2. INVENTORY OF EXISTING CONDITIONS

2.1 INTRODUCTION

Milwaukee Mitchell International Airport (MKE or the Airport) is located within the jurisdiction of Milwaukee County and the City of Milwaukee and is owned and operated by Milwaukee County Department of Transportation (MCDOT) - Airport Division. The Federal Aviation Administration (FAA) classifies MKE as a commercial service primary medium hub airport.

An airport master plan is a document the Airport Division can use to assess the Airport's current role and capabilities, study the future demand forecast for aviation operations at MKE, and identify the Airport's facility needs and requirements to select and prioritize feasible alternatives for development to meet demand. The master plan addresses the anticipated needs through 2040 while remaining compatible with the area around MKE. The master plan acts as a strategic vision for the future short-term (5-year), mid-term (10-year), and long-term (20-year) planning horizon and the associated improvements the Airport operator would like to see occur during that period.

FAA Advisory Circular 150/5070-6B (Change 2), *Airport Master Plans*, contains the guidelines for preparing an airport master plan. The information supplied in this chapter will serve as the inventory element for this Airport Master Plan Update, and was compiled from FAA rules and regulations, interviews, site visits, and the review and analysis of previous reports and studies.

The goal of the inventory is to gather required data to support subsequent analyses throughout the master planning process. The data collection is not meant to be exhaustive in detail, rather provide a framework for the planning team to perform the necessary analytic functions to underpin the requirements and functional area alternatives. The following sections will summarize the data collected as part of the inventory effort.

2.2 AIRPORT BACKGROUND AND HISTORY

Aviation has been an important component of the Milwaukee area since the early 20th Century. The first county-operated airport opened in 1919 in the northwest corner of Milwaukee County. The first American aircraft built to carry passengers as a commercial venture, the Lawson Airliner, was assembled near the airfield. The Lawson C-2 departed from the Milwaukee County Airport on a 2,000-mile multi-city tour to promote commercial air travel the same year.

Airmail service began for the Milwaukee region in 1926. The increased operations resulting from this regular service led to the conclusion that the current airfield was too small. A river to the east and a railroad line to the west prevented any significant expansion in the original location. On October 5, 1926, the Milwaukee County Board approved the $150,000 purchase of a new airport facility in the current location of Milwaukee Mitchell International Airport and called it the Milwaukee County Airport.

The new Milwaukee County Airport initially operated from offices attached to a hangar on East Layton Avenue. Soon after opening the new airfield, a farmhouse on the property was converted into the first terminal that opened in July of 1927. That same month Northwest Airlines initiated air service from Milwaukee to Chicago and Minneapolis/St. Paul. Other airlines soon followed, including Midwest Airways, one of the tenants at the Airport in 1935.

During the late depression years, from 1938 to 1940, the Works Progress Administration constructed a new two-story terminal building. In 1941 the name of the Milwaukee County Airport was changed to General Mitchell Field after Brigadier General William "Billy" Mitchell, an aviation and air force advocate from Milwaukee.

The Airport soon became an important facility for military use in the region. In 1942 the Army Air Force leased a part of the field to train pilots using Douglas C-47s. That same year the Wisconsin Air National Guard constructed a hangar at the site. Later, near the end of World War II, a camp for German prisoners of war was established on the field and housed a total of 3,000 prisoners. A contemporary report shows that the camp was intended to be a labor camp, including a battery assembly line. Facilities included a chapel and a sports field. The camp was closed on April 1, 1946.

Military activity at the Airport continued after the war. The 128th Air Refueling Wing of the Wisconsin Air National Guard (WI ANG) began service at the Airport in 1947 and continues to present-day. Located on the southeast portion of the airfield, the 128th WI ANG provides aero-medical evacuation and air lifts personnel and equipment to strategic locations. The 128th WI ANG has served a variety of missions, from natural disasters to service in the Korean War and Operation Desert Storm, while also serving the communities of Wisconsin and incorporating a 24/7 National Guard Reaction Force.

Improvements at the Airport continued throughout the following years, including a new utility building in 1953 that housed the heating plant, electrical substation, and rescue equipment. Shortly after the completion of the first terminal and through the early 1950s, General Mitchell Field experienced growth in the number of operations along with use by larger aircraft. Due to the congestion this caused at the Layton Avenue terminal building, a new 3-concourse, 2-level structure, with 23 aircraft gates opened on July 19, 1955. At that time, the airfield included 1,530 acres of land for runways and taxiways.

Advancements in aircraft technology eventually led to further changes to the Airport facilities. In 1956 the first turbine-powered aircraft, the Vickers Viscount prop airliner operated by Capital Airlines, conducted operations at General Mitchell Field. A Northwest Orient Airlines (renamed when Northwest Airlines established northern Pacific routes near the end of World War II) Boeing 720 four-engine jet became the first jet providing commercial service at the Airport in July of 1961 on the Minneapolis/St Paul – New York route. In 1962 the FAA updated navigation aids at the Airport and an extension of Runway 7R-25L to a length of 8,011 feet was completed in 1964, requiring the construction of a tunnel for South Howell Avenue.

Commercial use of General Mitchell Field continued to increase. In 1968 North Central Airlines began service for regional routes at the Airport. In the late 1970s, continued growth led to a $44 million terminal expansion and renovation to accommodate larger shops, ticketing, and baggage claim areas.

On June 19, 1986, the Milwaukee County Board of Supervisors officially renamed the airport General Mitchell International Airport, an action that reflected the presence of United States (U.S.) Customs at the Airport. The 1980s also saw the addition of the Airport Systems Cargo Complex, completed in 1989, to provide security and ground support services for cargo carriers.

Expansion at the airport continued in the following years. In December 1990 a 16-gate addition to Concourse D opened to accommodate increasing traffic and growth in commercial service. In 2007 eight new gates were added to Concourse C. More recent changes to the facilities include a complete renovation of the baggage claim area that was completed in 2015.

The Airport has also experienced recent changes in land use. From the 1950s until 2008, MKE was home to the 440th Airlift Wing of the Air Force Reserve (the 440th). The 440th was deployed on strategic missions around the world and relief missions during national emergencies and natural disasters. In 2008 the base was closed as part of the federal Base Realignment and Closure Act and the 440th relocated to Pope Air Force Base in North Carolina. Today, in its place is Milwaukee County's MKE Regional Business Park.

2.2.1 HISTORICAL TIMELINE

As the airport background and history described above demonstrates, MKE has a rich and significant history of serving the transportation needs locally, nationally, and worldwide. **Exhibit 2-1** depicts a visual overview of the Airport history.

2.2.2 REGIONAL SETTING AND LOCATION

The City of Milwaukee is located within Milwaukee County where the Menomonee River and the Milwaukee River join, less than a mile before flowing into Lake Michigan. The city boundary spans nearly 20 miles running north to south along and near the lake shore. In addition to the Menomonee and Milwaukee Rivers, there are numerous other rivers and lakes in the region, all situated in the Milwaukee River basin. The basin covers a total of 7 counties and 1.3 million people live within those counties. The Milwaukee and Menomonee Rivers are two of the largest in this area, and they provide commercial and recreational opportunities.

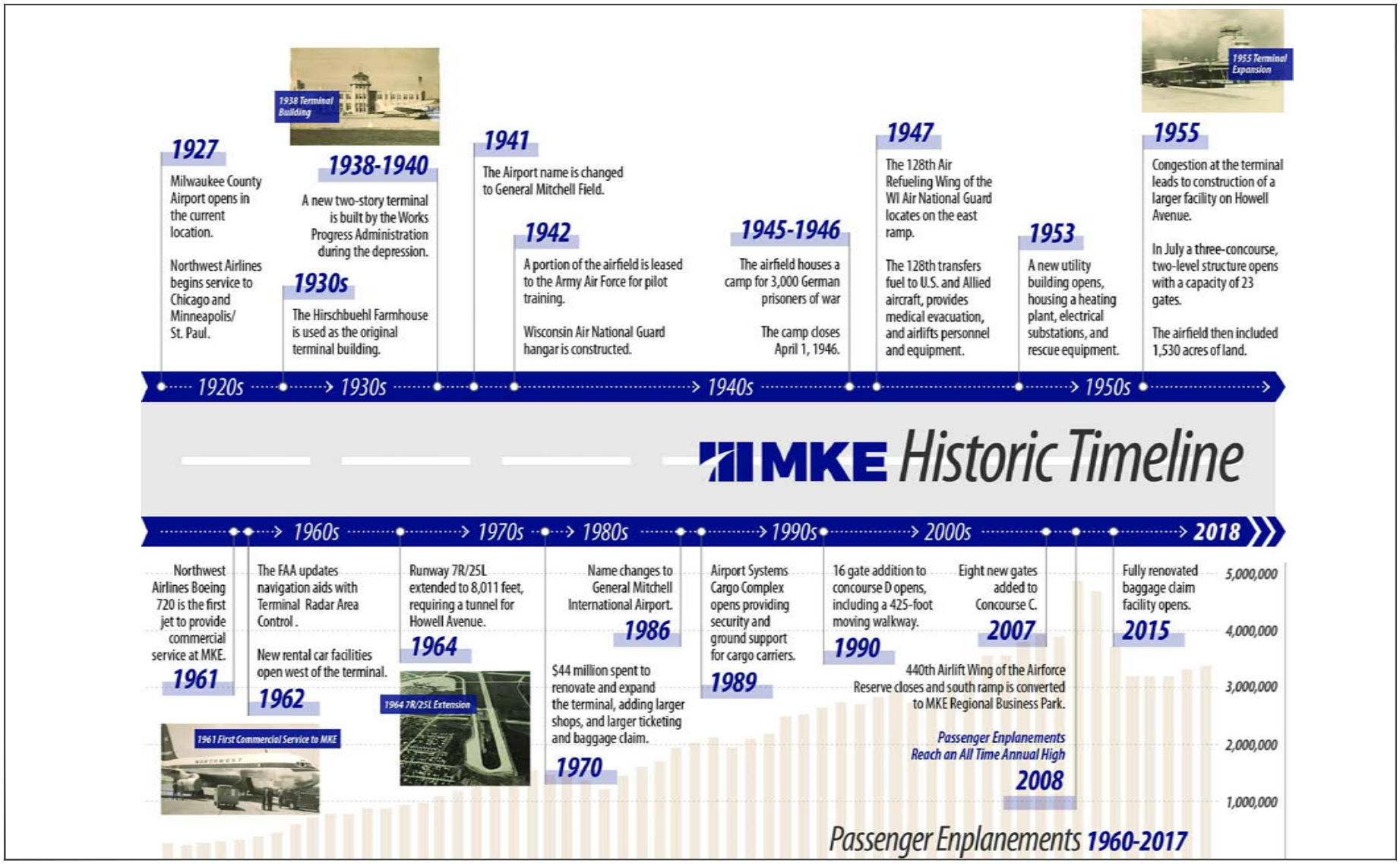
The City of Milwaukee has an estimated population of 595,351, according to the U.S. Census Bureau as of 2017, making it the largest city in Wisconsin. Milwaukee is centrally located among several major cities with direct interstate connections to these major cities. Interstate 43 connects Milwaukee to Green Bay, Wisconsin to the north, and Interstate 94 connects Milwaukee to Madison, Wisconsin to the west, and Chicago, Illinois to the south. Milwaukee is approximately 40 miles from the Wisconsin-Illinois border.

The Airport is approximately two miles west of Lake Michigan and six miles south of downtown. The area surrounding the Airport is generally developed and bounded by Interstate 94 to the west, West Layton Avenue to the north, East College Avenue to the south, and South Pennsylvania Avenue to the east. South Howell Avenue runs through a portion of the Airport, via a tunnel under Runway 7R-25L, and provides access to the terminal and various parking areas for passengers and employees. Interstate 94 also provides convenient access to the Airport via the Airport Spur and provides circulation to the terminal and parking garage area. **Exhibit 2-2** depicts the Airport's location relative to other major airports in the region.

2.2.3 AIRPORT ROLE AND CLASSIFICATION

The National Plan of Integrated Airport Systems (NPIAS) is an FAA report issued every two years that identifies airports integral to the national air transportation network. An airport must meet a set of criteria (e.g., based aircraft counts and locational requirements) to be included in the NPIAS. Airports included in the NPIAS are eligible for development grants under the FAA Airport Improvement Program. Of the 19,627 landing areas in the United States, 5,099 are publicly owned. As of 2017 only 3,321 of these publicly owned landing areas are included in the NPIAS.

MKE is included in the NPIAS categorized as a medium hub airport. The determination of hub status for an airport is based on the Airport's percentage of annual national enplaned passengers. A medium hub airport, such as MKE, has between 0.25 percent and 1.00 percent of total national enplaned passengers. The 2017 Terminal Area Forecast (TAF) estimates 3,383,874 enplaned passengers at MKE for the 2017 federal fiscal year, which is 0.40 percent of the national total of 849,778,702 enplaned passengers over that period.



SOURCE: Historical Passenger Enplanement Data - mitchellairport.com, December, 2018

EXHIBIT 2-1

HISTORIC TIMELINE

NORTH 0 Not to Scale

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-1 Historic Timeline.dwg

SOURCES: Federal Aviation Administration, Aeronautical Information Services, 2018 (airports); Esri, HERE, Garmin, DeLorme, increment P Corp., NPS, NRCan, Ordnance Survey, OpenStreetMap Contributors, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS User Community, August 2018 (basemap and transportation); US Census Bureau, Geography Division, TIGER/Line Shapefiles, 2018 (states); Esri, 2010 (major cities).

NORTH 0 80 mi

EXHIBIT 2-2

MKE LOCATION MAP

P:\GIS\Projects\MKE\MXDs\MKE_Exhibit2-2_AirportLocationMap_Ricondo_20190916.mxd

The Wisconsin State Airport System Plan is developed by the Wisconsin Department of Transportation (WisDOT) Bureau of Aeronautics. WisDOT adopted the current plan on February 19, 2015. The Airport System Plan provides an inventory and evaluation of the Wisconsin Airport System's 98 airports and implementation strategies to meet the goals and objectives established by this plan. The Wisconsin State Airport System Plan classifies MKE as one of eight Commercial Service Airports within the state.

2.2.4 AIRSPACE, AIR TRAFFIC MANAGEMENT

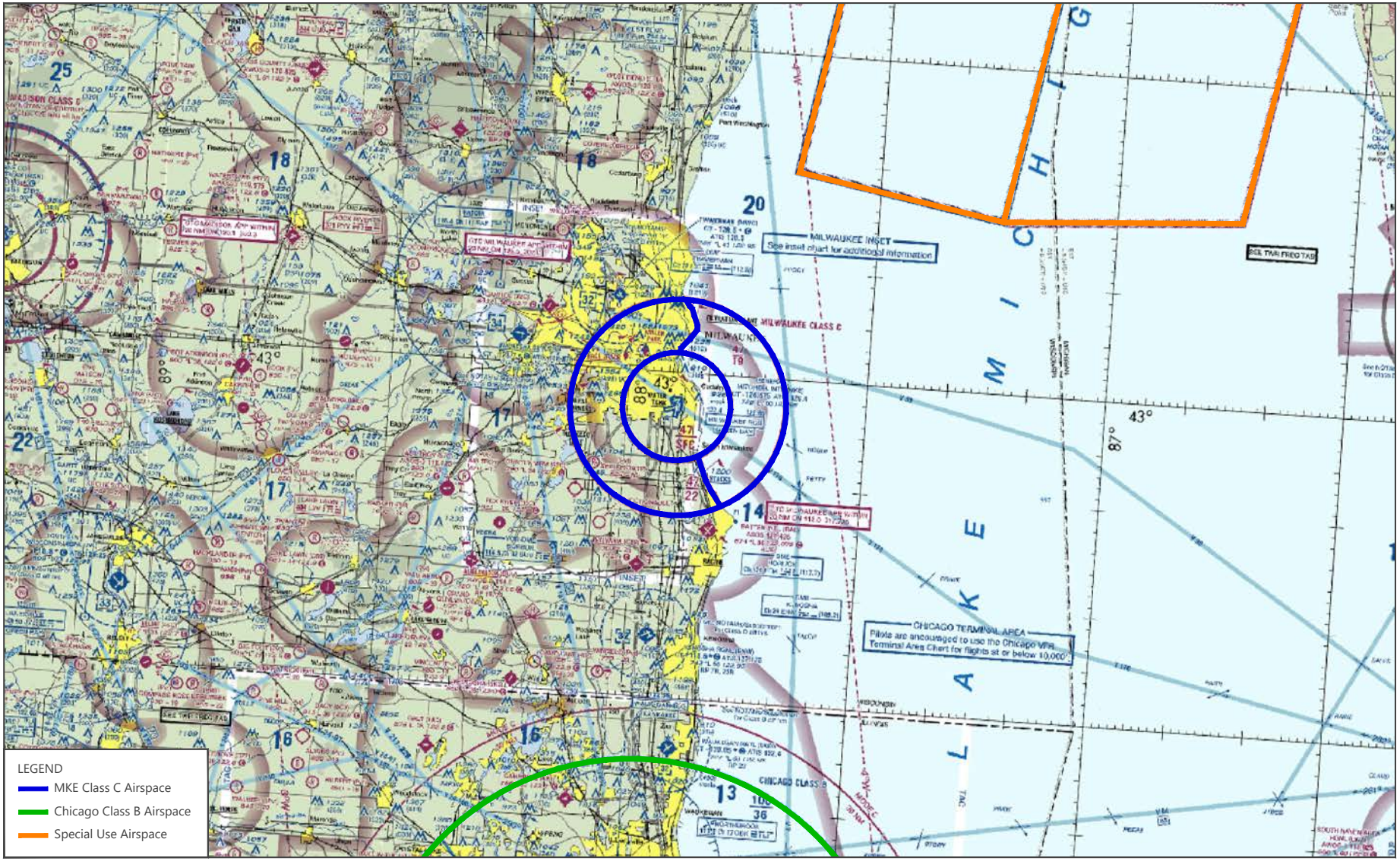
The National Airspace System (NAS) consists of various components of airspace, all of which are monitored, controlled, and coordinated by FAA Air Traffic Control (ATC) personnel. Three-dimensional volumes of airspace are defined based on the type of activity occurring in each and its relationship to the rest of the NAS. The ATC facilities that manage air traffic vary depending on the type of airspace. Coordination between facilities occurs when aircraft transition from one type of airspace to another.

The Chicago Air Route Traffic Control Center (ZAU ARTCC), also known as the Chicago Center, located in Aurora, Illinois, is responsible for managing high-altitude traffic into, out of, and through a region encompassing northern Illinois and Indiana, southwestern Michigan, the southern half of Lake Michigan, eastern Iowa, and southern Wisconsin. The MKE Airport Traffic Control Tower (ATCT) and Terminal Radar Approach Control (TRACON), also referred to as Milwaukee Tower, operates 24 hours every day and is responsible for aircraft movements to and from MKE within approximately 40 nautical miles of the Airport and below 13,000 feet above MSL. Ground movements of aircraft and of other vehicles when on or crossing taxiways or runways are monitored and controlled from the MKE ATCT. Aircraft movements on aprons are not controlled unless entering or exiting defined movement areas controlled by the ATCT.

Exhibit 2-3 shows a portion of the aeronautical chart for the areas surrounding MKE, with critical regions of airspace highlighted. The Class C airspace for MKE is cylindrical in shape, extends to 10 nautical miles from the Airport, and has height 4,700 feet above MSL (4,000 feet AGL). The inner portion of Class C airspace within five nautical miles of the Airport extends from surface level, the outer east portion extends from 1,900 feet above MSL, and the outer west portion extends from 2,200 feet above MSL.

The Chicago Class B airspace is to the south of MKE and extends to within approximately 30 nautical miles of MKE. The Chicago Class B airspace does limit some procedures into and out of MKE. The Minnow military operations area (MOA) and restricted area R-6903 are located approximately 20 nautical miles northeast of MKE. Operations in these areas are intermittent but when active, can impact operations into and out of MKE.

MKE can operate in several flows, dictated by available runways and by wind direction and magnitude, as depicted on **Exhibit 2-4**. Visual meteorological conditions (VMC) and instrument meteorological conditions (IMC) correspond generally with good weather and poor weather, respectively. VMC occurs when ceiling height is greater than 1,000 feet AGL and visibility is greater than 3 statute miles. IMC occurs when ceiling height is less than 1,000 feet AGL or visibility is less than 3 statute miles.

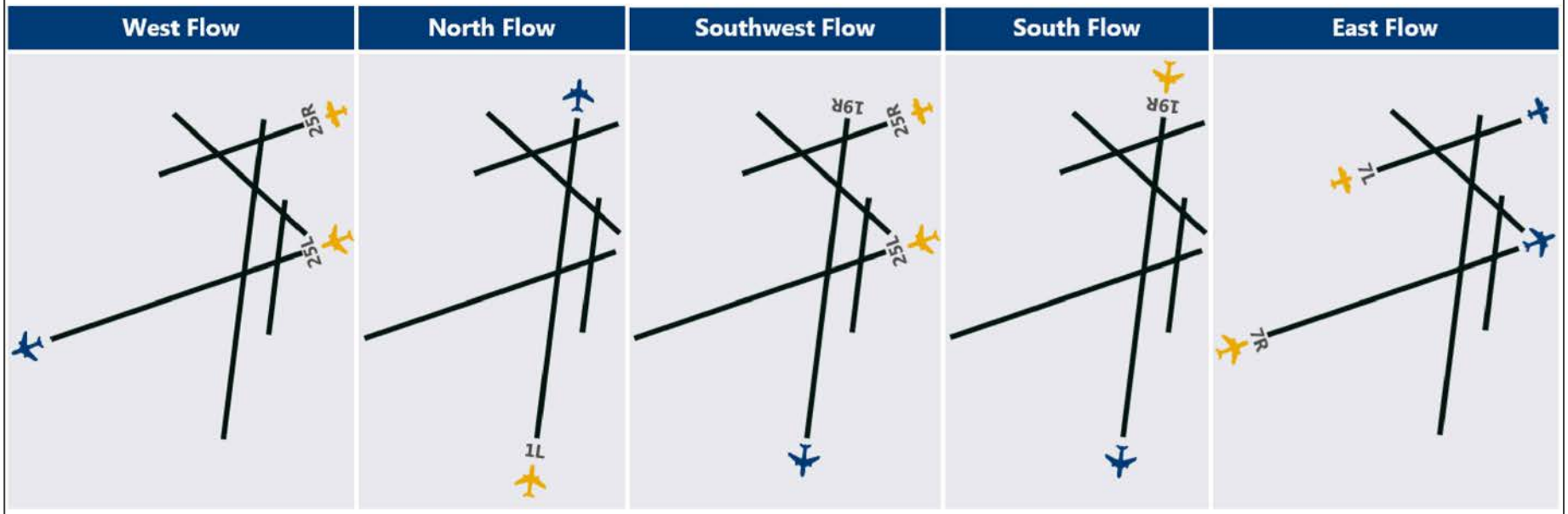


SOURCES: Federal Aviation Administration, Aeronautical Information Services, *Chicago Sectional Aeronautical Chart, 97th Edition,* October 2018; Ricondo & Associates, Inc, December 2018

EXHIBIT 2-3

MKE AIRSPACE

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.7 - Airspace and ATC\CAD\MKE_Airspace.dwgLayout: Airspace Plotted: Sep 17, 2019, 12:04PM



LEGEND
- Primary Arrivals
- Primary Departures
- Prop Arrivals
- Prop Departures

SOURCES: Federal Aviation Administration, Aviation System Performance Metrics, Airport Efficiency, MKE Daily Weather Report, January 2008 through December 31, 2017; Ricondo & Associates, Inc, December 2018

EXHIBIT 2-4

AIRFIELD OPERATING CONFIGURATIONS

NORTH 0 Not To Scale

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.7 - Airspace and ATC\CAD\MKE_Airspace.dwgLayout: Airfield Configs Plotted: Sep 17, 2019, 12:04PM

2.2.5 METEOROLOGICAL CONDITIONS

Weather conditions are categorized as either Visual Meteorological Conditions (VMC) or Instrument Meteorological Conditions (IMC). VMC occurs when visibility is greater than or equal to three statute miles *and* the cloud ceilings are 1,000 feet above ground level (AGL) or higher. During VMC, pilots operate under Visual Flight Rules (VFR), essentially using visual means to maintain separation from other aircraft, objects, terrain, etc. IMC occurs when the prevailing visibility at the airport is less than three statute miles *or* the cloud ceilings are less than 1,000 feet AGL. During IMC, pilots operate under Instrument Flight Rules (IFR), relying on Air Traffic Control (ATC) to provide separation from other aircraft and terrain.

To evaluate weather conditions at MKE, meteorological data was obtained from the automated weather station located on Airport property. Data for this station was recorded by the National Centers for Environmental Information for the 10-year period between January 1, 2008 and December 31, 2017. At MKE, VMC accounted for 91.2 percent of the hourly observations, while IMC accounted for 8.8 percent of the hourly observations.

The FAA Advisory Circular 150/5300-13A, *Airport Design*, recommends that runway(s) at an airport achieve at least 95 percent wind coverage based on an evaluation period of at least 10 consecutive years. MKE runways were evaluated both independently and together. Crosswind components of 10.5 knots, 13 knots, 16 knots, and 20 knots were evaluated to provide runway coverage percentages for all Runway Design Codes. Wind roses were prepared for the existing five-runway airfield under all weather conditions, VMC, and IMC, depicted on **Exhibit 2-5**.

The weather conditions categorized as IMC were broken down further to demonstrate how often aircraft need to utilize the different Instrument Landing System (ILS) precision approaches at the Airport. These approaches are classified as Category I (CAT I), utilized when cloud ceilings are between 200 and 1,000 feet AGL or visibility is between three statute miles and 2,400 feet, Category II (CAT II), utilized when cloud ceilings are between 100 and 200 feet AGL or visibility is between 1,200 and 2,400 feet, Category IIIa (CAT IIIa), utilized when cloud ceilings are between 50 and 100 feet AGL or visibility is between 700 and 1,200 feet, Category IIIb (CAT IIIb), utilized when cloud ceilings are between 25 and 50 feet AGL or visibility is between 300 and 700 feet, and Category IIIc (CAT IIIc), utilized when cloud ceilings are below 25 feet AGL or visibility is below 300 feet. **Table 2-1** summarizes the calculated wind coverage under various weather conditions as a percentage of operations at the Airport.

TABLE 2-1 WIND COVERAGE

WEATHER CONDITION	COUNT	PERCENTAGE OF WIND COVERAGE	APPROACH CONDITION	COUNT	PERCENTAGE OF WIND COVERAGE
VMC	79,948	91.20%	CAT I	6,675	86.56%
IMC	7,711	8.80%	CAT II	831	10.78%
Total:	**87,659**	**100.00%**	CAT IIIa	0	0.00%
			CAT IIIb	179	2.32%
			CAT IIIc	26	0.34%
			Total:	**7,711**	**100.00%**

NOTES:
VMC: Visual Meteorological Conditions
IMC: Instrument Meteorological Conditions
SOURCE: National Centers for Environmental Information 10-year data, January 1, 2008 – December 31, 2017.

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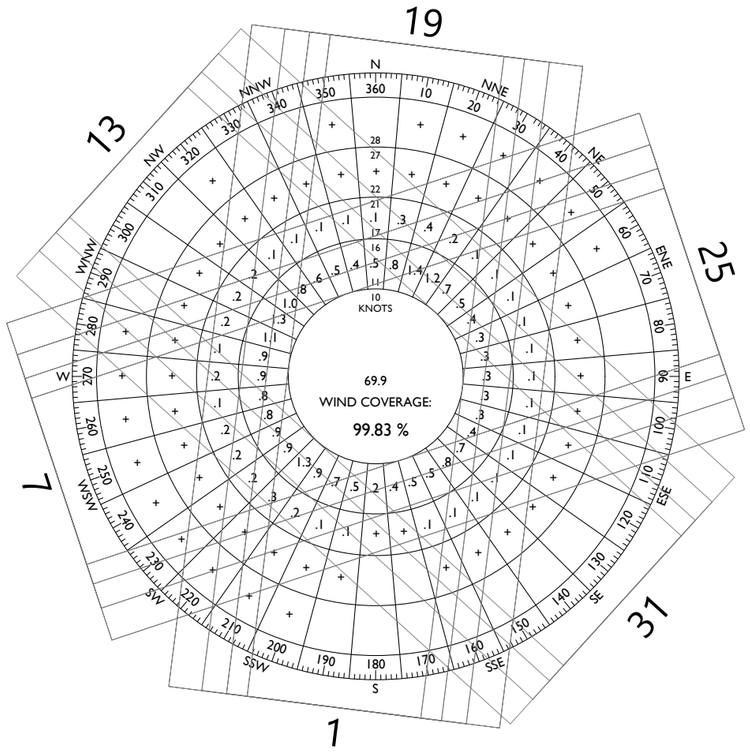
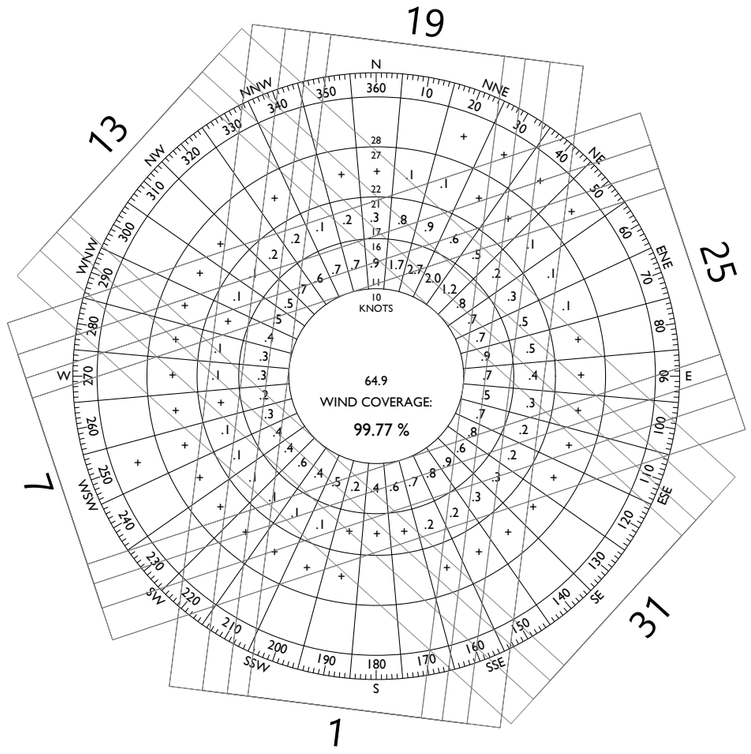
All Weather Wind Rose



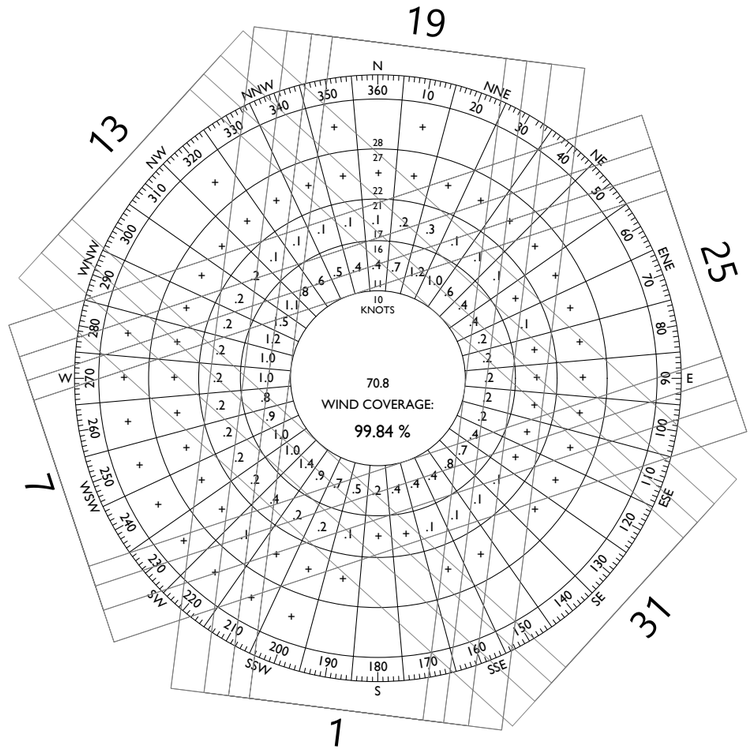
Runway End	Crosswind Components			
	10.5 Knots	13 Knots	16 Knots	20 Knots
1L-19R	86.71%	92.84%	97.83%	99.56%
1R-19L	86.71%	92.84%	97.83%	99.56%
7L-25R[1/]	87.19%	93.63%	98.34%	99.75%
7R-25L	87.19%	93.63%	98.34%	99.75%
13-31[1/]	84.65%	90.76%	96.91%	99.31%
Combined	99.83%	99.98%	100.0%	100.0%

IFR Wind Rose



Runway End	Crosswind Components			
	10.5 Knots	13 Knots	16 Knots	20 Knots
1L-19R	86.57%	92.04%	96.73%	99.30%
1R-19L	86.57%	92.04%	96.73%	99.30%
7L-25R[1/]	82.65%	90.47%	96.93%	99.50%
7R-25L	82.65%	90.48%	96.93%	99.50%
13-31[1/]	80.44%	87.78%	95.23%	98.97%
Combined	99.77%	99.97%	100.0%	100.0%

VFR Wind Rose



Runway End	Crosswind Components			
	10.5 Knots	13 Knots	16 Knots	20 Knots
1L-19R	86.66%	92.97%	98.04%	99.62%
1R-19L	86.66%	92.97%	98.04%	99.62%
7L-25R[1/]	88.02%	94.20%	98.59%	99.79%
7R-25L	88.02%	94.20%	98.59%	99.79%
13-31[1/]	85.48%	91.33%	97.21%	99.39%
Combined	99.84%	99.98%	100.0%	100.0%

NOTES:
1/ Runways 7L-25R and 13-31 are typically not used when the crosswind component exceeds 13 knots
2/ IFR - Instrument Flight Rules
3/ VFR - Visual Flight Rules

SOURCES: National Oceanic and Atmospheric Administration Integrated Surface Database for General Mitchell International Airport (2008 - 2017); FAA Wind Rose Generator, November 2018

NORTH 0 Not To Scale

EXHIBIT 2-5

WIND ROSES

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.8 - Meterological Data\Wind Data\CAD\MKE_Wind Rose Exhibit.dwgLayout: Layout1 Plotted: Sep 4, 2022, 10:40PM

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The wind coverage results show that winds in the Milwaukee area are generally westerly. All runways combined at MKE provide a 99.7 percent or higher wind coverage for all weather, VMC, and IMC at all four crosswind components (10.5, 13, 16, and 20 knots), which exceeds the FAA's recommendation of 95 percent. Individually, each of the runways at MKE exceeds the FAA wind coverage recommendations for all weather, VMC, and IMC at crosswind components of 16 and 20 knots. However, none of the individual runways meet the wind coverage recommendations under any condition for 10.5 and 13 knot crosswind components.

2.3 AIRSIDE FACILITIES

Airside facilities at the Airport encompass the areas where aircraft activity occur and consist of both movement and non-movement areas. Movement areas include the runways and taxiways where Air Traffic Control clearance is required. Non-movement areas include aprons, taxilanes, and vehicle service roads where authorized airport and airline vehicles are allowed to maneuver without Air Traffic Control clearance. The following sections describe the airside facilities and infrastructure currently active at the Airport, which are illustrated on **Exhibit 2-6**.

2.3.1 RUNWAY SYSTEM

The MKE airfield comprises five runways. There are two sets of parallel runways: Runway 7L-25R and Runway 7R-25L are oriented in an east/west direction, and Runway 1L-19R and Runway 1R-19L are oriented north/south. Runway 13-31, oriented northwest/southeast, makes up the remainder of the runway system. The runways are depicted on Exhibit 2-6 with runway characteristics provided in **Table 2-2**.

The critical design aircraft is designated in MKE's December 2016 Airport Layout Plan Update as the Boeing 747-400[1]. The design aircraft sets the dimensional requirements for the two primary runways: Runway 1L-19R and Runway 7R-25L. Both runways are equipped with an ILS, as well as a variety of navigational aids, lighting, and instrumentation summarized in **Table 2-3**. The Instrument Landing System facilities and their associated critical areas are illustrated on **Exhibit 2-7** along with the location of other airport-wide navigational aids.

Runway use varies according to demand and weather conditions. **Table 2-4** summarizes how often the predominant airfield operating configurations are used in visual meteorological conditions and in instrument meteorological conditions.

2.3.2 TAXIWAY SYSTEM

The taxiway system (including taxiway names) is depicted on Exhibit 2-6. Runway and taxiway separation standards are determined by the Airplane Design Group of the design aircraft operating on the runway and the parallel taxiway. Design standards for taxiway pavement width, shoulder width, and edge safety margin are based on Taxiway Design Group. Most taxiway and shoulder widths at the Airport can accommodate Taxiway Design Group 5 aircraft (e.g., Boeing 747-8, Airbus A350). Portions of other taxiways are limited to Taxiway Design Group 3 aircraft (e.g., Boeing 737, Airbus A300). A summary of the taxiway characteristics for the various segments of the airfield is illustrated in **Table 2-5**. The compliance of the taxiway system with current FAA criteria will be evaluated as part of the determination of facility requirements.

[1] Boeing 747-400 has an Aircraft Approach Category (AAC) of D (approach speed of 141 knots or more but less than 166 knots) and Airplane Design Group (ADG) V (signifying a wingspan of 171 feet or more but less than 214 feet and/or a tail height of 60 feet or more but less than 66 feet). The critical design aircraft for MKE will be re-evaluated as part of current and forecasted aviation activity by aircraft size.

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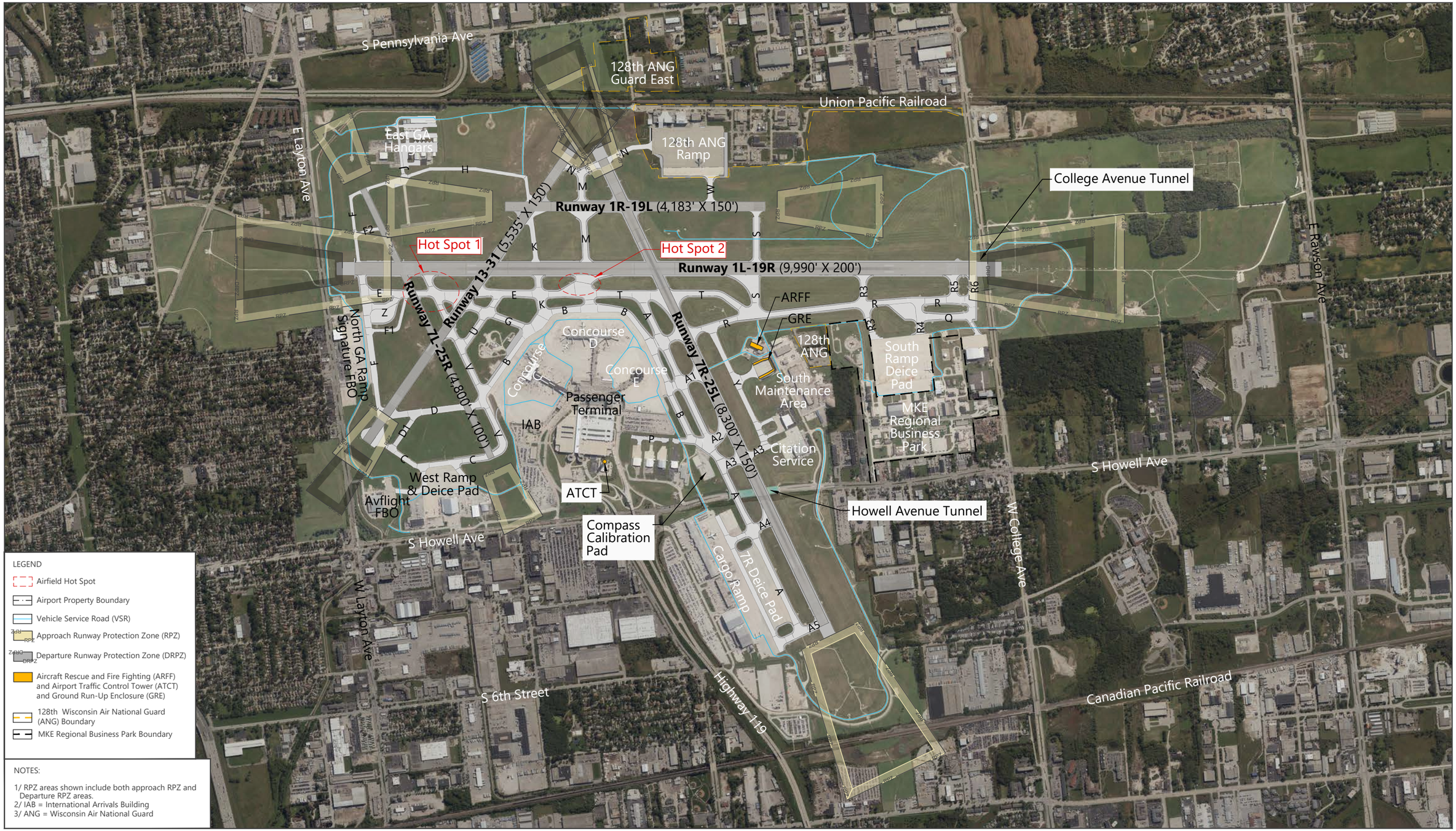

LEGEND

- Airfield Hot Spot
- Airport Property Boundary
- Vehicle Service Road (VSR)
- Approach Runway Protection Zone (RPZ)
- Departure Runway Protection Zone (DRPZ)
- Aircraft Rescue and Fire Fighting (ARFF) and Airport Traffic Control Tower (ATCT) and Ground Run-Up Enclosure (GRE)
- 128th Wisconsin Air National Guard (ANG) Boundary
- MKE Regional Business Park Boundary

NOTES:

1/ RPZ areas shown include both approach RPZ and Departure RPZ areas.
2/ IAB = International Arrivals Building
3/ ANG = Wisconsin Air National Guard

SOURCES: Location of pavements / Runway Protection Zone (RPZ) taken from FAA Airports Geographic Information Systems (GIS) database; Airports Geographic Information Systems (AGIS) Project: ME-138880; Airports Geographic Information Systems (AGIS verification: March 7th, 2014);Quantum Spatial, September 2018 (aerial imagery).

NORTH 0 1,500 ft.

EXHIBIT 2-6

AIRSIDE FACILITIES

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TABLE 2-2 RUNWAY CHARACTERISTICS

CHARACTERISTICS	RUNWAY									
	1L	19R	1R	19L	7L	25R	7R	25L	13	31
Dimensions (feet)	200 X 9,990		150 X 4,183		100 X 4,800		150 X 8,300		150 X 5,535	
Surface	Concrete		Concrete		Asphalt		Concrete		Asphalt / Concrete	
Pavement Surface Treatment	Grooved		None		None		Grooved		None	
Pavement Condition Index (PCI)	48-99		26-62		68-96		45-89		37-100	
Weight Bearing Capacity[1]	PCN 64 R/A/W/T		PCN 23 R/B/W/T		PCN 20 F/A/X/T		PCN 58 R/A/W/T		PCN 48 R/B/W/T	
Single Wheel (pounds)	100,000		85,000		30,000		100,000		80,000	
Double Wheel (pounds)	185,000		115,000		35,000		185,000		110,000	
Double Tandem (pounds)	350,000		180,000		55,000		350,000		170,000	
Runway Edge Lights	High Intensity		Medium intensity		Medium Intensity		High Intensity		Medium Intensity	
Elevation (feet above mean sea level)	705.8	672.8	677.6	669.6	671.4	674.5	728.5	670.0	671.4	668.7
Gradient	0.36%		0.19%		0.08%		0.69%		0.05%	
Displaced Threshold (feet)	300	786	-	-	-	-	-	433	737	205
Declared Distances (feet)										
TORA[2] (feet)	9,990		4,183		4,800		8,300		5,538	
TODA[2] (feet)	9,990		4,183		4,800		8,300		5,538	
ASDA[2] (feet)	9,380	9,990	4,183	4,183	4,800	4,800	8,012	8,300	5,538	5,538
LDA[2] (feet)	9,080	9,205	4,183	4,183	4,800	4,800	8,012	7,868	4,797	5,334
Visual Slope Indicator[3]	4-light PAPI (on right) 3.0° glide path	4-light PAPI (on right) 3.0° glide path	-	-	4-light VASI (on left) 3.1° glide path	4-light PAPI (on right) 3.0° glide path	4-light PAPI (on left) 3.0° glide path	4-light PAPI (on left) 3.0° glide path	4-light PAPI (on left) 3.0° glide path	4-light PAPI (on right) 3.0° glide path
Runway Centerline to Runway Centerline Separation (feet)	1,000				3,681				-	
Runway Design Code (RDC)	D-V-600		C-IV-5000		B-II-5000		D-V-5000		B-II-5000	

NOTES:

1 Runway Pavement strength items:
PCN: Pavement Classification Number, R/B/W/T; Rigid pavement (R) / medium subgrade strength (B) / no tire pressure limits (W) / technical evaluation (T)
PCN: Pavement Classification Number, F/A/X/T; Flexible pavement type (F) / high subgrade strength (A) / medium tire pressure limits (X) / technical evaluation (T)

2 Distance related to takeoff and landing requirements: TORA: Take-off Run Available, TODA: Take-off Distance Available, ASDA: Accelerate Stop Distance Available, LDA: Landing Distance Available

3 PAPI: Precision Approach Path Indicator; VASI: Visual Approach Slope Indicator

SOURCE: Federal Aviation Administration, Airport/Facility Directory, November 8, 2018.

TABLE 2-3 RUNWAY INSTRUMENTATION AND LIGHTING SYSTEMS

	RUNWAY			
	1L	19R	7R	25L
Approach Aids				
Distance Measuring Equipment	●	●	●	●
Glide Slope	●	●	●	
Localizer	●	●	●	●
Runway Visual Range	●	●	●	●
Approach Lighting System				
MALSR[1]		●	●	
ALSF-2[2]	●			
Touchdown Zone Lights	●			
High Intensity Runway Edge Lights	●		●	

NOTES:
1 MALSR: Medium-Intensity approach Lighting System with Runway Alignment Indicator Lights
2 ALSF-2: High-Intensity Approach Lighting System with Sequenced Flashing Lights

SOURCES: Federal Aviation Administration, Airport/Facility Directory, November 8, 2018; FAA Airports Geographic Information System (GIS) Data - Project: MKE-138880, Survey Date: April 30, 2013; National Geodetic Survey Verification: March 7, 2014.

SOURCES: Location of NAVAIDS taken from FAA Airports Geographic Information Systems (GIS) database; Airports Geographic Information Systems (AGIS) Project: ME-138880; Airports Geographic Information Systems (AGIS verification: March 7th, 2014; Location of NAVAID critical areas based on guidance within FAA Order 6750.16E; Quantum Spatial, September 2018.

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-7 Existing Navaid Locations.DWGLayout: EXHIBIT 2-7 Plotted: Sep 18, 2019, 09:41AM

EXHIBIT 2-7

EXISTING NAVIGATIONAL AID LOCATIONS

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TABLE 2-4 RUNWAY USE CONFIGURATIONS

WEATHER	FLOW	DEPARTURE RUNWAYS	ARRIVAL RUNWAYS	PERCENTAGE OF TOTAL FLOWS [1]
VMC [2]	West	25L	25L, 25R	21.1%
	North	1L	1L	19.6%
	Southwest	19R	25L, 25R	16.2%
	South	19R	19R	13.5%
	East	7R, 7L	7R, 7L	11.2%
	All Flows			**81.6%**
IMC [3]	West	25L	25L, 25R	6.2%
	North	1L	1L	4.4%
	Southwest	19R	25L, 25R	3.4%
	South	19R	19R	2.4%
	East	7R, 7L	7R, 7L	2.0%
	All Flows			**18.4%**

NOTES:
1 No runway use information was available for 13.7% of hours over the 10-year period; this missing percentage was distributed proportionally to other configurations.
2 VMC: Visual Meteorological Conditions
3 IMC: Instrument Meteorological Conditions
SOURCE: Federal Aviation Administration, Aviation System Performance Metrics, Airport Efficiency, MKE Daily Weather by Hour Report, January 2008 through December 31, 2017; Ricondo & Associates, Inc., December 2018.

TABLE 2-5 TAXIWAY CHARACTERISTICS

TAXIWAY DESIGNATION	TAXIWAY DESIGN GROUP (TDG)	TAXIWAY SURFACE	PAVEMENT CONDITION INDEX (PCI)	TAXIWAY WIDTH (FEET)	TAXIWAY SAFETY AREA (TSA) WIDTH (FEET)	TAXIWAY OBJECT FREE AREA (TOFA) WIDTH (FEET)
A	5	CONCRETE (C)	58-91	75 ft	214 ft	320 ft
A1	5	C	74	108 ft - 125 ft	214 ft	320 ft
A2	5	C	-	130 ft - 150 ft	214 ft	320 ft
A3	5	C	72	115 ft	214 ft	320 ft
A4	5	C	40-53	108 ft	214 ft	320 ft
A5	5	C	84-93	90 ft	214 ft	320 ft
B	3 & 5	C	53-95	75 ft	118 ft & 214 ft	186 ft & 320 ft
C	5	C	74-98	75 ft	214 ft	320 ft
D	5	ASPHALT (A)	32-88	100 ft	214 ft	320 ft
D1	3	A	26	75 ft	118 ft	186 ft
E	5	C	47-95	75 ft	214 ft	320 ft
F	3 & 5	A/C	14-80	50 ft, 75 ft, 100 ft	118 ft & 214 ft	320 ft
F1	3	A	43	50 ft	118 ft	186 ft
F2	3	A	32-53	50 ft	118 ft	186 ft
G	5	C	47-57	75 ft	214 ft	320 ft
H	3	A	37	50 ft	118 ft	186 ft
J	3	A	28	50 ft	118 ft	186 ft
K	3 & 5	A/C	31-100	50 ft, 75 ft, 100 ft	214 ft	320 ft
M	5	C	28-98	75 ft	214 ft	320 ft
N	5	C	98	75 ft	214 ft	320 ft
P	3	A	31	50 ft	118 ft	186 ft
Q	5	C	98	75 ft	214 ft	320 ft
R	5	C	49-97	50 ft, 75 ft, 100 ft	214 ft	320 ft
R3	5	C	49	75 ft	214 ft	320 ft
R4	5	C	47-98	75 ft	214 ft	320 ft
R5	5	C	51-97	90 ft	214 ft	320 ft
R6	3 & 5	C	97	90 ft	118 ft & 214 ft	320 ft
S	5	C	23-51	75 ft	214 ft	320 ft
T	5	C	58-67	75 ft	214 ft	320 ft
U	5	C	67-85	75 ft	214 ft	320 ft
V	5	C	53-84	75 ft	214 ft	320 ft
W	5	C	71	75 ft	214 ft	320 ft
Y	5	C	68	75 ft	214 ft	320 ft

SOURCES: Airport Layout Plan (ALP) Update, December 2016; Pavement Condition Index (PCI), 2016 Wisconsin Pavement Management Report.

2.3.3 AIRFIELD GEOMETRY HOT SPOTS

There are several airfield geometries and orientations that do not meet current design standards. Two of these areas have been designated as a *hot spot*, or an area with greater potential for pilot confusion and/or an airfield incursion.

Hot spots (HS), as shown on FAA developed Airport Diagrams, identify locations with a history of potential risk of collision or runway incursions and where heightened attention by pilots and drivers is necessary. Exhibit 2-6 identifies two FAA-designated hotspots at the Airport as described below:

- Hot Spot 1 (HS1) is located on the north side of the airfield in the area surrounding the Taxiway E / Taxiway V intersection. The FAA Airport/Facility Directory states that pilots taxiing northbound on Taxiway E for an intersection departure on Runway 19R at Taxiway V can end up entering Runway 7L-25R if they miss the right turn onto Taxiway V. The Airport/Facility Directory recommends that pilots on Taxiway E should use "extreme caution" approaching Runway 7L-25R to avoid a runway incident or incursion.
- Hot Spot 2 (HS2) is located east of the Terminal Apron in the area surrounding the Taxiway M/Runway 1L-19R intersection. Taxiway M pavement widens as it approaches Runway 1L-19R, which may cause confusion. The Airport/Facility Directory recommends pilots "use caution" as they navigate this area.

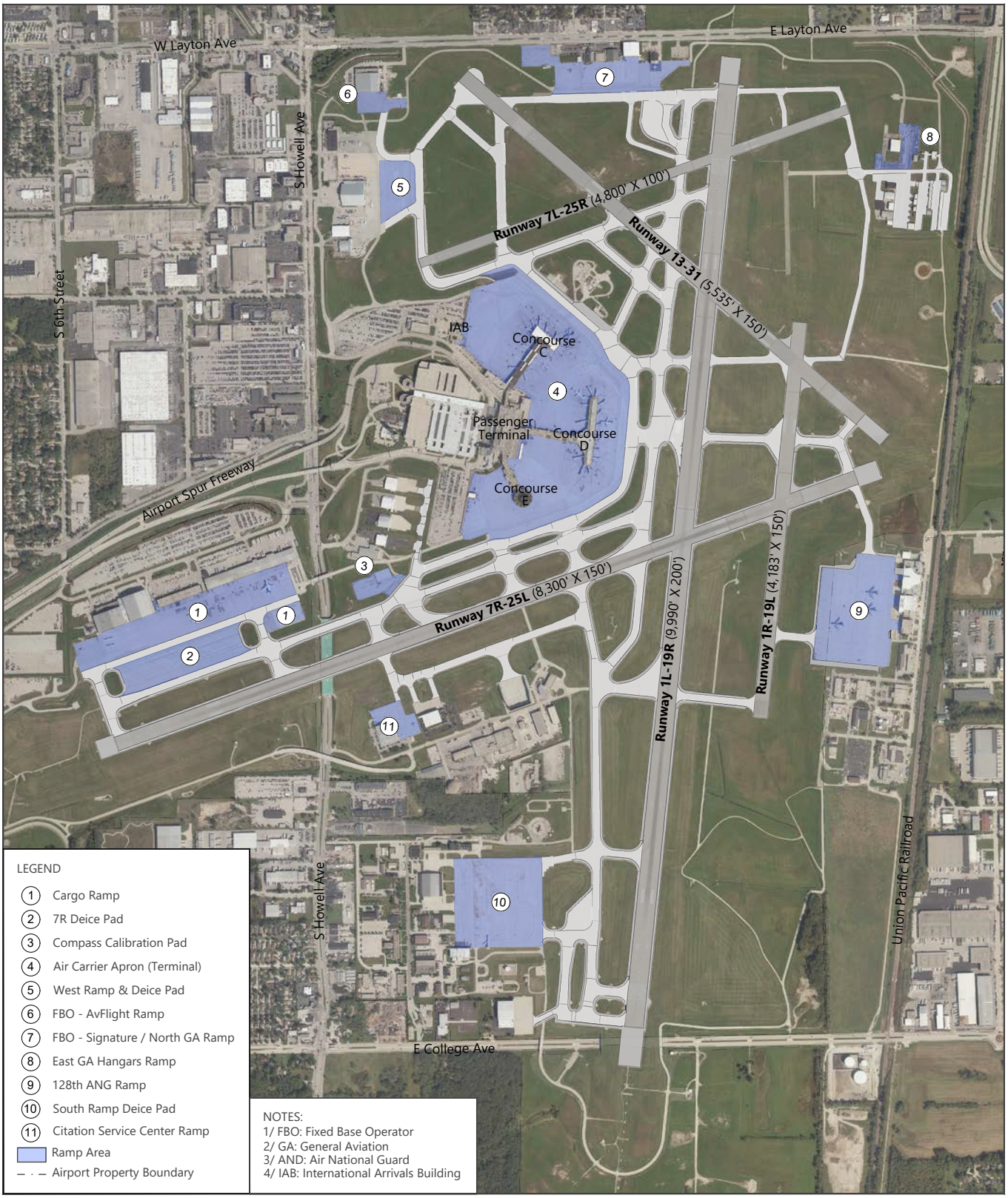
2.3.4 APRON (RAMP) FACILITIES

Apron areas, also referred to as ramps or pads, at the Airport are used to park and service passenger, cargo, military, or general aviation aircraft or to hold aircraft that are waiting for takeoff or a gate position. The primary apron areas of the airfield are shown on **Exhibit 2-8**, and a summary of their respective areas is provided in **Table 2-6**.

TABLE 2-6 APRON CHARACTERISTICS

APRON AREA DESCRIPTION	APRON AREA (ACRES)
Cargo Ramp	20.91
7R Deice Pad	10.08
Compass Calibration Pad	2.46
Air Carrier Apron (Terminal)	69.10
West Ramp	4.68
FBO[1] – AvFlight	2.08
FBO – Signature / North GA[2] Ramp	11.03
East GA Hangars Ramp	2.65
128th WI ANG[3] Ramp	19.98
South Deice Ramp	20.00
Citation Service Center	2.64
Total:	**165.61**

NOTES:
1 FBO: Fixed-Base Operator
2 GA: General Aviation
3 Wi ANG: Wisconsin Air National Guard
SOURCE: FAA Airports Geographic Information System Data - Project: MKE-138880, Survey Date: April 30, 2013; National Geodetic Survey Verification: March 7, 2014.



SOURCES: FAA Airports Geographic Information System Data - Project MKE-138880, Survey Date: April 30, 2013; National Geodetic Survey Verification: March 7, 2014; Quantum Spatial, September 2018.

EXHIBIT 2-8

APRON (RAMP) FACILITIES

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-8 Apron (Ramp) Facilities.dwgLayout: Exhibit 2-8 Plotted: Sep 18, 2019, 09:44AM

2.3.5 VEHICLE SERVICE ROADS AND ACCESS POINTS

Vehicle service roads (VSRs) provide vehicular access to facilities located throughout the airfield and are shown on Exhibit 2-6. The perimeter VSR generally provides access to all areas of the Airport Operations Area without the need for vehicles to enter movement areas. Two bridge structures convey the perimeter VSR across Howell Avenue on both the north and south sides of Runway 7R-25L. A third bridge structure conveys the perimeter VSR across College Avenue on the west side of Runway 1L. The segment of the VSR crossing College Avenue on the east side of Runway 1L is aligned over the College Avenue tunnel structure. This segment of the VSR is located outside the safety area but falls within the object free area of Runway 1L. As such, this segment of the VSR has restricted uses during instrument weather conditions.

Because of the airside/landside split that occurs within the South Maintenance area, a segment of the perimeter VSR is disconnected through this portion of the Airport. This split requires airfield service vehicles to leave the secured portion of the Airport at a security gate and travel roughly 900 feet on a landside (non-secure) roadway before re-entering the Airport Operations Area at another perimeter security gate location.

Generally, access between the landside and airside portions of the Airport is provided through a variety of controlled access points located along the perimeter fence and within the specific facilities adjacent to the Airport Operations Area.

2.3.6 ROADWAY TUNNEL STRUCTURES

Two separate tunnel structures allow the airfield to span Howell Avenue and College Avenue. The locations of these roadway tunnel structures are depicted on Exhibit 2-6.

The Howell Avenue Tunnel conveys Wisconsin Highway 38 under Runway 7R-25L and Taxiway A. The structure, originally constructed in 1964, is owned by Milwaukee County. In 1974, Runway 7R-25L and Taxiway A were overlaid with an additional layer of concrete, which included the area above the Howell Avenue Tunnel. The structure is 801 feet long and has 2 bores that each provide a 36-foot clear roadway width, with 3 lanes of traffic in both directions. The deck and abutments are post-tensioned. The most recent Bridge Inspection Report lists a minimum vertical clearance of 14.8 feet for the northbound roadway, and a minimum vertical clearance of 15.1 feet for the southbound roadway – both of which meet the minimum state highway standards for clearance of 14.75 feet.

The College Avenue Tunnel conveys the 4-lane roadway (also identified as County Highway ZZ) under the blast pad and safety critical areas extending off the end of Runway 1L. This tunnel was constructed in 2011 as part of a project to bring the safety areas of all the commercial service runways at MKE into compliance with FAA standards. The structure is a 640-foot cut and cover tunnel that includes 2 bores that are each 44 feet in width. Each bore of the structure conveys two lanes of traffic in each direction. Both the eastbound and westbound tunnel bores provide 15.0 feet of vertical clearance which meets County highway standards, and each bore also provides lanes for bike and pedestrian travel. The structure contains life safety features, including ventilation, lighting, fire detection and suppression, and other surveillance and alarm systems. Runway 1L is equipped with a CAT II/III instrument approach and the attendant ALSF-2 approach lighting system spans overtop the tunnel in addition to portions of the Runway 1L blast pad and a segment of the airfield perimeter service roadway.

2.3.7 AIRFIELD PAVEMENT CONDITIONS

Airfield pavements at MKE are inspected every three years as part of the WisDOT Bureau of Aeronautics' statewide Airport Pavement Management System. The goal of this program is to provide pavement information and analytical tools to help identify pavement-related needs and optimize the selection of projects and treatments over a multi-year period. Pavement conditions at MKE were last assessed in 2016 using the Pavement Condition Index (PCI)

procedure that quantifies the types, severities, and amounts of distress present. This information is then used to develop a composite index that represents the overall condition of the pavement in numerical terms, ranging from 0 (failed) to 100 (excellent). A map illustrating the 2016 PCI values for the MKE airfield is provided on **Exhibit 2-9**.

The 2016 Pavement Management Report identifies the MKE airfield as comprising just over 17 million square feet of pavement. The area-weighted PCI for the overall airfield pavements is 63. This cumulative 2016 PCI rating has dropped from 2013, which was also down from 2010. A breakout of the PCI values by pavement use are illustrated on **Exhibit 2-10**. The WisDOT Bureau of Aeronautics defines the Critical PCI value for Commercial Service runways as 75, and all other airfield pavements as 65. Exhibit 2-10 illustrates the 2016 PCI values at MKE in relationship to the WisDOT Bureau of Aeronautics Critical PCI thresholds.

Exhibit 2-11 illustrates how the PCI ranges are distributed to the overall airfield pavement area. Roughly 25 percent of the airfield has a PCI value greater than 70, requiring preventative maintenance. The remaining 75 percent of airfield has a PCI value below 70, reflecting a need for rehabilitation or reconstruction.

2.4 TERMINAL AND CONCOURSE FACILITIES

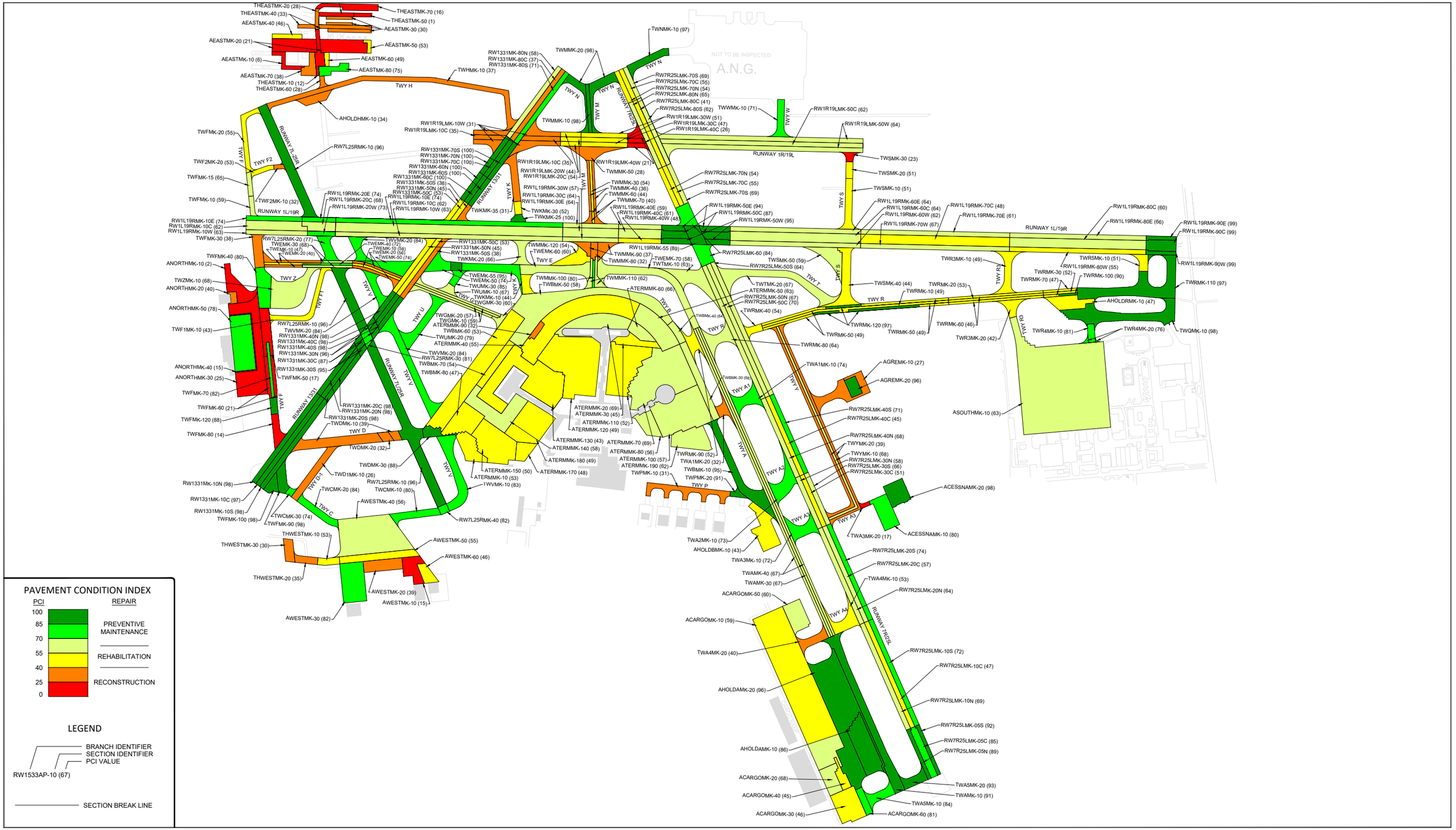
The passenger terminal generally comprises of the following floors:

- Upper Floor Spaces and Upper Mezzanine – Levels 4 through 6
- Concourse – Level 3
- Lower Mezzanine – Level 2
- Ground Floor – Level 1
- Basement – Level 0

The space makeup for each floor level is illustrated on **Exhibit 2-12** through **Exhibit 2-15**. An inventory of the space assignments for each level is provided in **Table 2-7** through **Table 2-10** and an overall space summary is provided in **Table 2-11**.

2.4.1 CONCOURSE LEVEL

The main concourse level includes the landside (non-secure) terminal mall, security screening checkpoints, the Mitchell Gallery of Flight Museum, airport conference rooms, office space, mechanical rooms, adjacent concessions, and other passenger amenities. The terminal mall feeds into three concourses: C, D and E. Concourse E is currently not in operation and is scheduled for redevelopment. Concourses C and D contain holdrooms, air carrier gates, concourse concessions, mechanical facilities, and other spaces. Airport Administration space is also located on this level. This area is located north of the terminal mall and effectively branches off from Concourse C at the non-secured side of the checkpoint.



SOURCE: 2016 Wisconsin Department of Transportation Bureau of Aeronautics Pavement Management Report

EXHIBIT 2-9

2016 PAVEMENT CONDITION INDEX MAP

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-9 Airfield PCN Data.dwgLayout: 2-9 Plotted: Sep 18, 2019, 09:46AM

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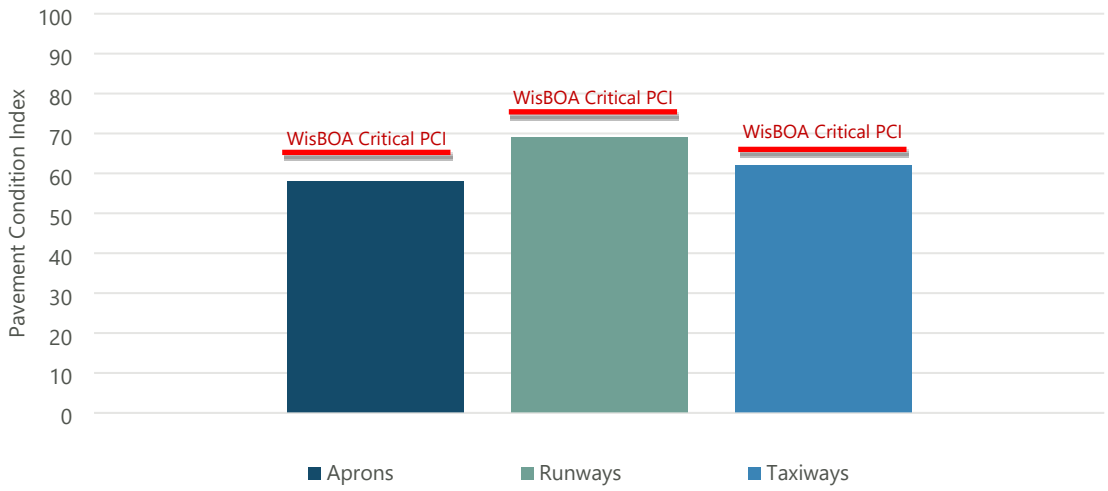
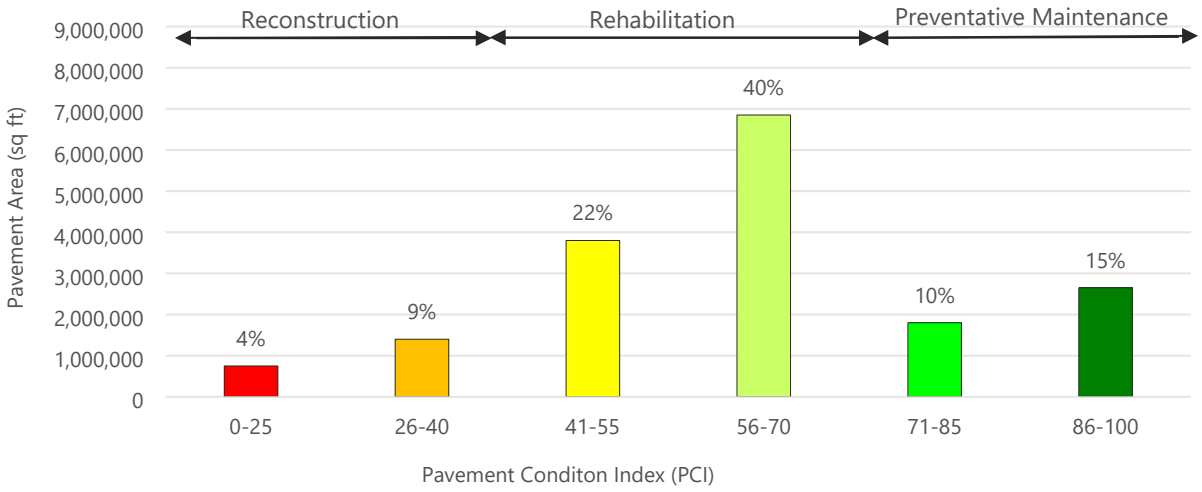
EXHIBIT 2-10 PAVEMENT CONDITION INDEX BY USE



NOTE:
1 WisDOT BOA: Wisconsin Department of Transportation Bureau of Aeronautics
2 PCI: Pavement Condition Index
SOURCE: 2016 Wisconsin Pavement Management Report, WisDOT BOA, 2016.

EXHIBIT 2-11 PAVEMENT CONDITION INDEX DISTRIBUTION



SOURCE: 2016 Wisconsin Pavement Management Report, WisDOT BOA, 2016.

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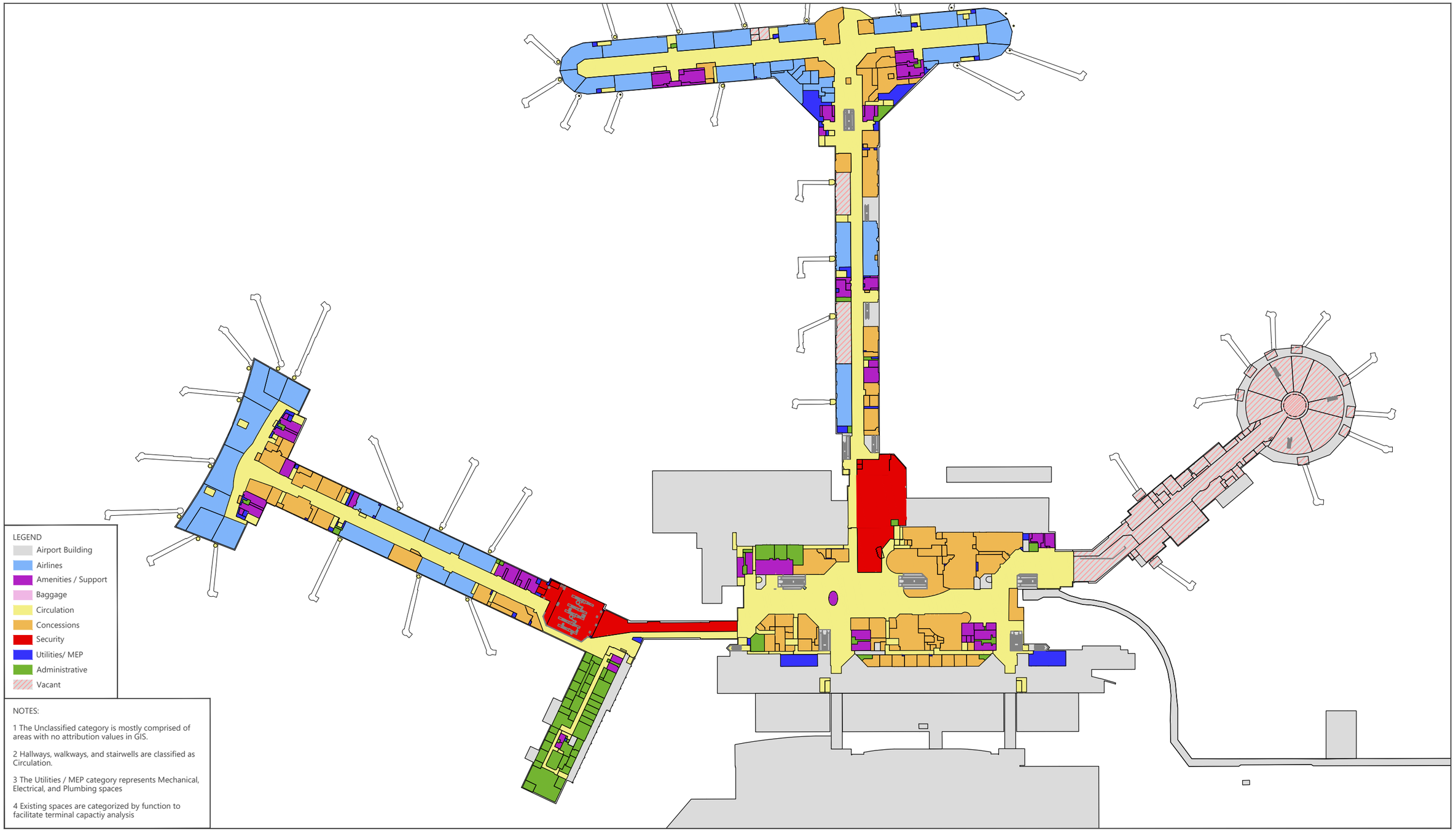

SOURCE: General Mitchell International Airport Geographic Information System (data provided November 2018); Site walk-through, January 2019.

EXHIBIT 2-12

TERMINAL SPACE INVENTORY - CONCOURSE LEVEL

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-12 TSI Concourse Level.dwgLayout: Terminal Space - Concourse Level Plotted: Feb 27, 2022, 02:59PM

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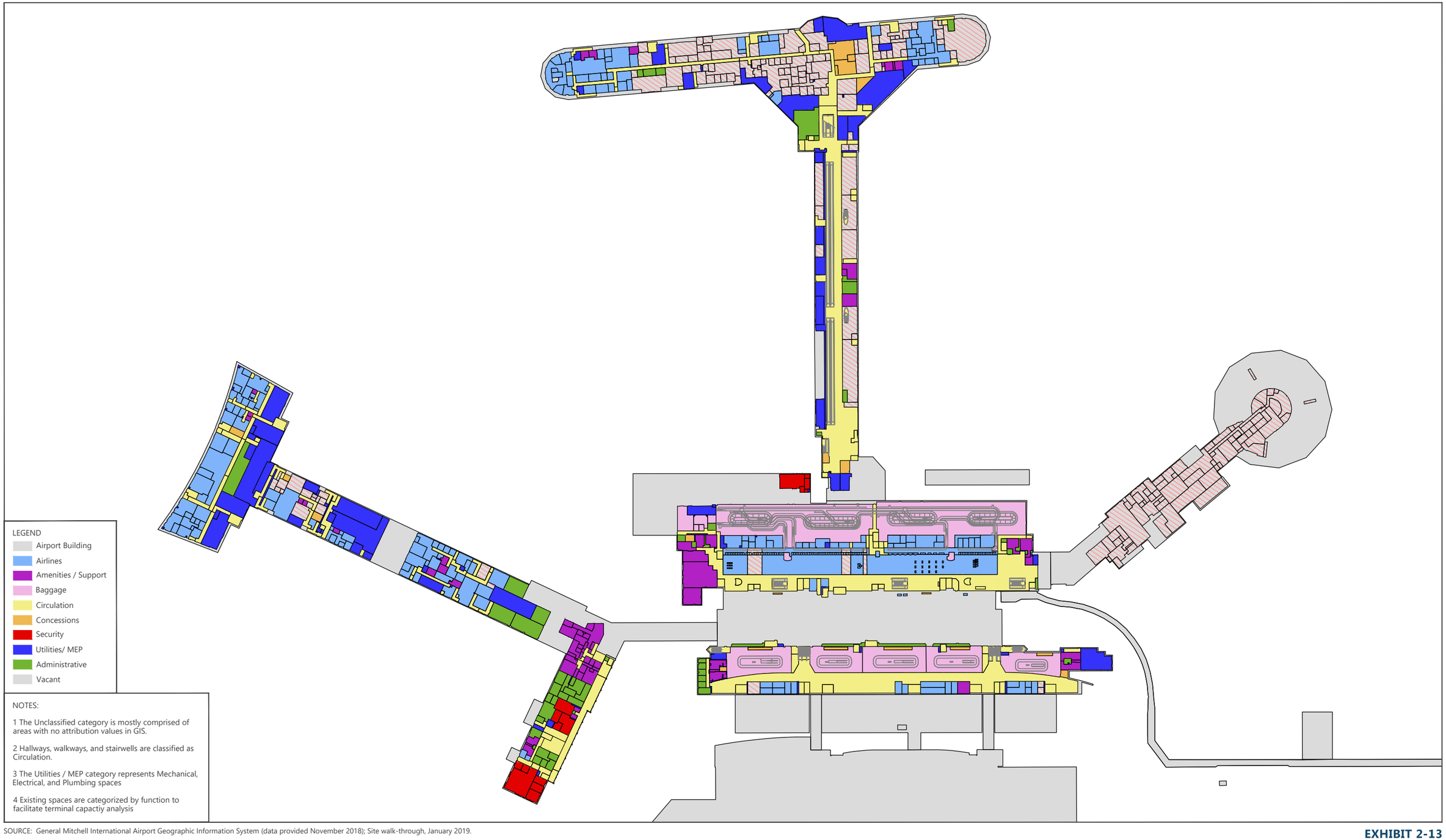

SOURCE: General Mitchell International Airport Geographic Information System (data provided November 2018); Site walk-through, January 2019.

EXHIBIT 2-13

TERMINAL SPACE INVENTORY - GROUND FLOOR LEVEL

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-13 TSI Ground Level.dwgLayout: Terminal Space - Ground Floor Plotted: Sep 24, 2019, 09:25AM

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SOURCE: General Mitchell International Airport Geographic Information System (data provided November 2018); Site walk-through, January 2019.

NORTH 0 150 ft

EXHIBIT 2-14

TERMINAL SPACE INVENTORY - UPPER MEZZANINE AND BASEMENT LEVELS

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-14 TSI Upper Mez_Basement.dwgLayout: Terminal Space - Upper Mezzanine and Basement Levels Plotted: Sep 24, 2019, 09:54AM

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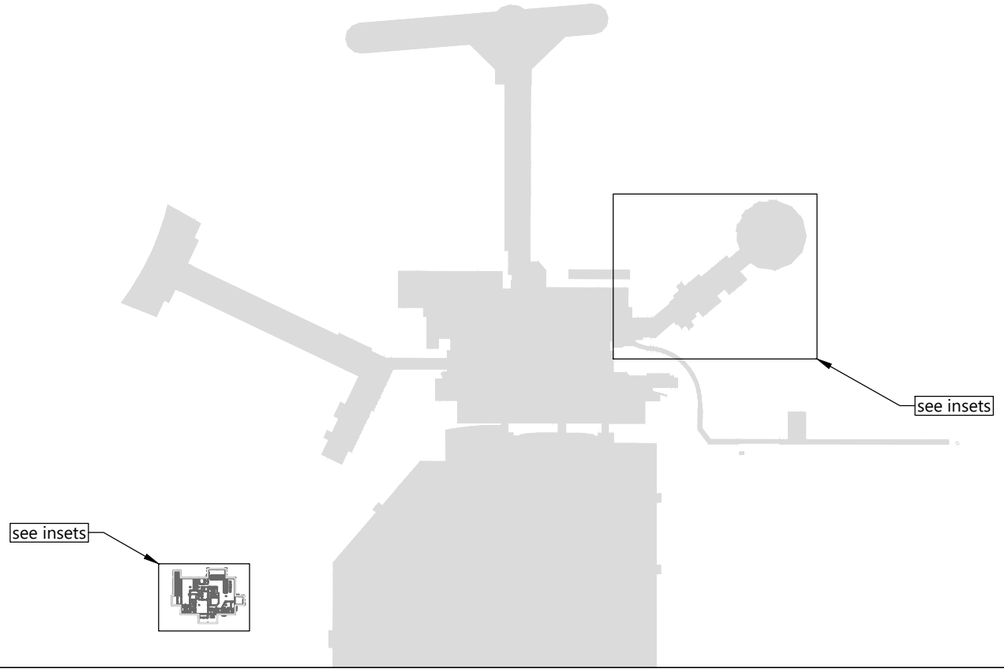
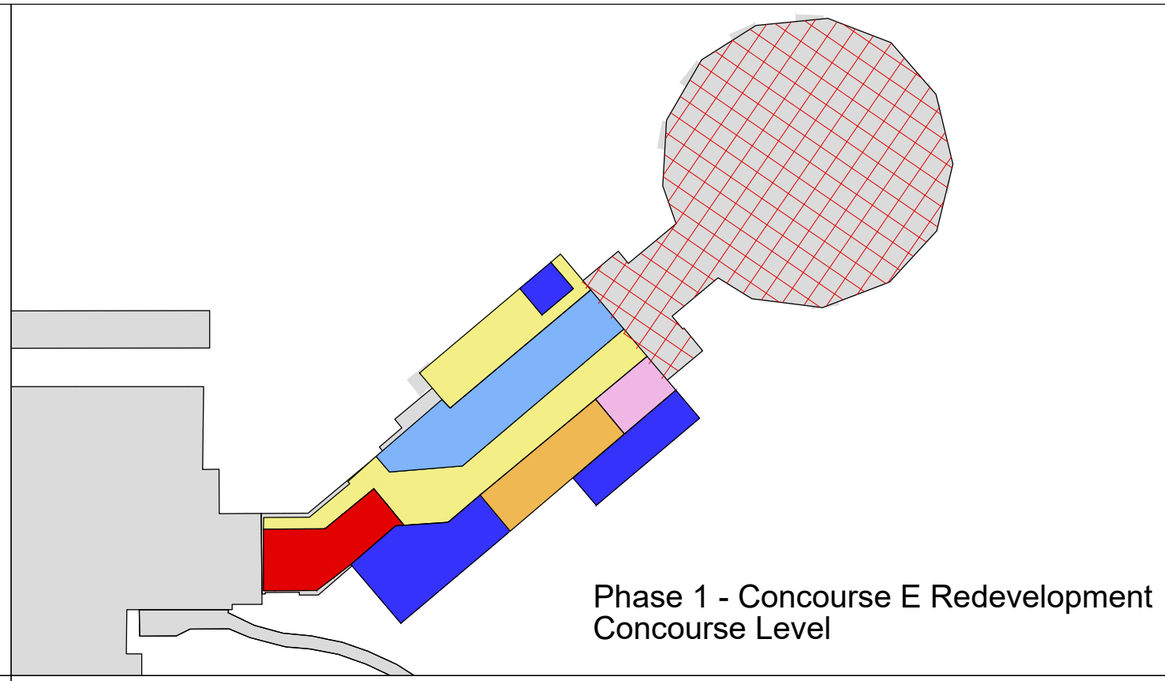




LEGEND
- Airport Building
- Airlines
- Amenities / Support
- Baggage
- Circulation
- Concessions
- Security
- Utilities/ MEP
- Vacant
- Concourse Demolition

NOTES:

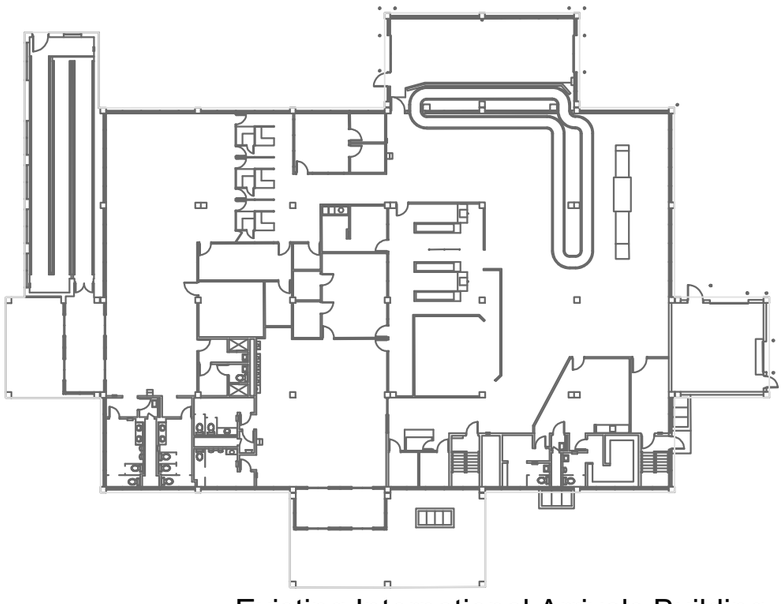
1 The Unclassified category is mostly comprised of areas with no attribution values in GIS.

2 Hallways, walkways, and stairwells are classified as Circulation.

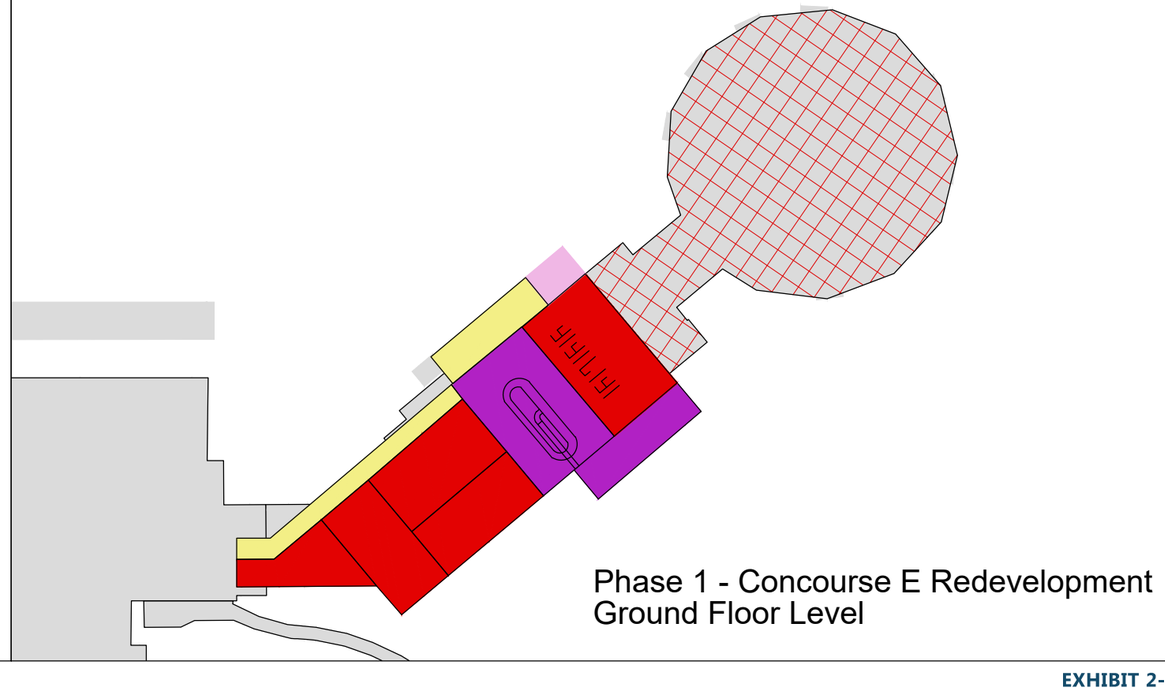
3 The Utilities / MEP category represents Mechanical, Electrical, and Plumbing spaces

4 Existing spaces are categorized by function to facilitate terminal capactiy analysis

5 Redevelopment of Concourse E will accommodate relocated International Arrivals passenger processing functions.



Existing International Arrivals Building



SOURCE: General Mitchell International Airport Geographic Information System (data provided November 2018); Site walk-through, January 2019.

NORTH 0 Not to Scale

EXHIBIT 2-15

TERMINAL SPACE INVENTORY - INTERNATIONAL ARRIVALS BUILDING AND CONCOURSE E REDEVELOPMENT

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-15 IAB and Concourse Redevelopment.dwgLayout: Terminal Space - IAD and E Plotted: Sep 23, 2019, 11:58AM

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TABLE 2-7 PASSENGER TERMINAL SPACE INVENTORY – BASEMENT LEVEL

SPACE CATEGORY	TERMINAL (SQUARE FEET)	CONCOURSE C (SQUARE FEET)	CONCOURSE D (SQUARE FEET)	CONCOURSE E[1] (SQUARE FEET)	ADMINISTRATION (SQUARE FEET)	INTERNATIONAL ARRIVALS (SQUARE FEET)	TOTAL (SQUARE FEET)
Airline Function	281	0	0	0	0	0	**281**
Ticketing	-	-	-	-	-	-	0
Hold Room	-	-	-	-	-	-	0
Club	-	-	-	-	-	-	0
Support	281	-	-	-	-	-	281
Other	-	-	-	-	-	-	0
Baggage Handling	43,927	0	0	0	0	0	**43,927**
Inbound	5,364	-	-	-	-	-	5,364
Outbound	-	-	-	-	-	-	0
Drive Lanes	38,563	-	-	-	-	-	38,563
Security	161	0	0	0	0	0	**161**
Check Point	-	-	-	-	-	-	0
Support	161	-	-	-	-	-	161
Other	-	-	-	-	-	-	0
Concessions	15,664	0	0	0	0	0	**15,664**
Concession Area	-	-	-	-	-	-	0
Support	15,664	-	-	-	-	-	15,664
Other	-	-	-	-	-	-	0
Airport	13,703	0	0	0	4,359	0	**18,062**
Administration	-	-	-	-	-	-	0
Operations	-	-	-	-	-	-	0
Support	13,703	-	-	-	4,359	-	18,062
Other	-	-	-	-	-	-	0
Utility / MEP	22,658	0	0	0	2,327	0	**24,985**
Amenities / Support	1,928	0	0	0	0	0	**1,928**
Restrooms	1,928	-	-	-	-	-	1,928
Sheriff Station	-	-	-	-	-	-	0
Museum / Other	-	-	-	-	-	-	0
Circulation	22,871	0	0	0	275	0	**23,146**
Unassigned Space	6,231	0	0	0	0	1,776	**8,007**
Total	127,424	0	0	0	6,961	1,776	**136,161**

NOTE:

1 Concourse E square footages reflect near-term redevelopment conditions as depicted on Exhibit 2-15.

2 Terminal space is categorized as necessary to facilitate terminal capacity calculations.

SOURCES: MKE Geographic Information System (GIS) Property and Space Layer Data – November 2018; Mead & Hunt/Ricondo site visit, January 2019.

TABLE 2-8 PASSENGER TERMINAL SPACE INVENTORY – GROUND FLOOR LEVEL

SPACE CATEGORY	TERMINAL (SQUARE FEET)	CONCOURSE C (SQUARE FEET)	CONCOURSE D (SQUARE FEET)	CONCOURSE E[1] (SQUARE FEET)	ADMINISTRATION (SQUARE FEET)	INTERNATIONAL ARRIVALS (SQUARE FEET)	TOTAL (SQUARE FEET)
Airline Function	27,212	22,095	13,409	0	200	0	**62,916**
Ticketing	13,853	-	-	-	-	-	13,853
Hold Room	-	-	-	-	-	-	0
Club	-	-	-	-	-	-	0
Support	6,761	22,095	13,409	-	200	-	42,465
Other	6,598	-	-	-	-	-	6,598
Baggage Handling	48,470	0	0	7,960	0	0	**48,470**
Inbound	19,468	-	-	-	-	-	19,468
Outbound	29,002	-	-	-	-	-	29,002
Support	-	-	-	-	-	-	0
Security	1,221	0	0	17,479	4,985	0	**6,206**
Check Point	-	-	-	-	-	-	0
Support	1,221	-	-	-	-	-	1,221
Other	-	-	-	-	4,985	-	4,985
Concessions	1,354	570	2,821	0	0	0	**4,745**
Concession Area	1,191	-	-	-	-	-	1,191
Support	163	570	2,821	-	-	-	3,554
Other	-	-	-	-	-	-	0
Airport	2,802	5,193	3,328	0	4,638	0	**15,961**
Administration	-	-	-	-	4,536	-	4,536
Operations	708	-	-	-	-	-	708
Support	2,094	5,193	3,328	-	102	-	10,717
Other	-	-	-	-	-	-	0
Utility / MEP	3,513	18,613	15,896	0	334	0	**38,356**
Amenities / Support	7,675	1,291	2,055	749	5,179	0	**16,200**
Restrooms	3,027	1,291	2,055	-	893	-	7,266
Sheriff Station	-	-	-	-	4,286	-	4,286
Museum/ Other	4,648			-	-	-	4,648
Circulation	36,760	9,501	29,216	4,184	5,039	217	**80,733**
Unassigned Space	2,526	3,224	39,042	0	0	18,041	**87,589**
Total	131,533	60,487	105,767	30,372	20,375	18,258	**361,176**

NOTE:
1 Concourse E square footages reflect near-term redevelopment conditions as depicted on Exhibit 2-15.
2 Terminal space is categorized as necessary to facilitate terminal capacity calculations.
SOURCES: MKE Geographic Information System (GIS) Property and Space Layer Data – November 2018; Mead & Hunt/Ricondo site visit, January 2019.

TABLE 2-9 PASSENGER TERMINAL SPACE INVENTORY – CONCOURSE LEVEL

SPACE CATEGORY	TERMINAL (SQUARE FEET)	CONCOURSE C (SQUARE FEET)	CONCOURSE D (SQUARE FEET)	CONCOURSE E[1] (SQUARE FEET)	ADMINISTRATION (SQUARE FEET)	INTERNATIONAL ARRIVALS (SQUARE FEET)	TOTAL (SQUARE FEET)
Airline Function	31	27,678	34,888	6,008	0	0	**62,597**
Ticketing	31	-	-	-	-	-	31
Hold Room	-	26,734	29,658	-	-	-	56,392
Club	-	-	5,002	-	-	-	5,002
Support	-	944	228	-	-	-	1,172
Other	-	-	-	-	-	-	0
Baggage Handling	0	0	0	0	0	0	**0**
Inbound	-	-	-	-	-	-	0
Outbound	-	-	-	-	-	-	0
Drive Lanes	-	-	-	-	-	-	0
Security	3,372	10,906	8,530	3,178	0	0	**22,808**
Checkpoint	3,372	10,481	7,794	-	-	-	21,647
Support	-	425	736	-	-	-	1,161
Other	-	-	-	-	-	-	0
Concessions	36,039	12,388	15,405	3,015	0	0	**63,832**
Concession Area	28,219	12,388	15,405	-	-	-	56,012
Support	7,820	-	-	-	-	-	7,820
Other	-	-	-	-	-	-	0
Airport	3,635	367	1,019	0	11,441	0	**16,462**
Administration	-	-	-	-	11,329	-	11,329
Operations	-	-	-	-	-	-	0
Support	3,635	367	1,019	-	112	-	5,133
Other	-	-	-	-	-	-	0
Utility / MEP	2,838	1,171	3,335	6,748	18	0	**7,362**
Amenities / Support	6,080	4,552	6,947	1,314	588	0	**18,167**
Restrooms	3,873	3,862	6,343	-	588	-	14,666
Sheriff Station	-	-	-	-	-	-	0
Museum / Info Other	2,207	690	604	-	-	-	3,501
Circulation	46,058	23,942	44,604	9,351	2,807	0	**117,411**
Unassigned Space	0	0	4,679	0	0	0	**49,544**
Total	98,053	81,004	119,407	29,614	14,854	0	**358,183**

NOTE:

1 Concourse E square footages reflect near-term redevelopment conditions as depicted on Exhibit 2-15.

2 Terminal space is categorized as necessary to facilitate terminal capacity calculations.

SOURCES: MKE Geographic Information System (GIS) Property and Space Layer Data – November 2018; Mead & Hunt/Ricondo site visit, January 2019.

TABLE 2-10 PASSENGER TERMINAL – UPPER LEVELS AND MEZZANINE LEVELS

SPACE CATEGORY	TERMINAL (SQUARE FEET)	CONCOURSE C (SQUARE FEET)	CONCOURSE D (SQUARE FEET)	CONCOURSE E[1] (SQUARE FEET)	ADMINISTRATION (SQUARE FEET)	INTERNATIONAL ARRIVALS (SQUARE FEET)	TOTAL (SQUARE FEET)
Airline Function	0	0	0	0	0	0	**0**
Ticketing	-	-	-	-	-	-	0
Hold Room	-	-	-	-	-	-	0
Club	-	-	-	-	-	-	0
Support	-	-	-	-	-	-	0
Other	-	-	-	-	-	-	0
Baggage Handling	0	0	0	0	0	0	**0**
Inbound	-	-	-	-	-	-	0
Outbound	-	-	-	-	-	-	0
Drive Lanes	-	-	-	-	-	-	0
Security	20,399	0	0	0	0	0	**20,399**
Check Point	-	-	-	-	-	-	0
Support	20,399	-	-	-	-	-	20,399
Other	-	-	-	-	-	-	0
Concessions	0	0	0	0	0	0	**0**
Concession Area	-	-	-	-	-	-	0
Support	-	-	-	-	-	-	0
Other	-	-	-	-	-	-	0
Airport	3,284	0	0	0	0	0	**3,284**
Administration	-	-	-	-	-	-	0
Operations	3,284	-	-	-	-	-	3,284
Support	-	-	-	-	-	-	0
Other	-	-	-	-	-	-	0
Utility / MEP	14,507	0	167	0	331	0	**15,005**
Amenities / Support	48	0	0	0	0	0	**48**
Restrooms	48	-	-	-	-	-	48
Sheriff Station	-	-	-	-	-	-	0
Museum / Other	-	-	-	-	-	-	0
Circulation	4,000	0	300	0	110	0	**4,410**
Unassigned Space	0	0	1,076	1,293	0	0	**2,369**
Total	42,238	0	1,543	1,293	441	0	**45,515**

NOTE:
1 Concourse E square footages reflect near-term redevelopment conditions as depicted on Exhibit 2-15.
2 Terminal space is categorized as necessary to facilitate terminal capacity calculations.
SOURCES: MKE Geographic Information System (GIS) Property and Space Layer Data – November 2018; Mead & Hunt/Ricondo site visit, January 2019.

TABLE 2-11 PASSENGER TERMINAL SPACE INVENTORY – OVERALL SUMMARY (ALL LEVELS)

SPACE CATEGORY	TERMINAL (SQUARE FEET)	CONCOURSE C (SQUARE FEET)	CONCOURSE D (SQUARE FEET)	CONCOURSE E[1] (SQUARE FEET)	ADMINISTRATION (SQUARE FEET)	INTERNATIONAL ARRIVALS (SQUARE FEET)	TOTAL (SQUARE FEET)
Airline Function	27,524	49,773	48,297	6008	200	0	**125,794**
Ticketing	13,884	0	0	-	0	0	13,884
Hold Room	0	26,734	29,658	-	0	0	56,392
Club	0	0	5,002	-	0	0	5,002
Support	7,042	23,039	13,637	-	200	0	43,918
Other	6,598	0	0	-	0	0	6,598
Baggage Handling	92,397	0	0	7,960	0	0	**92,397**
Inbound	24,832	0	0	-	0	0	24,832
Outbound	29,002	0	0	-	0	0	29,002
Drive Lanes / Support	38,563	0	0	-	0	0	38,563
Security	25,153	10,906	8,530	20,657	4,985	0	**49,574**
Check Point	3,372	10,481	7,794	-	0	0	21,647
Support	21,781	425	736	-	0	0	22,942
Other	0	0	0	-	4,985	0	4,985
Concessions	53,057	12,958	18,226	3,015	0	0	**84,241**
Concession	29,410	12,388	15,405	-	0	0	57,203
Support	23,647	570	2,821	-	0	0	27,038
Other	0	0	0	-	0	0	0
Airport	23,424	5,560	4,347	0	20,438	0	**53,769**
Administration	0	0	0	-	15,865	0	15,865
Operations	3,992	0	0	-	0	0	3,992
Support	19,432	5,560	4,347	-	4,573	0	33,912
Other	0	0	0	-	0	0	0
Utility / MEP	43,516	19,784	19,398	6,748	3,010	0	**85,708**
Amenities/Support	15,731	5,843	9,002	2,063	5,767	0	**36,343**
Restrooms	8,876	5,153	8,398	-	1,481	0	23,908
Sheriff Station	0	0	0	-	4,286	0	4,286
Museum / Other	6,855	690	604	-	0	0	8,149
Circulation	109,689	33,443	74,120	13,535	8,231	217	**225,700**
Unassigned Space	8,757	3,224	44,797	0	0	19,817	**147,509**
Total	399,248	141,491	226,717	59,986	42,631	20,034	**901,035**

NOTE:

1 Concourse E square footages reflect near-term redevelopment conditions as depicted on Exhibit 2-15.

2 International Arrivals Building functions will be relocated to redeveloped Concourse E; space is identified as unassigned to represent post-relocation conditions.

SOURCES: Milwaukee Mitchell International Airport Geographic Information System Property and Space Layer Data – November 2018; Mead & Hunt/Ricondo site visit, January 2019.

2.4.2 GROUND FLOOR LEVEL

The ground floor level includes the airline ticketing functions, baggage makeup, and baggage screening. Access from the lower ground floor ticketing level to the security screening checkpoints at the concourse level is provided by three escalator systems and elevators located at the north, central, and south ends of the ticketing area.

The ground floor level also houses the baggage claim area, which is located between the arrival and departure roadways of the terminal curbfront areas. The baggage claim area encompasses five carousels.

The ground floor level of the concourse areas is made up of airline office and operations space, hold rooms for ground boarding, mechanical areas, and other spaces. The ground floor level of the administration area includes office space for Airport badging, the Transportation Security Administration (TSA), the sheriff station, and other office and support spaces utilized by Airport staff.

2.4.3 UPPER LEVELS AND MEZZANINES

Upper levels of the terminal exist within isolated segments of Concourse D, Concourse E and the terminal mall. These areas include space for utilities and Heating, Ventilating and Air Conditioning (HVAC) facilities and areas that previously functioned as ground operation control towers.

The upper mezzanine is located just above the concourse level within the southeast portion of the terminal and just outside the entrance to Concourse E. The upper mezzanine area houses the Airport Operations Administration space for both airside and landside operations. A portion of the upper mezzanine space also serves as the Airport's Emergency Operations Center and briefing room. The upper mezzanine is not adequately sized to accommodate these multiple operations and space requirements. The Airport has identified a need to relocate the emergency operations center and briefing room out of the upper mezzanine level, to a location yet to be determined. An allowance for this needed space will be carried forward in the discussion of facility requirements and in the development of alternatives.

The lower mezzanine level includes the space between the concourse and ground floor levels. This level includes the area for the Transportation Security Administration's (TSA's) in-line baggage screening. This level also includes a corridor for mechanical, electrical, plumbing and similar utility infrastructure.

2.4.4 BASEMENT LEVEL

The basement level includes drive lanes for baggage handling and concessions deliveries that connect this area to the apron level. The basement level also include space for concessions storage and support, office and utility spaces, airport maintenance and custodial space, and the handling systems which convey domestic baggage to the baggage claim area and carrousels located directly above at ground level.

2.4.5 INTERNATIONAL ARRIVALS BUILDING AND CONCOURSE E REDEVELOPMENT

The International Arrivals Building (IAB) is illustrated on Exhibit 2-15. The IAB is remotely located approximately 1,000 feet northwest of Concourse C and is isolated from terminal services for connecting flights and other amenities. The facility was constructed in the 1970s, is a slab on grade, single story building, approximately 20,000 square feet in size. The IAB has two primary aircraft ramp positions but a single passenger loading bridge. The IAB is used for international arrivals only and has intermittent daily/weekly use for most of the year except for weekends during peak charter season.

The IAB is undersized and does not meet current U.S. Customs and Border Protection standards and requirements. In 2017, the Airport finalized a feasibility study evaluating alternatives for construction of a new IAB facility. The

preferred concept identified in the feasibility study includes demolishing the existing Concourse E (approximately 71,000 square feet) and phased reconstruction as a dual-use facility with swing gates to accommodate both domestic and international operations.

Milwaukee County has committed to advancing the first phase of the Concourse E redevelopment project and the Airport is currently in the final stages of selection for design and architectural services. The near-term Phase 1 concept consists of a two-gate facility (approximately 60,000 square feet) extending out from the existing connection point to the terminal and is illustrated on Exhibit 2-15. Given the near-term nature of the project, the Phase 1 limits of the Concourse E redevelopment have been inventoried as the existing condition within the terminal space inventories provided in Table 2-7 through Table 2-11.

2.4.6 AIR CARRIER APRONS AND GATE POSITIONS

Aircraft gates are leased by airlines for use in boarding and deboarding passengers. Those gates not currently leased are controlled and managed by the County for use as needed to accommodate new entrant air service, irregular operations, charter activity, or other uses not accommodated at leased gates. **Table 2-12** summarizes existing gates, the airline currently leasing each gate, and the largest aircraft accommodated at each gate with the associated airplane design group, and overall area.

Exhibit 2-16 illustrates the aircraft gates and parking positions in relationship to Concourse C and Concourse D. No gates located at Concourse E are currently leased. This concourse will be redeveloped to accommodate the relocation of facilities and functions engaged in the process of arriving international passengers.

TABLE 2-12 (1 OF 2) CONCOURSE GATE POSITIONS AND USAGE

GATE	AIRLINE	LARGEST AIRCRAFT ACCOMMODATED	AIRCRAFT DESIGN GROUP	LEASED RAMP (SQUARE FEET)	VACANT / UNLEASED RAMP AREA (SQUARE FEET)
Concourse C					
C9	United Airlines, Inc.	Boeing 737—MAX8	III	29,420	
C10	Air Canada	Boeing 737—MAX8	III	21,970	
C11	United Airlines, Inc.	Boeing 737—MAX8	III	22,585	
C12	Volaris Airlines, Inc.	Boeing 737—MAX8	III	21,768	
C14	Southwest Airlines Co.	Boeing 737-800	III	30,311	
C15	United Airlines, Inc.	Boeing 737—MAX8	III	24,927	
C18	Southwest Airlines Co.	Boeing 737-800	III	24,942	
C19	Southwest Airlines Co.	Boeing 737—MAX8	III	22,886	
C20	Southwest Airlines Co.	Boeing 737—MAX8	III	18,875	
C21	Southwest Airlines Co.	Boeing 737—MAX8	III	19,142	
C22	Southwest Airlines Co.	Boeing 737—MAX8	III	17,867	
C23	Southwest Airlines Co.	Boeing 737—MAX8	III	18,722	
C24	Southwest Airlines Co.	Boeing 737—MAX8	III	16,760	
C25	Southwest Airlines Co.	Boeing 737—MAX8	III	18,382	
Concourse D					
D27	One Jet, Inc.	Embraer E190	II	29,794	
D27A	Unassigned	N/A	N/A		7,998
D28	Unassigned	N/A	N/A		25,932
D29	Unassigned	N/A	N/A		22,545
D30	Unassigned	Boeing 737—MAX8	III		19,990
D35	Unassigned	Boeing 777-300	IV		
D36	Unassigned	Boeing 737-900	III		15,681
D39	Unassigned	Boeing 737-900	III		19,003
D41	Frontier Airlines, Inc.	Airbus A321	III	21,502	
D42	Allegiant Airlines LLC	Boeing 737-800	III	22,312	

Note: Gates currently listed as N/A are gates with lower-level hold rooms and are not frequently utilized by airlines. Maximum aircraft sizing could not be determined for each gate due to new configuration of Gate D35 and underutilization of holdroom/ramp areas.

TABLE 2-12 (2 OF 2) CONCOURSE GATE POSITIONS AND USAGE

GATE	AIRLINE	LARGEST AIRCRAFT ACCOMMODATED	AIRCRAFT DESIGN GROUP	LEASED RAMP (SQUARE FEET)	VACANT / UNLEASED RAMP AREA (SQUARE FEET)
D43	Delta Airlines, Inc.	Boeing 757-300	IV	19,026	
D44	Delta Airlines, Inc.	Boeing 757-300	IV	20,900	
D45	Delta Airlines, Inc.	Boeing 757-300	IV	18,953	
D46	Delta Airlines, Inc.	Boeing 757-300	IV	18,205	
D47	Delta Airlines, Inc.	Boeing 757-300	IV	18,687	
D48/49	Delta Airlines, Inc.	Boeing 757-300	IV	21,724	
D51	Alaska Airlines, Inc.	Boeing 737-900	III	18,693	
D52	American Airlines, Inc.	Airbus A320	III	31,383	
D53	Unassigned	Boeing 737-800	III		25,326
D54	American Airlines, Inc	Airbus A321	III	16,929	
D55	American Airlines, Inc.	Airbus A319	III	15,614	
D56	American Airlines, Inc.	Airbus A-321	III	14,174	
Concourse E					
E60	Vacant				16,009
E61	Vacant				24,039
E62	Vacant				21,848
E63	Vacant				16,088
E64	Vacant				17,117
E65	Vacant				17,826
E66	Vacant				21,320
E67	Vacant				13,966
E68	Vacant				28,128
E69	Vacant				32,401

NOTE: Occupancy reflects terminal lease documents as of November 2018.
SOURCE: Himalayan Consultants LLC site survey results, May, 2019; Mead & Hunt gate allocations, May 2019.

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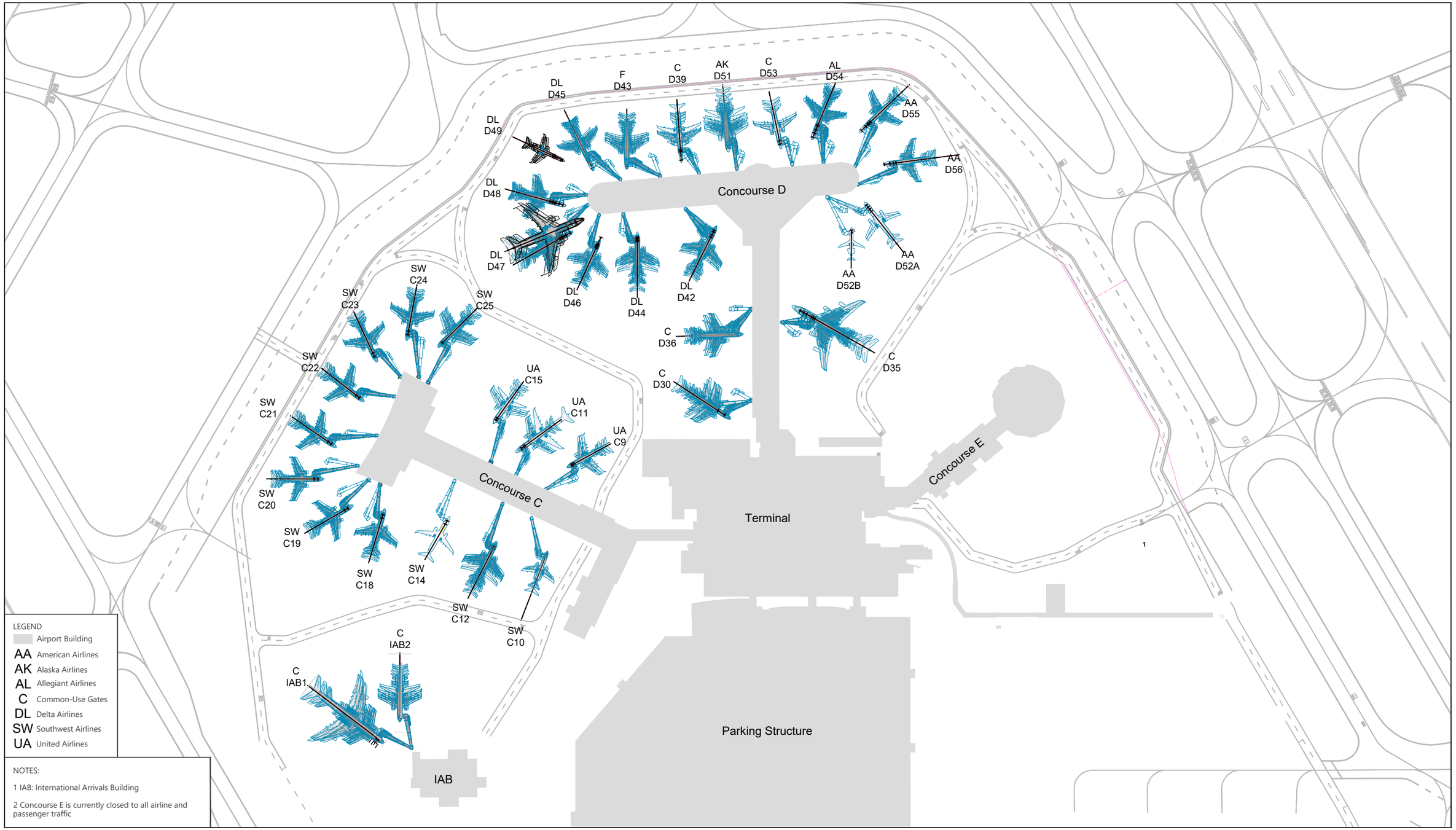

SOUCES: Gate Utility Study, 2019; Mead & Hunt Hand Mark Up, Gate Facility Layout, May 2019.

EXHIBIT 2-16

GATE POSITIONS AND AIRCRAFT PARKING

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-16 Gate Positions.dwgLayout: Gate Positions and AC Parking Plotted: Sep 17, 2019, 09:24PM

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2.5 LANDSIDE TRANSPORTATION FACILITIES

Landside transportation facilities include the non-secure vehicle access and circulation facilities in and around the Airport. This section describes the existing layout, facilities, and operation of the Airport's landside environment.

2.5.1 REGIONAL CONNECTIVITY

The regional transportation network that surrounds MKE is illustrated on **Exhibit 2-17**. Regional connectivity to the Airport is provided by three interstate highways, one United States highway and two Wisconsin state highways (WIS). While Interstate Highway 41 as described below is co-designated as United States Highway 41, this document will refer to the route as Interstate Highway 41.

Regional roadways providing access to the Airport include:

- Interstate Highway 43/94 – This is a divided highway located north of the Airport that currently carries between 117,000 and 135,000 vehicles on a typical day. Interstate Highway 43/94 has four travel lanes in each direction running north-south and connects to Interstate Highway 41/94 and Interstate Highway 41/43/894 northwest of the Airport.
- Interstate Highway 41/43/894 – This is a divided highway northwest of the Airport that currently carries between 133,000 and 139,000 vehicles on a typical day. Interstate Highway 41/43/894 has four travel lanes in each direction running east-west and connects to Interstate Highway 41/94 and Interstate Highway 43/94 northwest of the Airport.
- Interstate Highway 41/94 – This is a divided highway located west of the Airport that currently carries between 143,000 and 152,000 vehicles on a typical day. Interstate Highway 41/94 has four travel lanes in each direction running north-south and connects to Interstate Highway 43/94 and Interstate Highway 41/43/894 northwest of the Airport.
- WIS 119, or Airport Spur Freeway – This highway extends from Interstate Highway 41/94 and provides direct access to the Airport. WIS 119 currently carries about 23,800 vehicles on a typical day. The freeway designation ends as the roadway enters the Airport.
- WIS 38, or South Howell Avenue – This highway has three travel lanes in each direction and runs north-south with access to the Airport. WIS 38 currently carries about 24,400 vehicles on a typical day.
- WIS 794, or Lake Parkway – This highway is located east of the Airport and provides access from downtown Milwaukee and the Port of Milwaukee to the Airport via East Layton Avenue. WIS 794 has two travel lanes in each direction.
- WIS 241, or 27th Street – This highway has three travel lanes in each direction and runs north-south with connections to West College Avenue and West Layton Avenue. WIS 241 is located west of Interstate Highway 41/94.

2.5.2 PRIMARY AIRPORT ACCESS POINTS

Primary access roadways serve as the landside interface between the regional roadway system and the terminal curbfront facilities, parking areas, and Airport support/ancillary facilities. The primary Airport access routes are illustrated on **Exhibit 2-18**.

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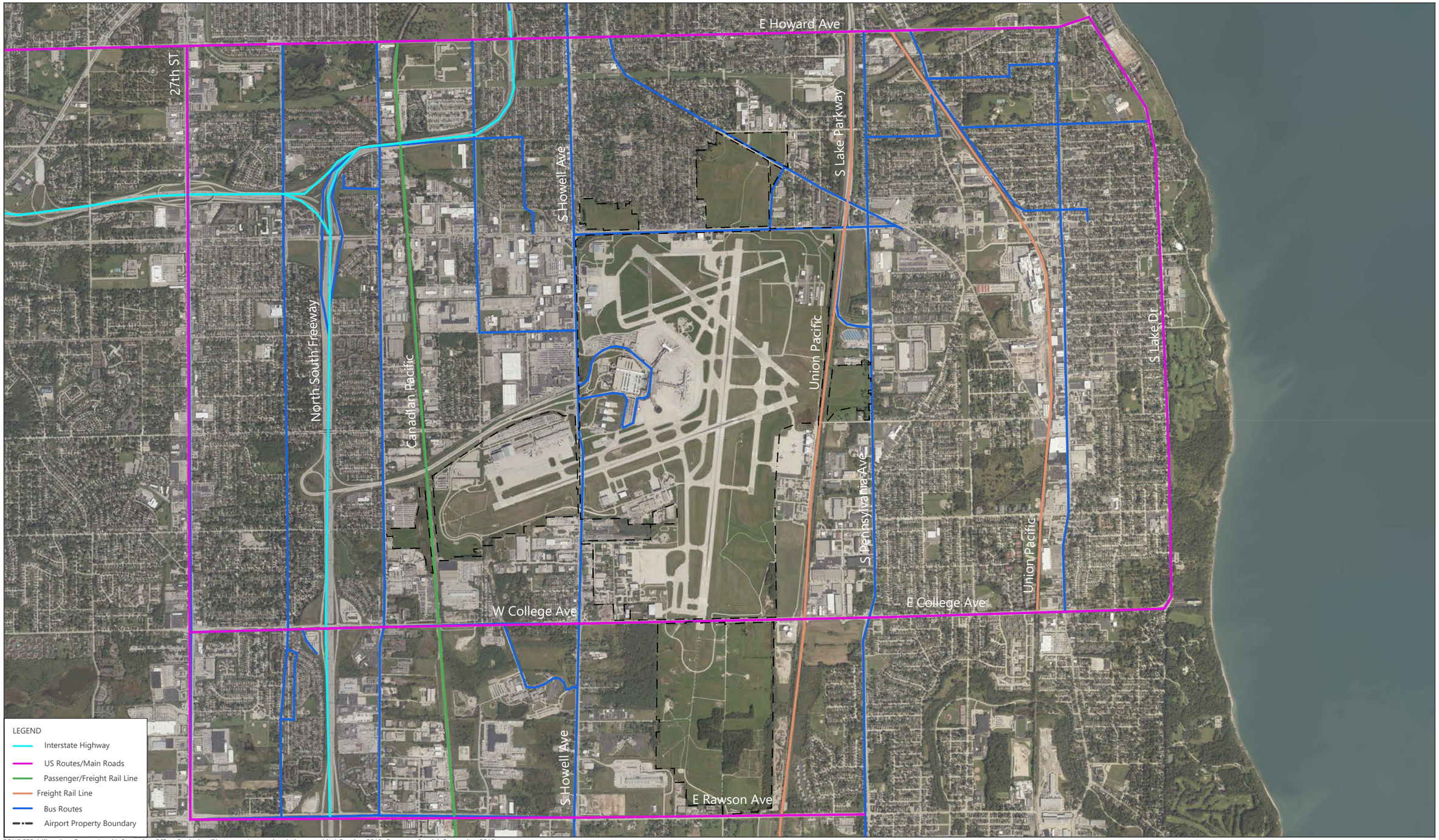

SOURCES: Milwaukee County Land Information Office, Eagleview/Pictometry International, data provided October 2018; Quantum Spatial, September 2018.

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EXHIBIT 2-17

REGIONAL TRANSPORTATION NETWORK

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SOURCES: Milwaukee County Land Information Office, Eagleview/Pictometry International, data provided October 2018; Quantum Spatial, September 2018.

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EXHIBIT 2-18

PRIMARY AIRPORT ACCESS POINTS

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The primary regional access to the Airport is from the west, via WIS 119 or the Airport Spur Freeway, from Interstate Highway 41/94. The Airport Spur Freeway provides direct and free flow access to the Airport and becomes the Airport Spur within the Airport boundary. The Airport Spur provides access to and from the terminal and commercial aviation facilities.

The Airport Spur serves as the gateway to access the passenger terminal building, the associated vehicle parking facilities, and airport support facilities including:

- Airport Traffic Control Tower and related FAA facilities
- International Arrivals Building
- Airport Administration and employee parking
- Central Utility Building

South Howell Avenue provides regional and local access to the Airport from the south and north and is perpendicular to and under WIS 119 via grade separation. The Airport Spur also provides links to South Howell Avenue via two signalized intersections. The signalized intersections each provide a connection between the Airport Spur, South Howell Avenue, and interchange ramps of the Airport Spur Freeway.

2.5.3 SECONDARY AIRPORT ACCESS POINTS

Secondary access roadways serve as the landside interface between the local roadway system and the terminal curbfront facilities, parking areas, and Airport support/ancillary facilities. Airport facilities can be accessed via secondary airport access points as illustrated on **Exhibit 2-19**, including:

- West Grange Avenue – This roadway, located west of the Airport, has two travel lanes in each direction and runs east-west, ending at South Howell Avenue. West Grange Avenue has access to the Airport Spur Freeway via a slip ramp.
- East/West Layton Avenue – This roadway, located north of the Airport, has two travel lanes in each direction and runs east-west intersecting South Howell Avenue on the west side of the Airport. East Layton Avenue provides access to facilities on the north side of the Airport. South Howell Avenue is the transition between east and west roadway designations.
- South Howell Avenue – This roadway provides access to the MKE Regional Business Park south of the Airport.
- East/West College Avenue – This roadway, located south of the Airport, has three travel lanes in each direction and runs east-west intersecting South Howell Avenue. East College Avenue provides access to facilities on the south side of the Airport including the MKE Regional Business Park via South Jasper Avenue.
- South 6th Street – This roadway, located west of the Airport, has one travel lane in each direction and runs north-south with access to the Milwaukee Airport Railroad Station parking lot and West Air Cargo Way. South 6th Street intersects West Grange Avenue and West College Avenue.

- West Air Cargo Way – This roadway, located within the Airport boundary, runs between South 6th Street and South Howell Avenue with access to Super Saver Lot B and the cargo terminal area. West Air Cargo Way also intersects the Airport Spur.
- East Citation Way – This roadway, located within the southern limits of the Airport, provides access to South Maintenance Area, Airport support facilities, and corporate hangars.

2.5.4 TERMINAL CIRCULATION

The Airport Spur serves as the on-Airport circulation roadway from WIS 119/Airport Spur Freeway. The Airport Spur provides interconnectivity to a majority of the roadways within the Airport, particularly west of the terminal. The Airport Spur runs in a loop around the parking garage and west of the terminal. Circulation adjacent to the terminal and parking areas is provided by a series of intertwined roadways that connect to the Airport Spur. Many of the connecting roadways are not named. **Exhibit 2-20** illustrates the orientation and flow of the circulation roadways within the terminal core.

The Airport Spur is a one-way roadway with three to five lanes to support access to numerous features around the terminal. The Airport Spur has connecting roadways to South Howell Avenue, East Joseph M. Hutsteiner Drive, parking areas, the Airport Traffic Control Tower, and FAA building. The Airport Spur allows recirculation of traffic to the arrivals and departures curbs as well as daily and hourly parking facilities. Access into the parking garage is from the south and west; egress from the parking garage is from the north and west. All parking garage access and egress points connect to the Airport Spur.

East Joseph M. Hutsteiner Drive is a two-lane, two-way roadway that provides access to the International Arrivals Building, employee parking lot, and service areas of the main terminal. These roadways are further inventoried in **Table 2-13**.

2.5.5 TRANSIT, PEDESTRIAN, AND BICYCLE FACILITIES

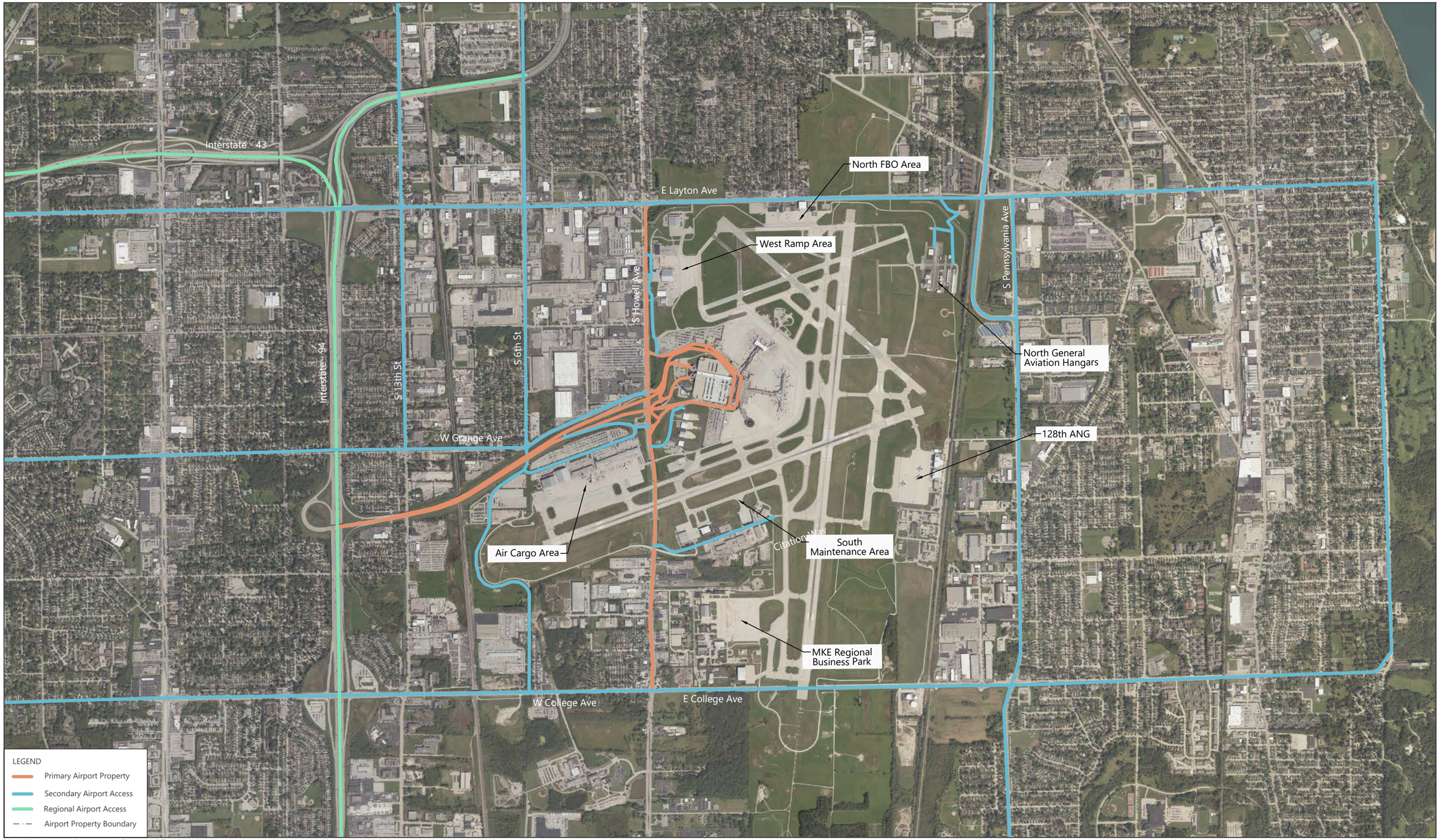
Air passenger-oriented transit service to the Airport is provided by the Milwaukee County Transit System, Amtrak Hiawatha service, and regional bus service.

The Milwaukee County Transit System Green Line (Route G), is an express bus route traveling between Bayshore Town Center and the Airport. The Milwaukee County Transit System also provides local, non-express, bus routes including Route 80, a local bus route traveling along 6th Street.

The Amtrak Hiawatha line provides a long-distance transit connection, operating on Canadian Pacific track between Chicago and Milwaukee with a stop at the Milwaukee Airport Railroad Station. Passengers on the Amtrak Hiawatha line have access to a free shuttle bus that connects to the Airport terminal.

Three coach bus companies serve the Airport with intercity bus service. Badger Coaches has a route that links the Airport to Johnson Creek and Madison. Coach USA provides service to Milwaukee and the Airport, Waukesha, Racine, and Kenosha Counties, as well as O'Hare and Midway Airports. Lamers bus service has a route linking Wausau, Stevens Point, Waupaca, Appleton, Oshkosh, and Fond du Lac to Milwaukee and the Airport. Wisconsin Coach Lines operates the Kenosha-Racine-Milwaukee commuter bus route that serves the Airport.

No dedicated bicycle pathways are within the road network surrounding the Airport, and no dedicated bicycle facilities are within the Airport core terminal area. Bicycle accommodation is provided via bicycle shared lanes on Layton Avenue and Howell Avenue.



SOURCES: Milwaukee County Land Information Office, Eagleview/Pictometry International, data provided October 2018; Quantum Spatial, September 2018.

NORTH 0 1,200 ft

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-19.dwgLayout: Secondary Airport Access Points Plotted: Sep 18, 2019, 10:43AM

EXHIBIT 2-19

SECONDARY AIRPORT ACCESS POINTS

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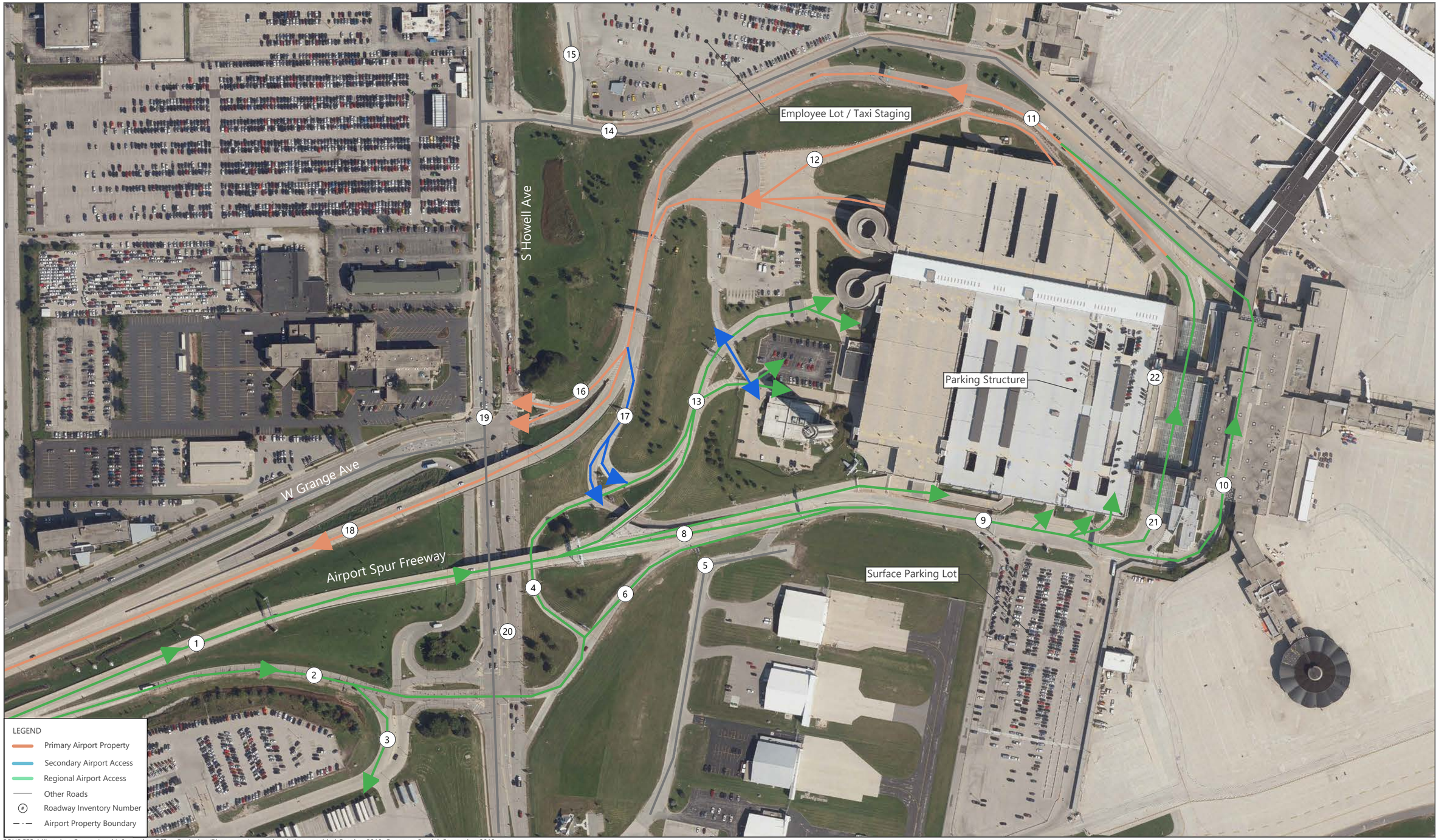

SOURCES: Milwaukee County Land Information Office, Eagleview/Pictometry International, data provided October 2018; Quantum Spatial, September 2018.

NORTH

0 250 ft

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-20 Roadway Inventory.dwgLayout: Primary Access Plotted: Sep 24, 2019, 10:00AM

EXHIBIT 2-20

TERMINAL AREA ROADWAYS AND CIRCULATION

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TABLE 2-13 TERMINAL AREA ROADWAY INVENTORY

ROADWAY (NUMBER IDENTIFIER)	DIRECTIONAL PURPOSE	POSTED SPEED[1]	ROADWAY WIDTH[2]	EXISTING NUMBER OF LANES	LANE WIDTH (FT)[2]	VERTICAL CLEARANCE[2]	EXISTING AADT[3]
WIS 119 - Airport Spur Freeway							
1	Arrival	35	40	2	11	-	8,100
18	Departure	50	40	2	12	-	6,100
Howell Avenue							
20	Northbound	35	39	3	12	15 ft-0 in	9,100
20	Southbound	35	39	3	12	15 ft-9 in	10,600
19	Northbound	35	39	3	12	15 ft-7 in	11,500
19	Southbound	35	39	3	12	16 ft-5 in	12,000
Airport Spur							
7	Arrival	25	24	1	12	-	7,100
9	Arrival	15	52	4	12	-	8,600
10	Departure Curb	15	46	2	12	11 ft-10 in.	12,500
11	Terminal Exit	15	40	3	12	11 ft-10 in.	-
21	Arrival Curb - Ground	15	30	2	10-12	Not Available	-
22	Arrival Curb – Hired Trans	15	31	2	11	Not Available	-
Unnamed							
2	Arrival	Not Posted	28	1	15	-	6,000
4	Arrival	Not Posted	20	1	15	15 ft-1 in.	1,000
5	Other	Not Posted	24	1	12	-	-
6	Arrival	25	20	1	12	-	3,600
8	Arrival	Not Posted	22	1	18	-	2,600
12	Departure	Not Posted	19	1	15	-	-
13	Arrival	Not Posted	34	2	15	-	1,400
15	Other	Not Posted	40	1	14	-	800
16	Departure	Not Posted	28	2	12	-	4,000
17	Recirculate	Not Posted	24	2	12	-	2,000
Air Cargo Way							
3	Other	30	36	2	16	-	2,600
E Joseph M Hutsteiner Dr.							
14	Other	Not Posted	28	2	12	-	800

NOTES:
1 Miles Per Hour
2 Average Annual Daily Traffic (2018)
SOURCES: 2018 Howell Avenue Plans, ID 2060-10-70; Wisconsin Department of Transportation Highway Structures Information System; Wisconsin Department of Transportation Traffic Count Maps; Google Earth imagery – 2018; Martinez Geospatial Aerial Imagery, September 2018.

While the adjacent public streets have pedestrian facilities, there is no pedestrian access to the Airport via the Airport Spur Freeway or the Airport Spur. The Airport provides Americans with Disabilities Act (ADA)-accessible walkways and curb fronts to access the terminal and parking areas throughout the Airport.

2.5.6 TERMINAL CURBFRONT OPERATIONS DATA COLLECTION

The terminal curbfront at MKE is divided into two roadways that pass between the main terminal processor and the parking garage. These two roadways are separated into an arrivals curb, which facilitates passenger loading and unloading operations, and a departures curb, which allows for passenger drop-off operations. Both roadways consist of multiple lanes, thru-lanes to ease traffic flow, and lanes for the active loading and unloading of passengers.

Passengers arriving at the terminal curbfronts use several modes of surface transportation, which are split between the arrivals and departures curbs:

- private vehicles
- taxi/limousine service
- transportation network companies (TNCs) such as Uber and Lyft
- public transportation
- charter buses
- various shuttle services
- intercity bus services
- off-site parking
- hotel shuttles

The arrivals and departures curbs are further described in the following paragraphs.

Arrivals Curb

The arrivals curb consists of six lanes; it is located to the east of the baggage claim building, adjacent to the ticketing area of the main terminal building. The roadway is divided by a median that is used for passenger queue space and waiting areas for shuttles, taxis, and other commercial passenger vehicles. The two western-most lanes are used for thru-traffic, while the inner-most lane is utilized for the active loading and unloading of commercial vehicle passengers. The two lanes east of the median are used for the through operations of private passenger vehicles, while the eastern-most lane is an active loading and unloading area for private vehicles meeting passengers coming from the baggage claim building or the main terminal building. City bus services are provided at the start of the median in the active loading and unloading area of the commercial vehicle portion of the curb.

Departures Curb

The departures curb consists of four lanes; it is located to the east of the baggage claim building, between the baggage claim building and the main terminal building ticketing area. The two center lanes are used for thru-traffic, while the eastern-most lane is used for active private vehicle passenger unloading activities. The western-most lane is used for commercial vehicle activity and TNC pick-up and drop-off, and it is also used for valet service.

To better understand the curbfront environment and how vehicles are transiting these roadways, a curbfront classification was conducted, in addition to a turning-movement count. The curbfront classification is conducted to assess the number, type, and dwell time of a vehicle using each curb area for active loading and unloading of passengers. The classification also includes the number of passengers entering or exiting a vehicle. The turning-movement counts assess the type and number of vehicles making various turning or thru-movements to identify the number of vehicles on a given portion of a roadway over a given period. The curbfront classifications were

conducted on November 8, 2018, and November 9, 2018, to align with the morning peak from 8:30 a.m. to 11:30 a.m. and the evening peak from 3:00 p.m. to 6:00 p.m. **Table 2-14** lists the curbfront classifications, and **Table 2-15** summarizes the usage metrics for the curbfront. The turning-movement counts were conducted over the same period as the curbfront classifications; they are summarized on **Exhibit 2-21** and **Exhibit 2-22**. Terminal curbside allocation is presented on **Exhibit 2-23**.

2.5.7 PUBLIC AND EMPLOYEE PARKING

Parking at MKE is separated into several major areas generally divided into hourly, daily, and employee lots. The parking structure and the cell phone surface lot are the closest to the terminal building while the Super Saver lots, both A and B, are located approximately one mile to the southwest. There is also a parking area dedicated to Amtrak passengers, located just over one mile away, on South 6th Street. The airport provides shuttle service between these parking areas and the terminal. The location and capacity of each parking area is shown on **Exhibit 2-24**.

2.5.7.1 PARKING CAPACITY AND LAYOUT

The majority of Airport parking capacity is provided by the parking structure located immediately west of the terminal building. The structure comprises six levels that are divided into three primary sections (yellow, blue and red). A moving walkway is located on the third level between the north and south portions of the structure. The northern (yellow) and southwestern (blue) portions of the structure consist entirely of daily parking while the southeastern (red) section is divided by level for hourly, daily, and rental car parking. Additional information on rental facilities is in Section 2.5.8, Rental Car Facilities. Vertical clearance to enter the garage is 7 feet although the first two aisles on each level, aisles A and B, are limited to vehicles that are 6 feet and 2 inches or shorter. Two pedestrian skywalks connect the parking structure to the terminal on Level 3 and Level 5. Each level of the parking structure is depicted on **Exhibit 2-25** through **Exhibit 2-27**. The cell phone surface lot to the south of the parking structure offers additional short-term parking near the terminal and accommodates vehicles over 7 feet in height that cannot access the parking structure. The cell phone surface lot also has an adjacent portion used for temporary staging for TNCs (Uber and Lyft) and taxis with additional circulation for buses around the perimeter of the lot. This lot also provides staging and parking for buses or vehicles pulling trailers and provides handicap spaces located near the terminal. Handicap spaces are also available within the red section of the parking structure.

Employee parking is located in relative isolation to the north of the parking structure and has a dedicated and controlled entrance. Off-airport parking is primarily provided by three companies all located along the west side of Howell Avenue: Fast Park & Relax, Wally Park, and Economy Airport Parking and Shuttle. Each of these companies offers varying levels of services, and Wally Park also offers a large section of covered parking. Some neighboring hotels also offer some off-airport, long-term parking for passengers. Finally, a parking area dedicated to Amtrak passengers is located adjacent to the Airport Rail Station. Total parking spaces for each lot, including off-Airport parking, is shown by type in **Table 2-16**.

The employee parking area entrances and exits were observed during a period from 6:30 a.m. through 6 p.m. on November 8th and November 9th, corresponding with the peak activity periods observed during the roadway data collection effort. To better understand the activity in the employee lot, the entrance and exit counts over the data collection period are depicted in **Table 2-17**.

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TABLE 2-14 CURBSIDE ROADWAY CLASSIFICATION OBSERVATION SUMMARY

	SERVICE / OTHER VEHICLE	PUBLIC TRANSPORTATION BUS	CHARTER / INTERCITY BUS	LIMOUSINE	SHARED RIDE/ DOOR-TO-DOOR	EMPLOYEE PARKING SHUTTLE	AMTRAK/RAIL SHUTTLE	SUPER SAVER PARKING SHUTTLE	MKE PARKING SHUTTLE	OFF-AIRPORT PARKING SHUTTLE	OFF-AIRPORT RENTAL CAR	COURTESY VEHICLE (HOTEL/MOTEL)	TNC	TAXICAB	PRIVATE VEHICLE
Departures Curbside Roadway (A.M.+P.M. Observation Period Totals)															
Number of Observations	5	0	0	14	25	0	29	39	0	170	0	46	198	48	566
Dwell:	410			107	141		49	45		48		82	66	114	107
Pax-Board	0.0			0.0	0.4		0.0	0.0		0.0		0.0	0.3	0.0	0.1
Pax-Alight	0.6			2.0	2.2		4.5	3.8		3.2		2.6	1.0	1.3	1.3
Arrivals Curbside Inner Roadway (A.M.+P.M. Observation Period Totals)															
# of Observations	45	0	4	2	1	1	13	27	0	2	0	1	0	0	895
Dwell:	271		134	81	8	1,728	136	209		201		820			222
Pax-Board	0.4		0.5	1.5	2.0	0.0	1.8	1.9		3.0		0.0			0.9
Pax-Alight	5.0		2.3	0.0			0.0	0.1		0.0		0.0			0.1
Arrivals Curbside Outer Roadway (A.M.+P.M. Observation Period Totals)															
# of Observations	5	68	50	4	19	0	0	1	0	200	0	110	2	111	116
Dwell:	60	251	292	404	827			442		222		200	101	922	127
Pax-Board	0.0	0.8	1.8	1.3	0.7			0.0		1.9		2.0	0.0	0.9	1.5
Pax-Alight	0.881	2.892	3	0				0		0.222		1.31	1	0.037	1.164
Total Observations: 2,817															

NOTES:
1 TNC – Transportation Network Company
2 Valet service was initiated in December 2018; therefore, no specific observations were conducted of valet activity.
SOURCE: TranSmart Technologies, December 2018.

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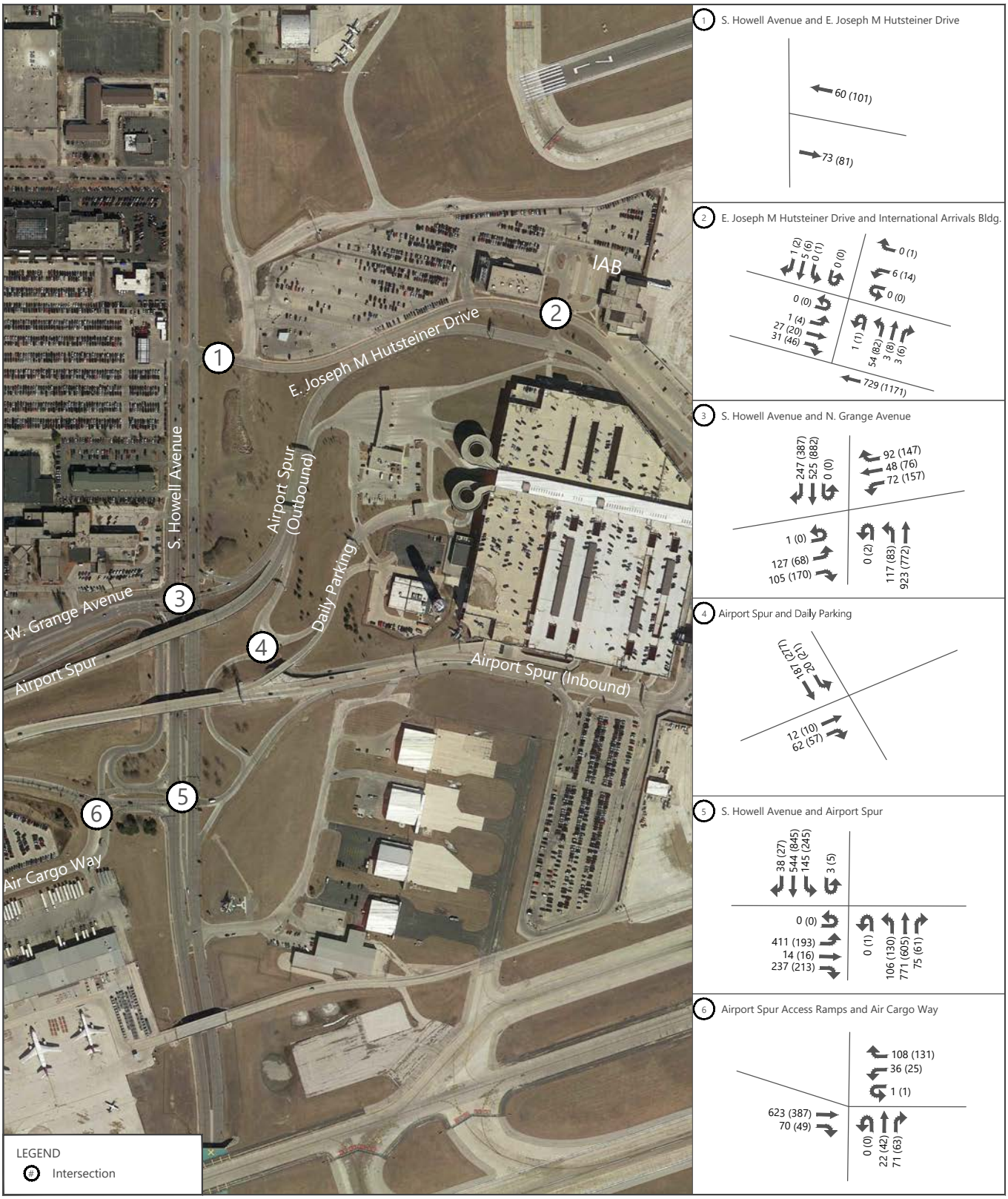
TABLE 2-15 CURBSIDE ROADWAY CLASSIFICATION UTILIZATION SUMMARY

	DEPARTURES ROADWAY				ARRIVALS ROADWAY (INNER AND OUTER)			
	9:30–10:30 A.M.		4:00–5:00 P.M.		9:30–10:30 A.M.		4:00–5:00 P.M.	
	# OF VEHICLES	% OF TOTAL	# OF VEHICLES	% OF TOTAL	# OF VEHICLES	% OF TOTAL	# OF VEHICLES	% OF TOTAL
Private Vehicles	204	65.8%	257	59.6%	215	70.3%	359	81.2%
Taxis	6	1.9%	11	2.6%	16	5.2%	7	1.6%
TNCs	58	18.7%	118	27.4%	21	6.9%	2	0.5%
Hotel/Motel	11	3.5%	4	0.9%	5	1.6%	17	3.8%
Off-Airport Rental Car	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Off-Airport Parking	18	5.8%	18	4.2%	21	6.9%	27	6.1%
Super Saver Parking (Lot A)	3	1.0%	6	1.4%	3	1.0%	7	1.6%
Super Saver Parking (Lot B)	0	0.0%	0	0.0%	0	0.0%	0	0.0%
International Terminal Parking Shuttle	0	0.0%	0	0.0%	1	0.3%	0	0.0%
Amtrak/Rail Station	5	1.6%	0	0.0%	0	0.0%	1	0.2%
Employee Parking Shuttle	0	0.0%	0	0.0%	1	0.3%	0	0.0%
Go-Rite Transportation	1	0.3%	7	1.6%	0	0.0%	5	1.1%
SuperShuttle	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Other Shuttle	2	0.6%	2	0.5%	0	0.0%	0	0.0%
Limousines	0	0.0%	7	1.6%	6	2.0%	2	0.5%
Charter Buses	0	0.0%	0	0.0%	5	1.6%	3	0.7%
City Buses	0	0.0%	0	0.0%	10	3.3%	12	2.7%
Police, Tow Trucks, Delivery, etc.	2	0.6%	1	0.2%	2	0.7%	0	0.0%
Total	310	100.0%	431	100.0%	306	100.0%	442	100.0%

NOTES:
1 TNC – Transportation Network Company
2 Valet service was initiated in December 2018; therefore, no specific observations were conducted of valet activity.
SOURCE: TranSmart Technologies, December 2018.



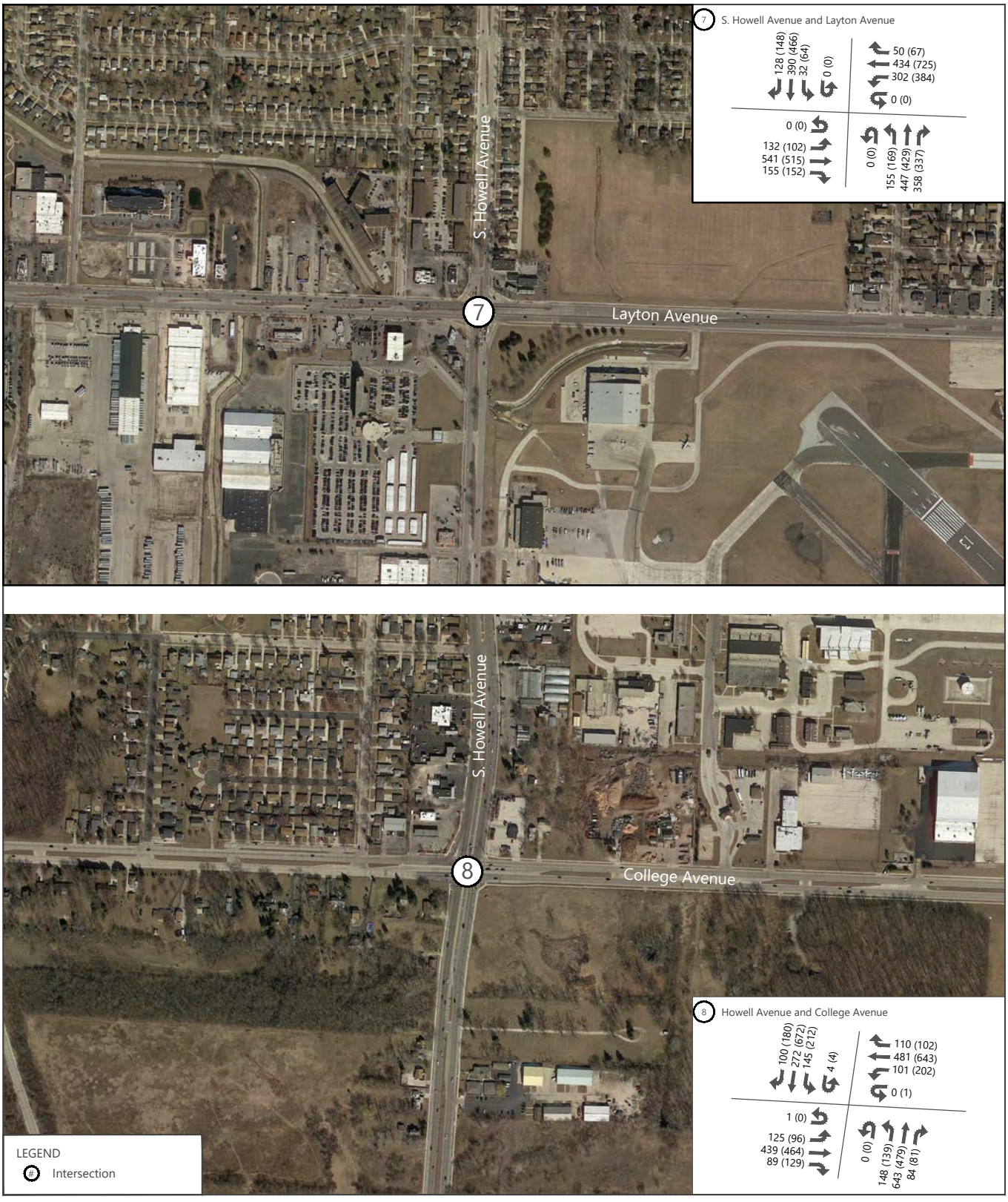
SOURCE: Google Earth Pro, March 16, 2018 (aerial photography).

NORTH 0 500 ft

EXHIBIT 2-21

On-airport Turning Movement Counts
Existing 2018 A.M. (P.M.) Peak Hour

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.10 - Ground Access and Curbfront\CAD\2-21_2-22 - Roadway Data.dwgLayout: 2-21 Plotted: Sep 17, 2019, 09:51PM



SOURCE: Google Earth Pro, March 16, 2018 (aerial photography).

NORTH 0 500 ft

EXHIBIT 2-22

Off-airport Turning Movement Counts
Existing 2018 A.M. (P.M.) Peak Hour

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-21_2-22 - Roadway Data.dwgLayout: 2-22

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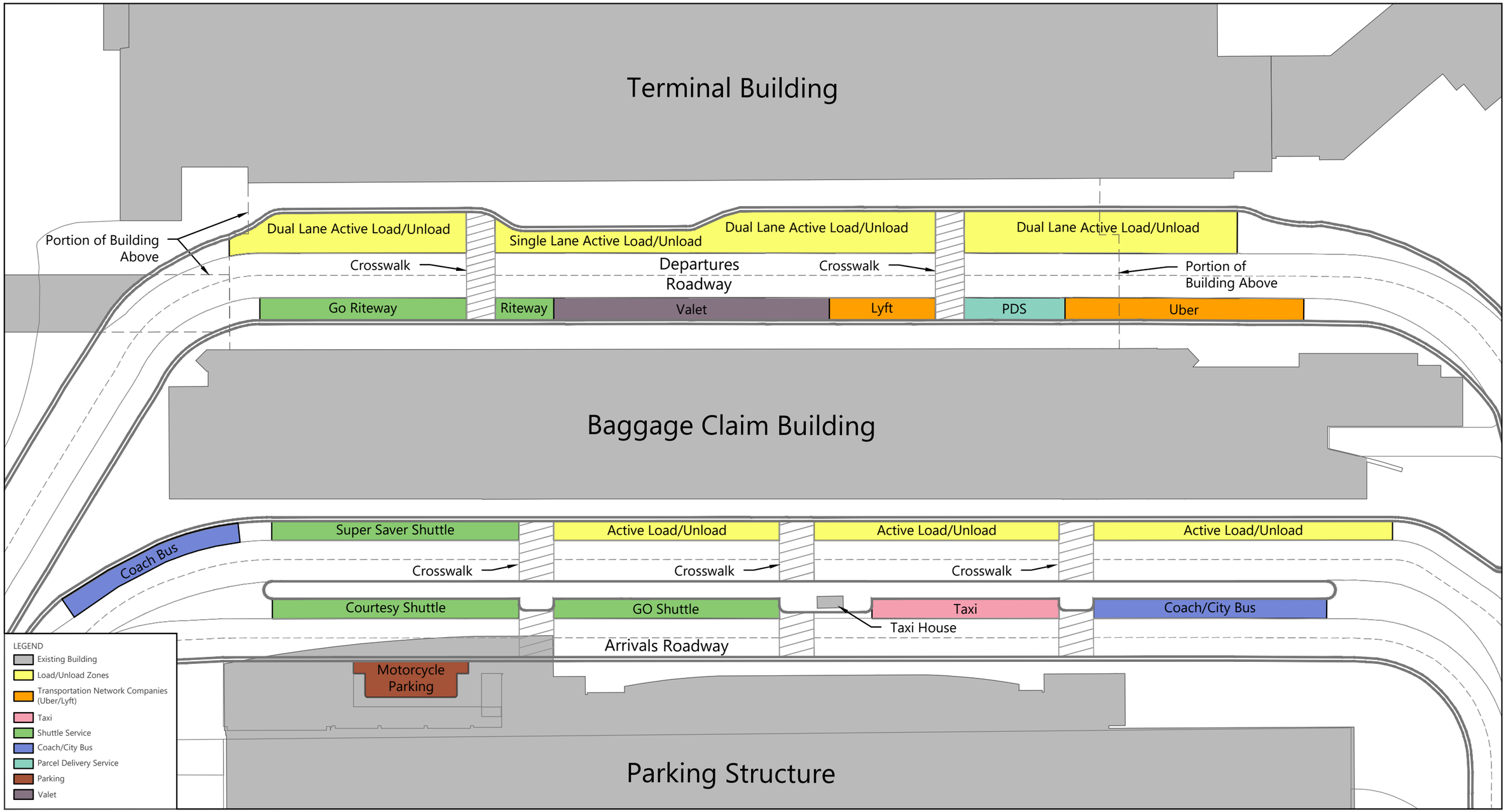

SOURCES: Site Visit Conducted October 24th, 2018; General Mitchell International Airport, Airport Layout Plan, May 2017 (Linework)

EXHIBIT 2-23

TERMINAL CURBSIDE ALLOCATION

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.10 - Ground Access and Curbfront\CAD\2-23 - Curb Frontages.dwgLayout: 11x17 Plotted: Sep 17, 2019, 12:53PM

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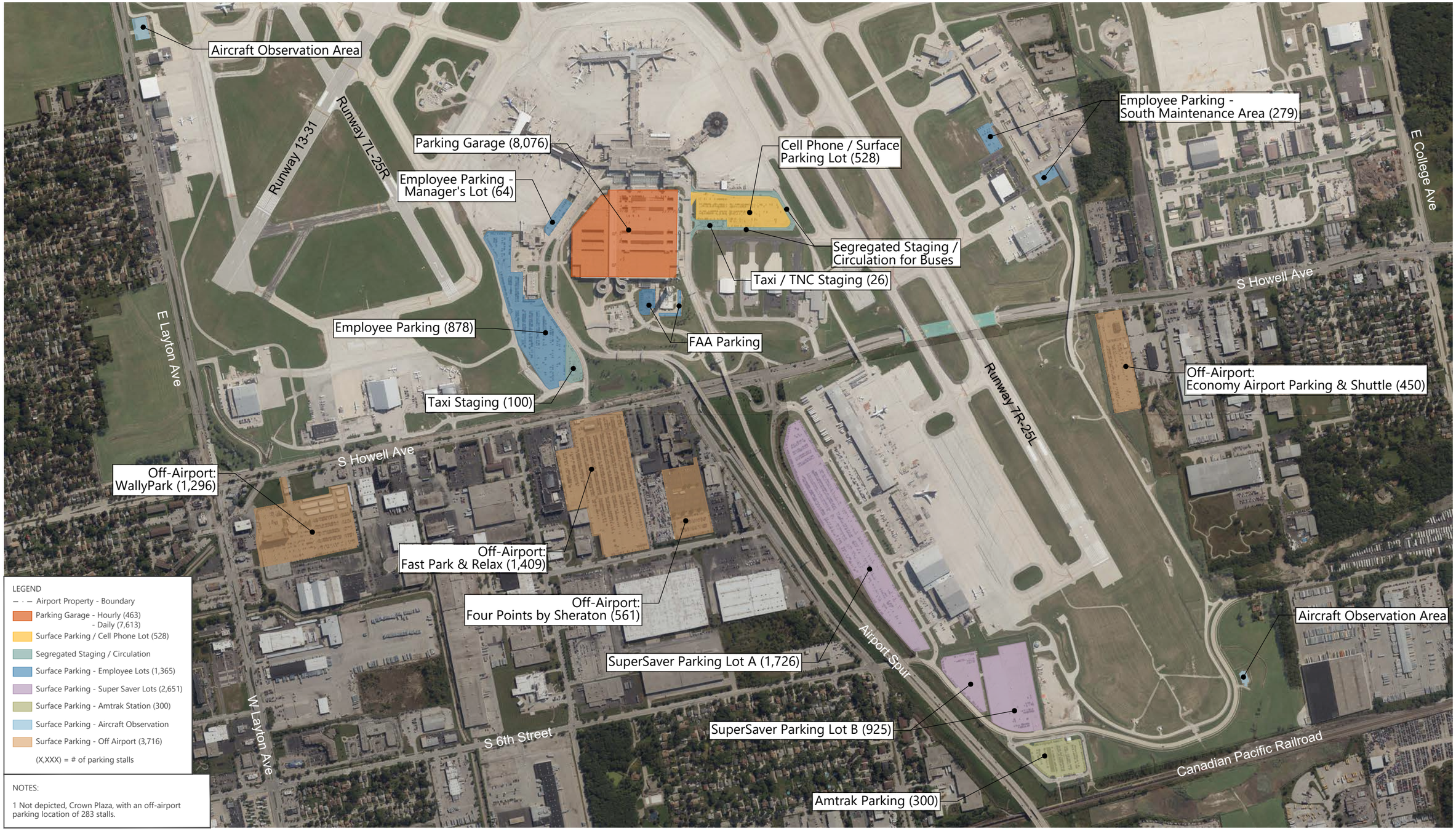

SOURCES: Milwaukee Mitchell International Airport - mkeairport.com, December 2018; FAA Airports Geographic Information Systems (GIS) database, December 2018; Manual counts from aerial photo - National Agriculture Imagery Program (NAIP), 2015; Quantum Spatial, September 2018 (aerial imagery).

NORTH 0 1,200 ft.

EXHIBIT 2-24

ON- AND OFF-AIRPORT PARKING & STAGING AREAS

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-24 Airport Parking Facilities.dwgLayout: EXHIBIT 2-24 Plotted: Sep 23, 2019, 12:59PM

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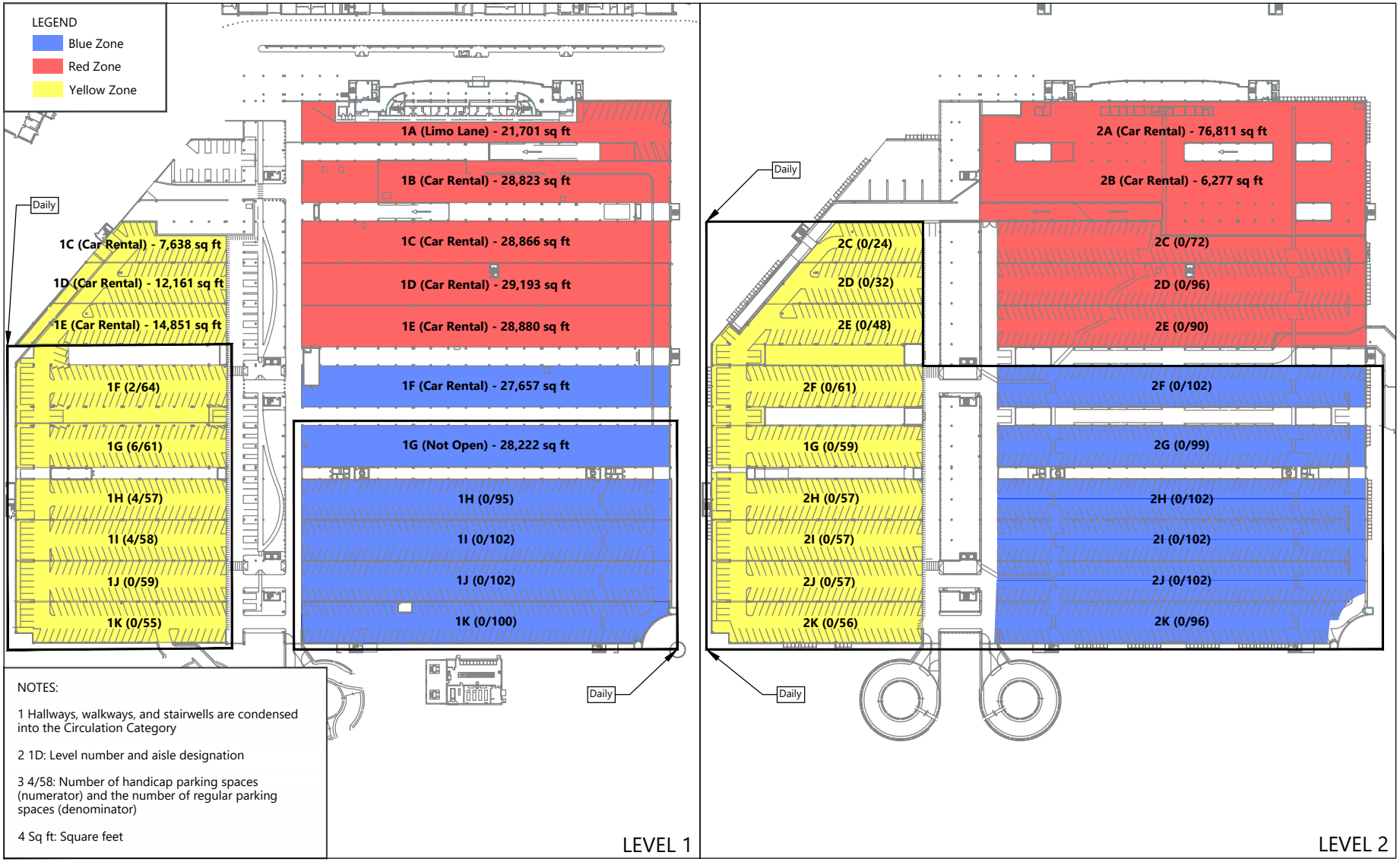
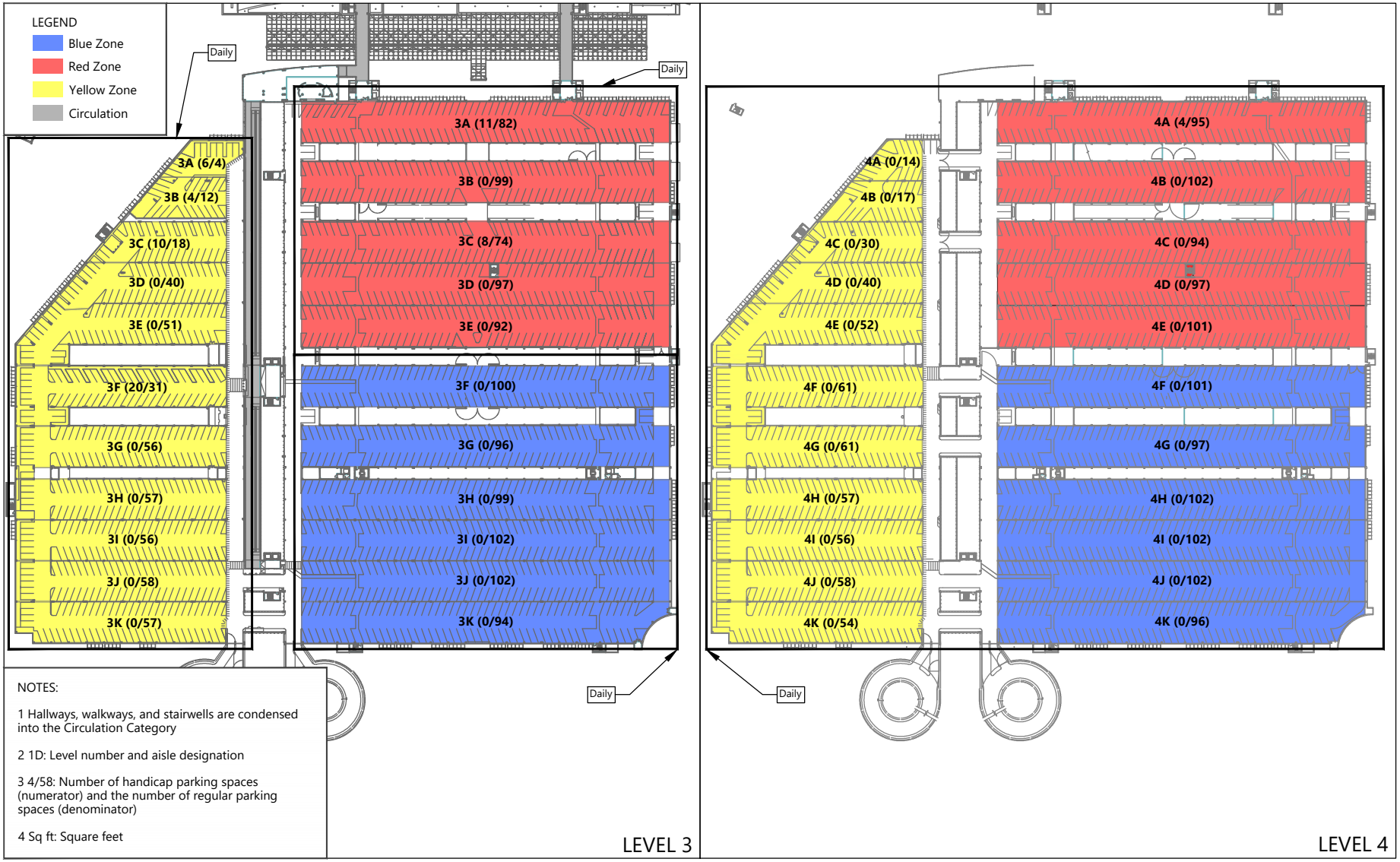


SOURCE: Milwaukee County Land Information Office & Eagle View Technologies/Pictometry International (aerial provided November 2018); Milwaukee Mitchell International Airport Geographic Information System (data provided November 2018).

EXHIBIT 2-25

PARKING STRUCTURE: LEVEL 1 AND LEVEL 2

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-25,26,27 Parking Levels.dwg

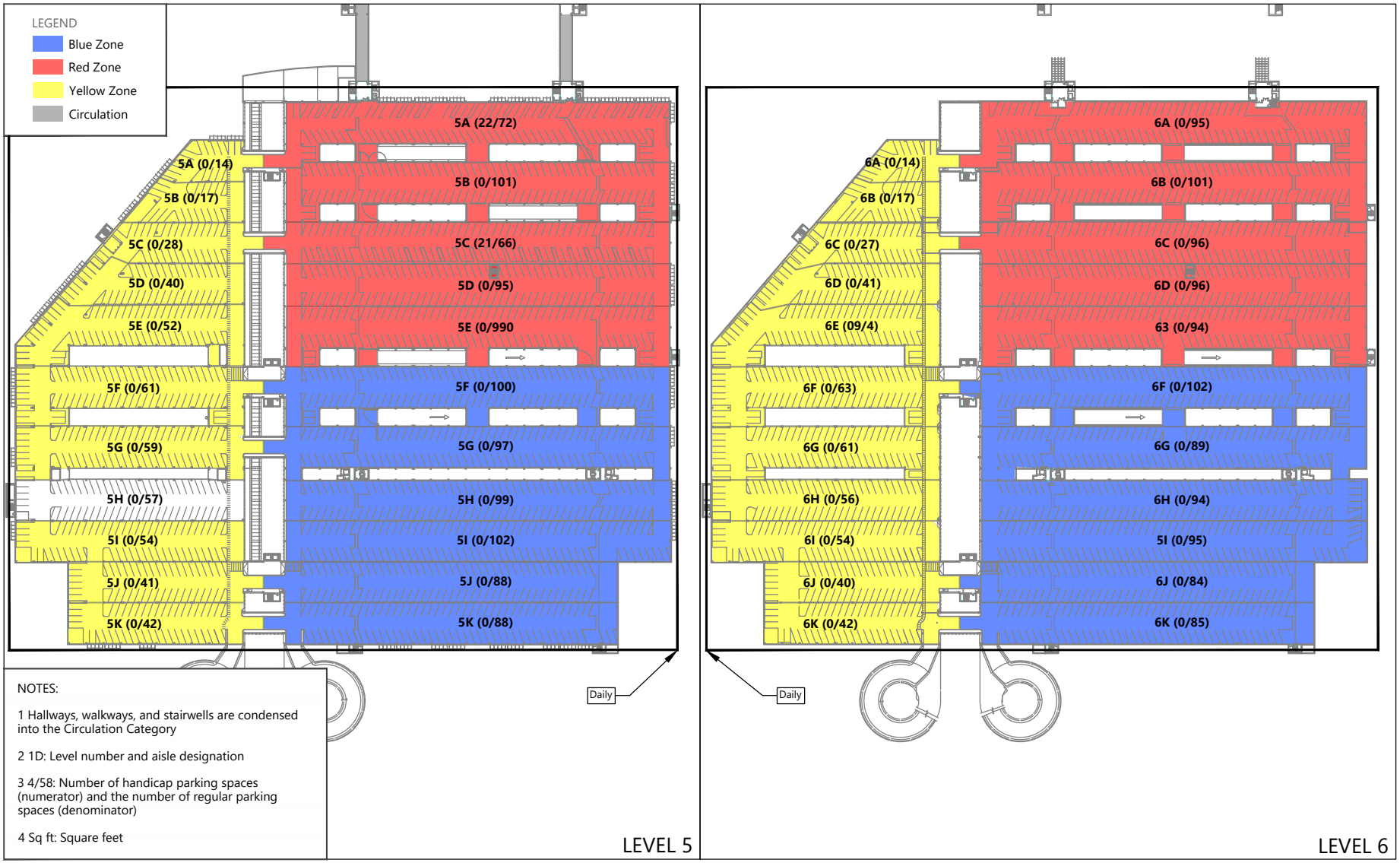


SOURCE: Milwaukee County Land Information Office & Eagle View Technologies/Pictometry International (aerial provided November 2018); Milwaukee Mitchell International Airport Geographic Information System (data provided November 2018).

EXHIBIT 2-26

PARKING STRUCTURE: LEVEL 3 AND LEVEL 4

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-25,26,27 Parking Levels.dwg



NOTES:

1 Hallways, walkways, and stairwells are condensed into the Circulation Category

2 1D: Level number and aisle designation

3 4/58: Number of handicap parking spaces (numerator) and the number of regular parking spaces (denominator)

4 Sq ft: Square feet

LEVEL 5

LEVEL 6

SOURCE: Milwaukee County Land Information Office & Eagle View Technologies/Pictometry International (aerial provided November 2018); Milwaukee Mitchell International Airport Geographic Information System (data provided November 2018).

EXHIBIT 2-27

PARKING STRUCTURE: LEVEL 5 AND 6

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-25,26,27 Parking Levels.dwg

TABLE 2-16 PARKING CAPACITY BY LOT

PARKING LOT	TEMPORARY	HOURLY	DAILY	SUPERSAVER	EMPLOYEE	OFF-SITE
Cell Phone / Surface Lot	528					
Parking Structure[1]		721	7,613			
Super Saver A				1,726		
Super Saver B				925		
Main Employee					884	
Managers' Lot					64	
Total On-Airport	**528**	**463**	**7,613**	**2,951**	**1,227**	
Amtrak Lot						300
Fast Park & Relax[2]						1,409
Wally Park[2]						1,296
Economy Airport Parking and Shuttle[2]						450
Four Points by Sheraton						561
Crowne Plaza						283
Total Off-Airport						**4,299**

NOTES:
1 These numbers do not include car rental spaces.
2 Parking availability depends on vehicle size and will vary.
3 Handicap spaces are included in each section.
SOURCE: Mead & Hunt from Google Earth image, accessed December 2018.

TABLE 2-17 EMPLOYEE PARKING ENTRY/EXIT COUNTS

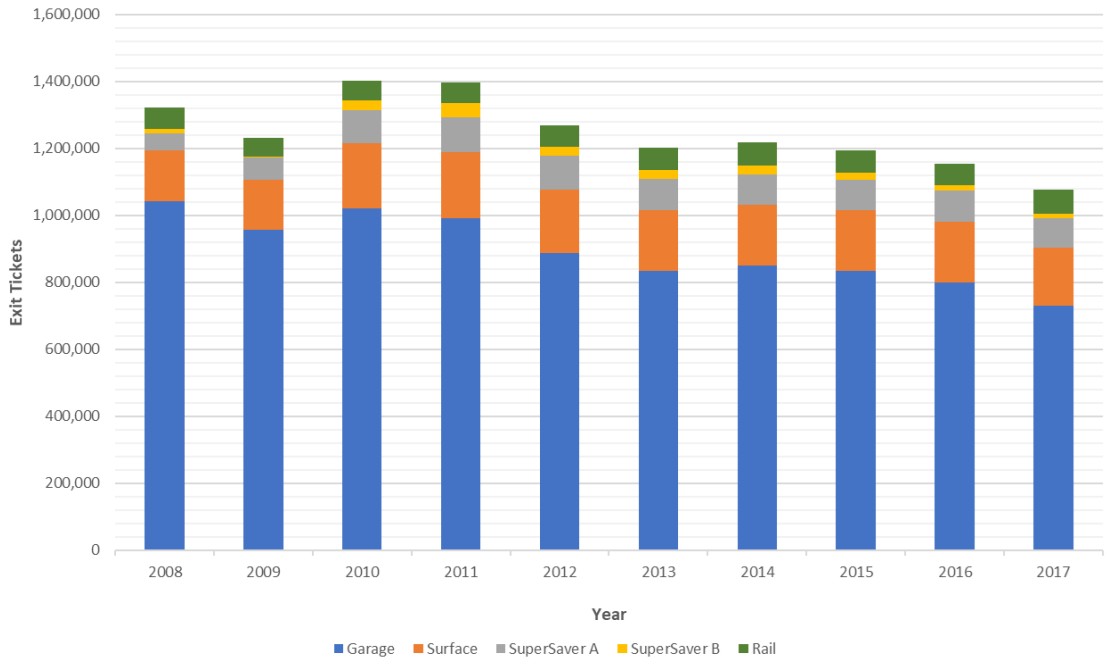
	DAY 1				DAY 2			
	PASSENGER VEHICLES		BUSES		PASSENGER VEHICLES		BUSES	
HOUR	ENTER	EXIT	ENTER	EXIT	ENTER	EXIT	ENTER	EXIT
6:30 AM	27	5	5	5	15	2	4	2
7:00 AM	47	12	7	4	42	18	7	7
8:00 AM	24	12	6	7	25	17	8	7
9:00 AM	25	11	9	8	26	12	8	6
10:00 AM	59	24	9	8	49	11	9	7
11:00 AM	46	69	7	8	43	57	7	7
12:00 PM	57	72	8	7	56	74	7	9
1:00 PM	25	41	6	6	26	52	7	5
2:00 PM	41	35	8	10	30	34	7	9
3:00 PM	30	32	8	8	16	29	8	8
4:00 PM	15	41	7	9	13	34	9	10
5:00 PM	20	34	8	7	9	30	9	8
6:00 PM	12	31	7	8	8	29	9	9
Subtotal	**428**	**419**	**95**	**95**	**358**	**399**	**99**	**94**

NOTE: Hours listed in the table are identified by the hour in which the data collection period took place (i.e., 7:00 a.m. – 8:00 a.m.)
SOURCE: TranSmart Technologies, Inc. Traffic count data, December 2018.

2.5.7.2 PARKING STRUCTURE USAGE

Passenger vehicle parking at the Airport experienced a decrease after the 2008 recession but recovered in 2010. However, since that time there has been a steady decline in vehicle parking, from 1.42 million exit tickets in 2010 to 1.07 million in 2017. The parking structure has remained the most heavily utilized of on-Airport available public parking facilities due to its capacity and proximity to the terminal. The historic trends for exit tickets can be seen on **Exhibit 2-28**.

EXHIBIT 2-28 HISTORIC EXIT TICKETS BY LOT



SOURCE: Milwaukee Mitchell International Airport, April 2018; Mead & Hunt, April, 2018.

The number of exit tickets as a percentage of enplaned passengers is an indicator of passenger behavior. **Table 2-18** shows that this percentage initially grew following the recovery from the 2008 recession and reached a high of 37.4 percent in 2014. Although passenger activity has increased steadily since 2015 the number of passengers that park at the Airport has declined to 31.8 percent in 2017. This decline is partially attributable to the presence of TNCs (Uber and Lyft) operating on the Airport since March 2016.

2.5.7.3 PARKING REVENUE

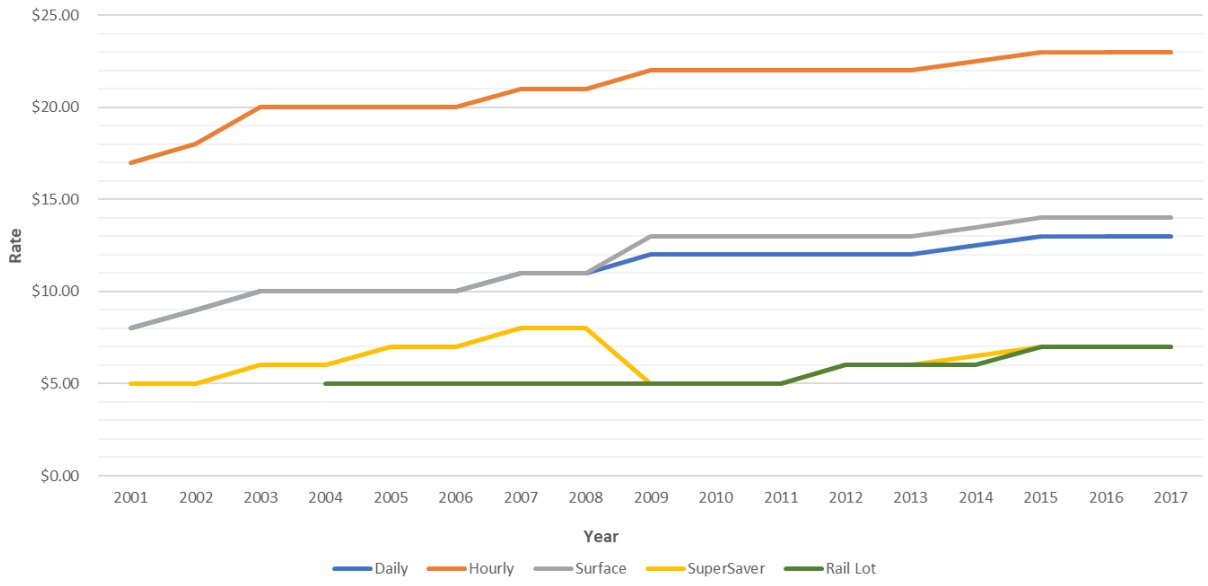
Parking is a significant source of revenue for an airport. Several adjustments have been made to parking fees and marketing over the past decade to better capture passenger parking activity at the Airport. Typically, parking rates reflect demand with higher rates for short term parking and lots that are either covered and/or closer to the terminal. Super Saver lots at MKE provide economy users uncovered parking approximately one-half to one mile from the terminal. Except for opening the rail lot in February of 2004 and rebranding of the remote lots to Super Saver lots, MKE parking rates have generally seen only modest changes as charges have been increased fractionally every several years to compensate for inflation. Historic rates for each lot can be seen on **Exhibit 2-29**.

TABLE 2-18 EXIT TICKETS PER ENPLANED PASSENGERS

YEAR	TICKETS	ENPLANEMENTS	TICKETS/ENPLANEMENTS
2008	1,321,371	3,960,107	33.4%
2009	1,232,604	3,601,954	34.2%
2010	1,402,881	4,583,841	30.6%
2011	1,396,781	4,812,394	29.0%
2012	1,268,596	3,935,825	32.2%
2013	1,201,581	3,227,852	37.2%
2014	1,218,205	3,255,921	37.4%
2015	1,193,658	3,221,801	37.0%
2016	1,155,001	3,298,421	35.0%
2017	1,076,859	3,383,874	31.8%

SOURCE: Milwaukee Mitchell International Airport, 2018 ; Mead & Hunt, April, 2018.

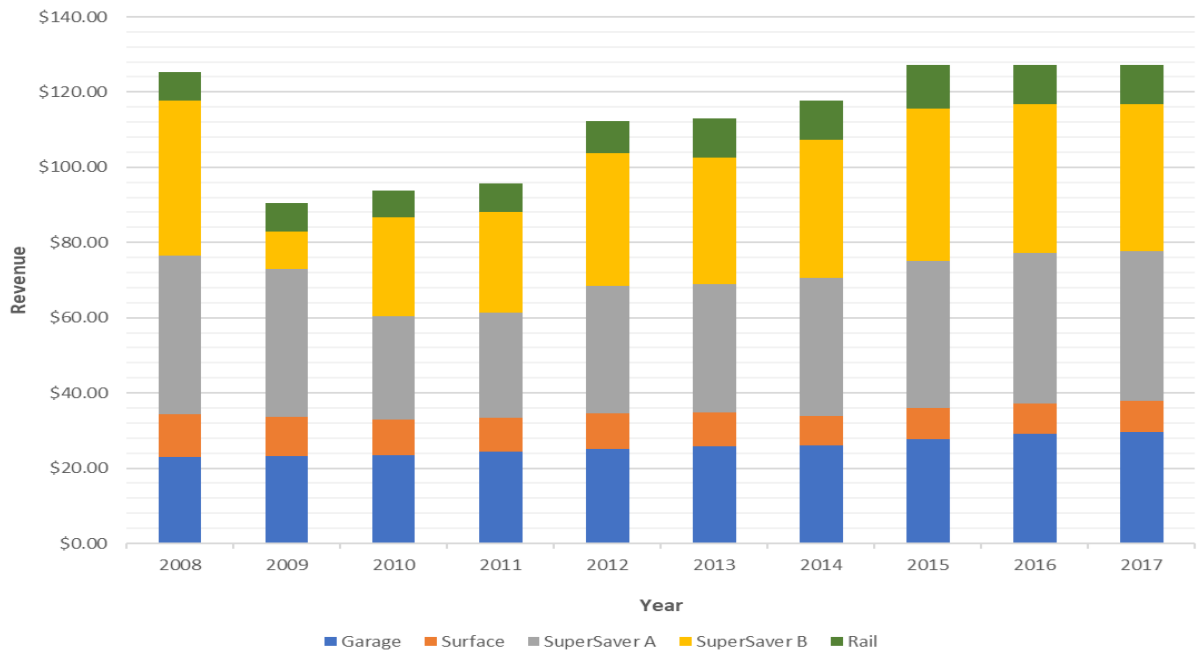
EXHIBIT 2-29 PARKING RATE HISTORY BY TYPE



NOTES:
1 AMTRAK (Rail) lot opened in February 2004.
2 Super Saver Lots rebranded from remote lots October 23, 2009.
3 Prices shown reflect a twenty four-hour period.
SOURCE: Milwaukee Mitchell International Airport, 2018.

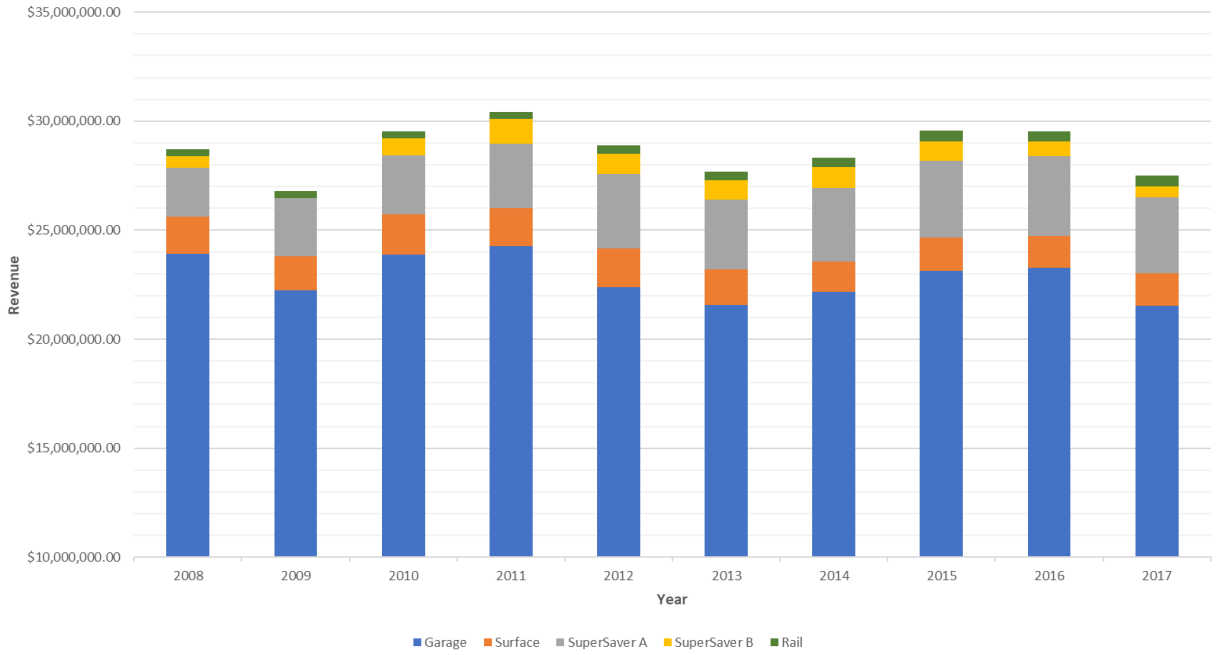
The total revenue per lot and average revenue per transaction by lot is shown on **Exhibit 2-30** and **Exhibit 2-31**, respectively. The trend revealed by a comparison of these exhibits is that, although total revenue from parking lots has declined in recent years, the average revenue per transaction has increased. This suggests that as more options have become available to passengers, such as ride sharing options or public transportation, the passengers that prefer parking near the terminal are willing to pay more for that convenience.

EXHIBIT 2-30 AVERAGE PARKING REVENUE PER TRANSACTION BY LOT



SOURCE: Milwaukee Mitchell International Airport, 2018; Mead & Hunt, April, 2018.

EXHIBIT 2-31 HISTORIC PARKING REVENUE BY LOT



SOURCE: Milwaukee Mitchell International Airport, 2018; Mead & Hunt, April, 2018.

2.5.8 RENTAL CAR FACILITIES

Car rental companies operate out of the parking structure. Several lanes of both the red and yellow sections of the structure are reserved for car rental use on the first and second levels. Facilities for storage and maintenance for these companies are located off Airport property, on private property. The car rental companies that currently operate at the Airport include:

- Avis / Budget
- Dollar / Thrifty
- Enterprise
- Hertz
- National / Alamo

Exhibit 2-32 depicts the location and configuration of customer service areas utilized by on-airport rental car operators. This area, on Level 1 of the parking structure, accommodates rental car transaction and administrative functions. **Table 2-19** summarizes the spaces within the rental car customer service area.

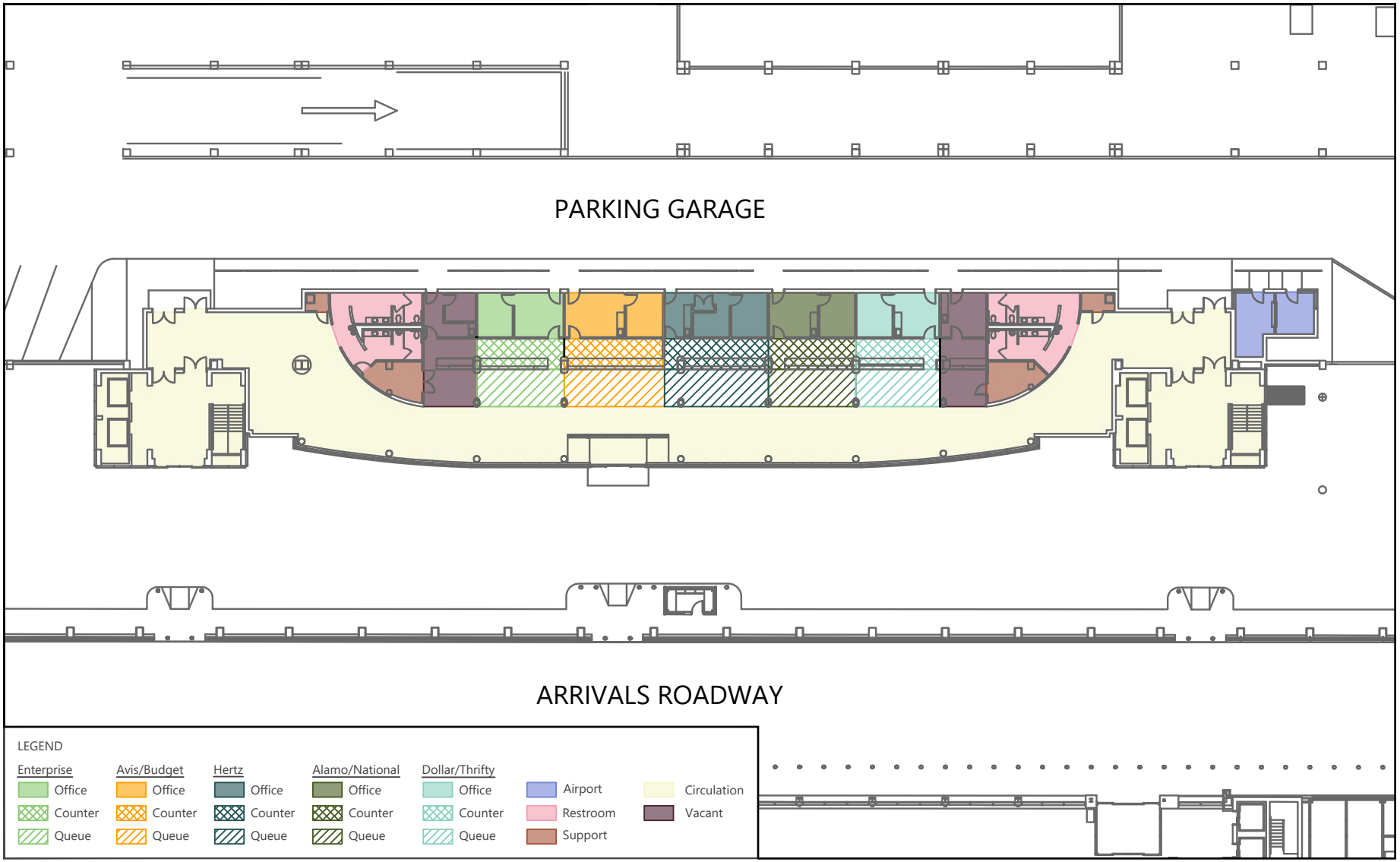
TABLE 2-19 ON-AIRPORT RENTAL CAR CUSTOMER SERVICE AREA SUMMARY

SPACE FUNCTION	AREA (SQUARE FEET)	CUSTOMER SERVICE POSITIONS
Avis/ Budget	832	2
Dollar/Thrifty	703	2
Enterprise	731	2
Hertz	863	2
National/Alamo	731	2
Vacant	649	4
Restroom	819	NA
Support	356	NA
Circulation	7,215	NA

NOTE:
1 Support space includes storage and janitorial.
SOURCES: Milwaukee Mitchell International Airport Geographic Information System Property and Space Layer Data – November 2018; Mead & Hunt/Ricondo site visit, January 2019.

2.5.8.1 RENTAL CAR CAPACITY

Rental car spaces are located on the first and second levels of the parking structure, as seen in Exhibit 2-24. A total of 258 spaces are situated in the northern portion of the parking structure where passengers can pick up and drop off vehicles. Rental spaces share the first level of the parking structure with public daily parking while a smaller portion of the second level is reserved for car rental usage.



SOURCE: Milwaukee Mitchell International Airport Geographic Information System (data provided November 2018).

EXHIBIT 2-32

NORTH 0 40 ft.

ON-AIRPORT RENTAL CAR CUSTOMER SERVICE AREA

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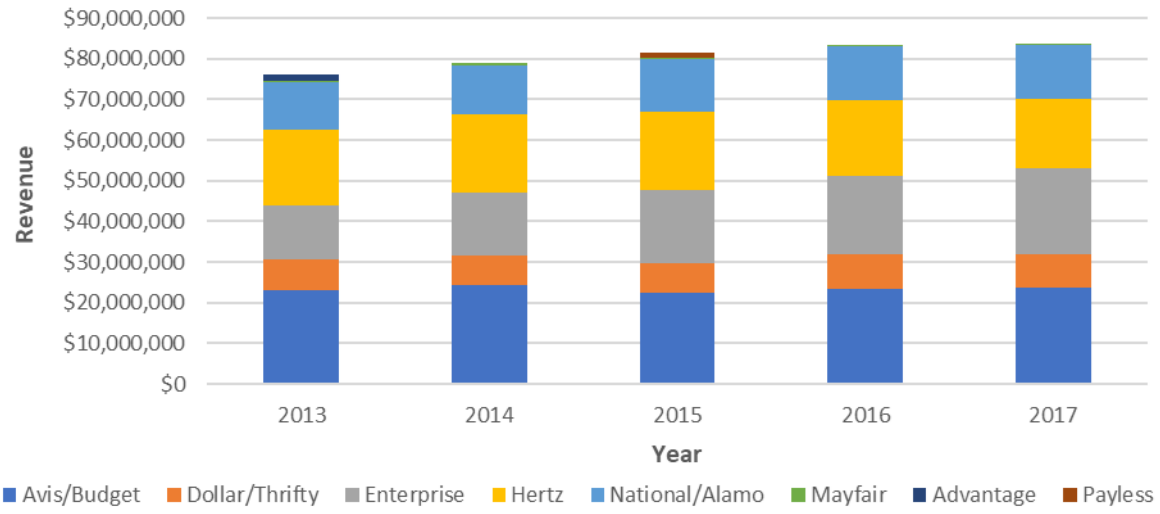
2.5.8.2 RENTAL CAR ACTIVITY

Rental car activity has increased steadily since 2013, even as many rental car companies have merged. In 2013 Payless merged with Avis/Budget, and Dollar/Thrifty merged with Hertz. Both combined companies have continued to grow over time as depicted on **Exhibit 2-33**.

EXHIBIT 2-33 TOTAL ANNUAL REVENUES BY RENTAL CAR COMPANY



SOURCE: Milwaukee Mitchell International Airport, 2018.

2.6 AIRPORT TENANT FACILITIES

Tenant and Airport support facilities are described in this section. **Exhibit 2-34** through **Exhibit 2-36** show the north, south, west, and east area facilities.

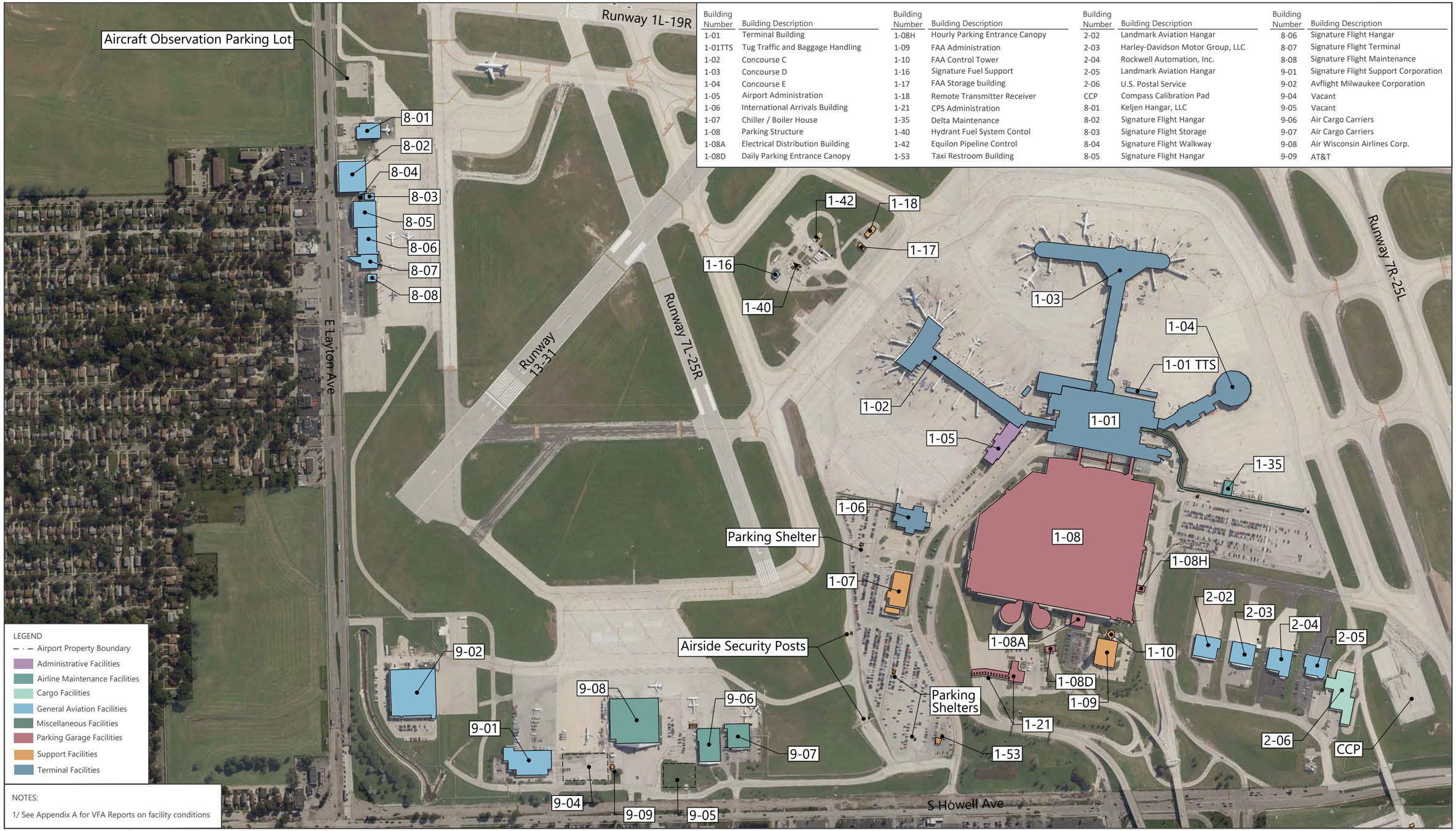
2.6.1 AIR CARGO

Air cargo at MKE includes freight and mail. The primary cargo operations facilities are located adjacent to Runway 7R between Howell Avenue and 6th Street. This area, shown on Exhibit 2-35, hosts facilities for Fed Ex and UPS, the dominant cargo operators at the Airport. These 2 companies, which handled more than 72,500 tons of arriving and departing cargo in 2017, occupy the largest cargo facilities at the Airport.

The United States Postal Service operates a facility next to the corporate hangars along Howell Avenue. This location provides public access from Howell Avenue as well as secure access to both the air cargo complex and the terminal. Additionally, several smaller cargo operators are located in other building areas. Buildings dedicated to cargo operations within each building area are shown on Exhibit 2-34 through Exhibit 2-36. The tenants in buildings used for cargo operations and the building age, size, condition, and function are shown in **Table 2-20**.

Cargo carriers and the most recent yearly freight poundage are shown in **Table 2-21**. Some commercial carriers also transport belly cargo, which is accounted for in this table.

Building Number	Building Description
1-01	Terminal Building
1-01TTS	Tug Traffic and Baggage Handling
1-02	Concourse C
1-03	Concourse D
1-04	Concourse E
1-05	Airport Administration
1-06	International Arrivals Building
1-07	Chiller / Boiler House
1-08	Parking Structure
1-08A	Electrical Distribution Building
1-08D	Daily Parking Entrance Canopy
1-08H	Hourly Parking Entrance Canopy
1-09	FAA Administration
1-10	FAA Control Tower
1-16	Signature Fuel Support
1-17	FAA Storage building
1-18	Remote Transmitter Receiver
1-21	CPS Administration
1-35	Delta Maintenance
1-40	Hydrant Fuel System Contol
1-42	Equilon Pipeline Control
1-53	Taxi Restroom Building
2-02	Landmark Aviation Hangar
2-03	Harley-Davidson Motor Group, LLC
2-04	Rockwell Automation, Inc.
2-05	Landmark Aviation Hangar
2-06	U.S. Postal Service
CCP	Compass Calibration Pad
8-01	Keljen Hangar, LLC
8-02	Signature Flight Hangar
8-03	Signature Flight Storage
8-04	Signature Flight Walkway
8-05	Signature Flight Hangar
8-06	Signature Flight Hangar
8-07	Signature Flight Terminal
8-08	Signature Flight Maintenance
9-01	Signature Flight Support Corporation
9-02	Avflight Milwaukee Corporation
9-04	Vacant
9-05	Vacant
9-06	Air Cargo Carriers
9-07	Air Cargo Carriers
9-08	Air Wisconsin Airlines Corp.
9-09	AT&T



NOTES:

1/ See Appendix A for VFA Reports on facility conditions

SOURCES: FAA Airports Geographic Information Systems (GIS) database, December 2018; Quantum Spatial, September 2018 (aerial imagery); VFA, Inc. Asset List Reports, November 27, 2017; Airport Leases - Milwaukee Mitchell International Airport records - November 2018

NORTH 0 500 ft.

EXHIBIT 2-34

ANCILLARY FACILITY LOCATIONS - NORTH

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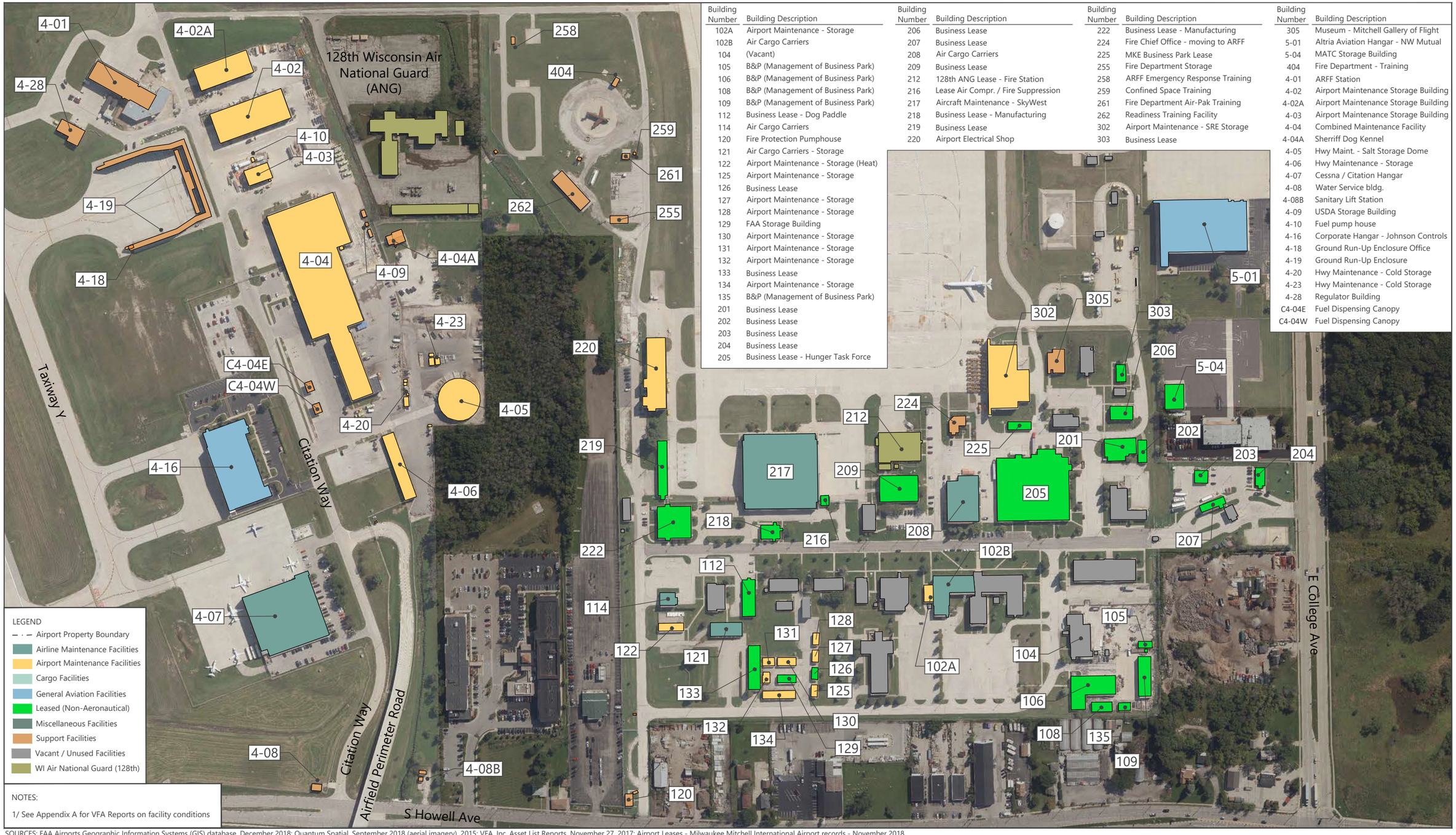

Building Number	Building Description
102A	Airport Maintenance - Storage
102B	Air Cargo Carriers
104	(Vacant)
105	B&P (Management of Business Park)
106	B&P (Management of Business Park)
108	B&P (Management of Business Park)
109	B&P (Management of Business Park)
112	Business Lease - Dog Paddle
114	Air Cargo Carriers
120	Fire Protection Pumphouse
121	Air Cargo Carriers - Storage
122	Airport Maintenance - Storage (Heat)
125	Airport Maintenance - Storage
126	Business Lease
127	Airport Maintenance - Storage
128	Airport Maintenance - Storage
129	FAA Storage Building
130	Airport Maintenance - Storage
131	Airport Maintenance - Storage
132	Airport Maintenance - Storage
133	Business Lease
134	Airport Maintenance - Storage
135	B&P (Management of Business Park)
201	Business Lease
202	Business Lease
203	Business Lease
204	Business Lease - Hunger Task Force

Building Number	Building Description
206	Business Lease
207	Business Lease
208	Air Cargo Carriers
209	Business Lease
212	128th ANG Lease - Fire Station
216	Lease Air Compr. / Fire Suppression
217	Aircraft Maintenance - SkyWest
218	Business Lease - Manufacturing
219	Business Lease
220	Airport Electrical Shop

Building Number	Building Description
222	Business Lease - Manufacturing
224	Fire Chief Office - moving to ARFF
225	MKE Business Park Lease
255	Fire Department Storage
258	ARFF Emergency Response Training
259	Confined Space Training
261	Fire Department Air-Pak Training
262	Readiness Training Facility
302	Airport Maintenance - SRE Storage
303	Business Lease

Building Number	Building Description
305	Museum - Mitchell Gallery of Flight
5-01	Altria Aviation Hangar - NW Mutual
5-04	MATC Storage Building
404	Fire Department - Training
4-01	ARFF Station
4-02	Airport Maintenance Storage Building
4-02A	Airport Maintenance Storage Building
4-03	Airport Maintenance Storage Building
4-04	Combined Maintenance Facility
4-04A	Sherriff Dog Kennel
4-05	Hwy Maint. - Salt Storage Dome
4-06	Hwy Maintenance - Storage
4-07	Cessna / Citation Hangar
4-08	Water Service bldg.
4-08B	Sanitary Lift Station
4-09	USDA Storage Building
4-10	Fuel pump house
4-16	Corporate Hangar - Johnson Controls
4-18	Ground Run-Up Enclosure Office
4-19	Ground Run-Up Enclosure
4-20	Hwy Maintenance - Cold Storage
4-23	Hwy Maintenance - Cold Storage
4-28	Regulator Building
C4-04E	Fuel Dispensing Canopy
C4-04W	Fuel Dispensing Canopy

SOURCES: FAA Airports Geographic Information Systems (GIS) database, December 2018; Quantum Spatial, September 2018 (aerial imagery), 2015; VFA, Inc. Asset List Reports, November 27, 2017; Airport Leases - Milwaukee Mitchell International Airport records - November 2018

EXHIBIT 2-35

ANCILLARY FACILITY LOCATIONS - SOUTH

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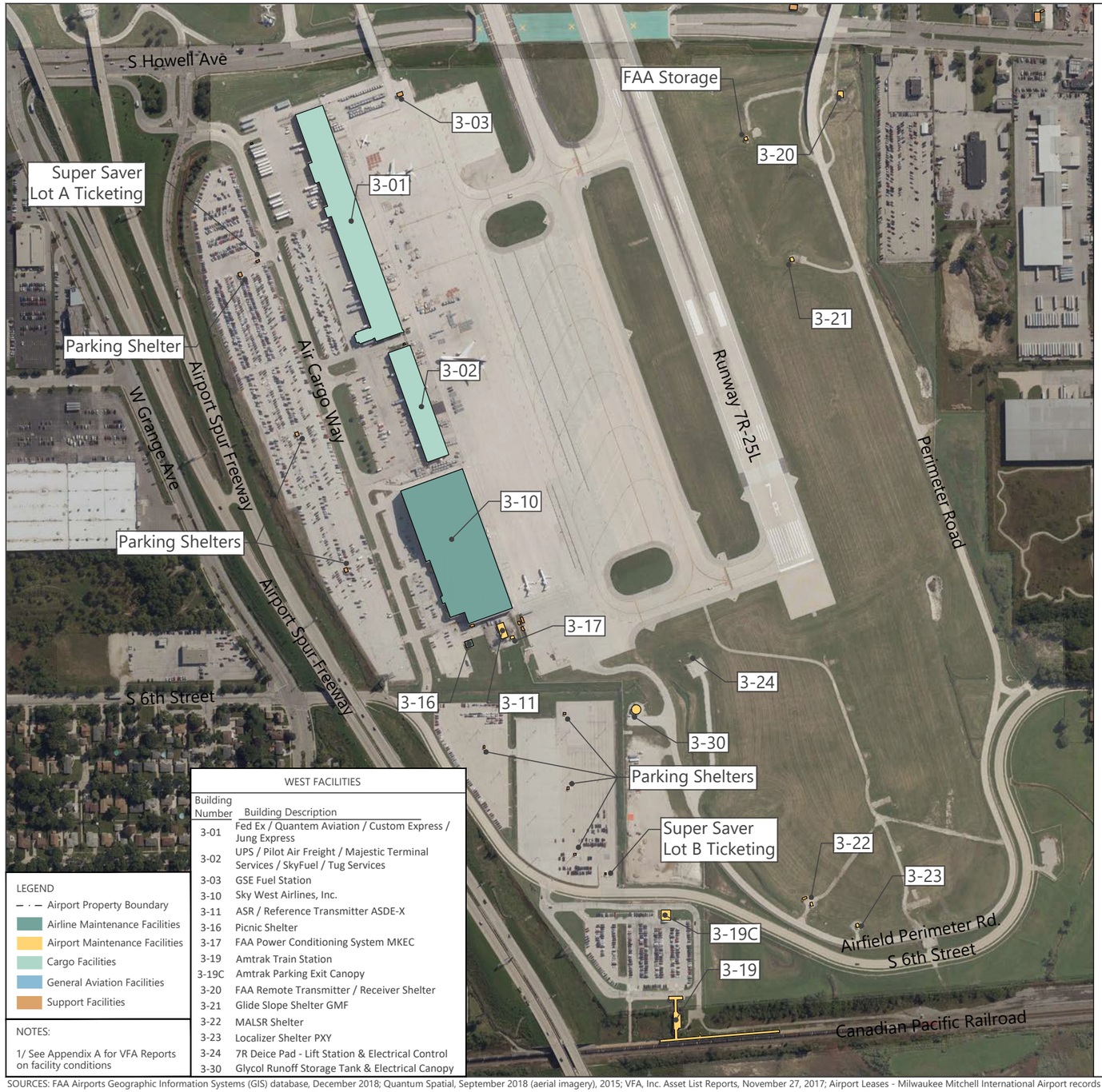

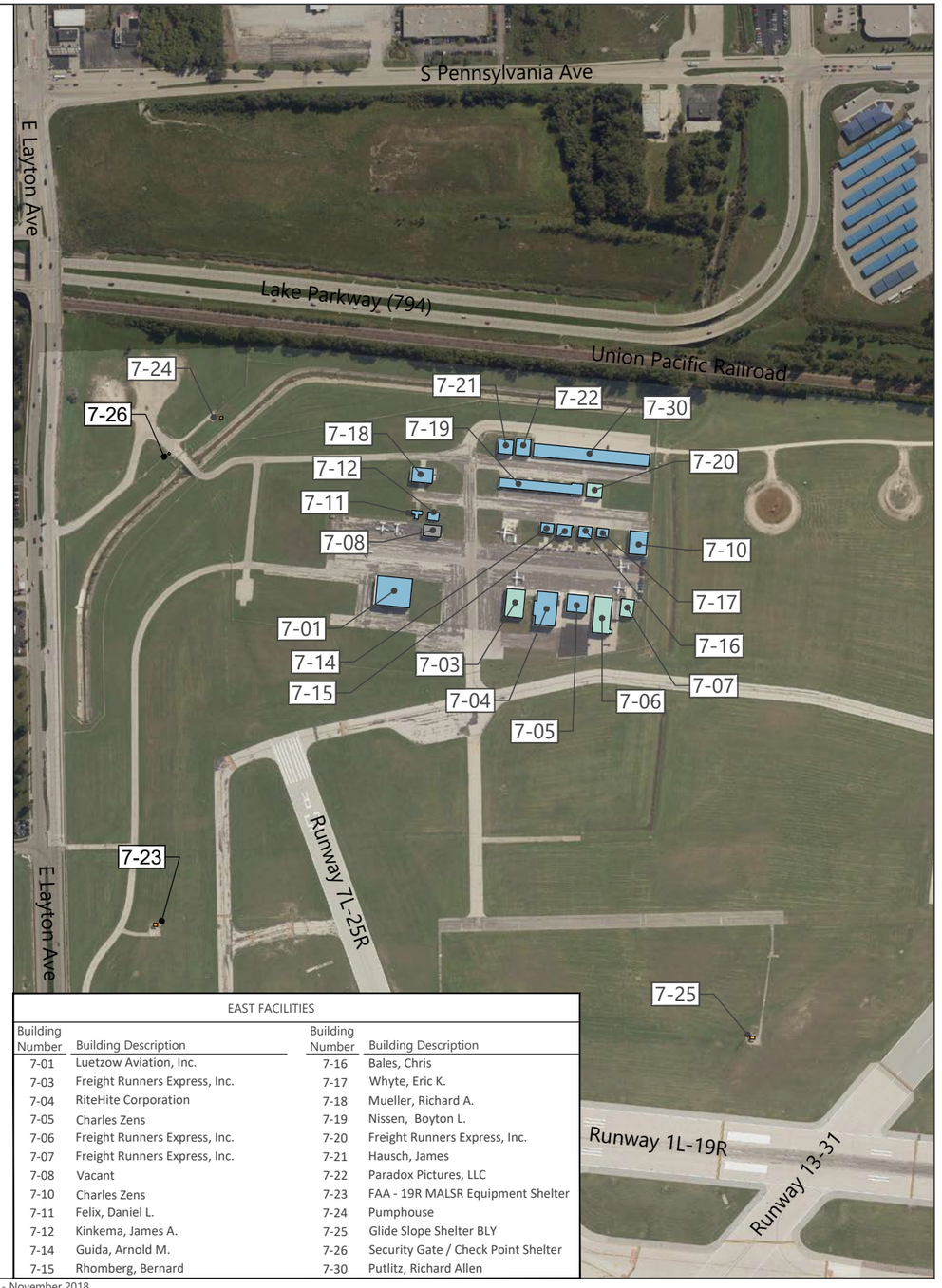

LEGEND

- Airport Property Boundary
- Airline Maintenance Facilities
- Airport Maintenance Facilities
- Cargo Facilities
- General Aviation Facilities
- Support Facilities

NOTES:

1/ See Appendix A for VFA Reports on facility conditions

WEST FACILITIES

Building Number	Building Description
3-01	Fed Ex / Quantem Aviation / Custom Express / Jung Express
3-02	UPS / Pilot Air Freight / Majestic Terminal Services / SkyFuel / Tug Services
3-03	GSE Fuel Station
3-10	Sky West Airlines, Inc.
3-11	ASR / Reference Transmitter ASDE-X
3-16	Picnic Shelter
3-17	FAA Power Conditioning System MKEC
3-19	Amtrak Train Station
3-19C	Amtrak Parking Exit Canopy
3-20	FAA Remote Transmitter / Receiver Shelter
3-21	Glide Slope Shelter GMF
3-22	MALSR Shelter
3-23	Localizer Shelter PXY
3-24	7R Deice Pad - Lift Station & Electrical Control
3-30	Glycol Runoff Storage Tank & Electrical Canopy

EAST FACILITIES

Building Number	Building Description	Building Number	Building Description
7-01	Luetzow Aviation, Inc.	7-16	Bales, Chris
7-03	Freight Runners Express, Inc.	7-17	Whyte, Eric K.
7-04	RiteHite Corporation	7-18	Mueller, Richard A.
7-05	Charles Zens	7-19	Nissen, Boyton L.
7-06	Freight Runners Express, Inc.	7-20	Freight Runners Express, Inc.
7-07	Freight Runners Express, Inc.	7-21	Hausch, James
7-08	Vacant	7-22	Paradox Pictures, LLC
7-10	Charles Zens	7-23	FAA - 19R MALSR Equipment Shelter
7-11	Felix, Daniel L.	7-24	Pumphouse
7-12	Kinkema, James A.	7-25	Glide Slope Shelter BLY
7-14	Guida, Arnold M.	7-26	Security Gate / Check Point Shelter
7-15	Rhomberg, Bernard	7-30	Putlitz, Richard Allen

SOURCES: FAA Airports Geographic Information Systems (GIS) database, December 2018; Quantum Spatial, September 2018 (aerial imagery), 2015; VFA, Inc. Asset List Reports, November 27, 2017; Airport Leases - Milwaukee Mitchell International Airport records - November 2018

NORTH 0 500 ft.

EXHIBIT 2-36

ANCILLARY FACILITY LOCATIONS - WEST & EAST

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TABLE 2-20 AIR CARGO FACILITIES

FACILITY NUMBER	BUILDING NAME / DESCRIPTION	TENANT(S)	LOCATION	BUILDING / SITE LEASE AREA (SQUARE FEET)	LEASED RAMP AREA (SQUARE FEET)	BUILDING AGE (YEARS)	BUILDING SIZE (SQUARE FEET)
3-01	Cargo Carriers / Fed Ex	Fed Ex, Quantem Aviation Services, Custom Express, Jung Express	Cargo Ramp	459,780	230,718	19	132,149
3-02	MKE1 Air Freight Building	UPS, Pilot Air Freight, Majestic Terminal Services, SkyFuel Aviation Services of Milwaukee, Tug Service Centers Network	Cargo Ramp	217,884	139,128	28	43,031
7-20	Private Hangar	Freight Runners Express	East GA hangar area	3,900	13,567	18	2,674
7-06	Private Hangar	Freight Runners Express	East GA hangar area	19,531		18	7,773
7-07	Private Hangar	Freight Runners Express	East GA hangar area	3,567		18	2,798
7-03	Private Hangar	Freight Runners Express	East GA hangar area	10,000		18	6,318
2-06	U.S. Postal Service	U.S. Postal Service	South of Airport Spur; East of Howell Avenue	94,575		18	28,536

SOURCES: MKE: Milwaukee Mitchell International Airport, Airport lease diagrams generated October 22, 2018; VFA, Inc., Asset List Report 2017.

TABLE 2-21 AIR CARGO OPERATORS

OPERATOR	2017 FREIGHT (POUNDS)
FedEx	90,780,959
UPS	54,527,776
DHL	6,810,262
Alaska Airlines	22,817
American Airlines	908,991
Ameriflight	150,137
CSA Air, Inc	2,536,902
Delta Air Lines	1,969,342
Freight Runners Express	4,743,535
Kalitta Charters	1,065
Southwest Airlines	2,454,093

SOURCE: 2017 Monthly Data Reports – mitchellairport.com, April 2018.

2.6.1.1 UPS FACILITIES

UPS leases 18,161 square feet in the MKE Air Freight Building, 125,985 square feet of apron space, and an additional 12,719 square feet of paved surface for equipment storage. The company operates a daily MD-11 into MKE from their national sort hub in Louisville, Kentucky; along with an additional six to eight Beech 99 or Metroliner aircraft on regional routes.

Current ramp space for UPS is at capacity operationally; when the MD-11 is used at the same time as the smaller aircraft, no additional aircraft can be accommodated.

An additional constraint for the UPS facilities is building space. The company leases non-contiguous areas in the air freight building, and this separation of facilities poses operational challenges. The building has 21 loading docks or ramps to transfer cargo to or from trucks; 12 of these loading docks are within areas leased by UPS. Tractor bays 1 through 7 are located at the west portion of the building and are fully automated. Tractor bays 8 through 11 are at the opposite end and are manual. There are no restroom facilities or office space in the UPS space on the east end of the building. Parking and maneuvering areas were designed for smaller trucks than are currently in use.

2.6.1.2 FEDEX FACILITIES

FedEx occupies (leases) approximately 85,600 square feet within the largest building adjacent to the cargo ramp, and leases 230,718 square feet of apron area. The facility was constructed by Aeroterm which leases space to FedEx within the building, additional tenants reside within this facility as FedEx does not lease the entire facility. FedEx has 27 loading docks or ramps in their facility to transfer cargo to or from trucks and approximately 180 vehicle parking spaces. The FedEx apron area has space for up to four larger aircraft (ADG-III and ADG-IV) and seven small aircraft (ADG-I and ADG -II).

2.6.1.3 DHL FACILITIES

DHL began operations in MKE in 2014, and currently handles the majority of the Amazon activity in the area. DHL currently leases 19,679 square feet of apron space, which accommodates daily Boeing 737F aircraft operations. Quantem Aviation Services is the ground handling company for the DHL cargo activity.

2.6.1.4 BELLY CARGO

Freight carried by Delta, United, Southwest, and American Airlines is also processed through one of the two cargo buildings in the main cargo ramp. While these airlines do not lease space themselves, these operations are handled by third-party operators.

2.6.1.5 PARKING

Vehicle parking outside of the cargo buildings includes 159 spaces in an angled lot outside of the FedEx building, along with 31 spaces for semi-trailer trucks on the building's northeast side.

Outside of the smaller cargo building are 126 striped vehicle spaces. While there are no designated spaces for semi-trailer trucks in this location, observations show that trucks occasionally use multiple regular sized spaces when parking is needed.

2.6.1.6 OTHER CARGO FACILITIES

Smaller cargo companies including Freight Runners Express and third-party providers lease building and apron space in other airport areas. The majority of Freight Runners Express' activity is made up of feeder routes for UPS using Beech 1900 and Beech 99 aircraft. Freight Runners Express' facilities are concentrated on the northeast side of the Airport. Third party providers including Jung Express, Quantem Aviation Services, LLC and Pilot Air Freight lease space within the two primary cargo buildings along the Cargo Apron (Facility 3-01 and Facility 3-02).

2.6.2 AIRLINE MAINTENANCE

Airline maintenance facilities are present within the north, south, and west areas of the airfield as illustrated on Exhibit 2-34 through Exhibit 2-36. These facilities are inventoried in **Table 2-22.**

TABLE 2-22 AIRLINE MAINTENANCE FACILITIES

FACILITY NUMBER	STRUCTURE TYPE	BUILDING NAME / DESCRIPTION	AREA LOCATION	BUILDING / SITE LEASE AREA (SQUARE FEET)	LEASED RAMP AREA (SQUARE FEET)	BUILDING AGE (YEARS)	BUILDING SIZE (SQUARE FEET)
102B	Office Building	Air Cargo Carriers	MKE Regional Business Park			61	10,930
114	Training Building	Air Cargo Carriers	MKE Regional Business Park			33	2,176
121	Storage Building	Air Cargo Carriers	MKE Regional Business Park			20	4,484
208	Storage Building	Air Cargo Carriers	MKE Regional Business Park			40	14,420
217	Maintenance Hangar / Offices	Sky West Airlines, Inc.	MKE Regional Business Park			61	57,301
3-10	Maintenance Hangar / Offices	Sky West Airlines, Inc.	West Cargo Area	293,220	127,858	27	157,266
4-07	Maintenance Hangar / Offices	Cessna / Citation Hangar	South Maintenance	156,042	61,327	17	46,368
9-06	Maintenance Hangar	Air Cargo Carriers	West Ramp	99,797		28	20,753
9-07	Maintenance Hangar	Air Cargo Carriers	West Ramp	93,099		18	15,695
9-08	Maintenance Hangar / Offices	Air Wisconsin Airlines Corp.	West Ramp	209,850	138,956	17	62,067

SOURCES: Milwaukee Mitchell International Airport lease diagrams, generated October 22, 2018; VFA, Inc. Asset List Report 2017; Airport Geographic Information System data, 2018.

In early 2018 SkyWest Airlines, Inc., took occupancy of the two large aircraft hangars formerly used by Midwest Airlines within the west cargo area (Facility No. 3-10). SkyWest maintains and operates regional jet aircraft for United, Delta, and American Airlines. SkyWest also holds a lease for a hangar facility within the MKE Regional Business Park (Facility No. 217).

Air Wisconsin operates from a large hangar facility located within the northwest area of the airfield (Facility No. 9-08). Air Wisconsin operates as a United Express carrier exclusively.

The Cessna Citation Service Center is located within the South Maintenance area of the airfield.

Air Cargo Carriers (ACC) occupies two hangars on the West Apron (Facility 9-06 and 9-07). These buildings serve as the primary maintenance depot for their fleet, which is made up of roughly 14 Short 360 aircraft. ACC also occupies buildings within the MKE Business Park which are used for parts storage (Facility 121 and 208), training (Facility 114), and office space for accounting and payroll (Facility 102A).

2.6.3 GENERAL AVIATION

General Aviation (GA) facilities are present within multiple areas of the airfield and are illustrated on Exhibit 2-34 through Exhibit 2-36

MKE is served by two Fixed Base Operators (FBOs). Signature Flight Support's primary campus is located on the far north central portion of the Airport (Facility 8-02 through 8-08). This FBO services corporate aircraft from a hangar in the northwest area (Facility 9-01) and two hangars near the terminal (Facilities 2-02 and 2-05). Avflight is an FBO that started operations at MKE in the fall of 2017. Avflight operates from a hangar and office facility located in the northwest corner of the airfield (Facility 9-02). This FBO recently expanded and upgraded the facility.

Smaller GA hangar facilities are located on the northeast area of the airfield and include a mixture of box hangars, t-hangars, and ramp areas with tie-down parking positions.

Larger corporate hangars are present within the north, central, and southern areas of the airfield. The overall inventory of GA facilities is listed in **Table 2-23**.

TABLE 2-23 GENERAL AVIATION INVENTORY

FACILITY NUMBER	STRUCTURE TYPE	BUILDING NAME / DESCRIPTION	AREA LOCATION	BUILDING / SITE LEASE AREA (SQUARE FEET)	BUILDING AGE (YEARS)	BUILDING SIZE (SQUARE FEET)
2-02	Corporate Hangar	Landmark Aviation Hangar	Terminal Area	82,118	18	15,047
2-03	Corporate Hangar	Harley-Davidson Motor Group, LLC	Terminal Area	95,200	18	14,475
2-04	Corporate Hangar	Rockwell Automation, Inc.	Terminal Area	100,000	18	16,401
2-05	Corporate Hangar	Landmark Aviation Hangar	Terminal Area	100,000	18	12,546
4-16	Corporate Hangar	Johnson Controls	South Maintenance	167,897	18	36,142
5-01	Corporate Hangar	Altria Aviation Hangar – NW Mutual	South	281,832	18	47,936
7-01	Box Hangar	Luetzow Aviation, Inc.	Northeast	13,500	18	12,240
7-04	Corporate Hangar	RiteHite Corporation	Northeast	21,498	18	8,730
7-05	Box Hangar	Charles Zens	Northeast	27,170	18	4,314
7-10	Box Hangar	Charles Zens	Northeast	5,100	18	4,884
7-11	T-Hangar	Felix, Daniel L.	Northeast	2,607	28	701
7-12	Box Hangar	Kinkema, James A.	Northeast	2,565	18	1,113
7-14	Box Hangar	Guida, Arnold M.	Northeast	2,953	18	1,602
7-15	Box Hangar	Rhomberg, Bernard	Northeast	2,949	18	2,120
7-16	Box Hangar	Bales, Chris	Northeast	2,609	18	1,907
7-17	Box Hangar	Whyte, Eric K.	Northeast	2,564	18	1,255
7-18	Box Hangar	Mueller, Richard A.	Northeast	5,000	18	3,655
7-19	Multi-Unit Hangar	Nissen, Boyton L.	Northeast	15,071	18	9,747
7-21	Box Hangar	Hausch, James	Northeast	2,500	18	2,563
7-22	Box Hangar	Paradox Pictures, LLC	Northeast	4,200	18	2,965
7-30	Multi-Unit Hangar	Putlitz, Richard Allen	Northeast	20,625	18	17,478
8-01	Hangar	Keljen Hangar, LLC	North	47,081	18	10,314
8-02	FBO[1]	Signature Flight Hangar	North		87	24,195
8-03	FBO	Signature Flight Storage	North		28	1,830
8-04	FBO	Signature Flight Walkway	North		40	692
8-05	FBO	Signature Flight Hangar	North	512,800	28	17,039
8-06	FBO	Signature Flight Hangar	North		28	14,988
8-07	FBO	Signature Flight Terminal	North		20	8,850
8-08	FBO	Signature Flight Maintenance	North		28	2,145
9-01	FBO	Signature Flight Support Corporation	Northwest	126,851	18	31,109
9-02	FBO	Avflight Milwaukee Corporation	Northwest	257,891	18	60,870

NOTE:
1 FBO: Fixed-base Operator

SOURCES: Milwaukee Mitchell International Airport lease diagrams, generated October 22, 2018; VFA, Inc. Asset List Report 2017, Airports Geographic Information System data, 2018.

2.7 AIRPORT MAINTENANCE AND SUPPORT FACILITIES

This section identifies those facilities at MKE that are not otherwise used by businesses, tenants, or the airlines. The facilities inventoried serve to maintain and support the safe and efficient operation of the Airport and are depicted on Exhibit 2-34 through Exhibit 2-36.

2.7.1 AIRPORT MAINTENANCE

The primary airport maintenance campus is located on the south side of Citation Way (Exhibit 2-35). MKE owns and operates the storage and maintenance building facilities within this area. However, approximately 30,500 square feet of the 99,150 total square feet of these facilities is leased to the Milwaukee County Highway Department for satellite highway equipment, maintenance and operations. The shared use of facilities presents some challenges with the landside/airside separation, which is generally centered on and within the primary maintenance building (Facility 4-04). The maintenance bays that service both airport and highway fleet vehicles are located on the west (landside) portion of Facility 4-04 which requires airside vehicles and parts to be transferred off the secured area.

In addition to the westerly restrictions imposed by the Highway Department, the Airport Maintenance grounds are also constrained by other adjacent infrastructure and drainageways. These restrictions include the Mitchell Field drainage ditch and the 128th WI ANG on the south, the proximity of Taxiway R and drainage features to the east, and Citation Way and support facilities to the north. With limited ability to expand, the needs of Airport Maintenance have been met by utilizing buildings within the MKE Regional Business Park. The Airport Electrical Maintenance staff recently moved to the first floor of Building 220. The Airport houses 12 multi-function snow removal units, 2 Snow-Melter units, and rotary plows within Building 302. There are also nine other buildings/sheds within the MKE Regional Business Park that serve to provide storage of materials, parts, and ancillary items. The Airport Maintenance equipment assets consist of roughly 180 vehicles or implements, inventoried in **Table 2-24**. The Airport Maintenance Buildings are inventoried in **Table 2-25**.

A listing of the overall support facilities is provided in **Table 2-26**. Individual support facilities are described in greater detail within the sections that follow.

2.7.2 AIRCRAFT RESCUE AND FIRE FIGHTING STATION

The Aircraft Rescue and Fire Fighting (ARFF) building (Facility 4-01 on Exhibit 2-35) is approximately 15,000 square feet in size and was originally built in 1979. The facility is currently undergoing an expansion and remodeling project that will increase the living and office space areas by an additional 4,000 square feet. The Airport Fire Chief's administration space is currently remotely located in Facility 224 of the South Maintenance Area. The use of the remote facility will no longer be needed once the expanded ARFF facility is completed. The new expanded ARFF quarters will include a new fitness center, allowing the existing mezzanine level of the ARFF facility to accommodate elevated storage and gravity filling of extinguishing agents. Other near-term improvements planned at the ARFF facility are upgrades to floors (including removal of an unused underground foam storage tank), new bay doors, and upgrades to interior lighting and heating, ventilation and air conditioning.

The ARFF facility is centrally located on the airfield, just east of the Ground Run-up Enclosure (GRE), and maintains an adequate response time of under 3 minutes to the midpoint of each of the commercial service runways. Minimum ARFF requirements are established as part of the Title 14 Code of Federal Regulations (CFR) Part 139, which includes an index of five airport classes and their corresponding requirements for equipment and extinguishing agents. The Airport currently has an ARFF Index C which corresponds to aircraft that are 126 feet to 160 feet in length. The ARFF building has six bays that accommodate space for the storage and maintenance of the fleet of equipment. The facility currently houses three Oshkosh Striker 3000s, a mass casualty unit, a hazmat response decontamination trailer and truck, and a rapid intervention vehicle.

TABLE 2-24 AIRPORT MAINTENANCE VEHICLES AND EQUIPMENT

MAINTENANCE DEPARTMENT	EQUIPMENT TYPE	MAKE / TYPE	NO.	YEAR PURCHASED	ESTIMATED SERVICE LIFE (YEARS)
Administration	SUV	2018 / 2019 Chevrolet Tahoe	2	2018	12
Central Plant	Van	2011 Chevrolet Express Cargo Van (2)	2	2011	15
Electrical	Truck	2003 GMC Sierra 4X4 Pickup Truck	1	2003	12
Electrical	Van	Workhorse 1-Ton Step Van (1); 2006 Chevrolet Express Van (2); 2007 Chevrolet Express Cargo Van (5); 2011 Chevrolet Express Cargo Van (3); Chevrolet Express (2)	13	2005 – 2017	15 – 20
Electrical	Aerial Truck	2005 GMC 7500 Aerial Truck	1	2005	15
Fleet	Forklift	2009 Nissan Forklift MW1F4A40V	1	2008	20
Fleet	Jeep	1996 Jeep Cherokee 4X4	1	1996	20
Fleet	Truck	1988 Chevrolet 3500 Crew Cab 4X4 (1); F350 Service Truck (1); 1993 Chevrolet Chassis Cab (1)	3	1988 – 1993	n/a – 25
Fleet	Van	Chevrolet Cutaway Van 2WD	1	2005	20
HVAC	SUV	2018 Chevrolet Tahoe	1	2018	12
HVAC	Truck	1996 Dodge Dakota Pickup Truck; 2007 Ford Ranger 4X2	2	1996 – 2007	12
HVAC	Van	2007 Chevrolet Express Cargo Van	1	2007	15
Plumbing	Van	2007 Chevrolet Express Cargo Van (1); Chevrolet Express (1)	2	2007 – 2017	15
South	ATV / Utility / Bobcat	2011 Kubota 1100 With All Season Cab (1); 2010 Bobcat 5600 Toolcat (1); 2011 Bobcat Toolcat 5600T (2); 2018 Bobcat S770 (1); Bobcat E80 Compact Excavator (1)	6	South	15-20
South	Deice Truck	1994 Mack 6X6 Deicer Truck RM6886S (1); 2007 International Model 5600 De-Ice Truck (1); International 5900I Batts De-Icer Pro (1)	3	1994 – 2015	NA – 15
South	Dump Truck	1994 Mack 4X4 Dump Truck RM6884X (1); 1996 Mack 4X4 Dump Truck RD688P (2); 2002 Sterling L9513 Single Axle Dump Truck (4); International Harvester 4X2 Dump Truck (1)	8	1994 – 2002	NA – 12
South	Fuel Tanker	Fuel Tanker	2	1991	30
South	Grader	1990 John Deere Motor Grader 772	1	1990	30
South	Haige	2008 Hagie GST 20	1	2008	20
South	Light Tower	L8 Light Tower-LT5Y (2); Atlas V5 Light Tower (2); Boss Lighting BLP-158-MH/E (3)	7	1999 – 2017	20
South	Lighted X	Neubert Lighted X	8	2017	15
South	Loader	1993 Case 4X4 Wheel Loader 821B (2); 1995 Case 4X4 Wheel Loader 821B (1); 1998 John Deere 4X4 Wheel Loader 644G (1); 2002 Case 4X4 Wheel Loader 821C (1); 2004 John Deere 644J Wheel Loader (2); 2008 John Deere 844K Wheel Loader (1)	8	1993 – 2008	15 – 20
South	Mower	John Deere 1575 (1); Deweze 712C Mower (1); John Deere 72-in. Lawnmower (3); DewEze 72-in. Mower (1); 1999 Land Pride 15 FT Rotary Mower RC6015 (5); Torro 7200 (2); 2013 Schulte 5026 TOW Behind Mower (2); Torro 7200 Shuttle/Mower (2)	17	1999 – 2017	10 – 20
South	Oshkosh Truck/Broom	2001 Oshkosh Truck H271BB (3); 2002 Oshkosh Truck W/Broom (3); 2003 Oshkosh H2718B Truck W/Broom (2)	8	2001 – 2003	20
South	Plow	2012 Monroe 24 ft Ramp Plow (1); 2012 Ramp Hog 24 ft (Ramp Plow) (1); 2012 Wausau RP24 Ramp Plow 24 ft (1); 2012 Ramp Hog 24 ft (Wausau 20 ft Ramp Plow) (1); 2014 Wausau-RP20 Ramp Plow 20 ft (1)	5	2012 – 2014	15
South	Snow Blower	2008 Oshkosh Snow Blower 5000TPH (2); 2009 Oshkosh Snow Blower (5); 2010 Oshkosh Snow Blower (1)	8	2008 – 2010	15
South	Snow Melter	201 Trecan 180 PD Snow Melter	2	2014	20
South	Combo Unit	2008 Oshkosh Combo Unit (9); 2009 Oshkosh Combo Unit (3)	12	2008 – 2009	15
South	SUV	2003 Ford Explorer/Mail run	1	2004	12
South	Sweeper	Elgin Sweeper (1); Vacall/Sweeper (1)	2	2008 – 2016	10 – 11
South	Tractor	2003 Massey-Ferguson 4345 Tractor (3); 2013 John Deere 7130 Tractor (1); 2018 John Deere 6130D (1); 2018 John Deere 6155M (1); 2014 John Deere 1550 Utility Tractor (2); John Deere 6130D Tractor (1)	9	2003 – 2018	11 – 20
South	Trailer	1992 Best Trailer T/T TTL-40KTP (1); 1998 Nations 24FT Cargo Trailer E824 (1); Trailer (1); Parker Trailer (1)	4	1992 – 2017	15 – 20
South	Truck	Chevrolet 4X2 Stake Truck C6H042-C650 (1); 2007 Ford Super Duty 4X4 (1); 2012 Chevrolet Silverado 2500 4X4 (5); Chevrolet Silverado 2500 (1); 1994 Ford F350 Crew Cab (2); Chevrolet Silverado 2500 Crew Cab (3); 2015 Chevrolet Silverado Super Cab 4WD (4); 2007 Ford F250 Super Duty 4X4 (2); 2007 Ford Super Duty F350 (Crew Cab/Dump) (3); 2005 International 5600 Patrol Truck (2); 2007 Lakeside International Truck 5600 (2); 2009 Freightliner M2112 4X4 Airport Truck (2); 2009 Freightliner M2112V (1); 2012 Wisc. Kenworth-T440 Truck (CNG) (1)	30	1999 – 2017	12 – 20
South	Van	1997 Ford E350 Club Wagon (1); 2003 Chevrolet 2500 Cargo Van (1)	2	1997 – 2003	12 – 15
South	Other	1987 Gardner-Denver Air Compressor (1); 2009 Crafco SS125 Tar Kettle (1); Wausau RP24 (2); 2018 RC Paint Trailer (1); Waterblasting Technologies Stripe Hog Rubber Removal SH 7500 (1)	6	1987 – 2014	8 – 25
		TOTAL:	**181**		

SOURCE: Milwaukee Mitchell International Airport, Vehicle Equipment Replacement Plan, August 16, 2018.

TABLE 2-25 AIRPORT MAINTENANCE BUILDINGS

FACILITY NUMBER	STRUCTURE TYPE	BUILDING NAME / DESCRIPTION	AREA LOCATION	BUILDING AREA (SQUARE FEET)	BUILDING AGE (YEARS)
102A	Office Building	Airport Maintenance – Storage	South – MKE Regional Business Park	1,617	
122	Heated Building	Airport Maintenance – Storage (Heated)	South – MKE Regional Business Park	2,046	18
125	Cold Storage Shed	Airport Maintenance – Storage	South – MKE Regional Business Park	772	24
127	Cold Storage Shed	Airport Maintenance – Storage	South – MKE Regional Business Park	775	24
128	Cold Storage Shed	Airport Maintenance – Storage	South – MKE Regional Business Park	778	24
130	Cold Storage Shed	Airport Maintenance – Storage	South – MKE Regional Business Park	1,548	22
131	Cold Storage Shed	Airport Maintenance – Storage	South – MKE Regional Business Park	1,005	22
132	Cold Storage Shed	Airport Maintenance – Storage	South – MKE Regional Business Park	797	22
134	Cold Storage Shed	Airport Maintenance – Storage	South – MKE Regional Business Park	2,719	17
220	Maintenance Building	Airport Electrical Shop	South – MKE Regional Business Park	15,043	18
302	Former Hangar	Airport Maintenance – SRE[1] Storage	South – MKE Regional Business Park	23,441	43
4-02	Heated Storage	Airport Maintenance Storage: Equipment, Parts, Sand	South Maintenance Area	24,283	31
4-02A	Cold Storage Building	Airport Maintenance Storage Building	South Maintenance Area	13,595	6
4-03	Dry Chemical / Deice Storage	Airport Maintenance Storage Building	South Maintenance Area	4,146	36
4-04	Office / Garage / Maintenance / Shops	Combined Maintenance Facility	South Maintenance Area	101,521	67
4-05	Dome	Highway Maintenance – Salt Storage Dome	South Maintenance Area	14,618	28
4-06	3-Sided Structure	Highway Maintenance – Storage	South Maintenance Area	8,594	28
4-20	Cold Storage Shed	Highway Maintenance – Cold Storage	South Maintenance Area	529	48
4-23	Cold Storage Shed	Highway Maintenance – Cold Storage	South Maintenance Area	409	48

NOTE:
1 SRE: Snow Removal Equipment
SOURCES Airport lease diagrams generated October 22, 2018; VFA, Inc. Asset List Report 2017; Airports Geographic Information System data.

TABLE 2-26 AIRPORT SUPPORT FACILITIES

FACILITY NUMBER	STRUCTURE TYPE	BUILDING NAME / DESCRIPTION	AREA LOCATION	BUILDING AREA (SQUARE FEET)	BUILDING AGE (YEARS)
120	Utility	Fire Protection Pumphouse	MKE Regional Business Park	1,003	22
224	Office – ARFF[1]	Fire Chief Office - moving to ARFF	MKE Regional Business Park	2,381	22
255	Storage – ARFF	Fire Department Storage	South Maintenance Area	1,449	22
258	Other	ARFF Emergency Response Training	South Maintenance Area	290	
259	Other	Confined Space Training	South Maintenance Area	80	18
261	Other	Fire Department Air-Pak Training	South Maintenance Area	484	14
262	Office	Readiness Training Facility	South Maintenance Area	5,892	15
305	Other	Museum – Mitchell Gallery of Flight	MKE Regional Business Park	3,991	20
404	Other	Fire Department - Training	South Maintenance Area	452	17
1-07	Central Utility	Chiller / Boiler House	Central - Terminal Area	17,783	19
1-09	Office	FAA Administration	Central - Terminal Area	15,854	18
1-10	ATC[2] Tower	FAA Tower	Central - Terminal Area	1,473	43
1-17	Other	FAA Storage building	Central - Fuel Farm Area	906	18
1-18	FAA[3] NAVAID[4] Equipment & Storage	Remote Transmitter Receiver (North)	Central - Fuel Farm Area	1,848	18
3-03	Other	GSE[5] Fuel Station	West - Cargo Area	374	
3-11	Other	ASR[6] / Reference Transmitter ASDE-X[7]	West - Cargo Area	1,877	18
3-17	Power Plant	FAA Power Conditioning System	West - Cargo Area	199	18
3-19	Railroad Station	Amtrak Station	West - Cargo Area	9,180	13
3-20	FAA NAVAID Equipment & Storage	FAA Remote Transmitter Receiver (South)	West - Cargo Area	628	18
3-24	Lift Station Control Panel Rack Enclosure	7R Deice Pad - Lift Station & Electrical Control	West - Cargo Area	200	3
3-25	Bolted Steel Glycol Recovery Storage Tank	100,00 Gallon Tank & Electrical Canopy	West - Cargo Area	1,320	3
4-01	ARFF Station[9]	ARFF Station[9]	South Maintenance Area	14,745	38 [9]
4-04A	Other	Sherriff Dog Kennel	South Maintenance Area	2,066	
4-08	Other	Water Service building	South Maintenance Area	684	28
4-08B	Other	Sanitary Lift Station	South Maintenance Area		
4-09	Other	USDA[8] Storage Building	South Maintenance Area	131	28
4-10	Other	Fuel pump / dispensing canopies	South Maintenance Area	135	28
4-18	Other	Ground Run-Up Enclosure Office	South Maintenance Area	3,504	16
4-19	Other	Ground Run-Up Enclosure	South Maintenance Area	13,156	16
4-28	Other	Regulator Building	South Maintenance Area	4,016	11

NOTES:
1 ARFF: Aircraft Rescue and Fire Fighting
2 ATC: Air Traffic Control
3 FAA: Federal Aviation Administration
4 NAVAID: Navigational Aids
5 GSE: Ground Service Equipment
6 ASR: Airport Surveillance Radar
7 ASDE-X: Airport Surface Detection Equipment, Model X
8 USDA: U.S. Department of Agriculture
9 Living Quarters of the ARFF are currently undergoing a 4,000-square-foot expansion and remodel. Estimated completion Summer 2019.

SOURCES: Milwaukee Mitchell International Airport lease diagrams, generated October 22, 2018; VFA, Inc., Asset List Report 2017; Airport Geographic Information System data, 2018.

The ARFF staff comprises 18 firefighters, 1 assistant chief, and the fire chief that operate in 3 shifts. The ARFF staff responds to emergency needs within the terminal and assists local communities and the 128th WI ANG in emergency response. On-site training occurs at two primary locations within the Airport. The first location is the buildings and burn area immediately north of the MKE Regional Business Park (Facilities 255 through 262 and Building 404). The

second training location is a pit located just south of the northeast GA hangar area where a 500-gallon burn is carried out annually.

2.7.3 GROUND RUN-UP ENCLOSURE

The GRE (Facility 4-18 and 4-19 on Exhibit 2-35) is located within the South Maintenance Area of the airfield. Originally constructed in 2003, the facility can accommodate aircraft with wingspans up to 214 feet. Aircraft with wingspans less than 125 feet can taxi into the enclosure under their own power. Aircraft with wingspans greater than 125 feet must be pushed into the enclosure with a tug.

Any aircraft conducting an above-idle engine runup operation greater than 10 minutes in duration must use the GRE facility. The facility is used regularly (4 times/day on average) with many operations occurring at night. Airline maintenance businesses regularly use the facility when trimming and fine-tuning engines after repairs and the 128th WI ANG also makes use of the facility. Users can access the GRE webpage to determine availability and then coordinate with Airport Operations for an assigned time. Priority for scheduling the use of the GRE is given to aircraft with scheduled departures; the average occupancy time is approximately 30 minutes.

2.7.4 ELECTRICAL VAULT

The Airfield Electrical Vault (Facility 4-28 on Exhibit 2-35) is located within the South Maintenance Area of the airfield. The facility provides power to and control over the airfield edge lights, signs, and related facilities. The 4,000 square foot building has 2 floors (main level and basement). The main floor is comprised of four primary areas: a room that houses the main power supply and utility switch gear equipment, a room that houses the airport lighting control and monitoring system, the main regulator storage room, and a room that houses a 600 kW backup generator (diesel-powered).

There are roughly 40 constant current regulators that service the various airfield lighting circuits. Of these, roughly seven are spares that can be swapped out in the event one is damaged or otherwise out of service. The basement portion of the vault accommodates access to the cabling and connections underlying the constant current regulators on the main level and promotes quick and easy transfer of power to spare regulators as needed. A summary of the 33 airfield circuits by type is listed below:

- Runway edge light circuits: 7
- Runway touch down zone lighting circuits: 3
- Taxiway edge light circuits: 11
- Taxiway centerline circuits: 2
- Runway guard light circuits: 4
- Guidance sign circuits: 3
- Precision Approach Path Indicator (PAPI): 3

2.7.5 FUELING SYSTEMS

Fueling operations at MKE are primarily handled through a consortium (MKE Fuel Company). The consortium was formed in 2016 after Shell Oil decided to sell much of its airport infrastructure – creating a potential supply shortage for the airlines. MKE Fuel Company is a cooperative of members that include Allegiant, American, Delta, FedEx, Frontier, SkyWest, Southwest Airlines and UPS. Only air carriers can be members of the consortium. Members share the maintenance and operating costs of the fuel system in accordance with a 10/90-share formula. The 10/90 formula means that the first 10 percent of the maintenance and operating costs are shared equally among all members, and the remaining 90 percent are prorated according to the volume of Jet A fuel each carrier sends through the system. Non-members pay a throughput rate for fuel that is 1.5 times the highest member rate, adjusted annually.

The airport fuel pipeline system and related infrastructure is illustrated on **Exhibit 2-37**. The consortium owns the off-airport Jet A fuel terminal located south of College Avenue and west of the Union Pacific Railroad. This station is fed from the Chicago area via the West Shore Pipeline company. The station contains 3 large aboveground fuel storage tanks (a 4-million-gallon tank, a 3-million-gallon tank and a 1-million-gallon tank). Fuel from the off-airport station is piped to the on-Airport fuel farm located north of Concourse C via a 16-inch and 10-inch underground pipe.

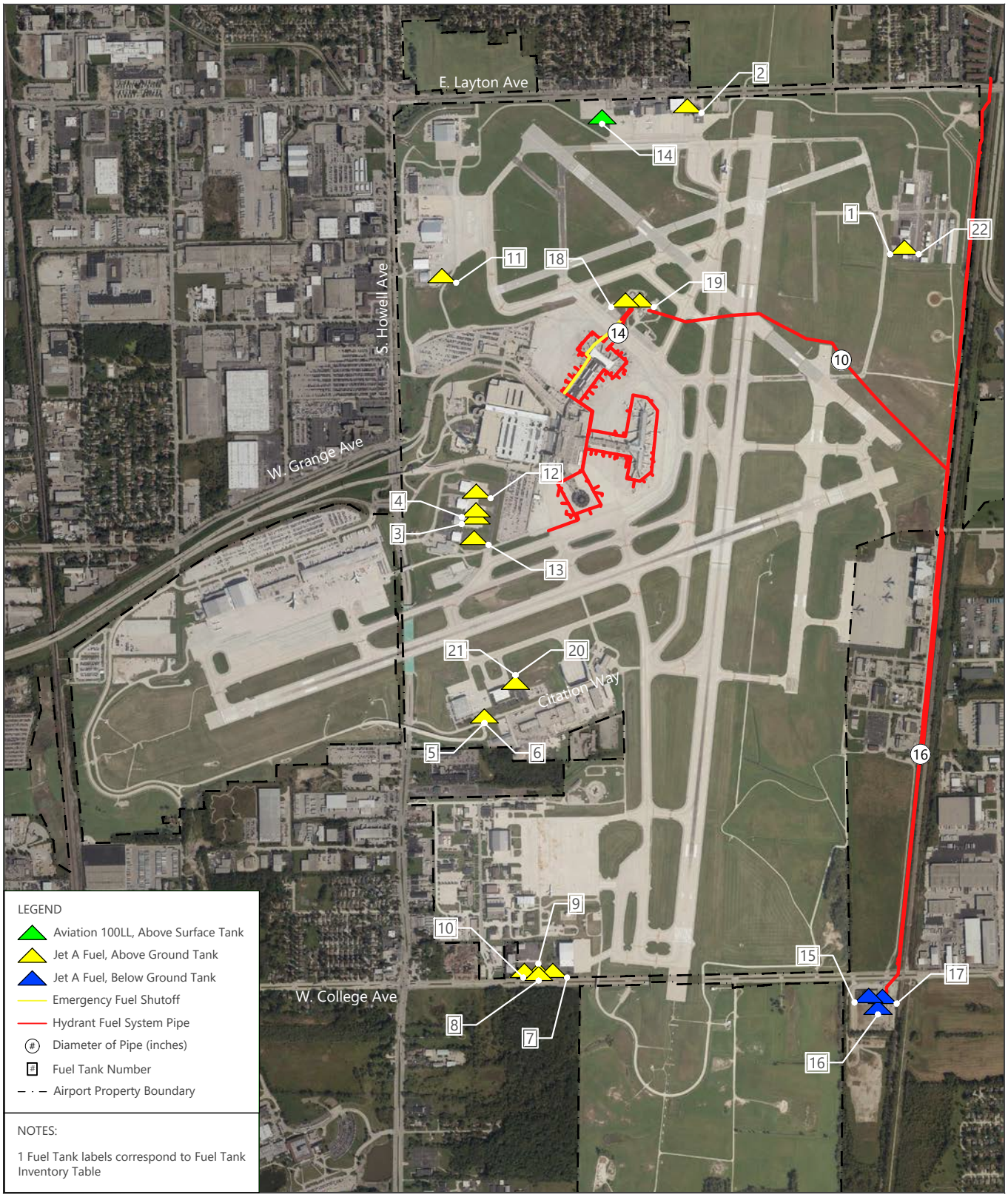
The on-airport fuel farm has relatively small capacity that includes two 40,000-gallon underground tanks. The consortium has infrastructure improvements planned for the on-airport fuel farm that include the installation of a 30,000-gallon aboveground tank, a hydrant cart test stand, and a truck rack. Jet A fuel supply is routed from the on-airport fuel farm to the concourse gate positions via a hydrant fuel system. The hydrant fuel system routes around the perimeter of Concourses C, D and E. Representatives from the consortium reported daily average fuel flowage rates of 150,000 to 160,000 gallons. Busier days can see fuel use eclipse 200,000 gallons.

There are several other privately owned and maintained fuel tanks located at various points around the airfield that are also illustrated on Exhibit 2-35. A summary of the overall number of fuel tanks, age, ownership, type, and size is provided in **Table 2-27**.

2.7.6 FAA AIRPORT TRAFFIC CONTROL TOWER

The FAA ATCT and TRACON are co-located within the same area at MKE. Two buildings make up the ATCT campus at the Airport, an administration building and the Airport Traffic Control Tower, both of which are located at the southwest corner of the parking structure, immediately north of the airport entrance road, or Airport Spur. The administration building is a two-story building with a footprint of approximately16,800 square feet, the ATCT is approximately 200 ft tall (above ground level) and has a footprint of approximately 1,000 square feet. The ATCT consists of the main tower cab and supporting infrastructure and remainder of the administration building is occupied by offices, related space, and the ATCT. The facility operates 24 hours a day, 7 days a week, 365 days a year.

The ATCT has approximately 98 parking spaces that are fenced at the base of the ATCT providing additional parking and administrative space for FAA personnel. All primary air traffic control is completed and coordinated in its main building, the Air Traffic Control Tower, while administrative and other functions are housed within the administration building. The ATCT location is depicted on Exhibit 2-34.



SOURCES: Quantum Spatial, September 2018 (aerial imagery); Milwaukee Mitchell International Airport Geographic Information System (data provided November 2018).

EXHIBIT 2-37

NORTH 0 1,700 ft

AIRPORT FUELING INFRASTRUCTURE

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-37 Airport Fueling.dwgLayout: Airport Fueling Infrastructure Plotted: Sep 23, 2019, 01:40PM

TABLE 2-27 FUEL TANK INVENTORY

TANK NUMBER	OWNERSHIP	ABOVE-GROUND/ UNDER-GROUND	QUANTITY (GALLON)	FUEL TYPE	DATE INSTALLED
1	Rite Hite (Hangar)	Under	12,000	Jet A	October 1982
2	Keljen (Hangar)	Under	12,000	Jet A	December 1990
3	Rockwell International (Hangar)	Under	10,000	Jet A	February 1990
4	Rockwell International (Hangar)	Under	10,000	Jet A	February 1990
5	Cessna Citation Service Center	Under	5,000	Jet A	July 1990
6	Cessna Citation Service Center	Under	5,000	Jet A	July 1990
7	Altria	Under	20,000	Jet A	July 1990
8	Altria	Under	20,000	Jet A	1980
9	Altria	Under	20,000	Jet A	1980
10	Altria	Under	20,000	Jet A	1980
11	Air Cargo Carriers	Under	12,000	Jet A	June 1998
12	Harley Davidson	Under	18,000	Jet A	1997
13	Sterling Aviation	Under	12,000	Jet A	July 1998
14	Signature Flight Support	Above	10,000	Aviation 100LL	1998
15	MKE Fuel Company (Consortium)	Above	2,856,000	Jet A	No Data
16	MKE Fuel Company (Consortium)	Above	4,200,000	Jet A	No Data
17	MKE Fuel Company (Consortium)	Above	840,000	Jet A	No Data
18	MKE Fuel Company (Consortium)	Under	40,000	Jet A	1986
19	MKE Fuel Company (Consortium)	Under	40,000	Jet A	1986
20	Johnson Controls	Under	20,000	Jet A	2003
21	Johnson Controls	Under	20,000	Jet A	2003
22	Freight Runners	Under	11,000	Jet A	No Data

SOURCES: VFA, Inc. Asset List Report 2017; Milwaukee Mitchell International Airport Geographic Information System data 2018.

2.7.7 AMTRAK STATION

The Amtrak Hiawatha line provides passenger rail service connecting downtown Chicago (Union Station) to the downtown Milwaukee area (Intermodal Station) with three stops in between: Glenview, Illinois; Sturtevant, Wisconsin; and MKE. The Amtrak station at MKE is sometimes referred to as the Milwaukee Airport Rail Station (MARS). The MARS station and platform were originally constructed in 2005 on Canadian Pacific Railroad property within an area perpetually leased to the WisDOT. The station is approximately 9,000 square feet in size. A 400-foot southerly extension to the platform was constructed in 2013, doubling the length to 800 feet. The Amtrak station parking lot constructed on Airport property, accommodates approximately 300 parking stalls, and is revenue controlled. The Airport provides shuttle service between the Amtrak station and the Airport terminal.

There are currently seven daily roundtrips offered from the Airport MARS Station along the Hiawatha route. It is one of the busiest Amtrak routes in the nation, and the busiest route in the Midwest. MARS is one of only four intercity passenger rail stations in the nation located at an airport and has over 167,000 riders annually.

The existing MARS station and platform are located on the eastern track of the Canadian Pacific Rail's double track Chicago and Milwaukee (C&M) subdivision that accommodates both passenger and freight trains. The WisDOT is currently planning to implement a second platform on the westerly track that will include an overhead pedestrian bridge with elevator towers to connect passengers from the existing easterly Amtrak station to the proposed westerly platform. The second platform will provide improved fluidity and capacity between the passenger and freight trains that share the use of these lines. This platform will also provide the addition of 2 one-way trips per week on the Hiawatha line to achieve the WisDOT goal of improving weekend service. WisDOT is also working to implement an increase in the Hiawatha Service from 7 to 10 round-trips daily; the second platform is one of 9 infrastructure projects required to implement this goal.

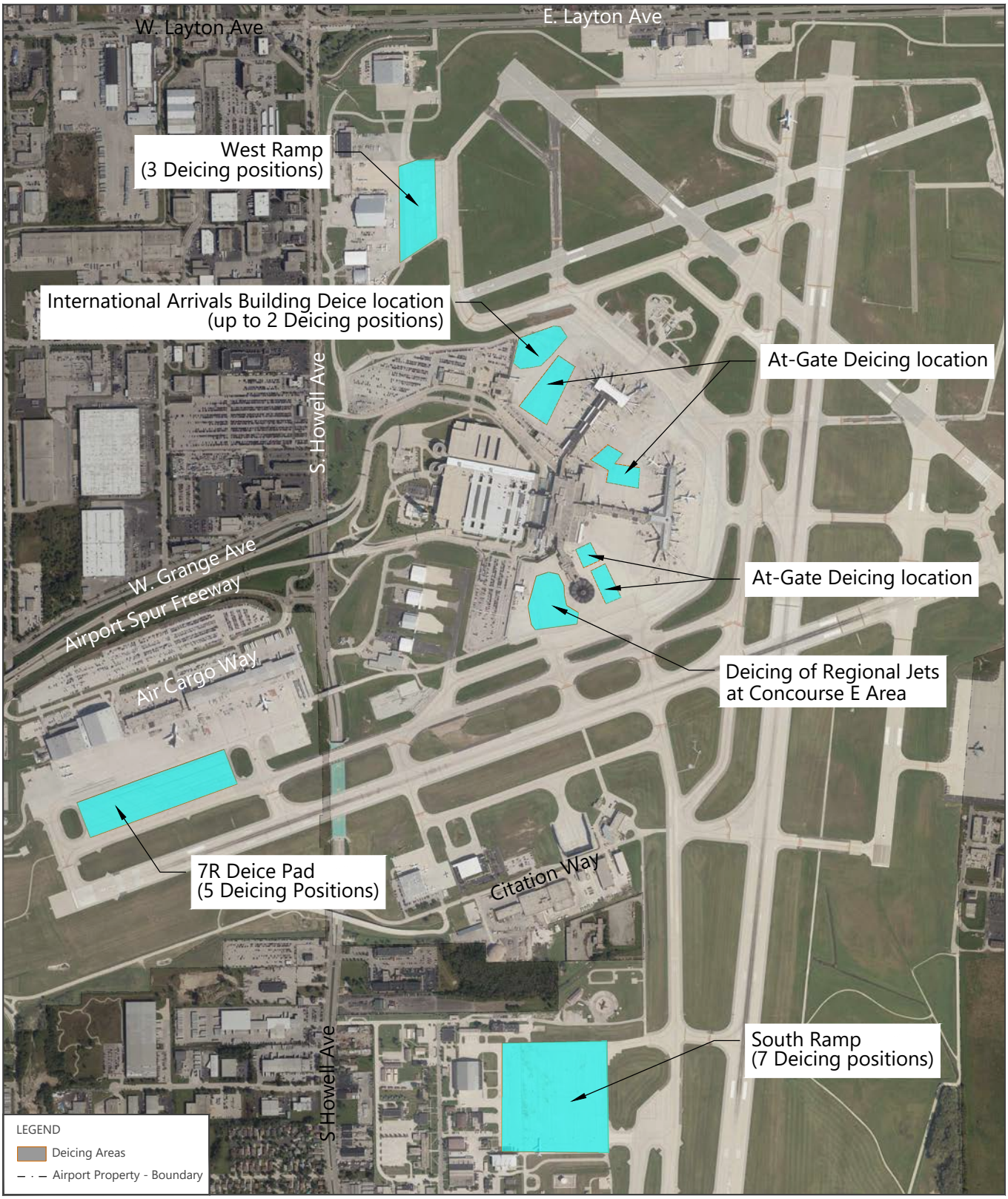
2.7.8 DEICING OPERATIONS

Deicing operations at MKE are regulated by the Wisconsin Department of Natural Resources (WisDNR) through the Wisconsin Pollutant Discharge Elimination System program. The Airport permit establishes the requirements that must be followed, including the implementation of best management practices, chemical monitoring, the percentage of glycol reclaimed, and necessary reporting. All signatories conducting deicing operations must operate under the requirements of the same Wisconsin Pollutant Discharge Elimination System permit. The current permit is in good standing but set to expire in 2019. The Airport is currently in the re-application process for this permit. Required permit monitoring is conducted under an intergovernmental agreement with the United States Geological Survey.

Historically, aircraft deicing occurred adjacent to the concourse gates and within the respective lease areas of the carriers and cargo operators. Airlines currently contract for deicing services. While this practice still occurs, a general increase in aircraft size and operations is contributing to congestion in these areas. In recent years, MKE has initiated a centralized deicing program. Outside the concourse gates, deicing operations occur at five other ramp areas as illustrated on **Exhibit 2-38**. During the winter months, most operations occur on Runway 1L-19R and the south ramp is the most heavily utilized location for deicing.

The MKE Wisconsin Pollutant Discharge Elimination System permit is volume-based and requires the capture or recovery of 34 percent of the aircraft deice fluid (ADF) applied at MKE, with a goal of 85 percent. Credit is given for the use of technology and conservation, such as the use of reduced concentrations of ADF during appropriate conditions. The Airport sweeps the ramps to collect ADF runoff with the use of three glycol recovery vehicles that can vacuum up to 1,000 gallons of runoff per minute directly from pavement and into an onboard tank. However, the efficiency of the glycol recovery vehicles coupled with the labor-intensive nature of trapping and pumping the ADF runoff has this method of collection on the decrease.

Several of the deicing pad locations contain drains, valves, and pumps specifically designed for the collection of ADF runoff. The Runway 7R deice pad was constructed in 2015. This pad includes a series of trench drains, a diversion chamber, and a lift station that ultimately convey the ADF runoff to a 100,000-gallon holding tank located west of the Cargo Ramp.



SOURCES: Quantum Spatial, September 2018 (aerial imagery); Deicing Locations, 2017-2018 Winter Operations Plan - Milwaukee Mitchell International Airport - October, 2017

EXHIBIT 2-38

DEICING OPERATION AREAS

NORTH 0 1,200

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-38 Deicing.dwgLayout: 2-38 Plotted: Sep 23, 2019, 01:43PM

All ADF applied is propylene glycol-based and the collected runoff is transported to the Milwaukee Metropolitan Sewerage District (MMSD) for treatment. The MMSD uses the glycol runoff in its anaerobic digestors, generating methane gas which is used as an energy source to power the treatment plant. Given this benefit, MMSD charges MKE a very low rate for the treatment of the ADF runoff and this relationship has been mutually beneficial to both parties. The Airport operator and MMSD recently entered into a new five-year agreement to extend this operation through Year 2024. A summary of recent glycol usage by airline/operator and the collection summaries are provided in **Table 2-28**.

Apart from the aircraft deicing operations, chemicals are applied to the airfield pavements as part of its snow removal operations at MKE. The Airport noted that ice events have been occurring at a greater rate than snow events in recent years. The pre-wetting of pavements with chemical deicer helps control ice from accumulating on pavements – which ultimately requires less staffing and equipment to remove it later. Airport representatives noted an average of $1 million is spent annually on pavement deicers and as much as 10,000 gallons/day can be used during icy weather conditions.

2.7.9 CONNECTED SUPPORT FACILITIES

Connected support facilities at MKE include the 128th WI ANG and the MKE Regional Business Park. Both facilities cover large areas of the Airport property and encompass numerous buildings and facilities. A more broadly-based inventory of these facilities is provided in the following sections.

2.7.9.1 128TH WISCONSIN AIR NATIONAL GUARD MILITARY FACILITIES

MKE is home to the 128th WI ANG. The unit is currently assigned KC-135 aircraft, which they operate primarily from the Guard Central facility, a 71-acre campus located east of Runway 1R-19L and west of the Union Pacific Railroad. The 128th WI ANG also leases additional Airport property located west of Runway 1L-19R (Guard West) and east of the Union Pacific Railroad (Guard East). The central, westerly and easterly locations of the 128th WI ANG facilities are depicted on Exhibit 2-6. The overall inventory of the 128th WI ANG facilities are summarized in **Table 2-29**.

The KC-135 is scheduled to fly through 2040, however, the 128th WI ANG is in national consideration for transition to the KC-46 with the next selection to occur in 2021. The latest Installation Development Plan for the 128th WI ANG is from September 2015 and states that the 128th WI ANG plans to divest the Guard West and ARFF Station 2 locations and consolidate functions at Guard Central. A great deal of stormwater is conveyed to the 128th WI ANG area from the City of Cudahy and areas to the east. Frequent isolated flooding occurs at the north end of the 128th WI ANG facility (from Bailey's Pond) and occasionally backs up to flood ditch lines around the 128th WI ANG apron and other adjacent low-lying locations.

A new Entry Control Facility is planned for near-term construction within the Guard East boundaries, east of the Union Pacific Rail Line. The 128th WI ANG also plans to construct a new petroleum, oils, and lubricants facility to replace the existing one within Guard Central that will include a pipe tee for a future desired connection to the MKE underground fuel distribution line. Representatives from the 128th WI ANG noted that the apron's proximity to Runway 1R-19L airspace restricts the parking and allowable tail height positions of the KC-135 aircraft. Given the constrained nature of the Guard Central campus, a westerly extension of the ramp would provide greater flexibility in the parking and configuration of the refueling aircraft, and more easily accommodate potential future transition to the larger KC-46 aircraft. The 128th WI ANG expressed interest in the use of any future deice pad that may be constructed near the approach end of Runway 19R.

TABLE 2-28 HISTORIC GLYCOL USE BY OPERATOR

MONTHLY USAGE (GALLONS)	AIR WISCONSIN		DELTA		SOUTHWEST		FEDEX		UPS		ASIG		AVFLIGHT		MENZIES		TOTAL TYPE I	TOTAL TYPE IV
	I [1]	IV [2]	I	IV	I	IV	I	IV	I	IV	I	IV	I	IV	I	IV		
2014 -2015 Glycol Use Summary																		
November	0	0	0	0	3,566	1,210	0	0	0	0	4,768	0					8,334	1,210
December	1,172	255	2,501	0	2,151	85	878	75	933	280	2,182	218					9,817	913
January	2,775	0	7,270	1,985	10,242	2,750	3,700	705	2,538	590	14,584	5,282					41,109	11,312
February	2,805	1,660	7,950	1,600	8,372	2,010	2,570	505	1,845	320	10,736	3,577					34,278	9,672
March	933	500	3,700	1,100	3,073	995	553	100	875	0	5,096	1,303					14,230	3,998
April	0	0	0	0	0	0	0	0	0	0	0	0					0	0
TOTAL	**7,685**	**2,415**	**21,421**	**4,685**	**27,404**	**7,050**	**7,701**	**1,385**	**6,191**	**1,190**	**37,366**	**10,380**					**107,765**	**27,105**
2015 -2016 Glycol Use Summary																		
November	472	195	338	0	3,207	750	700	80	850	70	4,143	1,086					9,710	2,181
December	952	495	975	0	2,635	1,607	1,157	280	2,000	820	4,671	1,235					12,390	4,437
January	2,550	1,028	1,550	200	6,779	1,180	1,579	200	2,916	185	10,847	3,477					26,221	6,270
February	1,921	1,015	3,600	1,400	4,643	1,771	1,930	202	1,838	475	8,240	3,670					22,172	8,533
March	1,009	565	1,500	200	3,764	1,170	1,905	180	1,535	100	5,823						15,536	2,215
April	0	0	0	0	0	0	0	0	0	0	321						321	0
TOTAL	**6,904**	**3,298**	**7,963**	**1,800**	**21,028**	**6,478**	**7,271**	**942**	**9,139**	**1,650**	**34,045**	**9,468**					**86,350**	**23,636**
2016 -2017 Glycol Use Summary																		
November			240	0	247	45	3,413	85	125	0	895	100					4,920	230
December			7,510	1,580	11,676	3,814	3,386	235	5,575	1,721	18,724	1,508					46,871	8,858
January			2,920	660	6,674	1,180	1,579	200	2,675	520	32,473	3,146					46,321	5,706
February			1,620	520	3,470	82	494	5	486	100	3,626	887					9,696	1,594
March			8,180	1,040	4,674	2,021	2,044	250	2,395	215	9,539	2,640					26,832	6,166
April																	0	0
TOTAL	**0**	**0**	**20,470**	**3,800**	**26,741**	**7,142**	**10,916**	**775**	**11,256**	**2,556**	**65,257**	**8,281**					**134,640**	**22,554**
2017 -2018 Glycol Use Summary																		
November	0	0	225	0	628	0	150	0	0	0			0	0	195	26	1,198	26
December	5,171	1,998	4,767	2,600	5,110	1,110	2,707	595	2,132	770			215	0	5,188	3,031	25,290	10,104
January	3,133	737	2,440	1,100	8,916	1,415	1,407	155	1,480	155			448	195	13,888	3,761	31,712	7,518
February	4,688	1,121	500	135	8,912	1,715	588	595	2,126	140			250	135	14,079	3,154	31,143	6,995
March	905	336	296	0	1,759	160	295	0	795	265			400	90	2,614	505	7,064	1,356
April	3,211	351	995	810	2,940	1,388	1,355	595	2,887	358			138	95	6,408	2,206	17,934	5,803
TOTAL	**17,108**	**4,543**	**9,223**	**4,645**	**28,265**	**5,788**	**6,502**	**1,940**	**9,420**	**1,688**			**1,451**	**515**	**42,372**	**12,683**	**114,341**	**31,802**

NOTES:
1 Type I aircraft deicing fluid
2 Type IV aircraft deicing/anti-icing fluid
3 Type I And IV fluids are used at varying concentrations, mixed with water.
4 Totals may not add due to rounding.
SOURCE: Milwaukee Mitchell International Airport, Glycol Collection Efficiency Reports, 2014 – 2018.

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TABLE 2-29 ESTIMATED 128TH WISCONSIN AIR NATIONAL GUARD SPACE

FACILITY	BUILDING NAME / DESCRIPTION	NUMBER OF BUILDINGS	BUILDING AREA (SQUARE FEET)	APRON AREA (ACRES)	CAMPUS AREA (ACRES)
128th WI ANG[1] - WEST	Wisconsin Air National Guard - West	3	32,974	0.00	6.80
Buildings 212 & 213	128th ARFF[2] Station 2 – MKE Regional Business Park Lease	2	14,040	0.00	0.00
128th WI ANG - CENTRAL	Wisconsin Air National Guard - Central (Main Complex)	26	311,130	19.98	70.92
128th WI ANG - CENTRAL	Wisconsin Air National Guard - Central (Unallocated)	0	26,309	0.00	
128th WI ANG - EAST	Wisconsin Air National Guard - East	0	0	0.00	25.00
	Totals:	**31**	**384,453**	**19.98**	**102.72**

NOTES:
1 128th WI ANG: 128th Wisconsin Air National Guard
2 ARFF: Aircraft Rescue and Fire Fighting
3 The 128th WI ANG overlaps MKE property at ARFF Station 2, the western-most portion of the Guard Central Ramp, and portions of Guard East.
SOURCES: 128TH Air Refueling Wing – Installation Development Plan 2015; Airport Lease Records and Geographic Information System Data, 2018.

2.7.9.2 MKE REGIONAL BUSINESS PARK

The MKE Regional Business Park was the former home of the 440th Airlift Wing of the Air Force Reserve (the 440th). The base was closed in 2008 as part of the federal Base Realignment and Closure Act and ownership of this property was transferred to Milwaukee County. Buildings and facilities within this area are inventoried and illustrated on Exhibit 2-35. Several private businesses and non-profit organizations currently operate within the business park that includes over 175,000 square feet of leasable building space.

In addition to the non-aeronautical business leases, several facilities within the MKE Regional Business Park are utilized to meet the needs of the Airport. The Airport Electrical Maintenance staff, supplies, and equipment are currently housed within the first floor of Building 220. Airport Maintenance stores its 12 combination snow removal units and other snow removal equipment within Building 302. Nine other buildings are currently used by Airport Maintenance for both cold and heated storage. The FAA and other aircraft maintenance and cargo companies also hold leases or currently make use of seven other buildings and facilities within the business park. In total, approximately 78 percent of the leasable building space is occupied.

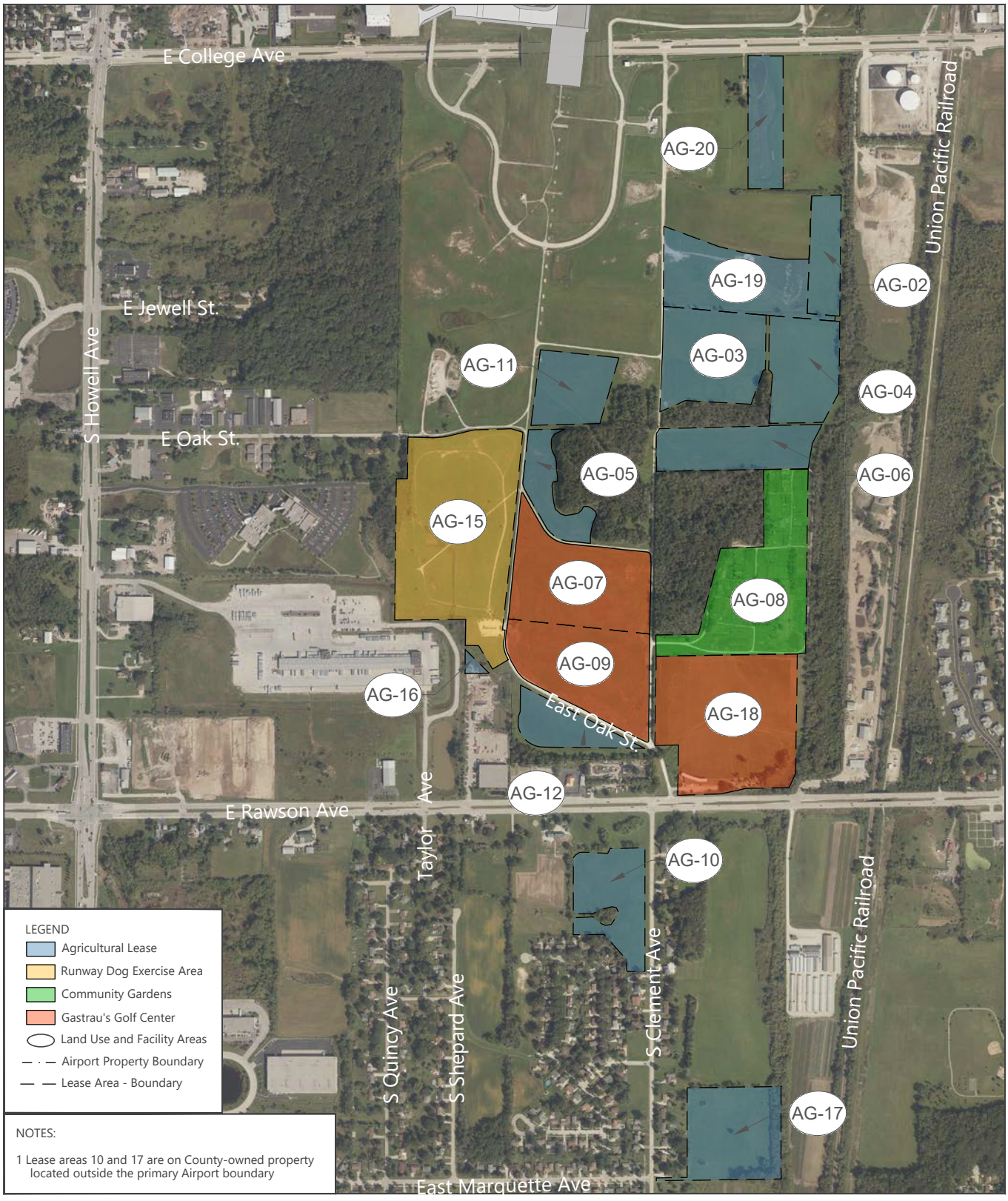
2.7.10 OTHER NON-AERONAUTICAL LAND USES AND FACILITIES

Other non-aeronautical uses of the Airport include a publicly accessed dog park, community gardens, a golf driving range, aircraft observation areas, and other spaces identified for agricultural or other uses. A summary of these areas is provided in **Table 2-30**. These facilities are primarily located within the southernmost portion of the Airport between College Avenue and Rawson Avenue and are illustrated on **Exhibit 2-39**. One Aircraft Observation Parking Lot is located east of the Keljen hangar on the north side of the Airport, the second is located along 6th street, both are illustrated on Exhibit 2-34.

TABLE 2-30 OTHER NON-AERONAUTICAL LAND USES AND FACILITIES

FACILITY	LAND USE / DESCRIPTION	LAND LEASE AREA (ACRE)
AG-02	Agricultural / Other	4.22
AG-03	Agricultural / Other	10.60
AG-04	Agricultural / Other	7.94
AG-05	Agricultural / Other	4.12
AG-06	Agricultural / Other	7.69
AG-07	Gastrau's Golf Center	13.75
AG-08	Community Gardens	16.92
AG-09	Gastrau's Golf Center	12.88
AG-10	Agricultural / Other	7.48
AG-11	Agricultural / Other	5.96
AG-12	Agricultural / Other	4.30
AG-15	Runway Dog Exercise Area	25.94
AG-16	Agricultural / Other	0.33
AG-17	Agricultural / Other	9.95
AG-18	Gastrau's Golf Center	20.50
AG-19	Agricultural / Other	10.78
AG-20	Agricultural / Other	5.65
	Total:	**169.01**

SOURCE: Milwaukee Mitchell International Airport Geographic Information System Property and Lease Space Layer Data-Nov. 2018.



SOURCES: FAA Airports Geographic Information Systems (GIS) database, December 2018; Quantum Spatial, September 2018 (aerial imagery).

NORTH 0 1,000 ft

EXHIBIT 2-39

OTHER NON-AERONAUTICAL LAND USES AND FACILITIES

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2.8 UTILITIES

The primary utilities servicing MKE include electric, water, sanitary, natural gas, communication, and storm sewer lines. The sizes and locations of the utilities were inventoried from existing mapping and information provided from the Airport Geographic Information System database. Local municipalities were also contacted to obtain records of utility data (where available and applicable) to confirm and supplement the Airport data. The following subsections discuss the individual utilities in more detail.

2.8.1 ELECTRIC

Electrical power is supplied to the Airport by We-Energies, which serves southeast Wisconsin. **Exhibit 2-40** illustrates the location of both underground and overhead electric lines within and adjacent to Airport property. Primary electrical service is provided to the terminal area by power lines running along Howell Avenue and comes into the Airport to feed the primary substations located just south of the Airport Traffic Control Tower. A secondary feed comes from a substation located south and west of the Airport. In cases where the primary service line is disrupted, or the primary substation is inactivated, there is an Automatic Throw Over switch that transfers power to the Airport Alternate Substation. In case of power loss, power for essential services is provided by generators. The majority of service to Airport facilities is three-phase power.

The Airport primary Cargo area is served with three-phase power that feeds from WE Energies to Air Cargo Way. The FAA power conditioning system is also located within this area, immediately west of the Airport Surveillance Radar Tower. The substation servicing this area of the Airport is also located just west of this tower.

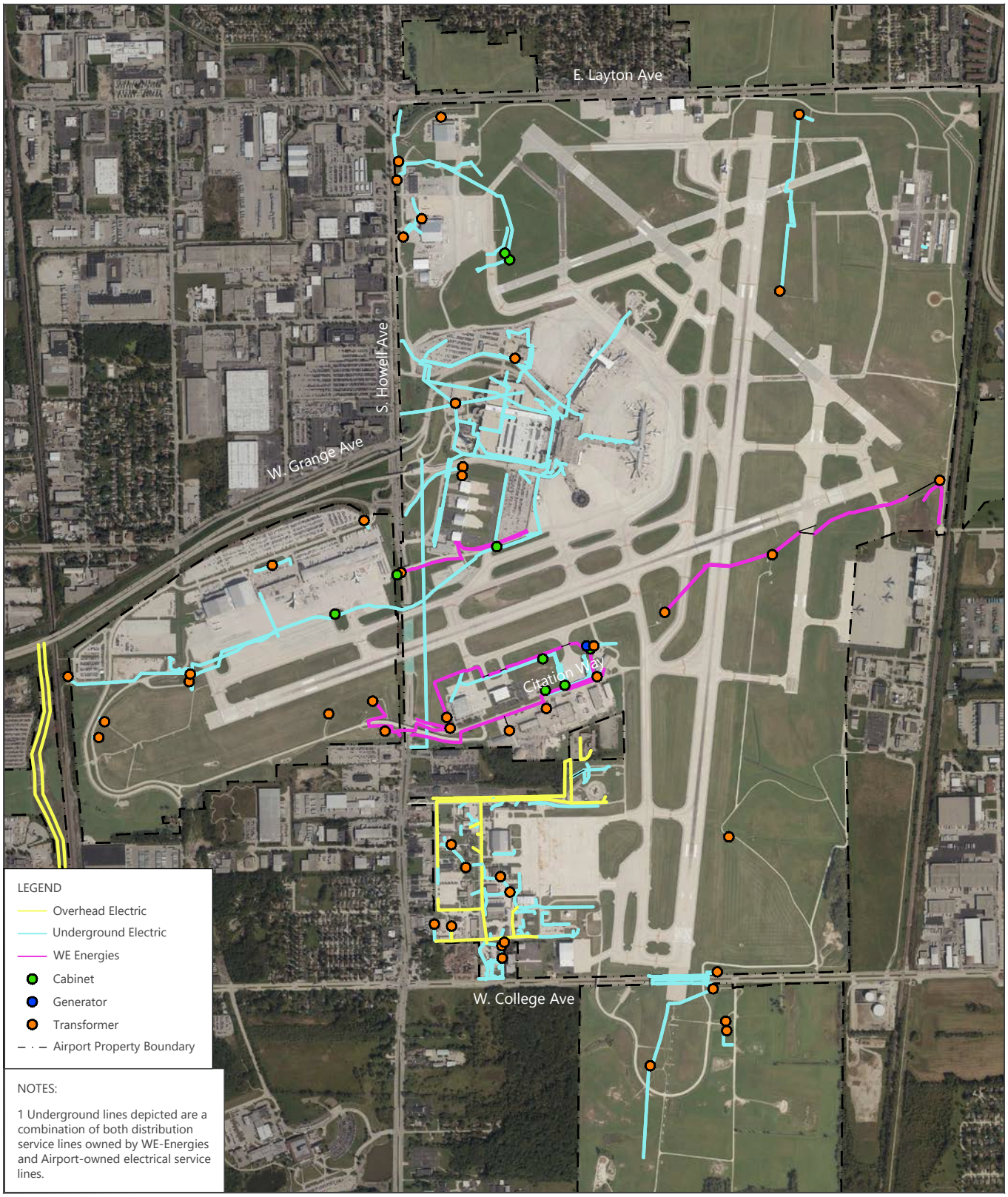
FAA-owned navigational aids on the airfield are generally serviced from single-phase We-Energies power lines that run through the Airport via easements. Some larger navigational instrument facilities such as the Instrument Landing System CAT II/III for Runway 1L-19R are fed with larger three-phase power service and are independently supported with diesel-powered backup generators to maintain service in the event of a power outage.

2.8.2 WATER

Water is provided to the Airport by the City of Milwaukee. Water mains of varying sizes run down the major adjacent roadways with laterals that feed service into the various development areas of the Airport. **Exhibit 2-41** illustrates the location of water mains and services lines throughout the Airport.

The water main running along Layton Avenue is a 16-inch line and feeds into the north side of the Airport at 3 primary points: a 12-inch service to the northeast GA area, an 8-inch service to the Signature FBO campus, and a 6-inch service to the AvFlight Hangar area located on the southeast quadrant of the intersection of Howell and Layton Avenues. The 12-inch line feeding the northeast GA area extends further south to service the 128th WI ANG and eventually loops (connects) to a 16-inch main line that runs along College Avenue.

The water main running along Howell Avenue is a 12-inch line that provides a 12-inch fire service to the Air Wisconsin hangar (Facility 9-08) and branches to 8-inch lines that service other facilities around the West Ramp. The terminal area is serviced with a 12-inch loop from the Howell Avenue main that comes in near Hutsteiner Drive, routes along the circulation roadways, and ultimately loops back to the Howell Avenue main line near the Airport Spur. The terminal area service loop includes 8-inch sub-loops around Concourses C and D. The FAA offices and Airport Traffic Control Tower are serviced with a 6-inch sub-loop that feeds from the primary terminal area loop. Concourse E, the Delta Maintenance building (Facility 1-35), and the corporate hangars and post office are serviced with 6-inch to 8-inch lines that dead-end near each facility or service area. Fire suppression lines also feed in to various areas of the parking structure.



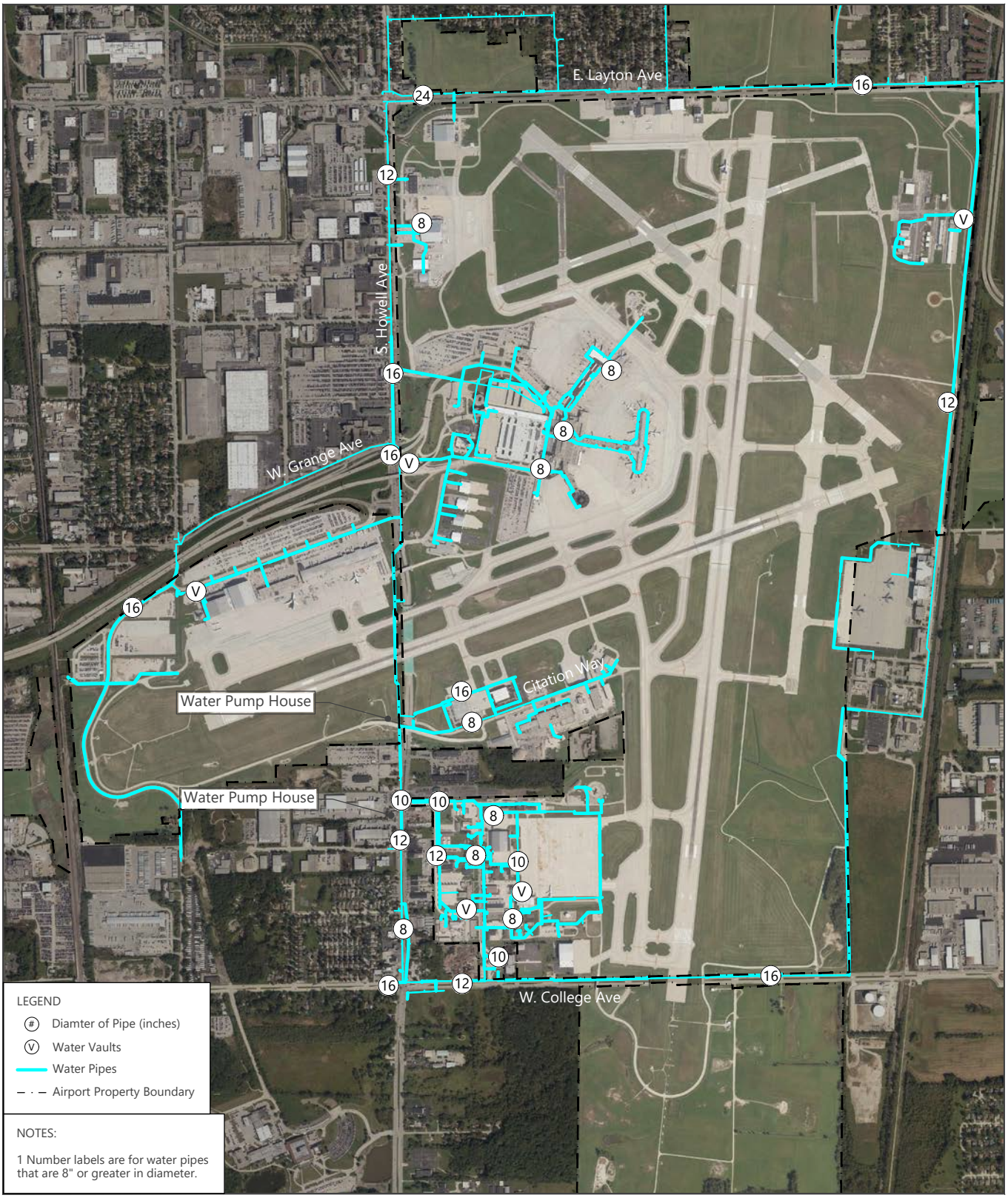
SOURCES: Quantum Spatial, September 2018 (aerial imagery); Milwaukee Mitchell International Airport Geographic Information System (data provided November 2018).

EXHIBIT 2-40

NORTH 0 1,700 ft

ELECTRIC UTILITY LINES

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-40 Electric Utility Lines.dwgLayout: Exhibit 2-40 Plotted: Sep 23, 2019, 01:45PM



SOURCES: Quantum Spatial, September 2018 (aerial imagery); Milwaukee Mitchell International Airport Geographic Information System (data provided November 2018).

NORTH 0 1,700 ft

EXHIBIT 2-41

WATER UTILITIES

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-41 Water Utilities.dwgLayout: Exhibit 2-41
Plotted: Sep 23, 2019, 01:47PM

The primary cargo area south of the Airport Spur is serviced by a 12-inch line that runs along Air Cargo Way. This line connects to the 12-inch main line along Howell Avenue to the east and the 16-inch main line running along 6th Street to the west. Several service lines feed from the Air Cargo Way main line into the various cargo and aircraft maintenance facilities located to the south. The main line along 6th Street also provides a service line to the Amtrak station further west.

Within the South Maintenance Area, an 8-inch service line runs from the Howell Avenue main line down Citation Way and provides water to the primary maintenance building and other support facilities where it dead-ends near the ARFF Station. Separately, a 16-inch service line routes off the 12-inch main line to a pumphouse located near the intersection of Howell Avenue and Citation Way. This pumphouse feeds a 16-inch line that runs along the north sides of the Citation Service Center and the Johnson Controls hangar that provides service and necessary fire suppression for these facilities.

Water service to the MKE Regional Business Park is provided from multiple points including the 12-inch main line along Howell Avenue to the west and the 16-inch main line running along College Avenue to the south. Service lines route through the various roadways within this area and include individual service feeds to the many structures located therein. A water pumphouse is located at the intersection of Howell Avenue and Henry Avenue that provides a fire suppression line that ultimately dead-ends near the South Deice Ramp.

2.8.3 SANITARY

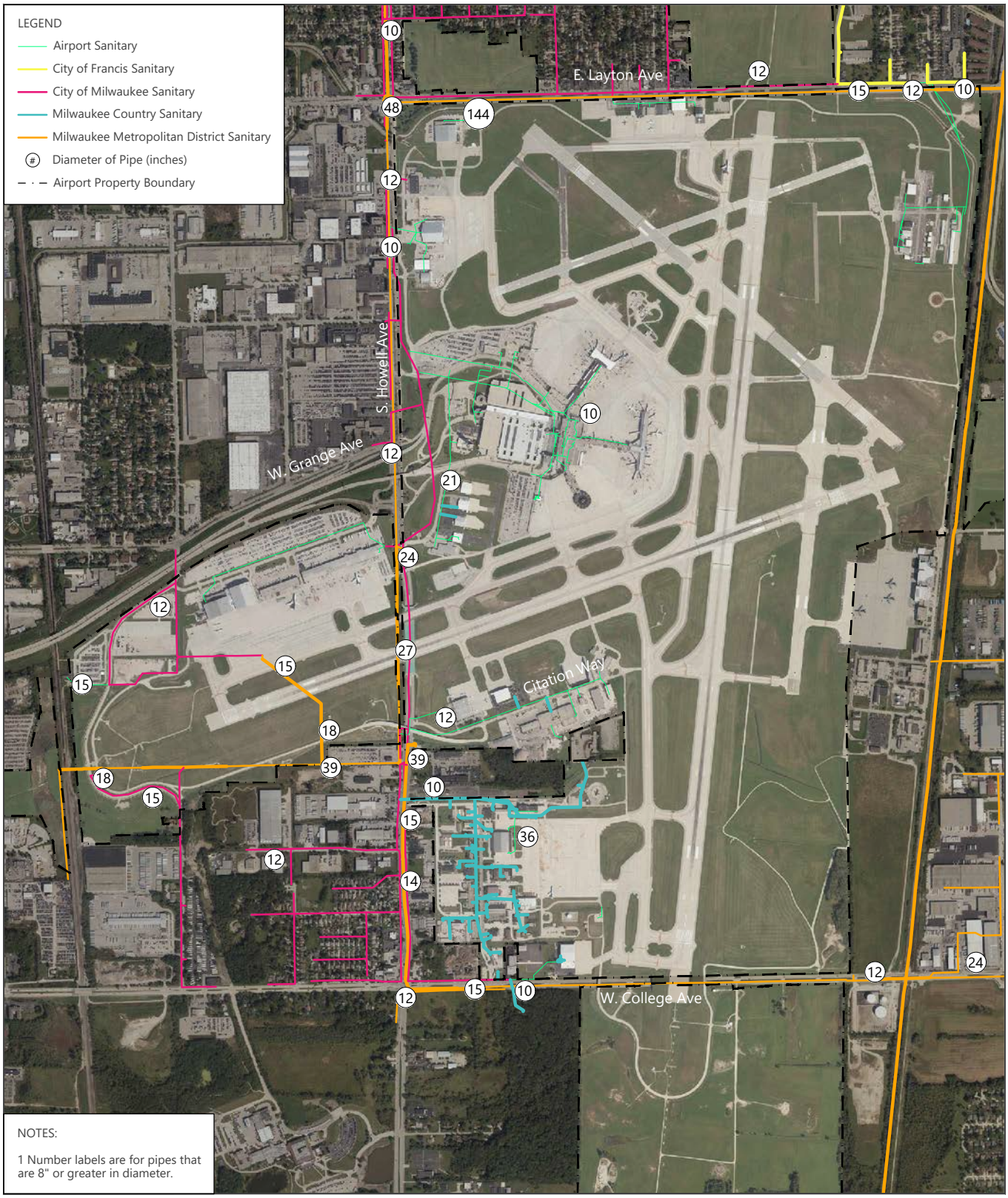
Sanitary lines servicing the Airport come from the City of Milwaukee, the MMSD, and Milwaukee County. The location of these lines in relationship to the Airport-owned sanitary facilities is illustrated on **Exhibit 2-42**.

The north portions of the airfield connect to varying service lines running along Layton Avenue. The northeast GA area drains by gravity to a lift station located just north of the concrete-lined channel area. The lift station pumps the flow through a 4-inch PVC force main that connects to the City of St. Francis sewer running along the north side of Layton Avenue. The AvFlight and Signature FBO facilities are serviced by gravity sewers that connects to the 144-inch MMSD Metropolitan Interceptor Sewer line running along the south side of Layton Avenue.

Sanitary facilities within the Air Wisconsin and West Ramp area of the Airport drain by gravity through 6-inch service lines that connect to both the City of Milwaukee and a MMSD Metropolitan Interceptor Sewer line (27-inch) running along Howell Avenue.

The terminal area sanitary lines connect to a 21-inch main line owned by the City of Milwaukee that runs along the east side of Howell Avenue. Concourse C includes a 10-inch service line that drains by gravity along the east side of the stem to the terminal area main lines running along Hutsteiner Drive. Sanitary lift stations and segments of a force main service Concourse D, Concourse E, and other service lines between the terminal and parking structure. The corporate hangars and post office located south of the terminal are serviced with a gravity sewer that drains north and ultimately connects to the City of Milwaukee 21-inch main line near Hutsteiner Drive.

Sanitary service to the facilities within the primary cargo area drain by gravity to an airport-owned 12-inch line running along the north side of Air Cargo Way. This line conveys flow eastward where it crosses Howell Avenue by means of 15- to 18-inch lines that connect to the 21-inch main line owned by the City of Milwaukee.



SOURCES: Quantum Spatial, September 2018 (aerial imagery); Milwaukee Mitchell International Airport Geographic Information System (data provided November 2018).

EXHIBIT 2-42

SANITARY UTILITIES

NORTH 0 1,700 ft

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Within the South Maintenance Area, a 10-inch sanitary service line runs along Citation Way and coveys flow westward to the City-owned main lines within Howell Avenue. Several 4-inch service laterals branch off from this 10-inch line to service the primary maintenance building, the ARFF Station, the Johnson Controls hangar, and other ancillary structures within this area. The Citation Service Center hangar is serviced with a 12-inch sanitary line that connects directly to the City's main line along Howell Avenue.

Sanitary lines within the MKE Regional Business Park are owned by Milwaukee County. These lines generally flow by gravity to the north and west.

2.8.4 NATURAL GAS

Natural gas facilities at MKE are provided by We-Energies and are illustrated on **Exhibit 2-43**. A landfill gas line owned by the MMSD conveys methane gas collected from a former landfill site (located south of the 128th WI ANG).

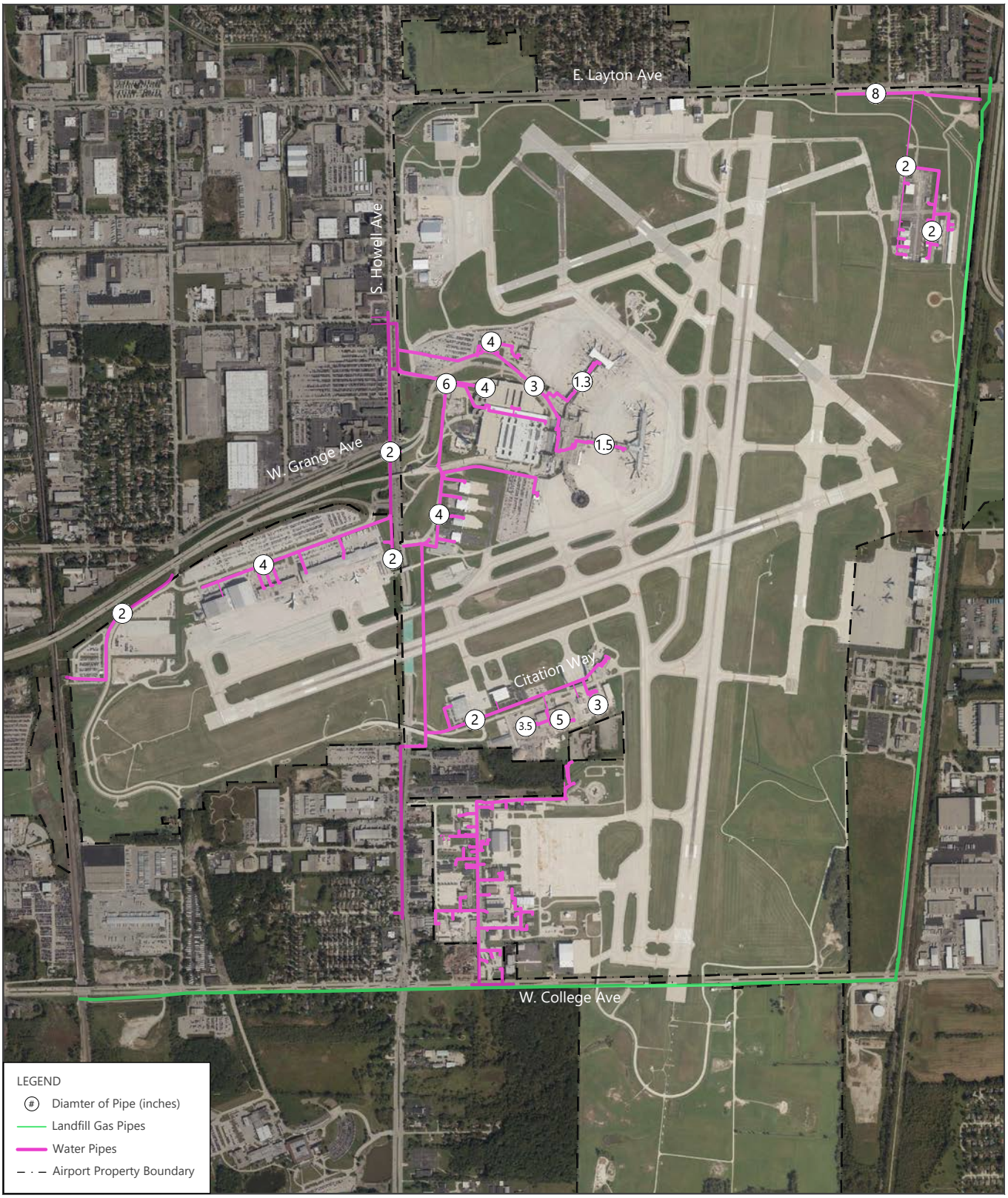
2.8.5 COMMUNICATIONS

Communication utilities at MKE are comprised of telephone, fiber-optic, fire-comm, and those generally labeled as "communication." These line types and locations are illustrated on **Exhibit 2-44**.

2.8.6 STORM SEWER UTILITIES AND AIRPORT DRAINAGE

Drainage and storm sewer facilities at MKE are illustrated on **Exhibit 2-45**. The primary developed area of the Airport represents roughly 1,800 acres that drain to 3 primary basins and release points from the airfield property. These three primary drainage areas are illustrated on Exhibit 2-45.

The northernmost drainage basin of the Airport is represented in blue. Water within this area is conveyed through overland flow and ditch lines to a series of storm sewer structures and pipes. These storm sewer pipes range in size and age, but generally flow to larger box culverts and dual-lines that run through this portion of the airfield. These lines include the presence of a dual 54-inch trunk sewer line that conveys drainage across Runway 1L-19R, Runway 13-31 and Runway 7R-25L. Within this same drainage basin, a concrete-lined channel conveys water that enters the Airport from the east under the Lake Park Freeway and the Union Pacific Railroad. This concrete channel starts just east of the northeast GA area and drains north and west where it enters a double box culvert (two 10-foot by 15- foot). This box culvert system runs parallel to and south of Layton Avenue and conveys the storm water further west and under the safety area for Runway 19R and the Signature FBO campus. The dual box culvert daylights back to a concrete channel that conveys the storm water an additional 1,000 feet west. The dual box culvert and the dual 54-inch storm sewer system come together at this point - just southwest of the intersection of Howell and Layton Avenue. Stormwater from the northerly basin ultimately leaves the Airport at this point via a large box culvert that runs under Howell Avenue. This release point is referred to as the Wilson Park Creek Outfall within the storm water management report for MKE. Wilson Park Creek is located immediately northwest of the outfall point and drains to the Kinnikinic River which ultimately drains to Lake Michigan.



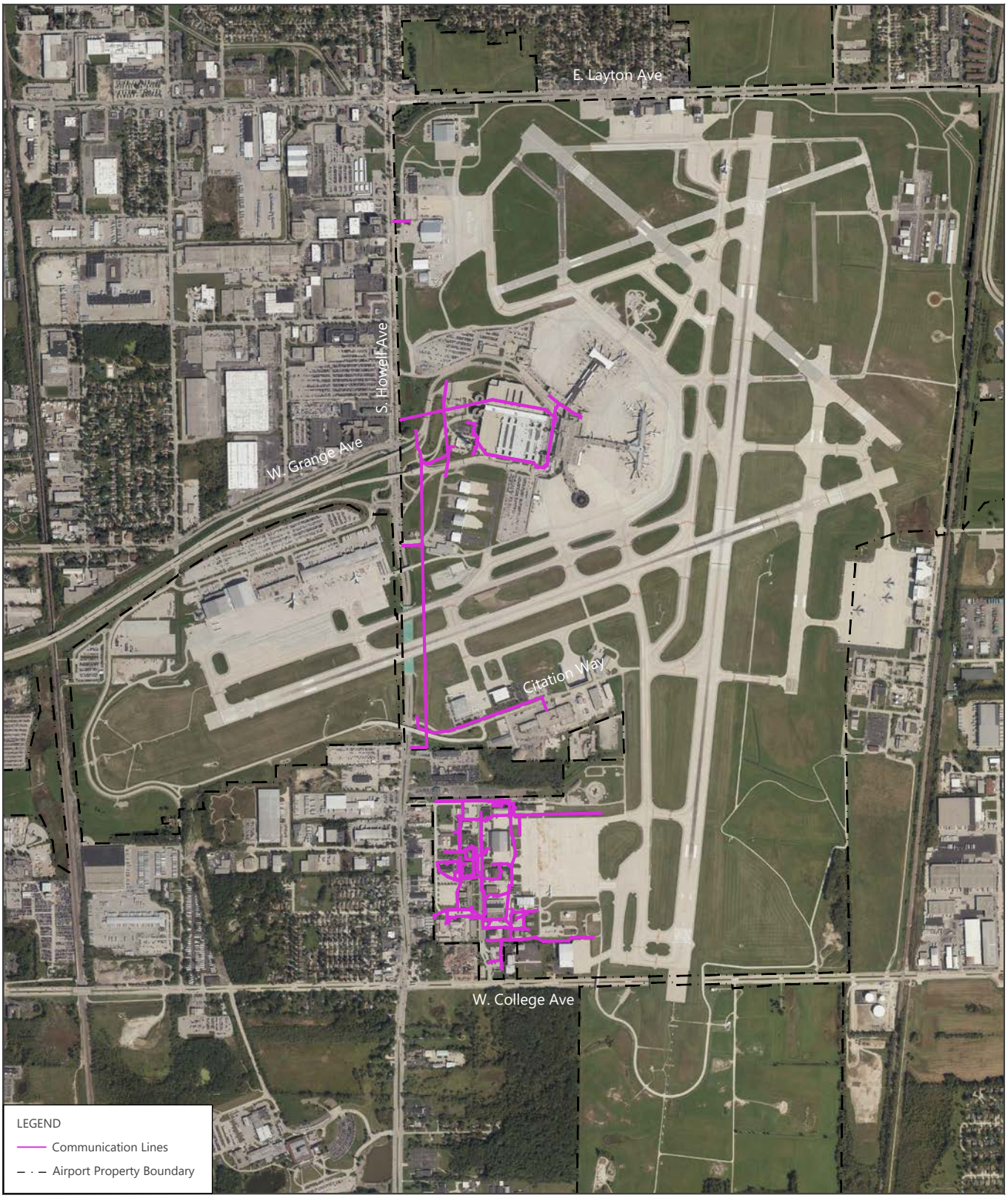
SOURCES: Quantum Spatial, September 2018 (aerial imagery); Milwaukee Mitchell International Airport Geographic Information System (data provided November 2018).

EXHIBIT 2-43

NORTH 0 1,700 ft

LANDFILL GAS AND NATURAL GAS UTILITIES

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-43 Landfill & Natural Gas Utilities.dwgLayout: Landfill Gas and Natural Gas Utilities Plotted: Sep 23, 2019, 01:50PM



SOURCES: Quantum Spatial, September 2018 (aerial imagery); Milwaukee Mitchell International Airport Geographic Information System (data provided November 2018).

EXHIBIT 2-44

NORTH 0 1,700 ft

COMMUNICATION LINES

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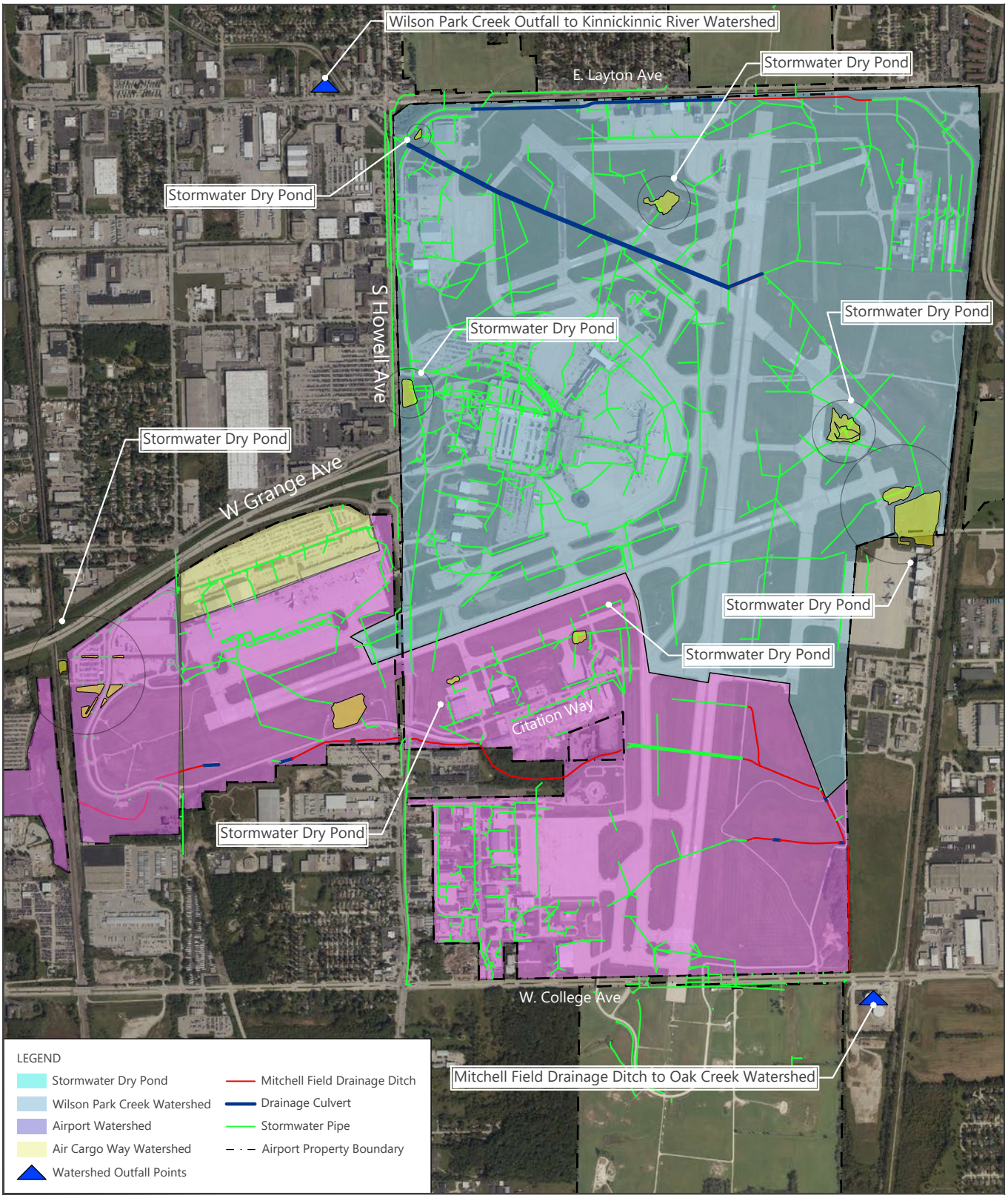

SOURCES: Quantum Spatial, September 2018 (aerial imagery); Milwaukee Mitchell International Airport Geographic Information System (data provided November 2018).

EXHIBIT 2-45

NORTH 0 1,700 ft

STORM SEWER AND AIRPORT DRAINAGE UTILITIES

Drawing: P:\Project-Chicago\MKE\MKE Master Plan Update\Master Plan Project 2018\03 - Inventory of Existing Conditions\3.23 - Working Paper and Issues Identification\M_H Inventory Exhibits\MKE Invetory Exhibits_CAD\EXHIBIT 2-45 Storm Sewer and Drainage.dwgLayout: Exhibit 2-45 Plotted: Sep 23, 2019, 01:52PM

The southern-most drainage basin of the Airport is represented in green. This area of the airport also drains via ditch lines and storm sewers that range in size and age. The Mitchell Field Drainage ditch is a major feature within this basin. This ditch line conveys water from the west, across the Canadian Pacific Railroad and South 6th Street, where it enters the airfield just southwest of Runway 7R. The ditch line runs east along the southern borders of the airport and is conveyed under the Runway 7R glideslope critical area, the airfield perimeter road, and Howell Avenue by a series of box culvert structures. Once east of Howell Avenue, the Mitchell Field drainage ditch continues eastward running along the southern edge of the south maintenance area where it crosses Taxiway R and Runway 1L via two 54-inch reinforced concrete pipes. The Mitchell Field Drainage ditch line then continues to the south and east where it ultimately leaves the Airport at a large structure that conveys the water across College Avenue and to Oak Creek further south. Oak Creek ultimately drains to Lake Michigan roughly two miles to the east.

A smaller drainage basin is located within the primary cargo area of the Airport along Air Cargo Way and is represented in red. This area generally drains from west to east via a series of storm sewer pipes and structures and leaves the Airport at a 48-inch pipe located just south of the Airport Spur. This area is referred to as the Air Cargo Way outfall point on the MKE storm water management plan. Drainage from this basin ultimately contributes to the Kinnickinnic River Watershed.

Several dry detention basins have been installed at the Airport to address impervious areas that have been added from individual projects. These areas are generally illustrated on Exhibit 2-45. Some periodic flooding occurs beyond the limits of the dry detention basins located near the approach ends of Runways 31 and 25L. This area of the Airport takes a great deal of stormwater from the City of Cudahy drainage to the east. A representative from the adjacent 128th WI ANG facility identified periodic flooding issues extending onto their campus from this area as well. The Airport operator is currently working to take a more regional and comprehensive approach to its stormwater management to avoid the need to build multiple detention basins for individual projects.

2.9 ENVIRONMENTAL BASELINE

The environmental baseline presents an overview of environmentally sensitive features and land uses on and surrounding the Airport and identifies key environmental issues that should be considered while developing and evaluating alternatives. These considerations are depicted on **Exhibit 2-46**). The environmental baseline considered the environmental resources and impact categories reviewed under the National Environmental Policy Act and outlined under FAA Order 1050.1F – *Environmental Impacts: Policies and Procedures*. Due to the location of the Airport and the surrounding environment, not all resources that require review under the National Environmental Policy Act are present or have the potential to be affected by potential Airport development. Resources categories not present at or near the Airport are not included in this baseline. The following resource categories are included:

- Air Quality
- Biotic resources including Threatened and Endangered Species
- Department of Transportation Act of 1966, Section 4(f)
- Hazardous materials and solid waste
- Historical, architectural, archeological, and cultural resources
- Socioeconomics, environmental justice, and children's environmental health and safety risks
- Water resources
- Land Use
- Noise and compatible land use

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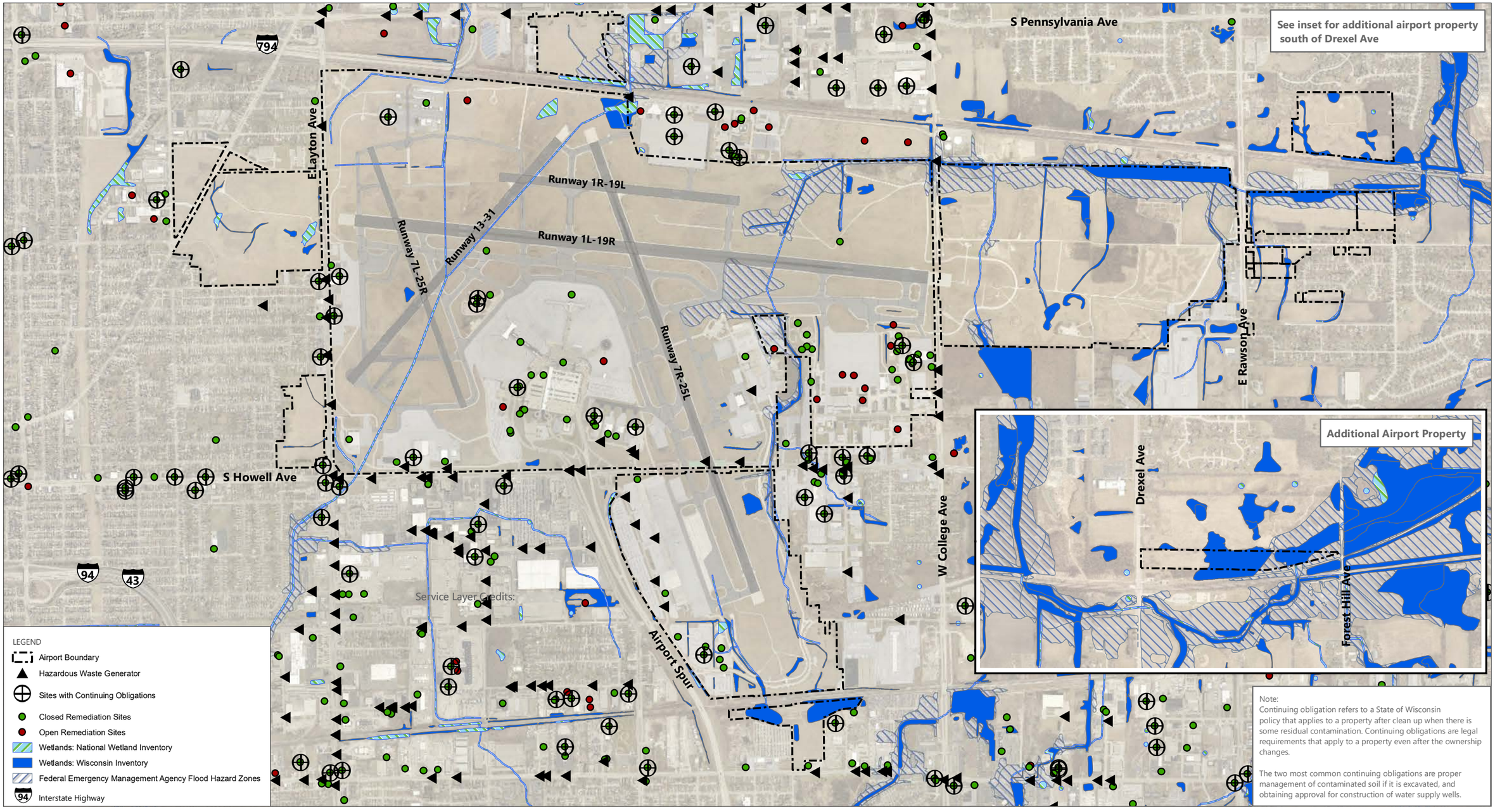

SOURCES: Milwaukee County, 2018 (image); Milwaukee County Land Information Office, 2018 (layers); Wisconsin Department of Natural Resources, October 2018; US Environmental Protection Agency, MyEnvironment, October 2018

EXHIBIT 2-46

ENVIRONMENTAL OVERVIEW

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2.9.1 AIR QUALITY

Under the Clean Air Act, the U.S. Environmental Protection Agency (USEPA) sets National Ambient Air Quality Standards (NAAQS) for certain pollutants that in high enough concentrations affect air quality and can harm human health, affect crops and vegetation, and cause property damage. There are currently NAAQS for six air pollutants that are referred to as the "criteria" pollutants. The pollutants are:

- Ozone (O_3)
- Nitrogen dioxide (NO_2)
- Carbon monoxide (CO)
- Particulate matter (PM) – Less than or equal to 10 micrometers (coarse PM or PM10) and less than or equal to 2.5 micrometers (fine PM or PM2.5)
- Sulfur dioxide (SO_2)
- Lead (Pb)

In accordance with the Clean Air Act, all areas within the U.S. are designated as attainment, nonattainment, maintenance, or unclassifiable in relation to the NAAQS. An area where the amount of a criteria pollutant is measured below the limits set by the NAAQS is designated attainment for that pollutant, while areas where a criteria pollutant does not meet the NAAQS are designated nonattainment. When a nonattainment area attains the NAAQS, it is re-designated as a maintenance area. Parts of Milwaukee County have been designated by the USEPA[2] as a nonattainment area for 8-hour Ozone levels, according to the 2017 standards, and as a maintenance area for Sulfur dioxide. The entire county is a maintenance area for PM2.5. The Ozone nonattainment area in Milwaukee County does not include the Airport.

To attain and maintain the NAAQS and to comply with the Clean Air Act, Wisconsin adopted a State Implementation Plan. This document includes air quality standards and monitoring requirements. The impacts to air quality from an airport project with federal funding must conform to the conditions of the State Implementation Plan. Actions of the FAA are regulated under the General Conformity Rule that requires coordination to ensure that an action does not cause new violations of the NAAQS, does not worsen existing violations of the NAAQS, and does not delay attainment of the NAAQS.

2.9.2 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act of 1966 requires consideration of potential effects to historic properties for federal actions. The Act established the National Register of Historic Places, part of a national program to identify and protect historic resources. The State of Wisconsin and the City of Milwaukee also provide historic designations that offer some legal protection for listed buildings.

Previous studies included historic resources near the Airport that are listed on or appear eligible for the National Register of Historic Places:

- A reconnaissance-level architectural survey conducted in December 2007 identified two structures within the affected area designated for noise mitigation measures as part of a previous Federal Aviation Regulations (FAR) Part 150 Airport Noise Compatibility study (Part 150), an FAA study process that helps determine whether airport

[2] EPA Green Book current as of August 31, 2018.

operations impact the surrounding land uses in terms of noise and if so, how to mitigate for the impacts so that airport development can continue in a way that is compatible with surrounding land use. These properties included the Fernwood Montessori School and the St. Stephens' Catholic Church, which has been demolished.

- The 2009 Master Plan Update identified a National Register of Historic Places and Wisconsin State Register listed site, the New Coeln House. This building, dating to 1850, is situated approximately 1,500 feet southeast of Runway 7R. Further consultation regarding the New Coeln House may be required for some airport projects due to its proximity to the airfield.

A review of previous studies also identified three known archaeological sites located on Airport property. An environmental assessment prepared in 2008 noted that these sites are documented by the Wisconsin Historical Society. Two sites are located north of College Avenue within the main Airport property boundary, the third is located on Airport property south of College Avenue. Further study in areas of proposed ground disturbance may be necessary as part of an environmental review prior to project implementation. Known architectural and historical resources are shown on **Exhibit 2-47**.

2.9.3 BIOTIC RESOURCES

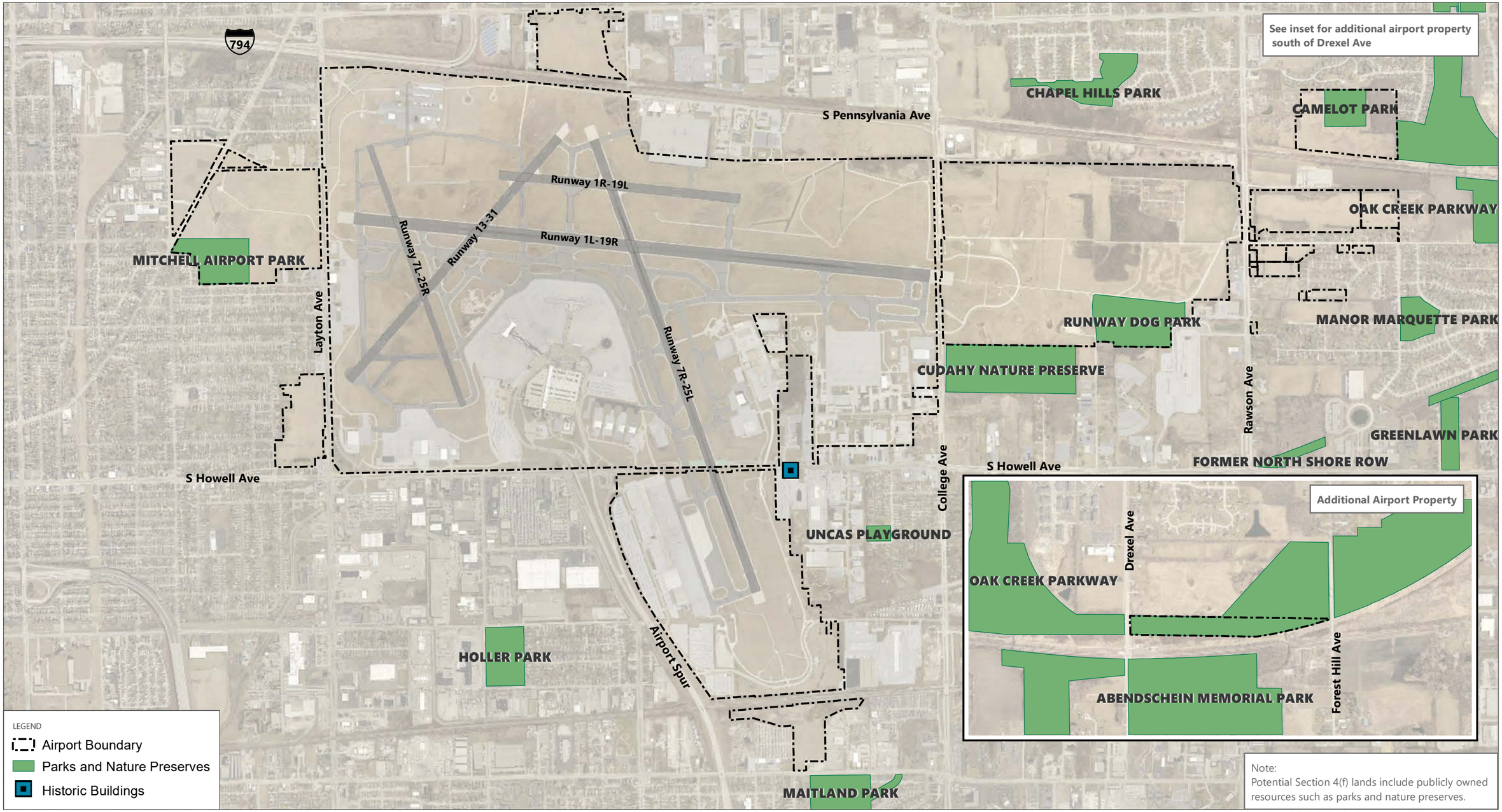
Biotic resources are defined as the various types of plants and animals, including birds and aquatic species, as well as habitats that support them. Federal and state-listed rare or unique species are shown in **Table 2-31**. The primary regulation for biotic resources on the federal level is the Endangered Species Act overseen by the U.S. Fish and Wildlife Service. The Act requires that any federal action not jeopardize the continued existence of a listed species or destroy any habitat critical to its continued existence. Milwaukee County is home to two threatened species under the Endangered Species Act, the Northern Long-eared Bat and the Red Knot (a shore bird). One endangered species, the Rusty Patched Bumble Bee is located in Milwaukee County. No critical habitat, areas that contain features essential to the conservation of the species, has been designated for any of the species in Milwaukee County. The Airport is located in a Low Potential Zone[3] for the Rusty Patched Bumble Bee, meaning that the species is not likely to be present. However, the area is within the maximum dispersal zone from sites where the species has been documented and is still considered important for conservation. In order to receive approval from federal agencies, proposed development at the airport would require consultation with the U.S. Fish and Wildlife Service to receive concurrence that the action will not negatively impact these listed species.

TABLE 2-31 STATE AND FEDERAL LISTED SPECIES

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	CRITICAL HABITAT
Northern Long-eared Bat	*Myotis septentrionalis*	Threatened	Threatened	None designated
Red Knot	*Calidris canutus rufa*	Threatened	Not Listed	None designated
Rusty Patched Bumble Bee	*Bombus affinis*	Endangered	Special Concern	None designated
Harbinger-of-Spring	*Erigenia bulbosa*	Not Listed	Endangered	Not applicable
Bluestem Goldenrod	*Solidago caesia*	Not Listed	Endangered	Not applicable
False Hop Sedge	*Carex lupuliformis*	Not Listed	Endangered	Not applicable
Purple False Oats	*Trisetum melicoides*	Not Listed	Endangered	Not applicable
Prairie Parsley	*Polytaenia nuttallii*	Not Listed	Threatened	Not applicable
False Asphodel	*Triantha glutinosa*	Not Listed	Threatened	Not applicable

SOURCES: U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) species list generated September 10, 2018; Wisconsin Department of Natural Resources Natural Heritage Inventory data township tool updated August 9, 2018.

[3] U.S. Fish and Wildlife Service Rusty Patched Bumble Bee Map, August 15, 2018.



SOURCES: Milwaukee County, 2018 (image); Milwaukee County Land Information Office, 2018; National Register of Historic Places, October 2018; Wisconsin Architecture and History Inventory, October 2018

EXHIBIT 2-47

SECTION 4(F) LANDS AND HISTORIC PROPERTIES

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Several plant species listed as threatened or endangered by the State of Wisconsin have been documented in the township where the Airport is located. Further consultation with the Wisconsin Department of Natural Resources will be required to determine if any species may be affected by specific airport development projects.

2.9.4 DEPARTMENT OF TRANSPORTATION ACT OF 1966, SECTION 4(F) LANDS

Section 4(f) of the Department of Transportation Act of 1966 protects public parklands, historic sites, and other special resources of national, state or local significance from impacts of transportation projects. These types of properties are referred to as Section 4(f) lands. FAA Order 1050.1F asserts:

> The Secretary of Transportation may approve a transportation program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance, or land from any publicly or privately owned historic site of national, state, or local significance, only if there is no feasible and prudent alternative to the use of such land and the program or project includes all possible planning to minimize harm resulting from the use.

Consideration of Section 4(f) resources with regard to potential airport development is focused on public parklands and is based upon a search of city, county, and state parks and natural resource preserves. Historic sites along with archeological and cultural resources are discussed in Section 2.9.2, Historical, Architectural, Archaeological, and Cultural Resources. Locations of parks and known historic resources are shown on Exhibit 2-47.

Mitchell Airport Park and Runway Dog Park are located on Airport property. Cudahy Nature Preserve borders Airport property south of College Avenue. Other parks in the area, including Maitland Park and Manor Marquette Park, are not on or adjacent to Airport property, but are close enough to runway ends to experience potential impacts of airport noise or height limits for trees growing in the parks.

Airport development alternatives should consider impacts to Section 4(f) lands in the planning phase. Impacts can result from direct use of the land and through indirect uses such as noise or vibrations that could affect the quality of the resource or limit access to the site. When it is not possible to avoid impacts, Section 4(f) regulations require "all possible planning to minimize harm."

2.9.5 HAZARDOUS MATERIALS AND SOLID WASTE

Hazardous materials are substances or materials that have been determined to be capable of posing unreasonable risks to health, safety, and property. These materials are frequently used or stored for business purposes and encountered during construction. Hazardous materials and solid waste are regulated by several federal and state statutes and regulations. The Comprehensive Environmental Response, Compensations, and Liability Act and the Resource Conservation and Recovery Act are the most relevant federal policies for potential airport development. The Resource Conservation and Recovery Act sets guidelines for solid and hazardous waste management, regulating storage, treatment, and disposal of waste. The Comprehensive Environmental Response, Compensations, and Liability Act creates a means to identify sites with previous spills of hazardous substances and establishes liability for those responsible for leaks. Other federal statutes require measures such as reporting the storage locations of hazardous substances.

Establishing baseline for hazardous materials includes identification of contaminated sites that could be encountered during construction or implementation of a project and to determine if there are ongoing remediation

efforts at or near the project site. This process is necessary so that contaminated areas can be avoided during development, or mitigation measures can be implemented where avoidance of the site is not feasible.

The State of Wisconsin requires businesses that generate hazardous waste to file an annual report of waste generated and its disposal. Facilities that treat, store, or dispose of hazardous waste must be licensed by the Wisconsin Department of Natural Resources. A list of contaminated sites, those that have been remediated, and sites that have continuing obligations is also maintained by the Wisconsin Department of Natural Resources. These sources, along with information published by the USEPA provide an inventory of known contaminated sites and those that store hazardous materials, as shown on Exhibit 2-46. There are 12 closed remediation sites on Airport property that have continuing obligations, and 12 open remediation sites. Seven of the open sites are related to the U.S. Air Force Reserve Station. A search of the USEPA Resource Conservation and Recovery Act Information database showed 4 active small quantity generators of hazardous waste at the Airport, and 11 conditionally exempt small quantity generators[4]. The database showed no active corrective actions under the Resource Conservation and Recovery Act on or adjacent to Airport property.

2.9.6 NATURAL RESOURCES AND ENERGY SUPPLY

Airports make use of local energy and natural resource supplies. FAA Order 1050.1F calls for consideration of these energy requirements, natural depletable resource requirements, and the conservation potential for potential projects.

The Airport recently developed a Sustainability Management Plan that addressed its use of natural resources and energy. This report provides a baseline for the amount of utility energy used at the Airport, shown in **Table 2-32.**

TABLE 2-32 AIRPORT ENERGY USE SUMMARY (ONE MILLION BRITISH THERMAL UNITS)

YEAR	ELECTRICITY	NATURAL GAS	TOTAL	ELECTRICITY	NATURAL GAS
2013	146,599	117,199	263,798	56%	44%
2014	149,005	120,747	269,752	55%	45%
2015	147,708	107,038	254,745	58%	42%

NOTES:

1 Data represents combined energy use from both the Airport and the MKE Regional Business Park.

2 The Airport accounts for approximately 90% of the total combined use. The MKE Regional Business Park accounts for the remaining 10% of energy use.

SOURCE: Milwaukee Mitchell International Airport Sustainability Management Plan – August 8, 2017.

The Sustainability Management Plan noted that the Airport operator has implemented several energy management projects with the goal of reducing energy use. These projects include a Leadership in Energy and Environmental Design certified baggage claim renovation, hot water heater updates, and updates to lighting with more efficient fixtures.

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

Population and demographic information collected from the U.S. Census Bureau over a 20-year period is shown in **Table 2-33** for the State of Wisconsin, Milwaukee County, and the municipalities that include and surround the Airport.

[4] U.S. EPA RCRA Info data extracted August 2, 2018.

TABLE 2-33 POPULATION CHARACTERISTICS

GEOGRAPHIC REGION	2000	2010	2016 ESTIMATE	MEDIAN HOUSEHOLD INCOME	MINORITY POPULATION (PERCENT)
State of Wisconsin Population	5,363,675	5,686,986	5,754,798	$54,610	17.9
Milwaukee County Population	940,164	947,735	955,306	$45,263	47.3
City of Milwaukee Population	596,974	594,833	598,672	$36,801	64.0
St. Francis Population	8,662	9,365	9,516	$43,065	20.4
Cudahy Population	18,429	18,267	18,321	$46,973	16.4
South Milwaukee Population	21,256	21,156	21,197	$52,418	16.3
Oak Creek Population	28,456	34,451	35,218	$67,845	21.2

SOURCE: U.S. Census Bureau 2000 Decennial Census; 2010 Decennial Census; American Community Survey 2012-2016 Five-Year Estimates.

FAA Order 1050.1F defines an environmental justice impact as one that would have a disproportionately high adverse impact on minority or low-income populations. A search of the USEPA Environmental Justice EJSCREEN tool showed that there are several census block groups near the Airport within the 80-90 percentile range for the percentage of minority residents, as compared to the State of Wisconsin. The search showed fewer block groups with comparably high percentages of low-income residents near the Airport; however, an area adjacent to the northeast side of the Airport falls within the 80-90 percentile range.

2.9.8 WATER RESOURCES

Wetlands, surface waters, and Federal Emergency Management Agency (FEMA) floodplains are shown on Exhibit 2-46. The Airport is located in the Lake Michigan Basin; the property is divided between the Kinnickinnic River watershed and Oak Creek watershed. Oak Creek, located southeast of the Airport, is listed as an impaired water under Section 303(d) of the Clean Water Act. The Wisconsin Department of Natural Resources Impaired Water Search reports that the impairments include chronic and acute aquatic toxicity and degraded biological community. Pollutants in the creek include total phosphorous and chloride.

Milwaukee County falls within lands subject to Coastal Zone Management Review because it borders Lake Michigan. The Wisconsin Department of Administration oversees this program.

2.9.9 AIRPORT LAND USE

Land use regulations near airports typically focus on safety for airport users and the surrounding community, as well as minimizing negative impacts such as noise disturbance. Zoning regulations generally discourage or prohibit land use that is incompatible with airports. The authority to enact zoning codes lies at the local level but the FAA and Wisconsin Department of Transportation offer guidance. Notably, the FAA also requires agreement to written grant assurances from airport sponsors prior to providing federal funding for airport improvements. This includes an assurance, "that appropriate action, including the adoption of zoning laws, has been or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations."

According to the 2011 Wisconsin Airport Land Use Guidebook, incompatible land uses are those that hinder safe and efficient airport operations, or those that expose people living or working near aircraft noise or other aviation hazards. Land uses that are least compatible with airports include densely populated residential or office buildings,

streetlamps and structures that emit bright light, dust-producing smokestacks that cause visual and physical obstructions, and ponds and large wetlands that attract wildlife. **Exhibit 2-48** illustrates land uses surrounding the Airport. Existing land uses include industrial and commercial, residential areas to the north, and open lands primarily to the south of the Airport. Recent changes in on-airport land use include the conversion of the 440th facility on the southwest side of the property to a regional business park.

2.9.9.1 COMPATIBILITY WITH NOISE

The most recent Part 150 Study (defined earlier in Section 2.9.2, Historical, Architectural, Archaeological and Cultural Resources), approved by the FAA in 2009, observed that there are residences within noise exposure areas where noise levels are too loud to be compatible with residential use. The Airport then conducted a noise mitigation program that included providing sound insulation for residents within areas of concern. The study also recommended noise easements or acquisition of lands zoned for incompatible uses.

Noise contours will be prepared under the Master Plan Update, depicting noise contours that are based on 2018 actual operations. These contours will be addressed in the Noise Analysis section of the Master Plan Update.

2.9.9.2 LAND USE CONTROLS

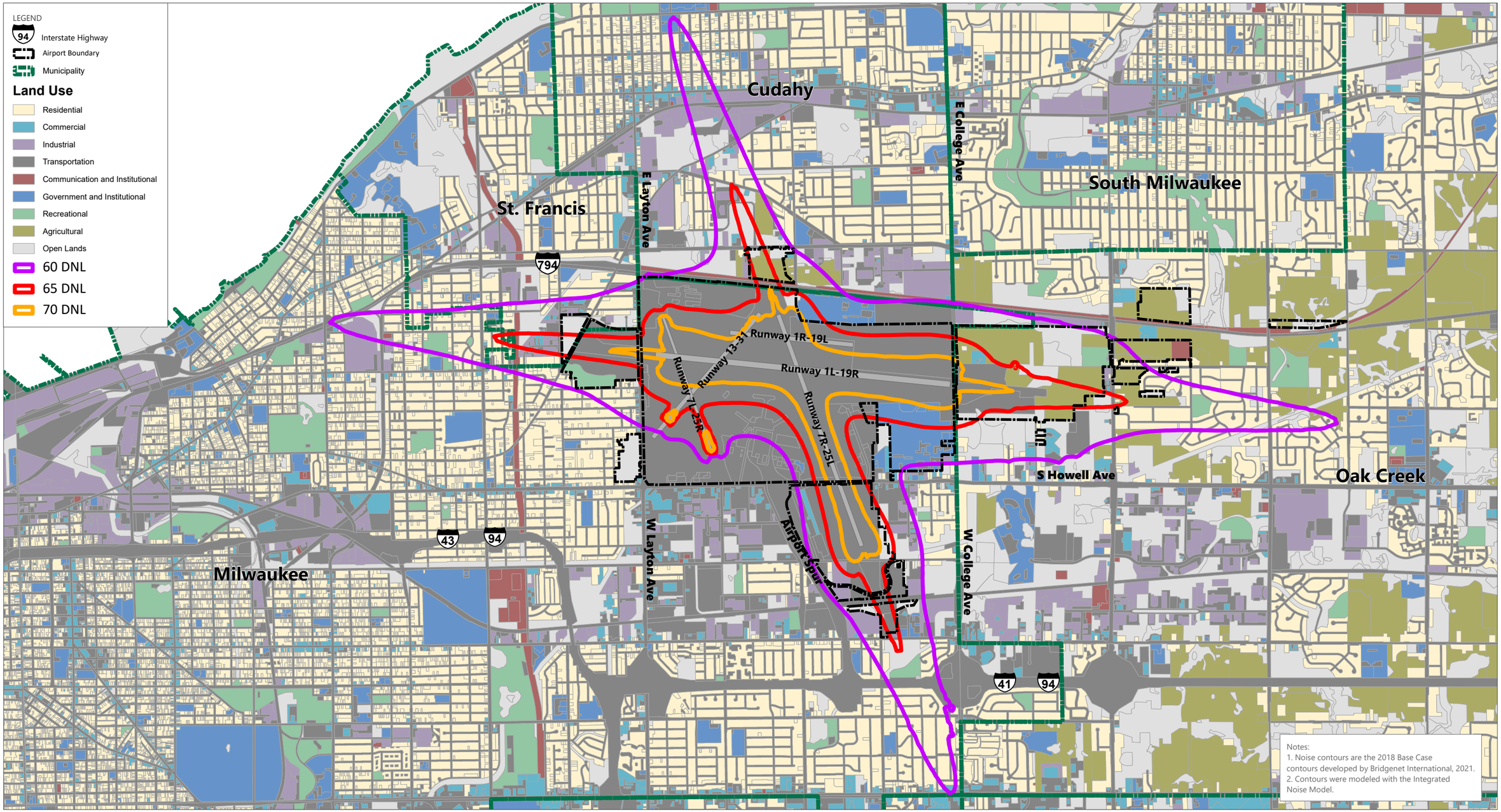
Current land use controls on and near the airport include height limit zoning. The purpose of height limits is to prohibit potential obstructions in nearby airspace that could cause a hazard for airport users and neighbors. These limits are shown on **Exhibit 2-49**. Land closest to the airfield and runway ends is limited to a height of 35 feet. Increasing height limits of 50, 75, 100, 150, 200, and 300 feet are permitted as the distance from the Airport increases. These height limitations are part of the Milwaukee County Code of Ordinances. All other land use control measures are controlled by local municipalities.

The Airport is primarily located within the City of Milwaukee and is zoned IL1, an industrial use district. Airports are permitted by right within this district.

2.9.9.3 WILDLIFE ATTRACTANTS

Wildlife attractants are present on and near the airport. Some of the most prominent attractants include Bailey's Pond, drainage ditches (including the Edgerton Channel, Cudahy Infall, and Oak Creek Tributary) and woodland. Off-site attractants include grasslands, woodlands south of College Avenue, and Milwaukee Area Technical College ponds.

To address wildlife hazards, the Airport operator employs a full-time U.S. Department of Agriculture (USDA) Wildlife Services biologist who implements deterrent and mitigation measures. The Airport operator follows and regularly updates a Wildlife Hazard Management Plan for the Airport. The area within a 10,000-foot radius of the runway centerline is considered the *critical area* in this plan. Wildlife management efforts are primarily concentrated within this area as it is the area where arriving and departing aircraft typically operate at or below 500 feet, an altitude that also corresponds with the most bird activity. The Airport operator works to reduce attractive wildlife habitat on property, while working cooperatively with adjacent property owners to discourage land-use practices that might increase wildlife hazards.



SOURCES: Image: 2018 Milwaukee County; Layers: Milwaukee County Land Information Office, 2000. Noise Contour - Bridgenet International, 2021.

EXHIBIT 2-48

NORTH 0 4,000 8,000 ft

AIRPORT AREA LAND USES

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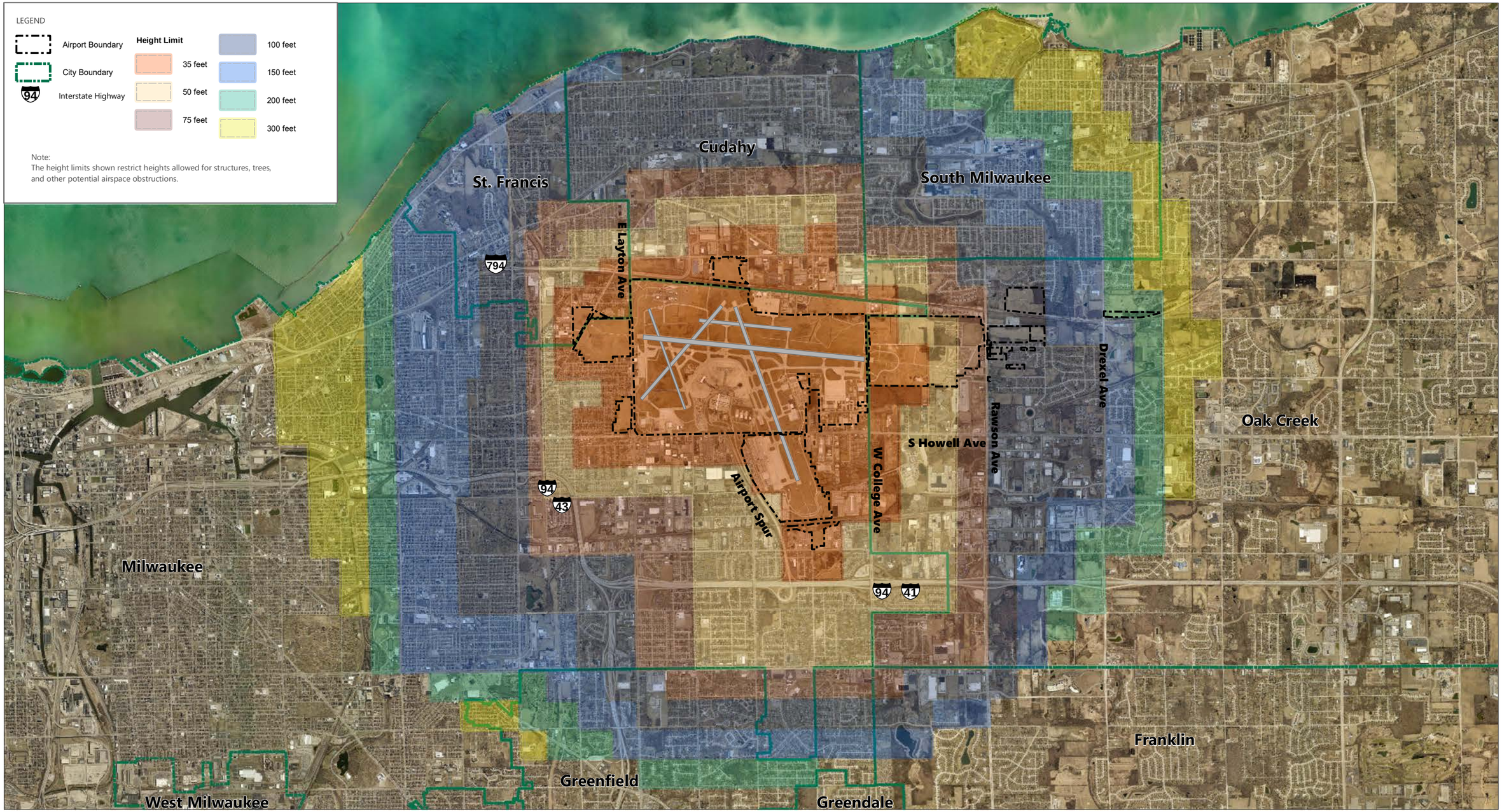

SOURCES: Image: 2018 Milwaukee County; Layers: 2010 Southeast Wisconsin Regional Planning Commission; Milwaukee County Code of General Ordinances Chapter 84

EXHIBIT 2-49

NORTH 0 5,280 ft

MILWAUKEE AREA HEIGHT LIMITATION ZONING ORDINANCE

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The U.S. Department of Agriculture biologist participates in early phases of airport building projects to avoid increases in wildlife hazards resulting from architectural or landscape changes. Whenever possible, this biologist participates in non-airport land-use decisions to avoid inadvertent creation of wildlife hazards.

2.9.9.4 FUTURE LAND USE PLANS

A recent document titled the *Milwaukee Aerotropolis Development Plan* updated land use planning near the Airport. The plan was developed by The Milwaukee Gateway Aerotropolis Corporation, made up of representatives from the nine communities near the Airport, along with the Southeast Wisconsin Regional Planning Commission. Land use and transportation planning in this document are intended to support Airport services. The Aerotropolis plan divides Airport-adjacent land into targeted development areas:

- The Layton Town Center Area focuses on hospitality, retail, and manufacturing freight.
- The MKE South Industrial Area includes the former 440th base and features concentrated industrial parks.
- The Layton/Lake Parkway Area is centered on retail, office, and a food and beverage manufacturing district.
- The 13th/27th Street Area includes two sections of existing mixed-use corridors, emphasizing higher density hospitality, entertainment, and offices.

2.10 SUSTAINABILITY CONSIDERATIONS

The Airport Division prepared a Sustainability Management Plan (SMP) in 2018. The SMP was developed with comprehensive stakeholder engagement, including contributions from Airport staff and management, regulatory agencies, tenants, airlines, travelers, and Airport neighbors. Implementation of initiatives identified in the SMP is underway.

The purpose of the sustainability baseline in the Master Plan Update is to present an overview of sustainability performance and programs at the Airport and to identify key issues that should be considered when developing and evaluating master plan alternatives. This sustainability discussion draws from the recently completed SMP.

The SMP comprises the following, which are summarized herein: a vision statement, 11 focus areas, a baseline, goals, and actions.

2.10.1 MKE SUSTAINABILITY VISION

The MKE sustainability vision describes a future MKE that is focused on environmental, economic, and social sustainability:

MKE is the airport of choice for Wisconsin and beyond. Striving for sustainable operations, we will:

- Provide the best customer service experience by minimizing waiting times, creating a comfortable environment for travelers and supporting the success of our staff and tenants
- Provide exemplary service at the lowest possible expense with the least possible waste of resources, materials and time and minimal impact on the environment
- Be the best possible neighbor to our community and Lake Michigan
- Link Milwaukee to the world

2.10.2 SUSTAINABILITY FOCUS AREAS

The SMP includes 11 focus areas, for which baselines were set, goals established, and actions to achieve goals were identified:

- economic prosperity
- operational efficiency
- sustainable and resilient buildings and infrastructure
- air emissions and climate change
- energy management
- waste management
- water management
- employee engagement
- community engagement
- health and safety
- customer experience

2.10.3 SUSTAINABILITY OPPORTUNITIES FOR THE MASTER PLAN UPDATE

Table 2-34 summarizes the sustainability baseline, goals, and actions, by focus area, and identifies sustainability opportunities for consideration in the Master Plan Update, either facilities or infrastructure needs identified in the SMP that should be captured in the Master Plan Update development footprint or aspects of the Master Plan Update that can support or advance elements of the SMP. A copy of the Waste Reduction, Reuse, and Recycling Plan, dated October 2019, has been included in **Appendix B.**

2.11 FACILITY INDEX

As a component of the inventory process, the Facility Index provides a high-level summary of the conditions of Airport-owned facilities. This information was compiled largely from a separate facility condition assessment of the Airport's infrastructure conducted by Milwaukee County staff using VFA, Inc. software for data compilation. The documentation, included in **Appendix A,** presents the Facility Condition Index (FCI) for each of the assessed facilities.

Generally, lower index values for Facility Condition and Requirements reflect a better condition of the asset. Table A-1, provided within Appendix A, contains a listing of Airport-owned facilities that includes its type, description, age and size. The facilities are grouped by their general location on the Airport with a listing of both their Facility Condition Index and Requirements Index. The locations of Airport-owned facilities listed in Table A-1 are depicted on Exhibits 2-34 through 2-36.

TABLE 2-34 (1 OF 3) SUMMARY OF OPPORTUNITIES TO INTEGRATE THE SUSTAINABILITY MANAGEMENT PLAN INTO THE MASTER PLAN UPDATE

	SUSTAINABILITY MANAGEMENT PLAN ELEMENTS			MASTER PLAN UPDATE INTEGRATION OPPORTUNITIES					
FOCUS AREA	BASELINE (FY 2015)	GOALS	ACTIONS	GOALS AND STAKEHOLDER ENGAGEMENT	FACILITY REQUIREMENTS	LAND USE STRATEGY	ALTERNATIVES ANALYSIS	IMPLEMENTATION PLAN	FINANCIAL ANALYSIS
Economic Prosperity	▪ $97.3 million in total operating revenue ▪ $110.5 million in total operating expenses ▪ Parking fees represent the highest income source for the Airport ▪ Energy utility fees (electricity and natural gas) represent over 95 percent of the Airport's utility fees ($3.8 million in electrical utility fees)	Enhance MKE's economic performance by developing cost containment strategies and increasing revenue streams.	Develop and implement an AMP. Establish a dedicated yearly budget and identify grants to fund sustainability initiatives. Develop a business plan for the MKE Regional Business Park and Timmerman Airport.	Position MKE to support and enhance regional economic growth by incorporating local business needs into the MPU.		Identify development opportunities for the MKE Regional Business Park (to support future development of a business plan) and Airport-owned non-aeronautical parcels.	Integrate cost containment and increased revenue stream priorities into evaluation of MPU alternatives. Integrate metric to evaluate comparative energy costs into evaluation of MPU alternatives.	Recommend adoption of green building strategies with demonstrated operational cost reductions (e.g., energy conservation measures) to offset costs associated with increased development footprint.	Consider opportunities for funding sustainability enhancements of the MPU recommended development projects.
		Build the Airport's role as an economic engine in the region.	Develop an updated economic study.						
Operational Efficiency	▪ Maintenance efficiency is tracked in Cityworks program	Improve performance tracking by adopting management systems and developing new metrics and specific procedures.	Evaluate the feasibility of expanding the use of Cityworks program to include monitoring of additional sustainability actions. Evaluate the Airport's O&M manual to ensure it is sufficient and comprehensive, including any new areas identified in the SMP.	Set overarching operational efficiency goals to guide MPU development. Engage the maintenance department to explore Cityworks metrics and goals as they may pertain to improved operational efficiency at MKE through future development.	Consider need for a Centralized Receiving and Distribution Center to improve operational efficiency (divert supplier truck activity from the terminal area to reduce congestion and enhance safety) and improve the ability to capture packaging for reuse and recycling.		Based on goals, integrate operational efficiency metrics into evaluation of alternatives.		
Sustainable and Resilient Buildings and Infrastructure	▪ County initiatives include Green Print and Sustainable Design Guidelines. ▪ County Ordinance requires County real estate projects to achieve LEED or other national certification. ▪ LEED certified Baggage Claim Renovation project at MKE. ▪ New focus on resilience at MKE, evidenced in redundant energy feed project.	Adopt sustainable design and construction practices for MKE's buildings and infrastructure.	Develop Airport-specific construction guidelines for sustainable planning and design. Consider a green building commitment or policy (i.e., pursuing LEED certification where appropriate). Use the Envision rating system to assess the sustainability of Airport infrastructure projects and development programs.		Qualitatively consider disruption effects associated with increasingly extreme weather events on ability to balance capacity among airfield, terminal, and landside facilities.		Integrate a facility flexibility metric (e.g., operational redundancy, energy redundancy) to evaluate the comparative resiliency of MPU alternatives. If climate change and resiliency vulnerability assessment recommendations are available, integrate appropriate development considerations into alternatives development and appropriate metric(s) into evaluation.	Recommend adoption of sustainable design and construction practices timed to support enhancing the sustainability and resiliency of MPU projects. Recommend conduct of climate change and resiliency vulnerability assessment timing, if not already completed, to support design strategies for MPU projects.	
		Ensure MKE is prepared to face emergencies by improving resiliency through mitigation and adaptation strategies.	Conduct a Climate Change and Resiliency Impact / Vulnerability Assessment.						
Air Emissions and Climate Change	▪ 33,921 MT CO_2e of GHG emissions generated by County facilities and operations at the Airport ▪ Electricity use accounts for 80 percent of overall GHG emissions	Develop a carbon reduction management program. Take a regional leadership role on carbon and climate change.	Pursue Airport Carbon Accreditation certification. Complete an annual GHG inventory. Evaluate options and consider direct purchase of renewable energy or purchase of RECs.	Consider opportunity to support regional goals for intermodal facilities.			Explore opportunities to improve operational efficiency of ground vehicles. Include evaluation criteria to evaluate operational benefits to County vehicles, which comprise approximately 5 percent of GHG emissions from County operations at MKE. Integrate metric to evaluate opportunities to reduce emissions in the alternatives analysis.	Recognize features of MPU recommended development that improve aircraft and vehicle operational efficiency and reduce emissions.	

TABLE 2-34 (2 OF 3) SUMMARY OF OPPORTUNITIES TO INTEGRATE THE SUSTAINABILITY MANAGEMENT PLAN INTO THE MASTER PLAN UPDATE

	SUSTAINABILITY MANAGEMENT PLAN ELEMENTS			MASTER PLAN UPDATE INTEGRATION OPPORTUNITIES					
FOCUS AREA	BASELINE (FY 2015)	GOALS	ACTIONS	GOALS AND STAKEHOLDER ENGAGEMENT	FACILITY REQUIREMENTS	LAND USE STRATEGY	ALTERNATIVES ANALYSIS	IMPLEMENTATION PLAN	FINANCIAL ANALYSIS
Energy Management	▪ 39 million kWh annual electricity use ▪ Total annual energy use (electricity and natural gas for Airport [90 percent] and MKE Regional Business Park [10 percent]) 254,745 MBTUs	Reduce MKE's energy consumption by developing a formal energy management program that relies both on energy efficiency and renewable energy.	Implement ECMs identified in SMP and any other existing or future energy studies. Develop a SEMP. Evaluate the potential for guaranteed energy performance contract. Develop and implement an EMS and EnMS. Enhance the Airport's energy management program by developing an energy efficiency program for tenants. Complete installation of sub-meters in all areas of the Airport including terminals, MKE Regional Business Park buildings, tenant areas, and airfield.	Engage energy management department and draw from industry best practices to evaluate future facility needs associated with enhanced energy management strategies, such as redundant and resilient central utility plan capabilities.			Identify area for future microgrid/solar farm development (assume 5- to 50-acre footprint based on solar farm footprints at US airports). Integrate metric to evaluate opportunities to reduce energy use in the alternatives analysis (e.g., facilities that improve operational efficiency of ground vehicles).	Recommend adoption of green building strategies with demonstrated energy benefits to offset costs associated with increased development footprint. Additionally, recommend submetering of new facilities and energy data tracking to support tenant energy efficiency programs and inform refined understanding of energy use by functional area of the Airport.	
Waste Management	▪ Generated 801 tons of solid waste ▪ Recycled 90.7 tons (10.2 percent waste diversion rate)	Increase waste diversion through enhanced waste management program, including education and training programs, formal policies and procedures, increase waste revenue streams and avoided disposal costs.	Enhance waste management and recycling efforts by developing education/training on best practices. Develop a monitoring and tracking plan for the Airport waste stream.		Increase space requirement standards for back-of-house waste circulation and collection areas to support waste separation/sortation at collection points.		Integrate metric to evaluate effects of alternatives on the operational efficiency of waste collection.	Recommend adoption of green building strategies with demonstrated waste management benefits through construction, operation, maintenance, and deconstruction of facilities.	
Water Management	▪ 238.7 million gallons of water consumed annually (36.44 gallons of water per passenger)	Support the Milwaukee area in becoming a national hub for water related innovation and technology. *Consider the MMSD's goal to create green infrastructure to capture up to 740 million gallons of water during each rain event by the year 2035.* Reduce MKE's water consumption by managing use, monitoring data, and implementing efficiency strategies.	Improve stormwater management at MKE through green infrastructure and watershed restoration projects in collaboration with MMSD. Review and update comprehensive SWMP. Develop partnerships with other organizations in the water management / technology space and engage stakeholders on relevant water topic. Develop a dedicated water management and efficiency program. Develop a tenant engagement program for water management and efficiency.	If water management opportunities, such as partnerships or green infrastructure strategies, are identified during stakeholder engagement, recognize these opportunities in stakeholder engagement documentation for future consideration as MPU projects proceed to advanced planning.				Recommend adoption of green building strategies that incorporate green infrastructure solutions and document any partnership opportunities for green infrastructure solutions identified through stakeholder engagement. Recommend adoption of green building strategies with water conservation strategies. Recommend water submetering of new facilities and water data tracking to support tenant engagement on water conservation.	
Employee Engagement	▪ 1,800 Airport employees ▪ 300 MKE Regional Business Park employees	Attract workers from throughout Milwaukee County. Retain employees and build employee satisfaction. Provide opportunities for advancement.	Build awareness of Airport job openings and improve communications regarding job advertising. Involve employees directly in the SMP and Airport sustainability programs. Provide opportunities for employee engagement, advancement and growth.	Provide employee engagement opportunity in MPU through advisory committee and other briefings to enhance employee engagement in MKE's future.					

TABLE 2-34 (3 OF 3) SUMMARY OF OPPORTUNITIES TO INTEGRATE THE SUSTAINABILITY MANAGEMENT PLAN INTO THE MASTER PLAN UPDATE

	SUSTAINABILITY MANAGEMENT PLAN ELEMENTS			MASTER PLAN UPDATE INTEGRATION OPPORTUNITIES					
FOCUS AREA	BASELINE (FY 2015)	GOALS	ACTIONS	GOALS AND STAKEHOLDER ENGAGEMENT	FACILITY REQUIREMENTS	LAND USE STRATEGY	ALTERNATIVES ANALYSIS	IMPLEMENTATION PLAN	FINANCIAL ANALYSIS
Community Engagement	▪ MKE hosts community events ▪ MKE partners with education and social organizations	Create lasting partnerships to enhance reputation and be responsive to community needs. Communicate Airport's leadership related to sustainability.	Involve Airport business and community stakeholders in the development and implementation of MKE's sustainability programs. Develop a communication plan for distributing sustainability information to the public.	Engage business and community stakeholders in MPU development process.			Integrate metric(s) to evaluate the effects of alternatives on community, including economic, social, and environmental/noise effects.	Identify community benefits of MPU to support MPU messaging and community engagement.	
Health and Safety	▪ Health & Safety program covers customers/passengers and employees ▪ SMS metrics tracked in Cityworks: SMS Portal provided for staff, tenant, and contractor safety hazards reporting	Maintain a robust health and safety program.	Develop and implement a Risk Management System Plan.				Recognize safety and security needs in the development of alternatives.		
Customer Experience	▪ Monthly passenger surveys indicate "very good" satisfaction (4.1 on a scale of 1 to 5)	Maintain or improve high customer satisfaction.	Create a unique sense of place, specific to Milwaukee. Track and evaluate existing data collected on passenger satisfaction. Improve customer experience by improving wayfinding, travel, and wait.		Account for space for security checkpoints, FIS, and concessions program improvements when evaluating terminal space program.		Integrate metric to estimate effects of alternatives on the customer experience (e.g., efficiency improvements).	Document how the recommended MPU development program enhances the customer experience at MKE.	
General	▪ Not applicable	Not applicable	Incorporate the MKE SMP in the upcoming Master Plan Update.[1] Integrate sustainability metrics into MKE KPIs. Produce a sustainability newsletter, that would be available to employees, stakeholders and the general public periodically.				Review MKE KPI initiative for relevance to MPU alternatives analysis.	Document how the MKE SMP was integrated into the MPU. Identify sustainability features of the recommended MPU development plan for highlighting in stakeholder outreach communications.	

NOTES:
FY – fiscal year
AMP – Asset Management Plan
ECM – Energy Conservation Measure
EMS – Environmental Management System
EnMS – Energy Management System
FIS – Federal Inspection Services
GHG – Greenhouse Gases
KPI – Key Performance Indicator
kWh – kilowatt hour
LEED – Leadership in Energy and Environmental Design
MBTU – Million British Thermal Units
MKE – Milwaukee Mitchell International Airport
MMSD – Milwaukee Metropolitan Sewerage District
MPU – Master Plan Update
MT CO_2e – Metric Tons of Carbon Dioxide Equivalent
O&M - Operation and Maintenance
REC – Renewable Energy Certificate
SEMP – Strategic Energy Management Plan
SMP – Sustainability Management Plan
SMS – Safety Management System
SWMP – Storm Water Management Plan
1 This Sustainability section of the Master Plan Update Inventory chapter represents the initiation of integrating the Sustainability Management Plan into the Master Plan Update.
SOURCE: Milwaukee County Department of Transportation and Public Works – Airports Division, *Journey to Sustainability, Milwaukee County's General Mitchell International Airport, Sustainability Management Plan*, 2018.

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2.12 ISSUES IDENTIFICATION SUMMARY

This section summarizes some of the key issues communicated or identified during the inventory of existing airport facilities and conditions. **Table 2-35** provides a listing and brief description of these items that are intended to inform the next steps of the master plan development.

TABLE 2-35 (1 OF 3) INVENTORY SUMMARY OF IDENTIFIED ISSUES

IDENTIFIED ISSUE / CONCERN BY CATEGORY	DESCRIPTION
Airside Facilities	
Airfield Pavement Conditions	▪ Overall Airfield Pavement Condition Index (PCI) values for each category of the airfield are below the maintenance thresholds recommended by the Wisconsin Bureau of Aeronautics (including runways).
Runway System	▪ Status of Runway 13-31 (approved Airport Layout Plan). ▪ Status of extension of Runway 1R-19L. ▪ Runway maintenance activities requiring temporary closure of existing runway(s).
Hot Spots and Taxiway Geometry	▪ Airport taxiway geometry compliance with current FAA standards. ▪ Two designated hot spots (near or along Runway 1L-19R). ▪ Potential need for a future dual-parallel taxiway along Runway 1L (Taxiways R and Q).
Howell Avenue Tunnel Structure	▪ Potential need for major tunnel rehabilitation or replacement.
Centralized Deicing Ramps	▪ Opportunities to reduce concourse gate area congestion and restricted aircraft circulation.
Terminal and Concourse Facilities	
Concourse E Redevelopment	▪ Programming and implementation of Concourse E redevelopment. ▪ Operational integration of redeveloped Concourse E.
Gate Utilization	▪ Efficient and balanced gate utilization to meet demand in the near term. ▪ Flexibility in gate utilization over the planning horizon to accommodate changes in airline operations, fleet evolution, and operational standards.
Security CheckPoint(s)	▪ Checkpoint consolidation opportunities. ▪ Airport concessions locations relative to the checkpoints. ▪ Passenger experience and journey in a multi-checkpoint environment. ▪ Passenger movement among concourses without rescreening. ▪ Employee Screening ▪ Technology Impacts
Existing International Arrival Building (IAB)	▪ Facility compliance with current Customs and Border Patrol standards. ▪ Passenger connections to terminal building.
Experience and Journey	▪ Opportunities for the implementation of technologies for improved efficiencies, a more positive passenger experience and increased non-airline revenues, and modernization of the terminal mall.
Concourse C and D	▪ Gate compatibility for current aircraft fleet
Landside Facilities	
Regional Connectivity	▪ Improvements to the Hiawatha Line (e.g., second platform at Airport Station) allowing enhanced Amtrak schedules. ▪ Improved connectivity between the Airport and downtown (central business district).
Airport Entrance Road Improvements	▪ Opportunities to improve the aesthetics of the entrance into the Airport. ▪ Improved terminal roadway functionality (capacity, configuration, curbfront).
Terminal Circulation Roadways	▪ Wayfinding and vehicle circulation in the terminal core area.
Curbfront Operations	▪ Dark, low lighting and a 90 degree turn to both departures and arrivals curbs can make wayfinding and sight-lines challenging.
Rental Car Facilities	▪ Existing rental car occupancy of parking structure impacts public parking capacity. ▪ Utility and Efficiency of parking structure for rental car operations
Off-Airport Parking	▪ Loss of parking revenues to off-airport competitors.

TABLE 2-35 (2 OF 3) INVENTORY SUMMARY OF IDENTIFIED ISSUES

IDENTIFIED ISSUE / CONCERN BY CATEGORY	DESCRIPTION
Tenant Facilities	
Cargo Facilities	▪ Constraints and capacity (building and apron) limitations in the primary cargo area. ▪ Non-contiguous UPS operations in the east and west ends of the central cargo building. ▪ Proximity of cargo buildings and ramp to Runway 7R-25L (restricted tail heights due to RW 7R-25L airspace surfaces and Taxiway A Object Free Area-based aircraft parking restrictions. ▪ Use of RW 7R Deice pad to stage cargo aircraft requires close coordination with Airport Operations. ▪ Westerly expansion of the Cargo Ramp (planned in Airport Capital Improvement Program) impacts Super Saver Lot B. ▪ Consolidation of other cargo operators (currently operating from dispersed facilities: northeast general aviation hangar area, the West Ramp area, and the MKE Regional Business Park).
Airline Maintenance	▪ Consolidation of airline maintenance facilities and activities. ▪ Efficient ramp utilization, particularly in multi-tenant areas.
Fixed Base Operator Facilities	▪ Accommodation of expressed FBO tenant growth. ▪ Consolidation of FBO facilities and activities (particularly in the case of fragmented FBO tenant facilities and operations).
Corporate General Aviation Hangars	▪ Consolidation of dispersed corporate hangar facilities.
Northeast General Aviation Hangars	▪ Redevelopment or repurposing opportunities for this area.
Maintenance and Support Facilities	
South Maintenance Area Facilities	▪ Physical restrictions adjacent to the Airport Maintenance Area impact the efficiency of facilities and operations in this area. - Mitchell Field drainage ditch and Guard West facilities to the south - Taxiway R and drainage to the east - Shared County Highway facilities to the west - Citation Way and other developments to the north ▪ Operational inefficiency due to landside/airside division within South Maintenance Area. ▪ Airfield perimeter access road includes a non-secure landside segment through this area. ▪ MKE Airport Maintenance is currently using multiple facilities within the MKE Regional Business Park to meet needs for space and storage. Some equipment requires reconfiguration to be stored in existing buildings (e.g., combo units must be stored without plows attached to fit into Building 302), reducing efficiency and creating congestion as equipment is reconfigured as needed. ▪ Storage of off-season maintenance equipment (currently stored outside), equipment maintenance activities often occur outside.
Future Snow Removal Equipment Building	▪ WI ANG-leased property (through 2051) in the South Maintenance Area impacts the efficient use and long-term development opportunities for this area.
Aircraft Rescue and Fire Fighting (ARFF)	▪ Transfer of the former 440th alarm systems to Simplex System. ▪ Looped connection of the dead-ended water supply line at the ARFF with another dead-ended supply line in the MKE Regional Business Park (increase the pressurized flow in the system and provide redundancy in water source).

TABLE 2-35 (3 OF 3) INVENTORY SUMMARY OF IDENTIFIED ISSUES

IDENTIFIED ISSUE / CONCERN BY CATEGORY	DESCRIPTION
Maintenance and Support Facilities (continued)	
Fueling Systems	▪ Limited on-airport fuel storage capacity (supplemented by Fuel Consortium-owned bulk fuel storage facility located south of College Avenue). - Fuel Consortium is planning the installation of a new loading station at the off-airport facility to accommodate both on- and off-airport fueling needs which may generate additional truck movement into and out of this area from College Avenue. - Removal (by the Consortium) of the two 40,000-gallon underground tanks within the on-airport fuel farm (age and potential environmental concern); replacement capacity would be provided from the off-airport system. ▪ Increase in the size of the transfer line between the off-airport facility to the fuel farm is needed. ▪ Improvements/expansion of the hydrant fuel system to service additional areas such as the main cargo area. ▪ Reliable forecasting of regional freight shipping is needed given the support of off-airport fueling needs. ▪ Implementation of a retention system upstream of storm sewer outfalls for improved protection in the event of fuel spills or leaks.
128th Air Refueling Wing (Wisconsin Air National Guard)	▪ The128th Air Refueling Wing is in national contention for the next selection/transition to KC-46 aircraft (KC-135 is scheduled to fly until 2040); requirement for 10,000-foot runway could be a determinant. ▪ Westward expansion of WI ANG ramp is desired; Runway 1R-19L airspace restricts. ▪ Connection to the Airport underground fuel supply line (adjacent to WI ANG property) is desired by WI ANG. ▪ Flooding issues near Bailey's pond impact the north end of the WI ANG ramp and the existing entrance check-point. ▪ A parallel taxiway on the east side of Runway 1L would provide operational benefit to WI ANG. ▪ 128th Air Refueling Wing access to any future deicing pad(s) near the approach end of Runway 19R is operationally desirable. ▪ Potential We-Energies solar farm in the area formerly used as a landfill (south of Guard Central).
Primary Utilities	
Storm Sewer Infrastructure	▪ The Airport operator desires a more regional approach to the management of airfield stormwater to move away from multiple detention facilities scattered throughout. ▪ Isolated flooding in and around the 128th WI ANG and near the approach ends of Runway 31 and Runway 25L. Extensive storm water runoff from City of Cudahy to the east.
Environmental / Land Use	
Land Use Strategy	▪ Establish business-based and strategic decision-making regarding land needs and development. ▪ Explore the sale or reuse of properties no longer needed for noise mitigation. ▪ Explore the removal of restrictions on adjoining lands previously being protected for future runway development, as appropriate.

SOURCE: Preliminary meetings and correspondence with Milwaukee Mitchell International Airport personnel – fall of 2018.

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