Chapter 1

INVENTORY

The inventory chapter of existing conditions is the initial step in the preparation of the Merrill Municipal Airport (RRL) Master Plan. The inventory will serve as an overview of the airport's physical and operational features, including facilities, users, and activity levels, as well as specific information related to the airspace, air traffic activity, and role of the airport. Finally, a summary of socioeconomic characteristics and review of existing environmental conditions on and adjacent to the airport are thoroughly detailed, which will provide further input into the study process.

Information provided in Chapter One serves as the baseline for the remainder of the master plan, which is compiled using a wide variety of resources, including: applicable planning documents; on-site visits; interviews with airport staff, tenants, and users; aerial and ground photography; federal, state, and local publications; and project record drawings. Specific sources are listed below, and environmental resources are detailed at the end of this chapter.

Inventory Source Documents:

- 2009 Merrill Municipal Master Plan/Airport Layout Plan (ALP) Update; 2016 ALP Update
- City of Merrill's airport website (https://ci.merrill.wi.us/airport)
- City of Merrill Strategic Plan, 2020-2024
- City of Merrill Comprehensive Plan (2017)
- Merrill Municipal Airport Federal Aviation Administration (FAA) Form 5010, *Airport Master Record*

AIRPORT SETTING AND BACKGROUND

LOCALE

The City of Merrill is located in Lincoln County in north-central Wisconsin, approximately 160 miles north of Madison and 110 miles northwest of Green Bay. Merrill serves as the county seat, and with a population of 9,347 as of the 2020 Census, it is the largest community within Lincoln County. The "City of Parks,"

as it is known locally, is situated along the banks of the Wisconsin River and at the edge of Wisconsin's Northwoods, an area encompassing more than 500,000 acres that is known for its abundant forests and lakes. In this locale, residents and visitors enjoy diverse scenery, a rich history, and a thriving local economy. Major employment industries in the area include insurance, manufacturing, finance, education, and retail.

Merrill Municipal Airport is situated within the Merrill city limits on the northwest edge of town, near the Merrill Industrial Park. The airport encompasses approximately 430 acres and sits at an elevation of 1,318.2 feet above mean sea level (MSL). The surrounding major surface roadways include U.S. Route 51, which runs north/south on the east side of Merrill, and Wisconsin Highway 107 (WIS 107), which borders the airport's west side and connects to Taylor Street. From Taylor Street, Champagne Drive and Airport Road provide access to airport property. **Exhibit 1A** depicts the airport in its regional setting.

AIRPORT ADMINISTRATION

Merrill Municipal Airport is owned and operated by the City of Merrill. An Airport Commission is responsible for operational and fiscal oversight management of the airport. The Commission consists of five members (including one alderperson) who are appointed by the mayor and confirmed by the city council. The Commission is responsible for electing its own chairman and secretary to maintain records and report to council on a monthly basis. Airport commissioners serve six-year terms. An airport manager provides day-to-day oversight of the airport and its maintenance and serves as a staff liaison to the Airport Commission. The airport is staffed via the fixed base operator acting as airport manager Monday through Friday from 8:00 a.m. to 5:00 p.m.

CLIMATE

Climate and local weather conditions are an important consideration in the master planning process as they can significantly impact an airport's operations. For example, high surface temperatures and humidity increase runway length requirements, and runway orientation is dependent upon predominant wind patterns for the area. Cloud cover percentages and frequency of other climatic conditions also determine the need for navigational aids and lighting.

Merrill experiences a humid continental climate with four distinct seasons. Winters are severe, while summers are generally warm. The weather is generally humid, and there is no dry season. **Exhibit 1B** displays weather patterns in the city. July has the highest average maximum temperature of 80.2 degrees, while January is the coldest month with an average minimum temperature of 3.4 degrees. Annual rainfall totals 33.8 inches and is most plentiful during the summer, with June being the rainiest month, averaging 4.6 inches. Annual snowfall totals 54.3 inches, with January averaging the most snow at 12.4 inches.


LAKE SUPERIOR
MICHIGAN
Superior
53
MERRILL
MUNICIPAL AIRPORT
Spooner
8
8
Marinette
Eau Claire
10
Green Bay
94
MINNESOTA
51
Oshkosh
La Crosse
LAKE
MICHIGAN
43
90
Madison
94
Milwaukee
Racine
61
43
IOWA
ILLINOIS
WISCONSIN


Oneida
RHINELANDER
8
8
Price
14
TOMAHAWK
86
PARISH
45
51
Lincoln
RIB
LAKE
MERRILL
MUNICIPAL AIRPORT
Langlade
Taylor
MERRILL
GOODRICH
ANTIGO
PINE RIVER
64
107
51
HOGARTY
ATHENS
52
Marathon
WAUSAU
29
MARATHON CITY
29
45
29
STRATFORD
MOSINEE
ELDERTON
51
LINCOLN COUNTY


51
K
Alexander Lake
MERRILL
MUNICIPAL AIRPORT
Pesobic
Lake
107
Hillside Drive
107
Pier Street
51
K
Taylor Street
E 14th Street
Wisconsin River
Merrill
64
64
Wisconsin River
S Center Avenue
Joe Snow Road
LOCATION MAP

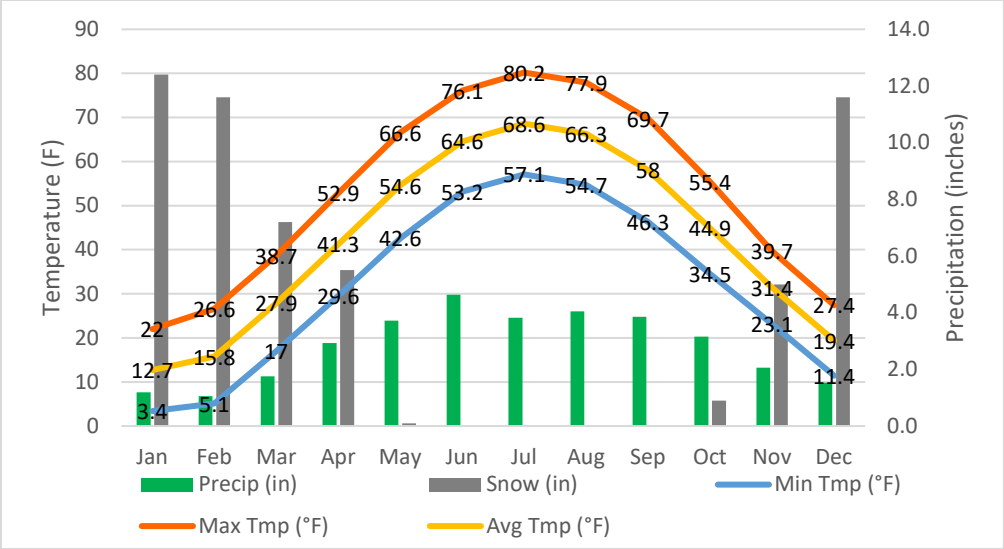


Exhibit 1B – Merrill Weather Patterns

Table 1A indicates that visual meteorological conditions (VMC) occur 87.65 percent of the time. When under VMC conditions, pilots can operate using visual flight rules (VFR) and are responsible for maintaining proper separation from objects and other aircraft. Instrument meteorological conditions (IMC) account for all weather conditions less than VMC conditions that still allow for aircraft to safely operate under instrument flight rules (IFR). Under IFR, pilots rely on instruments in the aircraft to accomplish navigation. IMC conditions occur 7.46 percent of the time. Less than IMC, or poor visibility conditions (PVC), are present 4.89 percent of the time. These weather conditions are lower than instrument approach minimums, making the airport inaccessible to most air traffic.

Table 1A | Weather Conditions

Condition	Cloud Ceiling	Visibility	Percent of Total
VMC	≥ 1,000' AGL	≥ 3 statute miles	87.65%
IMC	≥ 500' AGL and < 1,000' AGL	≥ 1 to < 3 statute miles	7.46%
PVC	< 500' AGL	< 1 statute mile	4.89%

VMC: Visual Meteorological Conditions
IMC: Instrument Meteorological Conditions
PVC: Poor Visibility Conditions
AGL: Above Ground Level

Station ID: 72644904891 MERRILL MUNICIPAL AIRPORT, WI US; observations from 1/1/2013 thru 12/31/2022

CAPITAL IMPROVEMENT HISTORY

Significant improvements have been made to the airport since its establishment. To assist in funding capital improvements, the FAA and Wisconsin Department of Transportation - Bureau of Aeronautics (WisDOT BOA) have provided funding assistance to Merrill Municipal Airport primarily through the Airport Improvement Program (AIP). Airport improvement funds are collected through user fees, additional taxes on airline airfares, and aviation fuel taxes. As airports grow, or safety standards change over time,

funding is needed to maintain a safe and efficient airport environment. The *Airport and Airway Development and Revenue Act* of 1970 established the Aviation Trust Fund which funds the AIP. Wisconsin is a member of the FAA's Block Grant Program, giving WisDOT BOA the responsibility, among other things, for administering AIP grants to reliever and general aviation airports, including Merrill Municipal Airport. **Table 1B** summarizes approximately $10.4 million in federal grant-aided capital improvement projects undertaken at the airport since 2002. State grant history since 2001 is also included and totals more than $358,000, with an additional $725,482 in state funds to match the AIP grants. These funds have included a variety of airport improvement projects, as listed in the table.

Table 1B | Grant History

FY	Grant Number	Project Description	TOTAL COST	FAA	State	Local
AIP (Federal Aid) Projects						
2002	AIP-01	Reconstruct Rwy 7/25 & grade extension to 5,000'. Construct hangar taxiways. Design of extension and reconstruction of taxiway	**$1,063,162**	636,000	212,000	215,162
2003	AIP-02	Pave Rwy 7/25 extension & relocate Txwy, reconstruct apron	**$930,419**	608,244	161,088	161,088
2004	AIP-03 and SAP-56	EA for parallel taxiways, new GA hangar area, acquire land for new GA hangar area and approach to Rwy 34	**$260,000**	211,263	24,369	24,369
2005	AIP-04	Install perimeter fence; provide jet fuel facility in new south hangar area; master plan, ALP updates and EA re-write; design and construct watermain and sanitary sewer extension to terminal area	**$1,584,568**	1,505,339	39,614	39,614
2009	AIP-05	Land acquisition and land acquisition activities to include: Mutz parcels 40 & 41 and Berlin parcel 42 to protect the Runway 34 approach	**$442,541**	419,663	11,439	11,439
2009	AIP-06	Design and construct parallel taxiway and new terminal area	**$3,055,193**	2,902,433	76,380	76,380
2011	AIP-07	Crackseal & sealcoat airfield pavements	**$60,033**	57,031	1,501	1,501
2012	AIP-08	Taxiway & terminal area development, Phase 2	**$1,352,654**	1,238,071	57,292	57,292
2014	AIP-09 and SAP-59	Design & construct new terminal building	**$414,048**	330,961	41,543	41,543
2015	AIP-10 and SAP-60	Design and construct apron pavement rehab. And drainage; Runway 16-34 length justification report and RPZ alternatives analysis; convert SAP-60 to AIP funding	**$833,171**	749,854	41,659	41,659
2013	AIP-11	Purchase SRE	**$129,740**	123,253	3,244	3,244
2020	AIP-11	CARES / CRRSAA / APRA Operations and Maintenance Reimbursements	**$75,000**	75,000	NA	NA
2021	AIP-12	Repair airfield pavements: crack fill, preservation; repair existing T-hangar; expand apron - In Progress (estimated amounts)	**$1,320,755**	1,245,978	37,388	37,388
2023	AIP-13	Conduct airport master plan; ALP update - In Progress (estimated amounts)	**$359,330**	323,397	17,967	17,967
2023	AIP-14	AWOS replacement	**TBD**			
2023	AIP-15	Design and construct aircraft maintenance bldg. and t-hangars	**TBD**			
		Federal Grants Subtotals	**$11,880,614**	**$10,426,488**	**$725,482**	**$728,644**

Continues on next page

Table 1B | Grant History (continued)

FY	Grant Number	Project Description	TOTAL COST	FAA	State	Local
SAP (State Aid) Projects						
2001	SAP-56	Acquire land easements to clear obstructions for Rwy 16/34 - moved to and included in AIP-03	**$0**	NA	0	0
2010	SAP-57	Install / upgrade fuel system	**$381,059**	NA	304,847	76,212
2014	SAP-58	Site lighting	**$48,649**	NA	38,919	9,730
2021	SAP-60	Land Loan – land acquisition for Rwy 34 approach protection - moved to and included in AIP-10	**$0**	NA	0	0
2021	SAP-61	Reimburse fuel system card reader upgrade	**$18,176**	NA	14,541	3,635
		State Grants Subtotals	**$447,884**	**NA**	**$358,307**	**$89,577**
		TOTAL GRANT FUNDS	**$12,328,497**	**$10,426,488**	**$1,083,789**	**$818,221**

Source: WisDOT BOA Records

THE AIRPORT'S SYSTEM ROLE

Airport planning takes place at the local, state, and national levels, each of which has a different emphasis and purpose.

- **Local** | Merrill Municipal Airport has an approved Airport Layout Plan, which was last updated in 2016.
- **State** | Merrill Municipal Airport is included within the *State Airport System Plan 2030*.
- **National** | Merrill Municipal Airport is included in the *National Plan of Integrated Airport Systems* (NPIAS), which categorizes overall airport roles and responsibilities based on input from local and state planning efforts (i.e., master plans and state system plans).

LOCAL AIRPORT PLANNING

2009 Airport Layout Plan & Narrative | The *2009 Airport Layout Plan & Narrative* provided a 20-year airport development vision based on aviation demand forecasts for activity levels. The study used 2008 data for its aviation forecasts baseline. The primary recommendations from the 2009 study included: construction of a parallel taxiway to Runway 7-25; relocation of the automated weather observing system (AWOS) and primary wind cone; construction of taxiway pavement serving Runway 16-34; property acquisition for approach protection; and additional landside facilities (aprons/taxilanes/hangars) on the south side of the airfield.

2016 Airport Layout Plan Update | An update to the ALP drawing set was approved in 2016 to reflect as-built conditions at the airport. This included the construction of Taxiway A serving as a partial parallel taxiway to Runway 7-25, construction of the terminal apron, and relocation of the AWOS and primary wind cone. The plan also depicted the addition of visual approach aids serving Runway 16-34.

STATE AIRPORT PLANNING

The primary planning document for the State of Wisconsin is the *State Airport System Plan 2030*, which was adopted in 2015. The System Plan provides an inventory and evaluation of all public-use airports in the state, with a focus on keeping Wisconsin's airports highly advanced, safe, and responsive to the public's needs. Merrill Municipal Airport is classified as a medium general aviation (GA) airport within the System Plan. The definition for a medium GA Community airport is one that "supports most single and multi-engine GA aircraft, including those aircraft commonly used by businesses. These airports support regional and in-state air transportation needs."

FEDERAL AIRPORT PLANNING

Many of the nation's existing airports were either initially constructed by the federal government or their development and maintenance was partially funded through various federal grant-in-aid programs to local communities. The system of airports existing today is, therefore, mostly due to federal policy that promotes the development of civil aviation. As part of a continuing effort to develop a national airport system, the U.S. Congress has maintained a national plan for the development and maintenance of airports.

The FAA maintains a database of airports that are eligible for AIP funding and are for public use called the *National Plan of Integrated Airport Systems* (NPIAS). The NPIAS is published and used by the FAA in administering the AIP, which is the source of federal funds for airport improvement projects across the country. An airport must be included in the NPIAS to be eligible for federal funding assistance through the AIP.

The most current plan is the NPIAS 2023-2027, which identified 3,287 existing public-use airports and eight proposed nonprimary airports anticipated to open by 2027, that are deemed important to national air transportation. The plan estimates that approximately $62.4 billion in AIP-eligible airport projects will require financial assistance between 2023 and 2027, which is an increase of almost $19 billion identified in the previous NPIAS report.

The NPIAS categorizes airports by the type of activities that take place, including commercial service, cargo service, reliever operations, and general aviation. Merrill Municipal Airport is currently classified as a Local GA airport in the NPIAS. These airports are critical components of the national GA system and account for 36 percent of all NPIAS airports. They are typically located near population centers and have moderate levels of activity. They often accommodate flight training and emergency services, and average approximately 33 based propeller-driven aircraft (no jets) at their facilities.

AIRPORT FACILITIES AND SERVICES

There are three broad categories of facilities and services at the airport: airside, landside, and support.

- **Airside facilities** | Facilities directly associated with aircraft operations, including runways, taxiways, lighting, markings, navigational aids, and weather reporting.
- **Landside facilities** | Facilities necessary to provide a safe transition from surface to air transportation and support aircraft parking, servicing, storage, maintenance, and operational safety.

- **Support facilities** | Serve as a critical link to provide the necessary efficiency to aircraft ground operations, such as fuel storage, airport maintenance, firefighting, and fencing.

AIRSIDE FACILITIES

Runways

As depicted on **Exhibit 1C**, Merrill Municipal Airport has a dual runway system. The runways and their features are detailed below.

Runway 7-25 | Runway 7-25 is the airport's primary runway, measuring 5,100 feet long by 75 feet wide. The runway is oriented northeast/southwest and is constructed of asphalt, which is reported to be in good condition. Runway 7-25 has a weight-bearing capacity of 45,000 pounds for single wheel aircraft (S), 65,000 pounds for dual wheel aircraft (D), and 100,000 pounds for dual tandem wheel aircraft (2D). Both runway ends are equipped with non-precision markings, which support the localizer performance with vertical guidance (LPV) global positioning system (GPS) approaches that are available to each runway end. The runway generally slopes down from the Runway 7 end at a longitudinal gradient of 0.24 percent.

The north side of Runway 7-25 is occasionally used as a turf landing area. This area is equipped with turf markers that define the lateral limits of this landing area.

Runway 16-34 | Runway 16-34, oriented northwest/southeast, serves as the crosswind runway. It is 2,997 feet long and 75 feet wide and is constructed of asphalt that is reported to be in fair condition. Runway 16-34 has a weight-bearing capacity of 26,000 S. It has basic markings and no instrument approach procedures. The longitudinal gradient is 0.48 percent, generally sloping downward from the Runway 16 end.

Taxiways

The taxiway system at Merrill Municipal Airport is identified on **Exhibit 1C**. A partial parallel taxiway, Taxiway A, serves Runway 7-25, extending from the Runway 7 threshold for approximately 3,500 feet before turning to the east to provide access to Runway 16-34 and east side hangar facilities. Three connector taxiways provide entry/exit points from Runway 7-25 to Taxiway A. Taxiway A, which is 35 feet wide, is separated from the Runway 7-25 centerline by 300 feet.

Taxiway F serves as a partial parallel taxiway to Runway 16-34 and also provides access to the Runway 25 threshold. This taxiway is 40 feet wide and also provides access to landside facilities located on the southeast side of the airport. A connector taxiway located approximately 200 feet north of the Runway 34 threshold provides a route for pilots to back-taxi when departing Runway 34.

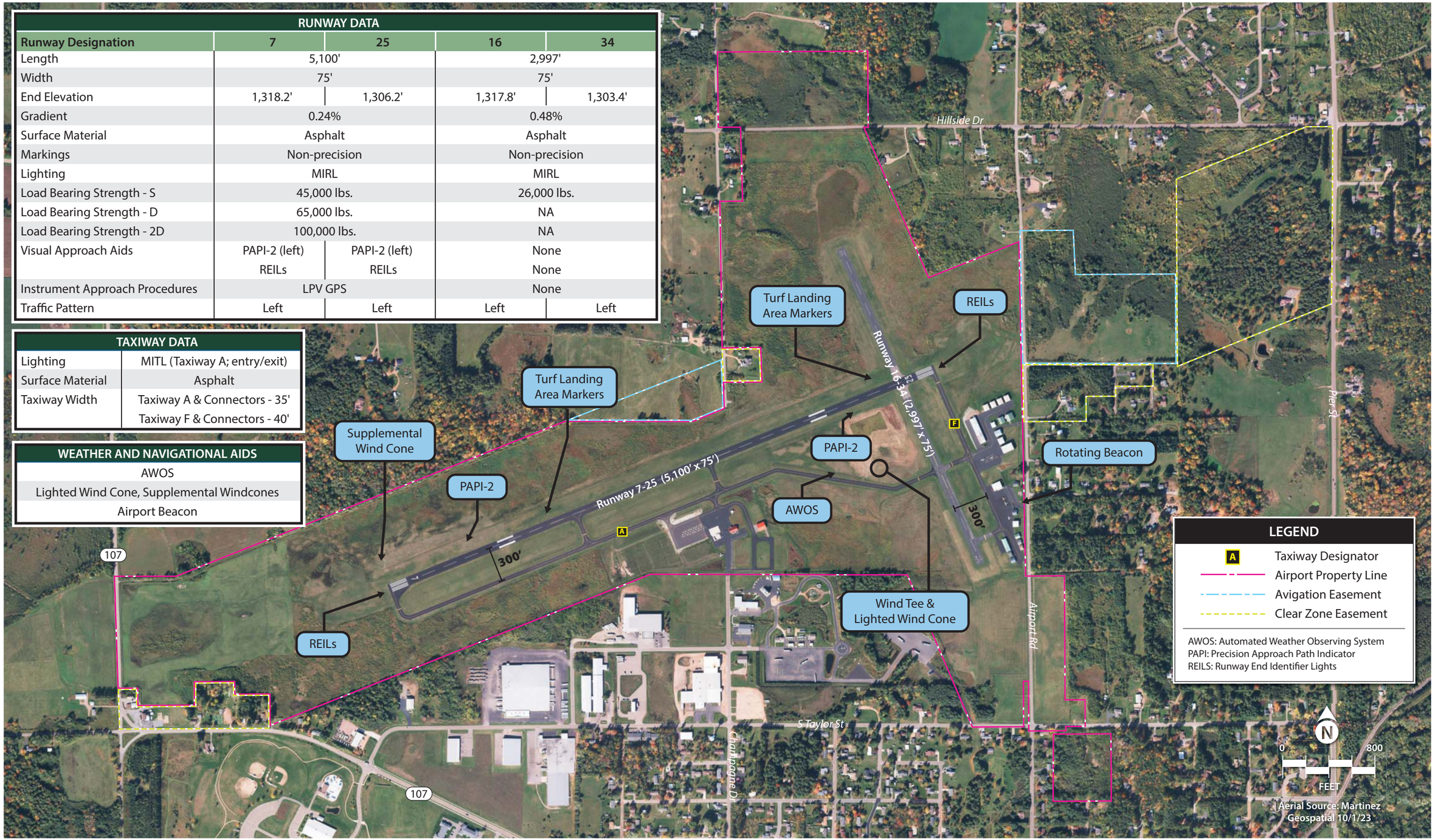
Airfield Lighting

Airfield lighting systems extend an airport's usefulness into periods of darkness and/or poor visibility. A variety of lighting systems are installed at the airport for this purpose. These lighting systems, categorized by function, are summarized as follows.

RUNWAY DATA				
Runway Designation	**7**	**25**	**16**	**34**
Length	5,100'		2,997'	
Width	75'		75'	
End Elevation	1,318.2'	1,306.2'	1,317.8'	1,303.4'
Gradient	0.24%		0.48%	
Surface Material	Asphalt		Asphalt	
Markings	Non-precision		Non-precision	
Lighting	MIRL		MIRL	
Load Bearing Strength - S	45,000 lbs.		26,000 lbs.	
Load Bearing Strength - D	65,000 lbs.		NA	
Load Bearing Strength - 2D	100,000 lbs.		NA	
Visual Approach Aids	PAPI-2 (left)	PAPI-2 (left)	None	
	REILs	REILs	None	
Instrument Approach Procedures	LPV GPS		None	
Traffic Pattern	Left	Left	Left	Left

TAXIWAY DATA	
Lighting	MITL (Taxiway A; entry/exit)
Surface Material	Asphalt
Taxiway Width	Taxiway A & Connectors - 35'
	Taxiway F & Connectors - 40'

WEATHER AND NAVIGATIONAL AIDS
AWOS
Lighted Wind Cone, Supplemental Windcones
Airport Beacon



LEGEND

- A — Taxiway Designator
- Airport Property Line
- Avigation Easement
- Clear Zone Easement

AWOS: Automated Weather Observing System
PAPI: Precision Approach Path Indicator
REILS: Runway End Identifier Lights

N

0 800

FEET

Aerial Source: Martinez Geospatial 10/1/23

This page intentionally left blank

Airport Identification Lighting

The location of the airport at night is universally identified by a rotating beacon. The rotating beacon projects two beams of light, one white and one green, 180 degrees apart. The beacon operates from sunset to sunrise and is located on the east side of airport property at the entrance to the public parking area.

Rotating Beacon

Pavement Edge Lighting

Pavement edge lighting defines the lateral limits of the pavement to ensure safe operations during night and/or times of low visibility, and to help maintain safe and efficient access to and from the runway and aircraft parking areas. Both runways are equipped with medium intensity runway lighting (MIRL). Each runway end is equipped with threshold lights, which emit green light outward from the runway and emit red light toward the runway. The green lights indicate the landing threshold to arriving aircraft and red lights indicate the end of the runway for departing or landing aircraft. Taxiway A and entrance/exit taxiways at the airport are equipped with medium intensity taxiway lighting (MITL). All edge lights are mounted on frangible bases approximately one foot off the ground.

PAPI-2 on Approach to Runway 25

Visual Approach Aids

Visual approach aids are installed at airports to assist pilots in determining the correct descent path to the runway end during landing. Runway 7-25 is equipped with a two-box precision approach path indicator (PAPI-2) system on each runway end. The PAPIs are installed on the left side of the runway and have been set at the standard 3.00-degree glide path. PAPIs have an effective visual range of three miles during the day and 20 miles at night. There are no visual approach aids on Runway 16-34.

Runway end identification lights (REILs) provide a visual identification of the runway end for landing aircraft. The REILs consist of two synchronized flashing lights, located laterally on each side of the runway end, facing the approaching aircraft. These flashing lights can be seen day or night for up to 20 miles depending on visibility conditions. Runway 7-25 is equipped with REILs on both ends, while Runway 16-34 does not have REILs.

REILs and Threshold Lighting

Pilot-Controlled Lighting

During nighttime hours, pilots can use the pilot-controlled lighting (PCL) system to activate and dim the airfield lights and visual approach aids from their aircraft through a series of clicks of their radio transmitter using the common traffic advisory frequency (CTAF) (122.8 MHz).

Taxiway Lighting and Airfield Signage

Airfield Signage and Markings

Airfield identification signs assist pilots in identifying runways, taxiway routes, holding positions, and critical areas. Merrill Municipal Airport is equipped with lighted runway and taxiway designations and routing/directional signage.

Pavement markings aid in the movement of aircraft along surfaces at the airport and identify closed or hazardous areas. The airport provides and maintains marking systems in accordance with Advisory Circular 150/5340-1, *Standards for Airport Marking*. As mentioned previously, Runway 7-25 is equipped with non-precision markings that include the runway centerline, designation, threshold markings, and aiming points. Runway 16-34 has basic markings which include the runway centerline and designation.

All taxiways at the airport are marked with yellow centerline, holding position markings, and leadoff lines on normally used exits. Centerline markings assist pilots in maintaining proper clearance from pavement edges and objects near the taxiway edges. Aircraft holding positions are marked at each runway/taxiway intersection. All taxiways serving Runway 7-25 are marked with holding positions located 200 feet from the runway centerline, except for Taxiway F where it provides access to the Runway 25 threshold. This holding position is separated from the runway centerline by 125 feet. Taxiway A, where it crosses Runway 16-34, has holding positions located 200 feet from centerline (west side of runway) and 125 feet from centerline (east side of runway). The connector taxiway providing access to the Runway 34 end is marked with a hold line separated from the runway centerline by 125 feet.

Navigational Aids and Instrument Approach Procedures

Navigational aids are electronic devices that transmit radio frequencies that pilots in properly equipped aircraft can translate into point-to-point guidance and position information. The very high omnidirectional range (VOR), in general, provides azimuth readings to pilots of properly equipped aircraft transmitting a radio signal at every degree to provide 360 individual navigational courses. Frequently, distance measuring equipment (DME) is combined with a VOR facility (VOR/DME) to provide distance as well as direction information to the pilot. Military tactical air navigation aids (TACANs) and civil VORs are commonly combined to form a VORTAC. The VORTAC provides distance and direction information to both civil and military pilots. The Merrill area is served by one VOR/DME at Rhinelander, located 28.2 nautical miles (nm) northeast.

A non-directional beacon (NDB) is a radio transmitter at a known location, used as an aviation or marine navigational aid. The signal transmitted does not include *inherent* directional information, in contrast to other navigational aids, such as a VOR. NDB signals follow the curvature of the Earth, so they can be received at much greater distances at lower altitudes, a major advantage over VOR. The Arsha NDB, located 26.1 nm to the north, is the only NDB in the vicinity of Merrill Municipal Airport. NDBs are generally being phased out of use by the FAA.

The global positioning system (GPS) is an additional navigational aid for pilots. GPS was initially developed by the United States Department of Defense for military navigation around the world. GPS differs from an NDB or VOR in that pilots are not required to navigate using a specific facility. GPS uses satellites placed in orbit around the earth to transmit electronic radio signals, which pilots of properly equipped aircraft use to determine altitude, speed, and other navigational information. With GPS, pilots can directly navigate to any airport in the country and are not required to navigate using a specific navigation facility.

Instrument approach procedures assist pilots in locating and landing at an airport during low visibility and cloud ceiling conditions. They are categorized as either precision, approach with vertical guidance (APV), or non-precision. Precision instrument approach aids provide an exact course alignment and vertical descent path for an aircraft on final approach to a runway with a height above threshold (HATh) lower than 250 feet and visibility lower than ¾-mile. APVs also provide course alignment and vertical guidance but have HAThs of 250 feet or more and visibility minimums of ¾-mile or greater. Non-precision instrument approaches provide only course alignment information with no vertical guidance.

Approach minimums are published for different aircraft categories (aircraft categories are described in greater detail in Chapter Two) and consist of a minimum “decision” altitude and required visibility. According to 14 Code of Federal Regulations (CFR) 91.175, a pilot must be able to make a safe landing, have the runway in sight, and the visibility requirement be met. For a precision approach or approach with vertical guidance, the decision altitude (DA) is the point at which the pilot must meet all three criteria for landing, otherwise they cannot land using the published instrument approach. For a non-precision approach, the minimum descent altitude (MDA) is a specified altitude at which the required visual reference must be made, or a missed approach initiated.

At Merrill Municipal Airport, GPS provides for localizer performance with vertical guidance (LPV) via an area navigation (RNAV) GPS instrument approach to each end of Runway 7-25. **Table 1C** details the instrument approach procedures at Merrill Municipal Airport.

Table 1C | Instrument Approach Procedures

	WEATHER MINIMUMS BY AIRCRAFT TYPE			
	Category A	Category B	Category C	Category D
RNAV (GPS) Rwy 7				
LPV DA	1,635' / 1-mile			NA
LNAV/VNAV DA	1,754' / 1¼ -mile			NA
LNAV MDA	1,700' / 1-mile		1,700' / 1⅛-mile	NA
Circling	1,760' / 1-mile	1,780' / 1-mile	1,920' / 1¾ -mile	NA
RNAV (GPS) Rwy 25				
LPV DA	1,640' / 1-mile			NA
LNAV/VNAV DA	1,719' / 1⅛ -mile			NA
LNAV MDA	1,700' / 1-mile		1,700' / 1⅛-mile	NA
Circling	1,760' / 1-mile	1,780' / 1-mile	1,920' / 1¾ -mile	1,760' / 1-mile

Aircraft categories are based on the approach speed of aircraft, which is determined as 1.3 times the stall speed in landing configuration as follows:

- Category A: 0-90 knots (e.g., Cessna 172)
- Category B: 91-120 knots (e.g., Beechcraft KingAir)
- Category C: 121-140 knots (e.g., Canadair Challenger, Boeing 737)
- Category D: 141-166 knots (e.g., Gulfstream IV, Boeing MD-88)
- Category E: Greater than 166 knots (e.g., certain large military or cargo aircraft)

Note: (xxx'/ x-mile) = Decision altitude/Visibility minimum

Source: AirNav https://www.airnav.com/airport/KRRL

Weather and Communication

Merrill Municipal Airport is served by an automated weather observing system (AWOS-3). The system updates weather observations every minute, continuously reporting changes that can be accessed via radio frequency 119.925 MHz or by calling (715) 539-8422. The AWOS reports cloud ceiling, visibility, temperature, dew point, wind direction, wind speed, altimeter setting (barometric pressure), lightning detection and density altitude (airfield elevation corrected for temperature). The AWOS is located on the east side of airport property, adjacent Taxiway A and near the intersection of Runways 7-25 and 16-34.

AWOS

Merrill Municipal Airport also has a lighted wind cone and lighted wind tee located approximately 360 feet east of the AWOS equipment, near the intersection of Runway 16-34 and Taxiway A. The wind cone informs pilots of the wind direction and speed, while the wind tee indicates wind direction only.

Lighted Wind Cone and Wind Tee

AREA AIRSPACE AND AIR TRAFFIC CONTROL

The *FAA Act of 1958* established the FAA as the responsible agency for the control and use of navigable airspace within the U.S. The FAA has established the National Airspace System (NAS) to protect persons and property on the ground, in addition to establishing a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS covers the common network of U.S. airspace, including air navigation facilities; airports and landing areas; aeronautical charts; associated rules, regulations, and procedures; technical information; and personnel and material. The system also includes components shared jointly with the military.

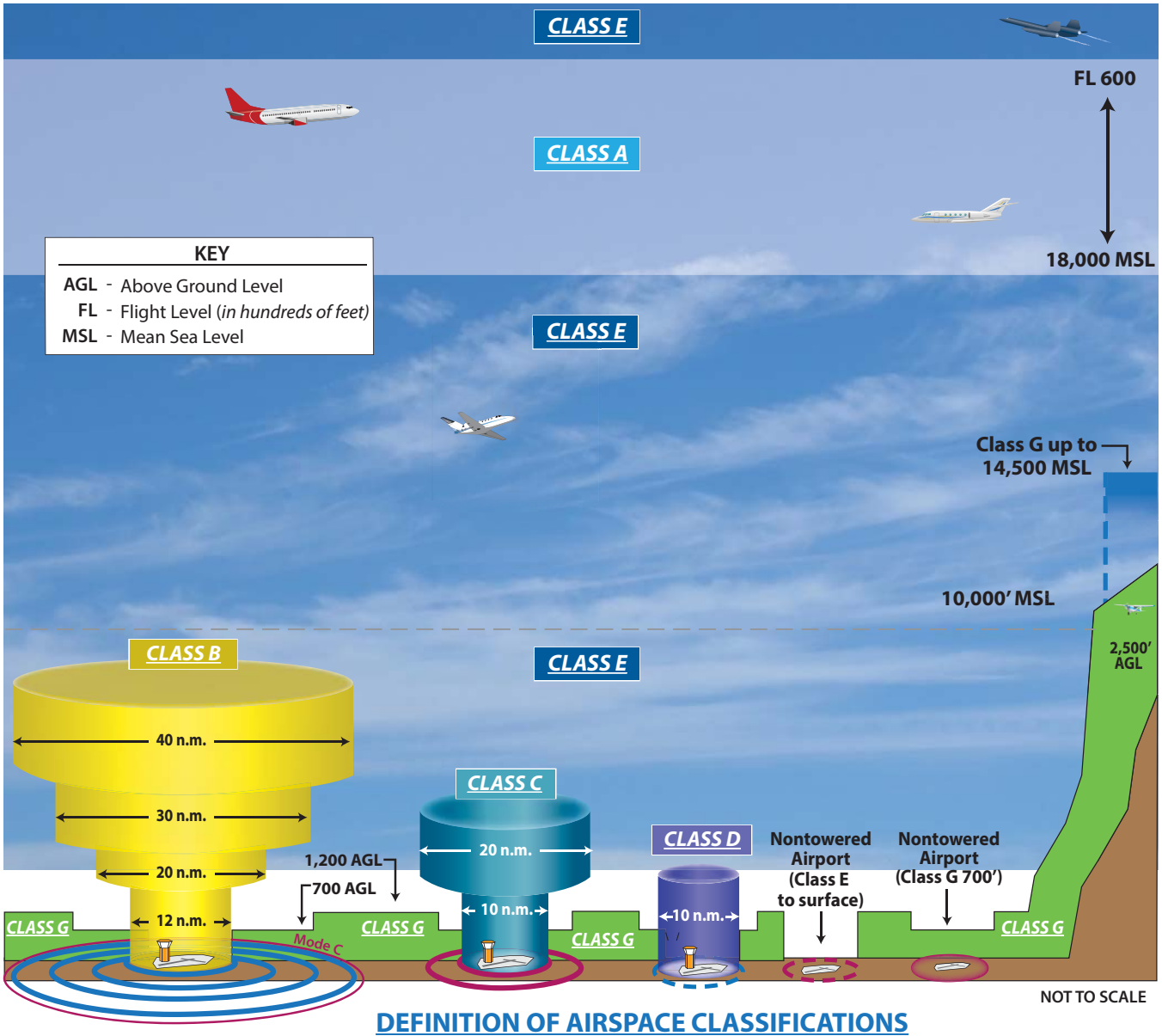
AIRSPACE STRUCTURE

Airspace within the U.S. is broadly classified as either "controlled" or "uncontrolled." The difference between controlled and uncontrolled airspace relates primarily to requirements for pilot qualifications, ground-to-air communications, navigation and air traffic services, and weather conditions. Six classes of airspace have been designated in the U.S., as shown on **Exhibit 1D**. Airspace designated as Class A, B, C, D, or E is considered controlled airspace. Aircraft operating within controlled airspace are subject to varying requirements for positive air traffic control. Airspace near Merrill Municipal Airport is depicted on **Exhibit 1E**.

Class A Airspace | Class A airspace includes all airspace from 18,000 feet MSL to flight level (FL) 600 (approximately 60,000 feet MSL) over the contiguous 48 states and Alaska. This airspace is designated in 14 CFR Part 71.33 for positive control of aircraft. All aircraft must be on an IFR clearance to operate within Class A airspace.

Class B Airspace | Class B airspace has been designated around some of the country's major airports, such as Minneapolis-Saint Paul International Airport (MSP), to separate all aircraft within a specified radius of the primary airport. Each Class B airspace is specifically tailored for its primary airport. This airspace is the most restrictive controlled airspace routinely encountered by pilots operating under VFR in an uncontrolled environment. In order to fly within Class B airspace, an aircraft must be equipped with special radio and navigation equipment and must obtain clearance from air traffic control. A pilot is required to have at least a private pilot certificate or be a student pilot who has met the requirements of F.A.R. Part 61.95, which requires special ground and flight training for Class B airspace. Aircraft are also required to utilize a Mode C transponder within a 30 nautical mile range of the center of the Class B airspace. A mode C transponder allows the airport traffic control tower (ATCT) to track the location and altitude of the aircraft. Merrill Municipal Airport is located approximately 120 nm from MSP's Class B airspace.

Class C Airspace | The FAA has established Class C airspace at approximately 120 airports around the country that have significant levels of IFR traffic. Class C airspace is designed to regulate the flow of uncontrolled traffic above, around, and below the arrival and departure airspace required for high-performance, passenger-carrying aircraft at major airports. To fly inside Class C airspace, an aircraft must have a two-way radio, an encoding transponder, and have established communication with the ATC facility. Aircraft may fly below the floor of the Class C airspace or above the Class C airspace ceiling without establishing communication with ATC. The nearest Class C airspace to Merrill Municipal Airport surrounds Austin Straubel International Airport (GRB) in Green Bay, approximately 70 nm to the southeast.



DEFINITION OF AIRSPACE CLASSIFICATIONS

CLASS A Think A - Altitude. Airspace above 18,000 feet MSL up to and including FL 600. Instrument Flight Rule (IFR) flights only, ADS-B 1090 ES transponder required, ATC clearance required.

CLASS B Think B - Busy. Multi-layered airspace from the surface up to 10,000 feet MSL surrounding the nation's busiest airports. ADS-B 1090 ES transponder required, ATC clearance required.

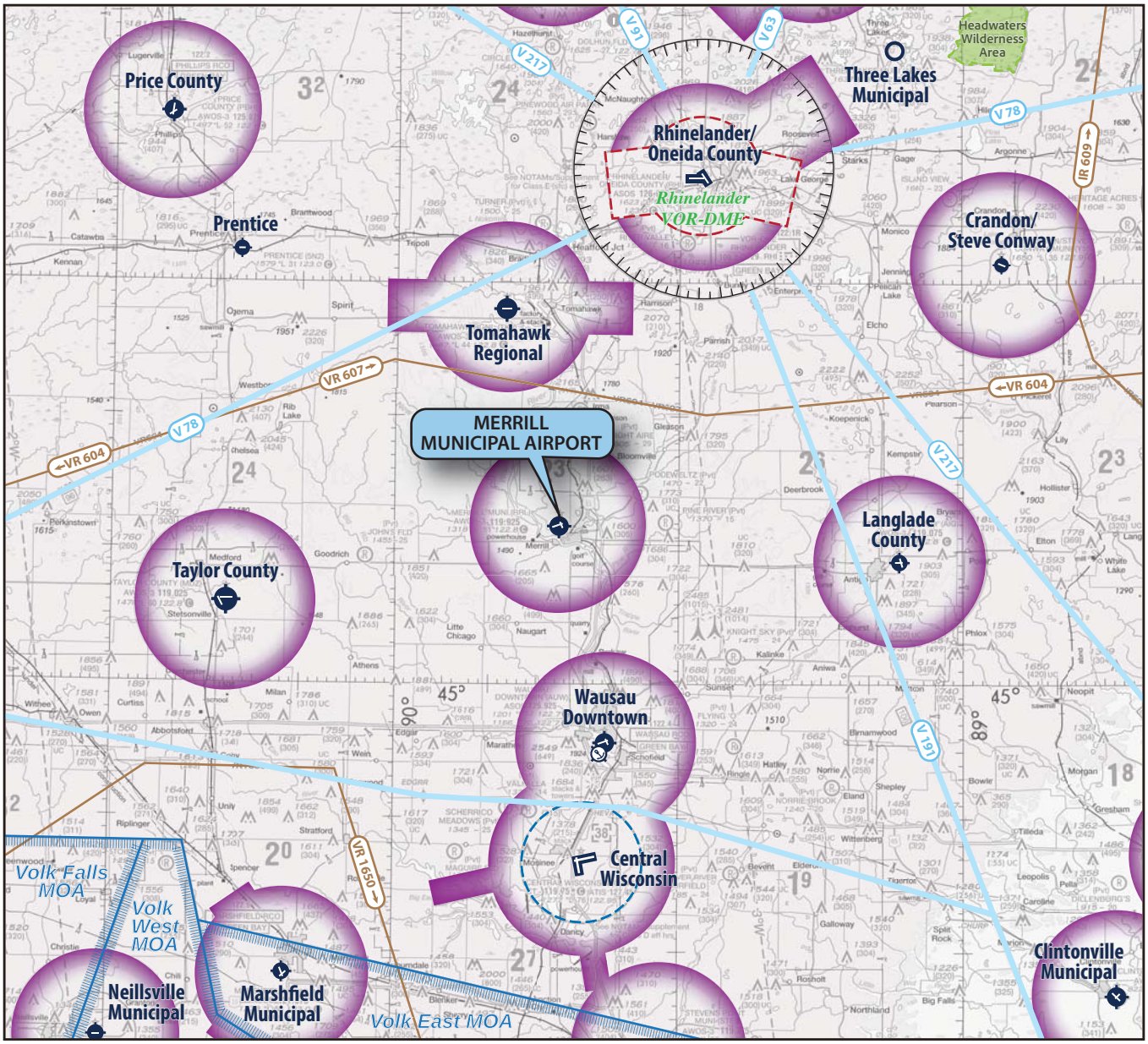
CLASS C Think C - Mode C. Mode C transponder required. ATC communication required. Generally airspace from the surface to 4,000 feet AGL surrounding towered airports with service by radar approach control.

CLASS D Think D - Dialogue. Pilot must establish dialogue with tower. Generally airspace from the surface to minimum 2,500 feet AGL surrounding towered airports.

CLASS E Think E - Everywhere. Controlled airspace that is not designated as any other Class of airspace.

CLASS G Think G - Ground. Uncontrolled airspace. From surface to a 1,200 AGL (in mountainous areas 2,500 AGL) Exceptions: near airports it lowers to 700' AGL; some airports have Class E to the surface. Visual Flight Rules (VFR) minimums apply.

Source: www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/media/15_phak_ch15.pdf



LEGEND

- Airport with other than hard-surfaced runway
- Airport with hard-surfaced runways 1,500' to 8,069' in length
- Airports with hard-surfaced runways greater than 8,069' or some multiple runways less than 8,069'
- Seaplane Base
- Compass Rose
- Wilderness Area
- Class D Airspace
- Class E Airspace with floor 700 ft. above surface that laterally abuts 1200 ft. or higher Class E airspace
- Class E Airspace (SFC)
- Victor Airways
- Military Training Route
- Military Operations Area (MOA)

NORTH

NOT TO SCALE

Source:
Green Bay Sectional Chart,
US Department of Commerce,
National Oceanic and Atmospheric
Administration, June 15, 2023

Class D Airspace | Class D airspace is controlled airspace surrounding airports with an ATCT. The Class D airspace typically constitutes a cylinder with a horizontal radius of four or five nautical miles (nm) from the airport, extending from the surface up to a designated vertical limit, typically set at approximately 2,500 feet above the airport elevation. Aircraft operators planning to operate within Class D airspace are required to contact air traffic control prior to entering or departing airspace and must maintain contact while within the controlled airspace to land or to transverse the area. The nearest Class D airspace surrounds Central Wisconsin Airport (CWA), approximately 20 nm south of Merrill Municipal Airport.

Class E Airspace | Class E airspace consists of controlled airspace designed to contain IFR operations near an airport and while aircraft are transitioning between the airport and enroute environments. Unless otherwise specified, Class E airspace terminates at the base of the overlying airspace. Only aircraft operating under IFR are required to be in contact with ATC when operating in Class E airspace. While aircraft conducting visual flights in Class E airspace are not required to be in radio communications with ATC facilities, visual flight can only be conducted if minimum visibility and cloud ceilings exist. Merrill Municipal Airport is in Class E airspace with the surface beginning at 700 feet above ground level (AGL). Airspace below 700 feet AGL surrounding the airport is Class G airspace.

Class G Airspace | Airspace not designated as Class A, B, C, D, or E is considered uncontrolled, or Class G, airspace. Air traffic control does not have the authority or responsibility to exercise control over air traffic within this airspace. Class G airspace lies between the surface and the overlaying Class E airspace (700 feet AGL).

While aircraft may technically operate within this Class G airspace without any contact with ATC, it is unlikely that many aircraft will operate this low to the ground. Furthermore, federal regulations specify minimum altitudes for flight. F.A.R. Part 91.119*, Minimum Safe Altitudes*, generally states that except when necessary for takeoff or landing, pilots must not operate an aircraft over any congested area of a city, town, or settlement, or over any open-air assembly of persons, at an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

Over less congested areas, pilots must maintain an altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure. Helicopters may be operated at less than the minimums prescribed above if the operation is conducted without hazard to persons or property on the surface. In addition, each person operating a helicopter shall comply with any routes or altitudes specifically prescribed for helicopters by the FAA.

Victor Airways | For aircraft arriving or departing the regional area using VOR facilities, a system of Federal Airways, referred to as Victor Airways, has been established. Victor Airways are corridors of airspace eight miles wide that extend upward from 1,200 feet above ground level (AGL) to 18,000 feet MSL and extend between VOR navigational facilities. Victor Airways near Merrill Municipal Airport are identified on **Exhibit 1E**.

Alert Areas / Military Operations Area (MOA) & Military Training Routes (MTRs) / Restricted Areas | Alert areas, MOAs, MTRs, and restricted areas are depicted on aeronautical charts to inform nonparticipating pilots of areas that may contain a high volume of pilot training, military operations/activities, or an unusual type of aerial activity. Pilots should exercise caution near and within these areas. All activity within these areas, if granted by the controlling agency, should be conducted in accordance with regulations, without waiver, and pilots of participating aircraft, as well as pilots transitioning the area, are equally responsible for collision avoidance. The nearest MOA to the airport is the Volk East MOA, 35 nm to the south. A restricted area (R-6904A and B) used for live fire munitions training is located approximately 55 nm southeast of the airport.

Wilderness Areas | When operating near designated wilderness areas, aircraft are requested to maintain a minimum altitude of 2,000 feet above the surface of designated National Park areas, which includes wilderness areas and designated breeding grounds. FAA Advisory Circular (AC) 91-36C defines the "surface" as the highest terrain within 2,000 feet laterally of the route of flight or the uppermost rim of a canyon or valley. The Headwaters Wilderness Areas is the nearest to Merrill Municipal Airport, approximately 46 nm to the northeast.

AIRSPACE CONTROL

The FAA has established 21 Air Route Traffic Control Centers (ARTCCs) throughout the continental U.S. to control aircraft operating under IFR within controlled airspace and while enroute. An ARTCC assigns specific routes and altitudes along Federal Airways to maintain separation and orderly traffic flow. The Minneapolis Center ARTCC controls IFR airspace enroute to and from Merrill Municipal Airport at altitudes greater than 10,000 feet above ground level (AGL).

Flight Service Stations (FSS) are air traffic facilities which provide pilot briefings, flight plan processing, inflight radio communications, search and rescue (SAR) services, and assistance to lost aircraft and aircraft in emergency situations. FSSs also relay air traffic control clearances, process Notice to Air Mission (NOTAMs), and broadcast aviation meteorological and aeronautical information. The Green Bay FSS is the nearest to Merrill Municipal Airport.

LOCAL OPERATING PROCEDURES

The traffic pattern at the airport is maintained to provide the safest and most efficient use of the airspace. At Merrill Municipal Airport, all runways use a left-hand traffic pattern, which means aircraft conduct left-hand turns within the traffic pattern when operating on the runway. The typical traffic pattern altitude for rotorcraft is 500 feet AGL; piston aircraft is between 800 and 1,000 feet AGL; and 1,500 feet AGL for turbine aircraft.

REGIONAL AIRPORTS

A review of other public-use airports with at least one paved runway within a 30-nm radius of Merrill Municipal Airport was conducted to identify and distinguish the types of air service provided in the region. It is important to consider the capabilities and limitations of these airports when planning for future changes or improvements at Merrill Municipal Airport. **Exhibit 1F** provides basic-level information on the public-use airports within the vicinity of Merrill Municipal Airport.

LANDSIDE FACILITIES

TERMINAL/AIRPORT OPERATIONS OFFICE

Constructed in 2016, the terminal building at Merrill Municipal Airport is located at midfield. From the airside, it can be accessed via Taxiway A. From the landside, it is accessible from Champagne Drive. The terminal features a comfortable lobby, a pilots' lounge, a conference room, a kitchen, and restrooms.

Terminal Building

FIXED BASE OPERATOR AND AVIATION BUSINESSES

A fixed base operator (FBO), Park City Aviation, is currently located on the east side of the airport. The FBO provides aircraft maintenance services and daily on-site management when open. A new, 100-foot by 100-foot maintenance hangar is planned to be constructed south of the terminal building in Fall 2024. Park City Aviation plans to move to this facility once completed. Flight training is offered through another on-airport business, C.E. Plane, LLC.

AIRCRAFT HANGAR FACILITIES

Existing hangar facilities at Merrill Municipal Airport are primarily located on the east side of the airport, with the exception of one hangar located at midfield, as shown on **Exhibit 1G**. These aircraft storage facilities consist of T-hangars, which are designed to accommodate a single, smaller aircraft, and executive box hangars, which can accommodate larger aircraft and typically range in size from 2,500 square feet (sf) to 10,000 sf. There are no conventional hangars on the airport, which are typically greater than 10,000 sf in size and are used to store larger aircraft, including jets.

There is one city-owned T-hangar facility offering 10 individual storage units and comprising approximately 12,600 sf of storage space. There are also 18 executive box hangars, ranging in size from 1,300 to 7,000 sf, that have a combined storage capacity of approximately 47,600 sf.

As of September 2023, all hangar spaces are occupied, and there are 18 individuals on a hangar waiting list.

TOMAHAWK REGIONAL (TKV)

Distance from RRL ..... 17 nm NNW
FAA Service Level ..... Basic GA
Based Aircraft 13
Operations 7,200
Longest Runway 4,401
Lowest Visiblity Minimums 1-mile

MERRILL MUNICIPAL AIRPORT (RRL)

FAA Service Level ..... Local GA
Based Aircraft 39
Operations 18,710
Longest Runway 5,100
Lowest Visiblity Minimums 1-mile

TAYLOR COUNTY (MDZ)

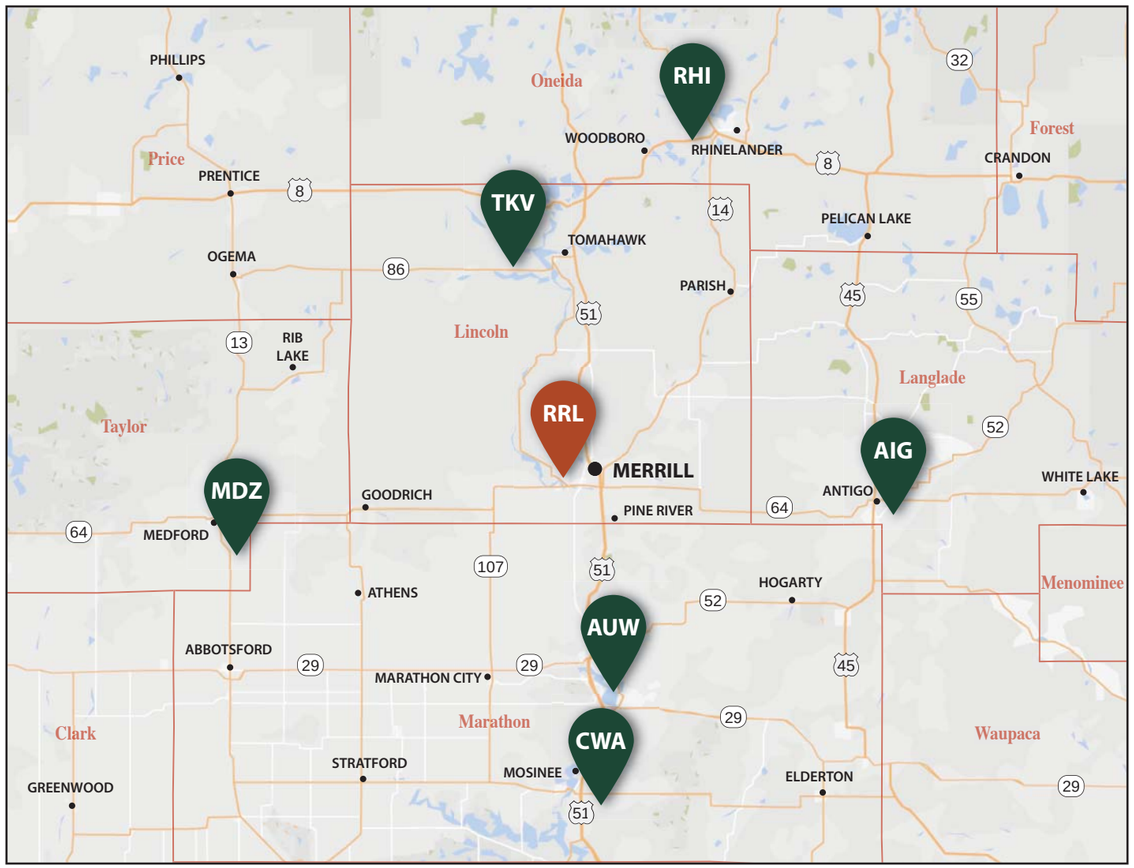
Distance from RRL ..... 26 nm WSW
FAA Service Level ..... Basic GA
Based Aircraft 12
Operations 7,020
Longest Runway 6,000
Lowest Visiblity Minimums 1-mile

WAUSAU DOWNTOWN (AUW)

Distance from RRL ..... 17 nm SSE
FAA Service Level ..... Regional GA
Based Aircraft 72
Operations 36,400
Longest Runway 5,200
Lowest Visiblity Minimums 3/4-mile

CENTRAL WISCONSIN (CWA)

Distance from RRL ..... 25 nm S
FAA Service Level ... Primary Commercial Service - Nonhub
Based Aircraft 24
Operations 13,592
Longest Runway 7,723
Lowest Visiblity Minimums 1/2-mile



LANGLADE COUNTY (AIG)

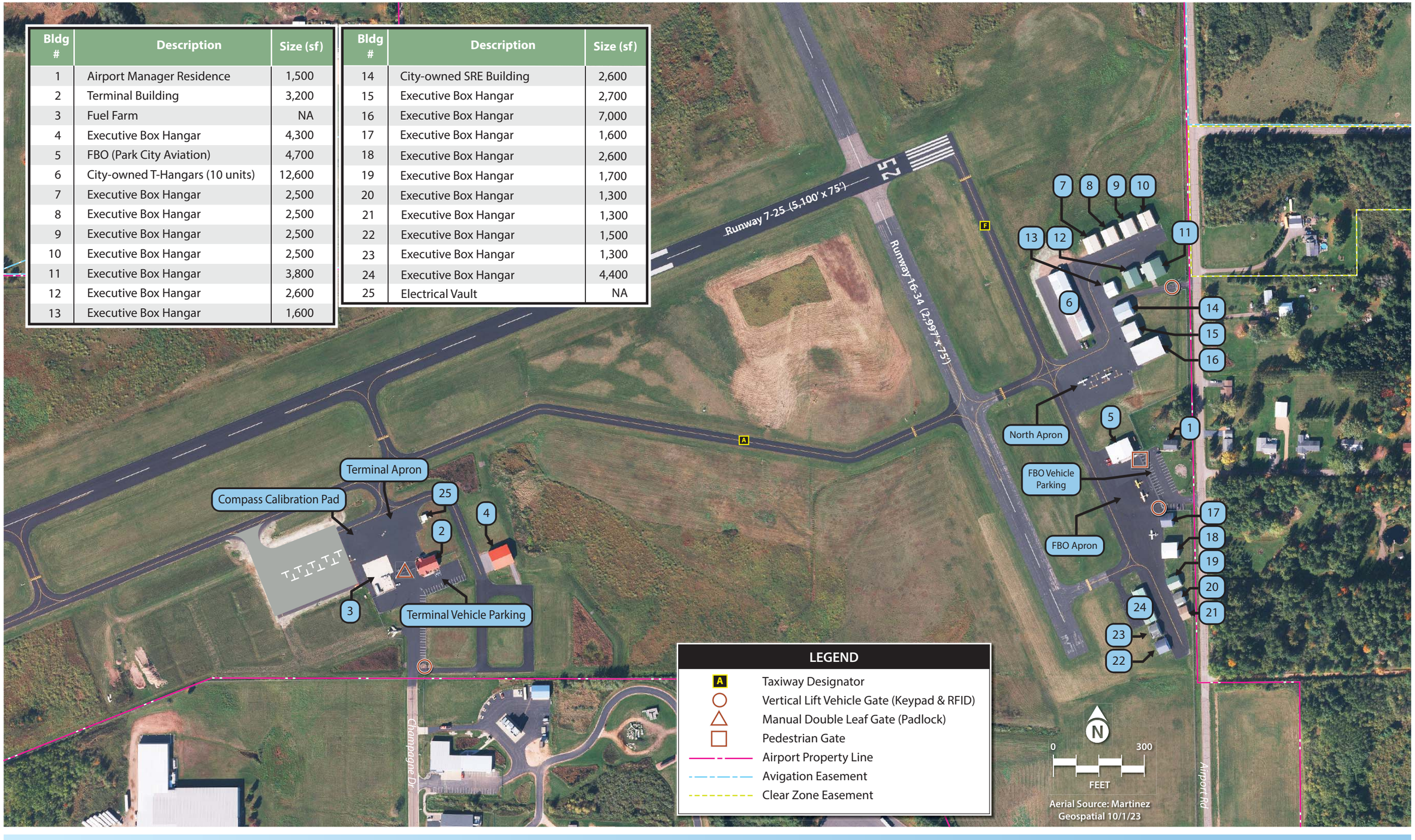
Distance from RRL ..... 26 nm E
FAA Service Level ..... Local GA
Based Aircraft 18
Operations 8,250
Longest Runway 4,010
Lowest Visiblity Minimums 1-mile

RHINELANDER-ONEIDA COUNTY (RHI)

Distance from RRL ..... 28 nm NNE
FAA Service Level ... Primary Commercial Service - Nonhub
Based Aircraft 43
Operations 24,958
Longest Runway 6,800
Lowest Visiblity Minimums 1/2-mile

Bldg #	Description	Size (sf)
1	Airport Manager Residence	1,500
2	Terminal Building	3,200
3	Fuel Farm	NA
4	Executive Box Hangar	4,300
5	FBO (Park City Aviation)	4,700
6	City-owned T-Hangars (10 units)	12,600
7	Executive Box Hangar	2,500
8	Executive Box Hangar	2,500
9	Executive Box Hangar	2,500
10	Executive Box Hangar	2,500
11	Executive Box Hangar	3,800
12	Executive Box Hangar	2,600
13	Executive Box Hangar	1,600

Bldg #	Description	Size (sf)
14	City-owned SRE Building	2,600
15	Executive Box Hangar	2,700
16	Executive Box Hangar	7,000
17	Executive Box Hangar	1,600
18	Executive Box Hangar	2,600
19	Executive Box Hangar	1,700
20	Executive Box Hangar	1,300
21	Executive Box Hangar	1,300
22	Executive Box Hangar	1,500
23	Executive Box Hangar	1,300
24	Executive Box Hangar	4,400
25	Electrical Vault	NA



City-owned T-hangars

Executive Box Hangars

AIRCRAFT PARKING APRONS

There are three aircraft parking aprons at Merrill Municipal Airport: the terminal apron, the north apron, and the FBO apron. The terminal apron located at midfield was expanded in Summer 2023 and now offers approximately 12,000 square yards (sy) of pavement and includes nine marked parking positions for fixed wing aircraft. The FBO apron, located on the east side of the airport, comprises approximately 3,500 sy of pavement and has three marked aircraft parking positions. The north apron, located immediately north of the FBO apron, is approximately 3,200 sy and provides six marked tiedown positions. The airport's fuel farm is located on the terminal apron. Aircraft parking aprons are identified on **Exhibit 1G**.

VEHICLE PARKING

There are two public vehicle parking lots at Merrill Municipal Airport. The parking lot adjacent to the terminal building contains 40 parking spaces, plus two handicapped spaces. A second lot is located near the FBO building and has 34 parking spaces plus one handicapped space. Tenants of the box/T-hangar facilities on the airport are authorized to pass through secured gates with their vehicles, so most of these facilities do not have separate vehicle parking areas.

SUPPORT FACILITIES

Firefighting Services

As a general aviation airport, Merrill Municipal Airport is not required to maintain on-site aircraft rescue and firefighting (ARFF) equipment or services. Firefighting services are provided by the Merrill Fire Department, which operates from a station located at 110 Pier Street, approximately two miles southeast of the airport.

Fuel Storage

Fuel storage facilities at Merrill Municipal Airport are located on the south side of the airport on the terminal apron fronting the terminal building, as shown on **Exhibit 1G**. There are two underground tanks, one for 100LL fuel and one for Jet A. Both tanks have a 12,000-gallon capacity and are owned by the City of Merrill. Both fuel types are dispensed via a self-service pump on the terminal apron that is equipped with a credit card reader. There is one city-owned, 5,000-gallon Jet A fuel truck which is parked near the fuel farm.

Fuel Farm

Airport Maintenance Facilities

Maintenance equipment is stored in the snow removal equipment (SRE) building on the airport's east side (see Building #14 on **Exhibit 1G**). This includes a McCormick tractor with blower and mowing attachments, a single axle dump truck with a snow blade, a Chevy one ton truck with a box plow, a Ford F-150, and various maintenance tools and small equipment.

PERIMETER FENCING

The airfield perimeter is equipped with 10-foot-tall security fencing to restrict entry to unauthorized persons and vehicles. Three motorized vertical pivot gates allow access to landside areas to authorized personnel only. Two of these are located on the east side of the airport, and the third is located on the south side near the terminal building. Three non-motorized gates also provide access to various points on the airport and are secured with padlocks.

Security Fencing

UTILITIES

The availability and capacity of the utilities serving the airport are factors in determining the development potential of the airport property, as well as the land immediately adjacent to the facility. Of primary concern in the inventory investigation is the availability of water, gas, sewer, and power sources. Providers are detailed below:

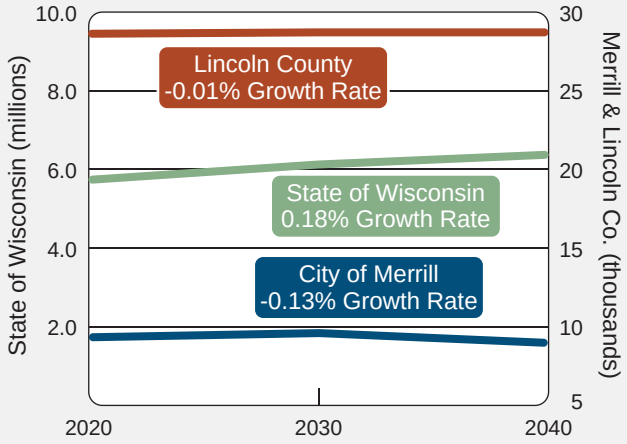
- Electric/Gas – Wisconsin Public Service
- Water/Sanitary Sewer/Solid Waste/Communications (including high speed fiber optic cable) – City of Merrill

COMMUNITY PROFILE

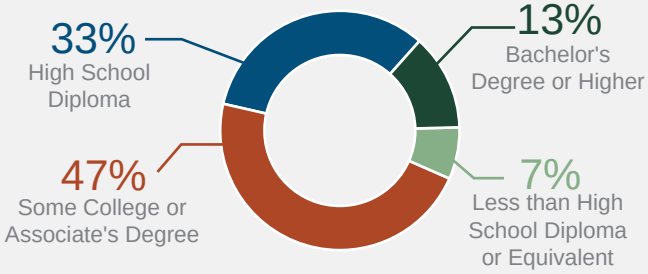
For an airport planning study, a profile of the local community, including its socioeconomic characteristics, is created and examined in order to understand the growth dynamics of the study area. The community profile for the City of Merrill on **Exhibit 1H** is derived from several sources, including the city's comprehensive plan, the North Central Wisconsin Regional Planning Commission, Woods & Poole, and the U.S. Census Bureau.

From a population perspective, city growth is projected to increase slightly between now and 2030, before entering a declining period, with just under 9,000 residents estimated by 2040. Lincoln County reflects a similar trend, with slightly fewer residents in 2040 (28,354) as compared to 2020 (28,415). The state's population, however, is expected to steadily increase over the next several years, adding more than 300,000 residents between 2020 and 2040, for a compound annual growth rate (CAGR) of 0.18 percent. Key industries in Merrill include manufacturing, educational services, and retail, and these, along with others, support a labor force of more than 3,200 people.

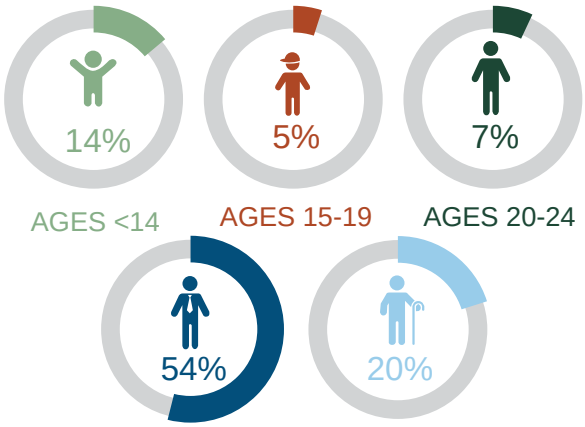
POPULATION



EDUCATION



POPULATION BY AGE



MAJOR EMPLOYERS

(Manufacturing, Transportation, Retail Finance and Insurance, Health Care)

- Agra Industries, Inc.
- Harley-Davidson Motor Company
- Hurd Windows & Doors
- Interflex
- Packaging Corporation of America
- Sierra Pacific
- Pioneer Transportation
- Dave's County Market
- Walmart Supercenter
- Church Mutual Insurance
- Aspirus Health Care

HOUSEHOLDS

Median Household Income (2022)

Merrill	Lincoln Co.
$48,378	$64,314

Merrill Total Households (2022)

4,190

Merrill Avg. Home Value (Jan. 2024)

$98,900

EMPLOYMENT BY SECTOR

30% Manufacturing	**20%** Education, healthcare, and social services	**12%** Retail trade	**11%** Finance, insurance, and real estate	**7%** Transportation, warehousing, and utilities	**4%** Information	**4%** Professional, scientific, and administrative services
4% Wholesale trade	**3%** Public administration	**2%** Other services	**2%** Construction	**1%** Arts, entertainment, food and recreation	**0%** Agriculture, forestry, and mining	

Sources: U.S. Census Bureau; Woods & Poole Complete Economic and Demographic Data Source; City of Merrill Comprehensive Plan (2017), North Central Wisconsin Regional Planning Commission

ENVIRONMENTAL INVENTORY

The purpose of the following environmental inventory is to identify potential environmental sensitivities that should be considered when planning future improvements at the airport. Research was performed for each of the 14 environmental impact categories described within FAA Order 1050.1F *Environmental Impacts: Policies and Procedures*.

- Air Quality
- Biological Resources (including fish, wildlife, and plants)
- Climate
- Coastal Resources
- *Department of Transportation Act*, Section 4(f)
- Farmlands
- Hazardous Materials, Solid Waste, and Pollution Prevention
- Historical, Architectural, Archeological, and Cultural Resources
- Land Use
- Natural Resources and Energy Supply
- Noise and Compatible Land Use
- Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks
- Visual Effects (including light emissions)
- Water Resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)

AIR QUALITY

The concentration of various pollutants in the atmosphere defines the local air quality. The significance of a pollutant's concentration is determined by comparing it to the state and federal air quality standards. In 1971, the U.S. Environmental Protection Agency (EPA) established standards that specify the maximum permissible short- and long-term concentrations of various air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of primary and secondary standards for criteria pollutants: ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead (Pb).

Based on federal air quality standards, a specific geographic area can be classified as an "attainment," "maintenance," or "nonattainment" area for each pollutant. The threshold for nonattainment designation varies by pollutant.

Merrill Municipal Airport is located one mile northwest of Merrill in Lincoln County, Wisconsin. Lincoln County is in attainment for all federal criteria pollutants, as of August 31, 2023.[1]

[1] U.S. EPA – Green book – Wisconsin Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants (https://www3.epa.gov/airquality/greenbook/anayo_wi.html)

BIOLOGICAL RESOURCES

Biotic resources include the various types of plants and animals that are present in an area. The term also applies to rivers, lakes, wetlands, forests, and other habitat types that support plants and animals.

The U.S. Fish and Wildlife Service (USFWS) is charged with overseeing the requirements contained within Section 7 of the *Endangered Species Act* (ESA). The ESA provides a framework to conserve and protect animal or plant species whose populations are threatened by human activities. The FAA and USFWS review projects to determine if a significant impact to protected species will result from implementation of a proposed project. Significant impacts occur when a proposed action could jeopardize the continued existence of a protected species or would result in the destruction or adverse modification of federally designated critical habitat in the area. The USFWS Information for Planning and Consultation (IPaC) resource list describes species and habitats protected under ESA within the vicinity of the airport (**Table 1F**).

In addition to this, in 1972, the State of Wisconsin passed a state endangered species law. This law is established and defined in Chapter NR 29.604, Wis. Adm. Code. Under the Wisconsin Department of Natural Resources, the state outlined rules and regulations that identified which species to protect under the state's endangered species law.

Section 3 of the ESA is used to protect critical habitat areas. Designated critical habitat areas are geographically defined and have been determined to be essential to the recovery of a specific species. There are no critical habitats at Merrill Municipal Airport.

The federal *Migratory Bird Treaty Act* (MBTA) protects migratory birds, their eggs, nests, and their feathers. Potential impacts to species protected under the MBTA are evaluated by USFWS in consultation with other federal agencies.

Habitat for migratory birds may occur if bushes or other ground nesting substrate is present.

Table 1F | U.S. Fish and Wildlife Service List of Federally Endangered, Threatened and Candidate Species within Airport Boundaries

Common Name (*Scientific Name*)	Federal Status	Habitat and Range	Potential for Occurrence
Mammals			
Gray wolf (*Canis lupus*)	Endangered	This species can inhabit a wide range of habitats in which wolves can thrive and includes temperate forests, mountains, tundra, taiga, grasslands, and deserts. Gray wolves have populations in Alaska, northern Michigan, northern Wisconsin, western Montana, northern Idaho, northeast Oregon, and the Yellowstone area of Wyoming.	Unlikely to occur. Limited suitable habitat is present on airport boundaries. Furthermore, this species prefers areas with limited human access.

Continues on next page

Table 1F | U.S. Fish and Wildlife Service List of Federally Endangered, Threatened and Candidate Species within Airport Boundaries (continued)

Common Name (*Scientific Name*)	Federal Status	Habitat and Range	Potential for Occurrence
Mammals			
Northern long-eared bat (*Myotis septentrionalis*)	Endangered	Northern long-eared bats spend winter hibernating in caves and mines, called hibernacula. They can be found in areas that consist of various sized caves or mines with constant temperatures, high humidity, and no air currents. Within hibernacula, this species has been spotted hibernating most often in small crevices or cracks. During the summer and portions of the fall and spring, northern long-eared bats may be found roosting individually or in colonies underneath bark, in cavities or in crevices of both live trees and snags, or dead trees. Males and non-reproductive females may also roost in cooler places, like caves and mines. This species can also be found, though less commonly, roosting in structures, such as barns and sheds. This species uses forested areas not only for roosting, but also for foraging and commuting between summer and winter habitat. The northern long-eared bat can be found in the eastern and midwestern regions of the U.S.	May occur. The airport and land in proximity to the airport contain trees that could be used for roosting habitat.
Tricolored bat (*Perimyotis subflavus*)	Proposed Endangered	Tricolored bats spend the winter hibernating in caves and mines; although in the southern U.S., where caves are sparse, tricolored bats often hibernate in road-associated culverts, as well as sometimes in tree cavities and abandoned water wells. During the spring, summer, and fall, tricolored bats primarily roost among live and dead leaf clusters of live or recently dead deciduous hardwood trees. In the southern and northern portions of the range, tricolored bats have been observed roosting during summer among pine needles and eastern red cedar, within artificial roosts like barns, beneath porch roofs, bridges, concrete bunkers, and rarely within caves. This species can be found in the eastern, southern, and midwestern portions of the U.S.	May occur. The airport and land in proximity to the airport contain trees that could be used for roosting habitat. Additionally, on airport property and nearby residences, there are manmade structures that could be used as artificial roosts for this species.

Continues on next page

Table 1F | U.S. Fish and Wildlife Service List of Federally Endangered, Threatened and Candidate Species within Airport Boundaries (continued)

Common Name (*Scientific Name*)	Federal Status	Habitat and Range	Potential for Occurrence
Birds			
Whooping crane (*Grus americana*)	Experimental (Non-essential)	A migratory species that has been observed in a variety of areas including coastal marshes and estuaries, inland marshes, lakes, open ponds, shallow bays, salt marshes, wet meadows and rivers, and pastures and agricultural fields.	Potential to occur. Land in proximity to the airport contains freshwater ponds that may be used as habitat for this species.
Clams			
Salamander mussel (*Simpsonaias ambigua*)	Proposed Endangered	The salamander mussel is a freshwater mussel that inhabits swift-flowing rivers and streams within areas of shelter under rocks or crevices.	Unlikely to occur. The airport does not contain suitable habitat for this species.
Insects			
Monarch butterfly (*Danaus plexippus)*	Candidate	A migratory species found in a variety of habitats; the monarch butterfly requires milkweed (*Asclepias* spp.) for breeding. In the southwestern U.S., migrating monarch butterflies often occur near water sources (e.g., rivers, creeks, riparian corridors, roadside ditches, and irrigated gardens).	May occur. Wisconsin is home to several species of milkweed, and the airport property may contain flowering plants that monarchs could use for foraging.

*USFWS Status Definitions for federally listed species:

Candidate: A species for which the USFWS has sufficient information on biological vulnerability and threats to support proposals to list the species as endangered or threatened under the ESA; however, these proposed rules have not yet been issued because such actions are precluded at present by other listing activity.

Endangered: An animal or plant species that is in danger of extinction throughout all or a significant portion of its habitat range.

Proposed Endangered: Any species USFWS has determined is in danger of extinction throughout all or a significant portion of its range and the USFWS has proposed a draft rule to list the species as endangered.

Threatened: An animal or plant species in danger of extinction throughout all or a significant portion of its habitat range.

Experimental population, Non-essential: A population that has been re-established within its historical range under section 10(j) of the ESA to aid in recovery of the species.

Candidate: Any species USFWS has sufficient information on its biological status and threats to propose it as endangered or threatened under the ESA, but the development of a proposed listing regulation is precluded by other higher priority listing activities. Candidate species are not protected by the take prohibitions of section 9 of the ESA.

Source: USFWS, IPaC (https://ipac.ecosphere.fws.gov/); USFWS, Species habitats (various) (https://www.fws.gov/); USFWS, Listing Status (https://ipac.ecosphere.fws.gov/status/list); Nature Serve Explorer (https://explorer.natureserve.org/Search)

CLIMATE

Increasing concentrations of greenhouse gases (GHGs) can affect global climate by trapping heat in Earth's atmosphere. Scientific measurements have shown that Earth's climate is warming with concurrent impacts, including warmer air temperatures, rising sea levels, increased storm activity, and greater intensity in precipitation events. Climate change is a global phenomenon that can also have local impacts. GHGs, such as water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and

ozone (O_3), are both naturally occurring and anthropogenic (human-made). Research has established a direct correlation between fuel combustion and GHG emissions. GHGs from anthropogenic sources include CO_2, CH_4, N_2O, hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). CO_2 is the most important anthropogenic GHG because it is a long-lived gas that remains in the atmosphere for up to 100 years.

The U.S. EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2021* shows a two percent decrease in total U.S. emissions from 1990 to 2021, down from a high of 15.8 percent above 1990 levels in 2007. During 2020 to 2021, the U.S. saw an increase in economic activity driven by businesses and persons rebounding after the COVID-19 pandemic. This resulted in an increase in total U.S. GHG emissions, of which CO_2 emissions accounted for the majority.

In 2021, the transportation sector and power generation accounted for 79.3 percent of total CO_2 emissions. The overall aviation industry (excluding international bunkers), however, has shown an 18 percent decrease in CO_2 emissions between 1990 and 2021.[2] Commercial aircraft emissions have highly fluctuated over the past thirty years, with a 27 percent increase between 1990 and 2007, a two percent decrease from 2007 to 2019, and a 33 percent decrease from 2019 to 2020, followed by a 23 percent increase from 2020 to 2021. Overall, this represents an eight percent difference between 1990 and 2021 commercial aircraft emissions. Between 1990 and 2021, emissions from military aircraft decreased 65 percent.

In December 2020, Wisconsin released its Governor's Task Force on Climate Change Report. The plan includes policy recommendations to aid the state's goal of reducing GHG emissions by at least 26 to 28 percent below 2005 levels by 2025 and achieving 100 percent carbon-free electricity by 2050. Key aspects of the plan include creating an Office of Environmental Justice, expanding Focus on Energy program funding, supporting electric vehicle infrastructure, and avoiding all new fossil fuel infrastructure. Previous to this 2020 update, Wisconsin had released its latest scoping plan in 2008.[3]

Climate information sourced from the airport's AWOS, including wind, temperature, and precipitation, were detailed previously.

COASTAL RESOURCES

Federal activities involving or affecting coastal resources are governed by the *Coastal Barriers Resource Act*, the *Coastal Zone Management Act*, and Executive Order (E.O.) 13089, *Coral Reef Protection*.

The airport is not located within a coastal zone. The nearest National Marine Sanctuary is the Thunder Bay National Marine Sanctuary located 263 miles away from the airport.[4]

[2] U.S. EPA, Inventory of U.S. Greenhouse Gasses: Chapter 3 Energy, April 13, 2023 (https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021)
[3] U.S. State Climate Action Plans (https://www.c2es.org/document/climate-action-plans/)
[4] Google Earth Aerial Imagery (January 2023)

DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(f)

Section 4(f) of the *Department of Transportation Act,* which was recodified and renumbered as Section 303(c) of 49 United States Code, provides that the Secretary of Transportation will not approve any program or project that requires the use of any publicly or privately owned historic sites, public parks or recreation areas, or waterfowl and wildlife refuges of national, state, regional, or local importance unless there is no feasible and prudent alternative to the use of such land, and the project includes all possible planning to minimize harm resulting from the use.[5]

Table 1G and **Exhibit 1J** identify potential Section 4(f) resources within one mile of the airport. School playgrounds or athletic fields may be considered a Section 4(f) resource if the recreational facilities at the school are readily available to the public.

Table 1G| U.S. Dept. of Transportation Section 4(f)

Potential Resource	Location	Distance from Airport (miles)	Direction from Airport
Public Recreational Facilities			
Stange's Park	209 W 3rd St	0.90 miles	South
Ott's Park	501 N Foster Street	0.90 miles	South
Merrill Dog Park	Merrill, WI 544452	0.40 miles	South
Prairie Trails Park	N2121 Co Rd K	1 mile	East
Council Grounds State Park	N 1895 Council Grounds Dr	0.50 miles	Southeast
Krueger Pines State Natural Area	Council Grounds Rd	0.90 miles	Southeast
Public Schools[1]			
Prairie River Middle School	106 N Polk Street	0.90 miles	Southeast
Kate Goodrich Elementary	505 W 10th Street	0.50 miles	South
National Register of Historic Places (NRHP) Resources			
Merrill Post Office	430 E. Second St.	0.70 miles	Southeast
Center Avenue Historic District	Bounded by Cedar, Park, Third, Center and Seventh Streets	0.90 miles	Southeast
First Street Bridge	1st St. Spanning the Prairie River	0.80 miles	South
Merrill City Hall	717 E. 2nd St.	1.00 mile	Southeast
Scott, T.B., Free Library	E. 1st St.	0.90 miles	South

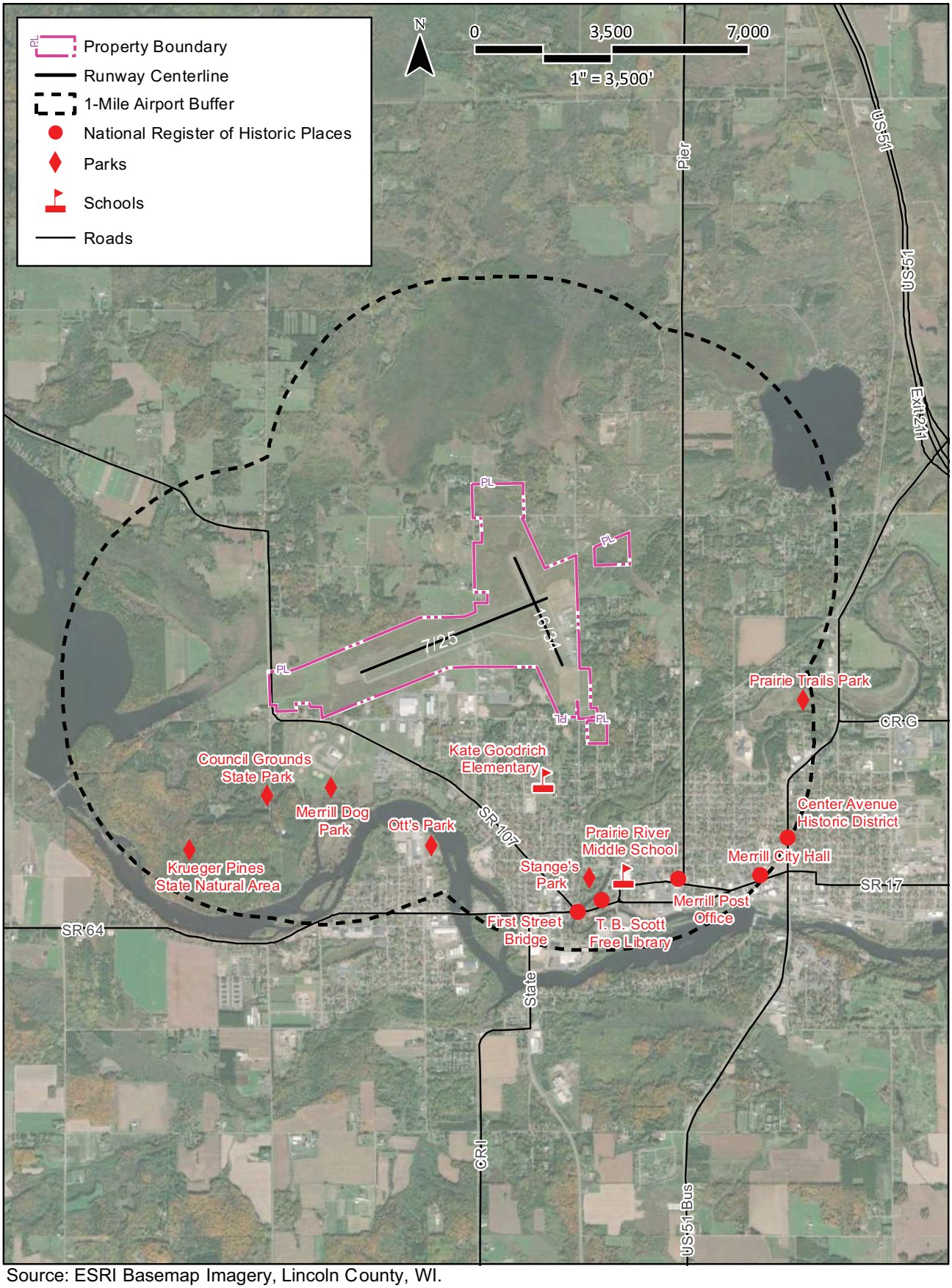
[1] Only public schools that have playgrounds and/or athletic fields open for public use are considered a Section 4(f) resource.

Source: Google Earth Aerial Imagery (March 2023); U.S. Department of the Interior, National Park Service, National Register of Historic Places (https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466)

There are no waterfowl and wildlife refuges within one mile of the airport. The nearest wilderness and national recreation areas are listed below:

- Nearest Wilderness Area: Headwaters Wilderness (51 miles from airport)
- Nearest National Recreation Area: Mississippi National River and Recreation Area (151 miles from airport)

[5] 49 U.S. Code § 303 - Policy on lands, wildlife and waterfowl refuges, and historic sites



Source: ESRI Basemap Imagery, Lincoln County, WI.

FARMLANDS

Under the *Farmland Protection Policy Act* (FPPA), federal agencies are directed to identify and consider the adverse effects of federal programs on the preservation of farmland, to consider appropriate alternative actions which could lessen adverse effects, and to assure that such federal programs are, to the extent practicable, compatible with state or local government programs and policies to protect farmland. The FPPA guidelines, developed by the U.S. Department of Agriculture (USDA), apply to farmland classified as prime, unique, or of state or local importance as determined by the appropriate government agency, with concurrence by the Secretary of Agriculture.

The U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) Web Soil Survey shows the types of soils and their farmland classification on and adjacent to the airport. The airport is classified into three types of farmland classification "all areas are prime farmland," "prime farmland if drained," and "not prime farmland," with the majority of the land within the airport recognized as "prime farmland if drained" (**Exhibit 1K**). **Table 1H** describes the farmland classification based on the soil inhabiting the airport's boundaries. The airport is located outside of urbanized area boundaries.[6]

Table 1H| Farmland Classification – Summary by Map Unit Shasta County Area, California (CA607)

Web Soil Survey symbol	Soil Type	Farmland Rating
FsB	Freeon-Sconsin silt loams, 2 to 6 percent slopes	All areas are prime farmland
Lu	Lupton and Cathro soils, 0 to 1 percent slopes	Not prime farmland
MgB	Magnor, very stony-Ossmer complex, 0 to 4 percent slopes	Prime farmland if drained
NpC	Newood-Pence complex, 6 to 15	Prime farmland if irrigated

Source: USDA-NRCS, Web Soil Survey (https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx)

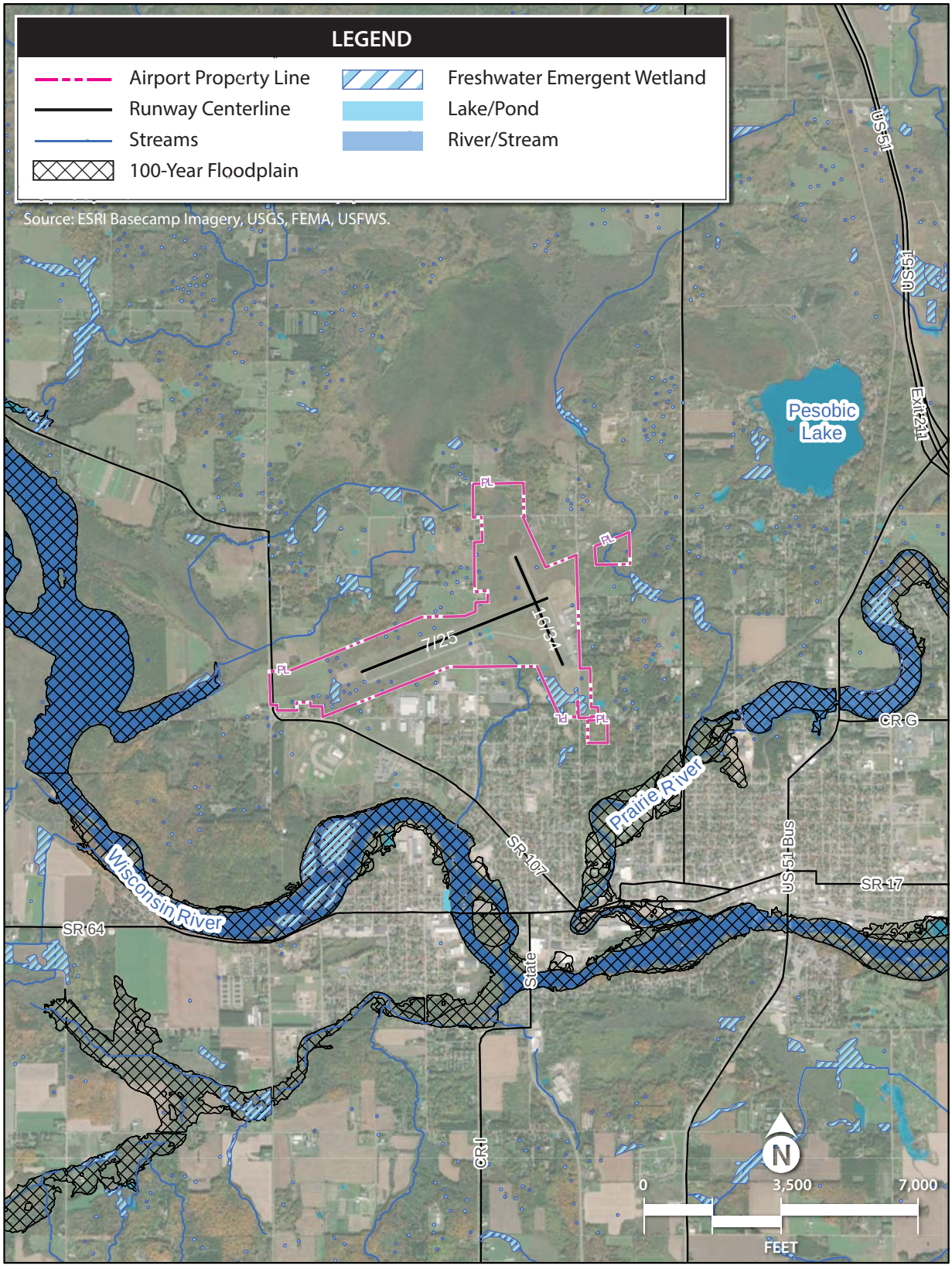
HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

Federal, state, and local laws regulate hazardous materials use, storage, transport, and disposal. These laws may extend to past and future landowners of properties containing these materials. In addition, disrupting sites containing hazardous materials or contaminants may cause significant impacts to soil, surface water, groundwater, air quality, and the organisms using these resources. According to the U.S. EPA's *EJSCREEN* online tool, there are no Superfund or brownfield sites within one mile of the airport. [7]

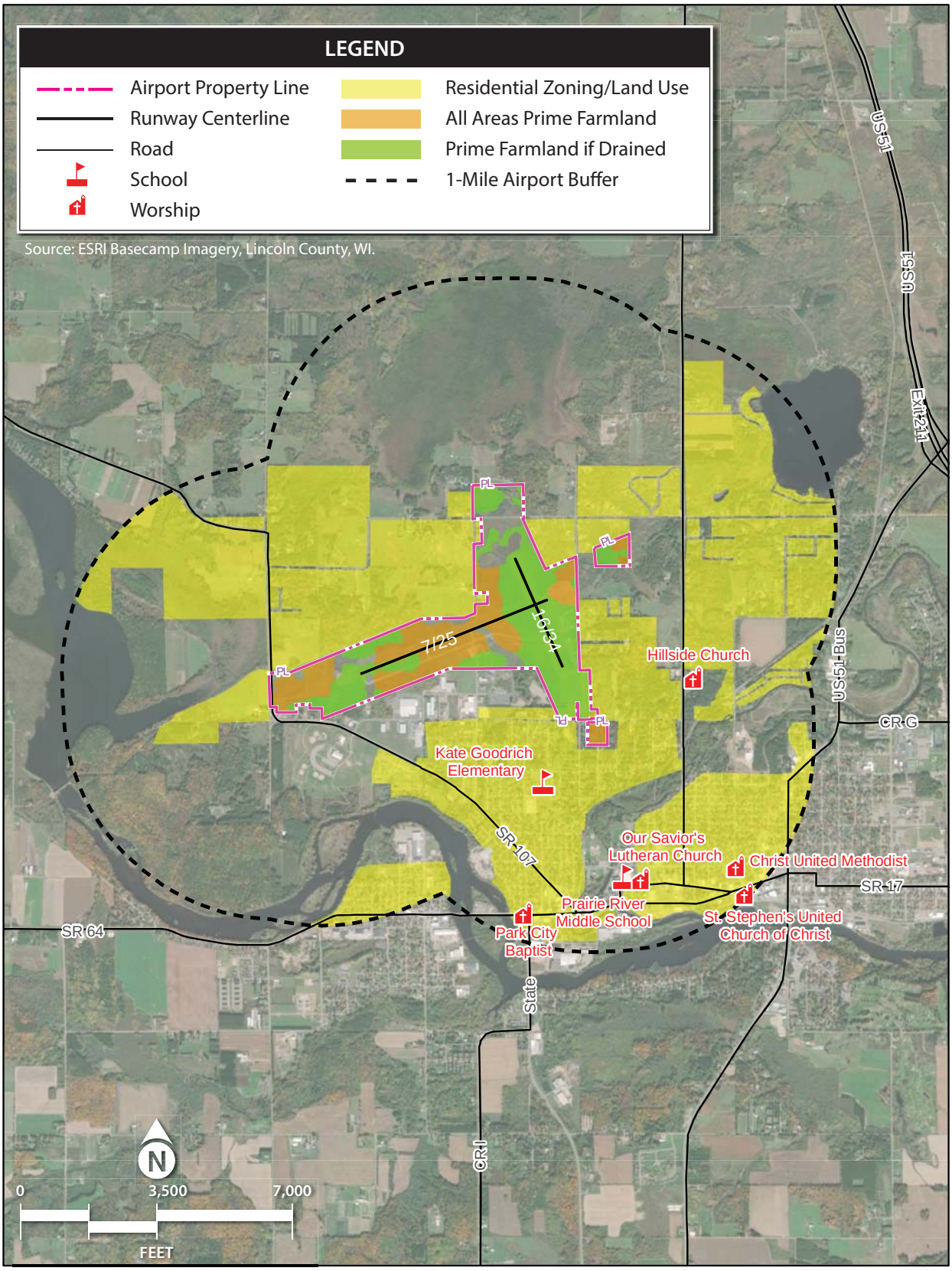
National Pollutant Discharge Elimination System (NPDES) permits outline the regulatory requirements of municipal storm water management programs and establish requirements to help protect the beneficial uses of the receiving waters. They require permittees to develop and implement Best Management Practices (BMPs) to control/reduce the discharge of pollutants to waters of the United States to the maximum extent practicable (MEP). The NPDES program manages wastewater, construction, stormwater, and pretreatment. In Wisconsin, the Wisconsin Department of Natural Resources (DNR) regulates the discharge of pollutants to waters of the state through the Wisconsin Pollutant Discharge Elimination

[6] U.S. EPA, EJScreen (https://ejscreen.epa.gov/mapper/) (March 2023)
[7] U.S. EPA EJSCREEN (https://ejscreen.epa.gov/mapper/)

Natural Resources



Farmland and Urban Resources



System (WPDES) program. In addition to this, the DNR has outlined erosion control plans that contain specific practices to reduce erosion, divert storm water from disturbed or exposed sites areas, and control the transport of sediment and other pollutants.[8]

The closest landfill is the Lincoln County landfill, approximately seven miles northeast of the airport.

HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Determination of a project's environmental impact to historic and cultural resources is made under guidance in the *National Historic Preservation Act* (NHPA) *of 1966*, as amended, the *Archaeological and Historic Preservation Act* (AHPA) *of 1974*, the *Archaeological Resources Protection Act* (ARPA), and the *Native American Graves Protection and Repatriation Act* (NAGPRA) *of 1990*. In addition, the *Antiquities Act of 1906*, the *Historic Sites Act of 1935*, and the *American Indian Religious Freedom Act of 1978* also protect historical, architectural, archaeological, and cultural resources. Impacts may occur when a proposed project causes an adverse effect on a resource which has been identified (or is unearthed during construction) as having historical, architectural, archaeological, or cultural significance.

A cultural survey has been conducted at the airport. A review of historic aerial photography does not indicate the presence of historic structures located within airport property.[9]

The nearest tribal lands to the airport are the Ho-Chunk Nation Off-Reservation Trust Land, located 30 miles southeast of the airport.

LAND USE

Land use regulations near airports are achieved through local government codes, city policies, and plans that include airport districts and planning areas. Regulations are used to avoid land use compatibility conflict around airports.

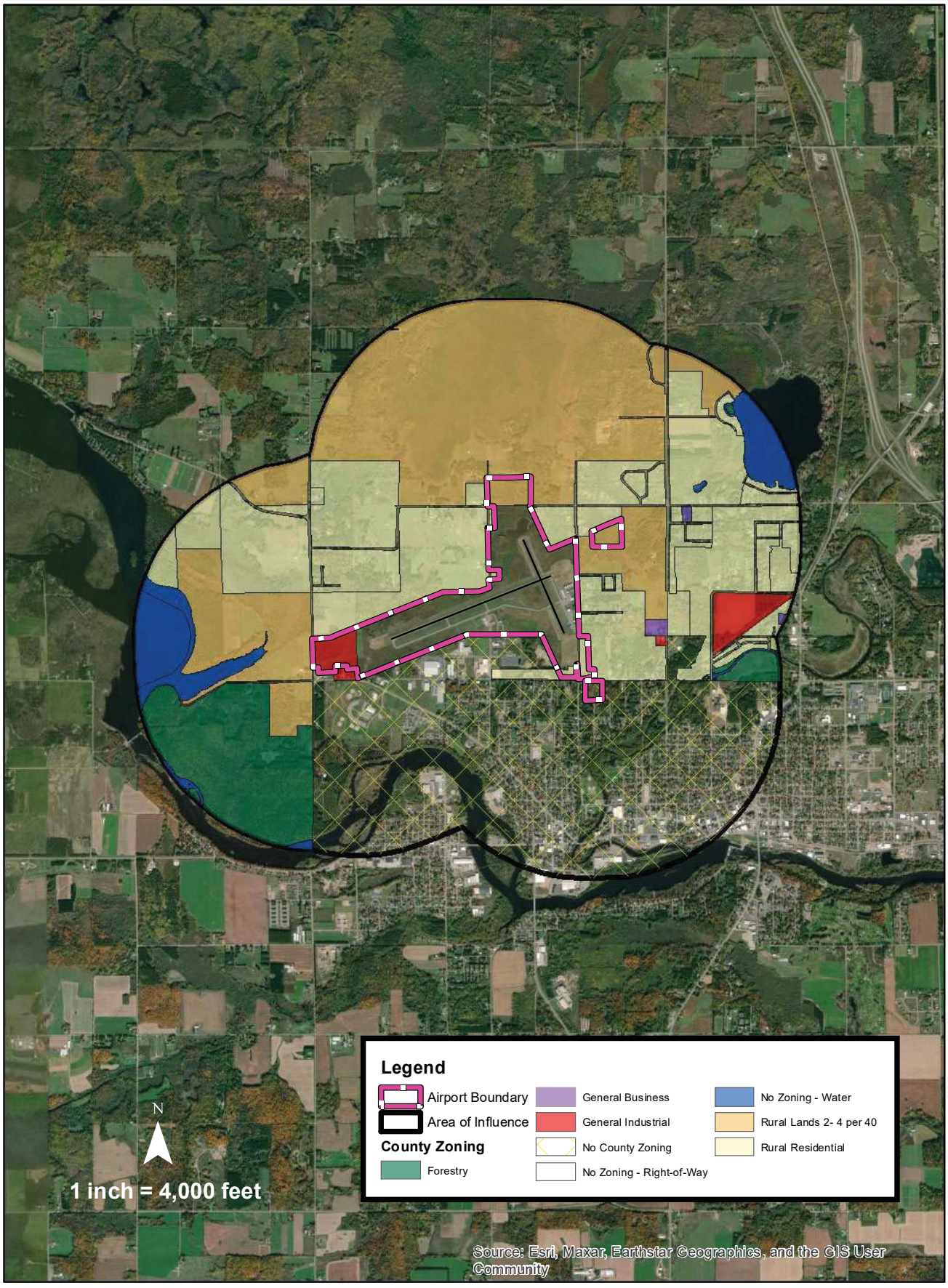
To enforce land use restrictions in land adjacent to the airport, clear zone easements and avigation easements have been implemented in properties near the airport (refer to **Exhibit 1C**). These easements are property rights that are acquired from the landowner and that grant the airport sponsor control over what improvements or objects can be implemented/installed on any portion of the land controlled by easements.[10]

Based on Lincoln County's zoning, most of the airport property is not zoned. However, on the southwestern end of the airport, the airport is zoned as general industrial, and a portion of airport property on the eastern side of the airport is zoned as rural lands (**Exhibit 1L**).

[8] Wisconsin Department of Natural Resources – Construction Site Storm Water Permits (https://dnr.wisconsin.gov/topic/Stormwater/construction)

[9] Historic Aerials (https://www.historicaerials.com/viewer)

[10] *Avigation Easements*, Wisconsin Bureau of Aeronautics, (https://wisconsindot.gov/Documents/doing-bus/aeronautics/resources/av-ease.pdf)


Legend
Airport Boundary
Area of Influence
County Zoning
Forestry
General Business
General Industrial
No County Zoning
No Zoning - Right-of-Way
No Zoning - Water
Rural Lands 2- 4 per 40
Rural Residential
N
1 inch = 4,000 feet
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

According to the City of Merrill Zoning Map, the airport is primarily zoned as park recreation and public.[11] South of Runway 7-25 along W Taylor Street, land uses are zoned as industrial, park recreation, and public (**Exhibit 1M**).

Currently, there are no city land use zoning ordinances for parcels of land adjacent to the airport; the State of Wisconsin, however, recommends establishing a zoning ordinance as outlined in the *Wisconsin State Airport System Plan 2030.*

Based on the City of Merrill's Comprehensive Plan adopted in 2017 (Map 5), existing land uses on airport property are shown as open lands and commercial. South of Runway 7-25, existing land uses have been identified as industrial, governmental/institutional, and commercial (**Exhibit 1N**).

The future land use plan map (Map 6 in the Comprehensive Plan) identifies the land uses on the airport to be redesignated as airport land uses instead of the existing designation of open lands and commercial land uses. South of the airport, the future land use map designates land uses as governmental/public/institutional and industrial (**Exhibit 1P**).

NATURAL RESOURCES AND ENERGY SUPPLY

Natural resources and energy supply provide an evaluation of a project's consumption of natural resources. It is the policy of FAA Order 1053.1C, *Energy and Water Management Program for FAA Buildings and Facilities*, to encourage the development of facilities that exemplify the highest standards of design, including principles of sustainability.

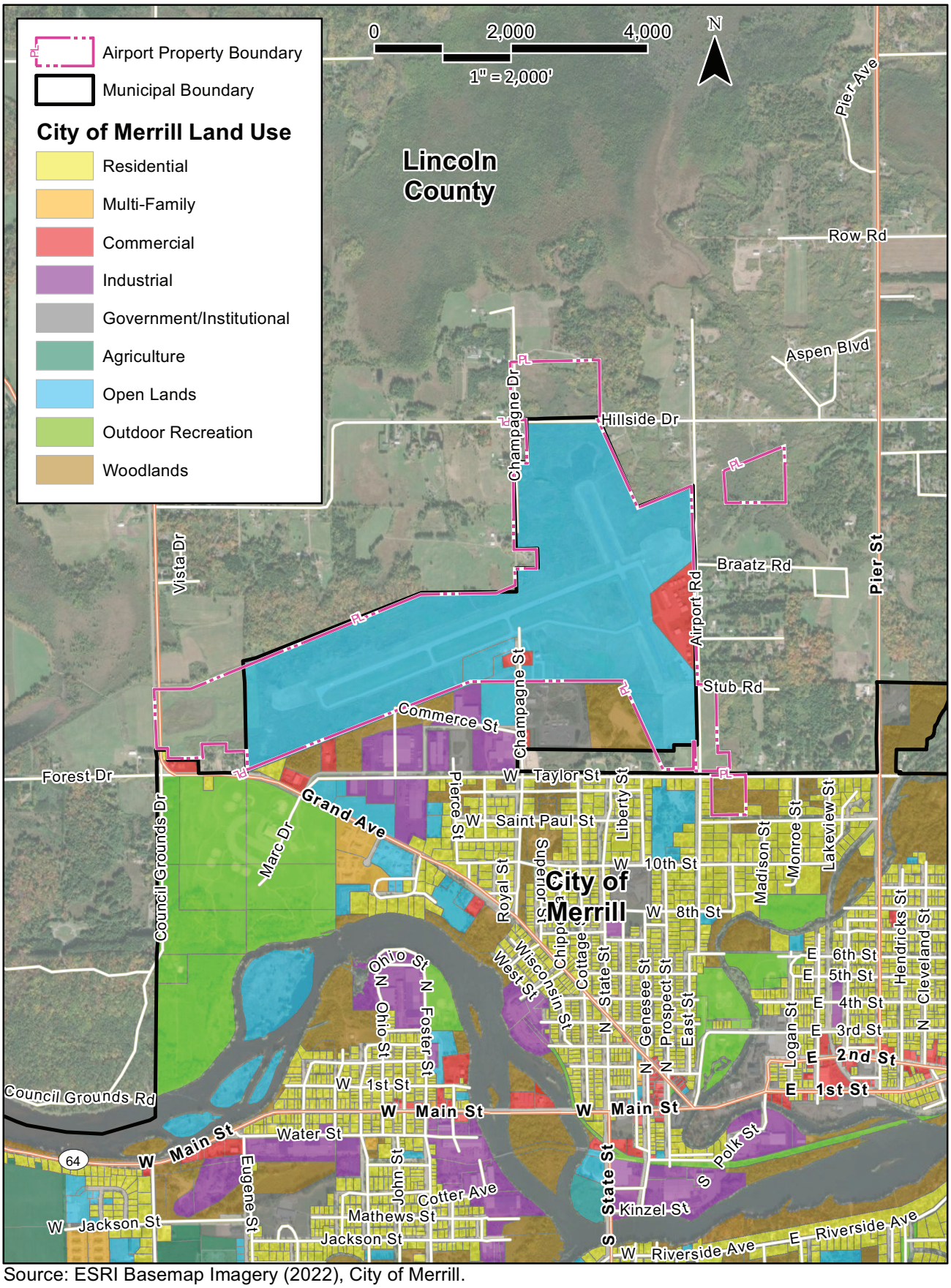
The Wisconsin DNR was formally established July 1, 1968, and was created to preserve, conserve, and enhance the environment, to ensure public health, environmental quality, and economic vitality. Continuing with its initial mission, the DNR created its governing body, the State of Wisconsin Natural Resources Board, to oversee and implement rules pertaining to the state's natural resources.

Water at the airport is supplied by the City of Merrill. The city's water supply is obtained from an established groundwater supply via wells.[12] The airport property does not contain any groundwater retrieval wells.

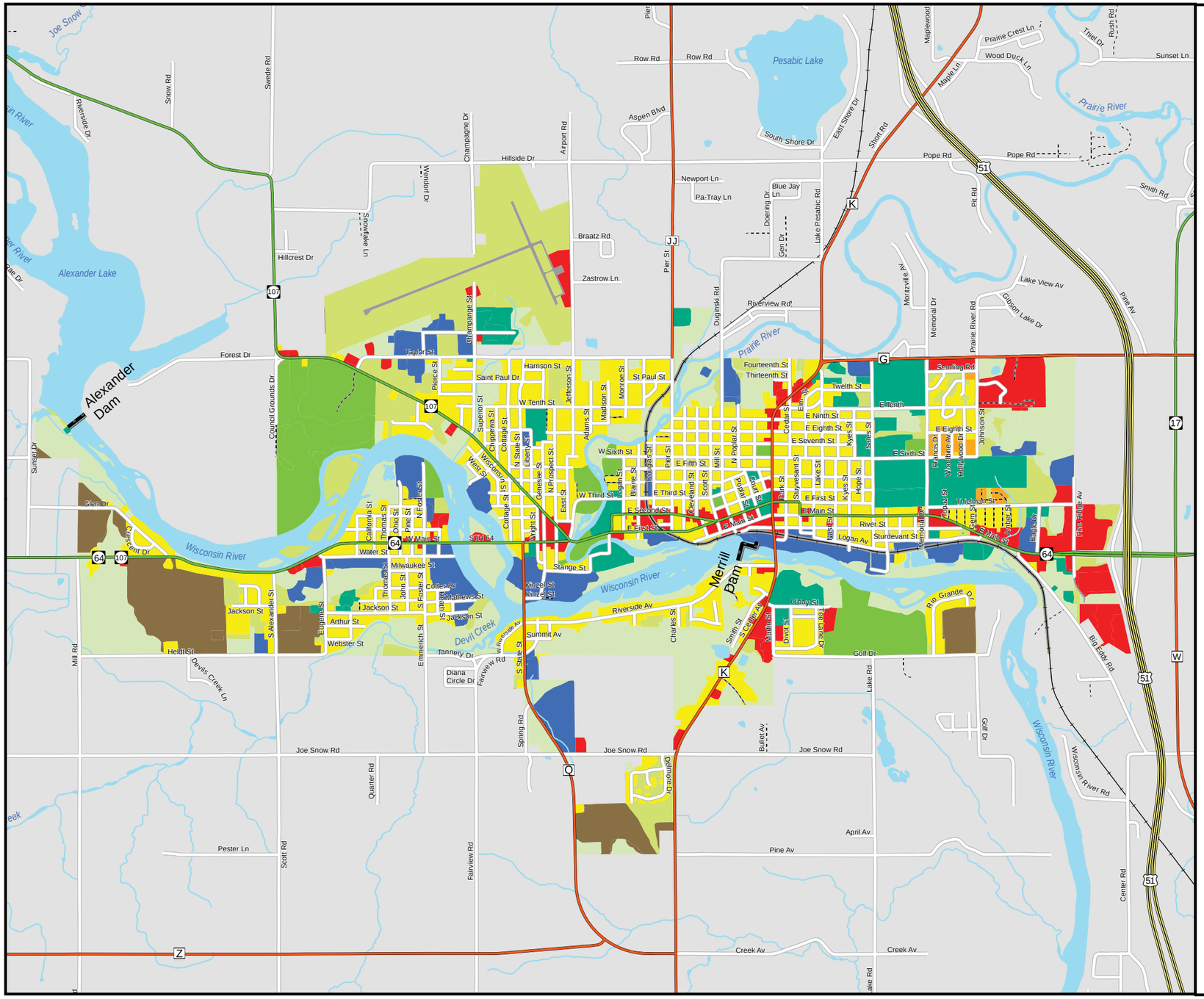
NOISE AND NOISE COMPATIBLE LAND USE

Federal land use compatibility guidelines are established under 14 Code of Federal Regulations (CFR) Part 150, *Airport Noise Compatibility Planning*. According to 14 CFR Part 150, residential land and schools are noise-sensitive land uses that are not considered compatible with a 65 decibel (dB) Day-Night Average Sound Level (Ldn or DNL). Other noise-sensitive land uses (such as religious facilities, hospitals, or nursing homes), if located within a 65 dB DNL contour, are generally compatible when an interior noise

[11] City of Merrill Zoning (https://merrill.maps.arcgis.com/home/webmap/viewer.html?webmap=c3f2748bdd204300919bd3c265a5878d)
[12] Merrill – Water Utilities – Water Treatment Plan (https://ci.merrill.wi.us/water#:~:text=Water%20Treatment%20Plant&text=Water%20was%20taken%20from%20the,filtration%20processes%20followed%20by%20chlorination.)



Source: ESRI Basemap Imagery (2022), City of Merrill.



Map 5

Existing Land Use

City of Merrill

Legend

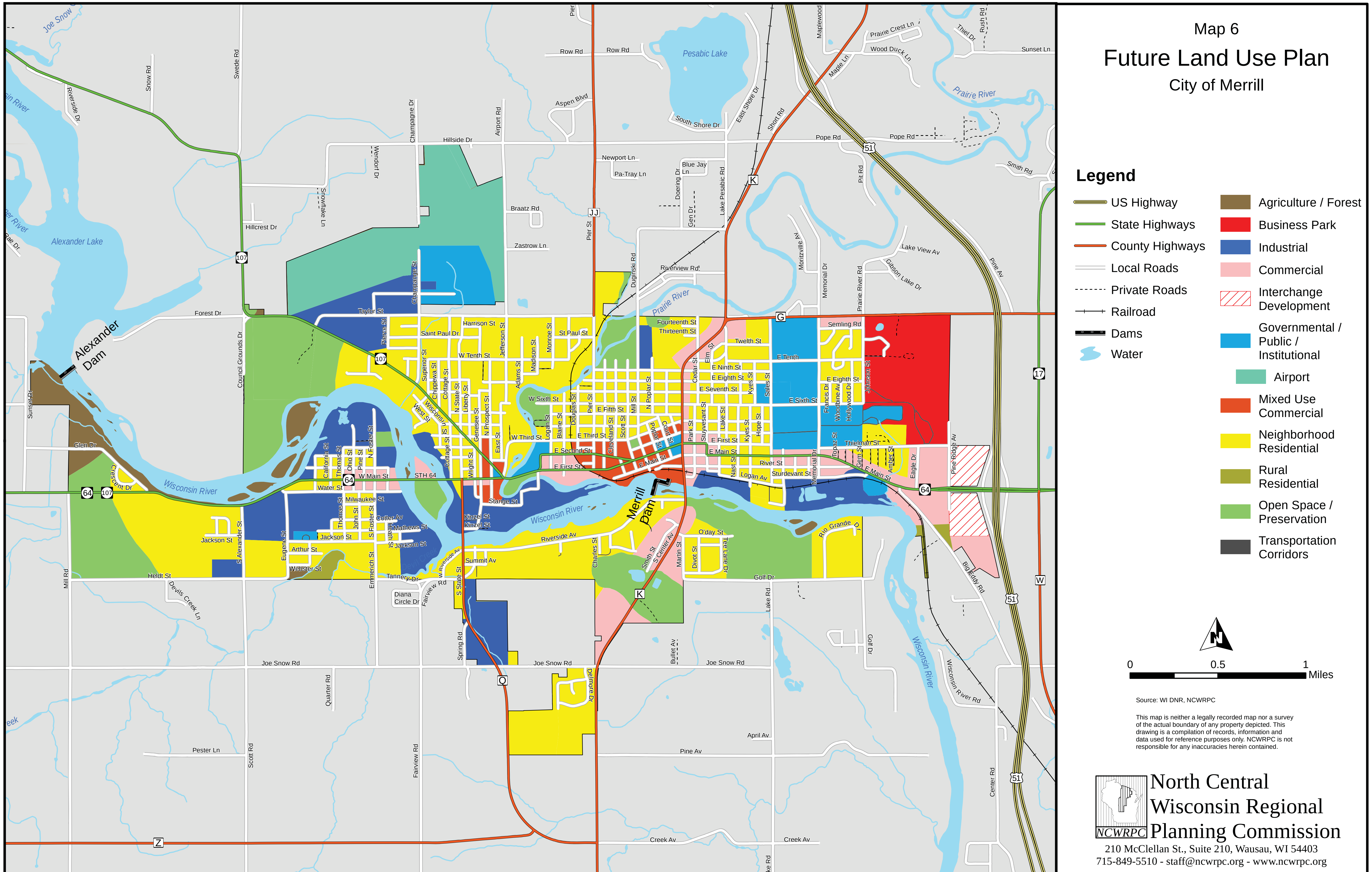
- US Highway
- State Highways
- County Highways
- Local Roads
- Private Roads
- Railroad
- Dams
- Water
- Agriculture
- Commercial
- Governmental / Institutional
- Industrial
- Multi-Family
- Open Lands
- Outdoor Recreation
- Residential
- Transportation
- Woodlands

0 0.5 1 Miles

Source: WI DNR, NCWRPC, Landuse 2015

This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

North Central Wisconsin Regional Planning Commission
NCWRPC
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org


Map 6
Future Land Use Plan
City of Merrill
Legend
US Highway
State Highways
County Highways
Local Roads
Private Roads
Railroad
Dams
Water
Agriculture / Forest
Business Park
Industrial
Commercial
Interchange Development
Governmental / Public / Institutional
Airport
Mixed Use Commercial
Neighborhood Residential
Rural Residential
Open Space / Preservation
Transportation Corridors
0
0.5
1
Miles
Source: WI DNR, NCWRPC
This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.
NCWRPC
North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org
Alexander Lake
Alexander Dam
Wisconsin River
Pesabic Lake
Prairie River
Merrill Dam
Joe Snow Rd
Pine Av
Creek Av
Heldt St
Hillside Dr
Pope Rd
Forest Dr
Golf Dr
W Main St
E Main St
STH 64
Riverside Av
Pester Ln
Mill Rd
Scott Rd
Fairview Rd
Lake Rd
Center Rd
Big Eddy Rd
Wisconsin River Rd
Pine Ridge Av
Pier St
Swede Rd
Snow Rd
Airport Rd
Champagne Dr
Council Grounds Dr

level reduction of 25 dB is incorporated into the design and construction of the structure. Special consideration should also be given to noise-sensitive areas within Section 4(f) properties where the land use compatibility guidelines in 14 CFR Part 150 do not account for the value, significance, and enjoyment of the area in question.[13]

Table 1J below identifies noise-sensitive land uses within one mile of the airport. These land uses are also shown on **Exhibit 1K** (Urban Resources). The closest residential areas are located on the eastern side of Airport Road abutting airport property.

Table 1J | Noise-Sensitive Land Uses

Facility	Location	Distance from Airport (Miles)	Direction from Airport
Schools			
Kate Goodrich Elementary	505 W 10th Street	0.50 miles	South
Prairie River Middle School	106 N Polk Street	0.90 miles	Southeast
Places of Worship			
Hillside Cathedral	1501 Pier Street	0.60 miles	Southeast
Our Savior's Lutheran Church	300 Logan Street	1.00 mile	South
Christ United Methodist	East 3rd Street	0.90 miles	Southeast
Park City Baptist Church	216 Grand Avenue	0.90 miles	South
St. Stephen's United Church of Christ	903 E 2nd Street	1.00 miles	South

Source: U.S. EPA, EJScreen (https://ejscreen.epa.gov/mapper/); Google Earth Aerial Imagery (March 2023)

SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Socioeconomics | *Socioeconomics* is an umbrella term used to describe aspects of a project that are either social or economic in nature. A socioeconomic analysis evaluates how elements of the human environment such as population, employment, housing, and public services might be affected by the proposed action and alternative(s).

FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures* specifically requires that a federal action causing disproportionate impacts to an environmental justice population (i.e., a low-income or minority population) be considered, as well as an evaluation of environmental health and safety risks to children. The FAA has identified factors to consider when evaluating the context and intensity of potential environmental impacts.

Would the proposed action?

- Induce substantial economic growth in an area, either directly or indirectly;
- Disrupt or divide the physical arrangement of an established community;
- Cause extensive relocation when sufficient replacement housing is unavailable;

[13] 49 U.S. Code § 47141 – Compatible land use planning and projects by state and local governments

- Cause extensive relocation of community business what would cause severe economic hardship for affected communities;
- Disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities; or
- Produce a substantial change in the community tax base.

Environmental Justice | *Environmental justice* is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies.

Meaningful Involvement ensures that:

- People have an opportunity to participate in decisions about activities that may affect their environment and/or health;
- The public's contribution can influence the regulatory agency's decision;
- Their concerns will be considered in the decision-making process; and
- The decision-makers seek out and facilitate the involvement of those potentially affected.[14]

The closest residential areas are located on the eastern side of Airport Road abutting airport property. According to the 5-Year 2016-2020 American Community Survey (ACS) estimates, the population within one mile of the airport is 2,711 persons, of which 29 percent of the population is considered low-income and four percent are people of color (which can include Hispanic populations of any race, including white). As indicated in **Table 1K**, approximately one percent of the population has identified as Hispanic.

Table 1K | Population Characteristics Within One Mile of the Airport

Characteristic	
Total Population	2,711
Population by Race[1]	
White	96%
Black	0%
American Indian	0%
Asian	3%
Pacific Islander	0%
Some Other Race	0%
Population Reporting Two or More Races	4%
Total Hispanic population (of any race)	1%

[1] Percentages do not add up to 100 percent. Hispanic is treated by the U.S. Census as a question separate from Race.

Source: U.S. EPA, EJScreen ACS Summary Report (5-Year 2016-2022) (https://ejscreen.epa.gov/mapper/)

[14] U.S. EPA website - Environmental Justice (https://www.epa.gov/environmentaljustice)

Children's Environmental Health and Safety | Federal agencies are directed, per E.O. 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, to make it a high priority to identify and assess the environmental health and safety risks that may disproportionately impact children. Such risks include those that are attributable to products or substances that a child is likely to encounter or ingest (air, food, water – including drinking water) or to which they may be exposed.

According to the 2016-2020 ACS estimates, five percent of the population within one mile of the airport are aged 17 or under (560 children). See **Tables 1G** and **1J** for lists of schools and recreational facilities within one mile of the airport that are used by children.

VISUAL EFFECTS

Visual effects deal broadly with the extent to which a proposed action or alternative(s) would either (1) produce light emissions that create an annoyance or interfere with activities; or (2) contrast with, or detract from, the visual resources and/or the visual character of the existing environment. Each jurisdiction will typically address outdoor lighting, scenic vistas, and scenic corridors in zoning ordinances and their general plan.

Light Emissions | These impacts typically relate to the extent to which any light or glare results from a source that could create an annoyance for people or would interfere with normal activities. Generally, local jurisdictions will include ordinances in the local code addressing outdoor illumination to reduce the impact of light on surrounding properties.

Airfield lighting at the airport includes a rotating beacon, medium intensity runway lighting (MIRL) on Runway 7-25 and Runway 16-34, and runway end identifier lights (REILS) on Runway 7-25. Additionally, the airport has two-box precision approach path indicator lights (PAPI-2) at each end of Runway 7-25. The airfield lights utilize pilot-controlled lighting (PCL) and are only lit when activated by pilots using the airport. For further information, see the discussion of the types of airfield lighting and visual approach aids presented earlier in this chapter.

Visual Resources and Visual Character | *Visual character* refers to the overall visual makeup of the existing environment where a proposed action or its alternative(s) would be located. For example, areas near densely populated areas generally have a visual character that could be defined as urban, whereas less developed areas could have a visual character defined by the surrounding landscape features, such as open grass fields, forests, mountains, deserts, etc.

Visual resources include buildings, sites, traditional cultural properties, and other natural or manmade landscape features that are visually important or have unique characteristics. Visual resources may include structures or objects that obscure or block other landscape features. In addition, visual resources can include the cohesive collection of various individual visual resources that can be viewed at once or in concert from the area surrounding the site of the proposed action or alternative(s).

Although the airport environment is not within an urban area, visually it is characterized not only by trees and vegetated open areas, but by both buildings and streets. The airport is visible from surrounding roadways on the northern portion of airport property boundaries (along Hillside Drive) and eastern portion of airport property boundaries (along Airport Road). Long-range views of the airport are not readily available from off airport property due to the relatively flat topography of the airport environs.

There are two nationally designated scenic byways in Wisconsin, but neither are located within Lincoln County, and therefore are not proximate to the airport.[15]

WATER RESOURCES

Wetlands | The U.S. Army Corps of Engineers regulates the discharge of dredged and/or fill material into waters of the United States, including wetlands with a continuous surface connection to a traditional navigable water, under Section 404 of the *Clean Water Act* (CWA). Wetlands are defined in E.O. 11990, *Protection of Wetlands*, as "those areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction." Wetlands can include swamps, marshes, bogs, sloughs, potholes, wet meadows, river overflows, mudflats, natural ponds, estuarine areas, tidal overflows, and shallow lakes and ponds with emergent vegetation. Wetlands exhibit three characteristics: the soil is inundated or saturated to the surface at some time during the growing season (hydrology), has a population of plants able to tolerate various degrees of flooding or frequent saturation (hydrophytes), and soils that are saturated enough to develop anaerobic (absent of air or oxygen) conditions during the growing season (hydric).

The USFWS manages the National Wetlands Inventory on behalf of all federal agencies. The National Wetlands Inventory (NWI) identifies surface waters and wetlands in the nation.[16] Based on the NWI, there are several freshwater emergent and freshwater forested shrub wetlands located on the airport. There is a freshwater forested/shrub wetland located near the approach end of Runway 16. The NWI also identified a few freshwater ponds located on the southeastern portion of the airport.

Floodplains | E.O. 11988, *Floodplain Management*, directs federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by the floodplains. A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel numbers 55069C0528D and 55069C0529D effective August 16, 2011, indicates that the airport is in Zone X, an area of minimal flood hazard.[17] Therefore, the airport is not located on a 100-year or 500-year floodplain.

[15] U.S. Department of Transportation, Federal Highways Administration, National Scenic Byways & All-American Roads (https://fhwaapps.fhwa.dot.gov/bywaysp/States/Show/WI)
[16] National Wetlands Inventory (https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/)
[17] FEMA Flood Map https://msc.fema.gov/portal/search?AddressQuery=merill%20%20municipal%20airport)

Surface Waters | The CWA establishes water quality standards, controls discharges, develops waste treatment management plans and practices, prevents or minimizes the loss of wetlands, and regulates other issues concerning water quality. Water quality concerns related to airport development most often relate to the potential for surface runoff and soil erosion, as well as the storage and handling of fuel, petroleum products, solvents, etc. Additionally, Congress has mandated (under the CWA) the NPDES.

Lincoln County is located in the Upper Wisconsin River drainage basin. Within the county, there are thirteen watersheds. The airport is in the Lower Prairie River and Joe Snow Creek-Wisconsin watersheds.[18] There are two impaired waterbodies within these watersheds: the Wisconsin River (southwest and south of the airport) and Lake Pesobic (northeast of the airport).

Groundwater | Groundwater is subsurface water that occupies the space between sand, clay, and rock formations. The term aquifer is used to describe the geologic layers that store or transmit groundwater, such as wells, springs, and other water sources. Examples of direct impacts to groundwater could include withdrawal of groundwater for operational purposes or reduction of infiltration or recharge area due to new impervious surfaces.

Based on the Wisconsin's DNR groundwater retrieval network, there are no groundwater wells located on the airport property.[19]

U.S. EPA's Sole Source Aquifer (SSA) Program was established under Section 1424(e) of the *Safe Drinking Water Act* (SDWA). Since 1977, it has been used by communities to help prevent contamination of groundwater from federally funded projects, and it has increased public awareness of the vulnerability of groundwater resources. The SSA program is authorized by Section 1424(e) of the SDWA (Public Law 93-523, 42 U.S.C. 300 et. seq), which states:

> "*If the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of that determination in the Federal Register.*"[20]

According to the U.S. EPA Sole Source Aquifer for Drinking Water website, there are no sole source aquifers located within airport boundaries. The nearest sole source aquifer is the Mille Lacs Sole Source Aquifer located approximately 190 miles northwest of the airport.[21]

Wild and Scenic Rivers | The *National Wild and Scenic Rivers Act* was established to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations.

[18] U.S. EPA – How's My Waterway (https://mywaterway.epa.gov/community/merrill%20municipal%20airport/overview)
[19] The Groundwater Retrieval Network (https://dnr.wisconsin.gov/topic/Groundwater/GRN.html)
[20] U.S. EPA, Overview of the Drinking Water Sole Source Aquifer Program (https://www.epa.gov/dwssa/overview-drinking-water-sole-source-aquifer-program#Authority)
[21] U.S. EPA, Sole Source Aquifers (https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b)

The Nationwide River Inventory (NRI) is a list of over 3,400 rivers or river segments that appear to meet the minimum *Wild and Scenic Rivers Act* eligibility requirements based on their free-flowing status and resource values. The development of the NRI resulted from Section 5(d)(1) in the *Wild and Scenic Rivers Act*, directing federal agencies to consider potential wild and scenic rivers in the comprehensive planning process.

The closest designated National Wild and Scenic River identified is the Wolf River, located more than 50 miles from the airport.[22] The nearest National River Inventory feature is the Wisconsin River, located just over one mile away from the airport.[23]

[22] U.S. Department of the Interior, National Park Service, National Wild and Scenic River System in the U.S. (https://nps.maps.arcgis.com/apps/MapJournal/index.html?appid=ba6debd907c7431ea765071e9502d5ac#)

[23] U.S. Department of the Interior, National Park Service, Nationwide River Inventory (https://www.nps.gov/maps/full.html?mapId=8adbe798-0d7e-40fb-bd48-225513d64977)