Chapter 2

Existing Conditions Analysis

The purpose of this chapter is to document current facilities and conditions that can affect airfield operations and the ongoing improvement of the McMinnville Municipal Airport; MMV (FAA Airport Identifier Code: MMV/KMMV), hereafter referred to as "the Airport" or "MMV," The assembled information is presented within the context of the Airport's regional setting, its airside and landside facilities, and its administrative functions. Available data sources including the previous airport layout/master planning effort (2004), airfield pavement inspections, design and environmental documents for several completed airfield projects, and current City of McMinnville and Yamhill County planning documents, codes and regulations are used to support this evaluation. The data collection is supplemented with meetings/contact with airport tenants, stakeholders, and City staff. The findings documented in this chapter will support subsequent elements of the master plan.

Regional Setting

The Regional Setting section is intended to provide a broader understanding of the geographic, social, economic, and environmental impacts airports can have in a region, county, and community. The primary focus in this section is to describe conditions that are specifically related to MMV and its surroundings.

LOCATION & VICINITY

MMV is owned and operated by the City of McMinnville in eastern Yamhill County, Oregon. The Airport is located approximately three miles southeast of the McMinnville city center, at the southeast edge of the city limits and urban growth boundary (UGB). Surface access to the Airport is provided via Highway 18 and SE Cirus Ave.

Yamhill County is located in northwest Oregon, with a land area of 718 square miles, situated between the Willamette Valley and the Oregon Coast. The county is made up of predominantly forest and agricultural lands. Numerous small communities are located along county roads and state highways in the eastern section of the county, within about an hour's drive of Portland. The central and western sections of the county are more sparsely populated with large, forested areas, including the Siuslaw National Forest. McMinnville is the county seat and the largest among 10 incorporated cities in Yamhill County. McMinnville is located approximately 40 miles southwest of Portland and 26 miles northwest of Salem and is served by two main highways: Oregon Highways 18 and 99W.

The City of McMinnville's 2023 Economic Development Strategy notes the following in its key findings: *"McMinnville has the largest population and highest employment in Yamhill County, which positions the city as a subregional center, on the outskirts of the greater Portland region. McMinnville is expected to grow and capture more than half of projected population growth in Yamhill County in the coming years, thereby increasing its role as the commerce and population center of Yamhill County."*

The Airport's location plays a crucial economic role in providing efficient access to air transportation for McMinnville and the broader Yamhill County area. The Airport supports a variety of local businesses with direct and indirect employment in both general aviation and commercial activities, and a broad range of secondary economic activity. A location, vicinity and site map is provided in **Figure 2-1**.

COMMUNITY SOCIO-ECONOMIC DATA

Population

Population within an airport's service area is a key element in defining economic activity, which in turn heavily influences airport activity. Data from Portland State University Population Research Center (PRC) and U.S. Census data was reviewed to gauge recent changes in population within the Airport's service area.

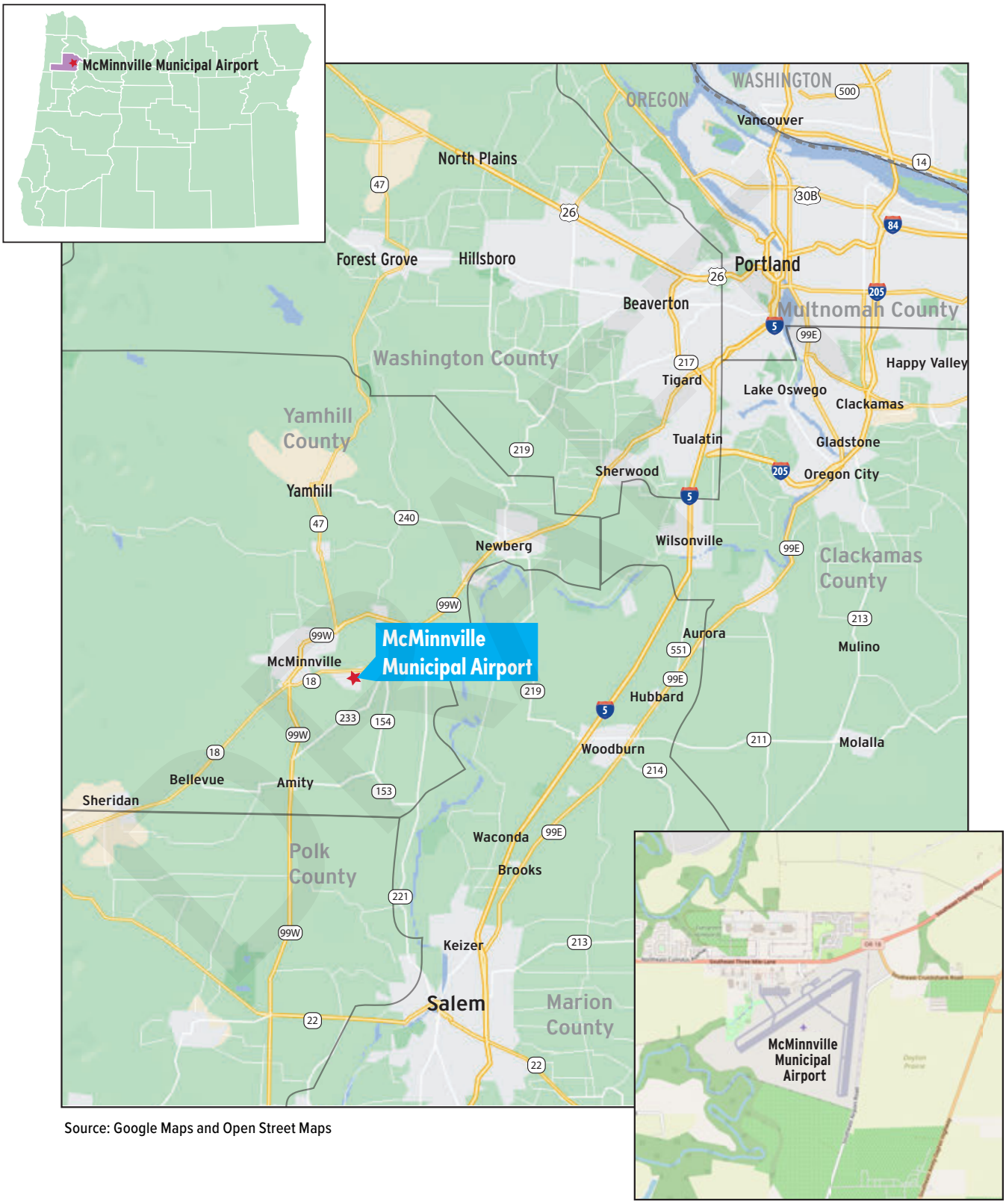
Population in the City of McMinnville has grown steadily over the last 20 years, outpacing the rates of growth for both Yamhill County and Oregon (statewide). During this period, population growth for the local/county/state averaged about 1 to 1.2% annually. Historical population data are summarized in **Table 2-1**. The distribution of population in Yamhill County is summarized in **Table 2-2**. It is noted that McMinnville's share of county population increased from around 27% to nearly 32% since 2000.

Table 2-1: Historical Population

	2000	2010	2018	2019	2020	2021	2023*
Oregon	3,421,399	3,831,074	4,183,538	4,216,116	4,237,256	4,263,581	4,291,525
CAGR (2000-2023)							0.99%
Yamhill County	84,992	99,193	106,390	106,927	107,722	108,311	109,743
CAGR (2000-2023)							1.12%
City of McMinnville (Incorporated Area)	26,499	32,187	34,434	34,674	34,319	34,263	34,612
CAGR (2000-2023)							1.17%

Source: Portland State University (PSU) Certified Population Estimates – McMinnville 2000-2023
*Portland State University (PSU) Certified Population Estimates December 15th 2023

Figure 2-1: Location and Vicinity Map



Source: Google Maps and Open Street Maps

Table 2-2: Historical Population – Local Area Distribution

	2000	2010	2018	2019	2020
Yamhill County	65,551 (100%)	84,992 (100%)	99,193 (100%)	107,722 (100%)	109,743(100%)
McMinnville	17,894 (27.3%)	26,499 (31.2%)	32,187 (34.5%)	34,319 (31.9%)	34,612 (31.54%)
Newberg	13,086 (20%)	18,064 (21.3%)	22,068 (22.3%)	25,138 (23.3%)	26,728 (24.36%)
Sheridan	3,979 (6.1%)	5,561 (6.6%)	6,127 (6.2%)	6,429 (6%)	5,987 (5.46%)
Lafayette	1,292 (2%)	2,586 (3%)	3,742 (3.8%)	4,423 (4.1%)	4,714 (4.3%)
Other Cities	8,800 (13.4%)	9,631 (11.3%)	11,521 (11.6%)	12,361 (11.5%)	12,521 (11.41%)
Unincorporated	20,500 (31.3%)	22,651 (26.7%)	23,548 (23.7%)	25,052 (23.3%)	25,181 (22.95%)

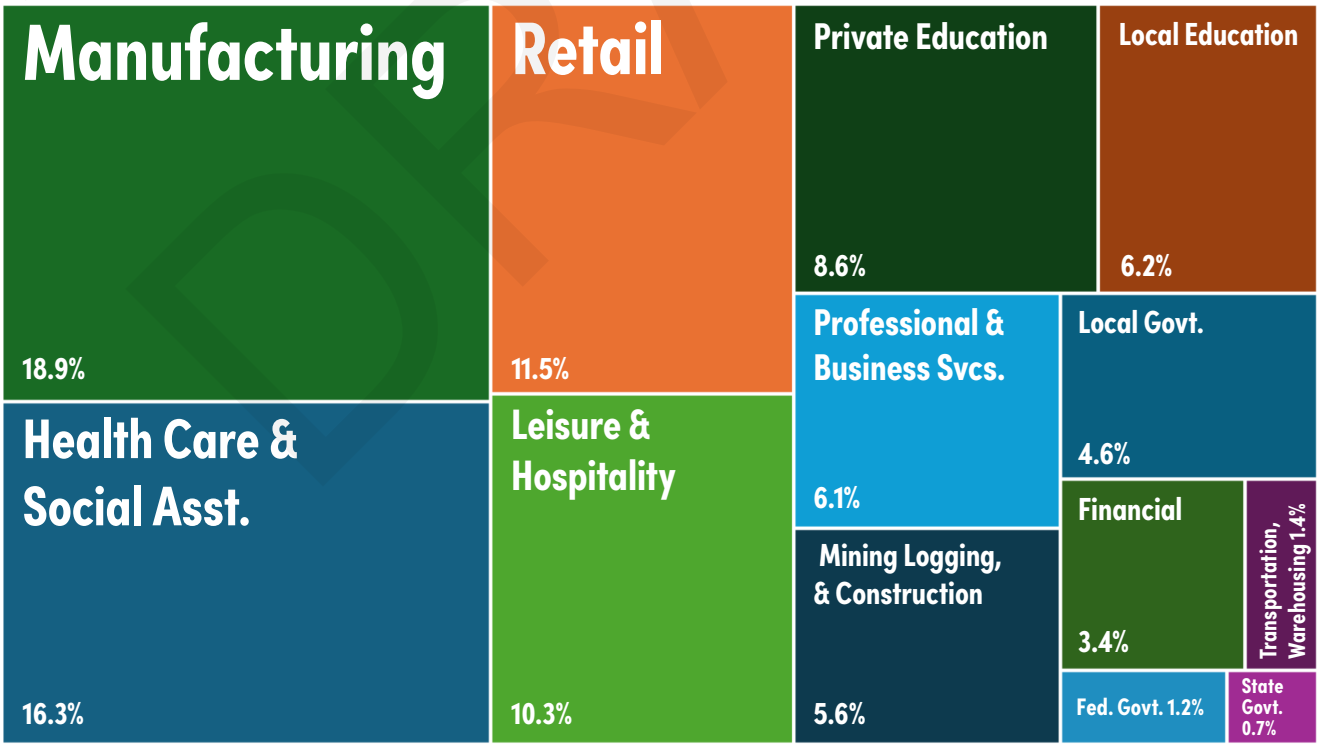
Source: US Decennial Census (1990-2020).
*Portland State University (PSU) Certified Population Estimates December 15th 2023

Income & Employment

U.S. Census data reports the 2022 median household income in the McMinnville census district was $66,215, trailing both Yamhill County ($77,267) and Oregon ($75,657). The December 2023 unemployment rate in Yamhill County was 3.4%, slightly lower than Oregon's statewide rate of 3.7%.

Figure 2-2 highlights the largest employment sectors in Yamhill County. The agency's December 2023 projection of industry employment in the four-county "Mid-Valley" region (Linn, Marion, Polk, and Yamhill Counties) projects a 10% net increase between 2022 and 2032. **Table 2-3** highlights demographic data for Yamhill County from the 2020 Census.

Figure 2-2: Employment Industries



Source: OR Department of Employment;Yamhill County

Table 2-3: Yamhill County Demographics[1]

Demographic	Data
Population (2020)	107,722 (2020 Census)[1]
Ethnicity (2020)	Caucasian (73.7%); Hispanic or Latino (16.5%); Black or African American (0.8%); American Indian and Alaska Native (1.3%); Asian (1.4%); Native Hawaiian and Other Pacific Islander (0.2%); Some Other Race (0.6%); two or more races (5.6%)
Median Household Income (2022)[2]	$77,267 (Yamhill County); $75,657 (Oregon)
Persons in Poverty (%)	11.1% (Yamhill County); 12.1% (Oregon)
Persons Under 18 (%)	20.8% (Yamhill County); 19.7% (Oregon)
Persons 65 and Over (%)	18.9% (Yamhill County); 19.2% (Oregon)
Total Workforce (December 2023)[3]	56,053 (Total Civilian Labor Force) 1,981 (Total Unemployed) 54,072 (Total Employed) 36,840 (Total Nonfarm) 32,170 (Total Private) 4,670 (Total Government)
Unemployment Rate (December 2023)[3]	3.4% (Yamhill County); 3.7% (Oregon)

1. U.S. Census Bureau QuickFacts State of Oregon, Yamhill County (2020 Census); other data and distributions are 2021.
2. United States Census Bureau. 2022 American Community Survey
3. State of Oregon Employment Department. Seasonally Adjusted

Additional socio-economic data and analysis is presented in Chapter 3: Aviation Activity Forecasts to supplement the projections of future aviation activity.

AIRPORT ROLE (NATIONAL, STATE, AND LOCAL)

The role of an airport may vary slightly within the context of the national, state, or local perspective. Understanding the existing roles of MMV is key to establishing the long-term vision and development of the facility.

National Role

The FAA maintains a current inventory of 3,287 existing U.S. aviation facilities in the National Plan of Integrated Airport Systems (NPIAS). The NPIAS lists airports significant to the air transportation of the United States, and thus are eligible for federal funding through the Airports Improvement Program (AIP), which currently covers 90% of eligible costs of planning and development projects. According to the 2022 *National Plan of Integrated Airport Systems (2023-2027) Report to Congress*, MMV is classified as a Regional General Aviation Airport and as such, supports regional economies by connecting communities to statewide and interstate markets.

State Role

The Oregon Department of Aviation (ODAV) has developed and regularly updates the Oregon Aviation Plan (OAP) to provide guidance on preserving the State's system of airports. The OAP presents a framework for improving the system for continued support of communities and economic development. The most recent update to the OAP (v.6.0) classifies MMV as a Category II - Urban General Aviation Airport. Category II airports support general aviation aircraft, business jets, helicopters, and gliders. Urban General Aviation Airports service a high level of general aviation activity while accommodating demanding user requirements of business-related activity.

AIRPORT HISTORY

The Airport was originally constructed as a national defense project during World War II. The airport property was acquired by the City of McMinnville in 1942 and the Federal Government constructed the airfield facilities. The original agreement, which remains in effect, requires that the airport *"be operated for the use and benefit of the public."* The existing dual runway-taxiway configuration is largely unchanged from the original construction although several improvement projects have been completed in recent years to upgrade the facilities.

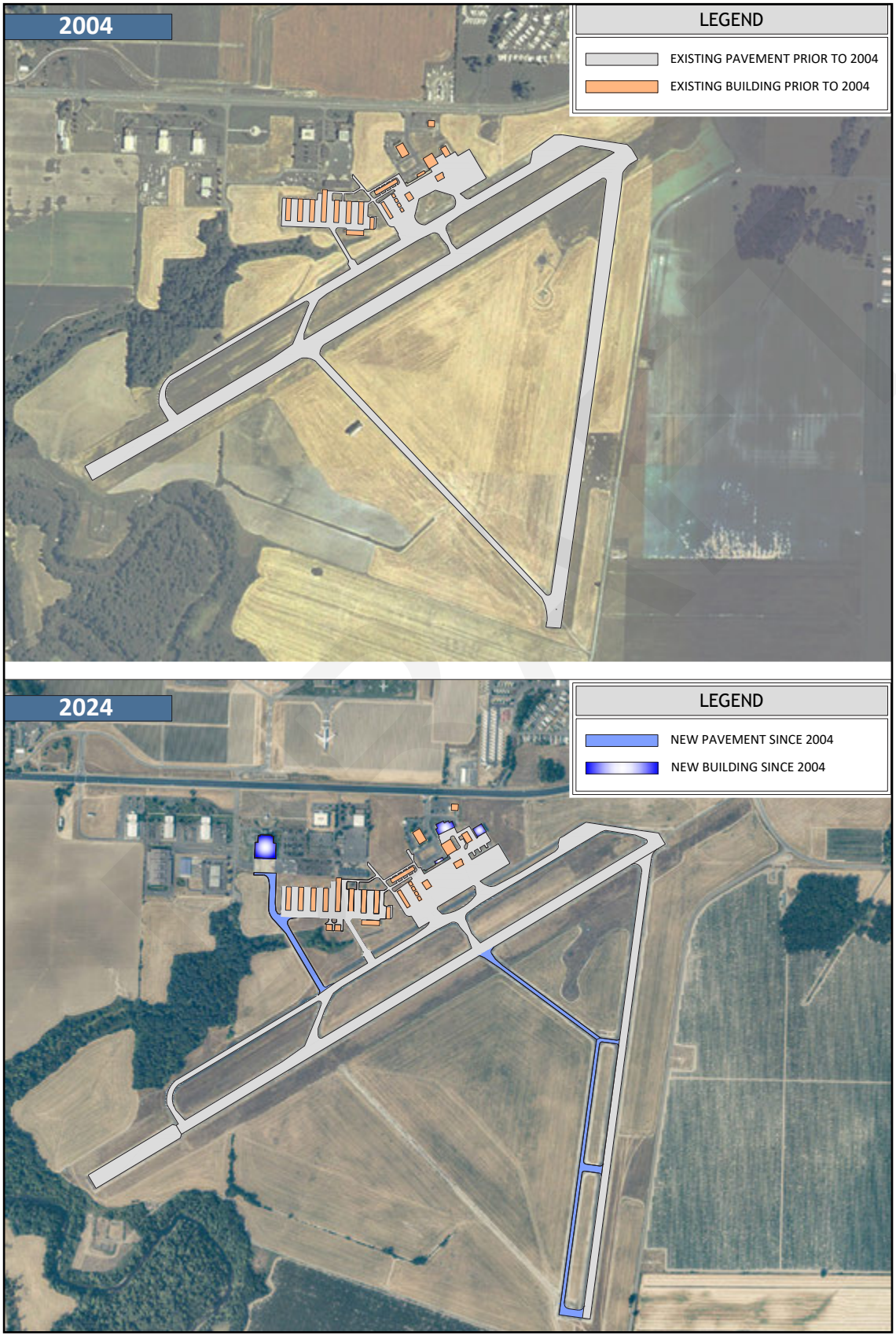
Several planning studies have taken place throughout the Airport's history, including multiple FAA-funded master planning efforts between 1973 and 2004. Several new construction and facility rehabilitation projects have been completed at the Airport over the past 20 years. Recent FAA funded (with local match) airfield projects are listed in **Table 2-4** including rehabilitation of the primary runway, construction of the Runway 17-35 parallel taxiway, expansion of the main apron, obstruction removal, and new taxiway construction. **Figure 2-3** depicts new airfield construction since the last plan was completed in 2004.

Table 2-4: 20-Year FAA Grant History

Fiscal Year	Project (MMV)	Entitlement	Discretionary	Other	Total Federal
2004	Expand Apron	$294,239	$0	$0	$294,239
2007	Rehabilitate Runway	$350,254	$0	$0	$300,000
2008	Construct Taxiway Rehabilitate Runway	$1,024,398 $100,000	$0 $0	$0 $0	$1,124,398
2008	Rehabilitate Runway	$0	$1,360,114	$0	$1,360,114
2009	Construct Taxiway	$68,073	$0	$0	$68,073
2009	Rehabilitate Runway Remove Obstructions Construct Taxiway	$15,682 $6,500 $98,505	$0 $0	$0 $0	$120,687
2009	Construct Taxiway	$0	$1,130,867	$0	$1,130,867
2014	Conduct Environmental Study	$248,667	$0	$0	$248,667
2015	Rehabilitate Runway	$492,230	$7,471	$0	$499,701
2016	Rehabilitate Runway	$828,526	$6,327,240	$0	$7,155,766
2018	Reconstruct Apron	$246,986	$0	$0	$246,986
2020	Reconstruct Apron	$435,941	$884,546	$146,720	$1,467,207
2020	CARES Act Funds	$0	$0	$69,000	$69,000
2021	CRRSA Act Funds	$0	$0	$23,000	$23,000
2022	General ARPA	$0	$0	$59,000	$59,000
2023	Conduct Airport Related Environmental Assessment/Plan/Study	$0	$0	$92,643	$92,463
2023	Update Airport Master Plan or Study	$450,000	$0	$0	$450,000
Total		$4,660,001	$9,710,238	$390,363	$14,760,602

Source: FAA AIP Grant Database; Note: State apportionment totals are not included in "Total Federal $"; "Other" includes BIL, ARPA, CARES, etc.

Figure 2-3: Airport Development Since 2004



AREA AIRPORTS CONTEXTUAL ANALYSIS

Contextual analysis of the airport service area examines the impact that the airport has on its immediate geographic area. For general aviation airports, the majority of aviation activity can be directly linked to their service area boundaries defined by 30- and 60-minute driving times surrounding the airport. The airports and aviation activity within a defined service area may directly affect activity at any individual airport in the service area. This includes locally based aircraft and transient aircraft where operators choose airports based in part on proximity to their place of business or travel destination. The type and availability of facilities and services, and competition among airports, are key factors in the distribution of aviation activity within any particular service area.

The public use airports located within the service area defined for MMV are briefly summarized below, depicted in **Figure 2-4**, and listed in **Table 2-5**. These airports include both publicly owned and privately-owned facilities. December 2023 FAA Airport Master Record Form (5010) data is presented for these airports to provide common reporting of activity. It is noted that available 5010 data for individual airports may not be current or highly accurate. Activity data for these airports is not verified and is presented for reference only. For MMV, an updated based aircraft count and estimate of aircraft operations are provided later in this chapter and will be used as the 2023 baseline to develop the 20-year aviation activity forecasts (Chapter 3).

North/Northeast/East

Chehalem Airpark (17S)

Chehalem Airpark is a privately-owned, public-use airport located 8.5 nautical miles (NM) northeast of MMV. The Airport has a single lighted runway with visual approach capabilities. Available services include aviation fuel, hangars and parking, aircraft maintenance, flight training, and aircraft rental. The December 2023 FAA 5010 lists 31 based aircraft and 12,500 annual operations.

Sportsman Airpark (2S6)

Sportsman Airpark is a privately-owned, public-use airport located 9.8 NM northeast of MMV. The Airport has a single lighted runway with visual approach capabilities. Available services include aviation fuel, hangars and parking, aircraft maintenance, flight training, and aircraft rental. The airport also serves as a launching point for hot air balloon operations. The December 2023 FAA 5010 lists 44 based aircraft and 11,650 annual operations.

Aurora State Airport (UAO)

Aurora State Airport is a public-use airport owned and operated by ODAV, located 15.8 NM east of MMV. UAO has a single lighted runway with non-precision instrument approach capabilities and an air traffic control tower (ATCT). Available services include aviation fuel, hangars and parking, flight training, and aircraft rental. The December 2023 FAA 5010 lists 128 based aircraft and 63,500 annual operations.

Lenhardt Airpark (7S9)

Lenhardt Airpark is a privately-owned, public-use airport located 16.6 NM east of MMV. 7S9 has a single lighted runway with visual approach capabilities. Available services include aviation fuel, hangars and parking, aircraft maintenance, flight training, and aircraft rental. The December 2023 FAA 5010 lists 109 based aircraft and 6,000 annual operations.

Stark's Twin Oaks Airpark (7S3)

Stark's Twin Oaks Airpark is a privately-owned, public-use airport located 16.6 NM northeast of MMV. 7S3 has a single lighted runway with visual approach capabilities. Available services include aviation fuel, hangars and parking, aircraft maintenance, flight training, and aircraft rental. The December 2023 FAA 5010 lists 160 based aircraft and 25,000 annual operations.

Hillsboro Airport (HIO)

Portland-Hillsboro Airport, owned and operated by the Port of Portland, is a public-use airport located 22.3 NM north of MMV. HIO is a designated reliever GA airport for Portland International Airport (PDX) and serves the Portland Metro Area. The Airport has three lighted runways with instrument approach capabilities, an ATCT, and weather reporting. Available services include aviation fuel, hangars and parking, aircraft repair and maintenance, flight training, aircraft rental, and air taxi (charter) services. The December 2023 FAA 5010 lists 253 based aircraft and 253,847 annual operations.

Mulino State Airport (4S9)

Mulino State Airport is a public-use airport owned and operated by ODAV, located 23.1 NM east of MMV. 4S9 has a single lighted runway with visual approach capabilities. Available services include aviation fuel, hangars and parking, and aircraft maintenance. The December 2023 FAA 5010 data lists 59 based aircraft and 21,300 annual operations.

South

Salem Municipal Airport (SLE)

Salem McNary Field is a public-use airport, owned and operated by the City of Salem, located 18 NM south of MMV. Since the deregulation of the U.S. airline industry in 1978, SLE has periodically accommodated a variety of small air service providers, including charter flights, but current activity consists predominantly of GA and military operations (Oregon Army National Guard). SLE has two lighted runways, precision instrument approach capabilities, an ATCT, weather reporting, and a full range of services. The December 2023 FAA 5010 lists 161 based aircraft and 45,357 annual operations.

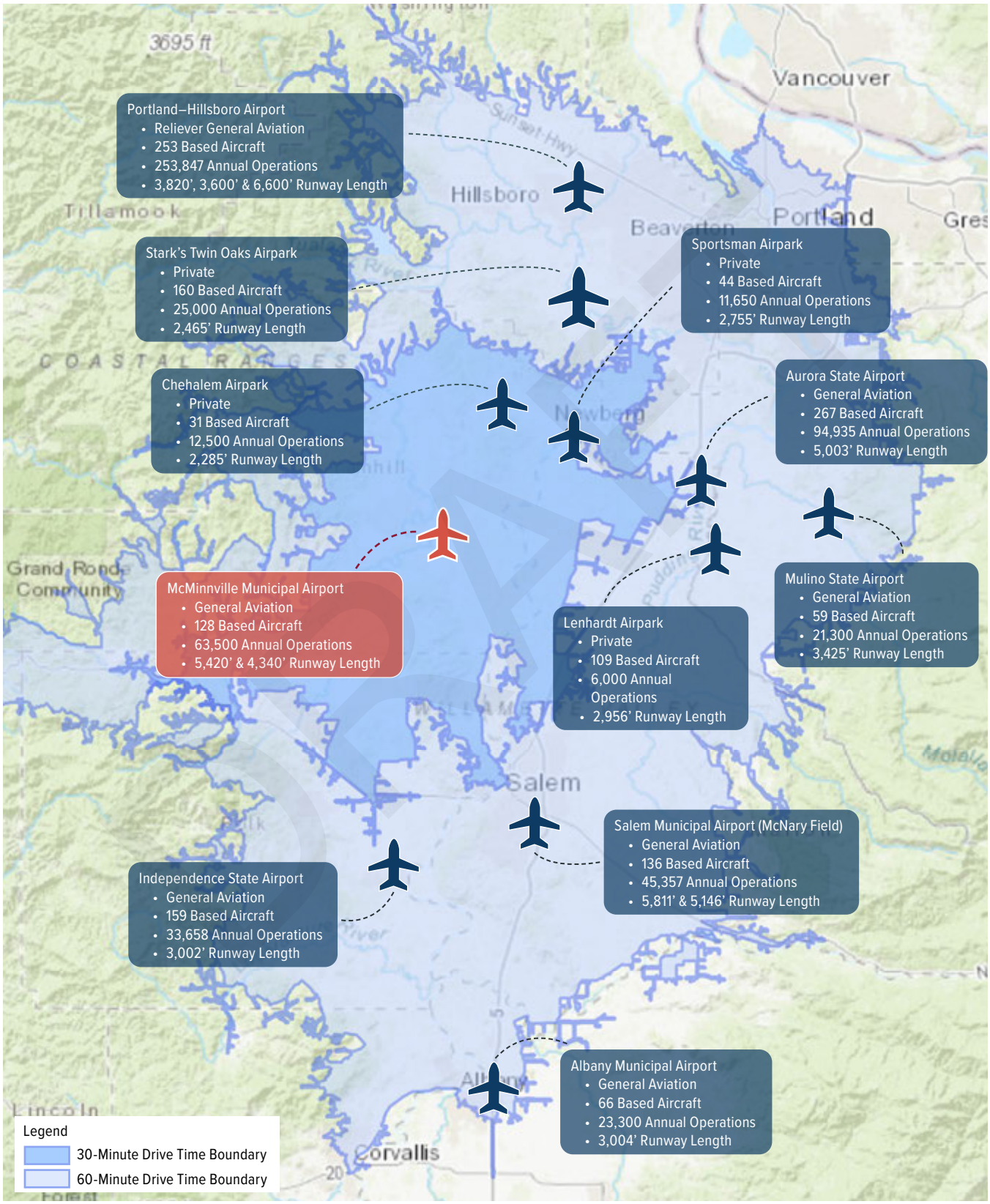
Independence State Airport (7S5)

Independence State Airport is a public-use airport owned and operated by ODAV, located 19.8 NM south of MMV. The Airport has a single lighted runway with visual approach capabilities. Available services include aviation fuel, hangars and parking, flight training, and aircraft rental. The December 2023 FAA 5010 lists 159 based aircraft and 33,658 annual operations.

Albany Municipal Airport (S12)

Albany Municipal Airport is a public-use airport owned and operated by the City of Albany, located 33.6 NM south of MMV. S12 has a single lighted runway with non-precision instrument approach capabilities. Available services include aviation fuel, hangars and parking, flight training and aircraft repair and maintenance. The December 2023 FAA 5010 lists 66 based aircraft and 23,300 annual operations.

Figure 2-4: Area Airports



Source: AirportIQ 5010, Esri, USGS, NOAA

A summary of the December 2023 5010 data for the area airports is presented in **Table 2-5**. As noted earlier, the 5010 data is provided for general reference only as a broad indication of activity. Relevant data to be updated in the aviation activity forecasts (Chapter 3).

Table 2-5: FAA 5010 Data (Public Use Airports in Vicinity)

	McMinnville	Lenhardt	Sportsman	Mulino State	Twin Oaks Airpoark	Aurora State	Portland-Hillsboro	McNary Field	Independence State	Albany	Chehalem	Total
Air Carrier	0	0	0	0	0	0	0	5	0	0	0	5
Air Taxi	0	0	100	0	0	7,909	9,561	3,466	1,121	650	500	23,307
GA Local	22,000	1,250	3,875	13,000	7,000	32,177	160,261	18,086	8,995	10,000	4,000	280,644
GA Itinerant	40,000	4,750	7,675	8,300	18,000	54,569	83,381	20,741	23,542	12,650	8,000	281,608
Military	1,500	0	0	0	0	280	644	3,059	0	0	0	5,483
TOTAL OPERATIONS	**63,500**	**6,000**	**11,650**	**21,300**	**25,000**	**94,935**	**253,847**	**45,357**	**33,658**	**23,300**	**12,500**	**591,047**
TOTAL BASED AIRCRAFT[1]	**128**	**109**	**44**	**59**	**160**	**267**	**253**	**161**	**159**	**66**	**31**	**1,428**
Single Engine	103	108	31	57	159	208	163	136	155	58	20	1,189
Multi Engine	7	1	2	2	1	15	26	10	4	6	2	76
Jet	2	0	0	0	0	35	41	6	0	2	0	87
Helicopters	16	0	11	0	0	9	23	9	0	0	9	76
Glider	4	0	0	2	0	3	5	2	5	0	0	21
Military	0	0	0	0	0	0	0	19	0	0	0	19
Ultra-Light	0[2]	4	0	0	1	1	0	0	0	0	0	6

Source: AirportIQ 5010 Airport Master Records and Reports (AirportIQ5010.com, Accessed 12/12/2023)
Notes:
1. *FAA does not include gliders, ultra-light, or military aircraft in its 5010 based aircraft totals.
2. Airport management reports 2 ultra-lights at MMV (3/2024).

SUMMARY OF AIRPORT OPERATIONS DATA

MMV accommodates a wide variety of aeronautical activity, ranging from small single-engine fixed-wing aircraft and helicopters to large corporate jets. The Airport's current based aircraft fleet and operational mix are similar, although MMV accommodates significant amounts of transient business turboprop and jet activity, in addition to the activity generated by locally based aircraft. The Airport also accommodates a significant amount of helicopter and fixed wing flight training activity—generated by both locally-based aircraft and aircraft from nearby airports.

As part of the FAA's National Based Aircraft Inventory Program, airport sponsors are required to periodically review and update their based aircraft data. MMV airport management completed a review of its based aircraft in December 2023, with a total of 128 validated aircraft. An additional 39 aircraft are listed in the database for MMV but are not included in the validated count due to a variety of issues. Most commonly, aircraft in this category are listed by more than one airport, or the aircraft may have an expired FAA registration or airworthiness certificate. When these types of conflicts occur in the database, the aircraft automatically default into the non-validated group. If adequate verification is provided, aircraft can be added to the validated count at any time.

Based on current counts, it appears that the number of based aircraft have declined since the last plan was completed in 2003. However, since the current based aircraft counting methodology (e.g., FAA Inventory database) was not in use when the last plan was completed, the accuracy of earlier counts cannot be verified. It is possible that a portion of 39 aircraft not included in the current validated count have been previously counted at MMV.

It is also noted that two commercial operations (Evergreen Aviation and Judy Newman's glider training operation) were active at MMV when the last plan was prepared. The 2004 ALP Report noted *"Evergreen currently bases a Gulfstream IV business jet at MMV, in addition to a variety of fixed wing aircraft and helicopters."* and *"...there were 150-based aircraft at MMV in 2003, including 19 aircraft based at Evergreen's facilities adjacent to the airport."* The ALP report also noted *"currently more than twenty locally based sailplanes/gliders."* The FAA no longer includes gliders in its Form 5010-1 based aircraft totals or in the validated based aircraft counts for airports, although these aircraft were included in the previous counts, as was common practice for aircraft with active FAA registrations ("N numbers"). MMV currently has seven gliders listed in its FAA count data that are not included in the airport inventory or validated inventory.

Based aircraft counts from the 2004 ALP Report, an October 2023 FAA 5010-1 form, and the December 2023 Validated Inventory count are presented for comparison in **Table 2-6**. For master planning purposes, the December 2023 Validated Inventory count will be used as the (2023) base year for the updated 20-year (2023-2043) aviation activity forecasts.

Table 2-6: Based Aircraft

	2004 Airport Layout Plan Report	FAA 5010-1 (10/10/2023)	2023 Updated Count
Single Engine	99	94	100
Multi Engine	9	7	7
Jet	2	3	2
Helicopter	19	15	19
Glider	21	4	7
Ultra-Light	-	0	0
Total	50	200	200
TOTAL BASED AIRCRAFT	**150**	**119**	**128**

Source: Updated Count provided by McMinnville Airport Management (12/2023) and 2004 Layout Plan (2003 base year).
*Glider and ultralight aircraft are not included in the FAA National Based Aircraft Inventory "Validated Inventory" or the FAA 5010 "Based Aircraft" totals.

As noted earlier, there are no actual counts of aircraft operations available for MMV. Aside from instrument flight plan filings, all other aircraft operations data are estimated. The current FAA Terminal Area Forecast (TAF) for MMV was issued in January 2024. The most recent historical year provided is 2022 (64,418 annual operations, 119 based aircraft; operations to based aircraft ratio (OPBA): 541).

The Oregon Department of Transportation (now ODAV) performed acoustical counts at non-towered airports statewide in the 1980s and 1990s. Six years of counts were conducted at MMV between 1987 and 1999, with an average (mean) of 57,909 annual operations. The average number of based aircraft during that period was 113, which yields an OPBA of 512. Although the age of the traffic counts limits highly relevant comparisons to more recent activity estimates, it is worth noting that they were developed using statistically-sound (four season) sampling methods, and that the similarity with current estimates presented in the TAF, appear to suggest that the TAF provides reasonable measures of activity.

Annual aircraft operations estimates from the 2004 ALP Report and the October 2023 FAA 5010-1 form are presented in **Table 2-7**. The 2023 5010-1 form provides an operations total for the 12 months ending 9/20/2021, which is identical to the TAF Total Operations reported for MMV in 2021.

Table 2-7: Estimated Aircraft Operations

	2004 Airport Layout Plan Report	FAA 5010-1 (10/10/2023)
General Aviation (Local)	28,682	22,000
General Aviation (Itinerant)	36,279	40,000
Air Taxi	-	0
Military	-	1,500
TOTAL OPERATIONS	65,961	63,500

Source: Estimates obtained from the 2004 ALP (2003 base year), and FAA 5010 Airport Master Record (Operations for 12 Months Ending 10/10/2023).

An updated estimate of aircraft operations will be prepared for 2023 for use as a baseline for the 2023-2043 master plan forecasts. The recent FAA 5010 and TAF data noted above are provided for reference.

ENVIRONMENTAL DATA

Physical Geography

MMV is located approximately three miles southeast of McMinnville, north of the South Yamhill River. The Airport site consists of approximately 670 acres, mostly located south of Highway 18. The published Airport elevation is 163 feet above mean sea level (MSL). The South Yamhill River extends from near Grand Ronde through McMinnville, before it becomes the Yamhill River and connects to the Willamette River east of Dayton. The Willamette River is the dominating natural physical feature within the Willamette Valley, which travels north toward Portland, connecting with the Columbia River. The Willamette Valley is bordered by high mountainous terrain to the east and lower elevation coastal mountains to the west. Terrain in the vicinity of McMinnville is characterized by level to moderately sloping irrigated farmland located within the basin valley. Irrigated farmland comprises the majority of the land surrounding McMinnville.

Local Climate/Wind Analysis

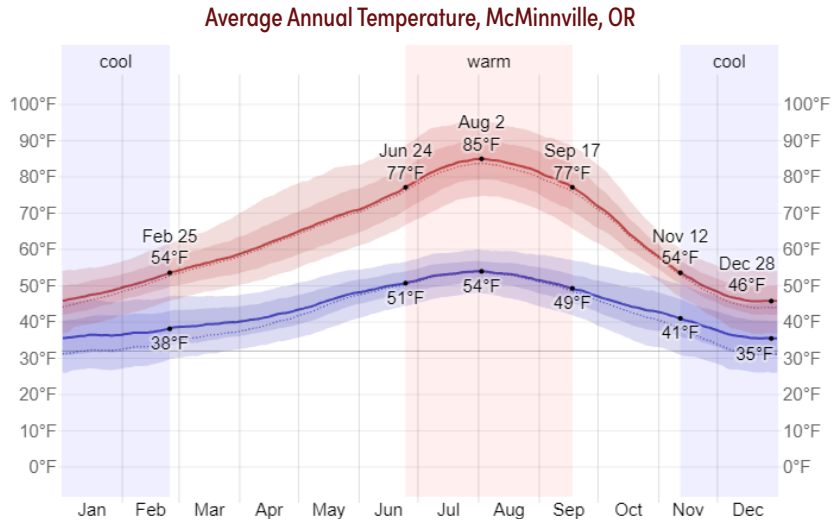
Yamhill County has a Mediterranean climate with relatively dry summers, wet and cold winters with moderate winter and summer temperature ranges. Temperature and precipitation vary with elevation and this region produces moderate amounts of winter snow.

Historical climatic data for McMinnville is maintained by the Western Regional Climatic Center. The local observation station (McMinnville, Station No. 355384) has data for a 121-year period (1894-2015).

The data for McMinnville indicate that July and August are typically the warmest months; December and January are the coldest. The average maximum temperature (July) is 82.9 degrees Fahrenheit, and the average minimum temperature (January) is 33.3 degrees. Annual precipitation averages 41.81 inches, with the three-month period November through January accounting for 50% of the annual total. Annual snowfall averages 6.7 inches. The range of typical monthly temperatures and precipitation are presented in the adjacent graphic. See **Table 2-8** for a summary of local historical weather data.

Figure 2-5: McMinnville Weather Patterns

The following graphics retrieved from weatherspark.com illustrate the typical temperature and precipitation patterns in McMinnville, based on an analysis of historical weather reports and model reconstructions.



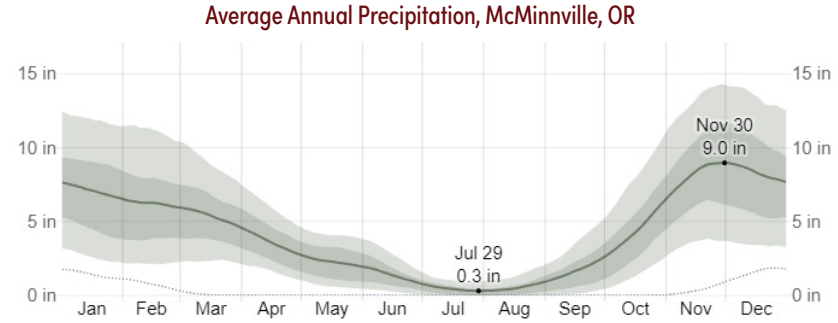


Table 2-8: Historical Weather Observations – Mcminnville (Station No. 355384)

Weather Station	Average Total Precipitation (inches) Annual	Average Maximum Temperature (F) Warmest Month	Average Minimum Temperature (F) Coldest Month	Average Total Snowfall (inches) Annual
McMinnville (355384)	41.81	82.9	33.3	6.7

Source: Western Regional Climate Center (WRCC) data; McMinnville 11/1894-4/2015

Available wind data for MMV indicates prevailing winds are generally northwest-southeast, which slightly favors the secondary runway (17/35), although Runway 4/22 is the primary runway and accommodates the majority of air traffic. An updated wind rose will be developed for the new ALP drawing set using 10 years (2013-2022) of wind data from the onsite Automated Weather Surface System (ASOS), consistent with FAA requirements. A preliminary review of data indicates that both runways appear to meet the FAA threshold of 95% wind coverage for large and small aircraft. A review of individual runway crosswind coverage will be included in the facility requirements evaluation (Chapter 4).

Airport Solid Waste and Recycling

Solid waste collection and recycling services for residential and commercial customers in McMinnville and Yamhill County are provided by Recology Western Oregon. Services include curbside pickup and self-drop off at the McMinnville Transfer Station and Recycling Depot at 2200 NE Orchard Avenue. Additional information about current programs and the regulatory requirements applicable within the community will be provided in Chapter 8 – Solid Waste and Recycling Plan. No state or federal requirements apply to the waste that is generated at the Airport. Individual tenants at MMV are responsible for the disposal of their own waste and any hazardous materials as required by local ordinance.

CULTURAL RESOURCES ANALYSIS

A Cultural Resources Review was completed as an element of the master plan. The full document is provided in Appendix A. The review noted that four cultural resource studies have been conducted within, or partially overlap with, the study area, and one archaeological isolate was identified in the north-central portion of the study area. The isolate consisted of five lithic flakes on the ground surface and two lithic flakes identified near the surface in two shovel tests. However, the isolate was determined to not be eligible for listing in the NRHP. The study noted the presence of 12 structures located within the study area (Airport) that were built more than 50 years ago (the age standard for historic structures). The report recommended that individual projects proposed in association with the Master Plan should include a compliance-level cultural resource investigation. This includes documenting historic resources within the study area on one or more Section 106 Documentation Forms and determining their eligibility for listing in the NRHP in consultation with the Federal Aviation Administration and the Oregon State Historic Preservation Office (SHPO).

ENVIRONMENTAL OVERVIEW (NEPA)

An environmental overview was completed as an element of the Master Plan. The full memo is provided in **Appendix B**, and a brief summary of key issues is provided below. The screening highlights existing or potential conditions that may be affected by the future use or proposed development of the Airport. Each project that involves federal funding will require a project-specific environmental evaluation, with differing levels of detailing determined by the degree of potential impacts to be addressed or the overall complexity of the project. A brief summary of the NEPA-defined specific impact categories most relevant for the site are summarized below:

- Air Quality
- Biological Resources
- Climate
- Coastal Resources
- Department of Transportation Act, Section 4(f)
- Hazardous Materials, Solid Waste, and Pollution Prevention
- Natural Resources and Energy Supply
- Socioeconomic, Environmental Justice, and Children's Environmental Health and Safety Risk
- Visual Resources
- Water Resources

Section 4(F) of the US Department of Transportation Act

Under section 4(F) of the U.S. Department of Transportation Act publicly owned and accessible parks, recreation areas, and wildlife and waterfowl refuges and historic sites are protected. The city owned Galen McBee Airport Park is located on Airport property and is entitled to the protections defined in section 4(F) of the US Department of Transportation Act.

Biological Resources

Biological resources include sensitive plants, fish, wildlife, and their respective habitats. There are no recorded sightings of any federally or state-listed protected species within the immediate vicinity of the Airport. However, a few species have the potential to be found in the area, including Marbled murrelet, Northern spotted owl, Streaked Horned Lark, Fender's Blue Butterfly, Monarch Butterfly Willamette daisy, Kincaid's lupine, and the Nelson's checker-mallow.

Several migratory bird species covered by the Migratory Bird Treaty Act are known to occur in the vicinity of the Airport. Please consult the full report in Appendix B for the complete list and note that the species listed are representative of species found in the area of the Airport, not necessarily on the property. MMV falls within the USFWS Birds of Conservation Concern (BCC) Zone 9 (USFWS 2022b). Of the 34 avian species listed under BCC, six species have the potential to occur within the surrounding area of the Airport. These species are the Evening Grosbeak, Wrentit, Olive-sided, and the Rufous hummingbird. The environmental review notes that there is no designated critical habitat on the Airport for any terrestrial species.

It is unlikely that any federally or state-protected fish species will occur on airport property. However, steelhead head trout are known to spawn in Agency Creek in the upper South Yamhill Watershed. The species was granted a threatened status in 1999 and reaffirmed in 2011. Due to their threatened status, the South Yamhill River is designated as critical habitat for steelhead trout..

Wetlands and Waters of the U.S.

Two wetlands have been identified on Airport property. These wetlands were products of the Apron Rehabilitation Project wetland survey in 2018. The 2018 survey classifies these wetlands as "Depressional Emergent" as they result from depressions in the soil and water buildup displaced from the tarmac. Stormwater structures prevent the wetlands from directly sharing hydrology with any protected species found in the South Yamhill River.

Floodplains

The Federal Emergency Management Agency administers the National Flood Insurance Program to reduce the impact of flooding on private and public structures. The proposed project is not located within, would not encroach upon, and would not otherwise affect a floodplain (FEMA 1989). The land adjacent to the South Yamhill River (near the southwest corner of Airport) is designated as a Special Flood Hazard Area.

Stormwater and Water Quality

Stormwater from impervious surfaces at the Airport is collected in a series of vegetated ditches for treatment and infiltration. Bioswales located adjacent to the runways and taxiways are used for treatment of stormwater and subsurface infiltration. Campbell Creek has been channelized and modified for past agricultural purposes and no longer connects with downstream waters. No stormwater is discharged to the water of the state or US. Consequently, no water quality issues have been identified at the Airport.

The Airport relies on a combination of infiltration and stormwater management infrastructure (inlets, storm pipe, and manholes) for site drainage. The airfield area has a system of perforated underdrains buried beneath the surface. The underdrains were installed to allow for the conveyance of subsurface stormwater. These underdrains connect to the storm drain system, which also collects surface runoff via inlets, and transports the stormwater to the west. Generally, the Airport has been graded to avoid the collection of surface waters, in an effort to avoid the creation of waterfowl habitat.

Air Quality

The Airport is located within a portion of Yamhill County that attains National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: ozone (O3), carbon monoxide (CO), sulfur dioxide (SO2), nitrogen oxide (NOx), particulate matter (PM10 and PM2.5), and lead (Pb), demonstrating a generally good level of air quality.

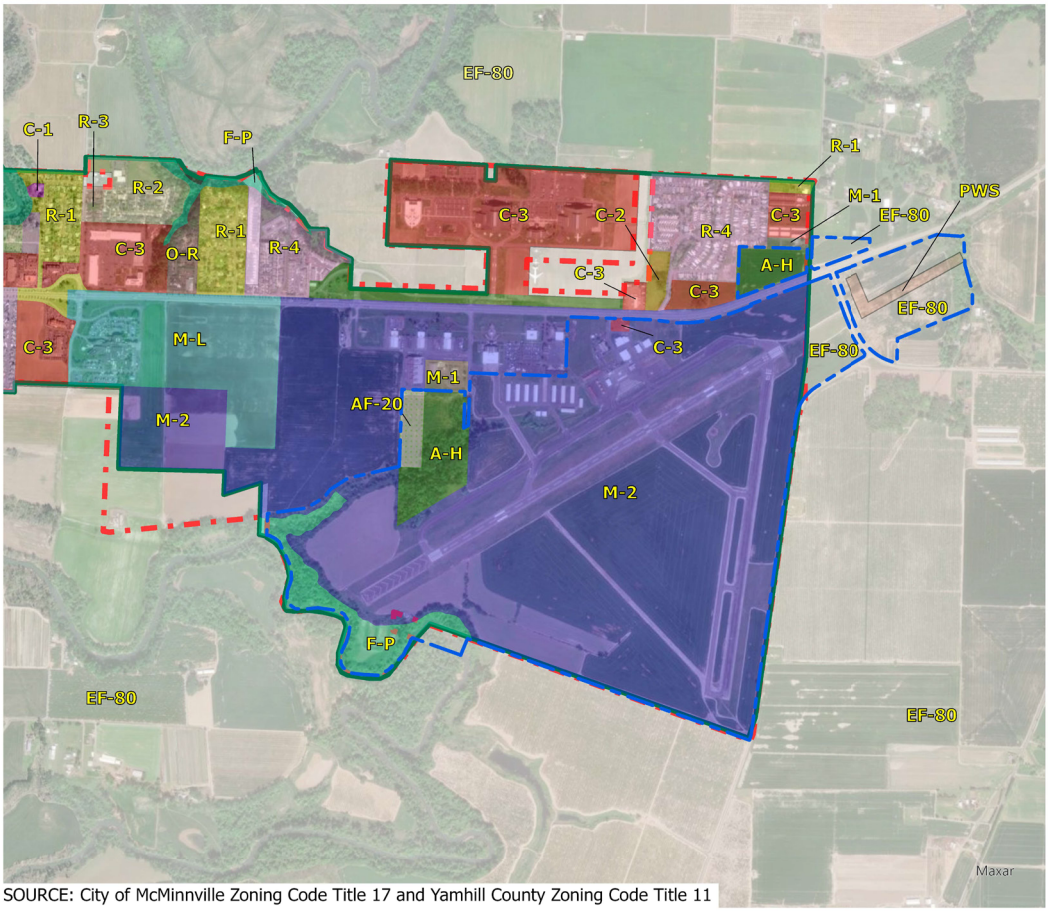
Noise Contours

Included in this planning effort for the 2023 Airport Master Plan noise contours will be completed as a part of the alternatives analysis described in Chapter 5.

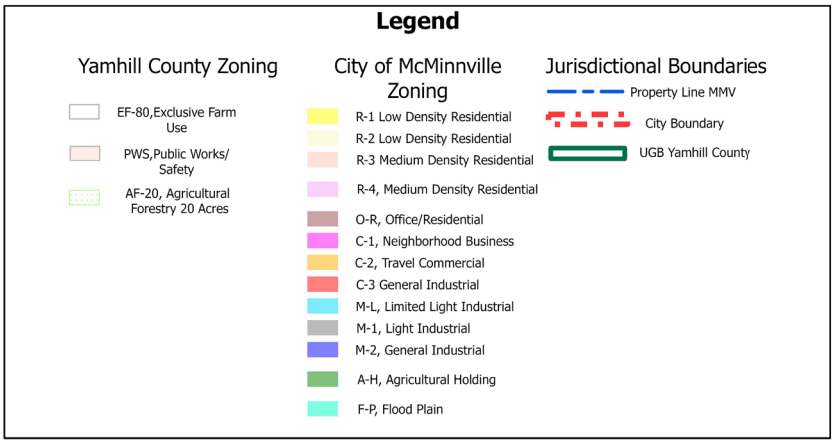
LAND USE & ZONING ANALYSIS

Most land use actions related to the Airport are subject to City of McMinnville development regulations (City of McMinnville Code Title 17), with the exception of the city-owned parcels located outside the city limits (Yamhill County Code, Title 11). The current zoning for the Airport and its immediate surroundings is depicted in **Figure 2-6**. These zones are briefly summarized below and the full zoning ordinances are provided in **Appendix C**.

Figure 2-6: Airport Zoning



SOURCE: City of McMinnville Zoning Code Title 17 and Yamhill County Zoning Code Title 11



Airport Zoning

City of McMinnville

As noted above, the majority of the land area associated with MMV is subject to the land use jurisdiction of the City of McMinnville, with smaller areas subject to Yamhill County land use jurisdiction.

General Industrial (M-2). The majority of MMV, including all airfield pavements, aircraft parking, aircraft hangars and landside support facilities are located in the M-2 zone. M-2 zoning supports a broad range of industrial land uses, including all permitted uses in lower density industrial zones (M-L, M-1). Airports are identified as permitted and accessory uses in the M-2 zone. These designations are consistent with both the overall land use and common airport development features such as airfield facilities and aircraft hangars. A wide range of non-airport industrial uses are also permitted in M-2 zones, including manufacturing, repair, fabricating, processing, packaging, or storage uses. However, the purpose of the Airport Overlay Zone (Chapter 17.52), which also applies to MMV, is to protect the aeronautical function of the Airport by prohibiting incompatible land uses, regardless of underlying zoning.

Agricultural Holding (AH). MMV currently has two areas of AH zoning including Galen McBee Airport Park and a parcel located on the north side of Highway 18 near the end of Runway 22. Although the AH zone is often used to *"provide for the continued practice of agriculture in areas where municipal sewer and water service exists"* it's potential applications also include parks (conditional use) and for other public lands without defined development needs.

Flood Plain Zone (F-P). The southwest corner of the Airport is located within the F-P zone defined for the South Yamhill River. This area of the Airport accommodates a local law enforcement shooting range and does not support any aeronautical development. Access to the facility is provided by an unpaved road connection to SE Airport Road, which runs parallel to Runway 17/35, on its east side. The purpose of the F-P zone is to define and regulate land uses in areas designated as hazardous due to periodic flooding. Permitted uses include farming, public park and recreation facility not requiring the use of any structure, and a sewage pump station.

General Commercial (C-3). A small area of C-3 zoning is located along the east side of the airport entrance (SE Cirrus Ave.) on Highway 18. This area currently accommodates one two-story commercial office building, which is consistent with the "office" use that is among more than 70 permitted uses defined for the zone.

Yamhill County

The areas of the Airport that are located outside the McMinnville city limits (in unincorporated Yamhill County) have mostly agricultural zoning. Two small areas are located near the northeast corner of the Airport near the Cruickshank Road connection with Highway 18—the Runway 22 approach lighting system, protected areas beyond the end of Runway 22, and a small parcel located on the north side of the highway. A small area of public facility zoning is located east of Cruickshank Road (for the Runway 22 approach lighting system). One additional parcel (island) of unincorporated Yamhill County-zoned land is located on the Airport, inside the overall McMinnville city limits.

Agriculture/Forestry Large Holding District (AF). A narrow parcel of AF zoned land is located on the west side of Galen McBee Airport Park and is actively planted. The parcel is zoned AF-20, which corresponds to mixed agricultural and forest management operations, with a 20-acre minimum lot size. Permitted uses include a variety of farm and forest uses. Other incidental uses vary but are consistent with the rural nature of the zone. The City of McMinnville Comprehensive Plan future land use designation for the parcel is industrial, consistent with the general and light industrial uses in the vicinity, and the parcel's physical location within the McMinnville city limits and UGB.

Public Works/Safety (PWS). A small parcel of PWS zoned land located east of Cruickshank Road, beyond the east end of Runway 4/22, accommodates a runway approach lighting system. The Yamhill County Code (Section 802.00) notes that *"the purpose of the PWS District is to accommodate the present foreseeable demand for public works and safety facilities and utility facilities and uses to serve local needs and to serve regional needs, when appropriate."*

Exclusive Farm Use (EF). With the exception of the AWS zone noted above, the land areas located at the northeast corner of the Airport, located in unincorporated Yamhill County, are zoned EF-80. The Yamhill County Code (Section 402.01) notes *"the purpose of the Exclusive Farm Use District is to identify and protect land designated as Exclusive Farm Use on the Comprehensive Plan that is suitable and desirable for commercial agricultural operations and other uses which are compatible with such operations. Properties in the Exclusive Farm District are primarily large, contiguous relatively flat terrace, valley-floor or low foothill holdings."*

Airport Vicinity Zoning

As noted earlier, MMV is located near the southeast corner of the McMinnville city limits and UGB. As a result, the Airport is surrounded by lands in both city and county jurisdiction. In general, the zoning and land uses within the city limits are consistent with urban levels of density. Nearby lands located outside the McMinnville city limits and UGB are rural.

City of McMinnville

Parcels located in the vicinity of MMV, within city jurisdiction, include an assortment of industrial, commercial, residential, agricultural holding, and flood plain zones described in the City of McMinnville Zoning Code - Title 17. Most of the higher density zones are located along the Highway 18 corridor that connects the Airport to the city center. The city's airport overlay zone, described later in this section, is applied over these adjacent areas based on the footprint of the Airport's defined airspace surfaces and the requirement to avoid development that could create a hazard to air navigation.

The nearest area of residential zoning and development is a manufactured home neighborhood located on the north side of Highway 18, about ¼-mile (north) of the closest runway end. This area is zoned **Multiple Family Residential (R-4)**, which permits a variety of dwelling types including single family, two-family, multi-family, accessory dwelling unit, condominium, and other uses defined in Chapter 17.06. The maximum building height permitted is 60 feet and the area is subject to the City's airport overlay zone. A variety of general, limited, and light industrial zones are also located adjacent to the Airport along the south side of the Highway 18 corridor.

Yamhill County

Virtually all of Yamhill County-zoned lands located south, east and north of MMV are designated **Exclusive Farm Use District EF-80** (80 acre minimum). The same agricultural definitions described earlier for the EF-80 zoned areas of MMV also apply to the surrounding EF-80 zoned parcels.

Comprehensive Planning

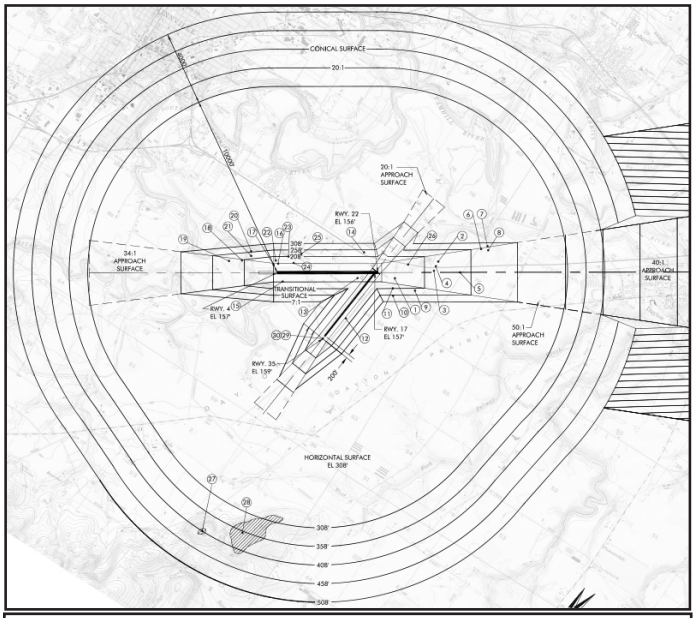
The long-term land development patterns for the City of McMinnville and the adjoining areas of unincorporated Yamhill County are defined in their respective comprehensive plans. The McMinnville city limit and Urban Growth Boundary (UGB) lines in the vicinity of McMinnville Municipal Airport are closely aligned, with only small areas of unannexed land remaining within the UGB in this part of the community. This indicates that the current urban and rural land designations are largely in place, and that changes through future development are expected to be consistent with those designations.

Compatible Land Use Planning

The Oregon Department of Aviation's *Airport Land Use Compatibility Guidebook* identifies land uses that are considered generally compatible or incompatible within airport safety areas and Part 77 airspace surfaces for airports. **Figure 2-7** depicts a land use compatibility matrix defined for these areas, based on compatibility criteria developed by FAA and other federal agencies, including Housing and Urban Development (HUD) and the Environmental Protection Agency (EPA).

PART 77 Airspace

Federally defined airspace for MMV is established under *Title 14 of the Code of Federal Regulations (CFR), Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace*. The regulations are commonly known as Part 77. The graphics below are the 2004 Part 77 airspace plan developed for MMV. It is important to note that Part 77 surfaces have both flat and sloped surfaces that begin at runway elevation. In general, airspace surfaces located farther from a runway are elevated above their associated airports. Obstacle clearing standards apply to both natural terrain and built items.



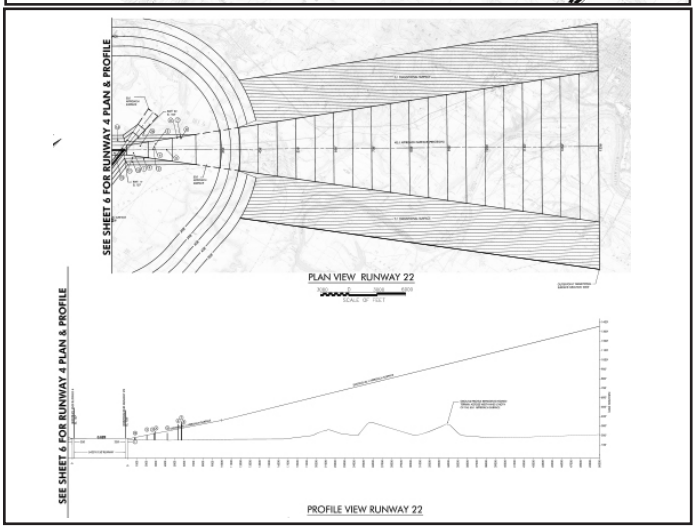


Figure 2-7: ODAV Land Use Matrix

Compatible Land Uses per FAR Part 77 Surfaces and FAA Safety Areas

Legend:
C Generally compatible land use
NC Incompatible land use
• Not clearly compatible or incompatible, requires specific study

Criteria for Compatibility:
1: Does not exceed height standards
2: Does not attract large concentrations of people
3: Does not create a bird attractant
4: Does not cause a distracting light/glare
5: Does not cause a source of smoke
6: Does not cause an electrical interference
7: Does meet compatible DNL sound levels

Land Uses	Primary Surface	Transitional Surface	Horizontal Surface	Conical Surface	Approach Surface	Runway Protection Zone
Residential						
Residential, other than those listed below	NC	NC	•	C	•	NC
Mobile home parks	NC	NC	•	C	•	NC
Transient lodgings	NC	NC	•	C	•	NC
Public Use						
Places of public assembly (schools, hospitals, churches, auditoriums)	NC	NC	•	C	NC	NC
Government services	NC	•	C	C	•	NC
Transportation (parking, highways, terminals)	NC	•	C	C	•	•
Commercial Use						
Offices, business and professional	NC	•	C	C	•	NC
Wholesale & retail - building materials, hardware and farm equipment	•	•	C	C	•	NC
Retail trade - general	NC	•	C	C	•	NC
Utilities	NC	•	•	•	•	•
Communication	NC	•	•	•	•	NC
Manufacturing & Production						
Manufacturing - general	NC	•	•	•	•	NC
Agricultural (except livestock) and forestry	•	•	C	C	•	•
Livestock farming and breeding	NC	•	•	C	•	NC
Mining and fishing, resource production and extraction	NC	NC	•	•	•	NC
Recreational						
Outdoor sports arenas and spectator sports	NC	NC	•	C	NC	NC
Nature exhibits and zoos	NC	NC	•	C	NC	NC
Amusement park, resorts and camps	NC	NC	C	C	NC	NC
Golf courses	NC	NC	C	C	NC	NC
Parks	NC	•	•	•	•	•

Airport Overlay Zoning

The City of McMinnville and Yamhill County have each adopted airport overlay zoning that is applicable to MMV, in accordance with Oregon state law (OAR 660-013-0070). The responsibility for adopting airport overlay zoning specific to MMV rests with each local government entity located within the footprint of federally defined airspace for MMV, under *Title 14 of the Code of Federal Regulations (CFR), Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace*. **Figure 2-8** depicts the Part 77 airspace surfaces for MMV and identifies local jurisdictional boundaries within the defined airspace.

The airspace associated with MMV primarily extends over the City of McMinnville and Yamhill County, but also extends over the cities of Dayton, Dundee, and Newberg, and Marion County, where the precision instrument approach surface for Runway 22 extends about 9.5 miles (50,000 feet) east of the runway end. A review of current zoning codes for these cities did not identify existing airport overlay zoning ordinances. The Marion County code includes airport overlay zoning, but its applicability to an airport physically located outside the county is not explicitly stated. Local government coordination with the Oregon Department of Aviation (ODAV) is recommended to determine future land use planning updates within these jurisdictions.

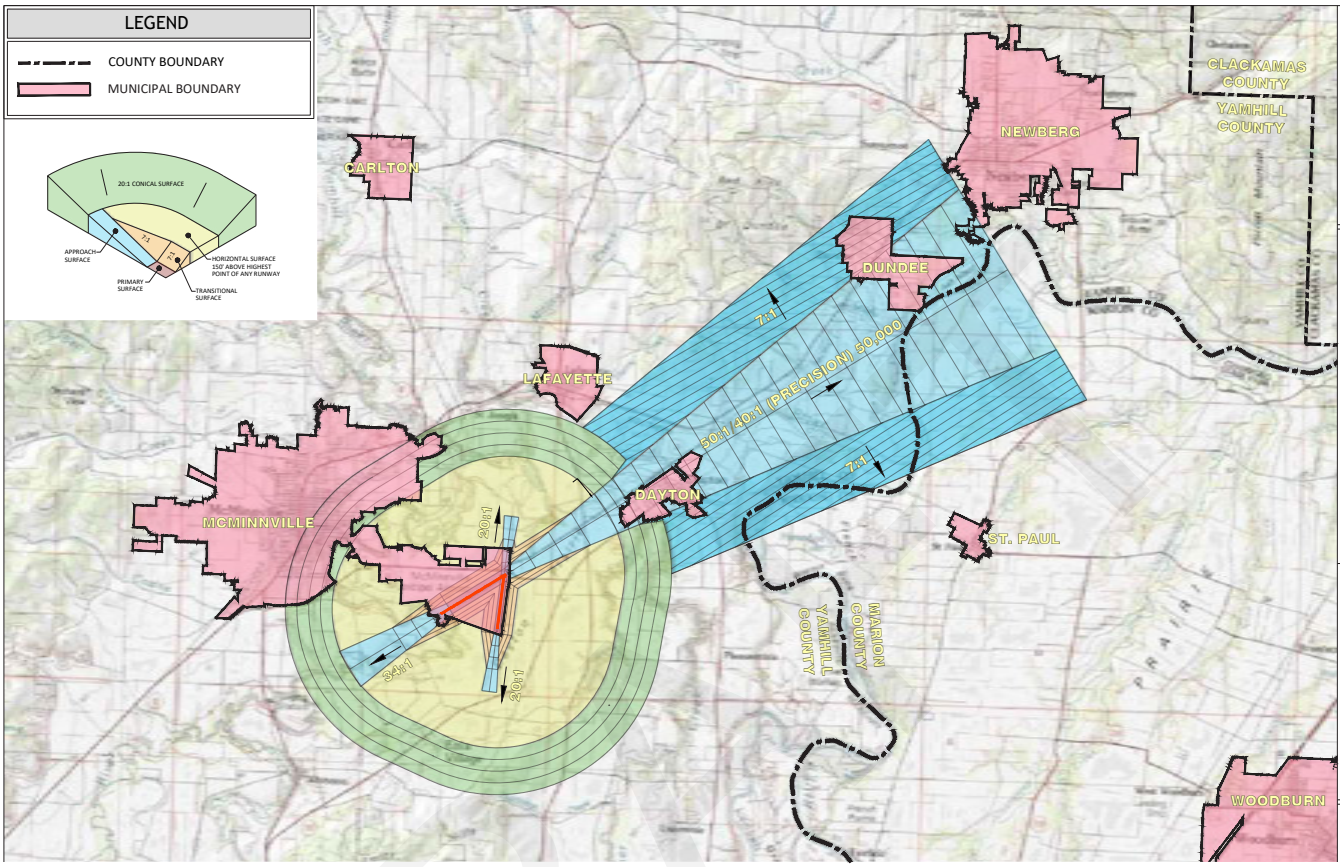
City of McMinnville

Title 17 of the City of McMinnville Code includes **Airport Overlay Zoning** (Chapter 17.52). The ordinance is specifically written to *"enhance the utility of the McMinnville Municipal Airport by preventing the establishment of any structure or use of land which unreasonably obstructs the safe flight of aircraft in landing or taking off. Further, this overlay zone is intended to prevent the establishment of airspace obstructions through height restrictions and other land use controls, as deemed essential to protect the public health, safety, and welfare consistent with Federal Aviation Regulations (FAR), Part 77."* It is noted that the terminology used to describe federal airspace regulations has been changed from "FAR Part 77" to "14 CFR, Part 77" (Code of Federal Regulations, Title 14, Part 77). Although the local code references to "FAR Part 77" are obsolete, there were no changes in standards that would affect is application.

Yamhill County

The Yamhill County Code includes an **Airport Overlay District** (Section 907.00) which is established to protect three public use airports located in Yamhill County (McMinnville, Sheridan, and Sportsman Air Park). Overlay zoning is intended to protect the airports from obstructions, hazards and incompatible land uses. Similar to the overlay zoning adopted by the City of McMinnville, the county's overlay zone defines protections for federally defined airspace, per the Code of Federal Regulations (14 CFR, Part 77). The federal regulation terminology issue noted for the City of McMinnville's code, also applies to Yamhill County.

Figure 2-8: Part 77 Airspace

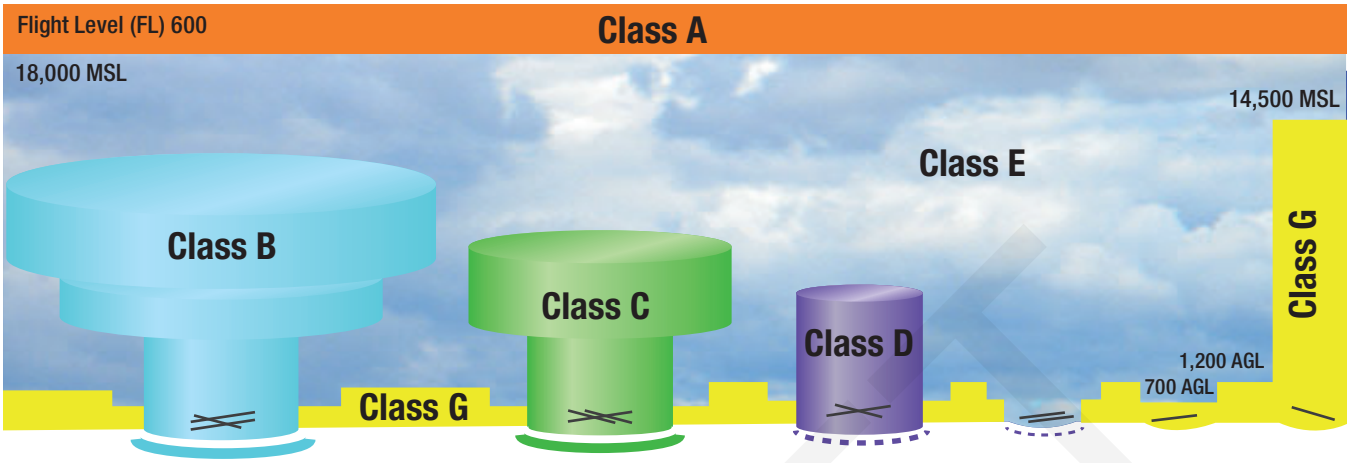


U.S. AIRSPACE CLASSES

Airspace within the United States is classified by the FAA as "controlled" or "uncontrolled" with altitudes extending from the surface upward to 60,000 feet above mean sea level (MSL). Controlled airspace classifications include Class A, B, C, D, and E. Class G airspace is uncontrolled. **Figure 2-9** depicts these airspace classes.

Aircraft operating within controlled airspace are subject to varying levels of positive air traffic control that are unique to each airspace classification. Requirements to operate within controlled airspace vary, with the most stringent requirements associated with very large commercial airports in high traffic areas. Uncontrolled airspace is typically found in remote areas or is limited to a 700 or 1,200-foot above ground level (AGL) layer above the surface and below controlled airspace.

Figure 2-9: FAA Airspace Classifications



COMMUNICATION REQUIREMENTS AND WEATHER MINIMUMS

	Class A	Class B	Class C	Class D	Class E	Glass G
Airspace Class Definition	Generally airspace above 18,000 feet MSL up to and including FL 600.	Generally multi-layered airspace from the surface up to 10,000 feet MSL surrounding the nation's busiest airports	Generally airspace from the surface to 4,000 feet AGL surrounding towered airports with service by radar approach control	Generally airspace from the surface to 2,500 feet AGL surrounding towered airports	Generally controlled airspace that is not Class A, Class B, Class C, or Class D	Generally uncontrolled airspace that is not Class A, Class B, Class C, Class D, or Class E
Minimum Pilot Qualifications	Instrument Rating	Student*	Student*	Student*	Student*	Student*
Entry Requirements	IFR: ATC Clearance VFR: Operations Prohibited	ATC Clearance	IFR: ATC Clearance VFR: Two-Way Communication w/ ATC	IFR: ATC Clearance VFR: Two-Way Communication w/ ATC	IFR: ATC Clearance VFR: None	None
VFR Visibility Below 10,000 MSL**	N/A	3 Statute Miles	3 Statute Miles	3 Statute Miles	3 Statute Miles	Day: 1 Statute Mile Night: 3 Statute Miles
VFR Cloud Clearance Below 10,000 MSL***	N/A	Clear of Clouds	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal***
VFR Visibility 10,000 MSL and Above**	N/A	3 Statute Miles	3 Statute Miles	3 Statute Miles	5 Statute Miles	5 Statute Miles
VFR Cloud Clearance 10,000 MSL and Above	N/A	Clear of Clouds	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal	1,000 Below 1,000 Above 1 Statute Mile Horizontal	1,000 Below 1,000 Above 1 Statute Mile Horizontal

* Prior to operating within Class B, C, or D airspace (or Class E airspace with an operating control tower), student, sport, and recreational pilots must meet the applicable FAR Part 61 training and endorsement requirements. Solo student, sport, and recreational pilot operations are prohibited at those airports listed in FAR Part 91, appendix D, section 4.
** Student pilot operations require at least 3 statute miles visibility during the day and 5 statute miles visibility at night.
*** Class G VFR cloud clearance at 1,200 agl and below (day); clear of clouds.
Source: Federal Aviation Administration (FAA) & Century West Engineering

LOCAL AREA AIRSPACE STRUCTURE

The FAA Seattle Sectional Aeronautical Chart depicts nearby airports, notable obstructions, special airspace designations, and instrument airways in the vicinity of MMV. **Figure 2-10** depicts the local airspace structure.

MMV is in an area of Class E airspace with a floor 700 feet above ground level (AGL); the airspace from the surface to 700 feet AGL is class G (uncontrolled). The local airspace is located near the southwest corner of the large block of Class E airspace that encompasses the greater Portland-Vancouver metro area. A rectangular section of this airspace extends further southwest of MMV to accommodate its defined instrument procedures. This extended section also abuts an area of Class E airspace associated with Salem McNary Field, southeast of MMV. Radio communication is not required for visual flight rules (VFR) operations in Class E airspace, although pilots are encouraged to use the common traffic advisory frequency (CTAF) when operating at the Airport. Aircraft are required to obtain an air traffic control (ATC) clearance prior to operating in Class E airspace during instrument flight rules (IFR), since the airspace is intended to protect inbound and outbound aircraft in non-visual conditions.

Areas of Class D airspace are in effect at several nearby airports with operating air traffic control towers including Salem, Aurora, and Hillsboro. Class D airspace extends from the surface upward and requires two-way radio contact with air traffic control for aircraft to enter or operate. Portland International Airport (33 NM NE) has Class C airspace that extends as far south as Lake Oswego. Class C airspace also requires air traffic control clearances for aircraft to enter or operate.

Figure 2-10: Area Airspace – Seattle Sectional Chart

LEGEND			
○	Airports with other than hard-surface runways		Compass Rose (VOR/DME or VORTAC)
⊕	Airports with hard-surfaced runways 1,500 ft. to 8,069 ft.		Enroute Airways
✈	Airports with hard-surfaced runways greater than 8,069 ft. or some multiple runways less than 8069 ft.		Class D Airspace (surface)
			Class E Airspace with floor 700' above surface
⬡	VOR/ VORTAC		National Wilderness Area

Source: SkyVector.com

CONTROLLED & UNCONTROLLED AIRSPACE

MMV is an uncontrolled field and pilots use the airport Unicom/common traffic advisory frequency (CTAF) for communications on the ground and in the vicinity of the Airport. The CTAF frequency assigned to MMV is 123.0 MHz. Pilots are responsible for traffic monitoring, communications, and operations as defined by FAA.

AIRSPACE – PART 77, TERMINAL INSTRUMENT PROCEDURES (TERPS), AND RUNWAY END SITING SURFACES

In addition to the airspace classifications and operating environment pilots are more familiar with (described in the previous section above) there are a variety of rules, regulations, design standards, and policies associated with the protection of airspace, evaluation of proposed objects on and near airports, and their effects on navigable airspace. *Airport Cooperative Research Program (ACRP) Report 38 - Understanding Airspace, Objects, and Their Effects on Airports* provides a comprehensive description of the regulations, standards, evaluation criteria, and processes designed to protect the airspace surrounding airports. The most commonly used technical guidance sources are summarized below.

Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace

14 CFR, Part 77 (described earlier) is the central federal regulation governing airspace protection, with cross-references to many other criteria documents. It sets forth the requirements for notifying the FAA of proposed construction; defines obstruction criteria; and describes aeronautical studies required to assess hazard status. Part 77 airspace surfaces, also known as “imaginary surfaces,” are defined for designated runways or helicopter landing pads, in accordance with FAA requirements. These surfaces are commonly used in local land use planning to define airport overlay zoning.

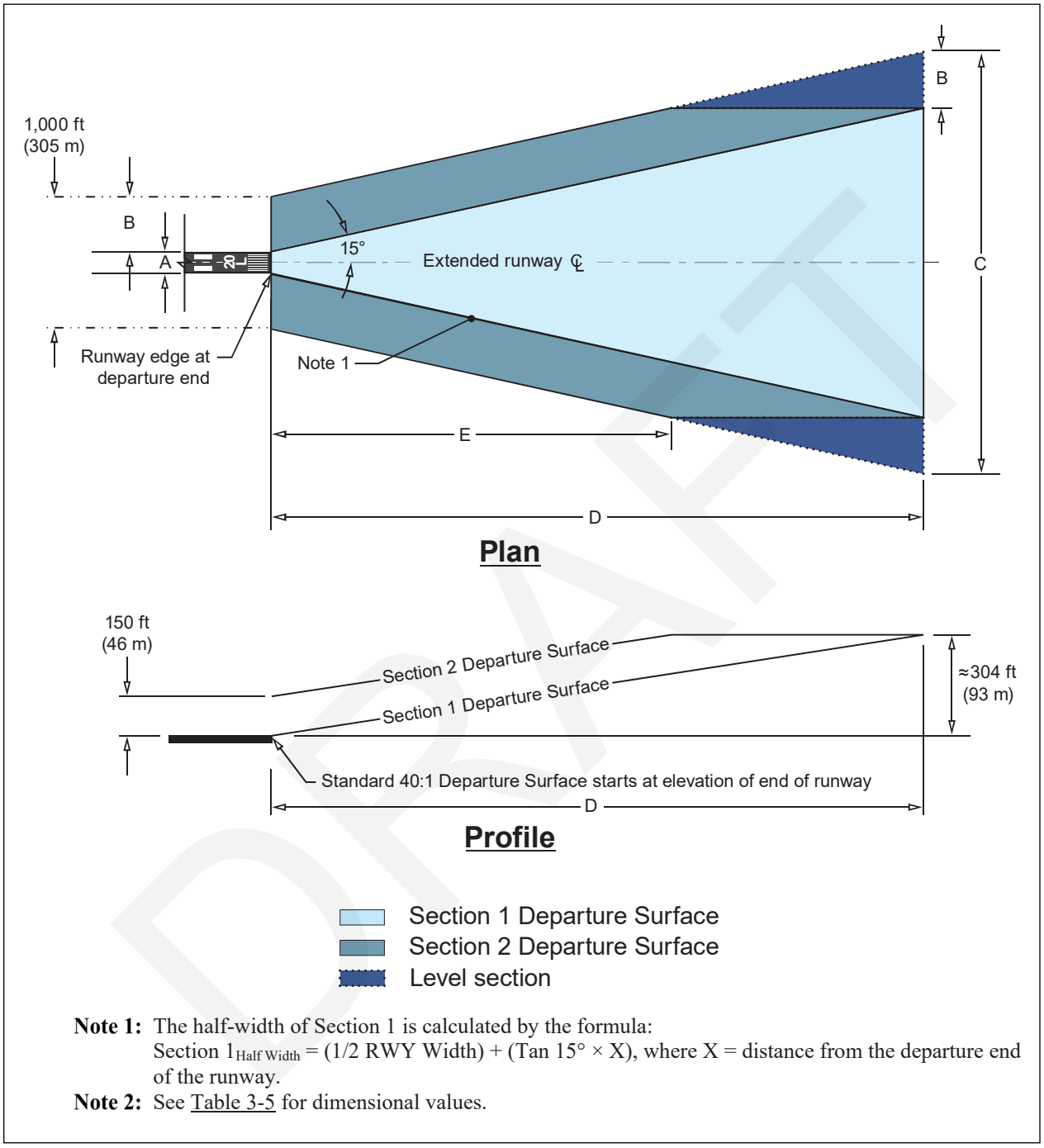
FAA Order 8260.3B – United States Standard for TERPS

This Order, along with several derivative orders in the 8260 series and other related orders, define criteria that FAA airspace designers utilize when designing instrument flight procedures at airports. Airspace protection requirements (obstacle clearance)for inbound and outbound instrument flight procedures are one of the items analyzed for hazard status in aeronautical studies. Other TERPS surfaces are associated with aircraft approaches and maneuvering in the vicinity of a runway or airfield. While Part 77 airspace surfaces are broadly defined by runway category, aircraft type, and the type of approach, the dimensions and features of TERPS surfaces correspond to a particular procedure design and the transition between enroute and terminal airspace. **Figure 2-11** depicts the TERPS departure surface, which is required for any runway end that supports departures in instrument conditions. This common surface has also been incorporated in the FAA’s primary airport design advisory circular (AC), described below.

FAA AC 150/5300-13B – Airport Design

This advisory circular (AC) is the principal document utilized by the FAA, airport sponsors, and planning consultants when planning and designing new airports, or modifications to existing airports. Airspace clearances for key runway end features are defined in the AC’s discussion of Runway End Siting Surfaces.

Figure 2-11: Instrument Departure Surface



Note 1: The half-width of Section 1 is calculated by the formula:
Section $1_{\text{Half Width}}$ = (1/2 RWY Width) + (Tan 15° × X), where X = distance from the departure end of the runway.

Note 2: See Table 3-5 for dimensional values.

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

INSTRUMENT FLIGHT PROCEDURES

Instrument approach and departure procedures are developed by the FAA, using electronic guidance from ground based navigational aids and satellite navigation systems, to guide aircraft through a series of prescribed maneuvers in and out of an airport's terminal airspace. The procedures are designed to enable continued airport operation during instrument meteorological conditions (IMC), but are also used during visual conditions, particularly in conjunction with flight training or the completion of an instrument flight plan (in visual conditions). The capabilities of each instrument approach are defined by the technical requirements of the procedure, including the vertical and lateral airspace clearances required for nearby obstacles for each segment of a procedure. These factors combined with aircraft performance limitations, affect the minimum cloud ceiling and visibility required for the approach, the permitted descent altitude for the approach, and the routing for both the approach and missed approach procedure segments.

MMV currently has four published instrument approaches, including one precision approach and three non-precision approaches. These approach procedures provide various levels of electronic guidance. Precision instrument (PI) approaches provide course and descent path guidance. Non-precision instrument (NPI) procedures provide course guidance only and pilots are responsible for altitude control based on published "step down" guidance defined by the procedure. All existing instrument approaches are authorized for category A-D aircraft, with varying approach minimums.

Three of the MMV instrument approaches are classified as "straight-in" since they are designed to direct aircraft to a specific runway end. The ILS/LOC approach to Runway 22 also supports a "circling" procedure to allow aircraft to land on another runway once the pilot has established visual contact with the airport environment. One approach (VOR/DME-B) only provides a "circling" procedure as it does not electronically guide aircraft to a particular runway end, but rather the airport environment.

The procedures are briefly described below and summarized in **Table 2-9**. The values listed in the table include the "ceiling" which represents the lowest descent altitude permitted for the aircraft and "visibility," which indicates the minimum required visibility measured on the airfield (in statute miles) for the procedure. See **Appendix D** for copies of instrument procedures and related requirements established by FAA for instrument operations at the Airport.

Instrument Landing System (ILS) or Localizer (LOC) Runway 22. The ILS approach provides the lowest approach minimums available at MMV. The LOC and circling procedures available for this approach have incrementally higher minimums. The circling procedure requires aircraft to establish and maintain visual contact with the runway/airport environment before proceeding visually to a particular runway end for landing.

RNAV (GPS) Runway 22. The approach is supported by satellite navigation and uses a series of GPS waypoints to guide aircraft. This procedure is straight-in only with three specific performance levels: LPV DA, LNAV/VNAV DA, and LNAV MDA. The LPV approach minimums are higher than the Runway 22 ILS minimums, but lower than the localizer approach minimums.

RNAV (GPS) Runway 4. The approach is supported by satellite navigation and uses a series of GPS waypoints to guide aircraft. This procedure is straight-in only.

VOR/DME-B. The VOR/DME approach provides an inbound course from the south to the center of the airfield (midway between the two runways). This procedure is circling only. The procedure relies on the Newberg VOR/DME located approximately 17 nautical miles north of MMV.

Table 2-9: Approach Procedure Minimums

Approach	Approach Category A		Approach Category B		Approach Category C		Approach Category D	
	Ceiling*	Visibility	Ceiling*	Visibility	Ceiling*	Visibility	Ceiling*	Visibility
RNAV (GPS) RWY 17								
S-ILS 22	200	0.5	200	0.5	200	0.5	200	0.5
S-LOC 22	439	0.5	439	0.5	439	0.75	439	1
Circling	497	1	677	1	757	2.25	1157	3
RNAV (GPS) 4								
LNAV MDA	439	1	439	1	439	1.25	439	1.25
RNAV (GPS) 22								
LPV DA	313	0.75	313	0.75	313	0.75	313	0.75
LNAV/VNAV DA	482	1.25	482	1.25	482	1.25	482	1.25
LNAV MDA	579	0.75	579	0.75	579	1.25	579	1.25
VOR/DME-B								
Circling	677	1	677	1	757	2.25	1157	3

Source: FAA U.S. Terminal Procedures. * Expressed as aircraft minimum descent altitude values, expressed in feet above ground level, or equivalent.

Airfield Facilities

Existing airfield facilities are described in the following sections. **Figure 2-12** provides an overview of existing airside facilities and **Figure 2-13** provides additional detail for terminal area (landside) area facilities.

Figure 2-12: Existing Conditions Airfield

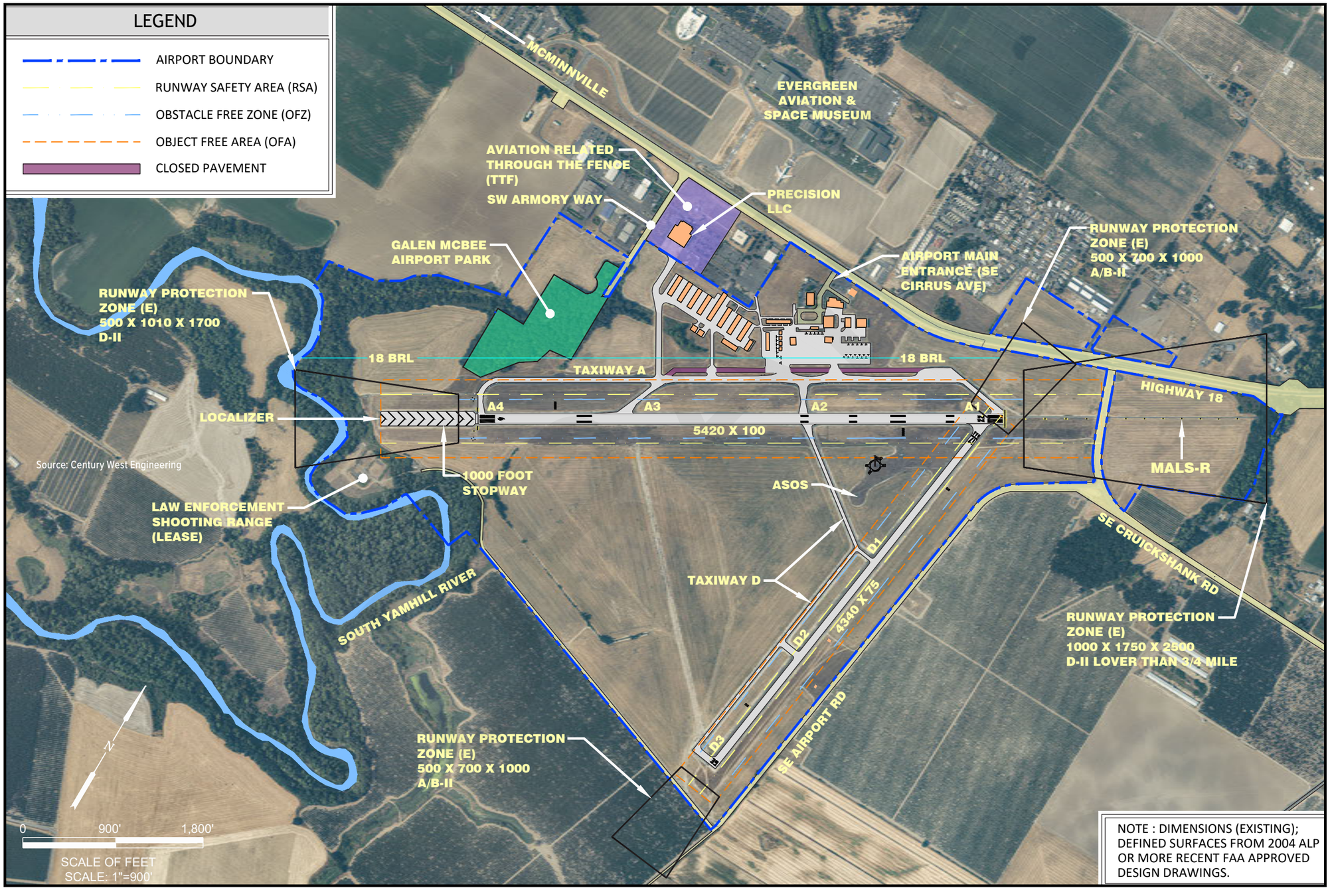
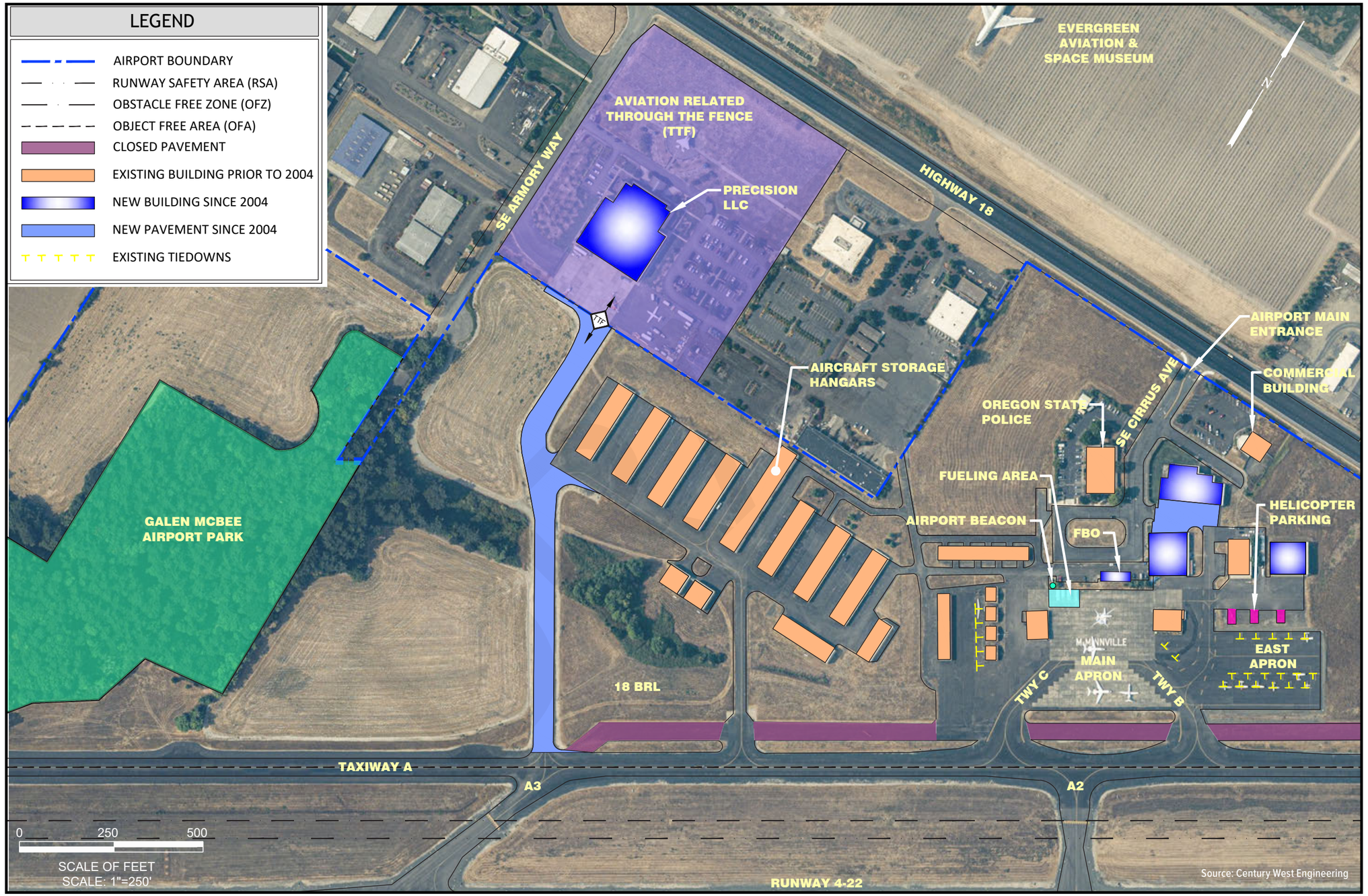


Figure 2-13: Existing Conditions Terminal Area



Airside Elements

Airside Elements are comprised of facilities that facilitate the movement and operation of aircraft on the ground and in the air. This section includes a discussion of the existing airfield facilities including runways, taxiways, airfield lighting, pavement condition, visual and electronic navigation aids. The evaluation of FAA design standards, including required protected surfaces/setbacks and their dimensions, will be included in the facility requirements section of the airport master plan (Chapter 4).

RUNWAYS

MMV has two paved runways (4/22 and 17/35) oriented in northeast-southwest (040/220 degrees magnetic) and north-south (170/350 degrees) directions. The two runways form an "open V" configuration. The runways converge at the closed (north) end of the "V," but do not intersect. Originally, the runways intersected at the 17 and 22 ends. This configuration was depicted on the 2004 ALP, but the physical intersection of the runways was eliminated in a subsequent runway rehabilitation project. Both runways are served by an extensive taxiway system. A brief summary of each runway is provided below and additional detail is provided in **Table 2-11**. Additional information is provided later in this section.

Based on its configuration and instrumentation, and its proximity to terminal area and landside facilities, Runway 4/22 has historically accommodated the largest share of air traffic at MMV, including fixed wing and helicopter flight training. The Airport's helicopter flight training operations utilize both Runway 4/22 and Taxiway A within a common traffic pattern, with aircraft reporting "runway or taxiway." Runway 17/35 serves as a crosswind runway, particularly during periods of strong southerly winds, and historically has been the primary runway used by local glider operations.

MMV is a non-towered airport, which effectively limits operations to one runway at a time. The runways utilize standard left traffic patterns for fixed wing aircraft. Pilots use the airport Unicom/common traffic advisory frequency (CTAF) for communications on the ground and in the vicinity of the airport.

Runway 4/22

Runway 4/22 is the primary runway at MMV. The 5,420' x 100' asphalt runway has a 1,000' x 150' paved overrun located beyond the end of Runway 4. The overrun is not included in the published runway length dimension. The overrun is marked with yellow chevrons as a non-movement area, effectively providing paved runway safety area. The 2004 ALP contains a note indicating that the paved area does not meet FAA criteria for use as stopway due to limited runway safety area (beyond the pavement end).

The runway is categorized as a precision instrument runway (PIR), based on its highest approach capability. The runway markings, edge lighting and approach lighting, and signage are consistent with PIR standards. The Runway 22 end has PIR markings and the Runway 4 end has non-precision instrument (NPI) markings based on their respective approach types. The existing runway markings are in good condition and meet FAA standards for configuration and color. The runway has a full-length parallel taxiway (Taxiway A) on its north side, with four connecting exit taxiways (A1-A4). Two exit taxiways have 90-degree connections with the runway, and two are acute-angled exits.

Runway 4/22 has pavement strength ratings that are generally consistent with current aircraft usage. A 2023 pavement inspection for the runway rated its condition as "Good." Additional pavement condition information for the airfield is provided later in the chapter.

The runway and associated taxiways have lighted signage that convey a variety of important directional, location, and clearance information to pilots. Existing signage includes directional and holding position signs at the boundaries of critical areas, such as the ILS critical area, or the runway obstacle free zone (OFZ) boundary. Runway 4/22 is also equipped with lighted distance remaining signs that are placed in 1,000-foot increments to inform pilots of the amount of runway remaining during takeoff and landing operations.

Runway 17/35

Runway 17/35 is the secondary runway at MMV. The unlighted runway is 4,340' x 75', with an asphalt surface and basic (visual) markings. The runway has a partial length parallel taxiway (Taxiway D) located on its west (infield) side that provides access to the Runway 35 end and two additional connections on the southern 2/3 of the runway. The north end of the runway (Runway 17) may be accessed from Taxiway A4 and crossing Runway 4/22.

Overview – Runway Lighting/Marking

A summary of runway conditions is summarized below:

- **Runway Markings**: As noted earlier, Runway 22 has PIR markings; Runway 4 has NPI markings; and Runway 17/35 has visual markings at both ends. Common runway markings include threshold bars, runway designation markings, and centerline stripe. Runway 4/22 (instrument runway) also has threshold markings, aiming point markings, touchdown zone markings, and edge stripes. During recent site visits, the runway markings were observed to be in good or fair condition. All runway markings are consistent with FAA standards for configuration, color (white paint), and approach type.

- **Runway Lighting**: Runway 4/22 is equipped with a High Intensity Runway Lighting (HIRL) system, which includes white edge lights (with amber lights located near the runway ends to indicate runway remaining) and threshold lights. The threshold lights consist of two sets of four fixtures near each corner of the runway ends. The fixtures have split lenses (green/red) indicating the beginning and end of the runway. The HIRL is pilot-activated using the CTAF (123.0 MHz). The current HIRL system was installed in 2016 as part of a runway reconstruction project. Runway 17/35 is unlighted.

- **Approach Lighting System (ALS)**: Runway 22 is equipped with a Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR), the standard for ILS runways. The Runway 22 MALSR extends approximately 2,500 feet beyond the runway end. The MALSR is pilot activated using the CTAF (123.0 MHz). The MALSR is FAA-owned and was installed in 2001.

The FAA provides the following description of MALSR systems:

> *The MALSR is a medium-intensity approach lighting system (ALS) installed in airport runway approach zones along the extended centerline of the runway. MALSRs consist of a combination of steady burning light bars and flashers that provide pilot's visual information on runway alignment, height perception, roll guidance, and horizontal references to support the visual portion of an instrument approach.*
>
> *The MALSR system consists of a Threshold Light, Steady Burning Light, and Sequenced Flasher. The threshold light array consists of 18 to 33 aviation green steady burning lights depending on runway width, arranged in a line at and parallel to the threshold of the runway. The steady burning light array consists of nine (9) sets of five (5) aviation white steady burning light sources called light bars. Seven (7) of the light bars are located at 200-foot intervals, in the direction of the approach and along the extended runway centerline, starting beyond the runway threshold. The remaining two steady burning light bars are offset to the left and right of the extended centerline at the 1,000-foot bar. The threshold light array and steady burning light array are collectively referred to as the approach light field. The sequenced flasher array consists of five (5) white flashing lamps, commonly referred to as flashers. The flasher are located at 200-foot intervals, in the direction of the approach and along the extended runway centerline, starting at 200 feet beyond the last steady burning light bar beginning at 1600 feet from the runway threshold. The collective flashing of all lights in the sequenced flasher array gives the appearance of a ball of light traveling toward the runway.*

- **REIL**: Runway 4 is equipped with Runway End Identifier Lights (REIL), which consist of two high-intensity sequenced strobe lights located near the corners of the runway end. For runways without an approach lighting system, REILS assists pilots in establishing visual contact with the runway environment during periods of darkness or reduced visibility. The REIL is pilot activated using the CTAF. The current REIL was installed in 2017.

- **Precision Approach Path Indicators (PAPI)**: Runway 4/22 is equipped with 4-box PAPIs on both runway ends. The PAPIs consist of four light boxes that project a pattern of red and white lights that provide visual approach slope information. The PAPI is pilot activated using the CTAF. The PAPIs were replaced in 2016, during the Runway 4/22 rehabilitation project.

With the exception of the MALSR, all existing airfield lighting systems are airport-owned.

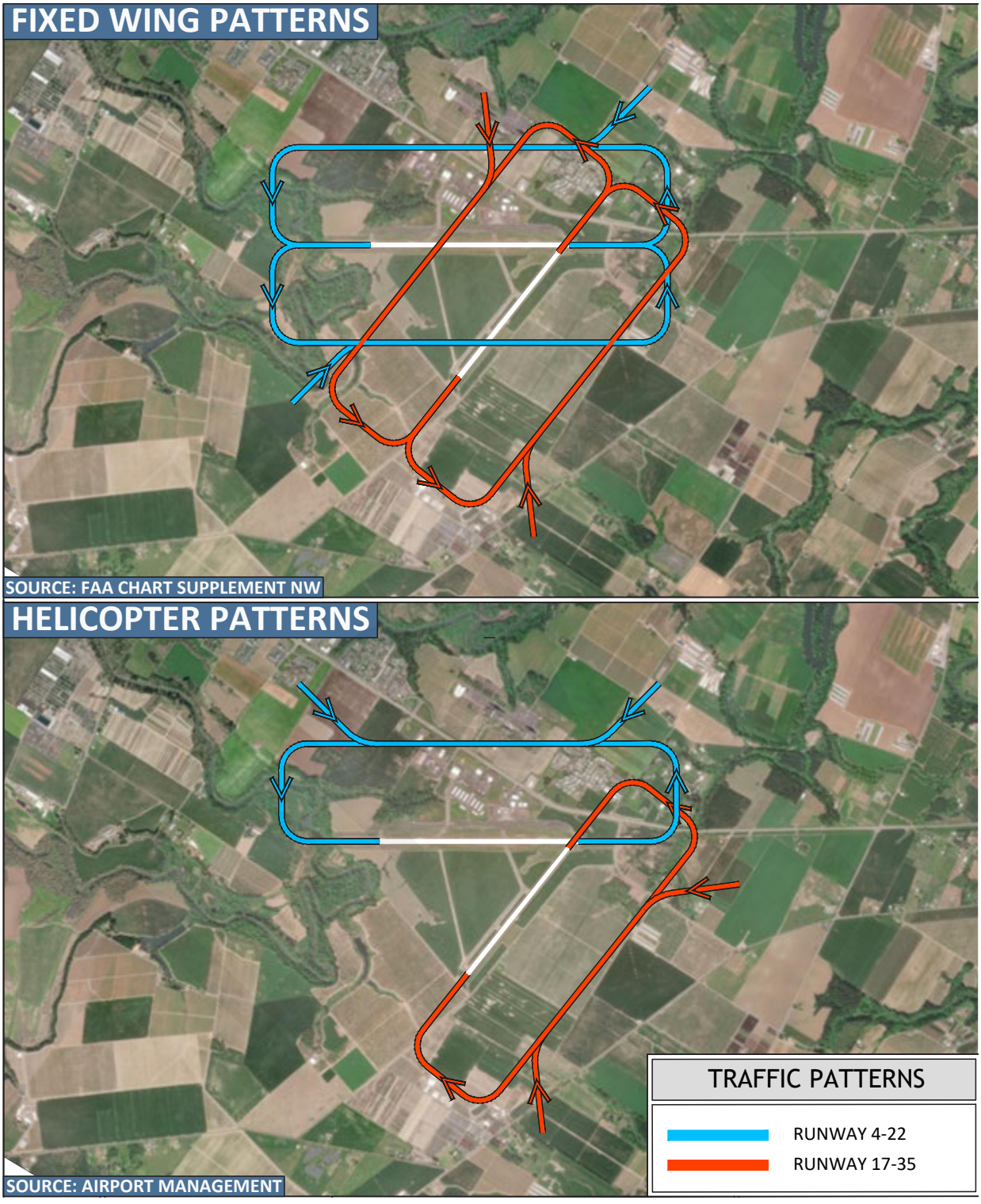
Table 2-10: Runway Details (MMV)

	Runway 4/22	Runway 17/35
Dimensions	5,420' x 100'	4,340' x 75'
Bearing (true)	N 57° 11'22" E	N 05° 16'45" E
Effective Gradient	0.02%	0.04%
Surface Condition	Asphalt/Good	Asphalt/Satisfactory
Weight Bearing Capacity	40,000 pounds – Single Wheel Gear 50,000 pounds – Double Wheel Gear 80,000 pounds – Tandem Double Gear	30,000 pounds – Single Wheel Gear
Markings	RWY 4: NPI – fair condition RWY 22: PIR – fair condition	RWY 17 & 35: Basic (Visual) – good condition
Lighting	High Intensity Runway Edge Lights (HIRL) 4 Light PAPI (3.0-degree glide path) (RWY 4 & 22) RWY 4: Runway End Identifier Light (REIL) RWY 22: MALSR (ALS)	None
Signage	Lighted Mandatory, Location, Directional, Destination, and Distance Remaining Signs	Retro-Reflective Mandatory, Location, Directional, Destination Signs

AIRPORT TRAFFIC PATTERNS

Standard traffic patterns (left traffic) are in effect for Runway 4/22 and Runway 17/35 (as published in the 25 Jan 2024 FAA Chart Supplement). The patterns are used by fixed wing aircraft with a traffic pattern altitude (TPA) of 800 to 1,000 feet AGL. The Airport also has locally-established helicopter traffic patterns (Left/Right Traffic) for both runways. The helicopter pattern for Runway 4/22 is located on the north side of the runway; the helicopter pattern for Runway 17/35 is located on its east side. The helicopter patterns are used extensively for helicopter flight training with a 500-foot TPA. The location and altitudes of the helicopter patterns are intended to separate MMV's helicopter and fixed wing traffic on opposite sides of a runway, consistent with FAA guidance. Some updates to the traffic pattern data contained in the FAA Chart Supplement are recommended to clarify the left/right traffic guidance for the fixed-wing and helicopter patterns. **Figure 2-14** depicts the existing traffic patterns, noted above.

Figure 2-14: Airport Traffic Patterns



TAXIWAYS & TAXILINES

MMV has an extensive taxiway system that provides access to all runway ends. Figure 2-12, presented previously, depicts all existing taxiways and their designations.

Runway 4/22 has a full-length parallel taxiway (Taxiway A) with four connecting exit taxiways (A1-A4). Runway 17/35 has a partial-length parallel taxiway (Taxiway D) with three connecting exit taxiways (D1-D3). The northern section of Taxiway D is an access taxiway that extends from Taxiway D1 to Runway 4/22 at Taxiway A2. The north end of Runway 17/35 (Runway 17) is accessed from Taxiway A1 by crossing Runway 4/22.

All MMV taxiways have yellow centerline stripes. Aircraft hold line markings are painted on all taxiway connections to the runways. The hold line locations are based on the applicable runway safety area, object free area, or obstacle free zone setbacks, 200 or 250 feet from runway centerline. The aircraft hold lines are co-located with required airfield signage.

In 2001, the eastern two-thirds of Taxiway A (from Taxiway A1 to A3) was relocated 100 feet closer to the runway to provide a standard 400-foot runway separation for the full length of the taxiway. This relocation enabled the terminal apron to be expanded and reconfigured to better accommodate larger itinerant aircraft. The original section of parallel taxiway remains in place (closed) but is occasionally used for temporary parking for large aircraft or helicopters.

Taxiway A

Taxiway A is the north parallel taxiway for Runway 4/22. The taxiway is 50 feet wide with a runway separation of 400 feet. The main section of the taxiway was reconstructed in 2001, with some sections of the exit taxiways (A1-A4) reconstructed or rehabilitated in 2017 (in conjunction with runway reconstruction). The parallel taxiway has four connections (Taxiways A1-A4) to the runway. Taxiways A1 and A3 have acute angled (45-degree) runway connections. Taxiways A2 and A4 have 90-degree connections to the runway. The number and location of the exit taxiways allow efficient aircraft movement in the runway-taxiway system. The west end of Taxiway A has two small pullout areas located between exits A3 and A4. The east end of Taxiway A has an adjacent 375’ x 50’ aircraft hold area near exit A1. The taxiway markings include aircraft hold lines, centerline, and lead-in line striping on the runway. The existing taxiway markings were observed to be in very good condition during fall 2023 site visits.

Taxiway D

The southern section of Taxiway D is a partial length parallel taxiway located on the west side of Runway 17/35. The taxiway is 35 feet wide with a runway separation of 240 feet. Taxiway D has three 90-degree connections to the runway (Taxiways D1-D3). The taxiway was constructed in 2009 and is currently rated “satisfactory”; Taxiways D1 and D2 were reconstructed in 2017 and are currently rated “good” (ODAV 2023). The taxiway markings include aircraft hold lines, centerline, and lead-in line striping on the runway. The existing taxiway markings were observed to be in good condition during fall 2023 site visits.

Taxiway D (Infield)

The northern section of Taxiway D is an infield access taxiway that connects the northern end of the parallel section of Taxiway D to Runway 4-22 at Taxiway A2. The taxiway is 35 feet wide. The main section of the taxiway was constructed in 2009 and is currently rated “satisfactory”; the north 220 feet of the taxiway was reconstructed in 2017 and is currently rated “good” (ODAV 2023). The existing taxiway markings were observed to be in good condition during fall 2023 site visits, and include aircraft hold lines, centerline, and lead-in line striping on the runway.

The current Taxiway D replaced the previous infield taxiway, which connected the end of Runway 35 to Runway 4/22, at Taxiway A3. The new infield taxiway route, combined with the parallel taxiway segment provides a more direct connection between Runway 17/35 and the terminal area.

Taxiway B and C

Taxiways B and C are the diagonal access taxiways connecting Taxiway A to the Terminal Apron. These taxiways were reconstructed in 2001, as part of the Taxiway A reconstruction project.

Taxiway Lighting

All major taxiways at MMV are equipped with reflective edge markers (stake-mounted blue 8-inch diameter cylinder reflectors). None of the existing taxiways are equipped with edge lighting.

PAVEMENT CONDITION

The Oregon Department of Aviation (ODAV) Pavement Evaluation Program (PEP) systematically identifies maintenance, repair, and rehabilitation projects required to sustain functional pavements at Oregon airports. The PEP provides a periodic evaluation of current conditions and future projections of condition in terms of pavement condition indices (PCI) for all eligible (public use) airfield pavements across the state. For NPIAS airports that receive federal funding, the PEP assists in meeting FAA grant assurances.

The most recent PEP survey for MMV was performed in July 2023. The survey was performed using the Pavement Condition Index (PCI) methodology developed by the U.S. Army Corps of Engineers and outlined in the current edition of *ASTM D-5340, Standard Test Method for Airport Condition Index Surveys*. The condition for the major runway, taxiway, and apron pavements surveyed in 2023 was "Fair" to "Good." Several small pavement sections, including hangar taxilanes or aprons, were rated "Poor, Very Poor, Serious, or Failed" in 2023:

- Multiple sections west of the Main Apron (Failed, Serious, Poor);
- Several of the west T-hangar taxilanes (Poor); and
- A small section of Taxiway A – east end (Poor).

Table 2-11 summarizes the 2023 PCI ratings for individual airfield pavements. **Figure 2-15** depicts the 2023 PCI ratings.

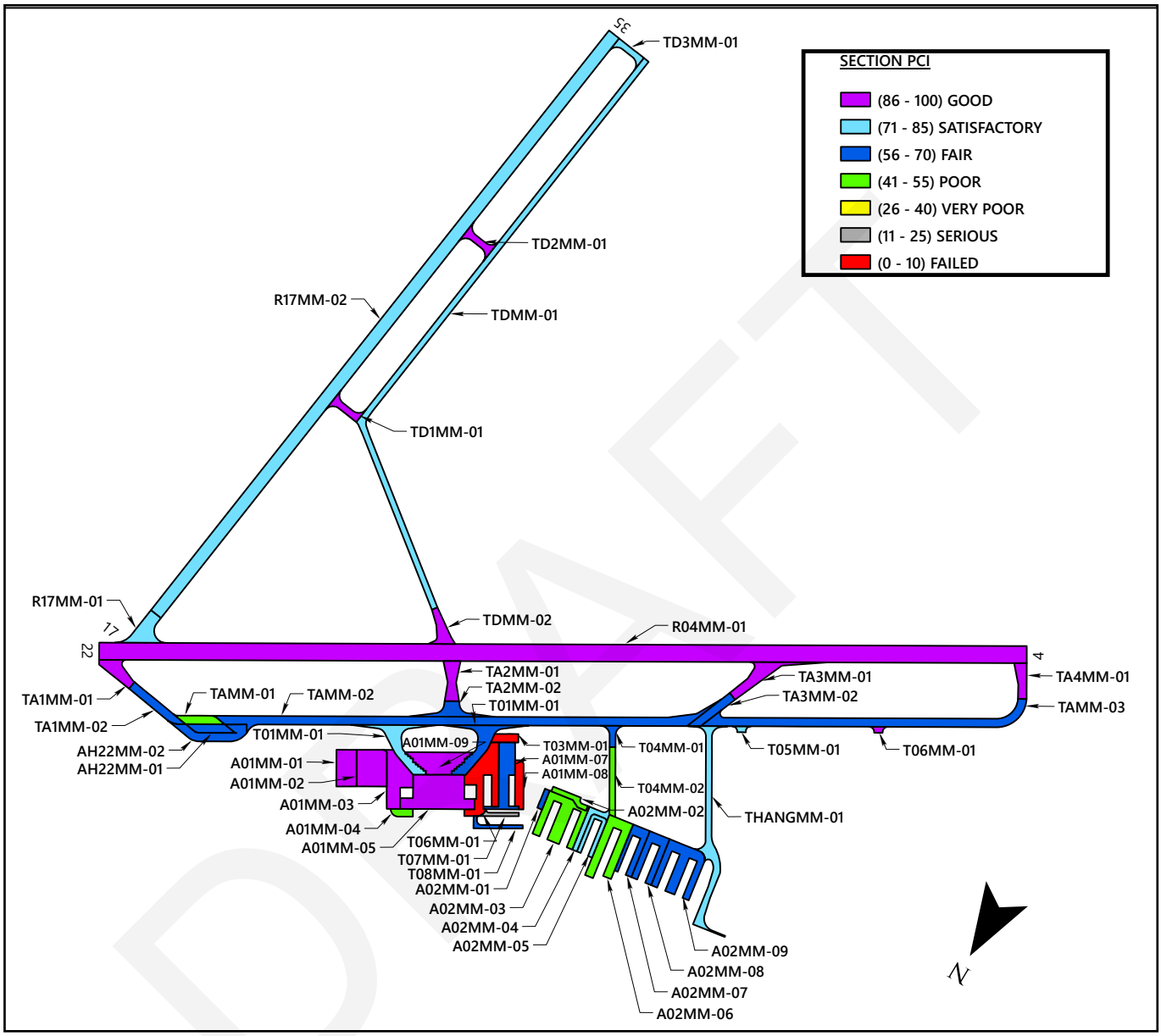
City staff are working with the FAA Seattle ADO to identify funding and schedule the necessary work to address the areas where pavement is in the worst condition. For pavement that is considered "ineligible" for FAA funding, other funding sources including ODAV PMP, grant funds and local funds may be used.

Table 2-11: 2023 PCI Inspection (MMV)

Pavement Section	2023 PCI
Runway 4/22	90
Runway 17/35	77-82
Runway 22 Hold Area	58-67
Taxiway A	50-64
Exit Taxiway A1-A4	63-94
Taxiway A Pull-Outs	74-89
Taxiway B and C	70-78
West T-Hangar Access Taxilanes	41-71
West T-Hangar Taxilanes	43-78
Main Apron	86-88
West Apron	0-61
East Apron (tiedowns)	94
NW T-Hangar Taxilanes (NW of Main Apron)	23-70

Source: Oregon Department of Aviation (2023 Pavement Evaluation/Maintenance Management Program)

Figure 2-15: Pavement Conditions (2023 Inspection)



Source: 2023 ODAV Pavement Evaluation/Maintenance Management Program

AIRFIELD SUPPORT FACILITIES

Support facilities generally include airside support facilities such as airport lighting, fueling facilities, weather reporting equipment and visual aids. MMV accommodates day and night operations in both visual and instrument meteorological conditions (IMC). The primary runway is equipped with lighting systems that are consistent with current instrument approach requirements and runway use. The runway-taxiway system has extensive signage that conveys directional, location, and runway clearance information to pilots. All airfield lighting observed during recent site visits appeared to be in good condition and fully operational.

Airport Lighting

The Airport has a rotating beacon mounted on a tower near the northwest corner of the main apron, on the north side of the airfield. The beacon operates on a dusk-dawn photocell switch and reportedly functions normally. Rotating beacons are used to indicate the location of an airport to pilots at night or during reduced visibility. The beacon provides sequenced white and green flashing lights (representing a lighted land airport) that rotate 360 degrees to allow pilots to identify the airport from all directions for several miles.

As noted earlier, the primary runway (4/22) has high intensity runway lighting (HIRL) with an MALSR approach lighting system on Runway 22, precision approach path indicators (PAPI) on both runway ends, and runway end identifier lights (REIL) on Runway 4. Runway 4/22 is also equipped with lighted distance remaining signs and extensive lighted and reflective directional/informational signage. Runway 17/35 is not lighted. The taxiways at the airport are not lighted, although the main taxiways are equipped with reflective edge markers. Overhead lighting is available in the terminal area, fueling area, and adjacent to most aircraft hangars.

Airfield Signage

The airfield has mandatory instruction signs (red background with white letters/numbers) marking the aircraft holding positions at each of the taxiway connections with the runway [4-22, 17-35]; the two-panel signs also include taxiway designations [A1, A2, etc.] with yellow background and black numbers/letters. The runway-facing side of each sign depicts the exit taxiway designation.

The signs are located to coincide with the painted aircraft hold lines on each taxiway that connects to the runway. The signs for Taxiway A are internally illuminated and were installed new in 2009; the signs for Taxiway D are reflective and were installed in 2009.

Weather Reporting

The Airport has an Automated Surface Observation System (ASOS-3) that provides 24-hour weather information. ASOS-3 provides on-site altimeter setting, wind data, temperature, dew point, density altitude, visibility, and cloud/ceiling data.

Landside Elements

Landside facilities support airport operations, including aircraft parking aprons, fueling aprons and fuel storage, hangars, and taxilanes. Other facilities including utilities, fencing, surface access roads, vehicle parking, and fixed base operator (FBO)/terminal facilities are also addressed. **Figure 2-13**, presented earlier depicts existing landside facilities at MMV. Existing apron facilities are described below and summarized in **Table 2-12**.

AIRCRAFT APRONS

The existing public-use aircraft aprons at MMV are located on the north side of Runway 4/22 and the parallel taxiway (Taxiway A). Three apron sections are consolidated in the terminal area with taxiway access provided by two diagonal taxiways (Taxiways B and C), which connect to Taxiway A. These include the main apron, the west apron, and the east apron. The aprons are used for a variety of activities including large aircraft parking, small airplane tiedowns, aircraft fueling, and provide access to the fixed base operator (FBO), aircraft hangars, aircraft maintenance providers, and other tenants. The main apron is the primary parking area available for large transient aircraft. The east apron is the primary location for small airplane tiedowns, and the west apron is used primarily to access adjacent hangars.

Main Apron

The main apron is approximately 102,890 square feet and is constructed of Portland Cement Concrete (PCC). The apron was originally constructed in 1943 and expanded (south section) in 2004. A review of the design indicates that the south section of the apron is constructed of 8-inch PCC over an 8-inch aggregate base. Historical pavement records indicate that the 1943 section of the apron is 6-inch PCC and 6-inch subbase.

The main apron accommodates large and small transient aircraft parking, aircraft fueling, and passenger loading/unloading at the FBO building. Four small airplane tiedowns are located along the north edge of the apron, directly in front of the FBO building and east of the fueling area. These tiedowns are serviceable, but are not regularly used, with the area kept clear for passenger access to the FBO and for staging aircraft fueling and passenger service vehicles. The main section of the apron does not have fixed parking positions, but the FBO directs transient aircraft parking within the apron. The existing taxiway configuration allows aircraft up to large business jets to enter/exit the apron from either direction, with drive-through parking. The Airport's aircraft fuel storage and dispensing area is located at the northwest corner of the apron. Two commercial Quonset hangars are located on the east and west sides of the apron. The main apron has a painted compass rose that is used to calibrate wet compasses, as required by FAA.

East Apron

The east apron is located adjacent to Taxiway B (east diagonal taxiway). The east apron was expanded, reconfigured, and reconstructed in 2021, in conjunction with improvements to the taxilane used to access adjacent hangars in the northeast section of the terminal area. The east apron is asphalt with a total area of approximately 104,000 square feet. A review of the design indicates that the apron is constructed of 3-inch asphalt (AC) over a 4-inch aggregate base and 6-inch subbase. According to available pavement records, the east apron was originally constructed in two sections in 1977 and 1996 (62,881 square feet).

The east apron has three stub taxilanes that connect to Taxiway B. Two east-west taxilanes access the main tiedown rows, and one north-south taxilane extends to the north end of the apron, to access hangars and privately developed aprons and three helicopter parking positions. The east apron has a total of 19 small aircraft tiedowns configured in two east-west rows and individual tiedowns located near the west edge of the apron, south of the adjacent Quonset hangar. The northern tiedown row consists of 5 south-facing tail-in positions; the southern tiedown row is double-sided, with 12 nested tail-in positions.

West Apron

The west apron is located adjacent to Taxiway C (west diagonal taxiway). Available pavement records indicate that the apron (3 sections) was originally constructed in 1950, with the center section being overlaid in 1995 and full-depth (3-inch) patching done in 2005. Historical records indicate that the apron thickness varies—from 1-inch to 3-inch over a 6-inch aggregate base, with an overall area of approximately 92,881 square feet.

The west apron area accommodates a row of five aircraft tiedowns on the west side (back) of the four small conventional hangars located west of the main apron and the west Quonset hangar. Four additional tiedowns located are south of the hangar row, adjacent to Taxiway C. These tiedowns are not regularly used, due in part to their proximity to Taxiway C, and the taxiway object free area. This area is also directly west of the southern section of the main apron, directly in line with jet blast created by aircraft taxiing in and out of east facing parking. It is also noted that the asphalt pavement for this portion of the west apron was rated "failed" in the 2023 pavement inspection.

Table 2-12: Apron Details

East Tiedown Apron	
Surface/Condition	Asphalt Concrete / Multiple Sections: Good
Markings	Tiedown and Taxilane Striping (good condition)
Aircraft Parking	19 small airplane tiedowns
Main Apron	
Surface/Condition	Portland Cement Concrete / 2 sections: Good
Markings	Limited taxilane centerline striping (fair condition)
Aircraft Parking	Transient Parking (2-3 large aircraft) 4 small airplane tiedowns (north end in front of FBO)
Other Facilities	Aircraft Fueling Area (Avgas and Jet-A) 3 Aboveground Storage Tanks and Dispensing Fuel Truck Parking FBO Access
West Apron	
Surface/Condition	Asphalt Concrete: Failed – Fair
Markings	Tiedown and taxilane centerline striping (poor condition)
Aircraft Parking	9 small airplane tiedowns
Other Facilities	None

Source: Oregon Department of Aviation (2023 Pavement Evaluation/Maintenance Management Program)

HANGARS AND AIRPORT BUILDINGS

MMV accommodates a variety of buildings including aircraft hangars and commercial buildings. The Airport currently has 24 hangars, including 12 conventional hangars and 12 multi-unit hangars. Other buildings include a modular FBO office and two commercial (non-aeronautical) office buildings. **Figure 2-16** and **Table 2-13** depict/list the existing buildings at the Airport. A common numbering system is used for each building listed/depicted.

The Airport currently has one authorized "through-the-fence" (TTF) operation (Precision, LLC), and aircraft maintenance and charter operators, located northwest of the west hangar area. Precision has a large conventional hangar and an aircraft parking apron that is accessed from the west hangar access taxiway connection to Taxiway A/A3. Precision's facility accommodates both fixed wing aircraft and helicopters.

Figure 2-16: Existing Aviation Use Buildings

Table 2-13: Existing Airport Buildings (MMV)

Figure 2-16 Building No.	Building	Existing Use
1	FBO Building	Restrooms, Office, Pilot/ Passenger Waiting Area
2	Conventional Hangar (main terminal area) Potcake Aviation	Commercial Use
3	Conventional Hangar (main terminal area) Northwest Air Repair	Commercial Use
4	Conventional Hangar (main terminal area) Northwest Air Repair	Commercial Use
5	Conventional Hangar (east apron area) Jerry Trimble Helicopters	Commercial Use
6	Conventional Hangar (east apron area) Jerry Trimble Helicopters “New”	Commercial Use
7	Conventional Hangar (east hangar area) Potcake Aviation	Commercial Use
8	T-Hangar “Alpha” (8-units) (NW corner of terminal area)	Aircraft Storage
9	Conventional Hangars (4 -Units) (west end of terminal area)	Aircraft Storage
10	T-Hangar “Charlie” (6-units) (west end of terminal area)	Aircraft Storage
11	One-Sided Hangar “X-ray” (2-units) (west hangar area)	Aircraft Storage
12	One-Sided Hangar “X-ray” (3-units) (west hangar area)	Aircraft Storage
13	Conventional Hangar “Lima” (west hangar area) “new”	Aircraft Storage
14	Conventional Hangar “Mike” (west hangar area) “new”	Aircraft Storage
15	T-hangar “Delta” (10-units) (west hangar area)	Aircraft Storage
16	T-hangar “Echo” (10-units) (west hangar area)	Aircraft Storage
17	T-hangar “Foxtrot” (10-units) (west hangar area)	Aircraft Storage
18	T-hangar “Golf” (9-units) (west hangar area)	Aircraft Storage
19	T-hangar “Hotel” (9-units) (west hangar area)	Aircraft Storage
20	T-Hangar/conventional “India” (9-hangar units) (west hangar area)	Aircraft Storage
21	T-Hangar “Juliet” (10-units) west hangar area)	Aircraft Storage
22	T-Hangar “Kilo” (9-units) (west hangar area)	Aircraft Storage
23	Precision Air (Through the Fence)	Commercial Use
-	Commercial Building (Oregon State Police)	Office/Commercial Use
-	Office Building	Office/Commercial Use
-	Localizer Building (FAA)	Airfield Operations
-	Glide Slope Building (FAA)	Airfield Operations

AIRPORT PERIMETER FENCING

Fencing at the airport consists of sections of chain link in the terminal area and adjacent developed areas with keypad vehicle gates located at key access points in the terminal area. Beyond the terminal area, the majority of the airport perimeter is fenced with three or four strand wire fencing. A 2024 project will replace sections of existing fencing and add fencing in key locations to increase the security of airside and landside areas of the Airport. The fencing upgrades will extend from near the west end of Runway 4/22, along the south side of Galen McBee Airport Park, then continue through the terminal area and along Highway 18 and SE Cruickshank RD.

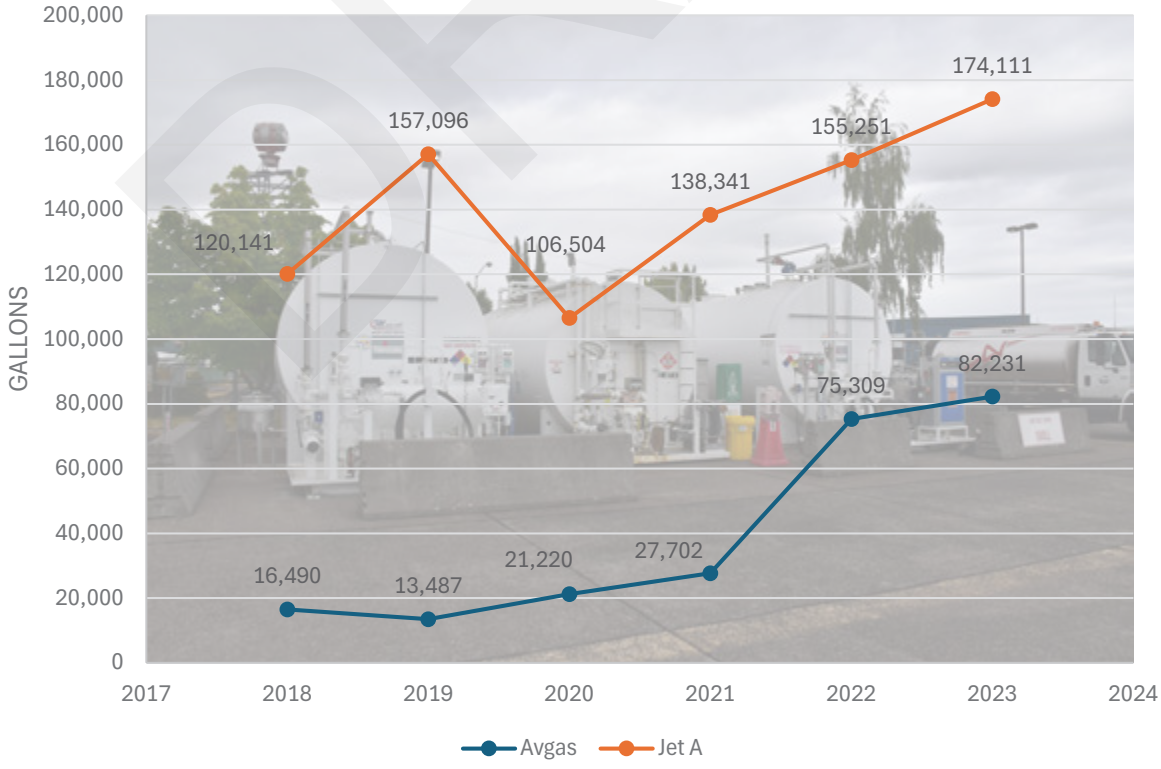
SURFACE ACCESS AND VEHICLE PARKING

Vehicle access to the Airport is provided via SE Cirrus Avenue, which connects directly to Highway 18. Cirrus Avenue serves the terminal area and all landside facilities on the north side of Runway 4/22. Designated vehicle parking areas are located adjacent to the FBO/terminal building, individual hangars, and the non-aviation buildings on the Airport. Cruickshank Road, located beyond the end of Runway 22, also connects to Highway 18, and provides access to the east side of Runway 17/35 via SE Airport Road. A gated unpaved road used to access a law enforcement shooting range connects to SE Airport Road at the southern corner of the Airport. SE Armory Way connects the Airport's Galen McBee Park to Highway 18.

AIRCRAFT FUEL

A summary of the Airport's recent fuel sales provided in **Figure 2-17** indicates an increase in both AVGAS and jet fueling activity. An analysis of recent fueling activity will be provided in the aviation activity forecasts (Chapter 3). MMV has 100-octane low lead (100LL) aviation gasoline (AVGAS) and jet fuel (Jet-A) available for sale through the local FBO, Potcake Aviation. The City of McMinnville owns and maintains the Airport's fuel storage and dispensing system that includes three 12,000 gallon above ground double-wall tanks and a 24-hour credit card payment system for self-fueling. The fixed-point fueling system is located immediately adjacent to the Potcake Aviation FBO building. Potcake also operates mobile trucks for aircraft fueling. Jerry Trimble Helicopters maintains their own fuel trucks.

Figure 2-17: Historical Aviation Fuel Sales (MMV)



Airport Administration

The Airport Administration section provides a summary of Airport Ownership & Management, Airport Finance, Rates and Charges, Rules and Regulations, and overview of FAA Grant Assurances and Compliance.

AIRPORT OWNERSHIP & MANAGEMENT

MMV is owned and operated by the City of McMinnville. The majority of the Airport's land area is within the McMinnville city limits. Current staffing includes the airport administration and a contractor (Potcake Aviation) to provide operations and maintenance support. Potcake also provides several fixed base operator (FBO) services, including aircraft fueling.

City of McMinnville staff provide finance, legal, human resources, information technology, and administration services for the Airport.

Airport lessees are responsible for managing their facilities and leased areas to meet the requirements defined in their leases and the Airport's Minimum Standards document.

AIRPORT FINANCE

The Airport operates as an enterprise fund with all revenue generated by the Airport remaining in the Airport's budget. This is required by FAA to prevent revenue diversion from Airport operations to general city services. The primary revenue generating sources for the Airport include hangar and ground lease rents and fuel sales. The primary expenditures for the Airport include airport administration, maintenance, and facility improvements. Many airport administration responsibilities such as human resources, finance, and legal services are provided by City internal service departments. The Airport's capital improvement projects are typically funded through FAA grants with a local (Airport Enterprise Fund) match that may be supplemented by ODAV grants.

The 2021-2022 actual revenue and expenses for MMV are summarized in **Table 2-14**.

Table 2-14: Airport Revenue/Expense Summary (MMV)

	Airport Revenue
Charge For Services	$343,768
Intergovernmental	$49,344
Miscellaneous	$12,728
Transfers In	$0
Total Airport Revenues	**$405,840**

	Airport Expenses
Materials and Services	$159,418
Capital Outlay	$158,306
Transfers Out	$98,190
Contingencies	$0
Total Airport Operating Expenses	**$415,914**
Net Operating Income (Loss)	**$(10,074)**

2021-2022 Actual expenses and revenue as reported in the 2022-2023 City of McMinnville proposed budget.

CITY OF MCMINNVILLE RULES AND REGULATIONS

The City of McMinnville Code provides the legal framework and authority for actions regulated by the City of McMinnville as the sponsor of the MMV. The City operates the Airport for the use and benefit of the public in order to make it available to all types, kinds, and classes of aeronautical activity on fair and reasonable terms and without unjust discrimination.

FAA COMPLIANCE OVERVIEW

A management program based on the FAA's "Planning for Compliance" guidance and the adoption of additional airport management "Best Practices" is recommended to address FAA compliance requirements and avoid noncompliance, which could have significant consequences.

Airport management "Best Practices" are developed to provide timely information and guidance related to good management practices and safe airport operations for airport managers and sponsors. The practices outlined herein are designed for use by the City of McMinnville for evaluating and improving their current and future operation and management program.

Airport sponsors must comply with various federal obligations through agreements and/or property conveyances, outlined in *FAA Order 5190.6B, Airport Compliance Manual*. The contractual federal obligations a sponsor accepts when receiving federal grant funds or transfer of federal property can be found in a variety of documents including:

- Grant agreements issued under the Federal Airport Act of 1946, the Airport and Airway Development Act of 1970, and Airport Improvement Act of 1982. Included in these agreements are the requirement for airport sponsors to comply with:
  - » Grant Assurances;
  - » Advisory Circulars;
  - » Application commitments;
  - » FAR procedures and submittals; and
  - » Special conditions.
- Surplus airport property instruments of transfer;
- Deeds of conveyance;
- Commitments in environmental documents prepared in accordance with FAA requirements; and
- Separate written requirements between a sponsor and the FAA.

Airport Compliance with Grant Assurances

As a recipient of both federal and state airport improvement grant funds, the City of McMinnville is contractually bound to various sponsor obligations referred to as "Grant Assurances", developed by the FAA and the Oregon Department of Aviation. These obligations, presented in detail in federal and state grants and state statute and administrative codes, document the commitments made by the airport sponsor to fulfill the intent of the grantor (FAA and State of Oregon) required when accepting federal and/or state funding for airport improvements. Failure to comply with the grant assurances may result in a finding of noncompliance and/or forfeiture of future funding. Grant assurances and their associated requirements are intended to protect the significant investment made by the FAA, State, and City to preserve and maintain the nation's airports as a valuable national transportation asset, as mandated by Congress.

FAA Grant Assurances

The FAA's Airport Compliance Program defines the interpretation, administration, and oversight of federal sponsor obligations contained in grant assurances. The Airport Compliance Manual defines policies and procedures for the Airport Compliance Program. Although it is not regulatory or controlling with regard to airport sponsor conduct, it establishes the policies and procedures for FAA personnel to follow in carrying out the FAA's responsibilities for ensuring compliance by the sponsor.

The Airport Compliance Manual states the FAA Airport Compliance Program is: "...designed to monitor and enforce obligations agreed to by airport sponsors in exchange for valuable benefits and rights granted by the United States in return for substantial direct grants of funds and for conveyances of federal property for airport purposes. The Airport Compliance Program is designed to protect the public interest in civil aviation. Grants and property conveyances are made in exchange for binding commitments (federal obligations) designed to ensure that the public interest in civil aviation will be served. The FAA bears the important responsibility of seeing that these commitments are met. This order addresses the types of commitments, how they apply to airports, and what FAA personnel are required to do to enforce them." According to the FAA, cooperation between the FAA, state, and local agencies should result in an airport system with the following attributes:

- Airports should be safe and efficient, located at optimum sites, and be developed and maintained to appropriate standards;
- Airports should be operated efficiently both for aeronautical users and the government, relying primarily on user fees and placing minimal burden on the general revenues of the local, state, and federal governments;
- Airports should be flexible and expandable, able to meet increased demand and accommodate new aircraft types;
- Airports should be permanent, with assurance that they will remain open for aeronautical use over the long-term;
- Airports should be compatible with surrounding communities, maintaining a balance between the needs of aviation and the requirements of residents in neighboring areas;
- Airports should be developed in concert with improvements to the air traffic control system;
- The airport system should support national objectives for defense, emergency readiness, and postal delivery;
- The airport system should be extensive, providing as many people as possible with convenient access to air transportation, typically not more than 20 miles of travel to the nearest NPIAS airport; and
- The airport system should help air transportation contribute to a productive national economy and international competitiveness.

The airport sponsor should have a clear understanding of and comply with all assurances. The following sections describe the selected assurances in more detail.

Project Planning, Design, And Contracting
Sponsor Fund Availability (Assurance #3)

Once a grant is given to the City of McMinnville (airport sponsor), the city commits to providing the funding to cover their portion of the total project cost. Currently this amount is ten percent of the total eligible project cost, although it may be higher depending on the particular project components or makeup. Once the project has been completed, the receiving airport also commits to having adequate funds to maintain and operate the airport in the appropriate manner to protect the investment in accordance with the terms of the assurances attached to and made a part of the grant agreement.

Consistency with Local Plans (Assurance #6)

All projects must be consistent with city and county comprehensive plans, transportation plans, zoning ordinances, development codes, and hazard mitigation plans. The City of McMinnville (airport sponsor) should familiarize themselves with local planning documents before a project is considered to ensure that all projects follow local plans and ordinances.

Accounting System Audit and Record Keeping (Assurance #13)

All project accounts and records must be made available at any time. Records should include documentation of cost, how monies were spent, funds paid by other sources, and any other financial records associated with the project at hand. Any books, records, documents, or papers that pertain to the project should be available at all times for an audit or examination.

General Airport Assurances
Good title (Assurance #4)

The City of McMinnville (airport sponsor) must have a Good Title to affected property when considering projects associated with land, building, or equipment. Good Title means the sponsor can show complete ownership of the property without any legal questions or show it will soon be acquired.

Preserving Rights and Powers (Assurance #5)

No actions are allowed, which might take away any rights or powers from the sponsor, which are necessary for the sponsor to perform or fulfill any condition set forth by the assurance included as part of the grant agreement.

Airport Layout Plan (ALP) (Assurance #29)

The City of McMinnville should maintain an up-to-date ALP, which should include current and future property boundaries, existing facilities/structures, locations of non-aviation areas, and existing and proposed improvements. FAA requires proposed improvements to be depicted on the ALP in order to be eligible for FAA funding. If changes are made to the Airport without authorization from the FAA, the FAA may require the airport to change the alternation back to the original condition or jeopardize future grant funding.

Disposal of Land (Assurance #31)

Land purchased with the financial participation of an FAA grant cannot be sold or disposed of by the airport sponsor at their sole discretion. Disposal of such lands are subject to FAA approval and a definitive process established by the FAA. If airport land is no longer considered necessary for airport purposes, and the sale is authorized by the FAA, the land must be sold at fair market value. Proceeds from the sale of the land must either be repaid to the FAA or reinvested in another eligible airport improvement project.

Airport Operations and Land Use
Pavement Preventative Maintenance (Assurance #11)

Since January 1995, the FAA has mandated that it will only give a grant for airport pavement replacement or reconstruction projects if an effective airport pavement maintenance-management program is in place. The Oregon Department of Aviation prepares and updates pavement reports for MMV. These reports identify the maintenance of all pavements funded with federal financial assistance and provides a pavement condition index (PCI) rating (0 to 100) for various sections of aprons, runways, and taxiways, including, a score for overall airport pavements.

Operations and Maintenance (Assurance #19)

All federally funded airport facilities must operate at all times in a safe and serviceable manner and in accordance with the minimum standards as may be required or prescribed by applicable Federal, State, and Local agencies for maintenance and operations.

Compatible Land Use (Assurance #21)

Land uses around an airport should be planned and implemented in a manner that ensures surrounding development and activities are compatible with the airport. The Airport is located inside the McMinnville city limits. Portions of the protected Part 77 airspace for the Airport extend into unincorporated Yamhill County, Marion County, and over other nearby municipalities. The City of McMinnville, as airport sponsor, should work with Yamhill and Marion counties, and other local govenments to ensure zoning laws are in place that protect the Airport from incompatible land uses.

Day-To-Day Airport Management
Economic Non-Discrimination (Assurance #22)

Any reasonable aeronautical activity offering service to the public should be permitted to operate at the Airport as long as the activity complies with airport established standards for that activity. Any contractor agreement made with the airport will have provisions making certain the person, firm, or corporation will not be discriminatory when it comes to services rendered including rates or prices charged to customers.

Exclusive Rights (Assurance #23)

No exclusive right to the use of the Airport by any person providing, or intending to provide, aeronautical services to the public. However, an exception may be made if the airport sponsor can prove that permitting a similar business would be unreasonably costly, impractical, or result in a safety concern, the sponsor may consider granting an exclusive right.

Leases and Finances

Fee and Rental Structure (Assurance #24)

An airport's fee and rental structure should be implemented with the goal of generating enough revenue from airport related fees and rents to become self-sufficient in funding the day-to-day operational needs. Airports should update their fees and rents on a regular basis to meet fair market value, often done through an appraisal or fee survey of nearby similar airports. Common fees charged by GA airports include fuel flowage fees, tie-down fees, and hangar or ground lease rents.

Airport Revenue (Assurance #25)

Revenue generated by airport activities must be used to support the continued operation and maintenance of the Airport. Use of airport revenue to support or subsidize non-aviation activities or to fund other departments who are not using the funds for airport specific purposes is not allowed and is considered revenue diversion. Revenue diversion is a significant compliance issue for FAA.

A summary of Oregon aviation laws is provided below.

OREGON AVIATION LAWS

The Oregon Department of Aviation (ODAV) has created both the Oregon Administrative Rules (OAR) and Oregon Revised Statutes (ORS) to govern airports within the state.

Oregon Administrative Rules (OAR)

- OAR Chapter 660, Division 13 – Airport Planning
- OAR Chapter 660, Division 13 – Exhibits
- OAR Chapter 738 – ODA
- Non-Commercial Leasing Policy
- Commercial Leasing Policy
- Category II Minimum Standards Policy
- Category IV Minimum Standards Policy
- Category V Minimum Standards Policy
- Insurance Requirements

Oregon Revised Statutes (ORS)

- ORS 197 – Land Use Planning I
- ORS 197A – Land Use Planning II
- ORS 319 – Aviation Fuel Tax
- ORS 835 – Aviation Administration
- ORS 836 – Airports and Landing Fields
- ORS 837 – Aircraft Operations
- ORS 838 – Airport Districts

For additional information on FAA Grant Assurances, please go to:
https://www.faa.gov/airports/aip/grant_assurances