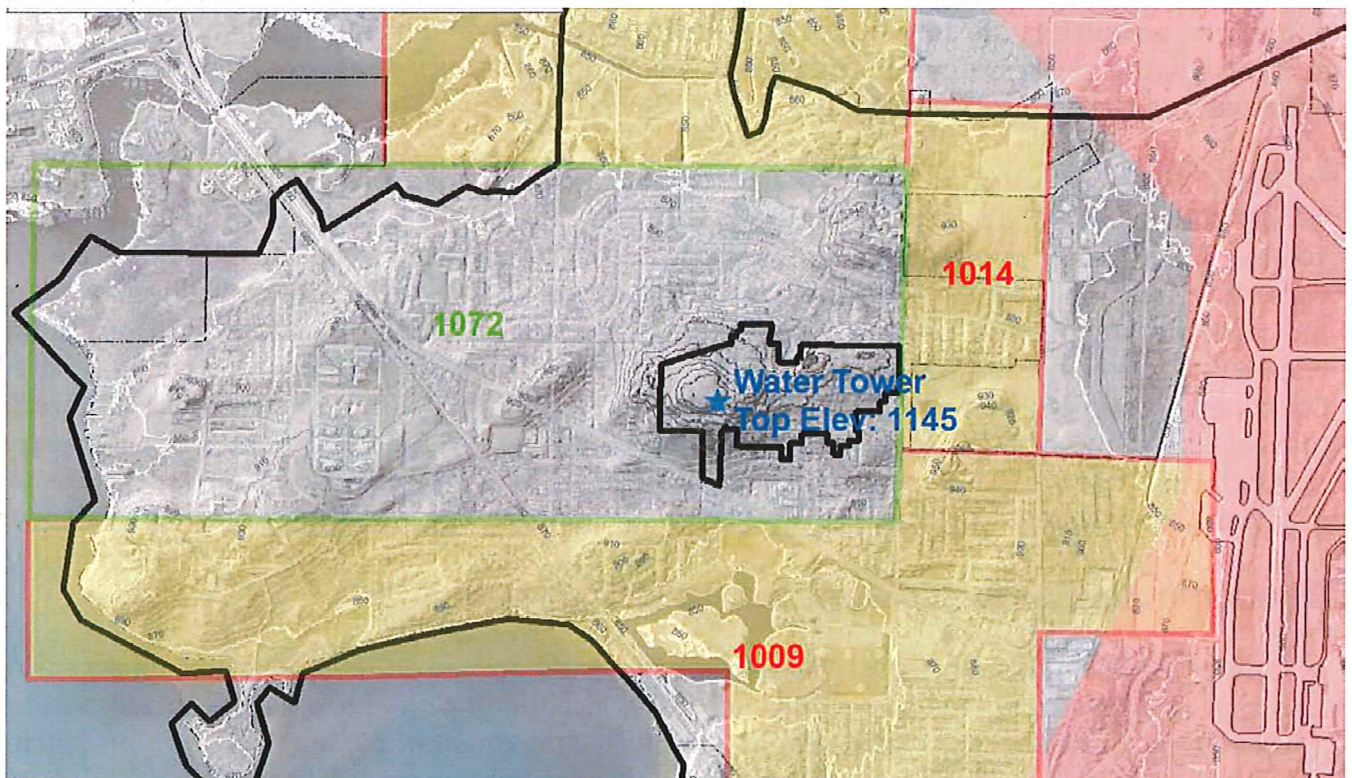
The Lakeview Reservoir is located approximately 8,700 feet west of the main runway at the Dane County Regional Airport and is not in any of the takeoff or landing flight patterns of the three runways at the airport. We refer to the aerial photo included below. The tank would also not be in the flight patterns around the airport and would therefore not see normal air traffic. The reservoir is equipped with a FAA approved aviation warning light and to our knowledge has not been reported as an obstruction to air traffic. Since the Height and Use Limitations Applicable in the Vicinity of the Dane County Regional Airport, §78 of the Dane County Ordinances was adopted in 1976 the County has not expressed any concerns to Madison Water Utility about the Lakeview Reservoir being a hazard to air navigation nor has there been a request to mitigate a hazard to air navigation created by the reservoir.

The existing tank does exceed the height limitations set by both the Dane County Zoning Code and the FAA with regard to the area around the Dane County Regional Airport. By strict definition the tank is an obstruction and it has been an obstruction since it was constructed in 1938. The question is, is it a hazard to air navigation? Due to the facts presented here and previous FAA findings, it is our opinion that the Lakeview Reservoir is not a hazard to air navigation. We are confident that the FAA will determine the reservoir is not a hazard to air navigation and a variance to the Zoning Ordinance should be granted.



Alternatives Considered to the Proposed Project

Due to the hydraulic requirements of the water system on the north end of the City of Madison and the local topography, there are no alternative sites available that would facilitate construction of a water storage reservoir that would serve Pressure Zone 5. The majority of the north side of Madison has a height limitation of 1072 or lower making a gravity fed reservoir unbuildable within the airport restriction zone without a variance (see Figure below). To meet the requirements of the height restriction ordinance, the tower would need to be moved to the west away from the airport out of the restricted area and out of our service area. This move would result in a lower site elevation thus making the reservoir taller. Any reservoir located out of the restricted area would be remote from the Pressure Zone 5 service area requiring substantial piping at great cost to provide service.



DNR code NR 811 Subchapter IX: 811.62 (3) indicates a requirement for elevated storage for any service area that provides water service for greater than 50 homes. This is further supported by MWU's well established preference for gravity fed storage due to its overall reliability. To provide gravity fed storage to Pressure Zone 5, an elevated tank will be required with a top elevation that would exceed 1072. This height limitation on the proposed water reservoir results in the use of a pumping station to provide service to Pressure Zone 5. This alternative does not meet basic operational standards for a service area of this size. Due to the undesirable nature of using a pumping station for Pressure Zone 5 this alternative was only briefly considered.

The Lakeview Reservoir is unique in that it also provides a key location for the Dane County 911 radio system. Alternatives for the 911 radio system would require a tower that would exceed the 1072 limitation. To facilitate a tower of the height necessary to provide for the 911 radio system, a site on the north end outside of the airport height restriction zone would be required. This would require significant infrastructure and development to make an alternate site viable and could impact radio coverage and reliability. No alternatives for a radio tower have been developed.

Unnecessary Hardship Imposed on Madison Water Utility and Dane County 911 System

MWU and the Dane County 911 radio system would suffer hardship due to the fact that water service to the north side of the City of Madison would be compromised and fire flow capacity may be impacted. The Dane County 911 radio system that provides critical communication coverage for police, fire, ambulatory, airport security, and other systems would be impacted and forced to relocate and reconfigure their system. Both systems would lose the use of an existing site that has been occupied by a water tower since 1938.

Both MWU Pressure Zone 5 and Pressure Zone 6 are currently lacking sufficient fire flow capacity in both the residential and the commercial/institutional areas due to limited water storage reservoir volume. A new water tower with a larger storage capacity will need to be constructed at the existing water tower location to meet these fire flow requirements. The new water tower will also need to be at the same elevation as the existing water tower to meet the WDNR requirement of 35 psi minimum water system pressure for Pressure Zone 5 and provide the necessary height requirement for the Dane County emergency 911 radio system. A new water storage reservoir is also needed for Pressure Zone 6 to meet established fire fighting standards for the Dane County Regional Airport, area commercial and industrial developments and residential neighborhoods. Eliminating the Lake View Reservoir site from consideration will create a significant hardship on the efficient operation of the Madison water system.

What are the Unique Physical Characteristics of the Project?

This project is unique in that it is a combination public water utility and public emergency radio tower project providing for the public need and necessity with the objective of sustaining and improving public safety. The water tower is a critical component of the north side water distribution and supply system. The water tower provides reliable fire fighting capacity and supply. The tower also provides a critical communication node for the 911 emergency radio system serving the police, fire, ambulatory, security, and other governmental agency functions around the County. This project is being proposed by a public utility owned by the City of Madison and will benefit Dane County and the Airport. No other agency, private party, or organization will be looking to construct a project of this type or magnitude.

What would be the effect on the property, community, neighborhood, and the general public interest if the variance were granted?

The Lake View Hill Park site has been used as a public water tower site since 1938. Rebuilding on the existing site will have no impact either negative or positive on the property, community,

neighborhood, park users, or the general public. Rebuilding the water tower on the existing site at the same elevation will have no adverse impact on Dane County Regional Airport.

The new water tower will have a positive impact on property, community, neighborhood, and the general public. Additional storage capacity will improve water system reliability, increase fire flow supply capacity in both Pressure Zone 5 and Pressure Zone 6. Continuing to operate this critical communication node of the Dane County 911 emergency radio system and the City emergency radio system will provide for the public good and support and sustain the public safety and rescue system.

Would granting this variance request set a negative precedent and undermine §78 the HLZO of the Dane County Zoning Code?

Granting a variance for the reconstruction of the Lakeview Reservoir will not set a negative precedent and it will not undermine the authority of Chapter 78 of the Dane County Zoning Code. This project is a public works water supply system project that is unique and would only be proposed by a public water utility. It is anticipated that this reservoir will meet the water storage needs of the area for the next 75 to 100 years. Additionally height restriction variances of this type have been granted for water towers in Madison and across the State of Wisconsin with no negative impact on height restriction ordinances or authority.

Why is the approval of this variance request in the best interests of the citizen's of the City of Madison and of Dane County?

A water tower has existed at the Lake View Hill site since 1938. The tower has been determined by the FAA to not be a hazard to air navigation in the past and we expect that finding to be confirmed by the FAA at the end of 2014. The water tower is not in the flight patterns for the three runways at the Dane County Regional Airport and has not been reported to be an obstruction to air navigation since the height restriction ordinance was instituted by Dane County in 1976.

The Lake View Reservoir provides critical water supply infrastructure to the Madison water supply and distribution system. The reservoir provides fire fighting capacity for Pressure Zone 5 and with the addition of storage capacity for Pressure Zone 6 will provide needed storage for the majority of the north side of the City of Madison. All properties on the north side of Madison including the Dane County Regional Airport, Dane County Human Services, residential, commercial, and industrial areas will benefit from this project.

The emergency radio system that provides critical communication capability for the Dane County 911 emergency radio system to provide service for police, fire, ambulatory, and security function will also benefit from this project. It is in the best interests of Dane County and the City of Madison to proceed with this project for the benefit of the public safety, fire, and rescue systems of the area.

Hans Hilbert, Zoning Inspector
Dane County Zoning Division
Appeal 3662 – Madison Water Utility Reservoir
November 20, 2014
Page 8 of 8

Action Requested

We are recommending that the Dane County Board of Adjustments delay any action on this issue until a determination has been made by the FAA. We expect that this action would be completed by early next year and the Dane County Board of Adjustments could take the issue up at its January 2015 meeting. This will allow us to award the construction contract and still start construction in the spring.

We look forward to your favorable review of our request. We are happy to provide you with any additional information you need regarding this issue. Please call me at 608-266-4653 or via email at alarson@madisonwater.org with any questions.

Sincerely,

MADISON WATER UTILITY



Alan L. Larson, PE, BCEE
Principal Engineer – Water



Federal Aviation Administration
Great Lakes Regional Office
2300 East Devon Avenue-AGL-520
Des Plaines, IL 60018

Aeronautical Study No.
2002-AGL-285-OE
Prior Study No.
1996-AGL-4085-OE

Issued Date: 4/11/2002

HEIDI FISCHER
MADISON MUNICIPAL BUILDING
215 MARTIN LUTHER KING, JR. BLVD.
MADISON, WI 53701

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Water Tank
Location: MAPLE BLUFF, WI
Latitude: 43-8-19.3 NAD 83
Longitude: 89-22-25
Heights: 143 feet above ground level (AGL)
1158 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does exceed obstruction standards but would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

As a condition to this Determination, the structure should continue to be marked and/or lighted utilizing red lights.

This determination expires on 10/11/2003 unless:

- (a) extended, revised or terminated by the issuing office.
- (b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

This aeronautical study included evaluation of a 143 foot AGL structure that exists at this time. Action will be taken to ensure aeronautical charts are updated to reflect this existing height and the most current coordinates/elevation as indicated in the above description.

If we can be of further assistance, please contact our office at (847)294 7566. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2002-AGL-285-OE.

Signature Control No: 57937-80168

(EBO)

Bridgitt S. Arledge
Specialist

Attachment(s)
Frequency Data

cc: NACO w/map

Frequency Data for ASN 2002-AGL-285-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
824	896	MHz	300	W
2	0	GHz	80	dBm
6	0	GHz	80	dBm
10	0	GHz	80	dBm
11	0	GHz	80	dBm
18	0	GHz	80	dBm
23	0	GHz	80	dBm



U.S. Department
of Transportation

**FEDERAL AVIATION
ADMINISTRATION**

Great Lakes Region
Illinois, Indiana, Michigan,
Minnesota, North Dakota,
Ohio, South Dakota
Wisconsin

System Management Branch
Attention, AGL-530
2300 East Devon Avenue
Des Plaines, Illinois
60018-4686
IN REPLY REFER TO
AERONAUTICAL STUDY NO.
91-AGL-2089-OE

DETERMINATION OF NO HAZARD TO AIR NAVIGATION

S P O N S O R	Mr. James Blotz: Madison Water Utility 523 E. Main Street Madison, WI 53703	CONSTRUCTION LOCATION	
		PLACE NAME Madison, WI	
		LATITUDE 43° 08' 25"	LONGITUDE 89° 17' 00"
		HEIGHT (IN FEET)	
CONSTRUCTION PROPOSED	DESCRIPTION Water Tank	ABOVE GROUND 115	ABOVE MSL 1145

An aeronautical study of the proposed construction described above has been completed under the provisions of Part 77 of the Federal Aviation Regulations. Based on the study it is found that the construction would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the construction would not be a hazard to air navigation provided the following conditions are met:

Conditions: The structure is marked and lighted in accordance with Chapters 3, 4, 5, & 13 of FAA Advisory Circular AC 70/7460-1, "Obstruction Marking and Lighting."

Supplemental notice of construction is required any time the project is abandoned (use the enclosed FAA form), or
At least 48 hours before the start of construction (use the enclosed FAA form).
Within five days after the construction reaches its greatest height (use the enclosed FAA form).

This determination expires on **MAR 2 1994** unless:
(a) extended, revised or terminated by the issuing office;
(b) the construction is subject to the licensing authority of the Federal Communications Commission and an application for a construction permit is made to the FCC on or before the above expiration date. In such case the determination expires on the date prescribed by the FCC for completion of construction, or on the date the FCC denies the application.

NOTE: Request for extension of the effective period of this determination must be postmarked or delivered to the issuing office at least 15 days prior to the expiration date.

This determination is subject to review if an interested party files a petition on or before **AUG 23 1992**. In the event a petition for review is filed, it should be submitted in triplicate to the Manager, Airspace Branch ATP-240, Federal Aviation Administration, Washington, D.C. 20591, and contain a full statement of the basis upon which it is made.

This determination becomes final on **SEP 1 1992** unless a petition for review is timely filed, in which case the determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review.

An account of the study findings, aeronautical objections, if any, registered with the FAA during the study, and the basis for the FAA's decision in this matter will be found on the following page(s).

If the structure is subject to the licensing authority of the FCC, a copy of this determination will be sent to that Agency.

This determination, issued in accordance with FAA Part 77 concerns the effect of this proposal on the safe and efficient use of the navigable airspace by aircraft and does not relieve the sponsor of any compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

SIGNED for Richard M. Wood Douglas F. Powers TITLE Manager, System Management Branch, AGL-530

ISSUED IN Des Plaines, Illinois ON JUL 24 1992

Subsequent to circularization it was established the proposed structure would be located approximately 2.36 nautical miles east of the Dane County Regional-Traux Field Airport, Madison, WI, not 2.38 miles west as stated in the circular. It would exceed the obstruction standards of the Federal Aviation Regulations, Part 77 as follows:

Section 77.23(a)(5) by 61 feet instead of 55 feet as stated in the circularization - A height exceeding the conical surface of the Dane County Regional - Truax Field Airport.

The Proposal was circularized for public comment by letter dated May 22, 1992. Four letters of objection were received as a result of the circular.

The state of Wisconsin Department of Transportation raised concerns over the following points:

1. Violation of Federal Aviation Administration Height Limitation Zoning by 45 feet over 1100 AMSL. Local zoning regulations are not considered for purposes of this aeronautical study.
2. Visual approached to runway 31 may be effected.
3. New instrument approach at Cottage Grove may be degraded.
4. Location within 1800 feet of USH 151 a VFR Corridor to Dane County Airport.

The Aircraft Owners and Pilots Association and the Dane County Regional Airport objections were the same as #2 above plus IFR approaches to the same runway. The airport further objected due the violation of a county ordinance on height restriction. Any state or local ordinance is not a subject for consideration in this aeronautical study.

The Air Transport Association felt the tower could cause a degradation of service due to the violation of TERPS criteria.

Study for Visual Flight Rules (VFR) effect disclosed that the proposal would be below the traffic pattern airspace area but would not affect traffic pattern altitudes at Dane County Regional-Traux Field Airport, Madison, WI. The study revealed that the structure would have no impact on any other known or proposed public use airport. Additionally, at 115 feet above ground level (AGL) the structure would not penetrate the altitudes considered available for VFR enroute operations. The structure would be appropriately charted and obstruction marked and lighted to assure aeronautical conspicuity.

Aeronautical study for Instrument Flight Rules (IFR) effect disclosed no adverse effect upon IFR operations or procedures. The proposal would have no effect on any existing or planned IFR operations, procedures or minimum flight altitudes, or air navigation and communication facilities.

The cumulative impact resulting from the proposed construction when combined with the impact of other existing or proposed structures was negligible.

Therefore, it is determined the proposed structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities and would not be a hazard to air navigation.

The FAA hereby requests that proper notice be given for any future construction or alteration that would exceed the above described heights, including any increase to the ERP, alteration to the transmitting frequency, and/or addition of any other transmitting devices.

This decision is based solely on the foregoing description of the structure, which includes location, and height.

The FAA hereby requests that proper notice be given for any future construction or alteration that would exceed the above described heights.

This determination does not include temporary construction equipment such as cranes, derricks, etc., which may be used during the actual construction phase of this proposal. Such equipment which has a height greater than the proposed structure and a height which would exceed the notice standards of Part 77 of the Federal Aviation Regulations requires separate notice. If prior notice for temporary construction equipment is required, please complete and return the enclosed FAA Form 7460-1.



Water Utility

City of
Madison

Gary A. Graham, Manager



December 15, 1992

Mr. William J. Fleck
Dane County Zoning
Room 116 City County Building
210 Martin Luther King Jr. Boulevard
Madison, WI 53709

Dear Mr. Fleck:

The Madison Water Utility hereby requests that the Dane County Board of Adjustment grant a variance in accordance with Chapter 78 of the Dane County Code of Ordinances to allow the Water Utility to construct a water tower in the High Crossing Plat in the City of Madison. This variance is necessary because the elevation of the top of the tower exceeds the allowable limit shown on the "Height Limitation Zoning Map, Dane County Regional Airport, Madison, Wisconsin."

This water tower will be located in the NW 1/4 of the SW 1/4, Section 23, Town 8 North, Range 10 East, approximately 500 ft. southeast of the intersection of High Crossing Boulevard and Cross Hill Drive.

The top of the water tower will be constructed at elevation 1145 U.S.G.S. Datum, which exceeds the allowable height for this zone by 45 feet. It is necessary for the Water Utility to construct this water tower to this height in order to meet the minimum static pressure requirements contained in the Administrative Codes of both the Wisconsin Department of Natural Resources and Public Service Commission.

The Madison Water Utility has recently submitted a Notice of Proposed Construction to the Federal Aviation Administration for this site. On July 24, 1992 the FAA issued a Determination of No Hazard to Air Navigation for a water tower to be built to the same elevation on a different site within this same zone. The Water Utility requests that if an FAA determination has not been received for the new site by the date of the hearing, the Board of Adjustment grant the variance subject to receiving an FAA Determination of No Hazard to Air Navigation for this site.

Sincerely,

MADISON WATER UTILITY

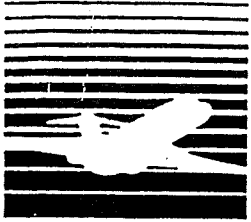
A handwritten signature in cursive script, appearing to read "Gary A. Graham", is written over the typed name.

Gary A. Graham
Water Utility Manager

DC:am
001/16

523 East Main Street
Madison, Wisconsin 53703
608 266 4651





DANE
COUNTY
REGIONAL
AIRPORT



TRUAX FIELD

July 29, 1992

William J. Fleck
Dane County Zoning
Room 116, City-County Building
210 Martin Luther King, Jr. Blvd.
Madison, WI 53709

Dear Bill:

The Federal Aviation Administration recently completed an aeronautical study of the City of Madison's proposed High Crossing water tower, and determined that the structure will not be a hazard to air navigation. Based upon this, Dane County Regional Airport does not object to the construction of this water tower.

As stated in the enclosed correspondence from FAA, the tower must be marked and lighted in accordance with FAR Part 77 requirements. In addition, if any equipment utilized during construction of the tower will exceed the ultimate height of the tower, the city must obtain prior approval from FAA through the use of FAA Form 7460-1: "Notice of Proposed Construction or Alteration."

Sincerely,

Peter L. Drahn, AAE
Airport Director

wl

Enclosure

cc: Gary Graham, Madison Water Utility

VARIANCE APPEAL

DANE COUNTY BOARD OF ADJUSTMENT

(I) (WE) City of Madison hereby appeal to the
Dane County Board of Adjustment for a variance on the following described land:
NW SW - Section 23, Parcel #0810-233-0099-0.

in the City of Madison which is located in the Agri pending C-2,C-3
Zoning District.

The variance is required because Section 78.03 of the Dane
County Zoning Ordinance requires that Height limitations of structures, trees
not to exceed those height limits indicated on the map referred to in Section
78.02.

Proposed use of property, building, addition or alteration if variance is
granted Water tower

Reason/s why applicant cannot comply with ordinance requirements _____

This height is required to meet minimum static pressure requirements contained
in the Administration Code for ~~P.A.A.~~ and Public Service Commission.

DATE: Dec 15, 1992 James R. Blot
Signature - Applicant or Agent

Madison Water Utility
Mailing Address 523 E. Main St.
Madison WI 53703

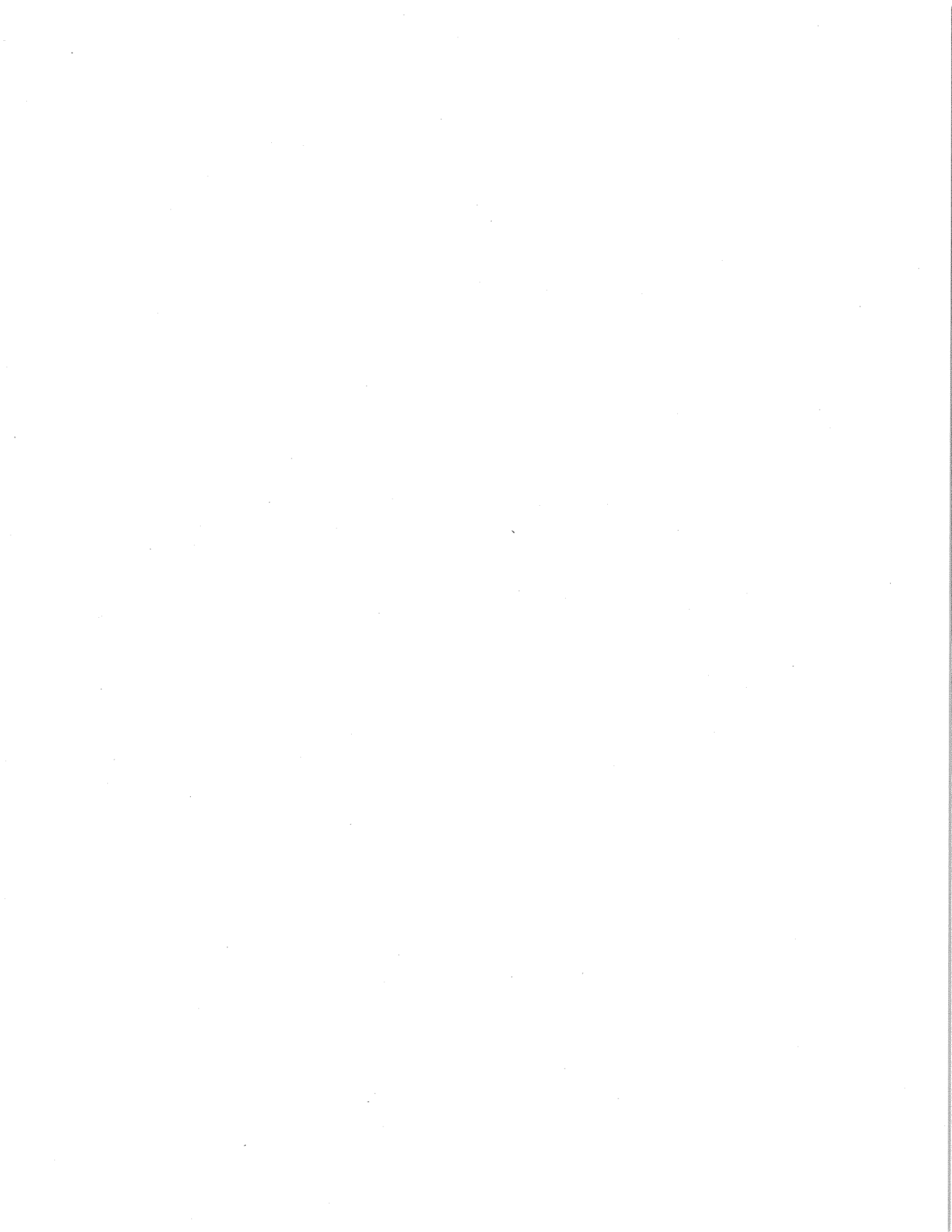
ACTION BY BOARD OF ADJUSTMENT

FINDING OF FACT IS INCLUDED IN THE MINUTES OF THE PUBLIC HEARING OF _____

DECISION: P.H. 1/28/93: Grant, with condition, variance of 45 feet from maxi-
mum height allowed by Airport Height Limitation Map of Dane County permit con-
struction of water tower within City of Madison as proposed.

CONDITIONS: 1). Variance granted subject to project receiving all necessary
governmental agency approval.

Appeal No. 2350 Zoning Permit No. _____ Issued _____



The proposed construction would be located approximately 2.36 nautical miles east of Dane Co. Regional - Truax Field Airport, Madison, WI.

The proposal exceeds the obstruction standards of Federal Aviation Regulations, Part 77, as follows:

Section 77.23(a)(5) by 56' - a height exceeding a conical surface as applied to Dane Co. Airport.

The proposal was circularized for public comment by letter dated January 26, 1993. No letters of objection were received as a result of circularization.

Wisconsin Department of Transportation noted that the proposal would exceed a local height limitation law. This would be a matter to be settled between the proponent and the legal entity having jurisdiction in the matter.

Aeronautical study disclosed the proposal would have no effect on any existing or planned instrument flight rules (IFR) operations, procedures, minimum flight altitudes, or air navigation and communication facilities.

Study for visual flight rules (VFR) effect disclosed that the proposal would underlie traffic pattern airspace for Category "C" and "D" aircraft. However, the structure does not penetrate a plane 300 feet beneath the airport traffic pattern altitude and would have no impact on these aircraft operations. At 125 feet above ground level, the antenna tower would not penetrate altitudes considered available for VFR enroute operation.

The cumulative impact resulting from the proposed construction, when combined with the impact of other existing or proposed structures, was negligible.

Therefore, it is determined that the proposed structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities and would not be a hazard to air navigation.

This decision is based solely on the foregoing description of the structure, which includes location, height, ERP, and operating frequency.

The FAA hereby requests that proper notice be given for any future construction or alteration that would exceed the above described heights, including any increase to the ERP, alteration to the transmitting frequency, and/or the addition of any transmitting devices.

This determination does not include temporary construction equipment such as cranes, derricks, etc., which may be used during the actual construction phase of this proposal. Such equipment which has a height greater than the proposed structure and a height which would exceed the notice standards of Part 77 of the Federal Aviation Regulations requires separate notice. If prior notice for temporary construction equipment is required, please complete and return the enclosed FAA Form 7460-1.