Chapter 5

Recommended Master Plan Concept

The preparation of the airport master plan has included technical efforts in the previous chapters which were intended to establish the role of Baraboo-Wisconsin Dells Regional Airport (DLL), forecast potential aviation demand, establish airside and landside facility needs, and evaluate options for improving the airport to meet those facility needs. The planning process has included the development of draft working papers that have been presented to the Planning Advisory Committee (PAC). The PAC is comprised of stakeholders/constituents with an investment or interest in the airport and surrounding area. This diverse group has provided extremely valuable input into the master plan. Additionally, a series of public information workshops has been conducted as part of this planning process, providing the interested members of the community an opportunity to be involved and educated about the study.

The alternatives that outlined future growth and development scenarios in Chapter Four have been refined into a recommended development concept for the master plan, which is presented in this chapter. An overview of environmental conditions that need to be considered when development projects are undertaken is provided later in this chapter.

One of the objectives of the master plan is to allow decision-makers the ability to either accelerate or slow development goals based on actual demand. If demand slows, development of the airport beyond routine safety and maintenance projects could be minimized. If aviation demand accelerates, development could be expedited. Any plan can account for limited development, but the lack of a plan for accelerated growth can sometimes be challenging; therefore, to ensure flexibility in planning and development to respond to unforeseen needs, the master plan concept considers balanced development potential for DLL.

MASTER PLAN DEVELOPMENT CONCEPT

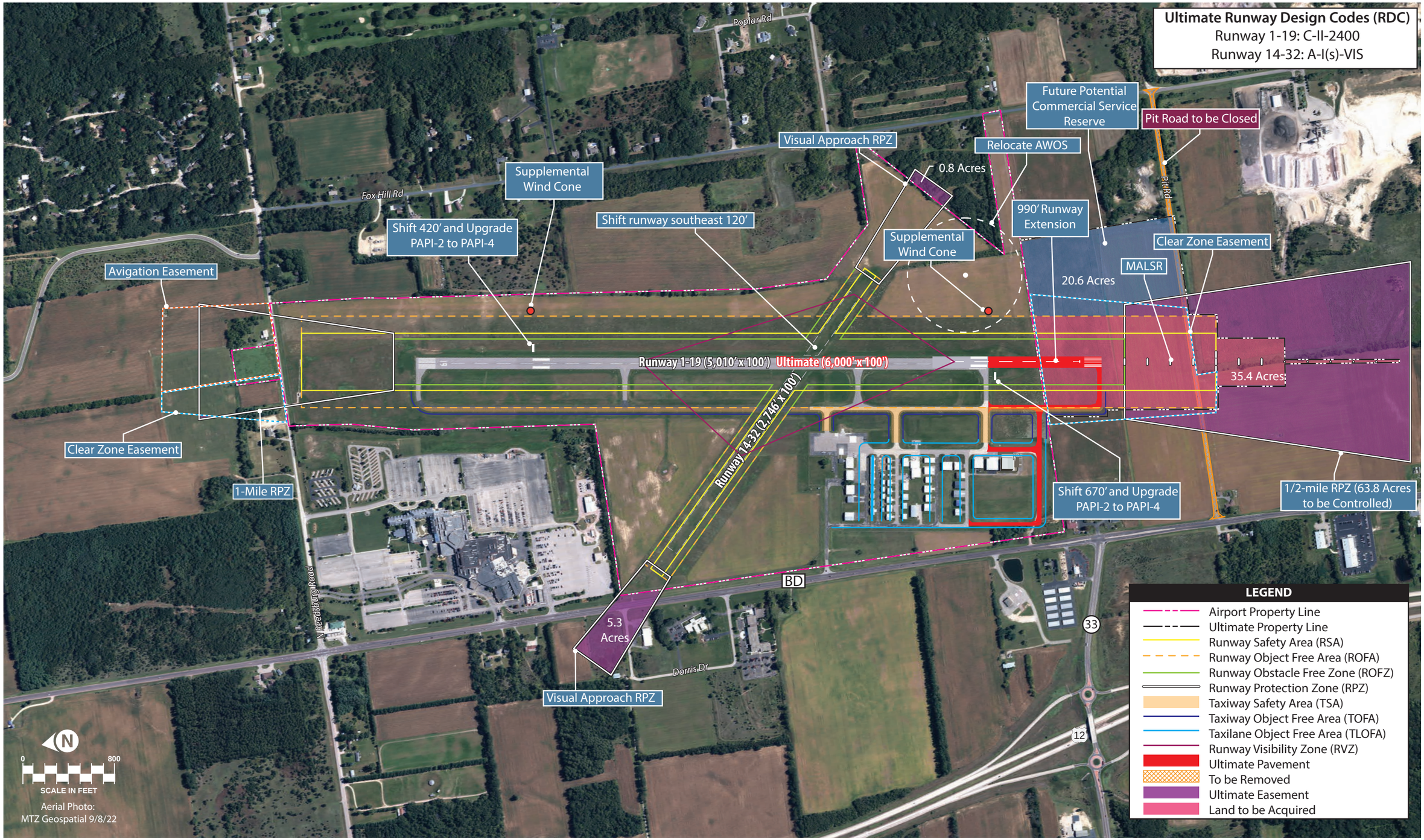
DLL is classified as a regional general aviation airport within the Federal Aviation Administration's (FAA) *National Plan of Integrated Airport Systems* (NPIAS). Most of the airport's operations can be attributed to general aviation activities, including business aviation, as well as some air taxi and charter operations occurring at the airport. NPIAS airports are considered important to the national aviation system and are eligible for development grant funding from the FAA. At the state level, the Wisconsin Department of Transportation (WisDOT) Bureau of Aeronautics (BOA) classifies DLL as a medium general aviation (GA) airport. The airport's classifications are not anticipated to change because of the recommendations in this master plan; in fact, this plan fully supports the continued and necessary development of the airport to serve in the function of a regional general aviation role.

The master plan concept, as shown on **Exhibit 5A**, presents the recommended configuration for DLL, which preserves and enhances the role of the facility while meeting FAA design and safety standards, to the extent practicable. The concept provides for anticipated facility needs over the next 20 years and establishes a vision and direction for meeting facility needs beyond the 20-year planning period of this study. A phased program to achieve the master plan concept is presented in Chapter Six. When assessing development needs, this chapter separates the airport into airside and landside functional areas. The following sections describe the master plan concept in detail.

AIRSIDE DEVELOPMENT CONCEPT

The airside plan generally considers improvements related to the runway and taxiway system and often requires the greatest commitment of land area to meet the physical layout of an airport. Operational activity at DLL is anticipated to grow beyond the 20-year planning horizon of this master plan, and the airport is projected to continue to serve the full range of general and business aviation operations, in addition to air taxi and charter activities. The principal airfield recommendations should always focus first on safety and security. Of key importance is to ensure that proposed airfield improvements will be designed to meet all appropriate FAA airport design standards. Recommendations are then designed to improve the operational efficiency, circulation, and capability of the airfield. The major airside issues addressed in the master plan concept include the following:

- Upgrade to ultimate runway design code (RDC) C-II standards on Runway 1-19 and maintain RDC A-I(S) design standards on Runway 14-32.
- Consider runway extension options for Runway 1-19 to better accommodate business jet operators, pending further justification and coordination with the BOA and FAA.
- Address safety area deficiencies on Runway 1-19, which primarily include land acquisition, vegetation obstructions associated with upgrading Runway 1-19 to ultimate RDC C-II standards, and runway protection zone (RPZ) incompatibilities introduced by the runway extension.
- Shift Runway 14-32 approximately 120 feet to the southeast to address safety area incompatibilities; acquire property within the RPZs serving each runway end.


Ultimate Runway Design Codes (RDC)
Runway 1-19: C-II-2400
Runway 14-32: A-I(s)-VIS
Poplar Rd
Fox Hill Rd
Supplemental Wind Cone
Shift 420' and Upgrade PAPI-2 to PAPI-4
Shift runway southeast 120'
Visual Approach RPZ
0.8 Acres
Relocate AWOS
Future Potential Commercial Service Reserve
Pit Road to be Closed
Pit Rd
990' Runway Extension
Supplemental Wind Cone
Clear Zone Easement
MALSR
20.6 Acres
Avigation Easement
Runway 1-19 (5,010' x 100') Ultimate (6,000' x 100')
35.4 Acres
Runway 14-32 (2,746' x 100')
Clear Zone Easement
1-Mile RPZ
Shift 670' and Upgrade PAPI-2 to PAPI-4
1/2-mile RPZ (63.8 Acres to be Controlled)
N Reedsburg Road
BD
5.3 Acres
Visual Approach RPZ
Dorris Dr
33
12
LEGEND
Airport Property Line
Ultimate Property Line
Runway Safety Area (RSA)
Runway Object Free Area (ROFA)
Runway Obstacle Free Zone (ROFZ)
Runway Protection Zone (RPZ)
Taxiway Safety Area (TSA)
Taxiway Object Free Area (TOFA)
Taxilane Object Free Area (TLOFA)
Runway Visibility Zone (RVZ)
Ultimate Pavement
To be Removed
Ultimate Easement
Land to be Acquired
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Aerial Photo:
MTZ Geospatial 9/8/22

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- Relocate hold positions to meet FAA separation standards.
- Enhance visual approach aids serving Runway 1-19 with the installation of four-box precision approach path indicator (PAPI-4) systems and a medium intensity approach lighting system with runway alignment indicator lights (MALSR) serving Runway 1; relocate the automated weather observation system (AWOS) to better meet critical area requirements for the system.

RUNWAY DIMENSIONAL STANDARDS

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

As discussed in previous chapters, the design criteria primarily center on an airport's critical design aircraft. The critical design aircraft is the most demanding aircraft, or family of aircraft, that currently conducts (or is projected to conduct) 500 or more operations (takeoffs or landings) per year at an airport. Factors included in airport design are an aircraft's wingspan, approach speed, tail height, and (in some cases) the instrument approach visibility minimums for each runway. The FAA has established the RDC to relate these design aircraft factors to airfield design standards. The most restrictive RDC is also considered the overall airport reference code (ARC) for an airport.

Analysis in Chapters Two and Three concluded that the existing RDC for Runway 1-19 is B-II. With a length of 5,010 feet, Runway 1-19 can accommodate most general aviation activity, including small and mid-sized business jets, as well as moderate air taxi and charter activity. Future planning considers numerous upgrades to the runway (to be discussed), as well as upgrading to an ultimate RDC of C-II for Runway 1-19.

The turf crosswind Runway 14-32 is 2,746 feet long and is designed to accommodate lightweight single-engine aircraft. The existing and ultimate Runway 14-32 RDC is categorized as A-I(S); however, several safety-related projects (to be discussed) are planned in the future.

Table 5A provides a summary of the RDCs for each runway based on the master plan concept. In addition to the physical and operational components of an aircraft, the RDC also considers the instrument approach capabilities of a runway, expressed in runway visual range (RVR) values. For Runway 1-19, the existing RVR value of 5000 indicates instrument approach visibility minimums not lower than 1-mile. The ultimate RVR value of 2400 indicates approach visibility minimums not lower than ½-mile, which correspond to the proposed instrument approach serving Runway 1. The approaches serving Runway 14-32 are planned to remain visual only and are represented by the RVR designation "VIS."

TABLE 5A | Design Standards Based on RDC

	Runway 1-19			Runway 14-32
	Existing	Ultimate		Existing/Ultimate
Runway Design Code (RDC)	**B-II-5000**	**C-II-2400**		**A-I(S)-VIS**
Runway Safety Area (RSA)				
Length Beyond Departure End	300	1,000		240
Length Prior to Threshold	300	600		240
Width	150	500		120
Runway Object Free Area (ROFA)				
Length Beyond Departure End	300	1,000		240
Length Prior to Threshold	300	600		240
Width	500	800		250
Runway Object Free Zone (ROFZ)				
Length Beyond Departure End	200	200		200
Length Prior to Threshold	200	200		200
Width	400	400		250
Runway Protection Zone (RPZ)				
Runway End	**1-19**	**1**	**19**	**14-32**
Length	1,000	2,500	1,700	1,000
Inner Width	500	1,000	500	250
Outer Width	700	1,750	1,010	450

Note: All dimensions are in feet.

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

RUNWAY 1-19

Runway 1-19 is 5,010 feet long, 100 feet wide, served by instrument approach visibility minimums not lower than 1-mile, and oriented in a north-south manner. The existing runway width should be maintained throughout the long-term planning horizon. The runway's existing pavement strength is 30,000 pounds single wheel loading (S) and 55,000 pounds dual wheel loading (D), which should be maintained; however, the airport should monitor the aircraft frequently operating on Runway 1-19. Should demand dictate, the runway strength should be increased to accommodate the heaviest aircraft (or group of aircraft) operating on a regular basis.

Given the results of the runway analysis presented in Chapter Three, the length and width of Runway 1-19 is adequate to accommodate the majority of aircraft operating at the airport and is capable of handling 100 percent of small airplanes with 10 or more passenger seats; however, additional runway length could benefit larger and faster business jet operators, providing the opportunity for aircraft to depart with more fuel and allowing for longer stage lengths and an increase in usable payload. Additional runway length would also improve landing situations for business jets operating under Part 91k or Part 135, especially during wet or contaminated runway conditions. As such, the recommended plan includes extending Runway 1-19 by 990 feet to an ultimate length of 6,000 feet.

Analysis in Chapter Three indicated that the existing runway safety area (RSA), runway object free area (ROFA), and runway obstacle free zone (ROFZ) serving Runway 1-19 are free of obstructions or incompatibilities. Under existing B-II-5000 conditions, the runway protection zones (RPZs) extend beyond the

airport property boundary to the north and south, encompassing approximately 0.12 and 10.35 acres of property, respectively; however, these areas within the RPZs serving each end of the existing Runway 1-19 are contained within avigation and clear zone easements owned by the airport.

As shown on **Exhibit 5A**, the ultimate RSA, ROFA, and RPZs associated with ultimate RDC C-II-2400 conditions expand in size and introduce multiple incompatibilities. The ultimate RSA and ROFA increase to a width of 500 and 800 feet, respectively, and extend 1,000 feet beyond each runway end. The ultimate RPZ serving Runway 1 will expand to an inner width of 1,000 feet, outer width of 1,750 feet, and length of 2,500 feet, encompassing a total of 78.91 acres. Under ultimate conditions, the RSA, ROFA, ROFZ, and RPZ extend beyond airport property to the south and the RSA, ROFA, and ROFZ are obstructed by overgrown vegetation. Additionally, the RSA, ROFA, and RPZ are traversed by Pit Road. The total property encompassed within the ultimate RSA, ROFA, ROFZ, and RPZ serving the extended Runway 1-19 is approximately 95 acres. These incompatibilities are associated with upgrading to ultimate RDC C-II-2400 standards and the extension of Runway 1-19 to the south. Upon the extension of Runway 1-19 and upgrading to ultimate RDC C-II-2400 standards, it is recommended for the ultimate RSA, ROFA, and ROFZ to be cleared of all obstructing vegetation, graded accordingly, and for a portion of Pit Road to be closed to conform to RSA, ROFA, and RPZ design standards; however, this action should not be taken unless or until the airport can justify a runway extension.

Upon upgrading to ultimate C-II-2400 design standards, the RPZ serving Runway 19 will increase in dimension to 500 feet at the inner portion, 1,010 feet at the outer portion, and 1,000 feet long. The RPZ serving ultimate Runway 19 extends beyond airport property and is completely traversed by N Reedsburg Road, which is now generally considered an incompatible land use by the FAA; however, because the interim guidance only addresses new or modified RPZs, existing or historically planned incompatibilities are typically considered grandfathered conditions. For example, roads that are in the current RPZ are typically allowed to remain grandfathered unless the runway environment changes. Given that Runway 1-19 has historically been planned to C-II design standards, the existing location of N Reedsburg Road should be acceptable. Furthermore, the airport currently owns clearway and avigation easements on the north side of N Reedsburg Road which encompass the ultimate RPZ serving Runway 19.

Airport officials and the communities of Lake Delton should continue to monitor activity within the existing and proposed safety areas and RPZs serving Runway 1-19 and maintain them free of incompatible land uses, to the extent practicable. Continued coordination with BOA and FAA officials will be important when implementing any projects that could require changes to the existing RPZs at DLL.

RUNWAY 14-32

As the crosswind runway, Runway 14-32 is designed to accommodate the small aircraft that utilize DLL, as high crosswind conditions impact them more. Turf Runway 14-32 is 2,746 feet long and 100 feet wide, oriented in a northwest-southeast manner, with visual approaches. Given that Runway 14-32 is unpaved, the load-bearing strength capacity is unknown; however, the runway is generally capable of accommodating small aircraft weighing less than 12,500 pounds. At its existing length, Runway 14-32 does not meet the FAA length requirement to accommodate 95 percent of the small general aviation aircraft fleet,

which is 3,300 feet; however, Runway 14-32 is currently constrained by County Highway BD and commercial use property to the northwest and Fox Hill Road to the southeast. Given the existing constraints on each end of Runway 14-32, extension options for the turf crosswind runway are cost prohibitive. Moreover, the current fleet of small aircraft (Category A-I[S]) utilizing the runway for crosswind purposes can operate in a safe and efficient manner. As such, Runway 14-32 is planned to remain at a length of 2,746 feet and maintained under RDC A-I(S)-VIS design standards.

Under existing and ultimate RDC A-I(S) standards, the RSA serving Runway 14-32 should be maintained clear of obstructions and graded according to FAA standard. As discussed in Chapter Three, the existing ROFA and ROFZ extend beyond airport property to the northwest and are obstructed by a fence adjacent to County Highway BD. It is recommended that Runway 14-32 be shifted approximately 120 feet to the southeast in an effort to contain the ROFA and ROFZ within the bounds of airport property, thereby resolving the ROFA and ROFZ incompatibilities.

As presented on **Exhibit 5A**, the RPZ serving the ultimate Runway 14 end extends beyond airport property to the northwest, encompassing approximately 5.3 acres of uncontrolled property, as well as a portion of County Highway BD and Dorris Drive. Furthermore, the ultimate Runway 32 RPZ extends beyond airport property to the southeast, encompassing approximately 0.8 acres of uncontrolled property. Under ultimate conditions, the master plan development concept considers the acquisition of avigation easements for the 5.3 and 0.8 acres of uncontrolled property within the ultimate Runway 14 and 32 RPZs, respectively.

BUILDING RESTRICTION LINE

Although achieving the lowest instrument approach visibility minimums is advantageous for airport operations, there are multiple safety area requirements tied to the minimums associated with the runway's instrument approach procedure(s). As a result, impacts to the airport environment imposed by the ultimate instrument approach visibility minimums need to be addressed. The runway type and capability of the instrument approach minimums contribute to the determination of the building restriction line (BRL), which is a product of Title 14 Code of Federal Regulations (CFR) Part 77 primary and transitional surface clearance requirements and identifies suitable building locations on the airport.

Given that the strength rating for Runway 1-19 is over 12,500 pounds, the runway is classified as an "other than utility" runway under Part 77. Runway 14-32 is classified as a "utility" runway, as it is designed to accommodate aircraft less than 12,500 pounds. The width of the primary surface for other-than-utility visual and non-precision instrument runways with minimums greater than ¾-statute-mile is 500 feet (250 feet to each side of runway centerline), which is the current condition for Runway 1-19. The width of the primary surface serving utility runways with visual-only approaches is 250 feet (125 feet to each side of runway centerline), which is the current condition for Runway 14-32.

The recommended concept for long-term planning at DLL considers instrument approach procedures with not lower than ½-mile minimums serving Runway 1 and not lower than 1-mile minimums serving Runway 19. The width of the primary surface serving other-than-utility runways with minimums of ¾-statute-mile or lower is 1,000 feet (500 feet to each side of runway centerline); thus, the ultimate

primary surface is 1,000 feet wide on Runway 1-19. Runway 14-32 is planned to remain a utility runway with visual approaches. As such, the primary surface serving Runway 14-32 will remain 250 feet wide. The transitional surface extends out and up from the edge of the primary surface at a ratio of seven feet laterally for every one-foot increase. Based on these criteria and using a planned building height, the BRL or obstructions to the BRL can be determined. **Exhibit 5A** presents the ultimate BRL separation at 745 feet from the runway centerline for Runway 1-19 and a BRL separation at 370 feet from the runway centerline for Runway 14-32 based on the approach capabilities of each runway and the selected allowable structure height of 35 feet.

As shown on the master plan concept, there are no structures currently located or planned within the ultimate 35-foot BRL.

INSTRUMENT APPROACHES

As discussed earlier, DLL has instrument approach capabilities to Runways 1 and 19. Instrument approaches serving DLL include a localizer approach (LOC) and area navigation (RNAV) global positioning system (GPS) approaches, as well as a very high frequency omni-directional range (VOR) circling approach that aids pilots in locating the airport, then transitions to a visual approach-to-land procedure. Each existing instrument approach procedure provides a 1-mile visibility minimum.

Chapter Four examined multiple instrument approach enhancement alternatives serving each runway end. Ultimately, increased instrument approach capabilities for Runway 1 are planned at not lower than ½-mile. The ultimate approach procedures are planned to remain at not lower than 1-mile serving Runway 19 and visual only serving Runway 14-32 over the long-term planning period. The existing approach capabilities are planned to be maintained on these runways due to numerous roadway and commercial property RPZ incompatibilities that would be introduced with lower approach capabilities.

VISUAL APPROACH AIDS

Future planning considers various enhancements to visual approach aids serving the runway system at DLL, as depicted on **Exhibit 5A**. Currently, Runways 1 and 19 are served by two-box precision approach path indicators (PAPI-2s) and there are no visual approach aids serving Runway 14-32. Ultimately, PAPI-4s are planned to serve Runways 1 and 19 to further enhance the use of each runway, as well as overall airfield safety, by providing pilots with improved visual approach guidance information during landing phases of flight. Existing Runways 1 and 19 are also served by runway end identifier lights (REILs), which are flashing lights located at the runway threshold end that facilitate rapid identification of the runway end at night and during poor visibility conditions. REILs provide pilots with the ability to identify the runway thresholds and the runway end lighting from other lighting on the airport and in the approach areas. As such, the existing REILs are planned to be maintained throughout the planning horizon.

Furthermore, runways served by instrument approach visibility minimums lower than ¾-mile are required to be served by an approach lighting system (ALS). Given that Runway 1 is planned to have instrument approach visibility minimums down to ½-mile, a MALSR is considered on the lead-in to Runway 1, as depicted on **Exhibit 5A**.

WEATHER REPORTING AIDS AND COMMUNICATION

At present, DLL is served by an automated weather observation system (AWOS), which provides weather observations 24 hours per day. The system updates weather observations every minute, continuously reporting significant weather changes as they occur. This information is then transmitted at regular intervals (usually once per hour). Aircraft in the vicinity can receive this information if they have their radios tuned to the correct frequency (118.325 MHz). The AWOS is surrounded by an FAA-defined critical area with a radius of 500 feet. Although buildings and objects are permissible within this area, they must not obstruct the operation of the AWOS sensors. As such, the ultimate development concept proposes that the AWOS be relocated to the southeast portion of the airfield, as depicted on **Exhibit 5A**.

DLL is also served by a lighted wind cone located on the west side of Runway 1-19 adjacent to the terminal ramp, which should be maintained throughout the planning horizon. In addition, supplemental wind cones are planned on each end of Runway 1-19, located outside of the ultimate ROFA on the east side of the runway.

TAXIWAY DESIGN AND MARKING

While no significant airfield capacity improvements should be necessary during the planning period, the master plan concept considers improving the taxiway system through the implementation of additional taxiway connectors and extended taxiways. The taxiway system is planned to maintain taxiway design group (TDG) 2 standards for all taxiways, which call for a taxiway width of 35 feet. The existing taxiways at DLL are 40 feet wide and should be maintained as such for added safety margin. In addition, it is recommended that taxiway fillets be upgraded to the most current taxiway fillet geometry standards on an as-needed basis or when taxiway rehabilitation projects are scheduled to occur.

At present, the taxiway system serving DLL is found to be adequate in meeting current and future air traffic demand and the existing airfield taxiway geometry is consistent with the current FAA taxiway design standards established in AC 150/5300-13B, *Airport Design*; however, under ultimate conditions, the current runway-to-taxiway separation of 395 feet for parallel Taxiway A serving Runway 1-19 does not meet FAA standards for C-II runways with instrument approach minimums less than ¾-mile. The FAA runway-to-taxiway centerline requirement for such instrument approach capabilities for C-II runways is 400 feet. Should the airport strive to achieve instrument approach minimums lower than ¾-mile, the airport sponsor has indicated that it will apply for a modification to standard to achieve the desired instrument approach minimums. This is due to the extreme cost that would be involved with relocating parallel Taxiway A an additional five feet to meet the 400-foot separation standard.

Under ultimate conditions, a partial parallel taxiway is proposed to serve the southwestern side of Runway 14-32. The construction of the partial parallel taxiway will create access points to future landside development areas, which are further discussed in the next section and depicted on **Exhibit 5B**.

As discussed in Chapter Three (Facility Requirements), hold position markings are placed on taxiways leading to runways, indicating where pilots should stop and hold prior to entering the active runway.

LEGEND

- Airport Property Line
- Runway Object Free Area
- Taxiway Object Free Area (TOFA)
- Taxilane Object Free Area (TLOFA)
- 35' Building Restriction Line (BRL)
- Land to be Acquired
- Ultimate Airfield Pavement
- Ultimate Roads/Vehicle Parking
- Ultimate Building
- Aeronautical Land Use Reserve
- Non-Aeronautical Land Use Reserve

3D Rendering - Northern Development Area

3D Rendering - Southern Development Area

AWOS Critical Area

Runway 1-19 (5,010' x 100')

3D Rendering - Northern Development Area

New Terminal (10,500 sf)

Executive Hangars (70' x 70')

Conventional Hangar (200' x 150')

Executive Hangars (80' x 80')

Conventional Hangar (100' x 100')

3D Rendering - Southern Development Area

Executive Hangars (100' x 100')

Relocate Fence

Relocated Airport Beacon

Executive Hangars (70' x 70')

Nested T-Hangars (6-unit)

24.4 Acres

6.4 Acres

Non-Movement Boundary

BD

Controlled Access Gate

Ultimate Secondary Access Road

N

0 300

SCALE IN FEET

Aerial Photo: MTZ Geospatial 9/8/22

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Currently, the hold position markings serving Runway 1-19 are situated 195 feet from the runway centerline, which does not meet the FAA design standard of 200 feet for RDC B-II-5000 runways. As such, the airport should relocate the existing hold position markings to at least 200 feet from the Runway 1-19 centerline in the near term. Prior to upgrading Runway 1-19 to RDC C-II-2400, the hold position markings should be relocated to 250 feet from the runway centerline to meet FAA design standards under the planned ultimate condition.

LANDSIDE DEVELOPMENT CONCEPT

The primary goal of landside facility planning is to provide adequate space to meet reasonably anticipated aviation needs, while also optimizing operational efficiency and land use. Achieving these goals yields a development scheme that segregates functional uses and maximizes the airport's revenue potential. Chapters Three and Four identified several opportunities to improve the existing landside facilities to better accommodate future aviation demand. This section will specify the recommended improvements pertaining to landside facilities. Landside facilities can include terminal buildings, hangars, aircraft parking aprons, and aviation support services, as well as the utilization of remaining airport property to provide revenue support and benefit the economic well-being of the regional area. Also important is identifying the overall land use classification of airport property to preserve the aviation purpose of the facility well into the future. **Exhibit 5B** presents the planned landside development for DLL.

As a regional general aviation airport, most of the landside development proposed within the master plan concept will accommodate the general aviation owners and operators, as well as current and future service providers, at DLL. At present, general aviation landside facilities are located on the east side of the airfield between the Runway 1 and 14 thresholds and include 47 separate hangar facilities providing approximately 153,000 square feet (sf) of hangar capacity, as well as aircraft apron space totaling approximately 10,800 square yards (sy).

Multiple layouts of potential landside facilities were presented in Chapter Four, including hangar development, aircraft apron layouts, and the placement of aviation support services. The master plan concept provides a compilation of proposed landside facilities, which attempts to maximize potential aviation development space on the airfield. New development is primarily planned near existing facilities to take advantage of existing infrastructure availability and reduce future development costs; however, long-term landside development also considers new development locations that could help meet forecast demands.

The major landside issues addressed in the master plan concept include the following:

- Designate areas that can accommodate aviation development potential near the existing terminal area, on the south side of Runway 14-32, and within the southwestern development area located immediately west of the Runway 1 threshold. All proposed development includes aircraft storage hangars and aircraft apron space.
- Provide a site for a new airport terminal building.
- Designate areas for additional automobile parking and new airport access extending from County Highway BD.

- Establish non-movement boundary markings on taxilanes to better segregate automobile and aircraft traffic.
- Designate an area for future potential commercial service.
- Identify potential areas for non-aeronautical-related revenue support land uses.

AIRCRAFT STORAGE HANGARS AND FUTURE AVIATION DEVELOPMENT

Analysis in Chapter Three indicated that aircraft storage hangar capacity is technically capable of meeting aircraft storage needs through the long-term planning period; however, for planning purposes, it is prudent to entertain the potential for future landside development. Recommended hangar development is proposed in the form of T-hangars, executive box hangars, and large conventional hangars, although future demand will ultimately dictate the size(s) and type(s) of hangar facilities that could be built. Ultimately, the master plan concept seeks to maximize hangar development potential along the flight line and on the main aircraft apron, while identifying locations on existing airport property for future development. If significant demand warrants, the development concept also identifies an area encompassing approximately 20.6 acres on the southeast side of the airfield that could accommodate future potential commercial service operations.

Northern Development Area

As presented on **Exhibit 5B** and in **Figure 5A**, the master plan concept considers significant aviation-related development and redevelopment of the existing airport terminal area, which is located on the northern side of main aircraft apron, with automobile parking and access provided on the west side of the terminal building via the airport entrance road.

Figure 5A: Northern Development Area

In the near term, a new 10,500-sf terminal facility is planned immediately north of the existing terminal building. The old terminal facility is planned to be demolished and is in a prime location for a large conventional hangar due to its position on the apron area and access to the flight line. Once demolished, the development concept considers the construction of a 100-by-100-foot conventional hangar in place of the old airport terminal building. To maximize the potential of the main aircraft apron area, the master plan concept considers expanding the existing apron along the east side of Taxiway B, as well as to the north and west, encompassing approximately 9,000 and 5,900 sy of new apron area, respectively. Additionally, a 200-by-150-foot conventional hangar is planned immediately north of the new terminal building, which will be located directly adjacent to the west side of the northern apron expansion. Immediately west of the large conventional hangar, four 80-by-80-foot executive hangars are proposed. Ultimately, the large conventional hangars proposed along the flight line and executive hangars in proximity to the new terminal building are served by approximately 50,000 sf of additional automobile parking, accessible via the existing airport entrance road.

Continuing west along the northern side of the terminal area, the master plan concept also considers the potential to develop a series of 70-by-70-foot executive hangars extending as far west as County Highway BD. In total, the master plan concept considers 23 70-by-70-foot executive hangars that could be served by approximately 43,500 sf of automobile parking. Access to the proposed executive hangars would be provided via the existing airport entrance road. Ultimately, the airport beacon could be relocated approximately 100 feet south of its existing location to create space for the proposed hangar development.

Southern Development Area

As previously mentioned, the master plan concept presents areas located on existing airport property that would be suited for future aviation development if demand warrants. Through the alternatives process, multiple development layouts were explored for the southern development area, which is positioned along Taxiway B on the westernmost side of the existing hangar development, near County Highway BD. This development area is ideal, as it would provide airside access via Taxiways A and B, while landside access could be provided from County Highway BD and the ultimate secondary access road on the west side of the airfield. **Exhibit 5B** and **Figure 5B** present the master plan concept as it relates to the southern development area.

Ultimately, the development concept considers the construction of two six-unit nested T-hangars, five 70-by-70-foot executive hangars, and four 100-by-100-foot conventional hangars. The proposed hangar development could also be supported by approximately 14,500 sy of apron and movement area. At present, the southern development area is somewhat isolated from the existing taxiway/taxilane access points on the airfield. As such, the master plan concept considers the addition of a taxiway/taxilane providing access to the southernmost side of the development area and continuing east to connect with the extended Taxiway A, serving the ultimate Runway 1 threshold.

As mentioned, automobile access is provided via County Highway BD and the ultimate secondary access road, with a controlled access gate to prevent unauthorized access. In addition, non-movement boundary markings are also planned on existing taxilanes where automobile and aircraft movements may occur.

Generally, this type of marking is reserved for towered airports; however, some non-towered airports have made use of these markings to separate vehicle/equipment traffic from areas where there are taxiing aircraft. Consideration is also given to providing additional automobile access and parking directly east of the snow removal equipment (SRE) building. The proposed automobile parking accounts for approximately 12,300 sf of additional automobile parking.

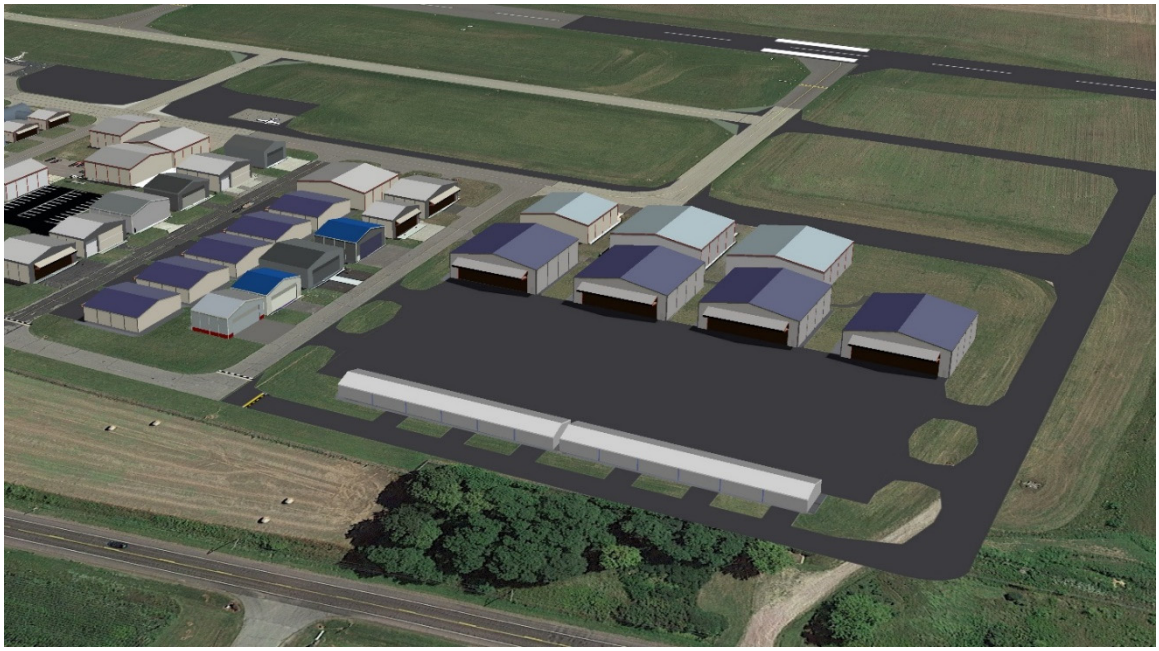

Figure 5B: Southern Development Area

Non-Aeronautical Land Use

Given that the land needed to accommodate the 20-year landside facility requirements (identified in Chapter Three) is not anticipated to exceed the undeveloped/vacant property currently available for development, the master plan concept considers non-aeronautical land uses on airport property to maximize the revenue potential of the airfield. Non-aeronautical developments could include, but are not limited to, industrial parks, restaurants, gas stations, or convenience stores. The area proposed for non-aeronautical use includes approximately 6.4 acres of property located immediately west of the existing landside development area, between Tailwind Way and County Highway BD. This area is ideal because it is not easily accessible to the airfield system.

It should be noted that the airport does not have the approval to use undeveloped property for non-aviation purposes at this time. Specific approval from the FAA will be required to utilize undeveloped property for non-aviation uses. This planning document does not gain approval for non-aviation uses, even if these uses are ultimately shown in the master plan and on the airport layout plan (ALP). A separate request justifying the use of airport property for non-aviation uses could be required; however, this study can be a source for developing that justification.

SUPPORT FACILITIES

As mentioned in Chapter Three, support facilities are integral to the operation of the airport; however, these facilities are not categorized as airside or landside facilities. The facility requirements analysis identified several improvements that will ultimately contribute to the airport's ability to accommodate the forecast aviation activity levels.

Airport Maintenance and Snow Removal Equipment Facility

At present, Baraboo-Dells Flight Center conducts the airport maintenance and snow removal at the airport under contract from the Village of Lake Delton. The fixed base operator (FBO)-owned equipment is stored in leased hangars. Airport-owned SRE equipment is housed within a designated 50-by-100-foot SRE facility that is located on the east side of Tailwind Way among the existing box hangars. As such, this facility is maintained through the long-term planning horizon.

Aviation Fuel Storage

Currently, Jet A and AvGas are stored in 15,000- and 12,000-gallon tanks, respectively, which are located in underground storage tanks adjacent to the primary aircraft apron. These tanks are connected to a set of self-serve pumps on the east side of the apron. Additional fuel storage and delivery is available via fuel service trucks. Based on fuel sales, the airport pumped 220,000 gallons of Jet A and 20,000 gallons of AvGas in 2022. Analysis in Chapter Three indicated that the current AvGas fuel storage capacity is adequate to meet the 14-day supply criterion through the long-term planning horizon. The existing Jet A fuel storage capacity is adequate to meet the 14-day supply criterion through the intermediate planning horizon but may need to be increased to meet long-term demands. Ultimately, the need for additional fuel storage capacity will be determined by the airport sponsor and FBO.

Airport Utilities

At this time, any significant landside development – particularly in the northern or southern development areas – could be limited by the existing utility infrastructure, or lack thereof. Minimum water flow requirements (for sprinkler and firefighting purposes) may vary depending on the type of hangars and facilities built, requiring water storage and pumping capabilities. All future development should consider enhancements to utility infrastructure, which could include increased water storage and pumping capacity, sewer, and improved electrical and natural gas capabilities. In addition to utilities, the airport should also evaluate the existing drainage system prior to any significant landside development to ensure it will adequately support development.

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 **Exhibit 5B**) and associated capital program at the airport to determine 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 *FAA Reauthorization Act of 2018* (Act) changed how the FAA historically operates with respect to airport oversight. Section 163 of the Act limits the FAA's approval authority over certain projects. Pursuant to Section 163, when a sponsor submits a change to the ALP for a project that would not be federally funded, requests a change in land use from aeronautical to non-aeronautical, or requests to dispose of airport-owned land, the FAA must determine if the proposal would be subject to the agency's approval authority. This approval is a two-step process. The FAA exercises its regulatory authority consistent with the Act and separately examines if it has ALP approval authority under both of the following steps. First, the FAA determines if it has ALP approval authority under Section 163 of the Act. The second step is to determine how the land was acquired and if land release obligations are required. Projects depicted on the ALP that were approved prior to the Act must be evaluated to determine whether the FAA retains its approval authority.

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*, 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 following portion of the airport master plan is not designed to satisfy the 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.

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.

Table 5B summarizes potential environmental concerns associated with implementation of the recommended development concept for DLL. Analysis under NEPA includes effects or impacts a proposed action or alternative may have on the human environment (see 40 CFR §1508.1). Effects have been recently defined in the Council of Environmental Quality guidelines as foreseeable environmental effects of the proposed action, reasonably foreseeable adverse environmental effects that cannot be avoided, and a reasonable range of alternatives to the proposed action.[1]

[1] Federal Register / Vol 88, No. 145 Monday, July 31, 2023 / Proposed Rules

TABLE 5B | 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	**Potential Impact.** An increase in operations could occur over the 20+ year planning horizon of the master plan that would likely result in additional emissions. Sauk County, which contains the airport, is currently in attainment for all federal criteria pollutants[1], so general conformity review per the *Clean Air Act* would not be required; however, according to the most recent FAA *Aviation Emissions and Air Quality Handbook* (2015), an emissions inventory under NEPA may still be necessary for any proposed actions that would result in a reasonably foreseeable increase in emissions due to plan implementation. For construction emissions, a qualitative or quantitative emissions inventory under NEPA may be required, depending on the type of environmental review needed for specific projects defined on the development plan concept. [1] U.S. EPA Greenbook – Wisconsin Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants (https://www3.epa.gov/airquality/greenbook/anayo_wi.html)
BIOLOGICAL RESOURCES (including fish, wildlife, and plants)	
FAA Order 1050.1F, ***Significance Threshold/ Factors to Consider***	***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.*** ***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:*** • ***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 their 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 six experimental, candidate, proposed endangered, and endangered species within the vicinity of the airport: northern long-eared bat (endangered, mammal), tricolored bat (proposed endangered, mammal), whooping crane (experimental, bird), salamander mussel (proposed endangered, clam), monarch butterfly (candidate, insect), and rusty patched bumble bee (endangered, insect)[2]. Of the six species listed above, four have potential habitat at the airport (northern long-eared bat, tricolored bat, monarch butterfly, and rusty patched bumble bee). These species may temporarily inhabit areas of the airport that contain flowering plants. The airport is relatively devoid of vegetation; however, if development were to occur in areas populated with trees or if other types of vegetation are removed (i.e., shrubs), a bat survey and habitat survey (i.e., botanical survey) may be warranted prior to project development. 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.* No eagles are expected to use the airport environs. Bird species protected by the MBTA could be adversely affected if construction occurs during the nesting and breeding seasons (May to December). Pre-construction surveys of vegetated areas at the airport are recommended for projects where 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. [2] U.S. Fish & Wildlife Service – Information for Planning and Consultation (https://ipac.ecosphere.fws.gov/)

(Continues)

TABLE 5B | 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 per FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, 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.** The airport is not located within a coastal zone. The closest National Marine Sanctuary is Thunder Bay National Marine Sanctuary, located 306 miles away[3]. [3] National Marine Sanctuaries (https://sanctuaries.noaa.gov/)
***DEPARTMENT OF TRANSPORTATION ACT*, SECTION 4(f)** (NOW CODIFIED IN 49 UNITED STATES CODE [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.** There are no wilderness areas, public recreational facilities, or National Register of Historic Places (NRHP)-listed resources that would be impacted by proposed development at the airport[4]. The closest Section 4(f) resource is Fairfield Hills Golf Course and Range, 0.3 miles east of the airport[5]. This resource is not likely to be physically or constructively used as a result of proposed airport development because it is not located on airport property. Any airport structures 50 years or older should be evaluated for historic significance prior to alteration or demolition. If determined to be a significant historic resource, they would qualify as a Section 4(f) resource. [4] National Register of Historic Places (https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466) [5] Google Earth Pro – Aerial Imagery
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 *Construction of non-farm structures necessary to support farming operations; and* o *Construction/land development for national defense purposes.*

(Continues)

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

Potential Environmental Concerns	**Potential Impact.** According to the NRCS Web Soil Survey (WSS), approximately 69.1 percent of the airport is identified as prime farmland and farmland of statewide importance[6] (**Exhibit 1L**). Proposed changes to the airside and landside areas of the airport (i.e., extension of ultimate Runway 1; ultimate pavement, roads, and buildings; and an aeronautical land reserve on the west side of the airport) could convert farmlands protected by the FPPA. This should be confirmed on a project-by-project basis and Form AD-1006 should be completed, when appropriate. [6] USDA-Natural Resources Conservation Service – 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.** There are no identified brownfields or Superfund sites located within a two-mile buffer of the airport[7]. Due to existing regulatory environmental management regarding hazardous materials and waste and stormwater management, no impacts related to ultimate airport development are anticipated. The construction of proposed executive hangars located on the west side of the airport would increase solid waste. No long-term impacts related to solid waste disposal are expected. The nearest solid waste landfill is the WMWI – South Central WI. South Central WI Waste Service provides an integrated solid waste management system to the airport. (See discussion on Surface Water for information on water quality pollution prevention.) [7] 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 National Register of Historic Places (NRHP) within two miles of the airport; however, no survey reports for cultural resources at the airport have been provided as part of the master plan and the presence of buried cultural resources is not known. The airport is adjacent to the Ho-Chunk Reservation on the northwestern portion of the airport[8]. An airport-wide cultural resources survey should be completed to document any resources at the airport. The FAA would then decide on the level of impact airport projects would have on these historic properties under NEPA and through the *National Historic Preservation Act's* Section 106 process. 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. [8] U.S. EPA EJScreen (https://ejscreen.epa.gov/mapper/)

(Continues)

TABLE 5B | 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	**Potential Impact.** Proposed airport improvements include a new GA terminal building, new hangars, an ultimate runway extension of Runway 1, acquisition of land south of the Runway 1 approach end, aeronautical and non-aeronautical land use reserves, relocation of the existing airport beacon, relocation of the AWOS and installation of two wind cones, and the relocation and upgrade of existing PAPI-2 lighting systems to PAPI-4 lighting systems along Runway 1-19. Pit Road, south of the airport, would also be closed. This road closure may impact nearby residences along Pit Road. Additionally, the road closure may also force more traffic to circulate on nearby roads, such as Highway 33 and Shady Lane Road. **Exhibit 5A** depicts a series of easements that are recommended to be enforced within all the runway RPZs and adjacent to Runway 19's RPZ. An avigation and clear zone easement are property rights acquired from the landowner for the airspace above a specified height. For example, the clear zone easement proposed within and adjacent to Runway 19's RPZ would give the airport the right to prohibit objects or land improvements other than low-growth vegetation within the land acquired for the easement. The closest residence is 0.1 miles from the closest airport property line along N Reedsburg Road and abuts the clear zone easement proposed within Runway 19's RPZ. **Exhibit 5A** also depicts a future potential 20.6-acre commercial reserve on the southeastern portion of the airport. This parcel of land is currently unoccupied and would not displace/relocate businesses or residents.
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 decibel (dB) or more for a noise-sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, 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 14 CFR Part 150 are not relevant to the value, significance, and enjoyment of the area in question.***
Potential Environmental Concerns	**No Impact. Exhibit 5C** shows existing and anticipated noise contours for the airport. As shown on **Exhibit 5C**, for existing conditions, the DNL 65 dB noise exposure remains on airport property. In the future (2042) noise contours, the DNL 65 dB expands outside of airport property boundaries on the southern airport boundary; however, there are only a few scattered residents near the airport (north side of N Reedsburg Road and west of Fox Hill Road), and thus, these would not be located within the 65 DNL noise contour. 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 prior to implementing a runway extension along proposed ultimate Runway 1-19. No other noise-sensitive land uses (i.e., places of worship, schools, or overnight medical facilities) are present less than a mile from the airport.

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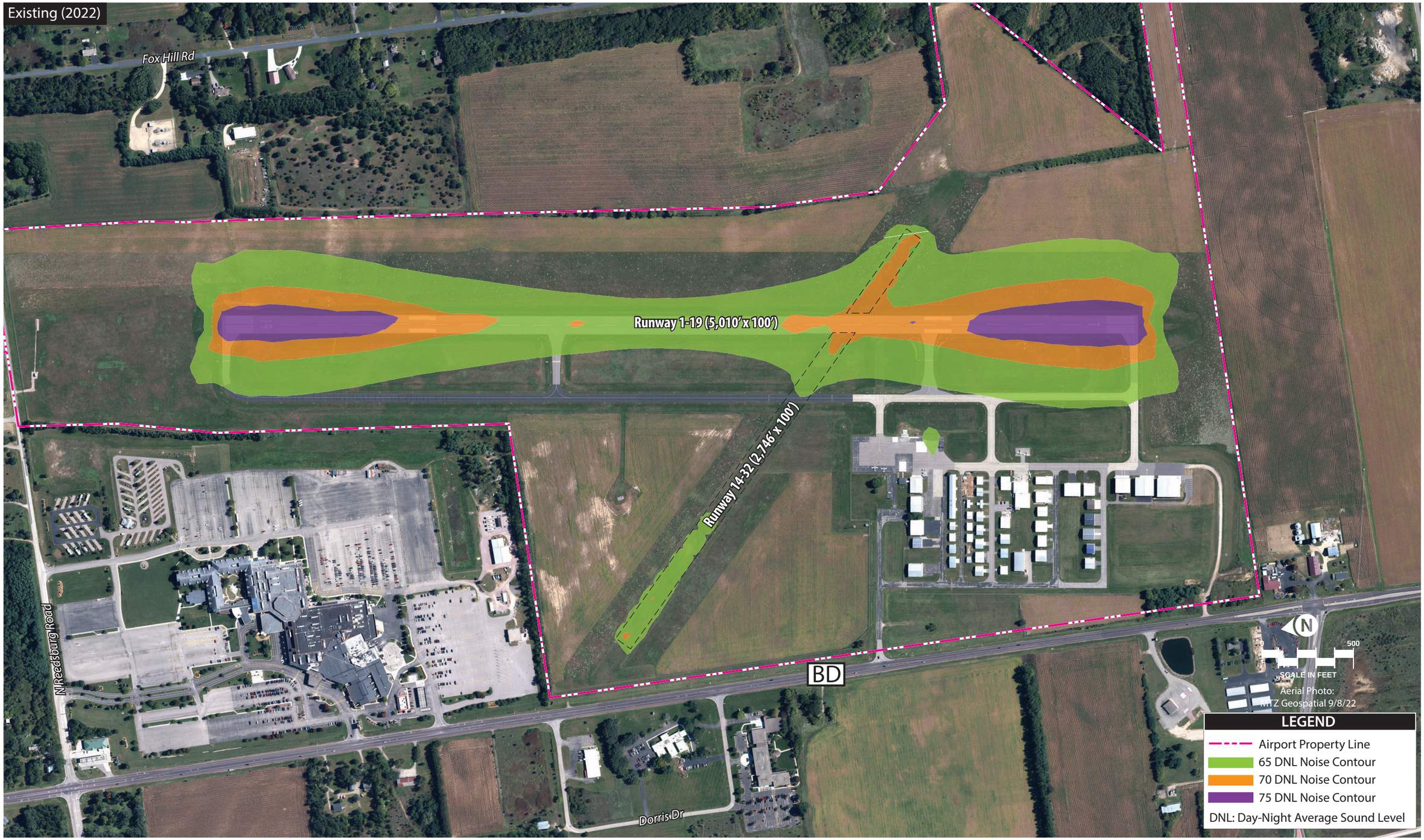

Existing (2022)
Fox Hill Rd
Runway 1-19 (5,010' x 100')
Runway 14-32 (2,746' x 100')
N Reedsburg Road
BD
Dorris Dr
N
0
500
SCALE IN FEET
Aerial Photo:
MTZ Geospatial 9/8/22
LEGEND
Airport Property Line
65 DNL Noise Contour
70 DNL Noise Contour
75 DNL Noise Contour
DNL: Day-Night Average Sound Level

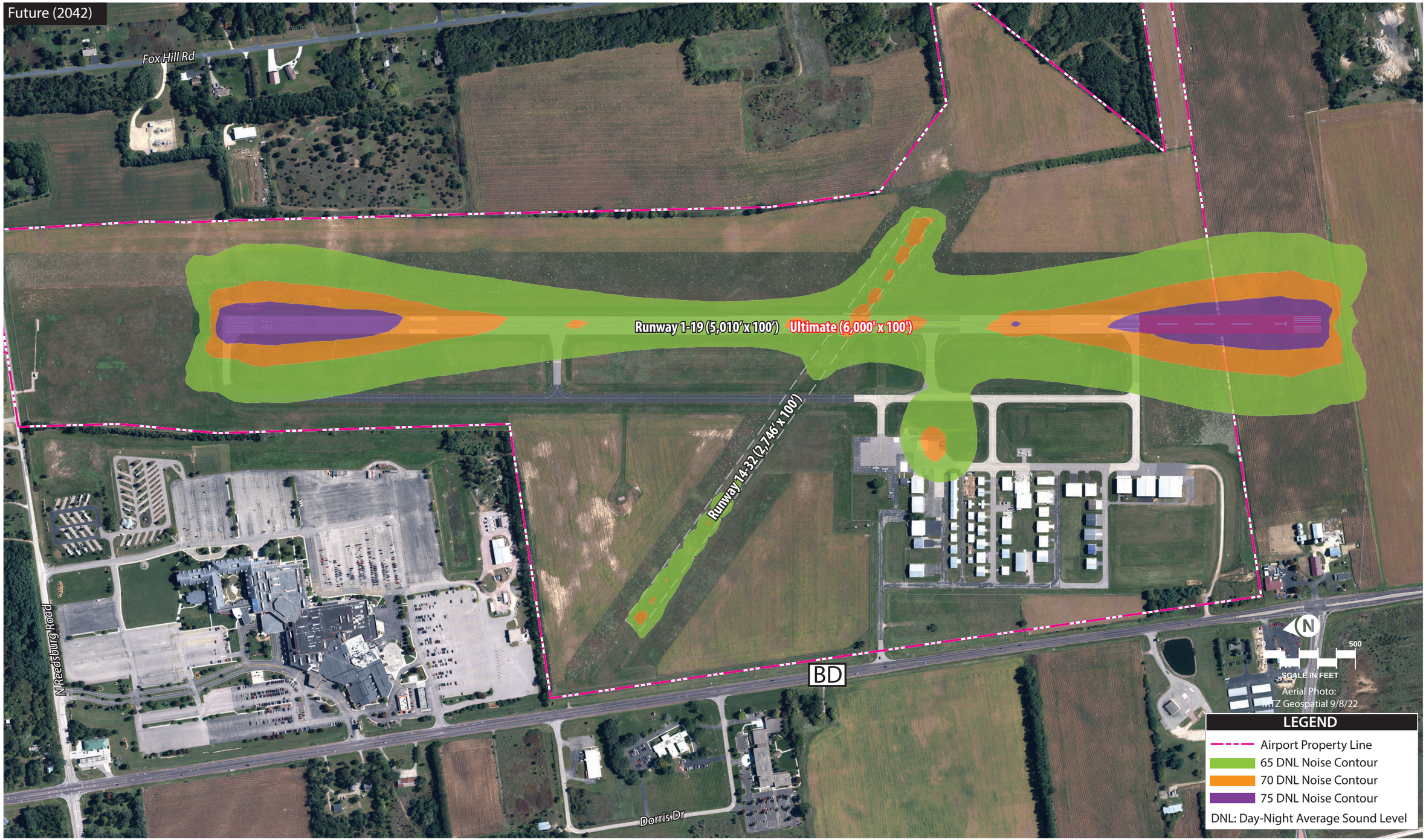

Future (2042)
Fox Hill Rd
Runway 1-19 (5,010' x 100')
Ultimate (6,000' x 100')
Runway 14-32 (2,746' x 100')
N Reedsburg Road
BD
Dorris Dr
N
500
SCALE IN FEET
Aerial Photo:
MTZ Geospatial 9/8/22
LEGEND
Airport Property Line
65 DNL Noise Contour
70 DNL Noise Contour
75 DNL Noise Contour
DNL: Day-Night Average Sound Level

TABLE 5B | 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	**Potential Impact.** Proposed development would not relocate or disrupt current businesses or residents. No division of existing neighborhoods or housing or businesses relocations would occur due to proposed development on the airport. Ultimate airport projects would result in temporary disruption of local traffic patterns during construction or once operational. The proposed development concept includes the closure of Pit Road, south of the airport. This road closure may impact nearby residences along the southern portion of Pit Road. Additionally, the road closure may force more traffic to circulate on nearby roads, such as Highway 33 and Shady Lane Road[9]. [9] Google Earth Pro – Aerial Imagery
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 that the FAA determines is unique to the environmental justice population and significant to that population.***
Potential Environmental Concerns	**No Impact.** Both low-income and minority populations have been identified in the vicinity of the airport. The closest residence is 0.1 miles along N Reedsburg Road from the closest airport property line[10]; however, 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. Executive Order (E.O.) 12898, *Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations*, and the accompanying Presidential Memorandum, and Order DOT 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. [10] 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 will not be allowed within the fenced portions of the airport without adult supervision. All construction areas should be controlled to prevent unauthorized access.

(Continues)

TABLE 5B | 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	**Potential 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-light PAPI systems at the end approach of Runway 1 and Runway 19). The new proposed lighting would be a four-light PAPI system at the end approach of Runway 1 and Runway 19, replacing the existing two-light PAPI systems. The rotating beacon will also be relocated to the west side of the airport, north of existing box hangars. Medium intensity approach lighting system with runway indicator alignment lights (MALSR) will be installed in the RPZ near the approach end of Runway 19. The MALSRs would sit atop pole structures, making them more visible than other low-lying light systems (such as the four-light PAPI system being installed along the runway); thus, the installation of MALSRs could impact the visual line of sight of nearby land uses. Night lighting during construction phases within the runway environment is typically directed down to the construction work area to avoid light spilling outside the airport boundaries. Other ultimate projects are likely to include additional lighting during operation of the airport's new structures and facilities but would not significantly change the amount of lighting seen from outside of the airport.
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 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; and*** • ***Block or obstruct the views of the visual resources, including whether these resources would still be viewable from other locations.***
Potential Environmental Concerns	**Potential Impact.** The proposed runway extension would extend the approach end of Runway 1 by 900 feet. This expansion may visually alter the line of sight from nearby land uses (i.e., the commercial land uses along Highway 33 near the southern portion of the airport and residences along Pit Road).
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 supporting 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	**No Impact.** According to the USFWS National Wetlands Inventory, there are no wetlands located on the airport[11]. [11] National Wetlands Inventory (https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/)

(Continues)

TABLE 5B | 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.** A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel 511110250E (effective December 18, 2009) indicates the airport is in Zone X, an area of minimal flood hazard[12]. 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[13], amends E.O. 11988[14], and mandates that a Federal Flood Risk Management Standard (FFRMS) be created. 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[15] 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 • Other methods resulting from updates to the FFRMS Since 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. [12] FEMA Flood Map Service (https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/) [13] *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input* (2015) [14] *Floodplain Management,* May 1977 [15] Critical action is defined in E.O. 13690 and the *2015 Guidelines for Implementing E.O. 11988* as any activity for which even a slight change of flooding is too great (for example, a facility producing and/or storing highly volatile, toxic, or water-reactive materials; structures such as schools where 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).
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 Lake Delton-Dell Creek watershed. The closest impaired waterbody is a segment of Dells Creek, which is within the airport's watershed[16]. 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. An NPDES General Construction permit would be required for all projects involving ground disturbance over one acre. FAA Advisory Circular (AC) 150/5370-10G, *Standards for Specifying Construction of Airports*, Item P-156, *Temporary Air and Water Pollution, Soil Erosion and Siltation Control*, should also be implemented during construction projects at the airport. [16] U.S. EPA – How's My Waterway (https://mywaterway.epa.gov/community/baraboo%20dells%20airport/overview)

(Continues)

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

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 are when 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 property is not located near a sole source aquifer. Mille Lacs Sole Source Aquifer (SSA) is 254 miles from the airport[17]. [17] U.S. EPA – Sole Source Aquifer (https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b)
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 are when an action would have an adverse impact on the values for which a river was designated (or 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	**No Impact.** The closest designated wild and scenic river identified is Wolf River, located 108 miles from the airport[18]. The nearest National River Inventory feature is Mecan River, located 34 miles from the airport[19]. Projects delineated on the proposed development concept would not have adverse effects on these rivers' outstanding remarkable values (i.e., scenery, recreation, geology, fish, wildlife, and history). [18] National Wild and Scenic Rivers System (https://www.rivers.gov/wisconsin) [19] National Park Service – Nationwide Rivers Inventory (https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm)

LAND USE COMPATIBILITY – OFF AIRPORT

Land use planning around Baraboo-Wisconsin Dells Airport occurs through regulatory and non-regulatory means. The primary regulatory tool for directing land use is the zoning ordinance, which limits the types, sizes, and densities of land uses in various locations. Examples of land use types include residential, commercial, industrial, and agricultural. Non-regulatory means of land use controls include comprehensive or strategic land use plans. These documents can be adopted for the greater municipality or for specific areas. In most states, including Wisconsin, zoning ordinances are required to be created in accordance with the city or county's comprehensive plan.

It is important to note the distinction between primary land use concepts used in evaluating development within the airport environs and existing land use, comprehensive plan land use, and zoning land use. Existing land use refers to property improvements as they *exist today*, according to city records.

The comprehensive plan land use map identifies the *projected or future* land use, according to the goals and policies of the locally adopted comprehensive plan. This document guides future development within the city planning area and provides the basis for zoning designations.

Zoning identifies the type of land use *permitted* on a given piece of property, according to the city zoning ordinances and maps. Local governments are required to regulate the subdivision of all lands within their corporate limits. Zoning ordinances should be consistent with the comprehensive plan (where one has been prepared). In some cases, the land use prescribed in the zoning ordinance or depicted in the comprehensive plan may differ from the existing land use.

The following sections describe the applicable land use policies for the area within the vicinity of the airport. Specifically, these sections pertain to the lands within the 65 DNL contours and the FAA 14 CFR Part 77 approach surface restricted to one mile from each runway end.

EXISTING LAND USE

As discussed in Chapter One, DLL is located in the Town of Delton in Sauk County, Wisconsin. Agricultural, single-family residential, retail, and gaming are the predominate land uses surrounding the airport. A gaming facility with parking, associated buildings, and an RV park encompasses over 100 acres of land immediately northwest of the airport. To the east along Fox Hill Road are scattered residential parcels, two residential subdivisions, a golf course, and an RV resort. Southeast of the airport is an operating extraction site and associated commercial landscape supply center. To the west of the airport along the West Pine Street corridor are various agricultural and retail land uses and one place of worship.

FUTURE LAND USE

The comprehensive plan is a general policy document used by a government agency to identify and describe the community's characteristics, articulate goals and policies, and explore alternative plans for future growth, which, in turn, will be used to produce zoning ordinances and subdivision regulations to carry out the plan's goals. A municipality will often incorporate goals and policies for its airports in the future land use plan, typically separate from an airport master plan. The current planning document of this type for the land near the airport is the *Sauk County Comprehensive Plan* (adopted December 15, 2009). The overall future land use goal for the county is to "maintain rural character through preserving farmland and open space while managing and promoting development in appropriate cases." In addition to the county comprehensive plans, local jurisdictions surrounding the airport have adopted comprehensive plans, as required by state statute (Wisconsin Statute 66.1001).

Airport property and areas to the east and west of the airport are within the three-mile extraterritorial jurisdiction (ETJ) of the City of Baraboo. State statutes enable the City of Baraboo to plan, review subdivisions, enact extraterritorial zoning, and implement an official map for the area to the south of the airport within the city's three-mile ETJ. As such, future land use surrounding the airport is addressed in the local comprehensive plan for the City of Baraboo (adopted in June 2005).

Other areas to the south of the airport in the approach surface to Runway 1 and Runway 32 are within the Village of West Baraboo ETJ. Those areas are addressed in the *Village of West Baraboo Comprehensive Plan 2016-2036* (adopted September 13, 2016). To the east of the airport, the Town of Fairfield has designated future use of the land as Agricultural Conservancy, according to the *Town of Fairfield Comprehensive Plan 2005-2025* future land use map. The *Town of Delton Comprehensive Plan* future land use map (Map 11-17) depicts planned land uses to the north of the airport.

Exhibit 5D depicts the future land use designations within the airport approach surfaces out to one mile for both runways. The planned uses identified within the one-mile approach surfaces include: commercial, operating extraction site, institutional, agricultural, future residential (primary and secondary), future mixed use (primary), and public lands. **Table 5C** presents the purpose for each designation as stated in the comprehensive plan, the specific recommended use that pertains to this analysis, and the approach location where each use is planned.

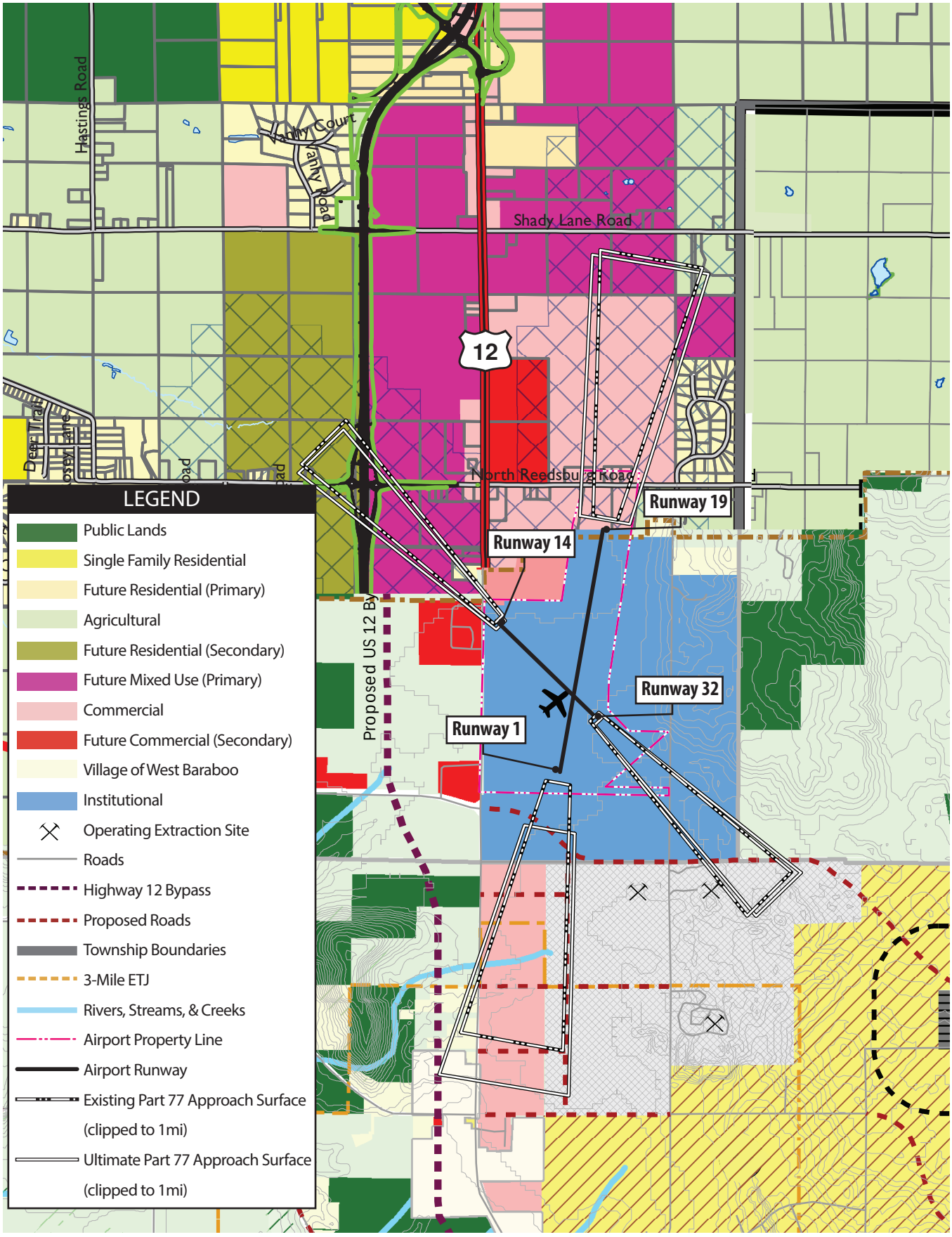

Hastings Road
Shady Lane Road
12
North Reedsburg Road
Runway 19
Runway 14
Runway 32
Runway 1
Proposed US 12 By
LEGEND
Public Lands
Single Family Residential
Future Residential (Primary)
Agricultural
Future Residential (Secondary)
Future Mixed Use (Primary)
Commercial
Future Commercial (Secondary)
Village of West Baraboo
Institutional
Operating Extraction Site
Roads
Highway 12 Bypass
Proposed Roads
Township Boundaries
3-Mile ETJ
Rivers, Streams, & Creeks
Airport Property Line
Airport Runway
Existing Part 77 Approach Surface (clipped to 1mi)
Ultimate Part 77 Approach Surface (clipped to 1mi)

TABLE 5C | One-Mile Approach Surface – Future Land Use Classification Summaries

Commercial	
Planning Area	City of Baraboo ETJ and Town of Delton
Purpose	To ensure future planned land uses are consistent with existing commercial designations.
Recommended Use	Commercial land uses consistent with existing commercial zoning districts.
Location	Runway 1 and Runway 19
Operating Extraction Site	
Planning Area	City of Baraboo ETJ
Purpose	To promote non-metallic mining registration and operation standards.
Recommended Use	State standards address the reclamation of mineral extraction sites after extraction operations are complete. Zoning-type permissions for land use activities that would permanently interfere with the future extraction of mineral deposits may be prohibited. Cities, counties, and towns should share information regarding non-metallic mining registrations.
Location	Runway 1 and Runway 32
Institutional	
Planning Area	City of Baraboo ETJ
Purpose	This designation includes existing large-scale public buildings, schools, religious institutions, Sauk Prairie Airport, power plants and substations, hospitals, and special care facilities. Baraboo-Wisconsin Dells Airport property and surrounding land to the south and east are depicted on the future land use map as institutional.
Recommended Use	Larger-scale institutions should generally be avoided in planned residential or traditional neighborhood areas.
Location	Runway 1 and Runway 32
Agricultural	
Planning Area	City of Baraboo ETJ
Purpose	Acts as a holding district and is intended to preserve productive agricultural lands in the long term, protect existing farm operations from encroachment by incompatible uses, promote further investments in farming, maintain eligibility for farming incentive programs, and ensure that development does not landlock the city.
Recommended Use	Farmlands, farmsteads, cottage industries, agricultural-related businesses, value-added farm production, and limited residential development at densities at or below one home per 20 acres.
Location	Runway 1, Runway 19, Runway 14, and Runway 32
Future Residential (Secondary)	
Planning Area	Town of Delton
Purpose	Designation of this secondary growth area is to accommodate additional rural residential growth needs.
Recommended Use	Rural residential use limited to very low-density uses (one residence per 10 acres or less) or residential development conforming to conservation subdivision development provisions.
Location	Runway 14
Future Mixed Use (Primary)	
Planning Area	Town of Delton
Purpose	The plan promotes well-planned mixed-use residential and commercial development on both sides of the USH 12 corridor, consistent with the *USH 12 Corridor Growth Management Plan*.
Recommended Use	Mixed, planned unit development of traditional neighborhoods (single- and multi-family residential) and neighborhood commercial uses with more intensive tourist/entertainment commercial uses along the highway corridor.
Location	Runway 19 and Runway 14

Sources: Town of Delton Comprehensive Plan (January 2009); City of Baraboo Comprehensive Plan (July 2005); Coffman Associates analysis

ZONING

Zoning regulations are used in conjunction with subdivision regulations and are an essential tool to achieve goals and policies outlined in the comprehensive plan. Zoning regulations divide land into districts – or zones – and regulate land use activities in those districts; specify permitted uses, intensity, and density of each use; and denote the bulk sizes of each building. Traditional zoning ordinances separate land into four basic uses: residential, commercial (including office), industrial, and agricultural.

As shown on **Exhibit 5E**, the following Sauk County zoning districts are within the ultimate runway Part 77 approach surfaces out to one mile:

- Commercial zoning district (COM) – Runway 14 and Runway 19
- Resource conservancy zoning district (RC) – Runway 1
- Agriculture zoning district (AG) – Runway 32, Runway 14, Runway 1, and Runway 19
- Single-family residential zoning district (SFR) – Runway 14 and Runway 19

Table 5D summarizes the types of land uses allowed in each zoning district, maximum allowable height, and minimum lot area. For the purposes of this analysis, only Sauk County underlying zoning designations within the airport vicinity are discussed.[2]

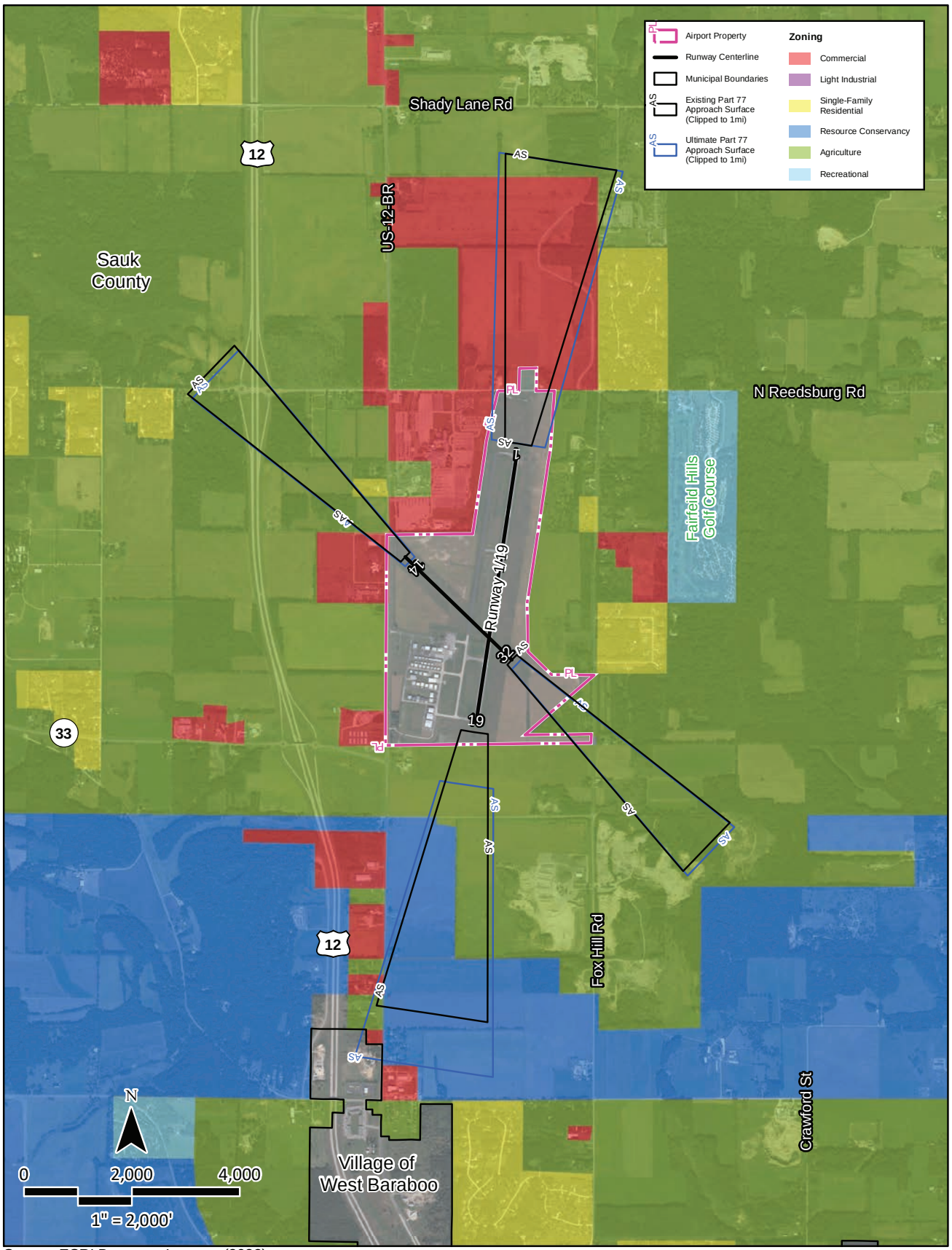
TABLE 5D | One-Mile Approach Surface Zoning Designations and Building Standards

Zoning Classification	Residential Allowed?*	Maximum Allowable Height (Principal/Accessory)	Minimum Lot Area
Commercial (COM)	Community living arrangements (P/C) Multi-family dwelling (C)	50'/50'	8,000 sf sewered 20,000 sf unsewered
Resource Conservancy (RC)	None	45'/75'	35 acres each, except one acre, as provided under Subch. IX
Agriculture (AG)	None	45'/75'**	1 acre
Single-Family Residential (SFR)	Community living arrangements (P/C) Single-family dwelling (P)	35'/20'	8,000 sf sewered 20,000 sf unsewered

Notes:
C = conditional use
P = permitted use
P/C = permitted or conditional
sf = square feet
* Excludes dwellings used temporarily during construction and temporary secondary dwellings for dependency living arrangements or agricultural use.
** Structures for agricultural uses may be erected to a height exceeding 75 feet, provided the front, side, and rear yards in the district in which the structure is to be located are increased at least 1.5 feet from the minimum setback requirement for each additional one foot of height greater than 75 feet in height of any agriculture structure that exceeds 75 feet in height.

Sources: Sauk County, Wisconsin, Code of Ordinances, Chapter 7 – Zoning; Coffman Associates analysis

[2] Sauk County, Wisconsin, Code of Ordinances, Chapter 7 – Zoning (https://library.municode.com/wi/sauk_county/codes/code_of_ordinances?nodeId=SACOCO_CH7ZO)



Source: ESRI Basemap Imagery (2022), Sauk County Zoning Districts, TIGER/Line, Coffman Associates Analysis

Additional airport vicinity limitations are also addressed in Chapter 63 of the Village of Lake Delton, Wisconsin, zoning ordinance.[3] The ordinance provides for the regulation of the height of structures and trees in the area surrounding DLL, in accordance with the Height Limitation Zoning Map (adopted February 13, 1998) under authority granted by the State of Wisconsin to establish land use controls within three miles of the airport.[4] The Baraboo-Wisconsin Dells Airport Ordinance height requirements supersede the height restrictions of the general underlying zoning classifications referenced in **Table 5D**.

SUBDIVISION REGULATIONS

Subdivision regulations are legal devices employed to administer the process of dividing land into two or more lots, parcels, or sites for the building and location, design, and installation of supporting infrastructure. The subdivision regulations are one of two instruments commonly employed to carry out the goals and policies outlined in the comprehensive plan. According to Wisconsin state statutes, subdivision is defined as a division of a lot, parcel, or tract of land by the same owner that creates five or more parcels or building sites of 1.5 acres or less, or successive divisions of land by the same owner within a five-year period that result in five or more parcels of 1.5 acres or less.[5] Local ordinances may be more restrictive. The land subdivision ordinance for Sauk County, Wisconsin, is codified in Chapter 22 – Land Division and Subdivision Regulations of the *Sauk County, Wisconsin, Code of Ordinances*. The provisions of the ordinance apply in all unincorporated areas of Sauk County and in all incorporated areas that have, under Wis. Stat. § 66.30, entered into an agreement with Sauk County for the cooperative exercise of the authority to approve plats of subdivisions (Code of Ordinances Sec. 22.11-22.12).

Subdivision regulations can be used to specify requirements for airport-compatible land development by requiring developers to plat and develop land to minimize noise impacts or reduce noise exposure to new development. Subdivision regulations can also be used to protect the airport proprietor from litigation for noise impacts at a later date. The most common requirement is the dedication of a noise or avigation easement to the airport sponsor by the land developer as a condition of the development approval. Easements typically authorize overflights of property, with noise levels attendant to such operations.

BUILDING CODE

Building codes are established to provide minimum standards to safeguard life, limb, health, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures. Building codes may be required to provide sound insulation in new residential, office, and institutional buildings when warranted by existing or potential high aircraft noise levels.

The State of Wisconsin has adopted the amended *2015 International Building Code* (IBC) for commercial buildings and the *One- & Two-Family Uniform Dwelling Code* (UDC) for residential dwellings built since

[3] Village of Lake Delton Municipal Code Part VII, Planning and Land Development, Chapter 63 – Airport Vicinity Limitations (https://www.lakedeltonwi.gov/DocumentCenter/View/414/Chapter-63-Airport-Vicinity-Limitations-PDF)
[4] Wis. Stat. § 114.136
[5] Wis. Stat. § 236.02(12)

June 1, 1980. The IBC and UDC generally do not include noise attenuation requirements. A jurisdiction can pass additional regulations in its building code to require additional building requirements, such as reacting to unique threats of regional natural disasters, helping to build structures correctly at the beginning of construction when it matters most to prevent the need for expensive and difficult changes. For new construction near an airport, incorporating noise attenuation can be especially important. Noise attenuation measures can include increased thicknesses of windows or sound-absorbing building materials.

NON-COMPATIBLE DEVELOPMENT ANALYSIS

Areas with the potential for non-compatible development – when compared to the noise exposure contours and height restrictions within the Part 77 approach surfaces out to one mile – have been evaluated. (Further discussion of these areas can be found in Chapter One.) This was accomplished by evaluating city-adopted land use plans and zoning designations for those parcels encompassed by the noise contours to determine if noise-sensitive land uses could be developed in those areas. Noise contours and height restrictions within the Part 77 approach surface area are addressed below.

Noise Exposure Contours

The standard methodology for analyzing noise conditions at airports involves the use of a computer simulation model. The purpose of the noise model is to produce noise exposure contours that are overlain on a map of the airport and vicinity to graphically represent aircraft noise conditions. When compared to land use, zoning, and comprehensive plan maps, the noise exposure contours may be used to identify areas that are currently, or have the potential to be, exposed to aircraft noise.

To achieve an accurate representation of an airport's noise conditions, the noise model uses a combination of industry-standard information and user-supplied inputs specific to the airport. The software provides noise characteristics, standard flight profiles, and manufacturer-supplied flight procedures for aircraft that commonly operate at DLL. As each aircraft has different design and operating characteristics (number and type of engines, weight, and thrust levels), each aircraft emits different noise levels. The most common way to spatially represent the noise levels emitted by an aircraft is a noise exposure contour.

Airport-specific information – including runway configuration, flight paths, aircraft fleet mix, runway use distribution, local terrain and elevation, average temperature, and numbers of daytime and nighttime operations – is also used in modeling inputs.

Based on assumptions provided by the user, the noise model calculates average 24-hour aircraft sound exposure within a grid covering the airport and surrounding areas. The grid values, representing the DNL at each intersection point on the grid, signify a noise level for that geographic location. To create noise contours, an isoline similar to those on a topographic map is drawn, connecting points of the same DNL noise value. In the same way that a topographic contour represents points of equal elevation, the noise contour identifies areas of equal noise exposure.

DNL is the metric currently accepted by the FAA, U.S. EPA, and Department of Housing and Urban Development (HUD) as an appropriate measure of cumulative noise exposure. These three agencies have each identified the 65 DNL noise contour as the threshold of incompatibility.

The guidelines summarized in Table 1 of Appendix A to 14 CFR Part 150 indicate that all land uses are acceptable in areas below 65 DNL. At or above the 65 DNL threshold, residential uses (including RV parks and campgrounds), educational and religious facilities, health and childcare facilities, and outdoor sport, recreation, and park facilities are all incompatible. Educational, healthcare, and religious facilities are also generally considered to be incompatible with noise exposure above 65 DNL. As with residential development, a community can make a policy decision that these uses are acceptable with appropriate sound attenuation measures. Hospitals and nursing homes, places of worship, auditoriums, and concert halls are structures that are generally compatible if measures to achieve noise level reduction are incorporated into the design and construction of structures. Outdoor music shells and amphitheaters are not compatible and should be prohibited within the 65 DNL noise contour. Additionally, agricultural uses and livestock farming are generally considered compatible, except for related residential components of these uses, which should incorporate sound attenuation measures.

As part of this master plan, noise exposure contours were prepared for DLL for a baseline condition (2022) and a long-range condition (2042). The resulting contours were previously shown on **Exhibit 5C**. As shown on the exhibits, noise contours out to the 65 DNL noise contour remain on airport property in the baseline condition forecast; however, due to the contemplated runway extension of Runway 1-19, a portion of the 65 DNL noise contour for the future condition extends off airport property to the south end of Runway 1. As previously discussed, the Sauk County zoning ordinance designates the land south of Runway 1 as agricultural. There is potential for noise-sensitive land use development within the future 65 DNL contour in the form of single-family residential dwellings. In addition, the future land use map designates the property as institutional, which could include noise-sensitive land uses, such as schools and places of worship.

Height Restrictions

To analyze the potential for non-compatible development of land off airport property, zoning within the Part 77 approach surface area out to one mile from the ends of the runways was evaluated. **Table 5D** above notes the maximum height limits for zoning of the underlying permitted land uses, which range from 35 to 75 feet. Structures for agricultural uses may exceed 75 feet. The heights of all structures and trees are subject to the *Baraboo-Wisconsin Dells Airport Ordinance Regulating the Height of Structures and Use of Property in the Vicinity of the Baraboo-Wisconsin Dells Airport* (dated February 13, 1998) and may not exceed the elevations indicated in the associated Height Limitation Zoning Map.

RECOMMENDATIONS

Based on the information presented above and the non-compatible development analysis, the following recommendations are provided to maintain airport land use compatibility in the vicinity of DLL. The following recommendations are in accordance with the recently published FAA AC 150/5190-4B, which identifies compatible land use development tools, resources, and techniques to protect surrounding communities from adverse effects associated with airport operations.[6]

[6] Federal Aviation Administration – Advisory Circular 150/5190-4B, Airport Land Use Compatibility Planning (September 16, 2022)

Update Baraboo-Wisconsin Dells Airport Overlay Zoning Ordinance and Map – The existing overlay ordinance for the airport has been adopted by the Village of Lake Delton, as of February 13, 1998. The ordinance could be updated to reflect up-to-date compatibility standards within the overlay zoning district.

Conduct Noise Compatibility Planning for 65 DNL Noise Contour Area – A mechanism for noise compatibility planning may be established for the area of land south of Runway 1-19 that is anticipated to be within the 65 DNL noise contour for the ultimate runway configuration. This could include mitigating future adverse effects of noise on noise-sensitive land uses through acquisition of property, purchase of noise easements, adoption of sound insulation standards, and/or the addition of noise compatibility standards to the existing airport overlay zoning ordinance.

Implement Review of Wildlife Hazards – Wildlife hazards are not currently defined as an airport hazard in the airport overlay zoning ordinance. Currently, airport hazard is defined as a height hazard penetrating the approach, operation, transition, or turning zone imaginary surfaces. Certain land uses that attract birds and other wildlife hazards should not be permitted on or near the airport, according to FAA AC 15/5200-33C.

Adopt Fair Disclosure Requirements for Real Estate Transactions within the Vicinity of DLL – Fair disclosure regulations in real estate transactions are intended to ensure that prospective buyers of property are informed that the property is, or will be, exposed to potentially disruptive aircraft noise or overflights. Around even the busiest airports, it is not uncommon for newcomers to report having bought property without having been informed about airport noise levels. At the most formal level, fair disclosure can be implemented through a city ordinance requiring a deed notice for property within the vicinity, based on an existing boundary, such as the Part 77 horizontal imaginary surface or the three-mile airport affected area, as defined by Wisconsin state statute. The following is an example of deed notice language that would notify the property owner of the proximity of an airport and expectations for living in the vicinity of the airport:

> *The subject property is within the vicinity of Baraboo-Wisconsin Dells Airport, located at S3440 County Highway BD, Baraboo, WI 53913. Properties within this area are routinely subject to overflights by aircraft using this public-use airport and, as a result, residents may experience inconvenience, annoyance, or discomfort arising from the noise of such operations. Residents should also be aware that the current volume of aircraft activity may increase in response to the population and economic growth within the vicinity of Baraboo-Wisconsin Dells Airport. Any subsequent deed conveying this parcel or subdivisions thereof shall contain a statement in substantially this form.*

AIRPORT RECYCLING, REUSE, AND WASTE REDUCTION

The primary objective of this section is to provide the Village of Lake Delton and its airport administration with recommendations for future improvements and processes that promote suitable principles in addressing airport operations and aviation demand. Making sustainability a priority in the planning process will aid the airport in identifying ways to reduce its overall environmental impact. By implementing sustainability best management practices into the master plan process, the airport can become a more environmentally friendly economic hub.

REGULATORY GUIDELINES

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 that receive AIP funding for an eligible project, to ensure that the new or updated master plan addresses issues related 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, 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.[7]

Wisconsin also 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 5F**). Wisconsin also has a database that tracks statewide collection areas for recyclables and compostable items, known as *The Wisconsin Recycling Markets Directory.*

Village of Lake Delton Solid Waste Management

The Village of Lake Delton Public Works Department is responsible for managing the disposal of the village's solid waste products.[8]

[7] Wisconsin Department of Natural Resources – Solid Waste Management in Wisconsin (https://dnr.wisconsin.gov/topic/Waste/Solid.html)
[8] Lake Delton – Public Works (https://www.lakedeltonwi.gov/224/Public-Works)

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.

Wisconsin Department of Natural Resources
Bureau of Waste and Materials Management
P.O. Box 7921, Madison, WI 53707 • (608) 266-2111
DNRWasteMaterials@wisconsin.gov

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SOLID WASTE

Airport sponsors typically have purview over waste handling services in facilities they own and operate, such as passenger terminal buildings, village-owned hangars, aircraft rescue and firefighting (ARFF) stations, and maintenance facilities. Tenants of airport-owned buildings/hangars or tenants that own their facilities are typically responsible for coordinating their own waste handling services.

For airports, waste can generally be divided into eight categories:[9]

- **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 resulting from land clearing, excavation, demolition, and renovation or repair of structures, roads, and utilities. C&D waste includes concrete, wood, metals, drywall, carpet, plastic, pipe, cardboard, and salvaged building components. C&D is also generally labeled MSW.

- **Green Waste** is a form of MSW yard waste consisting of tree, shrub, and glass clippings; 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.

- **Deplaned Waste** is waste removed from passenger aircraft. Deplaned waste includes bottles, cans, mixed paper (i.e., newspapers, napkins, and 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[10] 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 system prior to pretreatment.

- **Spill Clean and Remediation Wastes** are special wastes that are generated during the cleanup of spills and/or the 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 by the regulations in 40 CFR Subtitle C, Parts 260 to 270. The U.S. Environmental Protection Agency (EPA) developed less stringent regulations for certain hazardous waste, or universal waste, described in 40 CFR Part 237, *The Universal Waste Rule*.

[9] FAA – Recycling, Reuse and Waste Reduction at Airports (April 24, 2013)
[10] A triturator turns lavatory waste into fine particulates for further processing.

As seen on **Exhibit 5G,** there are multiple areas where the airport potentially contributes to the waste stream, including the passenger terminal building, flight kitchens, on-airport tenants (FBOs/specialized aviation service operators [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

DLL currently contracts monthly solid waste handling services to GFL Environmental, as well as other solid waste/recycling providers. The airport and its respective tenants are responsible for managing the disposal and pickup of their respective waste and recyclable items.

SOLID WASTE MANAGEMENT SYSTEM

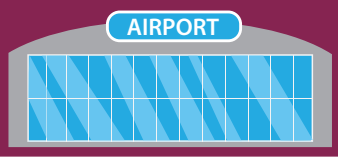
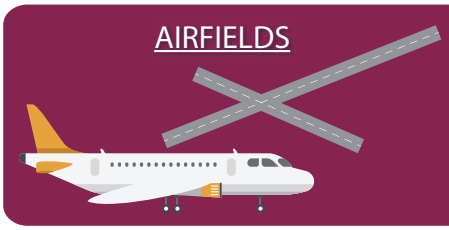
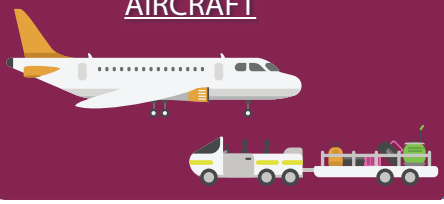
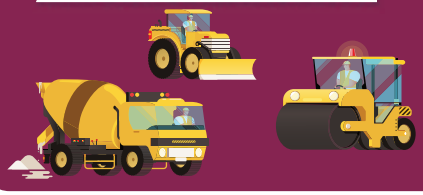
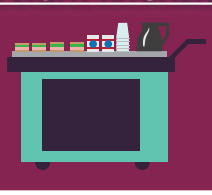
Airports generally utilize either a centralized or decentralized waste management system. The differences between the two methods are described below and summarized on **Exhibit 5H**.

- **Centralized waste management system** | With a centralized waste management system, the airport provides receptacles for the collection of waste, recyclable materials, and/or compostable materials and contracts for their removal by a single local provider.[11] The centralized waste management system allows for more participation from airport tenants who 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 it requires more effort and oversight on the part of airport management; however, the centralized system is advantageous in that it has fewer working components involved 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 receptacles on airport property and the number of trips by a waste collection service provider, should tenants' and the airport's collection schedules differ.

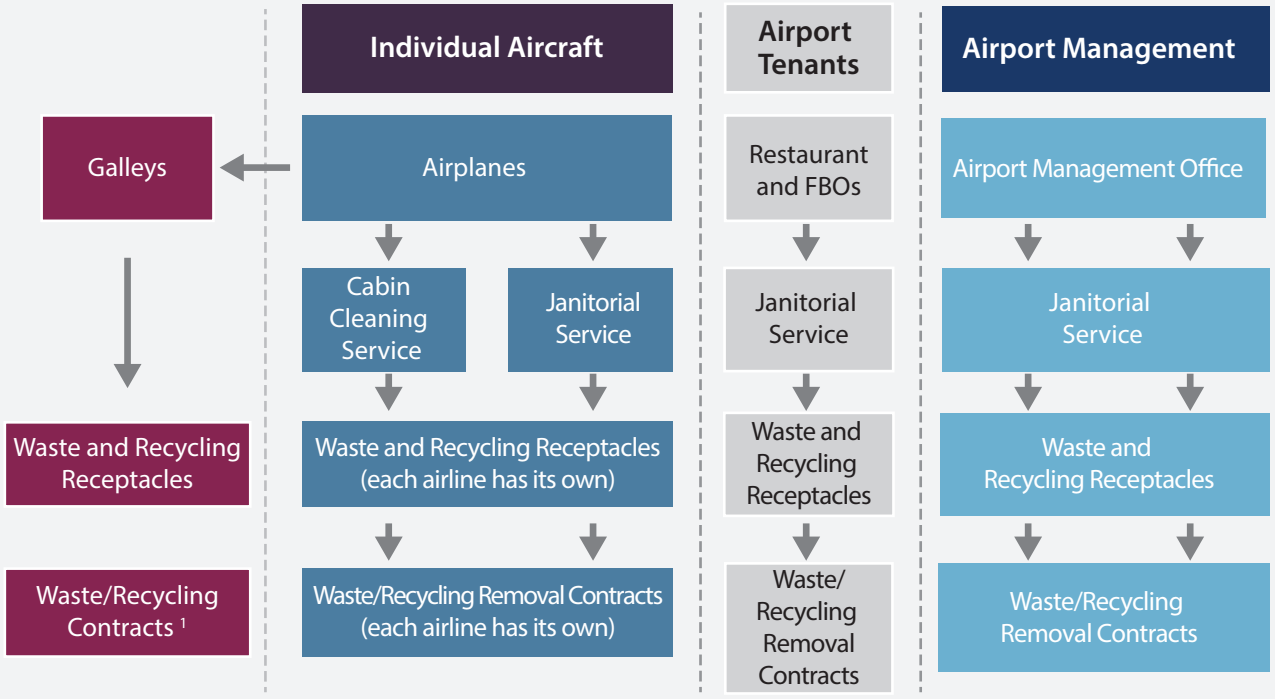
[11] National Academies of Sciences, Engineering, and Medicine Airport Cooperative Research Program – Synthesis 92, Airport Waste Management and Recycling Practices (2018)

AIRPORT WASTE STREAMS

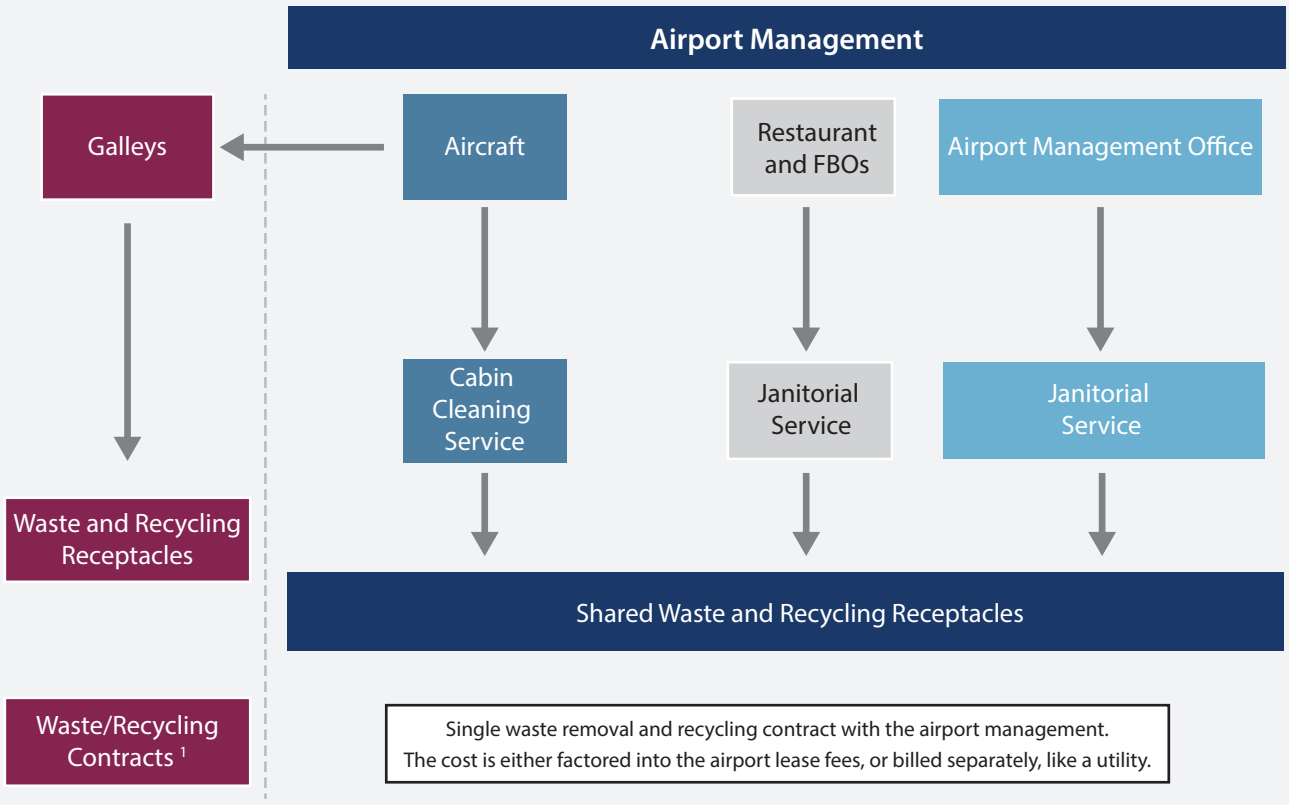
AIRPORT AREA	POTENTIAL INPUTS	POTENTIAL OUTPUTS
TERMINALS 	Restaurants Shops Passengers Employees	Food Waste, Paper Plastic, Aluminum Cans Trash, Grease & Oil Green Waste Deplaned Waste
AIRFIELDS 	Aircraft Operations	Runway Rubber Green Waste
AIRCRAFT 	Aircraft Ground Support Equipment (GSE)	Vehicle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

GOALS AND RECOMMENTATIONS

Solid Waste and Recycling Goals

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

TABLE 5E | Waste Management and Recycling Goals
Baraboo Dells Airport – Wisconsin

Goals	Objectives
Reduce amount of solid waste generated	Conduct a waste audit to identify 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 and recycling tracking and data management
	Incorporate recycling requirements and/or recommendations into tenant lease agreements
	Expand recycling marketing and promotion efforts throughout public areas
	Require contractors to implement strategies to reduce, reuse, and recycle construction and demolition (C&D) waste

Source: Coffman Associates, Inc.

Recommendations

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

- **Create a centralized waste management system at the airport.** Currently, DLL participates in a decentralized waste management system because 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 and recycling efforts at DLL.

- **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 and recycling at the airport will create efficient and cost-saving solid waste management solutions. People dedicated to this operation aspect of the airport will be familiar with processes and will help 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 and recycling 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
  - Review waste hauling and disposal records and contracts
  - Examine supply and equipment invoices
  - Assess 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-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 pickup and hauling practices

- Sort Waste
  - Provides quantitative data on total airport waste generation
  - Allows problem-solving design/enhances the recycling program for the airport

- **Create a tracking and reporting system.** Track solid waste generated to allow the airport the opportunity 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. Because the airport engages in recycling services, the airport can track recycling rates and waste quantities to identify cost-saving measures that are currently unidentified simply based on the lack of quantitative data.

- **Reduce waste through controlled purchasing practices and 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.

- **Enhance the existing 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. Recyclable materials (such as paper, aluminum, plastics, electronics, etc.) should be sorted from the airport's solid waste. The village should review internal procedures to ensure there are no unacceptable items contaminating recycling containers, or recyclables thrown in the trash. 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 an individual and group level. 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 crucial 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 solid waste and recycling goals and how tenants play a vital role in the airport's overall success.

- **Incorporate an airport-wide waste 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).** DLL and its tenants should consider creating a standardized program through which electronics can be picked up and sent to the county, as needed. Wisconsin also has a statewide manufacturer-funded program (E-Cycle Wisconsin) that provides various electronic collection drop-off sites across the state.[12]

SUMMARY

This chapter has been prepared to help the airport sponsor make decisions on the future growth and development of DLL 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, based on safety and demand, over the next 20 years and beyond.

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