



Chapter 5 **RECOMMENDED MASTER PLAN CONCEPT**

The airport master plan for Merrill Municipal Airport (RRL) 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. Those needs were then used to develop alternative facility plans to meet projected needs. Each step in the planning process has included the development of draft working papers, which were presented and discussed at previous planning advisory committee (PAC) meetings and a public information workshop and have been made available on the project website.

In the previous chapter, several development alternatives were analyzed to explore options for the future growth and development of RRL. The development alternatives have been refined into a single recommended concept for the master plan. This chapter describes, in narrative and graphic form, the recommended direction for the future use and development of RRL.

The recommended concept provides the ability to meet the disparate needs of various airport operators. The goal of this plan is to ensure the airport can continue and improve in its role of serving general aviation operators. The plan has been specifically tailored to support existing and future growth in all forms of potential aviation activity as demand materializes.

The recommended master plan concept, as shown on **Exhibit 5A**, presents a long-term configuration for the airport that preserves and enhances its role while meeting Federal Aviation Administration (FAA) design standards. The phased implementation of the recommended development concept will be presented in Chapter Six. The following sections describe the key details of the recommended master plan concept.

AIRFIELD PLAN

The airfield plan generally considers improvements related to the runway and taxiway system and navigational aids. The following sections provide descriptions of the airfield recommendations.

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 previously discussed, 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 conducts 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, and tail height, as well as the instrument approach visibility minimums for each runway. The FAA has established the runway design code (RDC) to relate these critical design aircraft factors to airfield design standards.

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 that are expected to utilize the taxilane.

The applicable RDC and critical design aircraft for each runway at RRL in the existing and ultimate conditions, as established in Chapter Two, are summarized in **Table 5A**.

TABLE 5A | Airport and Runway Classifications

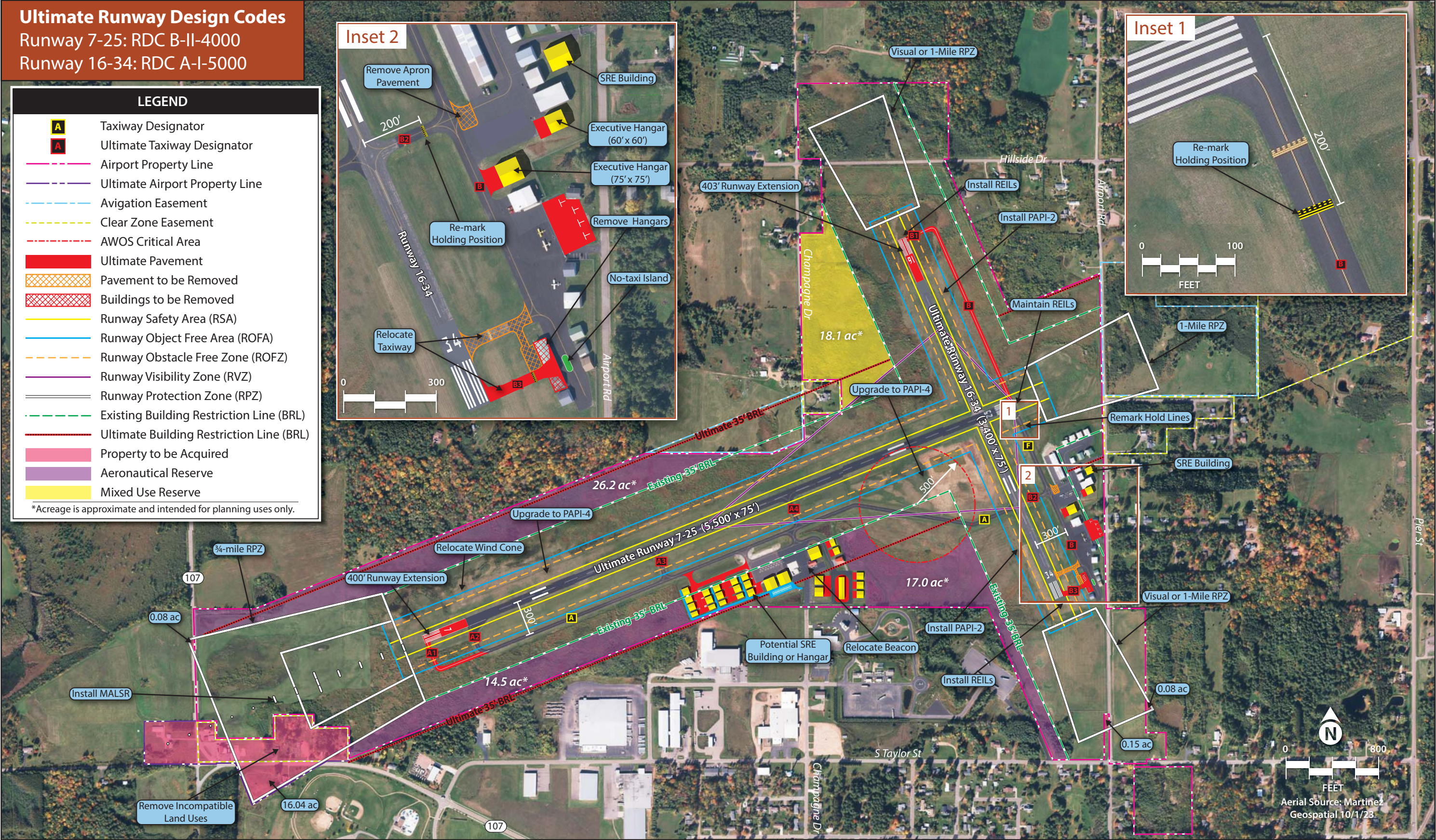
	Runway 7-25		Runway 16-34
	Existing/Future	Ultimate	Existing & Ultimate
Runway Design Code (RDC)	A-I-5000	B-II-4000	A-I-VIS
Taxiway Design Group (TDG)	1A	2A	1A
Critical Aircraft (Typ.)	Cessna 172	King Air 200/300/350	Cessna 172

Sources: FAA AC 150/5300-13B, Airport Design; Coffman Associates analysis

PRIMARY RUNWAY 7-25

Runway Dimensions | Runway 7-25 is currently 5,100 feet long and 75 feet wide. At this length, the runway can accommodate all piston-powered aircraft, as well as most of the more common business jets in the fleet operating under moderate loading conditions; however, when operating with heavier useful loads, many of these aircraft require additional runway length to safely operate (refer to Chapter Three for additional information). As such, a 400-foot extension to Runway 7-25 is planned, as shown on **Exhibit 5A**, bringing the total runway length to 5,500 feet. This is the FAA-recommended length to accommodate the 75 percent and 100 percent categories of the business jet fleet when operating at 60 percent useful load. The existing runway width of 75 feet meets ultimate airport reference code (ARC) B-II design criteria and is planned to be maintained.

Note: Justification for the runway extension will be required prior to project implementation.



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Pavement Strength | Runway 7-25 is currently strength-rated at 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). These ratings are sufficient for the ultimate critical aircraft (King Air 200/300/350), which have maximum takeoff weights (MTOW) ranging between 12,500 and 15,000 pounds on dual wheel main landing gear.

Safety Areas and Property Acquisition | In the existing A-I environment associated with Runway 7-25, all safety areas are owned and controlled by the airport sponsor, either as part of airport property or via easements, and are generally free from obstructions or incompatible uses. Airport Road traverses the Runway 25 runway protection zone (RPZ). While the FAA prefers public roads to be located outside the RPZ, it is often infeasible to do so, as mitigative actions typically include either rerouting or closing the roadway or shortening the runway by physically removing pavement or displacing the threshold. None of these options are considered feasible, so the plan does not include any actions to remove the road from the RPZ.

In the ultimate B-II-4000 condition, the dimensions of the runway safety area (RSA) and runway object free area (ROFA) increase, resulting in an obstruction to the ROFA. The wind cone located near Runway 7 is encompassed by the ultimate ROFA and is planned to be relocated to the north, outside this safety area.

The potential for lower visibility minimums associated with the instrument approach to Runway 7 also results in an increase to the size of this runway's RPZ. When combined with the planned extension to this runway, a portion of the ultimate Runway 7 RPZ would extend beyond the airport's existing clear zone easement on the southwest side, along with approximately 0.08 acres of property within the northwest corner of the RPZ. While the clear zone easement that is currently in place protects the airspace in this area by limiting vertical development, it does not allow for circumvention of the FAA's standards where incompatible land uses are concerned. Currently, this area contains homes and businesses, which are considered by the FAA to be incompatible land uses within an RPZ. Prior to reduction of the visibility minimums associated with the area navigation (RNAV) approach to Runway 7, the airport sponsor would need to acquire these properties as they become available and remove the structures located within the RPZ, as indicated on **Exhibit 5A**. Additional coordination with the FAA regarding the introduction of Highway 107 into the RPZ would also be necessary.

Visual Approach Aids | Runway 7-25 is currently equipped with a two-box precision approach path indicator (PAPI-2) system and runway end identifier lights (REILs) at each runway end. The plan includes an upgrade to a four-box PAPI (PAPI-4) system when jet traffic increases to the point the FAA and/or the Wisconsin Department of Transportation (WisDOT) Bureau of Aeronautics (BOA) deems the upgrade necessary and justified.

The REILs associated with each runway are planned to be maintained; however, the plan also includes installation of a medium intensity approach lighting system with runway alignment indicator lights (MALSR) on Runway 7. A MALSR is an approach lighting system that is recommended to be installed on runways equipped with instrument approach procedures with visibility minimums at $\frac{3}{4}$ mile or lower and is required for approaches with $\frac{1}{2}$ -mile or lower minimums. If and when a MALSR is installed on Runway 7, the REILs would no longer be necessary and would be removed. It should also be noted that installation of the MALSR would require property acquisition west of Highway 107 where several of the sequenced flashers would be located.

CROSSWIND RUNWAY 16-34

Runway Eligibility | RRL is served by a crosswind runway, Runway 16-34. As part of this master plan, the eligibility and justification for the continued maintenance of this runway was evaluated. Analysis detailed in Chapter Three considered 10 years of overall historical wind data, as well as scenarios that evaluated monthly wind data and daytime monthly data. Prior to this master plan, analysis was conducted by the airport's engineer that involved weighting operations during peak periods. Both evaluations determined that the primary runway provided less than 95 percent coverage during crosswind conditions, which has historically been the FAA's threshold for eligibility. Ultimately, the FAA concurred and issued a memorandum in 2023 stating that Runway 16-34 is considered eligible (see Appendix B).

More recently, new guidance regarding crosswind runway eligibility was released and is included in Reauthorization Program Guidance Letter (R-PGL) 25-01, *Runway Projects*. The guidance includes a definition for "legacy crosswind runways," which are existing runways that were previously funded to function as crosswind runways, even if the primary runway provides greater than 95 percent wind coverage. These runways are eligible for federal funding, per the new guidance. Runway 16-34 is considered by the FAA to be a legacy crosswind runway; therefore, its continued maintenance is eligible for federal grants.

Runway Dimensions | Runway 16-34 measures 2,997 feet long by 75 feet wide. In terms of length, the runway falls short of the 3,400 feet recommended by the FAA to accommodate 95 percent of the small aircraft fleet. In addition to this FAA-recommended length, additional analysis was conducted by the airport's engineer in coordination with the BOA, which ultimately determined that a length of 3,400 is necessary and justified (refer to Appendix C). As such, the runway is planned to be extended to the north by 403 feet, bringing the total runway length to 3,400 feet. In terms of runway width, the design standard for an A-I runway details a 60-foot width. While Runway 16-34 exceeds the standard, it is planned to be maintained at 75 feet wide, with the airport sponsor potentially funding pavement projects that exceed the standard.

Note: Additional justification for the runway extension will likely be required prior to project implementation.

Pavement Strength | Runway 16-34 is reported to have a strength rating of 26,000 pounds S. This is considered sufficient for the aircraft that currently use and are planned to use the runway, so no changes to the pavement strength are planned.

Safety Areas and Property Acquisition | The RSA, ROFA, and runway obstacle free zone (ROFZ) associated with Runway 16-34 are located entirely on airport property and are free of obstructions. Within the Runway 34 RPZ, there are two small portions of the RPZ that are not under airport control, each of which totals less than 0.2 acres. The plan includes acquisition of these areas, or acquisition of an easement, at a minimum. Both RPZs associated with Runway 16-34 contain public roadways: Hillside Drive on the north end and Airport Road on the south end. No changes to either roadway are planned.

Visual Approach Aids | Runway 16-34 is not equipped with any visual approach aids. The plan includes the installation of a PAPI-2 system and REILs at each runway end.

Runway Markings | Runway 16-34 is equipped with basic markings, which include centerline striping and runway designation markings. The plan includes the addition of threshold markings and aiming points, consistent with non-precision markings, in the event an instrument approach with visibility minimums not lower than one mile is implemented.

TAXIWAY IMPROVEMENTS

The taxiway system at RRL consists of Taxiway A, which serves the majority of Runway 7-25, and Taxiway F, which provides access to Runway 34 and Runway 25. The recommended development concept includes the construction of parallel taxiway pavement to serve the north end of Runway 16-34, along with a new threshold connect to Runway 34. Taxiways serving Runway 7-25 are planned to meet airplane design group (ADG) II and taxiway design group (TDG) 2A design standards, in accordance with the ultimate design standards associated with this runway, which establish a minimum taxiway width of 35 feet. Taxiways serving Runway 16-34 are planned to meet ADG I and TDG 1A standards, which call for a width of 25 feet.

Taxiway Nomenclature | The FAA recommends using the guidelines found in Engineering Brief 89, *Taxiway Nomenclature Convention*, when developing or revising airport plans, such as this master plan. Following the standards presented in the brief, the planned taxiway system at RRL has been given alphanumeric designations to improve the situational awareness of pilots and the safety margins at the airport. Taxiway F, which currently serves the southern portion of crosswind Runway 16-34, is planned to be redesignated as Taxiway B. The ultimate designations are shown on **Exhibit 5A**.

Taxiway A | Taxiway A is planned to be maintained in its current configuration, with the pavement extended in conjunction with the extension of Runway 7-25. The ultimate and existing connector taxiways are planned to be redesignated as A1, A2, A3, and A4, beginning on the west end (Runway 7).

Ultimate Taxiway B | Existing Taxiway F is planned to be redesignated as Taxiway B and extended to the north to provide access to Runway 16. Currently, pilots departing on Runway 16 must back-taxi to utilize this runway, which can be detrimental to safety and runway capacity. Three connector taxiways (B1, B2, and B3) are planned, starting from the north.

Taxiway Geometry Improvements | As detailed in previous chapters, three non-standard conditions currently exist in terms of taxiway geometry, including two direct access points from the aprons on the east side of the airport, as well as the location of the connector taxiway intended to serve Runway 34. To mitigate the direct access point on the north end of the east side apron, a portion of apron pavement is planned to be removed. Similarly, a no-taxi island is planned to be painted on the south end of the east side apron at the entrance to planned Taxiway B3. The intent behind these projects is to force pilots to make a turn prior to entering an active runway environment, thereby enhancing situational awareness and overall safety. Planned Taxiway B3 is a new threshold connector to Runway 34. Construction of this taxiway and removal of the existing connector to the north will eliminate the need for pilots to back-taxi when departing on Runway 34. This project will require the demolition of two hangars, as shown on **Exhibit 5A**.

Holding Position Markings | Holding position markings on the airfield should all be located 200 feet from the runway centerline. While most of these markings are properly located, two do not meet the standard: one on existing Taxiway F (ultimate Taxiway B) prior to Runway 25 and one on ultimate Taxiway B2 east of Runway 16-34. Both are located at a separation of 125 feet from the runway centerlines. These markings are planned to be removed and new markings added at a separation of 200 feet.

WEATHER-REPORTING AND OTHER EQUIPMENT

The airport is equipped with an automated weather observation station (AWOS-3), which is located southwest of the runways' intersection. This equipment meets FAA siting criteria, and the associated 500-foot critical area is located on airport property. No changes are planned for the AWOS or its location.

A wind tee and lighted wind cone are also located southwest of the runways' intersection, while a supplemental wind cone is located north of Runway 7. The wind tee and lighted wind cone are planned to remain in their existing locations; however, as previously stated, the supplemental wind cone obstructs the ultimate ROFA and is planned to be relocated to a new site outside this safety area.

The airport is equipped with a rotating beacon, which is located on the east side of airport property. The beacon is planned to be relocated to the terminal area.

LANDSIDE CONCEPT

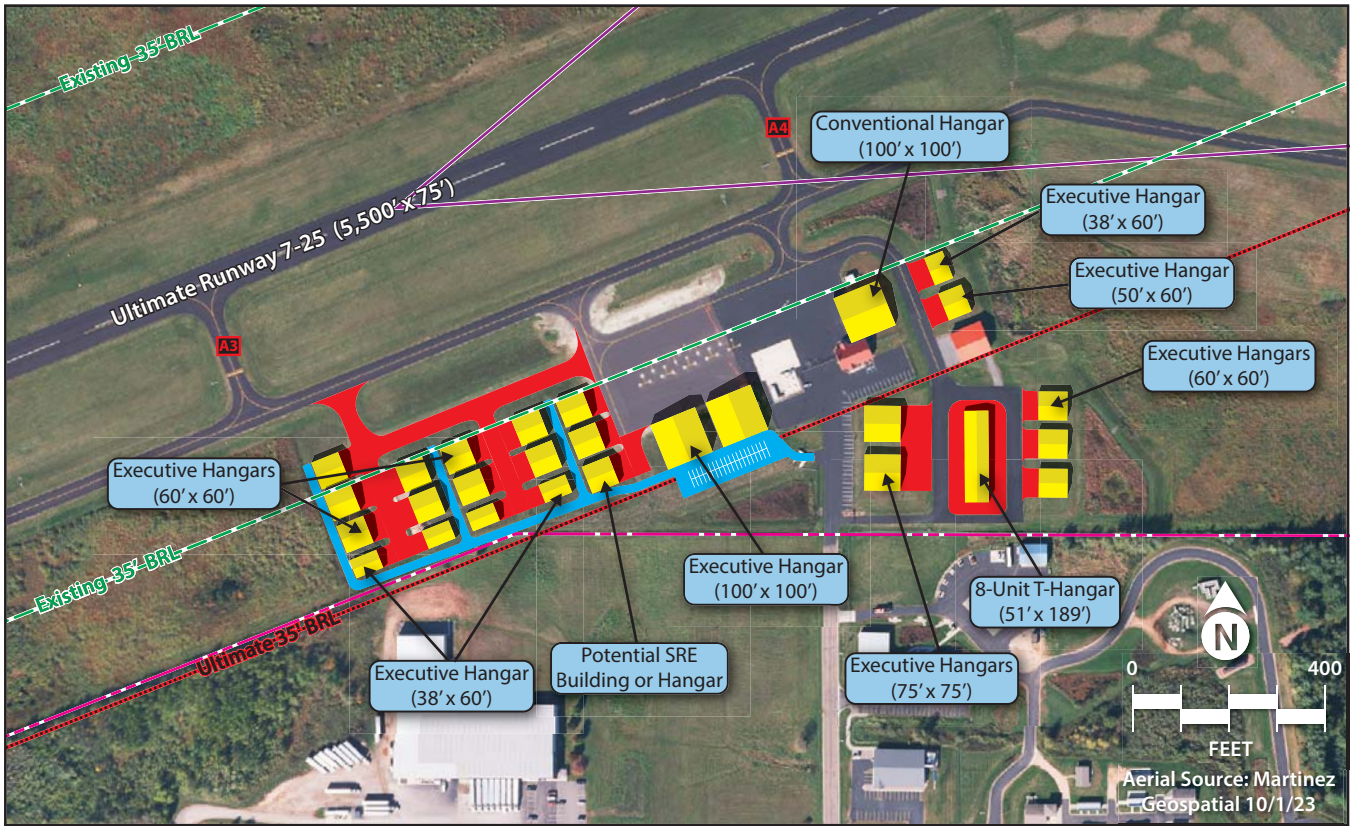
The primary goal of landside facility planning is to provide adequate space to meet reasonably anticipated needs of the various users while optimizing operational efficiency and land use. Achieving these goals yields a development scheme that segregates functional uses while maximizing the airport's revenue potential.

All landside development should occur only as dictated by demand. The locations and sizes of aprons and hangars proposed in the recommended plan are conceptual and may not reflect the needs of future developers and their customers. The recommended concept is strictly intended to be used as a guide for the City of Merrill when considering new developments.

Recommended landside developments are depicted on **Exhibit 5B**.

GENERAL AVIATION FACILITIES

Terminal | The facility requirements evaluation determined that the existing 3,200-square-foot (sf) terminal building is adequately sized for the operation levels projected through the long-term period, so no expansions or other projects to add capacity are planned; however, other improvements to the terminal, such as remodeling or upgrading building systems as needed, may be necessary in the future. Airport management/city staff should periodically inspect the facility to determine if and when upgrades may be needed.



Apron and Tiedowns | The existing apron capacity at RRL totals approximately 18,700 square yards (sy); about 7,800 sy are used exclusively for aircraft parking, which includes 18 marked aircraft parking positions. The plan includes additional apron pavement associated with proposed hangars, as well as expansion of the east apron for public aircraft parking. This area is currently used as a parking lot for the fixed base operator (FBO) and other hangars in the vicinity; however, with the relocation of the FBO (Park City Aviation) to the terminal apron, this area would be better utilized as additional space for dedicated aircraft parking.

Hangars | Hangar facilities at RRL currently consist of T-hangars, which are designed to accommodate individual smaller aircraft, and executive box hangars, which can accommodate larger aircraft. The plan includes layouts for new executive hangars and conventional-style hangars, for which demand is greatest, as well as one eight-unit nested T-hangar. The majority of new hangar development is planned west of the terminal apron, where grading, site preparation, and stormwater infrastructure have already been completed. The executive box hangars in this area range in size from 2,280 sf to 3,600 sf. Two 10,000-sf conventional hangars are planned immediately south of the existing apron and are intended to serve corporate users or a specialty aviation service operator (SASO). South and east of the terminal building, additional executive box hangars are planned, ranging in size from 2,280 sf to 5,625 sf, along with the eight-unit T-hangar. A 10,000-sf conventional hangar is planned adjacent to the terminal building (north side) for use by Park City Aviation and is already under construction. On the airport's east side, two additional executive box hangars are planned (3,600 sf and 5,625 sf).

Fuel Storage | Two tanks for aircraft fuel are located on the terminal apron. One is for 100LL Avgas and the other is for Jet A fuel; each has a 12,000-gallon capacity. Fuel flowage records were not available, so it is unclear if the existing capacity meets demand. The airport sponsor should regularly monitor usage to ensure the available capacity is sufficient and should plan to install a third tank for 100UL fuel when warranted.

Snow Removal Equipment Building | Snow removal equipment (SRE) and other maintenance equipment is currently stored in a hangar (identified as Building #14 on Exhibit 1G) that would be better utilized for aircraft storage. The plan includes the construction of an SRE building on the airport's east side. Consideration is also given to a south side location, as shown on **Exhibit 5B**.

Vehicle Parking and Access Roads | Vehicle parking at the airport is currently available adjacent to the terminal building and on the east side near the existing FBO hangar. As previously stated, the east side lot is planned to be used for apron expansion/aircraft parking when the need arises. As such, a second public parking area is planned on the south side at the rear of the conventional hangars, with access from Champagne Drive. A vehicle access road is planned to extend from this parking area to serve tenants of the hangars planned west of the terminal apron.

RESERVE PROPERTY

Airports often have areas of property that are undeveloped but should be classified for future use potential. Generally, areas along the flight line should be reserved for aeronautical development; however, there are instances where these portions of airport property are inaccessible to the airfield or

the surrounding road network and offer limited utility for aviation operations. These areas are typically reserved for non-aeronautical uses that provide opportunities to diversify and expand revenue streams for the airport.

At RRL, there are four portions of property that have no planned development but are set aside for future use. Three of these areas are intended to serve future aeronautical uses and are shown in purple shading on **Exhibit 5A**. If demand arises for hangar development or other aviation-related uses, these areas offer the most potential due to their locations along the flightline and near areas of the airport that have already been developed with aeronautical facilities. A fourth area, shown in yellow shading, is reserved for mixed-use development. A mixed-use designation applies to property that serves or has the potential to serve both aeronautical and non-aeronautical uses. This specific area, which is located along Champagne Drive on the airport's north side, has the potential to support either type of use.

AIRPORT RECYCLING, REUSE, AND WASTE REDUCTION

The primary objective of this section is to provide the City of Merrill and its airport administration with recommendations for ultimate improvements and processes that promote sustainable principles in addressing airport operations and aviation demand. Prioritizing sustainability in the planning process will aid the airport in identifying ways to reduce its overall environmental impact. As a result of implementing sustainability issues in the master plan process, the airport can become a more environmentally friendly economic hub.

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 requiring airports that have or plan to prepare a master plan and receive 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 following:
 - 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
 - The potential for cost savings or generation of revenue

State of Wisconsin Solid Waste Management

In the State of Wisconsin, Wisconsin's Department of Natural Resources (DNR) aids in managing solid waste with local governments, private industries, and other organizations 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 5C**). Wisconsin also has a database that tracks statewide collection areas for recyclables and compostable items, known as *The Wisconsin Recycling Markets Directory*.

SOLID WASTE

Typically, airport sponsors have purview over waste-handling services in facilities they own and operate, such as the 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, the airport should work to incorporate facility-wide strategies that create consistency in waste disposal mechanisms.

For airports, waste can generally be divided into eight categories:²

1. **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.
2. **Construction and Demolition Waste (C&D)** is considered non-hazardous trash resulting from land clearing, excavation, demolition, renovation, or repair of structures, roads, and utilities, including concrete, wood, metals, drywall, carpet, plastic, pipe, cardboard, and salvaged building components. C&D is also generally labelled as MSW.
3. **Green Waste** is a form of MSW yard waste that consists of tree, shrub, and grass clippings, leaves, weeds, small branches, seeds, and pods.
4. **Food Waste** includes unconsumed food products or waste generated and discarded during food preparation and is also considered MSW.
5. **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.
6. **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 triturator³ 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.

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

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

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 facility 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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Source: Wisconsin Department of Natural Resources, Recycling, What to Recycle in Wisconsin, (<https://dnr.wisconsin.gov/topic/Recycling/Banned.html>)

7. **Spill Clean and Remediation Wastes** are also special wastes and are generated during cleanup of spills and/or the remediation of contamination from several types of sites on an airport.
8. **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 Code of Federal Regulations (CFR) Part 237, *The Universal Waste Rule*. Common sources of aviation hazardous waste are included below:
 - Solvents
 - Caustic part washes
 - Heavy metal paint waste 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 shown on **Exhibit 5D**, there are multiple areas where the airport potentially contributes to the waste stream, including the terminal building, on-airport tenants (FBO/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

At a citywide level, the Merrill Street Department is responsible for the collection and disposal of the city's solid waste and recycling. The Merrill Street Department provides a system of collection and transportation of municipal solid waste and recycling for residential, commercial, and public land uses within the city. Solid waste is collected weekly and recycling is collected every other week. Large item pickup is also available from April through October. The airport and FBO utilize the city's solid waste and recycling services, while tenants are responsible for managing their own waste.

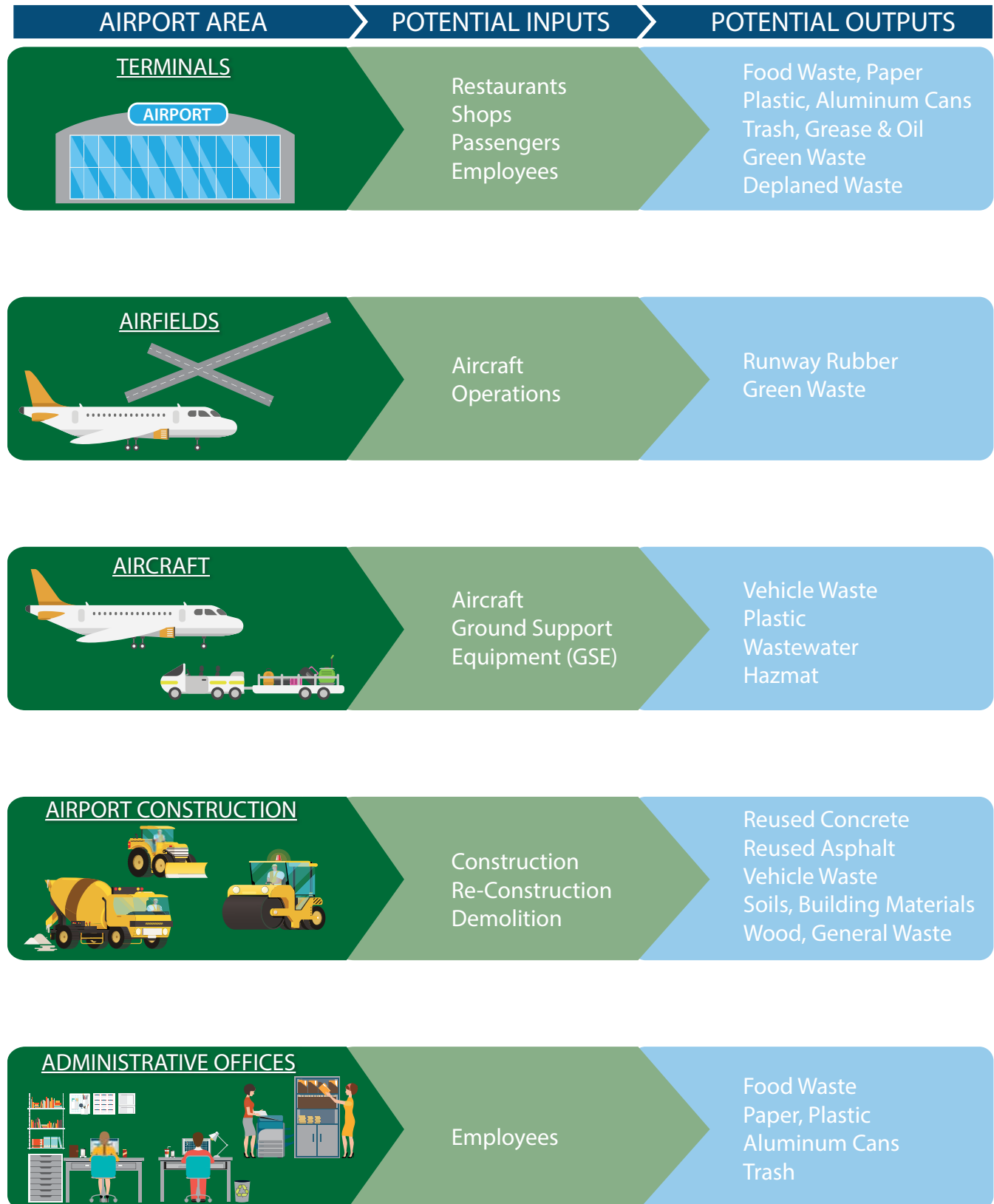
SOLID WASTE MANAGEMENT SYSTEM

An airport generally utilizes either a centralized or decentralized waste management system. The differences between these two methods are described below and summarized on **Exhibit 5E**.

- **Centralized Waste Management System** | Under a centralized waste management system, the airport provides receptacles for the collection of waste, recyclables, 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, which may not be incentivized to recycle on their own, and can reduce the overall cost of service for all involved. A centralized

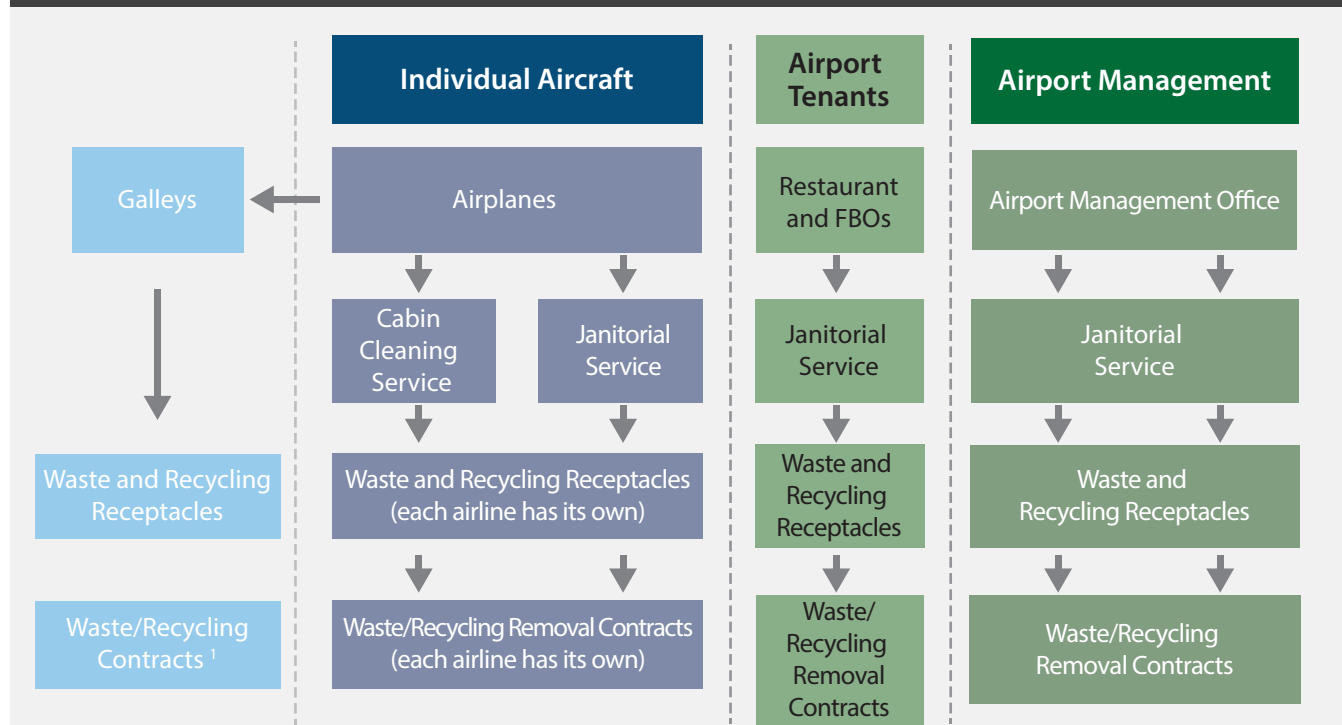
⁴ National Academies of Sciences, Engineering, and Medicine Airport Cooperative Research Program, Synthesis 92, Airport Waste Management and Recycling Practices, 2018

AIRPORT WASTE STREAMS

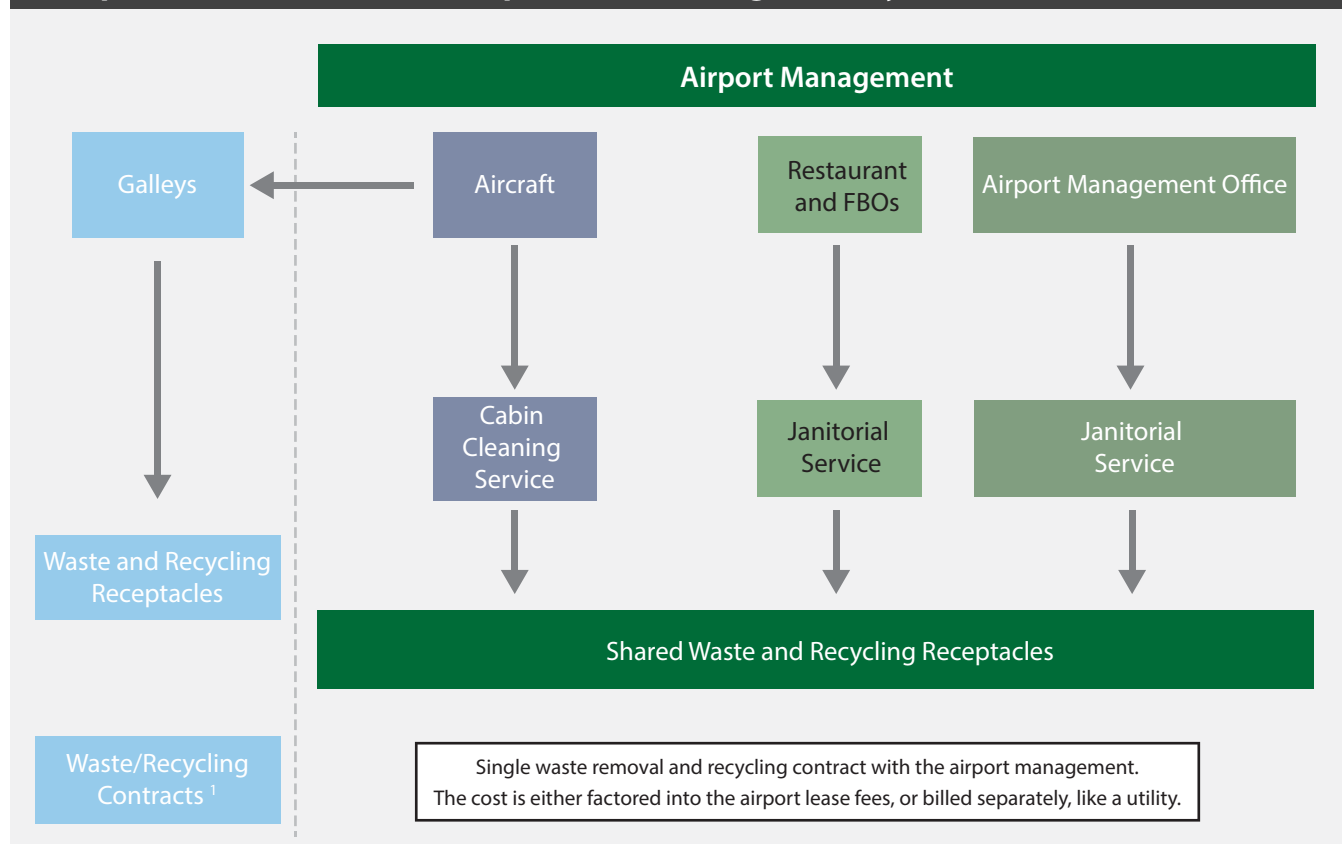


Source: Recycling, Reuse, and Waste Reduction at Airports, FAA (April 24, 2013)

Components of a Decentralized Airport Waste Management System



Components of a Centralized Airport Waste Management System



¹Galleys 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.

strategy can be inefficient for some airports, as it requires more effort and oversight on the part of airport management; however, the centralized system is advantageous because it involves fewer players in the overall management of the solid waste and recycling efforts and allows greater control by the city over the type, placement, and maintenance of dumpsters, thereby saving space and eliminating the need for each tenant to have its own container(s).

- **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 manage the waste from their leased spaces with separate contracts, billing, and hauling schedules. A decentralized waste management system can increase the number of receptacles on airport property, as well as the number of trips by a waste collection service provider if the collection schedule for a tenant differs from the airport's collection schedule.

RRL generally operates under a decentralized waste system, as the majority of tenants are responsible for their own waste management.

GOALS AND RECOMMENDATIONS

The following recommendations are made to maximize waste reduction and introduce recycling efforts at the airport.

Goal 1: Reduce the Amount of Solid Waste Generated

- Create a centralized waste management system at the airport. Currently, RRL participates in a decentralized waste management system. Airport tenants are responsible for overseeing their own waste management. Airport staff could consider engaging tenants to create a centralized waste management system at the airport to streamline waste management efforts at the airport.
 - Considerations:
 - Any lease agreements that are up for renewal should be reviewed/revised to include language that would require tenants to enact recycling practices.
 - Implementation of incentives for tenants to either enhance existing recycling practices or join the airport's recycling program should be considered.
- 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 would create efficient and cost-saving solid waste management solutions. People dedicated to this operational aspect of the airport would gain familiarity with waste processes and could help identify areas of improvement and cost-saving measures.
- Provide education for airport employees. To minimize waste within the airport, it is crucial to inform airport employees and provide them 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 goals.

- 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, opportunities for waste reduction, and capture of recyclables and should include the following actions:
 - Examination of records
 - Evaluate waste hauling and disposal records and contracts
 - Examine supply and equipment invoices
 - Identify other waste management costs (commodity rebates, container costs, etc.)
 - Track waste from the point of origin
 - Establish a baseline for metrics
 - Facility walk-through conducted by the airport
 - Gather qualitative waste information to determine major waste components and waste-gathering practices
- Create a tracking and reporting system. Tracking solid waste generated will allow the airport to identify areas where a significant amount of waste is generated, which will help the airport estimate annual waste volumes. Understanding the cyclical nature of waste generation will allow the airport to estimate costs and identify areas of improvement.

Goal 2: Create a Comprehensive Recycling Management Plan at RRL

- Introduce an airport-wide recycling program. To guarantee the airport reduces the amount of waste hauled to the landfill, materials that cannot be reused or avoided should be recycled, if possible. The airport/city should review internal procedures to ensure there are no unacceptable items contaminating recycling containers or recyclables thrown in the trash.
- 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.
- Provide tenant education. It is crucial to encourage participation to ensure buy-in of any future recycling efforts that may be undertaken at RRL. To ensure recycling is part of the airport's everyday business, airport administration should provide training and education to support personnel, tenants, and others that conduct business at the airport. In-person meetings with airport tenants could be held to create mutual understanding of the airport's solid waste and recycling goals and how tenants play a vital role in the airport's overall success.

Goal 3: Establish Construction and Demolition Goals

- Implement construction waste requirements in contracts for construction projects. Construction contracts should highlight ways to repurpose and reuse materials/salvage and explain how recyclable materials are defined in the construction process. Additionally, these contracts should establish standards and specifications in the procurement process and contracting when starting a new construction project at RRL. Other action items to consider when drafting a contract for a construction project include preparing a construction waste management (CWM) plan, assigning a waste management coordinator, and tracking and reporting requirements under the CWM plan.
- Create a CWM plan. The airport and its contractors should adopt a CWM plan when applicable. A typical CWM plan should encompass goals and strategies to manage a project's C&D waste. A CWM plan should also identify the types and quantities by weight for any proposed demolition, site-clearing, and/or construction waste that may be generated by the project. Other items to include in a CWM plan include the following:
 - Complete a materials handling estimate worksheet for all applicable project waste streams.
 - Identify where recyclable materials storage and collection points will be situated.
 - Create a plan to communicate recycling goals with employees and subcontractors.
 - Create a waste reduction work plan to identify what materials can be salvaged or recycled, how waste is disposed of, and the method for collecting and transporting waste streams.

At the end of each project, as part of the CWM plan, documentation that includes tracking, reporting, and invoicing should also be submitted to demonstrate which CWM plan goals were met.

The construction waste management plan should consider the following construction and demolition debris for recycling or reuse:	
Earth, soil, dirt	Sand
Concrete reclaimed asphalt pavement	Wood
Bricks/masonry (cinder blocks, mortar, etc.)	Gypsum drywall
Rock, stone, gravel	Plastics
Ferrous metal (iron, steel, etc.)	Plaster
Nonferrous metal (aluminum, copper, etc.)	Paint
Roofing shingles and other roof materials	Plumbing fixtures and piping
Cardboard, paper, packaging	Land-clearing debris
Non-asbestos insulation	

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 the airport's capital program to determine whether projects identified in the airport 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. This section provides an overview of potential impacts to existing resources that could result from the implementation of the planned improvements outlined on the recommended development concept.

If the FAA retains approval authority over a project, then the project is typically subject to the *National Environmental Policy Act* (NEPA). For projects not categorically excluded under FAA 1050.1G, *FAA National Environmental Policy Act Implementing Procedures*, 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.

The *FAA Reauthorization Act of 2024* introduced a variety of updated and new environmental guidelines. The primary updates related to environmental impacts are outlined in two sections: Section 743 and Section 783.

- Section 743 details the FAA's authority to regulate uses of airport property for 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 FAA jurisdiction should be submitted by an airport sponsor to the FAA.
- Section 783 outlines the airport capacity enhancement projects, terminal development projects, and general aviation airport improvement projects that will be subject to coordinated and expedited environmental review requirements.

The following portion of the master plan is not designed to satisfy NEPA requirements for a specific development project, but it 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 5B summarizes potential environmental concerns associated with implementation of the ultimate recommended development concept for RRL. Analysis under NEPA requires federal agencies to prepare a "detailed statement" for proposed "major federal actions significantly affecting the quality of the human environment," as amended by the *Fiscal Responsibility Act of 2023* (FRA), Public Law 118-5. This statement must include the following:

1. The reasonably foreseeable environmental effects of the proposed agency action;
2. The reasonably foreseeable adverse environmental effects that cannot be avoided;

3. A reasonable range of alternatives to the proposed agency action (including an analysis of any negative environmental impacts of not implementing the proposed agency action in the case of a no-action alternative) that are technically and economically feasible and meet the purpose and need of the proposal;
4. The relationship between local short-term uses of the human environment and the maintenance and enhancement of long-term productivity; and
5. Any irreversible and irretrievable commitments of resources that would be involved in the proposed action.

TABLE 5B | Summary of Potential Environmental Concerns

AVIATION EMISSIONS AND AIR QUALITY	
FAA Order 1050.1G, Significance Threshold/ Factors to Consider	<i>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.</i>
Potential Environmental Concerns	<p>Potential Impact. An increase in operations could occur over the 20+ years outlined in the aviation demand forecasts as part of this airport master plan that would likely result in additional emissions; however, Lincoln County is in attainment for all federal criteria pollutants. 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 concept plan.</p> <p><i>Source: U.S. EPA, Wisconsin Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants, accessed October 2025</i></p>
BIOLOGICAL RESOURCES (INCLUDING FISH, WILDLIFE, AND PLANTS)	
FAA Order 1050.1G, Significance Threshold/ Factors to Consider	<p><i>The U.S. Fish and Wildlife Service (USFWS) 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.</i></p> <p><i>The FAA has not established a significance threshold for non-listed species; however, factors to consider include whether an action would have the potential for:</i></p> <ul style="list-style-type: none"> • <i>Long-term or permanent loss of unlisted plant or wildlife species;</i> • <i>Adverse impacts to special status species or their habitats;</i> • <i>Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or populations; or</i> • <i>Adverse impacts on a species' reproductive rates, non-natural mortality, or ability to sustain the minimum population levels required for population maintenance.</i>
Potential Environmental Concerns	<p><u>Federally Protected Species</u></p> <p>Potential Impact. According to the USFWS <i>Information for Planning and Consultation (IPaC)</i> report, there is potential for three proposed endangered, proposed threatened, and non-essential experimental species at RRL:</p> <ul style="list-style-type: none"> • whooping crane (non-essential experimental) • salamander mussel (proposed endangered) • monarch butterfly (proposed threatened)

(Continues)

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

Potential Environmental Concerns (continued)	<p>Based on a review of aerial imagery, RRL appears to contain freshwater forested/shrub wetlands and freshwater emergent wetlands throughout the airport (Exhibit 1K). A biological resources evaluation may be needed to ensure no suitable habitat for the whooping crane and monarch butterfly is located within the proposed development footprint for projects identified on Exhibit 5A. Suitable habitat for the salamander mussel is not present at RRL.</p> <p>Designated Critical Habitat</p> <p>No Impact. There is no designated critical habitat within airport boundaries.</p> <p>Non-Listed Species</p> <p>Potential Impact. Non-listed species of concern include those protected by the <i>Migratory Bird Treaty Act</i> (MBTA) and the <i>Bald and Golden Eagle Protection Act</i>. Bird species protected by the MBTA could be adversely affected if construction occurs during the nesting and breeding seasons (December 31 to August 31). Pre-construction surveys of vegetated areas at the airport are recommended for projects that involve ground-clearing projects unless such projects are outside the nesting and breeding seasons.</p> <p><i>Source: USFWS, IPaC (https://ipac.ecosphere.fws.gov/location/index), accessed October 2025</i></p>
COASTAL RESOURCES	
FAA Order 1050.1G, Significance Threshold/ Factors to Consider	<p>The FAA has not established a significance threshold for Coastal Resources. Factors to consider include whether an action would have the potential to:</p> <ul style="list-style-type: none"> • 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	<p>No Impact. As mentioned in Chapter One, the airport is not located within a coastal zone; therefore, airport development depicted on Exhibit 5A would not impact coastal resources.</p>
DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(F) (NOW CODIFIED IN TITLE 49 UNITED STATES CODE [U.S.C.] § 303)	
FAA Order 1050.1G, Significance Threshold/ Factors to Consider	<p>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.</p>
Potential Environmental Concerns	<p>Potential Impact. There are several Section 4(f) resources within one mile of the airport, as outlined in Table 1G of the master plan. The recommended development concept proposes property acquisition that would contain a portion of land associated with a softball complex, which is associated with the Smith Multi-Purpose Center. A Section 4(f) evaluation may be necessary to determine the extent of physical impacts, if any, on this Section 4(f) resource.</p>
FARMLANDS	
FAA Order 1050.1G, Significance Threshold/ Factors to Consider	<p>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).</p>

(Continues)

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

FAA Order 1050.1G, Significance Threshold/ Factors to Consider (continued)	<p><i>The FPPA applies when airport activities meet the following conditions:</i></p> <ul style="list-style-type: none"> • <i>Federal funds are involved;</i> • <i>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</i> • <i>None of the exemptions to the FPPA apply. These exemptions include:</i> <ul style="list-style-type: none"> ○ <i>Land that 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);</i> ○ <i>Land that is already committed to urban development;</i> ○ <i>Land that is committed to water storage;</i> ○ <i>Construction of non-farm structures necessary to support farming operations; and</i> ○ <i>Construction/land development for national defense purposes.</i>
Potential Environmental Concerns	<p>Potential Impact. According to the USDA-NRCS Web Soil Survey, portions of the airport include prime farmland and may be subject to the FPPA (Exhibit 1K). The recommended development concept depicts the extension of Runway 7 and Runway 16, the construction of new taxiway pavement serving the north end of Runway 16-34, and the construction of hangars, taxilanes, and apron pavement in areas with farmable soils; therefore, prior to the construction of these projects, coordination with the USDA may be required to assess potential impacts to these soils.</p> <p><i>Source: USDA-NRCS, Web Soil Survey (https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx), accessed October 2025</i></p>
HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION	
FAA Order 1050.1G, Significance Threshold/ Factors to Consider	<p>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:</p> <ul style="list-style-type: none"> • 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; • Use a different method of waste collection, treatment, storage, or disposal that, as an action, would adversely impact the site, surroundings, or affected community, and/or would exceed state, tribal, or local capacity; or • Adversely affect human health and the environment.
Potential Environmental Concerns	<p>No Impact. There are no identified brownfields or Superfund sites within a one-mile buffer of the airport. Due to existing regulatory environmental management, no impacts related to ultimate airport development are anticipated. Furthermore, no long-term impacts related to solid waste disposal based on the projects outlined on Exhibit 5A are expected. Solid waste, such as the buildings and pavement proposed to be removed from the airfield, will be properly disposed of in local landfills.</p> <p><i>Source: U.S. EPA, NEPAAssist (https://nepassisttool.epa.gov/nepassist/nepamap.aspx), accessed October 2025</i></p>
HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES	
FAA Order 1050.1G, Significance Threshold/ Factors to Consider	<p>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).</p>

(Continues)

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

Potential Environmental Concerns	<p>Potential Impact. There are no listed National Register of Historic Places (NRHP) resources on or near RRL. As mentioned in Chapter One of the master plan, a cultural survey has been conducted on airport property, but this survey was conducted for project-specific development and no known systematic airport-wide cultural survey has been conducted at RRL; therefore, while much of the airport has been developed or disturbed by construction, there is still a potential that intact cultural resources may be present on the ground surface or subsurface.</p> <p>If previously undocumented buried cultural resources are identified during ground-disturbing activities for future airport development, all work must immediately cease within 30 meters (100 feet) until a qualified archaeologist has documented the discovery and evaluated its eligibility for the NRHP, as appropriate. Work must not resume in the area without the approval of the FAA.</p> <p><i>Source: Becher-Hoppe Associates, Inc., Final Environmental Assessment, Proposed Airport Development Consisting of the Following: Construction of New Terminal Area, Construction of a Parallel Taxiway for Runway 7-25, Completion of a Parallel Taxiway for Runway 16-34, March 2007</i></p>
LAND USE	
FAA Order 1050.1G, Significance Threshold/ Factors to Consider	The FAA has not established a significance threshold for Land Use and there are no specific independent factors to consider. The determination that significant impacts exist is normally dependent on the significance of other impacts.
Potential Environmental Concerns	<p>Potential Impact. Exhibit 5A depicts property to be acquired southwest of Runway 7 to allow the airport sponsor to maintain control over the ultimate Runway 7 RPZ, remove/relocate incompatible land uses within the RPZ, and install a MALSR. The relocation of a private residence would be subject to the <i>Uniform Relocation Assistance and Real Property Acquisitions Act</i>. All other proposed projects on Exhibit 5A would occur within the existing airport boundaries and would not directly affect off-airport land uses. It should be noted that property acquisition is planned to occur as these parcels become available for sale.</p>
NATURAL RESOURCES AND ENERGY SUPPLY	
FAA Order 1050.1G, 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 or adversely impact extant federal, tribal, state, or local resource planning that is already in place.
Potential Environmental Concerns	<p>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.</p>
NOISE AND NOISE-COMPATIBLE LAND USE	
FAA Order 1050.1G, Significance Threshold/ Factors to Consider	<p>The significance threshold applies to all civil aviation activities, including aircraft and airports; unmanned aircraft systems (UAS) and hubs; advanced air mobility (AAM) and vertiports; and commercial space vehicles and launch and reentry sites.</p> <p>The action would result in noise exposure from impulsive noise sources (e.g., sonic booms) that meet or exceed 60 continuous day-night average sound level (CDNL) (equivalent to a DNL of 65 dBA [A-weighted decibels]).</p> <p>The action would increase noise by a DNL of 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 level due to a DNL increase of 1.5 dB or greater, when compared to the no-action alternative for the same timeframe.</p> <p>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.</p>

(Continues)

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

Potential Environmental Concerns	Potential Impact. There are no hospitals or live-in medical facilities within one mile of the airport; however, other noise-sensitive land uses, such as schools and places of worship, are located within one mile of the airport. The closest residential areas are located on the east side of Airport Road, adjacent to airport boundaries. It is important to note that operational growth, unless tied to a specific project, will not result in noise impacts under FAA Order 1050.1G. Impacts to noise-sensitive land uses are evaluated through NEPA documentation for specific projects, such as the proposed runway extensions, or through the voluntary Part 150 process.
SOCIOECONOMICS AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS	
Socioeconomics	
FAA Order 1050.1G, 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: <ul style="list-style-type: none"> • 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	Potential Impact. The proposed development depicted on Exhibit 5A could encourage economic growth in the City of Merrill. This growth could include new construction jobs, new jobs for the airport and other commercial uses, new housing, and increases to the local tax base. Exhibit 5A depicts hangar development in the in the terminal area and on the airport's east side. No long-term traffic impacts are anticipated as a result of this development, as hangars are typically low traffic generators.
Children's Health and Safety Risks	
FAA Order 1050.1G, 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 near the airport because of the proposed ultimate development. The airport is in an access-controlled facility and children will not be granted access to the airfield or landside facilities without adult supervision. All construction areas should be controlled to prevent unauthorized access, as well.
VISUAL EFFECTS	
Light Emissions	
FAA Order 1050.1G, 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: <ul style="list-style-type: none"> • 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	Potential Impact. The proposed recommended development would include the installation of runway end identifier lights (REILs) and two-light PAPI systems on Runway 16-34. Proposed lighting upgrades to Runway 7-25 would include replacing the existing PAPI-2 systems with PAPI-4 systems. These light fixtures would be installed at ground level and would not be seen from nearby roadways.

(Continues)

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

Potential Environmental Concerns (continued)	<p>The proposed development concept also proposes the installation of a MALSR serving Runway 7. This lighting system would require property acquisition southwest of the airport where the sequenced flashers of the system would be located. This system would also require support for the lights to be mounted upon, which may be seen depending on the ground clearing that would occur as a result of the installation of these lights and the property acquisition.</p> <p>The rotating beacon is planned to be relocated from the east side of the airport to the terminal area.</p> <p>Construction of the proposed 400-foot extension to Runway 7 and 403-foot extension to Runway 16 may require nighttime construction. Night lighting during construction phases within the runway environment is typically directed downward to the construction work area to prevent lighting spilling outside the airport boundaries. Other ultimate projects, such as hangar construction, would include new light fixtures. Building security lights would be directed downward and would not create glare issues for users on nearby roadways. Similarly, if buildings are constructed in the reserve areas slated for aeronautical and/or non-aeronautical development, lights installed for building security would be directed downward to minimize the potential for glare issues.</p>
Visual Resources/Visual Character	
FAA Order 1050.1G, Significance Threshold/ Factors to Consider	<p>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:</p> <ul style="list-style-type: none"> • 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; and • Block or obstruct the views of the visual resources, including whether these resources would still be viewable from other locations.
Potential Environmental Concerns	<p>No Impact. There are no national scenic byways, state scenic byways, or scenic corridors near RRL; therefore, while short-range views of the airport are available on roadways along the northern and eastern portion of the airport, the development proposed on Exhibit 5A would not block or obstruct views of visual resources.</p>
WATER RESOURCES	
Wetlands	
FAA Order 1050.1G, Significance Threshold/ Factors to Consider	<p>The action would:</p> <ol style="list-style-type: none"> 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	<p>Potential Impact. Based on the National Wetlands Inventory (NWI), several freshwater forested/shrub wetlands are located throughout RRL. It is important to note that this information is based on aerial photography interpretation based on images dated from 2003. To determine if wetlands are present at the airport, a field survey and/or wetland delineation may be required.</p>

(Continues)

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

Potential Environmental Concerns (continued)	<p>Based on the NWI imagery, there are wetlands located in an area currently depicted for new taxiway and apron pavement.</p> <p><i>Source: USFWS, National Wetlands Inventory (https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/), accessed October 2025</i></p>
Floodplains	
<p>FAA Order 1050.1G, Significance Threshold/ Factors to Consider</p> <p>Potential Environmental Concerns</p>	<p>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 U.S. Department of Transportation (DOT) Order 5650.2, Floodplain Management and Protection.</p> <p>No Impact. Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), the majority of RRL is located in Zone X (unshaded), an area of minimal flood hazard (Exhibit 1K). Projects depicted on the recommended development concept would remain outside the 100-year and 500-year floodplains.</p> <p><i>Source: FEMA Flood Map Service (https://msc.fema.gov/portal/search?AddressQuery=merril%20municipal%20airport), accessed October 2025</i></p>
Surface Waters	
<p>FAA Order 1050.1G, Significance Threshold/ Factors to Consider</p> <p>Potential Environmental Concerns</p>	<p>The action would:</p> <ol style="list-style-type: none"> 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. <p>Factors to consider include whether a project would have the potential to:</p> <ul style="list-style-type: none"> • Adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values; • Adversely affect surface waters such that the beneficial uses and values of such waters 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. <p>Potential Impact. The proposed development depicted on Exhibit 5A would increase impervious surfaces at RRL with the construction of additional roads/parking and ultimate runway, taxiway, and apron pavements.</p> <p>A Wisconsin Pollutant Discharge Elimination System (WPDES) General Permit will 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), if available, to address operational and structural sources, best management practices (BMPs), and sediment and erosion control. FAA Advisory Circular (AC) 150/5370-10H, <i>Standards for Specifying Construction of Airports</i>, Item C-102, <i>Temporary Air and Water Pollution, Soil Erosion, and Siltation Control</i>, should also be implemented during construction projects at the airport.</p>
Groundwater	
<p>FAA Order 1050.1G, Significance Threshold/ Factors to Consider</p> <p>Potential Environmental Concerns</p>	<p>The action would:</p> <ol style="list-style-type: none"> 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.

(Continues)

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

FAA Order 1050.1G, Significance Threshold/ Factors to Consider (continued)	<p>Factors to consider are when a project would have the potential to:</p> <ul style="list-style-type: none"> • 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	<p>No Impact. According to the University of Wisconsin Well Water Quality database, there are no reported abnormalities in the groundwater in Lincoln County. Furthermore, the closest sole source aquifer is the Mille Lacs Sole Source Aquifer, which is located over 190 miles northwest of the airport.</p> <p><i>Sources: U.S. EPA, Sole Source Aquifers (https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b), accessed October 2025; University of Wisconsin, Stevens Point, Center for Watershed Science and Education (https://www3.uwsp.edu/cnr-ap/watershed/Pages/WellWaterViewer.aspx), accessed October 2025</i></p>
Wild and Scenic Rivers	
FAA Order 1050.1G, Significance Threshold/ Factors to Consider	<p>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 considered for designation) through:</p> <ul style="list-style-type: none"> • 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 another 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	<p>No Impact. As discussed in Chapter One, RRL is not located near a listed river on the National Wild and Scenic Rivers list. The closest river segment identified within the National Wild and Scenic River System is the Wolf River, which is located over 50 miles from the airport. The nearest river segment on the NRI is the Wisconsin River, which is located over one mile west and south of the airport. Based on the recommended development concept, proposed projects would be confined to existing airport property and would not be near the Wolf River or Wisconsin River; therefore, planned projects as shown on Exhibit 5A would not have adverse effects on these rivers' outstanding remarkable values (i.e., scenery, geology, fish, wildlife, and history).</p> <p><i>Sources: National Wild and Scenic Rivers System (https://rivers.gov/wisconsin), accessed October 2025; National Park Service, Nationwide Rivers Inventory (https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm), accessed October 2025</i></p>

SUMMARY

This chapter was prepared to help the airport sponsor make decisions on the future growth and development of RRL by narratively and graphically describing the development concept. The plan represents an airfield facility that fulfills aviation needs for the airport while conforming to safety and design standards, to the extent practicable. It also provides a guide for a landside complex that can be developed as demand dictates.

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