CHAPTER 5

RECOMMENDED MASTER PLAN CONCEPT

The airport master plan for Sawyer County Airport (HYR) has progressed through a systematic and logical process with a goal of formulating a recommended 20-year development plan. The process began with an evaluation of existing and future operational demand, which aided in creating an assessment of future facility needs and was used to develop alternative facility plans. Each step in the planning process included the development of draft working papers, which were presented and discussed at the planning advisory committee (PAC) meetings and were made available on the project website. A public workshop was held to present the development alternatives to the public and another will be held to present the information in this chapter. The public process is intended to familiarize the public with the master plan and provide the opportunity for comment. The public will have one final opportunity to comment when the draft master plan is presented to the Sawyer County Board of Supervisors for approval and adoption.

In the previous chapter, several development alternatives were analyzed to explore options for the future growth and development of Sawyer County Airport. The development alternatives have been refined into a recommended concept for the master plan. This chapter describes, in narrative and graphic form, the recommended direction for the future use and development of Sawyer County Airport. It is important to note that even once a recommendation is approved and adopted by the county board, the recommendation is only a plan and will require multiple steps to implement, including engineering/design and specific environmental assessments to the degree required by state and federal regulations. As such, this concept will remain a plan until necessary and justified.

As proposed, the recommended concept provides the ability for the airport to be incrementally improved to meet the disparate and specific needs of an array of airport operators. The goal of this plan is to ensure the airport can continue (and improve) in its role of serving general aviation activities in and around Sawyer County and the region. The plan has been specifically tailored to support existing and future growth in all forms of potential aviation activity as the demand materializes and capital resources allow.

The recommended airport development concept, as shown on **Exhibit 5A**, presents a long-term configuration for the airport that preserves and enhances the role of the airport, while meeting Federal Aviation Administration (FAA) design standards. The plan is intended to roughly correspond to a period of time that could exceed 20 years, unless aviation demand dictates the need for development associated with the ultimate plan sooner. Development staging (or an implementation schedule) for the proposed plan will be presented in Chapter Six. The following sections describe the key details of the recommended master plan concept, as shown on the exhibit.

AIRSIDE DEVELOPMENT

The airside plan generally considers improvements related to the runway and taxiway system and navigational aids.

DESIGN STANDARDS

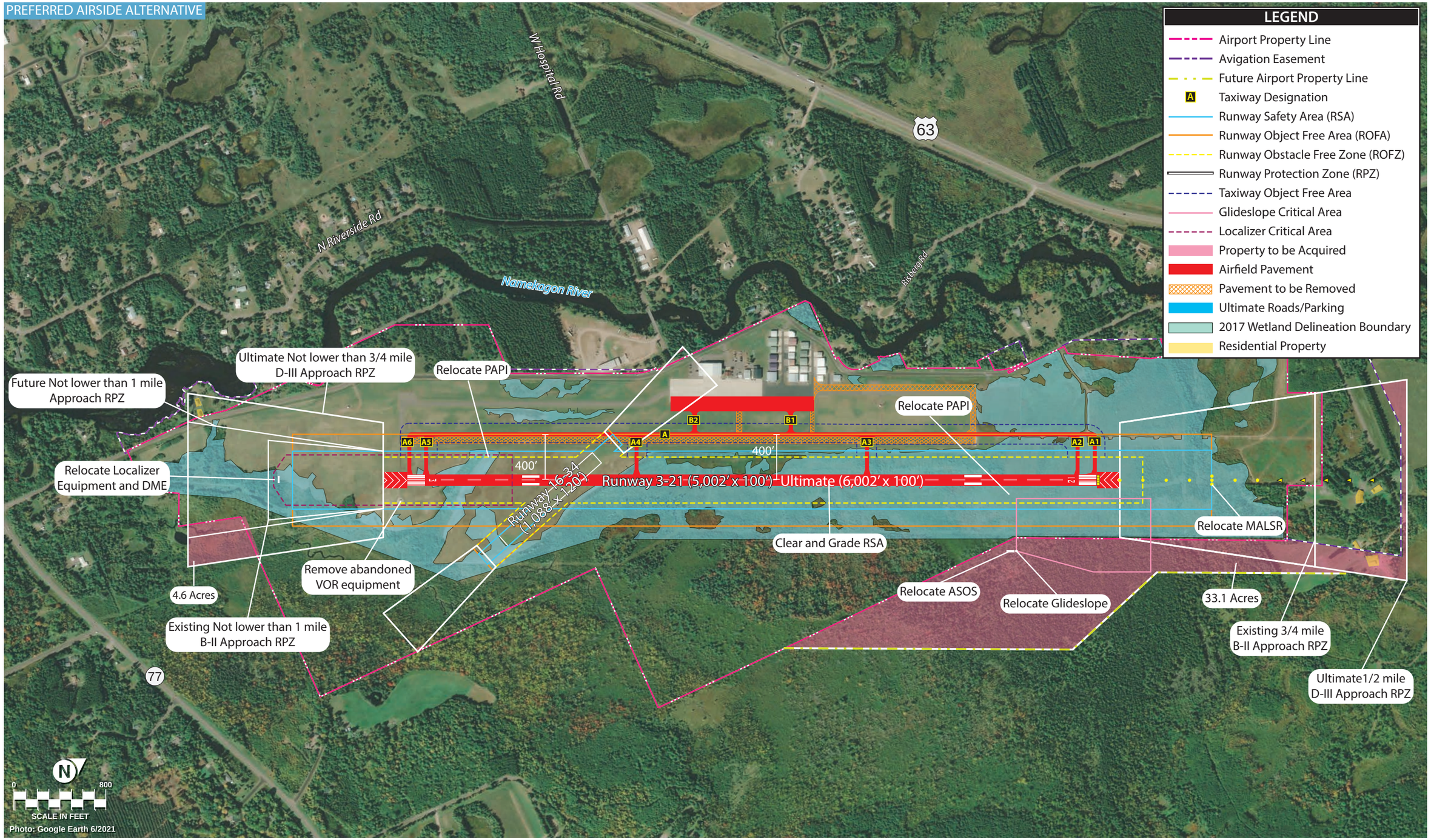
The FAA has established design criteria to define the physical dimensions of runways and taxiways, as well as the imaginary surfaces surrounding them, to enhance the safe operation of aircraft at airports. These design standards also define the separation criteria for the placement of landside facilities.

As discussed previously, the design criteria primarily center on the airport's critical aircraft. The critical aircraft is the most demanding aircraft, or family of aircraft, that currently (or is projected to) conduct 500 or more operations (takeoffs and landings) per year at the airport. Factors included in airport design are an aircraft's wingspan, approach speed, tail height, and the instrument approach visibility minimums for each runway, where applicable. The FAA has established the runway design code (RDC) to relate these design aircraft factors to airfield design standards. The most restrictive RDC is also considered the overall airport reference code (ARC). In the case of Sawyer County Airport, which has only one paved runway, the RDC for Runway 3-21 also serves as the airport's ARC. Crosswind Runway 16-34 is a short turf runway that is usable only by small aircraft. As such, its design parameters are relatively minor and remain completely on airport property.

While airfield elements, such as safety areas, must meet design standards associated with the applicable RDC, landside elements can be designed to accommodate specific categories of aircraft. For example, an airside taxiway must meet taxiway object free area (TOFA) standards for all aircraft types that use the taxiway, while the taxilane to a T-hangar area only needs to meet width standards for the smaller single- and multi-engine piston aircraft expected to utilize the taxilane.

The applicable RDC and critical design aircraft for Runway 3-21 in the existing and ultimate conditions are summarized in **Table 5A**.

PREFERRED AIRSIDE ALTERNATIVE



PREFERRED ULTIMATE LANDSIDE DEVELOPMENT ALTERNATIVE

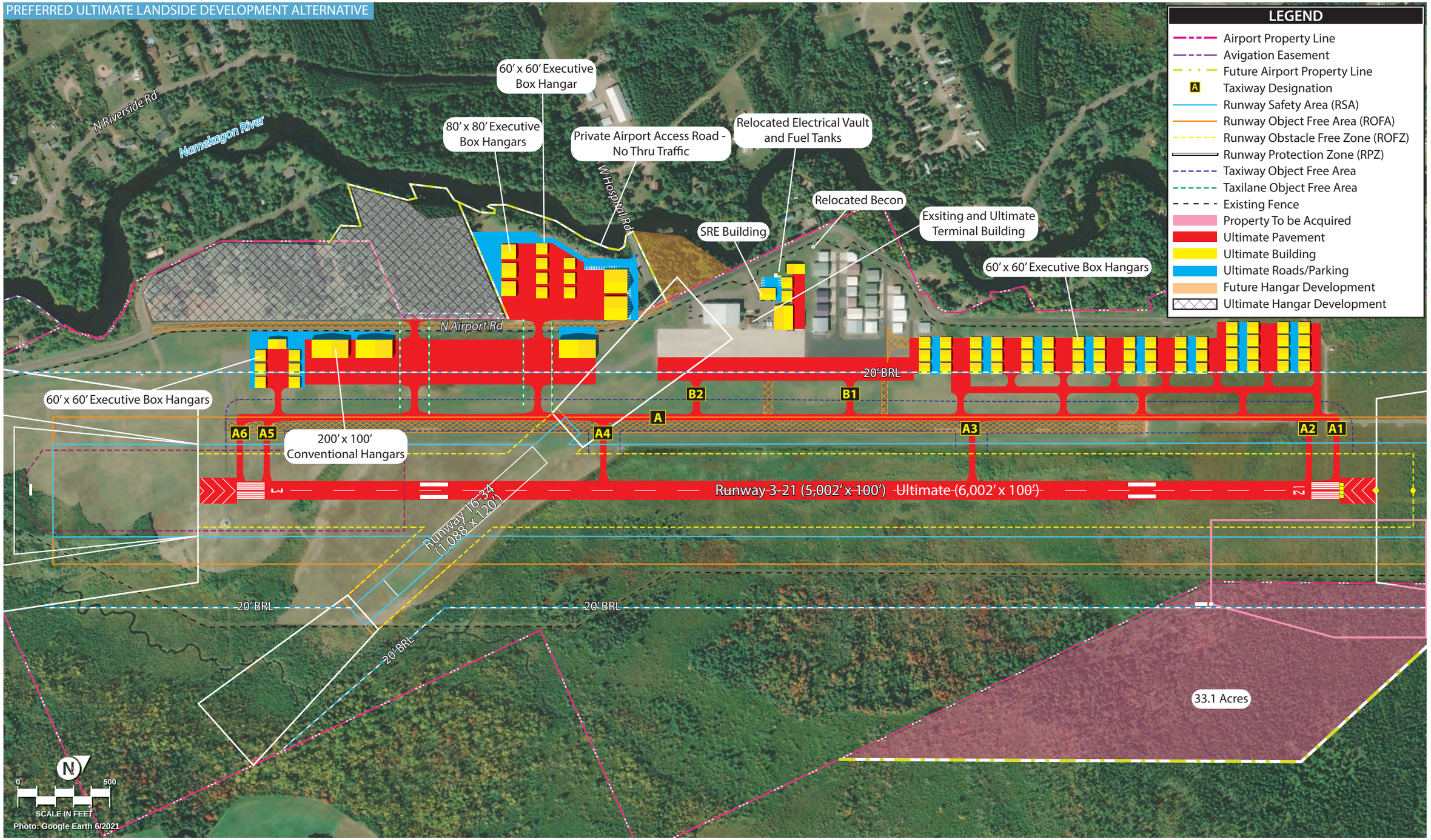


TABLE 5A | Airport and Runway Classifications

	Runway 3-21 Existing/Future (0-5 Years)	Runway 3-21 Ultimate (6-20+ Years)
Airport Reference Code (ARC)	B-II	C/D-III
Airport Critical Aircraft	B-II-2A	C/D-III-2B
Critical Aircraft (Typ.)	Citation II/SP/Latitude	Challenger 600/Global Express 500
Runway Design Code (RDC)	B-II-4000	C/D-III-4000
Approach Reference Code (APRC)	B/II/4000	C/D/III/4000
Departure Reference Code (DPRC)	B/II	C/D-III
Taxiway Design Group (TDG)	2A	2B

Source: FAA AC 150/5300-13B, Airport Design

RUNWAY 3-21

Runway Dimensions

Runway 3-21 is currently 5,002 feet long and 100 feet wide, which exceeds RDC B-II-4000 design standards for runway width, as the design standard width is 75 feet. Currently, the dimensions of Runway 3-21 make it fully capable of safely accommodating all small- to medium-sized general aviation aircraft. The full array of business jets can operate on this runway under moderate loading conditions in cool to warm temperatures. Longer trips and hot summer days can limit business jet capabilities, as jet engines are less efficient during hot weather and heavy loading conditions. As a general aviation airport, Sawyer County Airport serves a wide array of piston and turbine aircraft, and operations by both aircraft types are expected to increase over the planning period. Information in previous chapters outlined the current, strong jet operational activity, including some operations by aircraft in aircraft approach categories (AAC) C and D, as well as larger wingspans in aircraft design group (ADG) III.

Sawyer County is supported by businesses that rely on private and/or chartered air travel, as the community is relatively isolated from proximate commercial service airports. The closest commercial service airports in Duluth, Eau Claire, and Rhinelander provide limited services, and the nearest substantial commercial service airport, Minneapolis-Saint Paul International Airport, is approximately a three-hour drive from the Town of Hayward. As such, local business user aviation demand, such as Jacks Links, requires a highly functional runway capable of meeting the needs of the aircraft these businesses utilize. Moreover, the airport is frequently used by jet aircraft carrying visitors for recreational purposes. As detailed previously on Exhibit 2K, the business jets used range widely and include the Citation family of business jets, the Falcon 900 and 2000 models, the Global Express, and the Gulfstream 200 and 450 models. Increasing the utility of the runway, as proposed, will better position the airport to safely accommodate these business jets, as is expected under the federal regulations attached to the airport's grant assurances. These grant assurances have been signed by Sawyer County and represent the county's acceptance of federal grants.

The near-term recommended development concept includes a plan to maintain the runway's current dimensions; however, the ultimate plan recommends an increase in the runway length to 6,000 feet in order to meet an expected transition to C/D-III-4000 design standards. Additionally, the separation standard between the runway and the parallel taxiway increases to 400 feet in the ultimate C/D-III-4000 condition. The runway and Taxiway A are currently separated by 400 feet on the north end but only 300

feet on the south end, which meets the FAA's B-II-4000 design criteria. In the previous chapter, various options were examined regarding ways to achieve the C/D-III design standards for increased runway length and runway-to-taxiway separation. The ultimate-term plan considers improving the runway-to-taxiway distance by utilizing the westernmost 35 feet of runway as a parallel taxiway and building a new runway 400 feet east of the taxiway centerline. The newly constructed runway would offer a 400-foot runway-to-taxiway separation and greater depth for terminal development, as well as hangar and apron space. This plan preserves the current parallel taxiway pavement to be used for terminal access.

This runway project is recommended with the understanding that it would be completed when a) justification arises in the form of 500 or more annual itinerant operations by C/D-III aircraft and b) environmental clearance is obtained. The location of the proposed shifted runway is within an area with delineated wetlands, which are specifically discussed in the environmental overview later in this chapter.

Actions connected to the ultimate relocation of Runway 3-21 and transition to ultimate C/D-III-4000 design standards include the following:

- Environmental analysis to determine the potential for environmental impacts to occur, likely in the form of an environmental assessment (EA).
- Acquisition of property interests (fee simple or avigation easement) to protect safety areas (to be discussed).
- Extension of Taxiway A (current westernmost 35 feet of runway) to the ultimate Runway 3 and 21 ends.
- Clearing and grading of the ultimate runway safety area (RSA) and clearing within the ultimate runway object free area (ROFA).
- Wetland mitigation (to be determined, as necessary/required).
- Relocation of the localizer and glideslope antennas to support an instrument landing system (ILS) approach procedure.
- Installation of a medium intensity approach lighting system with runway alignment indicator lights (MALSR) on Runway 21.
- Relocation of the precision approach path indicator (PAPI) equipment.
- Construction/installation of all new runway pavement with medium intensity runway edge lighting (MIRL) and new taxiway pavement with medium intensity taxiway edge lighting (MITL).
- Re-marking of runway pavement with precision (Runway 21) and non-precision (Runway 3) markings.
- Relocation of the automated surface observation system (ASOS) equipment.

As noted previously, the runway extension and relocation project is included for planning purposes only and is not currently justified. An extension project would require additional aircraft operations that demonstrate the need for increased runway length before the FAA will offer grant funding assistance for its construction. Moreover, the project would require additional environmental clearances.

Runway Safety Areas

In the existing and future conditions, the RSA and ROFA are fully contained on airport property, while portions of each runway protection zone (RPZ) would partially extend beyond airport property and contain potentially incompatible land uses. As such, the existing/future plan includes a recommendation for the airport to acquire (fee simple) the portions of the RPZs that contain residential uses and remove these structures. On the Runway 3 end, this includes an area encompassing approximately 4.6 acres, depicted on **Exhibit 5A** in pink shading in the southeastern corner of the proposed and enlarged RPZ for Runway 3. In the southwestern corner of the enlarged Runway 3 ultimate RPZ, two residential uses are located on a parcel of land adjacent to Airport Road. As proposed, the FAA could require all property in the proposed RPZ to be acquired in fee. It is further recommended that the airport obtain property interest (in the form of an avigation easement, at a minimum, with fee simple preferred) over the remaining uncontrolled portions of the RPZs. If acquisition is not feasible/possible, the plan could revert back to the smaller RPZ and not lower than one-mile visibility minimum approach procedure, which would not include the homes to the southwest and would include only a small portion of land in the southeastern corner of the RPZ.

The proposed shifted northern end of the runway would require a larger property acquisition of approximately 33.1 acres. The acquisition would be to control property needed to support the relocated glideslope antenna for the ILS approach and for the shifted RPZ. If the ILS or future global positioning system (GPS) approach to Runway 21 is to provide not lower than ¾-mile visibility minimums, the relocated and shifted RPZ would also encompass up to four residential structures, as shown on **Exhibit 5A**. These properties would likely need to be acquired in fee to implement such an approach. If the visibility minimums remain at not lower than ¾-mile visibility, no residential properties would need to be acquired. All other airfield safety area standards could be maintained on currently owned airport property.

Pavement Strength

Runway 3-21 is currently strength-rated for up to 65,000 pounds for dual wheel loading aircraft (DWL), which is adequate for all small aircraft and most aircraft within the business jet fleet. The ultimate critical aircraft (Challenger 600/604) has a maximum takeoff weight (MTOW) of 48,200 pounds or less on dual wheel landing gear; however, the Global Express and Gulfstream models can weigh up to 95,000 pounds DWL and increasing the pavement strength to meet the needs of these aircraft should be considered only for the ultimate runway configuration. If demand to justify the relocated runway never materializes, the current pavement strength would be sufficient for the existing runway.

Instrument Approach Procedures

Both runway ends offer published instrument approach procedures. Runway 3 is equipped with a localizer performance with vertical guidance (LPV) GPS approach with visibility minimums down to one-mile, while Runway 21 offers an LPV (GPS) approach and an ILS with visibility minimums down to ¾-mile. Consideration was given to the potential for an instrument approach with visibility minimums below ¾-mile and the plan includes this at both ends. As noted previously, significant challenges are involved in reducing minimums below ¾-mile (i.e., larger RPZs that require additional property acquisition, and

installation of an approach lighting system). The improvement could be a significant benefit to operators, and as such, the plan includes the potential for lower than ¾-mile approach minimums on Runway 21 and not lower than ¾-mile approach minimums on Runway 3. This improvement would increase the size of the RPZs serving each runway end, as noted on the exhibit; however, if the challenges associated with achieving the improved minimums make this change infeasible, the current approach minimums should be maintained throughout the planning period.

Visual Approach Aids

Runway 3-21 is currently equipped with a four-box PAPI (PAPI-4) at the Runway 16 end and a PAPI-4 at the Runway 34 end. Runway 21 is equipped with a MALSR, while Runway 3 is equipped with runway end indicator lights (REILs). The plan includes the relocation of all airfield visual approach aids, as necessary.

Weather Reporting Equipment

As discussed in previous chapters, the existing ASOS equipment at the airport is planned to be moved to a new location. The future recommended development concept depicts a location on the east side of the relocated runway. ASOS relocation will only be necessary if hangar development occurs at the north end of the terminal area, as shown on the reverse side of **Exhibit 5A** and discussed later in this chapter.

TAXIWAY IMPROVEMENTS

Taxiway Design

The entirety of the Sawyer County Airport taxiway system is planned to meet Taxiway Design Group (TDG) 2A standards in the near term and then transition to 2B standards, both of which call for a width of 35 feet. All taxiways at HYR are currently 35 feet wide; the future and ultimate recommended development concept includes a plan for all taxiways (existing and ultimate) to be at least 35 feet wide.

Taxiway A

Taxiway A, the full-length parallel taxiway supporting Runway 3-21, is separated from the runway by 300 feet on the south half and 400 feet on the north half, centerline to centerline. While this separation meets the existing and future B-II-4000 design standards for runway-to-taxiway separation, it does not meet ultimate C/D-III-4000 standards, which call for 400 feet of separation. As such, the ultimate recommended development concept includes a plan to construct a relocated runway that would allow for the westernmost 35 feet of the existing runway to become the airfield's parallel taxiway. This change would provide a parallel taxiway that is 400 feet from the new Runway 3-21, as discussed previously.

Taxiway B

In the future recommended development concept, Taxiways B1 and B2 will become the taxiways extending between the main apron and the new Taxiway A. Ultimate Taxiway B and connectors are planned to be equipped with MITL.

Holding Position Markings

The holding positions at Sawyer County Airport are currently separated from the Runway 3-21 centerline by 250 feet, which meets B-II-4000 standards. These markings are planned to remain in the future recommended development concept; however, in the ultimate recommended concept, taxiways are planned to be re-marked with hold lines separated by 262 feet from the runway centerline, in accordance with ultimate D-III-4000 design standards.

LANDSIDE CONCEPT

The primary goal of landside facility planning is to provide adequate space to meet reasonably anticipated general aviation needs, while also optimizing operational efficiency and land use. Achieving these goals yields a development scheme that segregates functional uses while maximizing the airport's revenue potential. The key issues to be addressed in the landside areas at Sawyer County Airport are typical of most general aviation airports and include providing an expanded terminal services facility, increasing hangar and apron capacities, and adding amenities to accommodate existing users and attract new users. All general aviation-related development, such as new hangar construction, should occur only as dictated by demand. The recommended concept is intended to be used strictly as a guide for Sawyer County Airport staff when considering new developments.

The reverse side of **Exhibit 5A** depicts a detailed view of proposed landside facilities, all located on the west side of the airfield. A 20-foot building restriction line (BRL) is also included on the graphic. As discussed in the previous chapter, the BRL serves strictly as a planning guide for vertical construction on the airport by factoring in Code of Federal Regulations (CFR) Part 77 surfaces. Structures should generally be planned beyond the BRL, farther from the runway, to ensure clearance of safety areas and imaginary surfaces; however, it is not uncommon for airports to have development inside the BRL, as is the case at Sawyer County Airport. The FAA may require structures to be equipped with obstruction lighting, and all proposed structures should undergo airspace analysis prior to development to ensure there are no penetrations to Part 77 surfaces.

All of Sawyer County Airport's existing landside facilities are located west of Runway 3-21, with little space left for additional hangar development. The landside facilities include the terminal building, aircraft parking aprons, fueling facilities, and aircraft storage hangars. The Facility Requirements chapter determined that additional capacity may be needed in each of these areas by the end of the planning period, and the Alternatives chapter considered several facility layout concepts.

The preferred development concept for landside facilities is depicted on the reverse side of **Exhibit 5A**. It should be noted that, like the airside concept, future and ultimate plans are presented but will require specific demand factors to be met before implementation. Unlike the airfield plan, the landside plan is more fluid, as it will be mostly implemented and funded through private development. For example, the hangars shown on the exhibit represent one point-in-time thought process that could change and/or vary based on the specific needs of each operator. The airport proprietor will work with each individual operator to build to suit under land lease, unless the county chooses to fund hangar construction. Either way, the landside plan is intended only to indicate a potential for hangar and other landside facility development to meet actual demand factors. Those factors will likely change, which will require the

county to modify its plan to meet the demand. Moreover, this plan is intended to show orderly development of limited space so that maximal use and revenues can result. It is not intended to be a required plan that must be followed, but shows how best to maximize limited spaces for development to follow with the requirements of FAA grant assurances as operators choose to base at HYR.

The future and ultimate landside plans depict almost a full build-out of the airport's property on the west side and moving to the airport's east side would be advantageous; however, as described in previous chapters, there are significant terrain and floodplain challenges on the east side of the airport that could limit development potential when the cost/benefit is considered.

The focal point of development will include the closure of Airport Road between Namekagon Lane and Hospital Road. The initial development could include the land west of Airport Road and south of Hospital Road, if fully acquired. The land north of Airport Road and just north of Namekagon Lane is not planned for first-phase development at this time; other areas could be developed first, especially if Runway 3-21 is shifted east, creating greater depth in the western terminal area.

TERMINAL BUILDING

The alternatives analysis considered different options for expansion of the existing terminal building, as well as the possibility to develop a new terminal building. The recommended development concept includes both options, which affords Sawyer County greater flexibility in planning when capacity reaches a point at which expansion is needed, or the existing terminal has reached such an age that the benefits of constructing a new building could outweigh the costs of maintaining the existing building. The plan supports construction of a new terminal building in the current location to replace the existing building, as it is centrally located with an existing apron, as preferred.

The plan includes the construction of a new snow removal equipment (SRE) building just north and west of the terminal building. This location would be best, as it is not usable for hangar space but is proximate for use in snow removal operations. The plan also includes the relocation of the electrical vault and fuel tanks to the northwest of the SRE building, maximizing space that is not practicably usable for hangar development.

AIRCRAFT STORAGE FACILITIES

As mentioned, all of Sawyer County Airport's existing facilities are concentrated on the west side. There is currently a mix of executive and conventional hangars at the airport. The recommended plan includes additional development of each of these hangar types on both the north and south ends of the airfield, with the understanding that some of these hangars will likely be used to support specialized aviation service operators (SASOs) that offer aircraft maintenance and other services. The following hangar development areas are planned for the airport:

- *T-Hangars* | The future plan does not include the construction of T-hangars, as the local preference is not for expensive individual small T-hangar units. T-hangars have not been constructed recently at most airports because the return on investment is low due to based aircraft operators' reluctance to pay the high rents that make the construction of these hangars financially feasible. Executive and conventional hangars are generally preferred.

- *Executive Hangars* | Several areas on the west side of the airport are planned for new executive hangars. In the future development concept, this includes 52 60-foot by 60-foot hangars north, 13 south, and two adjacent the SRE building, for a total capacity of 67 60-foot by 60-foot executive hangars. Three 80-foot by 80-foot hangars are also planned, as shown in the southwestern area opened by the acquisition and closure of Airport Road.
- *Conventional Hangars* | The ultimate recommended plan includes proposed conventional hangars, mostly in the southern portion of the terminal area, as depicted on the exhibit. Eight conventional hangars of various sizes are shown. These could house corporate operations and/or specialty operators, or could be a new terminal building with attached hangar in the future.

AIRCRAFT PARKING APRON

Sawyer County Airport currently offers one primary apron, which extends north/south of the terminal building. Its proximity with the current runway and parallel taxiway limits its functionality and operators' ability to park aircraft during peak periods. The ultimate plan considers shifting the runway west, thereby increasing the depth and allowing for more apron space to be developed and used, as shown on the exhibit. The plan also includes the allowance for a large apron to serve the proposed hangars to the south and smaller aprons between hangars aligned north/south in the northern terminal area.

VEHICLE ACCESS AND PARKING

Consideration has been given to ensuring that vehicular traffic remains segregated from areas in which aircraft are operating. All new roads will stem from existing Airport Road (north) or a new "internal" Airport Road, which is planned to replace the existing road to be closed south of Hospital Road. The "internal" Airport Road will be for airport users only and will likely be gated and not a through road.

AIRPORT RECYCLING, REUSE, AND WASTE REDUCTION

REGULATORY GUIDELINES

FAA Modernization and Reform Act of 2012

The *FAA Modernization and Reform Act of 2012* (FMRA), which amended Title 49 United States Code (USC), included several changes to the Airport Improvement Program (AIP). Two of these changes are related to recycling, reuse, and waste reduction at airports.

- Section 132(b) of the FMRA expanded the definition of airport planning to include "developing a plan for recycling and minimizing the generation of airport solid waste, consistent with applicable State and local recycling laws, including the cost of a waste audit."
- Section 133 of the FMRA added a provision that requires an airport that has or plans to prepare a master plan, and receives AIP funding for an eligible project, to ensure the new or updated master plan addresses issues relating to solid waste recycling at the airport, including:

- The feasibility of solid waste recycling at the airport;
- Minimizing the generation of solid waste at the airport;
- Operation and maintenance requirements;
- A review of waste management contracts; and
- The potential for cost savings or the generation of revenue.

State of Wisconsin Solid Waste Management

In the State of Wisconsin, the Wisonsin Department of Natural Resources (DNR) aids local governments, private industries, and other organizations in managing solid waste in order to minimize waste and encourage reuse and recycling.[1]

Wisconsin has a strong history of recycling and composting. As a result, Wisconsin has a comprehensive set of laws that ban the disposal and incineration of certain materials in local landfills (**Exhibit 5B**). Wisconsin also has a database, the *Wisconsin Recycling Markets Directory,* that tracks statewide collection areas for recyclables and compostable items.

SOLID WASTE

Typically, airport sponsors have purview over waste handling services in facilities they own and operate, such as airport-owned hangars and maintenance facilities. Tenants of airport-owned buildings/hangars or tenants that own their own facilities are usually responsible for coordinating their own waste handling services. While the focus of this plan is airport-operated facilities, Sawyer County Airport should work to incorporate facility-wide strategies that create consistency in waste disposal mechanisms, which would ultimately result in the reduction of materials sent to the landfill.

For airports, waste can generally be divided into eight categories.[2]

- **Municipal Solid Waste** (MSW) is more commonly known as trash or garbage and consists of everyday items that are used and then discarded, such as product packaging.
- **Construction and Demolition Waste** (C&D) is considered non-hazardous trash that results from land clearing and excavation, as well as demolition, renovation, or repair of structures, roads, and utilities, and includes concrete, wood, metals, drywall, carpet, plastic, pipe, cardboard, and salvaged building components. C&D is also generally labelled as MSW.
- **Green Waste** is a form of MSW yard waste that consists of tree, shrub, and glass clippings, as well as leaves, weeds, small branches, seeds, and pods.
- **Food Waste** includes unconsumed food products or waste generated and discarded during food preparation and is also considered MSW.

1 Wisconsin Department of Natural Resources, Solid Waste Management in Wisconsin (https://dnr.wisconsin.gov/topic/Waste/Solid.html)
2 FAA, Recycling, Reuse, and Waste Reduction at Airports, April 24, 2013

Wisconsin Recycles

The following items are **banned** from landfills and incinerators statewide and should be reused, recycled or composted.

Containers

- #1 and #2 plastic bottles and jars
- Aluminum containers
- Bi-metal cans
- Glass containers
- Steel (tin) cans

Paper and Cardboard

- Corrugated cardboard
- Magazines, catalogs, and other materials on similar paper
- Newspaper and newsprint materials
- Office paper

Yard Materials

- Grass clippings
- Debris and brush under 6" in diameter
- Leaves

Vehicle Items

- Lead-acid vehicle batteries
- Tires *
- Used oil filters
- Waste oils *

*These items may be burned in a solid waste treatment facililty with energy recovery.

Appliances

- Air conditioners
- Boilers
- Clothes dryers
- Clothes washers
- Dehumidifiers
- Dishwashers
- Freezers
- Furnaces
- Microwaves
- Ovens
- Refrigerators
- Stoves
- Water heaters

Electronics

- Cell phones
- Computers – desktop, laptop, netbook, tablet
- Computer monitors
- Computer keyboards and mice
- Computer scanners
- Computer speakers
- Desktop printers (including those that fax and scan)
- DVD players, VCRs, DVRs and all other video players
- External hard drives
- Fax machines
- Flash drives/USBs
- Other items that plug into a computer
- Televisions

Why ban items from the landfill and incinerator?

The items on this list are made of materials that can be reused in new products. Some also have toxic components that we do not want in our groundwater, air or soil. Recycling and composting allow landfills to last longer, provide markets with valuable reusable materials, create jobs, and prevent pollution.

Why not ban more materials?

Corrugated cardboard is banned while waxed cardboard is not. Some things with plugs, like computers, are banned, while others, like toasters, are not. Why? Current bans cover some of the most easily reusable or most toxic materials on the market today. Eventually more items may be added to this list as new recycling markets develop or the types of materials we throw away change.

Some communities go above and beyond what is required by state law. Check with your local government or recycling service provider to find out what additional materials are accepted for recycling in your area. For more information about Wisconsin's recycling program, search "recycle" at dnr.wi.gov. Wisconsin's recycling requirements apply to everyone in the state at all residences and places of work or play.

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DNRWasteMaterials@wisconsin.gov

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- **Deplaned Waste** is waste removed from passenger aircraft. Deplaned waste includes bottles, cans, mixed paper (newspapers, napkins, paper towels), plastic cups, service ware, food waste, and food-soiled paper/packaging.
- **Lavatory Waste** is a special waste that is emptied through a hose and pumped into a lavatory service vehicle. The waste is then transported to a triturator[3] facility for pretreatment prior to discharge in the sanitary sewage system. Chemicals in lavatory waste can present environmental and human health risks if mishandled; therefore, caution must be taken to ensure lavatory waste is not released to the public sanitary sewage system prior to pretreatment.
- **Spill Clean and Remediation Wastes** are also special wastes generated during cleanup of spills and/or remediation of contamination from several types of sites on an airport.
- **Hazardous Wastes** are governed by the *Resource Conservation and Recovery Act* (RCRA), as well as regulations for certain hazardous waste, known as *universal waste*, described in Title 40 CFR Part 237, *The Universal Waste Rule.* Common sources of aviation hazardous waste are included below.
    - Solvents
    - Caustic part washes
    - Heavy metal pain waist and paint chips
    - Wastewater sludges from metal etching and electroplating
    - Unused explosives and monomers
    - Waste fuels and other ignitable products
    - Unusable water conditioning chemicals
    - Nickel cadmium batteries
    - Waste pesticides

As seen on **Exhibit 5C**, there are multiple areas where the airport potentially contributes to the waste stream, including the terminal building, on-airport tenants (fixed base operators [FBOs]/SASOs, etc.), hangars, airfields, aircraft ground support equipment, and airport construction projects. To create a comprehensive waste reduction and recycling plan for the airport, all potential inputs must be considered.

EXISTING SERVICES

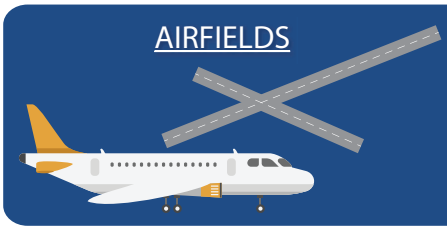
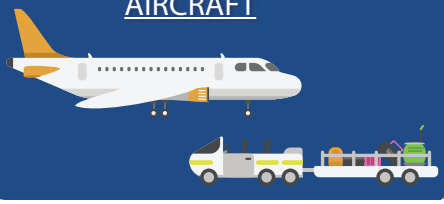
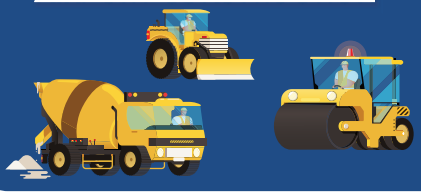
The airport manages its solid waste through eight-yard dumpsters that are routinely emptied weekly during the summer months and biweekly during the winter months. These dumpsters are available for use by all airport hangar lessees and users. Sawyer County and HYR's FBO manage the financial responsibility for HYR's waste provider through Allied Waste. The airport currently has no program for recycling.

SOLID WASTE MANAGEMENT SYSTEM

Airports generally utilize either a centralized or a decentralized waste management system. The differences between the two methods are described below and summarized on **Exhibit 5D**.

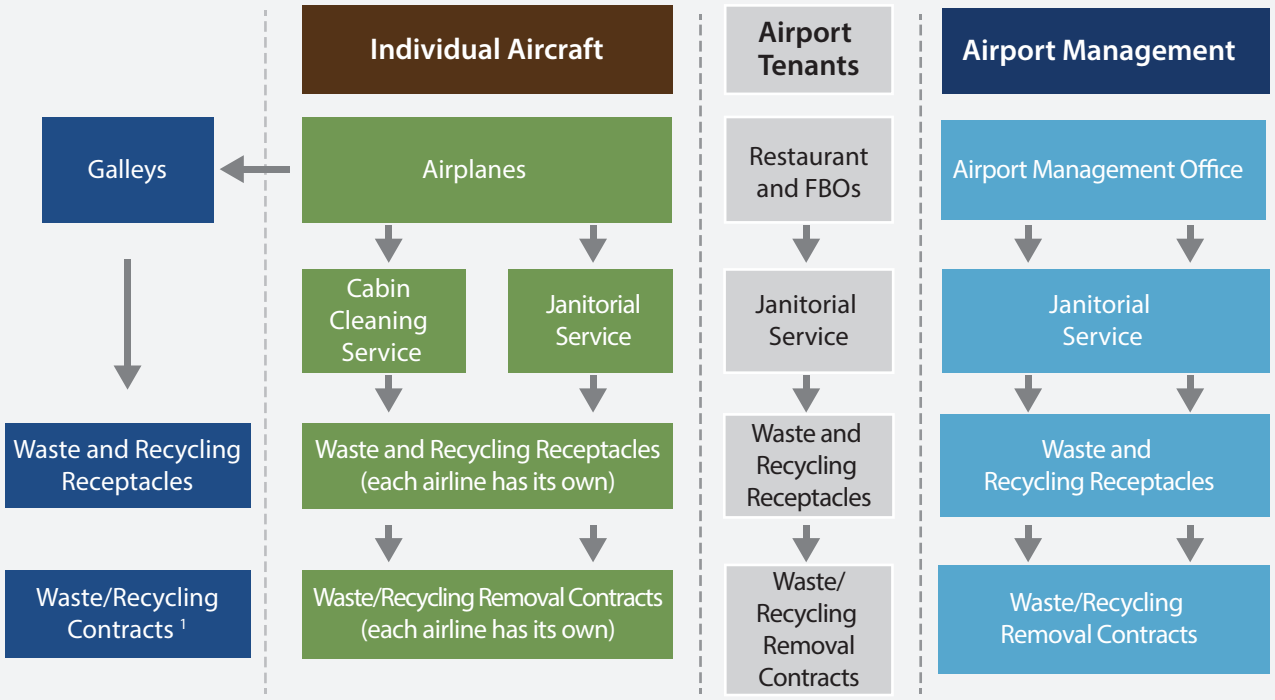
[3] A triturator facility turns lavatory waste into fine particulates for further processing.

AIRPORT WASTE STREAMS

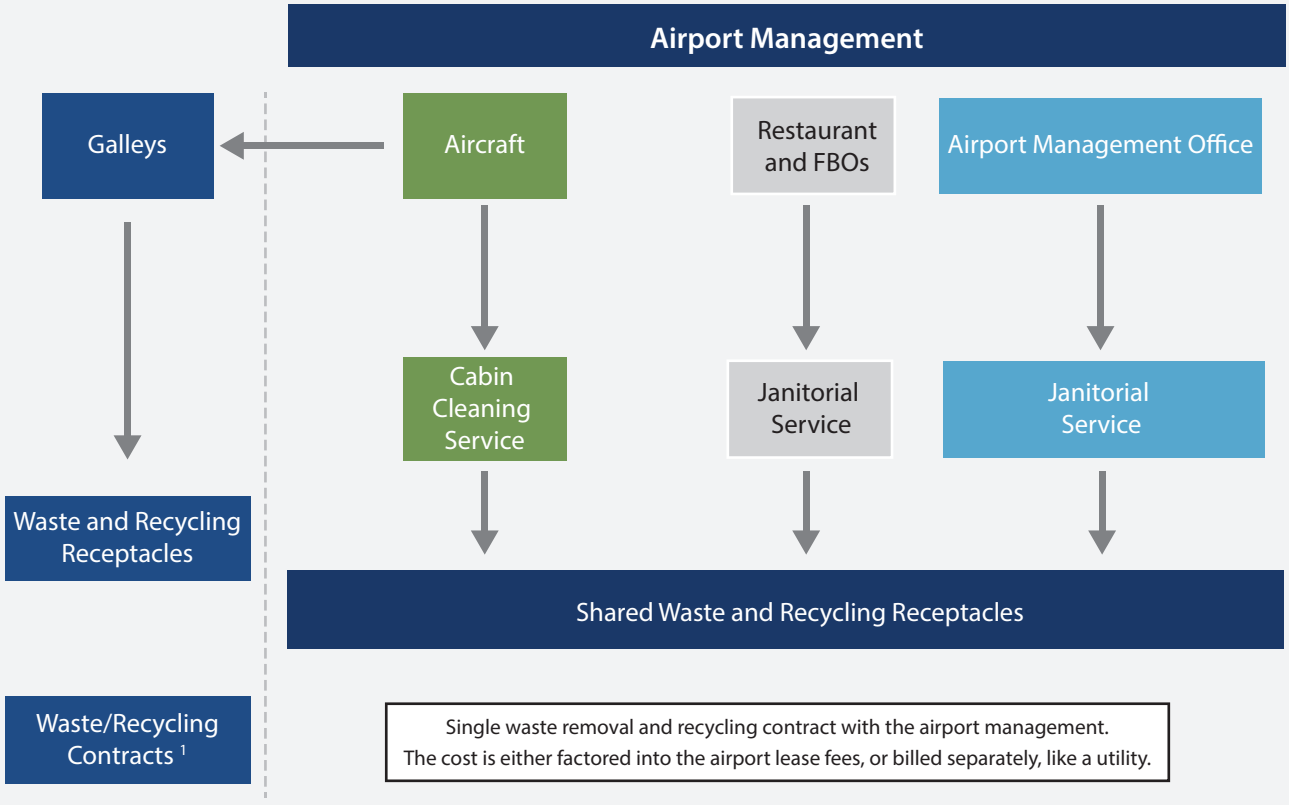
AIRPORT AREA	POTENTIAL INPUTS	POTENTIAL OUTPUTS
TERMINALS 	Employees	Food Waste, Paper Plastic, Aluminum Cans Trash, Grease & Oil Green Waste Deplaned Waste
AIRFIELDS 	Aircraft Operations	Runway Rubber Green Waste
AIRCRAFT 	Aircraft Ground Support Equipment (GSE)	Vehicle Waste Plastic Wastewater Hazmat
AIRPORT CONSTRUCTION 	Construction Re-Construction Demolition	Reused Concrete Reused Asphalt Vehicle Waste Soils, Building Materials Wood, General Waste
ADMINISTRATIVE OFFICES 	Employees	Food Waste Paper, Plastic Aluminum Cans Trash

Source: Recycling, Reuse, and Waste Reduction at Airports, FAA (April 24, 2013)

Components of a Decentralized Airport Waste Management System



Components of a Centralized Airport Waste Management System



[1] Galleys usually manage their own waste even if an airport relies on a centralized system

Source: Natural Resources Defense Council, Trash Landings: How Airlines and Airports Can Clean Up Their Recycling Programs, December 2006.

Centralized Waste Management System

With a centralized management system, the airport provides receptacles for the collection of waste, recyclable materials, or compostable materials and contracts for their removal by a single local provider.[4] The centralized waste management system allows for more participation from airport tenants that may not be incentivized to recycle on their own and can reduce the overall cost of service for all involved. A centralized strategy can be inefficient for some airports, as this type of strategy requires more effort and oversight on the part of airport management; however, the centralized system is advantageous in that it involves fewer working components in the overall management of the solid waste and recycling efforts. It also allows greater control by the airport sponsor over the type, placement, and maintenance of dumpsters, thereby saving space and eliminating the need for tenants to have individual containers.

Decentralized Waste Management System

Under a decentralized waste management system, the airport provides waste containers and contracts for the hauling of waste materials in airport-operated spaces only; however, airport tenants (such as FBOs, retail shops, and others) manage the waste from their leased spaces with separate contracts, billing, and hauling schedules. A decentralized waste management system can increase the number of receptables on airport property and the number of trips by a waste collection service provider if tenants' and the airport's collection schedules differ.

GOALS AND RECOMMENDATIONS

Solid Waste and Recycling Goals

Table 5B outlines objectives that could help reduce waste generation and introduce recycling efforts at the airport. To increase the effectiveness of tracking progress at the airport, a baseline of all suggested metrics should be established to provide a comparison over time.

TABLE 5B | Waste Management and Recycling Goals – Sawyer County Airport, Wisconsin

Goals	Objectives
Reduce amount of solid waste generated	Conduct a waste audit to identify the most common types of waste
	Eliminate purchase of items that are not recyclable (e.g., Styrofoam, plastic bags)
Reuse materials or equipment	Reuse grass clippings as mulch
	Offer reusable dishes to employees
	Reuse cardboard boxes for storage
Increase amount of materials recycled	Promote the expansion of recycling services to all areas of the airport
	Improve waste tracking and data management
	Incorporate recycling requirements and/or recommendations into tenant lease agreements
	Introduce recycling marketing and promotion efforts throughout public areas
	Require contractors to implement strategies to reduce, reuse, and recycle C&D waste

Source: Coffman Associates, Inc.

[4] National Academies of Sciences, Engineering, and Medicine Airport Cooperative Research Program, Synthesis 92, Airport Waste Management and Recycling Practices, 2018

Recommendations

To maximize waste reduction and introduce recycling efforts at the airport, the following recommendations are made:

- **Assign the responsibility of waste management to a dedicated individual or group.** Having one person or a group of people oversee and manage solid waste at the airport will create efficient and cost-saving solid waste management solutions. People dedicated to this operational aspect of the airport will be familiar with processes and will identify areas of improvement and cost-saving measures.
- **Audit the current waste management system.** The continuation of an effective program requires accurate data on current waste rates. An airport can gain insight into its waste stream in several ways, such as requesting weights from the hauler, tracking the volume, or reviewing the bills; however, managing the waste system starts with a waste audit, which is an analysis of the types of waste produced. A waste audit is the most comprehensive and intensive way to assess waste stream composition and opportunities for waste reduction and should include the following actions:
    - Examination of records to establish a baseline for metrics
        - Waste hauling and disposal records and contracts
        - Supply and equipment invoices
        - Other waste management costs (commodity rebates, container costs, etc.)
        - Tracking waste from the point of origin
    - Facility walk-through conducted by the airport
        - Gather qualitative waste information to determine major waste components and waste-generating processes
        - Identify the locations on the airport that generate waste
        - Identify what types of waste are generated by the airport to determine what can be reduced, reused, or recycled
        - Improve understanding of waste pick-up and hauling practices
    - Sort waste
        - Provides quantitative data on total airport waste generation
        - Allows problem-solving design/enhances the recycling program for the airport
- **Reduce waste through controlled purchasing practices and the consumption of nonessential products.** The airport can control the amount of waste generated by prioritizing the purchase of items or supplies that are reusable, recyclable, compostable, or made from recycled materials.
- **Create a recycling program at the airport.** To guarantee the airport continues to reduce the amount of waste hauled to the landfill, materials that cannot be reused or avoided should be recycled, if possible. The county should review internal procedures and place recycling containers near solid waste dumpsters to give airport users and tenants the opportunity to recycle items, rather than throwing them away. Clearly marked signage of what is and is not accepted, placed near the solid waste and recycling containers, is another significant component of an effective recycling program.

- **Provide ongoing education for airport employees.** In order to minimize waste within the airport, it is crucial to inform and provide airport employees with a thorough education on waste management at both individual and group levels. As part of the onboarding process, new employees should be given the tools needed to achieve a thorough understanding of the airport's solid waste and recycling goals.
- **Provide tenant education.** It is vital to encourage tenant participation to ensure buy-in of the airport's recycling efforts. To ensure recycling is part of the airport's everyday business, airport administration can provide training and education to support personnel, tenants, and others who conduct business at the airport. In-person meetings with airport tenants could be held to create mutual understanding of the airport's overall success.
- **Incorporate an airport-wide reduction strategic plan.** Designing an airport-wide waste reduction strategic plan will create consistency in waste disposal mechanisms, ultimately resulting in the reduction of materials sent to the landfill.
- **Recycle electronic waste (e-waste).** To guarantee the airport continues to reduce the amount of waste hauled to the landfill, materials that cannot be reused or avoided should be recycled if possible. Recyclable materials (such as paper, aluminum, plastic, electronics, etc.) should be sorted from the airport's solid waste. HYR and its tenants should consider creating a standardized program through which electronics can be picked up and sent to the county, as needed. Wisconsin has a statewide manufacturer-funded program (E-Cycle Wisconsin), that provides various electronic collection drop-off sites across the state.[5]

ENVIRONMENTAL OVERVIEW

An analysis of potential environmental impacts associated with proposed airport projects is an essential consideration in the airport master plan process. The primary purpose of this discussion is to review the recommended development concept (**Exhibit 5A**) and associated capital program at the airport to consider whether projects identified in the airport master plan could, individually or collectively, significantly impact existing environmental resources. Information contained in this section was obtained from previous studies, official internet websites, and analysis by the consultant.

The environmental inventory included in the first chapter of this master plan provides baseline information about the airport environs. This section provides an overview of potential impacts to existing resources that could result from implementation of the planned improvements outlined on the recommended development concept.

If the FAA retains approval authority over a project, the project is typically subject to the *National Environmental Policy Act* (NEPA). For projects not categorically excluded under FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, or under the new categorical exclusions provided in the recent *FAA Reauthorization Act of 2024* (Act), compliance with NEPA is generally satisfied through the preparation of an environmental assessment (EA). In instances where significant environmental impacts are expected, an environmental impact statement (EIS) may be required.

[5] Wisconsin Department of Natural Resources (https://dnr.wisconsin.gov/topic/ecycle)

The Act has introduced a variety of updated and new environmental guidelines. The primary environmental-related updates are outlined in three sections: Section 743, Section 783, and Section 788.

Section 743 acts as a revision to Section 163 of the *FAA Reauthorization Act of 2018*. Section 743 details the FAA's authority to regulate uses of airport property. The section details the FAA's authority over projects on land acquired without federal assistance and outlines limitations imposed on non-aeronautical review. Section 743 also states that a notice of intent for proposed projects outside of FAA jurisdiction should be submitted by an airport sponsor to the FAA.

Section 783 state that airport capacity enhancement projects, terminal development projects, and general aviation airport improvement projects will be subject to coordinated and expedited environmental review requirements. Additionally, Section 783 introduces a new process for determining which safety-related projects should be prioritized during the environmental review process.

Section 788 establishes two new NEPA categorical exclusions that would cover environmental projects for the following types of projects:

"*(A) Categorical Exclusion for Projects of Limited Federal Assistance*

1. *Receive less than $6 million of federal funds and do not involve extraordinary circumstances or special purpose laws or have a total anticipated cost of not more than $35 million with federal funds comprising less than 15 percent of the total estimated project cost*."

"*(B) Categorical Exclusion in Emergencies*

1. *For the repair or reconstruction of any airport facility, runway, taxiway, or something similar in structure that is in operation or under construction when damaged by a State declared emergency or for an emergency declared by the President pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act*."

The following portion of the airport master plan is not designed to satisfy the NEPA requirements for a specific development project, but provides a preliminary review of environmental issues that may need to be considered in more detail within the environmental review processes. It is important to note that the FAA is ultimately responsible for determining the level of environmental documentation required for airport actions.

Table 5C summarizes potential environmental concerns associated with implementation of the recommended development concept for HYR. Analysis under NEPA includes effects or impacts a proposed action or alternative may have on the human environment (see Title 40 CFR §1508.1). Effects have been recently defined in the Council on Environmental Quality guidelines as changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and include direct effects, indirect effects, cumulative effects, and ecological effects.[6]

[6] Federal Register, Vol. 89, No. 85, Rules and Regulations (§1508.1 Definitions), May 1, 2024

TABLE 5C | Summary of Potential Environmental Concerns

AIR QUALITY	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the United States (U.S.) Environmental Protection Agency (EPA) under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.***
Potential Environmental Concerns	**Unknown Impact.** An increase in operations could occur over the 20+ year planning horizon of the master plan that would likely result in additional emissions. Although Sawyer County, which contains the airport, is currently in attainment for federal criteria pollutants,[1] FAA *Aviation Emissions and Air Quality Handbook*, version 4, includes screening criteria for projects that are in attainment areas. For construction or operational emissions, project-specific qualitative or quantitative emissions inventories under NEPA may be required, depending on the type of environmental review needed for specific projects defined on the development plan concept. *Source: 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), as of August 31, 2024*
BIOLOGICAL RESOURCES (INCLUDING FISH, WILDLIFE, AND PLANTS)	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The U.S. Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS) determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species or would result in the destruction or adverse modification of federally designated critical habitat.*** ***FAA has not established a significance threshold for non-listed species; however, factors to consider include whether an action would have the potential for:*** • ***Long-term or permanent loss of unlisted plant or wildlife species;*** • ***Adverse impacts to special status species or their habitats;*** • ***Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or populations; or*** • ***Adverse impacts on a species' reproductive rates, non-natural mortality, or ability to sustain the minimum population levels required for population maintenance.***
Potential Environmental Concerns	Federally Protected Species. **Potential Impact.** According to the USFWS Information for Planning and Consultation (IPaC) report, there is the potential for four endangered, threatened, and candidate species within vicinity of the airport: Canada lynx (mammal, threatened), gray wolf (mammal, endangered), whooping crane (bird, experimental), and monarch butterfly (insect, candidate).[2] Of the four species listed above, the gray wolf and whooping crane may occur near the airport, as suitable habitat (such as dense vegetation and freshwater wetlands) is present; however, due to the nearby aviation-related activity, it is unlikely that these species would permanently inhabit these areas. Designated Critical Habitat. **No Impact.** There are no designated critical habitats within airport boundaries. Non-listed Species **Potential Impact.** Non-listed species of concern include those protected by the *Migratory Bird Treaty Act* (MBTA) and the *Bald and Golden Eagle Protection Act.* Bird species protected by the MBTA could be adversely affected if construction occurs during the nesting and breeding seasons (December 1 to August 31). Pre-construction surveys of vegetated areas at the airport are recommended for projects during which ground clearing would occur, unless happening outside the nesting and breeding seasons. Projects related to future land acquisitions that contain vegetation may also be areas of concern. *Source: U.S. Fish & Wildlife Service, Information for Planning and Consultation (https://ipac.ecosphere.fws.gov/), as of September 2024*

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TABLE 5C | Summary of Potential Environmental Concerns (continued)

CLIMATE	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The FAA has not established a significance threshold for Climate. Refer to FAA Order 1050.1F Desk Reference and/or the most recent FAA Aviation Emissions and Air Quality Handbook for the most up-to-date methodology for examining impacts associated with climate change.***
Potential Environmental Concerns	**Unknown.** An increase in greenhouse gas (GHG) emissions could occur over the 20+ year planning horizon of the airport master plan. A project-specific analysis may be required, based on the parameters of the individual projects; however, the FAA does not have an impact threshold to use to determine significance under NEPA at this time.
COASTAL RESOURCES	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The FAA has not established a significance threshold for Coastal Resources. Factors to consider include whether an action would have the potential to:*** • ***Be inconsistent with the relevant state coastal zone management plan(s);*** • ***Impact a coastal barrier resources system unit;*** • ***Pose an impact on coral reef ecosystems;*** • ***Cause an unacceptable risk to human safety or property; or*** • ***Cause adverse impacts on the coastal environment that cannot be satisfactorily mitigated.***
Potential Environmental Concerns	**No Impact.** Sawyer County is not within a coastal zone; thus, no coastal resources would be impacted from proposed airport development.
***DEPARTMENT OF TRANSPORTATION ACT*, SECTION 4(F)** (NOW CODIFIED IN 49 U.S.C. §303)	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The action involves more than a minimal physical use of a Section 4(f) resource or constitutes a "constructive use," based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource. Resources that are protected by Section 4(f) are publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance and publicly or privately owned land from a historic site of national, state, or local significance. Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished.***
Potential Environmental Concerns	**No Impact.** As discussed in Chapter One, there are no properties listed on the National Register of Historic Places (NRHP), wildlife or waterfowl refuges, or public recreation areas within one mile of the airport.
FARMLANDS	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The total combined score on Form AD-1006, Farmland Conversion Impact Rating, ranges between 200 and 260. (Form AD-1006 is used by the U.S. Department of Agriculture [USDA] Natural Resources Conservation Service [NRCS] to assess impacts under the Farmland Protection Policy Act [FPPA].)*** ***The FPPA applies when airport activities meet the following conditions:*** • ***Federal funds are involved;*** • ***The action involves the potential for the irreversible conversion of important farmlands to non-agricultural uses (important farmlands include pastureland, cropland, and forest considered to be prime, unique, or statewide or locally important land); or*** • ***None of the exemptions to the FPPA apply. These exemptions include:*** o ***When land is not considered "farmland" under the FPPA, such as land that is already developed or already irreversibly converted; these instances include when land is designated as an urban area by the U.S. Census Bureau or the existing footprint includes rights-of-way;*** o ***When land is already committed to urban development;*** o ***When land is committed to water storage;*** o ***The construction of non-farm structures that are necessary to support farming operations; and*** o ***Construction/land development for national defense purposes.***

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TABLE 5C | Summary of Potential Environmental Concerns (continued)

FARMLANDS (continued)	
Potential Environmental Concerns	**No Impact.** According to the NRCS Web Soil Survey (WSS), the airport is comprised of Mahtomedi loamy sand, Seelyeville and Markey soils, Lenroot loamy sand, Meehan loamy sand, and Newson muck, which are classified as *not prime farmland* (**Exhibit 1L**). *Source: USDA-NRCS, Web Soil Survey (https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)*
HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION	
FAA Order 1050.1F, *Significance Threshold/ Factors to Consider*	***The FAA has not established a significance threshold for Hazardous Materials, Solid Waste, and Pollution Prevention; however, factors to consider include whether an action would have the potential to:*** • ***Violate applicable federal, state, Tribal, or local laws or regulations regarding hazardous materials and/or solid waste management;*** • ***Involve a contaminated site;*** • ***Produce an appreciably different quantity or type of hazardous waste;*** • ***Generate an appreciably different quantity or type of solid waste, or use a different method of collection or disposal, and/or would exceed local capacity; or*** • ***Adversely affect human health and the environment.***
Potential Environmental Concerns	**No Impact. Exhibit 5A** does not include improvements that would produce an appreciably different quantity or type of hazardous waste. The construction of the proposed executive box and conventional hangars would increase the amount of solid waste at the airport; however, no long-term impacts related to solid waste disposal are expected. There are no identified brownfields or Superfund sites located within a one-mile buffer of the airport. Prior to any proposed land purchase, a Phase I Site Assessment should be conducted to provide a more detailed understanding of what hazardous materials may be located on the land to be purchased. Due to existing regulatory environmental management regarding hazardous materials and waste and stormwater management, no impacts related to ultimate airport development are anticipated. *Source: U.S. EPA, EJScreen (https://ejscreen.epa.gov/mapper/)*
HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES	
FAA Order 1050.1F, *Significance Threshold/ Factors to Consider*	***The FAA has not established a significance threshold for Historical, Architectural, Archaeological, and Cultural Resources. Factors to consider include whether an action would result in a finding of adverse effect through the Section 106 process; however, an adverse effect finding does not automatically trigger the preparation of an EIS (i.e., a significant impact).***
Potential Environmental Concerns	**Potential Impact.** There are no resources listed on the NRHP at the airport. In 2011, a survey of cultural resources was conducted at HYR as part of an environmental assessment for a fee acquisition and improvements project at the airport. Based on this survey, there were no identified resources that are listed or eligible for listing on the NRHP at the airport. In addition, the survey also examined the potential for historic-age buildings on the airport and concluded that most of the buildings and structures constructed on the airport were not of historic age. The oldest building found on the airport was a hangar constructed around 1963. This building was not concluded to be listed or eligible for listing on the NRHP. Proposed land to be acquired (on **Exhibit 5A**) should be surveyed to document any potential resources within the area. If previously undocumented buried cultural resources are identified during ground-disturbing activities for ultimate airport development, all work must immediately cease within 30 meters (100 feet) until a qualified archaeologist has documented the discovery and its eligibility for the NRHP, as appropriate. Work must not resume in the area without the approval of the FAA. Projects outlined in the master plan may require consultation between the FAA and the State Historic Preservation Office to determine whether proposed undertakings would result in impacts to historic or cultural resources. Additionally, per Executive Order (E.O.) 13175, *Consultation and Coordination with Indian Tribal Governments*, Tribal coordination (undertaken by the FAA) may be required. *Source: Bolton & Menk, Inc., Survey of Cultural Resources, Sawyer County Airport, Wisconsin, May 2011*

Continues on next page

TABLE 5C | Summary of Potential Environmental Concerns (continued)

LAND USE	
FAA Order 1050.1F, *Significance Threshold/ Factors to Consider*	***The FAA has not established a significance threshold for Land Use. There are also no specific independent factors to consider. The determination that significant impacts exist is normally dependent on the significance of other impacts.***
Potential Environmental Concerns	**No Impact.** Land surrounding the airport is zoned as pasture/open space. Proposed airport improvements include new hangars; shifting of Runway 3-21; an ultimate runway extension of Runway 3 and Runway 21; new taxiway pavement; acquisition of land to the northeast, east, and southeast; relocation of the PAPI-4 lighting system; and relocation of the airport beacon. **Exhibit 5A** depicts property to be acquired within the Runway 3 and Runway 21 RPZs. This is recommended to allow the airport to have control over what land uses may be permitted within the airport's RPZs. These parcels of land are currently unoccupied, and their acquisition would not displace or relocate any businesses or people.
NATURAL RESOURCES AND ENERGY SUPPLY	
FAA Order 1050.1F, *Significance Threshold/ Factors to Consider*	***The FAA has not established a significance threshold for Natural Resources and Energy Supply; however, factors to consider include whether the action would have the potential to cause demand to exceed available or future supplies of these resources.***
Potential Environmental Concerns	**No Impact.** Planned development projects at the airport could increase demands on energy utilities, water supplies and treatment, and other natural resources during construction; however, significant long-term impacts are not anticipated. Should long-term impacts be a concern, coordination with local service providers is recommended.
NOISE AND NOISE-COMPATIBLE LAND USE	
FAA Order 1050.1F, *Significance Threshold/ Factors to Consider*	***The action would increase noise by day-night average sound level (DNL) 1.5 decibels (dB) or more for a noise-sensitive area that is exposed to noise at or above the 65-dB DNL noise exposure level, or that will be exposed at or above the 65-dB DNL due to a DNL increase of 1.5 dB or greater, when compared to the no-action alternative for the same timeframe.*** ***Another factor to consider is that special consideration should be given to the evaluation of the significance of noise impacts on noise-sensitive areas within Section 4(f) properties where the land use compatibility guidelines in Title 14 CFR Part 150 are not relevant to the value, significance, and enjoyment of the area in question.***
Potential Environmental Concerns	**No Impact. Exhibit 5E** shows existing and anticipated noise contours for the airport. As shown on **Exhibit 5E** for the existing condition, the 65-dB DNL noise exposure contour (orange) is located entirely on airport property. In the future condition noise contours, while the 65-dB DNL expands slightly, it remains entirely on the airport (**Exhibit 5E**); thus, there are no noise-sensitive land uses that would be located within the 65-dB DNL. The ultimate development at the airport is not expected to change the overall noise environment more than the 1.5-dB threshold; however, this should be confirmed on a project-by-project basis. It is important to note that operational growth, unless tied to a specific project, will not result in noise impacts under FAA Order 1050.1F. Impacts to noise-sensitive land use are only evaluated through NEPA documentation for specific projects or through the voluntary Part 150 process.

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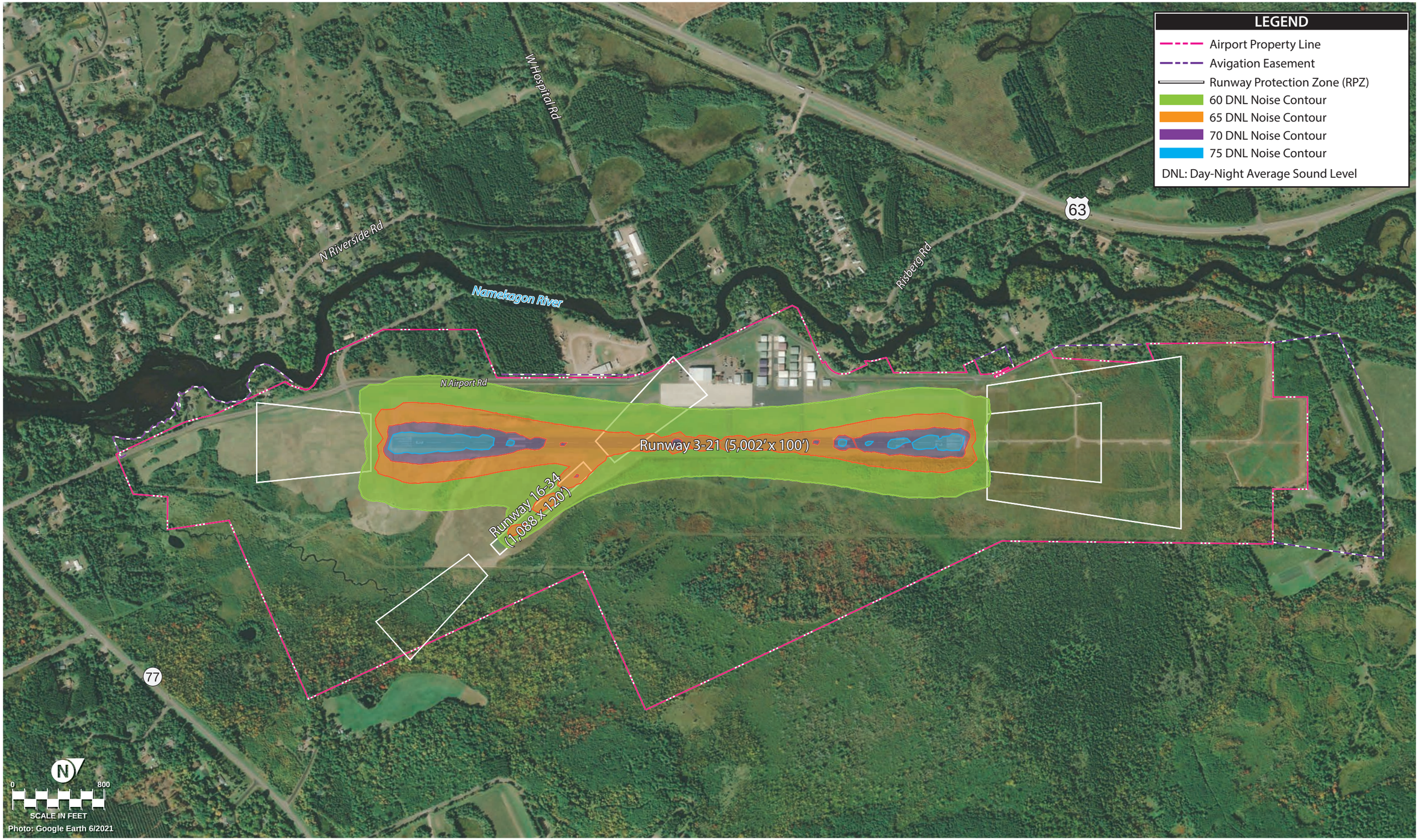
LEGEND
Airport Property Line
Avigation Easement
Runway Protection Zone (RPZ)
60 DNL Noise Contour
65 DNL Noise Contour
70 DNL Noise Contour
75 DNL Noise Contour
DNL: Day-Night Average Sound Level
W Hospital Rd
N Riverside Rd
Namekagon River
Risberg Rd
63
N Airport Rd
Runway 3-21 (5,002' x 100')
Runway 16-34
(1,088 x 120')
77
N
0
800
SCALE IN FEET
Photo: Google Earth 6/2021

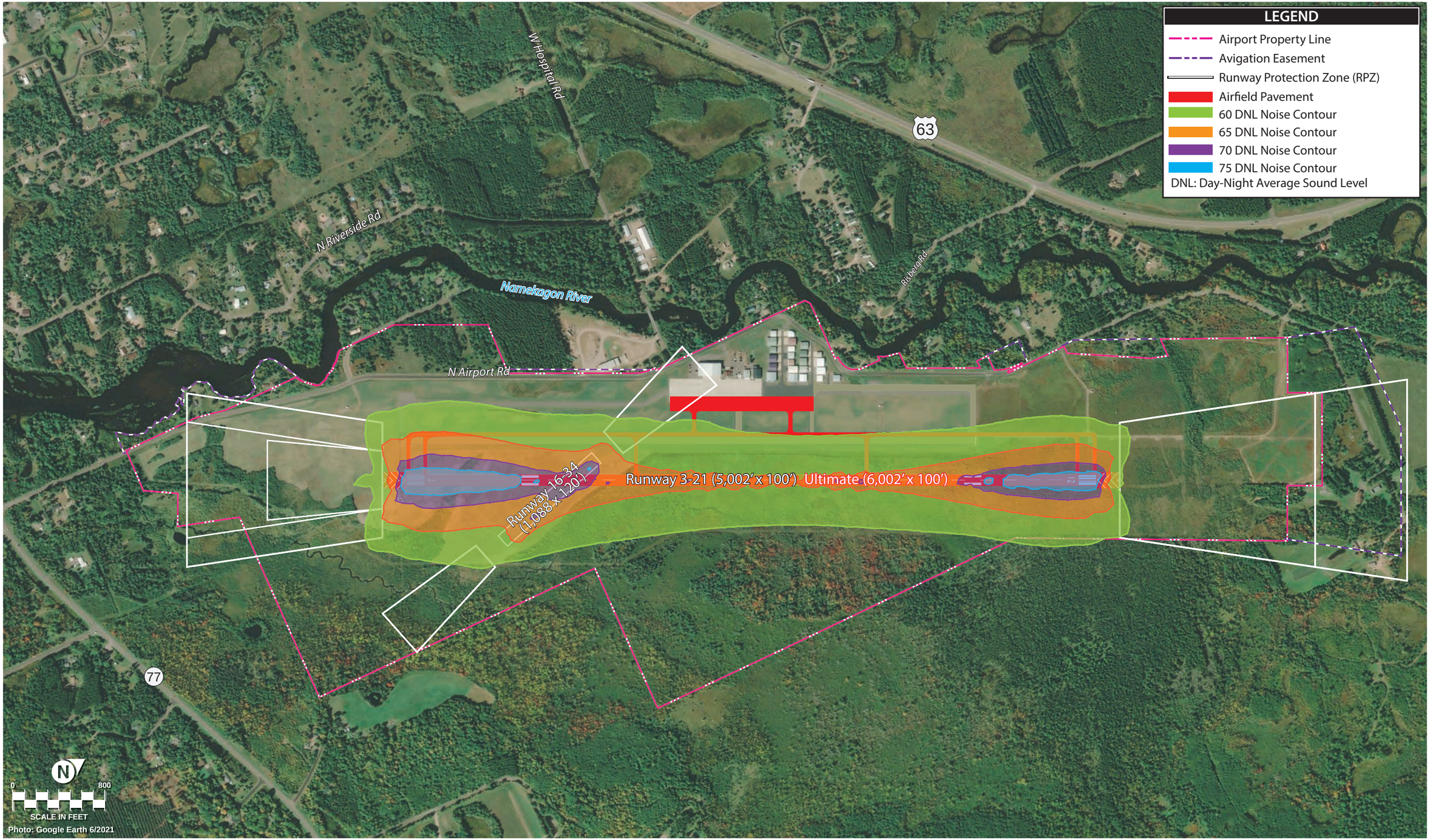
LEGEND
Airport Property Line
Avigation Easement
Runway Protection Zone (RPZ)
Airfield Pavement
60 DNL Noise Contour
65 DNL Noise Contour
70 DNL Noise Contour
75 DNL Noise Contour
DNL: Day-Night Average Sound Level
W Hospital Rd
63
N Riverside Rd
Namekagon River
Rixberg Rd
N Airport Rd
Runway 16-34 (1,088 x 120')
Runway 3-21 (5,002' x 100') Ultimate (6,002' x 100')
77
N
0
800
SCALE IN FEET
Photo: Google Earth 6/2021

TABLE 5C | Summary of Potential Environmental Concerns (continued)

SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS	
Socioeconomics	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The FAA has not established a significance threshold for Socioeconomics; however, factors to consider include whether an action would have the potential to:*** • ***Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area);*** • ***Disrupt or divide the physical arrangement of an established community;*** • ***Cause extensive relocation when sufficient replacement housing is unavailable;*** • ***Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities;*** • ***Disrupt local traffic patterns and substantially reduce the levels of service of roads serving the airport and its surrounding communities; or*** • ***Produce a substantial change in the community tax base.***
Potential Environmental Concerns	**No Impact.** Proposed development would not relocate or disrupt current businesses or residents. There are no residences located within the area proposed to be acquired on **Exhibit 5A**. No division of existing neighborhoods or housing or business relocations would occur due to proposed development on the airport.
Environmental Justice	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The FAA has not established a significance threshold for Environmental Justice; however, factors to consider include whether an action would have the potential to lead to a disproportionately high and adverse impact to an environmental justice population (i.e., a low-income or minority population), due to:*** • ***Significant impacts in other environmental impact categories; or*** • ***Impacts on the physical or natural environment that affect an environmental justice population in a way the FAA determines is unique to and significant to that environmental justice population.***
Potential Environmental Concerns	**No Impact.** Both low-income and minority populations have been identified in the vicinity of the airport. The closest residential areas are located west and adjacent 0.05 miles away from the airport property boundary across from North Airport Road. It is unlikely that implementation of the proposed improvements outlined in the development concept plan would affect these populations in a disproportionate or adverse manner. E.O. 12898, *Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations*, and the accompanying Presidential Memorandum, and Department of Transportation (DOT) Order 5610.2, *Environmental Justice*, require the FAA to provide meaningful public involvement for minority and low-income populations, as well as analysis that identifies and addresses potential impacts on these populations that may be disproportionately high and adverse. Environmental justice impacts may be avoided or minimized through early and consistent communication with the public and allowing ample time for public consideration; therefore, disclosure of ultimate airport development to potentially affected environmental justice populations near the airport as the projects are proposed is crucial. If disproportionately high or adverse impacts are noted, mitigation and enhancement measures and offsetting benefits should be taken into consideration. *Source: Google Earth Pro Aerial Imagery*
Children's Health and Safety Risks	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The FAA has not established a significance threshold for Children's Environmental Health and Safety Risks; however, factors to consider include whether an action would have the potential to lead to a disproportionate health or safety risk to children.***
Potential Environmental Concerns	**No Impact.** No disproportionately high or adverse impacts are anticipated to affect children living, playing, or attending school near the airport because of the proposed ultimate development. The airport is an access-controlled facility, and children are not allowed within the fenced portions of the airport without adult supervision. All construction areas should be controlled to prevent unauthorized access.

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TABLE 5C | Summary of Potential Environmental Concerns (continued)

VISUAL EFFECTS (INCLUDING LIGHT EMISSIONS AND VISUAL RESOURCES/VISUAL CHARACTER)	
Light Emissions	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The FAA has not established a significance threshold for Light Emissions; however, a factor to consider is the degree to which an action would have the potential to:*** • ***Create annoyance or interfere with normal activities from light emissions; or*** • ***Affect the nature of the visual character of the area due to light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources.***
Potential Environmental Concerns	**No Impact.** The existing lighting at the airport includes runway/taxiway lighting (medium intensity) and lighting used for navigation (such as a rotating beacon and two four-light PAPI systems at the approach ends of Runway 3 and Runway 21). The proposed recommended development concept shows the relocation of the two PAPI-4 systems as a result of the pavement work conducted for Runway 3-21. Both Runway 3 and Runway 21 have proposed runway extensions. Night lighting during construction phases within the runway environment is typically directed down to the construction work area to prevent light from spilling outside the airport boundaries. Residences located west of North Airport Road are surrounded by dense vegetation that would buffer light spillage from proposed construction projects. Other ultimate projects are likely to include additional lighting during operation of the airport's new structures and facilities.
Visual Resources/Visual Character	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The FAA has not established a significance threshold for Visual Resources/Visual Character; however, a factor to consider is the extent to which an action would have the potential to:*** • ***Affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources;*** • ***Contrast with the visual resources and/or visual character in the study area; or*** • ***Block or obstruct the views of the visual resources, including whether these resources would still be viewable from other locations.***
Potential Environmental Concerns	**No Impact.** The proposed runway extension would extend the approach ends of Runway 3-21. These runway extensions are not anticipated to visually alter the line of sight for any land uses, as the parcels of land bordering each runway approach end are undeveloped.
WATER RESOURCES (INCLUDING WETLANDS, FLOODPLAINS, SURFACE WATERS, GROUNDWATER, AND WILD AND SCENIC RIVERS)	
Wetlands	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The action would:*** 1. ***Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;*** 2. ***Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;*** 3. ***Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety, or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);*** 4. ***Adversely affect the maintenance of natural systems that support wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;*** 5. ***Promote the development of secondary activities or services that would cause the circumstances listed above to occur; or*** 6. ***Be inconsistent with applicable state wetland strategies.***
Potential Environmental Concerns	**Potential Impact.** Based on the National Wetlands Inventory, there are freshwater emergent wetlands within airport boundaries that would be impacted as a result of the projects detailed on the recommended development concept. It is important to note that NWI data is based on aerial photography interpretation dated in (2024) and that additional field investigation would be needed to determine the presence of wetlands in the project area. *Source: USFWS, National Wetlands Inventory (https://www.fws.gov/program/national-wetlands-inventory)*

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TABLE 5C | Summary of Potential Environmental Concerns (continued)

Floodplains	
FAA Order 1050.1F, *Significance Threshold/ Factors to Consider*	***The action would cause notable adverse impacts on natural and beneficial floodplain values. Natural and beneficial floodplain values are defined in Paragraph 4.k of DOT Order 5650.2, Floodplain Management and Protection.***
Potential Environmental Concerns	**No Impact.** Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel, the airport is identified as an area of minimal flood hazard. The airport is not located in a 100-year or 500-year floodplain. E.O. 14030, *Climate-Related Financial Risk*, was established on May 25, 2021. Section 5(e) of E.O. 14030 reinstates E.O. 13690,[1] amends E.O. 11988,[2] and mandates the creation of a Federal Flood Risk Management Standard (FFRMS). One of the primary purposes of the FFRMS is to expand the management of floodplains from a base flood evaluation to include a higher vertical elevation (and the corresponding floodplain) to protect against future flood risks for federally funded projects. Under E.O. 13690 and its guidelines, one of several approaches should be used to identify floodplains and their risks to critical[3] or non-critical federally funded actions: • Climate-Informed Science Approach (CISA) – the elevation and flood hazard area (i.e., 100-year floodplain) using data that integrate climate science with an emphasis on possible future effects on critical actions; • Freeboard Value Approach – the elevation and flood hazard area and an additional two or three feet above the base flood elevation, depending on whether the proposed federal action is critical or non-critical; • 500-Year Floodplain Approach – all areas subject to the 0.2 percent annual chance flood; or • Other methods resulting from updates to the FFRMS. Because the airport is outside the 500-year floodplain, which is one of the methods for determining federal flood risk, no impacts related to the FFRMS are expected. *Source: FEMA Flood Map Service (https://msc.fema.gov/portal/search?AddressQuery=sawyer%20county%20airpor)* [1] *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, 2015* [2] *Floodplain Management, May 1977* [3] *Critical action is defined in E.O. 13690 and 2015 Guidelines for Implementing E.O. 11988 as any activity for which even a slight change of flooding is too great, e.g., a facility producing and/or storing highly volatile, toxic, or water-reactive materials; structures (such as schools) in which occupants may not be sufficiently mobile or have available transport capability, given the flood warning lead times available; or essential or irreplaceable resources, utilities, or other functions that could be damaged beyond repair or otherwise made unavailable.*

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TABLE 5C | Summary of Potential Environmental Concerns (continued)

Surface Waters	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The action would:*** ***1. Exceed water quality standards established by federal, state, local, and Tribal regulatory agencies; or*** ***2. Contaminate public drinking water supply such that public health may be adversely affected.***
Potential Environmental Concerns	**Potential Impact.** The airport is located within the Hayward Lake-Namekagon River watershed. Long-term impacts to water quality from the proposed airfield improvements may need to be assessed, depending on how or if stormwater runoff is conveyed to airport stormwater infrastructure. A National Pollutant Discharge Elimination System (NPDES) general construction permit would be required for all projects involving ground disturbance over one acre. Improvements outlined on **Exhibit 5A** will require revisions to the airport's stormwater pollution prevention plan (SWPPP) to address operational and structural source controls, treatment best management practices (BMPs), and sediment and erosion control. FAA Advisory Circular (AC) 150/5370-10H, *Standards for Specifying Construction of Airports*, Item C-102, *Temporary Air and Water Pollution, Soil Erosion, and Siltation Control*, should also be implemented during construction projects at the airport. *Source: U.S. EPA, How's My Waterway (https://mywaterway.epa.gov/community/sawyer%20county%20airport/overview)*
Groundwater	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***The action would:*** ***1. Exceed groundwater quality standards established by federal, state, local, and Tribal regulatory agencies; or*** ***2. Contaminate an aquifer used for public water supply such that public health may be adversely affected.*** ***Factors to consider include whether a project would have the potential to:*** • ***Adversely affect natural and beneficial groundwater values to a degree that substantially diminishes or destroys such values;*** • ***Adversely affect groundwater quantities such that the beneficial uses and values of such groundwater are appreciably diminished or can no longer be maintained, and such impairment cannot be avoided or satisfactorily mitigated; or*** • ***Present difficulties based on water quality impacts when obtaining a permit or authorization.***
Potential Environmental Concerns	**No Impact.** The airport does not serve as a significant source of groundwater recharge and is not located near a sole source aquifer. The closest aquifer (Miles Lacs Sole Source Aquifer) is located more than 93 miles from the airport. *Source: U.S EPA, Sole Source Aquifer (https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b)*

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TABLE 5C | Summary of Potential Environmental Concerns (continued)

Wild and Scenic Rivers	
FAA Order 1050.1F, *Significance Threshold/ Factors to Consider*	***The FAA has not established a significance threshold for Wild and Scenic Rivers. Factors to consider include whether an action would have an adverse impact on the values for which a river was designated (or is considered for designation) through:*** • ***Destroying or altering a river's free-flowing nature;*** • ***A direct and adverse effect on the values for which a river was designated (or is under study for designation);*** • ***Introducing a visual, audible, or other type of intrusion that is out of character with the river or would alter outstanding features of the river's setting;*** • ***Causing the river's water quality to deteriorate;*** • ***Allowing the transfer or sale of property interests without restrictions needed to protect the river or the river corridor; or*** • ***Any of the above impacts preventing a river on the Nationwide Rivers Inventory (NRI) or a Section 5(d) river that is not included in the NRI from being included in the Wild and Scenic River System, or causing a downgrade in its classification (e.g., from wild to recreational).***
Potential Environmental Concerns	**Potential Impact.** The Namekagon River west of the airport is a segment of the St. Croix River, which is designated as a wild and scenic river. The nearest NRI feature is Totagetic River, located eight miles from the airport. Hangar development (delineated on the proposed development concept) that is adjacent to the river should be evaluated on a project-specific basis for potential impacts to the river. During the construction period, contractors should adhere to a SWPPP. SWPPP BMPs would minimize pollutants from project activities during a rain event. *Sources: National Wild and Scenic Rivers System (https://www.rivers.gov/rivers/rivers/wisconsin);; National Park Service, Nationwide Rivers Inventory (https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm); National Wild and Scenic River System (https://www.rivers.gov/map?river=st-croix)*

SUMMARY

This chapter has been prepared to help Sawyer County make decisions regarding the future growth and development of Sawyer County Airport by narratively and graphically describing the recommended master plan concept. It details environmental and land use conditions that must be taken into consideration when implementing the development plan. The plan represents an airfield facility that fulfills aviation needs for the airport while conforming to future and ultimate safety and design standards, to the extent practicable. The recommended master plan concept also provides a landside complex that can be developed as demand dictates and is subject to further refinement, pending comments from the PAC, Sawyer County, and the public.

Flexibility will be important to future development at the airport, as activity may not occur as predicted. The recommended master plan concept provides stakeholders with a general guide that, if followed, can maintain the airport's long-term viability and allow it to continue to provide air transportation services to the region. The next chapter of this master plan will provide a reasonable schedule for undertaking the projects, based on safety and demand over the course of the next 20 years.