City of SUNNYSIDE WASHINGTON

SUNNYSIDE MUNICIPAL AIRPORT

AIRPORT LAYOUT PLAN

Sunnyside, WA
May 2024

CENTURY WEST ENGINEERING

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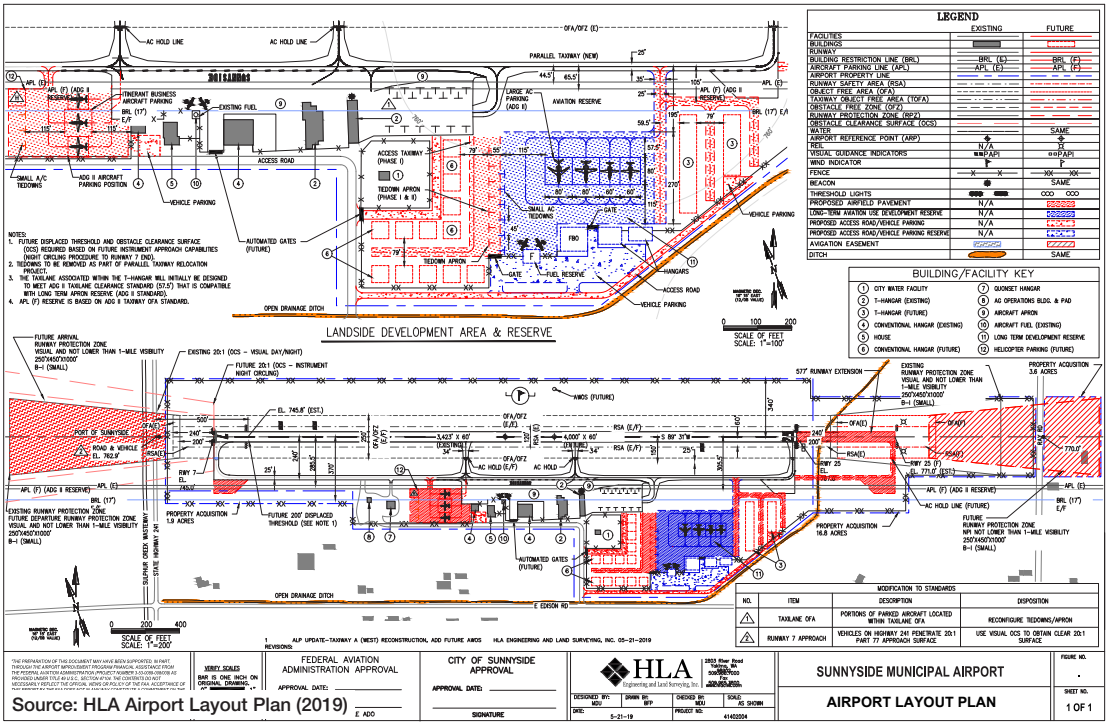
Chapter 1
Introduction

The City of Sunnyside is updating the Airport Layout Plan Report (ALP Report) for Sunnyside Municipal Airport in cooperation with the Federal Aviation Administration (FAA) to address the Airport's needs for the next 20 years. The ALP Report is a scaled down version of an Airport Master Plan, which provides specific guidance in making the improvements necessary to maintain a safe and efficient airport that is economically, environmentally, and socially sustainable.

Study Purpose

The purpose of the ALP Report is to define the current, short-term, and long-term needs of the Airport through a comprehensive evaluation of facilities, conditions, and FAA airport planning and design standards. The study will also address elements of local planning (land use, transportation, environmental, economic development, etc.) that have the potential of affecting the planning, development, and operation of the Airport.



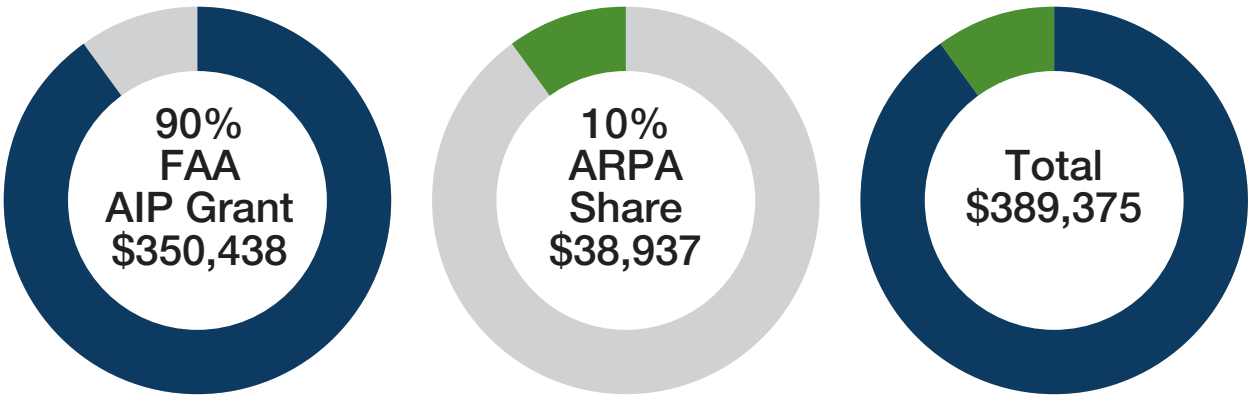
Project Need

The FAA requires airport sponsors (in this case, the City of Sunnyside) to periodically update their ALP drawings as conditions change in order to maintain current planning. This project replaces the 2008 ALP drawing set and report that guided several recent projects, including runway and taxiway reconstruction/rehabilitation. Since many of the previous ALP recommendations have been implemented, the need now exists to update the long-term planning for the Airport. The updated plan will reevaluate the development concepts presented in the previous planning effort, and address new facility needs. The updated plan will reflect changing local conditions, updated FAA standards, and current trends within the aviation industry.

The 2008 ALP Report will serve as a primary source for inventory data. More recent information provided by the City, the airport's engineering consultant, published FAA data, and data obtained from on-site airfield inspections will be reflected in the ALP update.

Project Funding

The 2021-2041[1] ALP Report for Sunnyside Municipal Airport is being fully funded at the federal level. This includes an FAA Airport Improvement Program (AIP) grant of $350,438 to cover the usual 90% FAA project funding share, and $38,937 of additional FAA funding under the American Rescue Plan Act (ARPA) to cover the usual 10% local sponsor match. The AIP is a dedicated fund administered by FAA with the specific purpose of maintaining and improving the nation's public use airports. The AIP is funded exclusively through fees paid by users of general and commercial aviation.



1 Sunnyside Municipal Airport – Airport Layout Plan Report (Century West Engineering, 2008)

Goals of the Airport Layout Plan

The primary goal of the ALP Report is to provide the framework and vision needed to guide future development at Sunnyside Municipal Airport. The FAA sets goals and objectives that each airport should meet through its ALP development, in order to ensure future development will cost-effectively satisfy aviation demand and also consider potential environmental and socioeconomic impacts.

Goal 1: Define the vision for the airport to effectively serve the community, airport users, and the region. Assess known issues including air traffic control, runway length, ability to accommodate development, auto parking, fencing, and land use to develop a realistic sustainable plan to improve the airport.

Goal 2: Document existing activity, condition of airfield facilities, and policies that impact airport operations and development opportunities.

Goal 3: Forecast future activity based on accepted methodology.

Goal 4: Evaluate facilities and conformance with applicable local, state, and FAA standards.

Goal 5: Identify facility improvements to address conformance issues and accommodate demand.

Goal 6: Identify potential environmental and land use requirements that may impact development.

Goal 7: Explore alternatives to address facility needs. Work collaboratively with all stakeholders to develop workable solutions to address needs.

Goal 8: Develop an Airport Layout Plan to graphically depict proposed improvements consistent with FAA standards as a road map to future development. Prepare a supporting Capital Improvement Plan to summarize costs and priorities.

Goal 9: Provide recommendations to improve land use, zoning, and City/County oversight of the airport to remove barriers for appropriate growth at the airport.

Goal 10: Summarize the collective vision and plan for the airport in the Airport Layout Plan report.

THE FAA ROLE IN THE AIRPORT MASTER PLAN

FAA *Advisory Circular (AC) 150/5070-6B Airport Master Plans* defines the specific requirements and evaluation methods established by FAA for the study. The guidance in this AC covers planning requirements for all airports, regardless of size, complexity, or role. However, each planning study must focus on the specific needs of the airport for which a plan is being prepared. As noted earlier, the scale of this planning effort has been reduced to reflect FAA funding priorities. The basic FAA guidance defined for airport master plans is applicable to the ALP Report, although some common tasks have been eliminated or scaled appropriately.

The recommendations contained in an airport master plan/ALP report represent the views, policies and development plans of the airport sponsor and do not necessarily represent the views of the FAA. Acceptance of the plan by the FAA does not constitute a commitment on the part of the United States to participate in any development depicted in the plan, nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public law. The FAA reviews all elements of the plan to ensure that sound planning techniques have been applied. However, the FAA only formally approves the Aviation Activity Forecasts and ALP drawings.

Planning Process

A three phase planning process is commonly used in airport planning. This process is designed to provide multiple feedback loops to facilitate the flow of information and ideas among the community and project stakeholders and ultimately maximize public involvement.

DEVELOP UNDERSTANDING

A comprehensive understanding of the issues and opportunities, existing conditions, and an identified level of future aviation activity that would mandate facility improvements required to satisfy future demand.

Analysis

- Develop Scope of Work
- Public Involvement Strategy
- AGIS Survey
- Existing Conditions Analysis
- Aviation Activity Forecasts

Project Meetings

- Bi-Weekly Planning Team Meetings
- Project Kick-off Meeting
- Planning Advisory Committee (PAC) Meetings

Work Product

- Introduction
- Existing Conditions
- Aviation Activity Forecasts

EXPLORE SOLUTIONS

A collaborative exploration of local Airport needs, goals, and facility requirements in sequence with the development of community generated ideas, solutions, and development alternatives.

Analysis

- Define Updated Airfield Design Standards
- Perform Demand/Capacity Analysis
- Define Facility Goals and Requirements
- Identify & Prepare Development Alternatives
- Evaluate Development Alternatives

Project Meetings

- Bi-Weekly Planning Team Meetings
- Planning Advisory Committee (PAC) Meetings
- Public Open House

Work Product

- Facility Goals & Requirements
- Airport Development Alternatives

IMPLEMENTATION

An implementation program with recommended strategies and actions for future land use, transportation, and environmental requirements; a realistic and workable CIP; and current ALP drawings that graphically depict existing conditions at the airport as well as proposed development projects.

Analysis

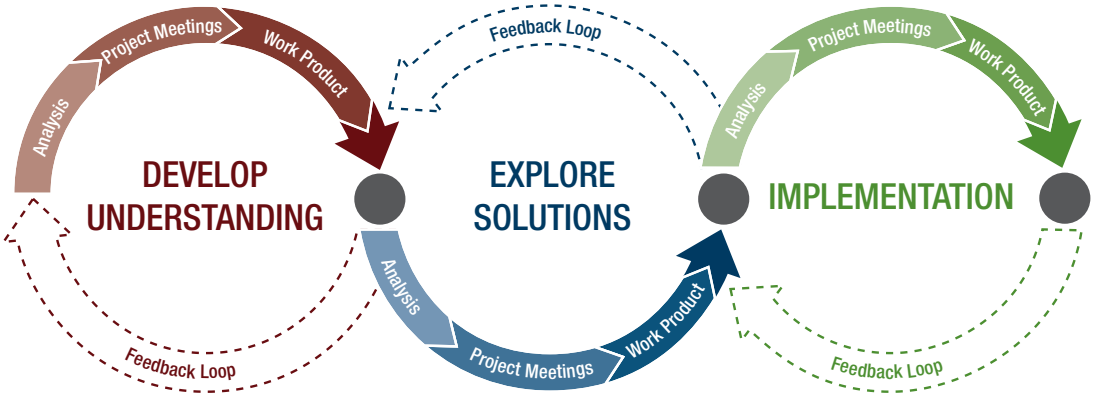
- Develop Strategies & Actions
- Develop CIP/Phasing/Financial Plan
- Develop ALP Drawing Set

Project Meetings

- Bi-Weekly Planning Team Meetings
- Planning Advisory Committee (PAC) Meetings

Work Product

- Strategies & Actions
- Financial Plan (CIP/Phasing)
- ALP Drawing Set
- Draft Report
- Final Report



Framework of the Airport Master Plan

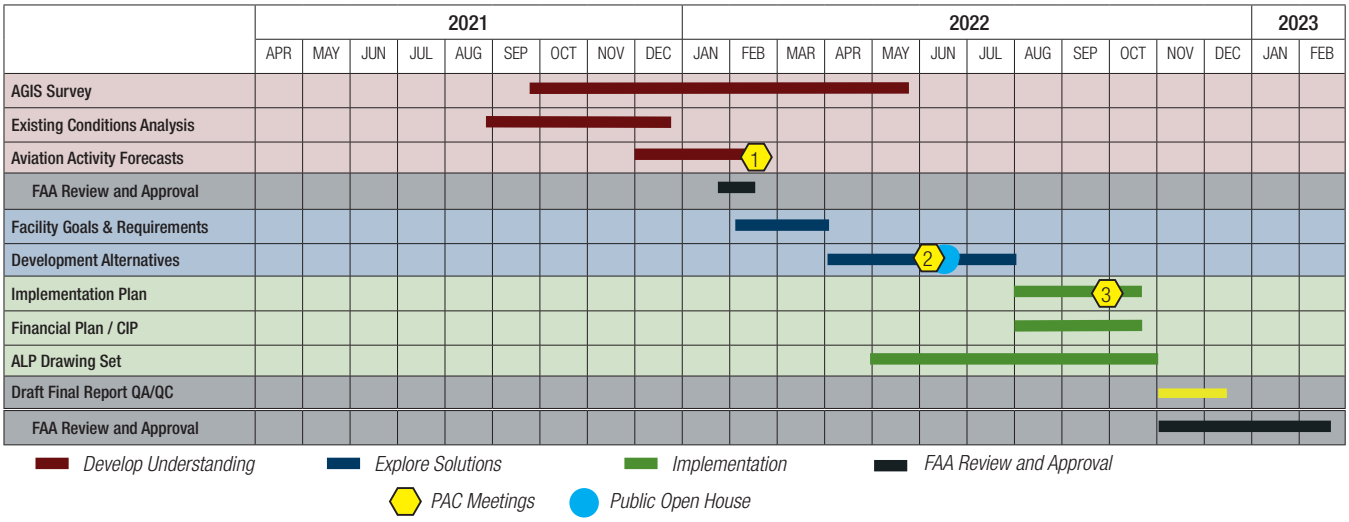
The framework of the ALP Report provides a clear structure to inform and steer future planning decisions and serve as a tool to guide a process that allows the plan to take shape through flexibility, iteration, and adaptation. The framework considers the regional setting of the Airport, its landside elements and airside elements, as well as the management and administration functions associated with the Airport. The framework provides guidance, while being flexible enough to adapt to changing conditions to maximize opportunities to develop understanding, explore solutions, and implement the preferred development alternatives for the Airport and adjacent urban and rural environments.

	Regional Setting	Airside Elements	Landside Elements	Airport Administration
Develop Understanding	Location & Vicinity Socio-Economic Data Airport Role Airport History Area Airports Context Airport Operations Relevant Studies Environmental Data Local Surface Transportation Land Use/Zoning	Area Airspace Instrument Flight Procedures Runway/Helipad Taxiways/Taxilanes Pavement Condition Airside Support Facilities	Terminal Building Aprons/Tiedowns Hangars Airport Fencing Airport Surface Roads Vehicle Parking Utilities	Airport Ownership & Management Airport Financials Airport Rates and Charges Local Rules & Regulations FAA Compliance Overview
Explore Solutions				
Implementation				

Project Schedule

The Sunnyside Municipal Airport – ALP Report schedule was expected to occur over the course of 18-24 months. However, the evaluation process, including local coordination extended through 2022 and 2023, with final approvals obtained in early 2024.

Original ALP Project Schedule



Public Involvement Process

A comprehensive and engaging public involvement process is a key element of the ALP update. Numerous opportunities for public participation were built into the process that centered on a local citizen advisory committee that provided input throughout the planning project. All project meetings were open to the public. These included three Planning Advisory Committee (PAC) meetings; one additional PAC study session; and one public open house. An interactive website was used to provide all draft work products to the public for review and comment. Ongoing coordination between City staff and the planning team over the course of the project was used to maintain contact with local elected officials and their respective public processes.

PLANNING ADVISORY COMMITTEE (PAC) MEETINGS

The PAC was assembled to provide input and allow for public dissemination of data. Airport tenants, pilots, local and regional economic development interests, neighbors of the Airport, and staff/representatives of the City and County were identified as members of the PAC. The FAA Seattle Airports District Office (ADO) project manager interacted with the project team throughout the project, and attended PAC meetings remotely. The FAA has primary responsibility for technical review, comment, and project approval.

The PAC meeting schedule included several in-person meetings, with remote access options available.

PAC Meeting #1 (January 2022)

The Consultant summarized the goals and objectives of an Airport Master Plan, and also presented the existing conditions of the Airport, community, and aviation industry; as well as the preliminary aviation activity forecasts that were submitted to FAA for formal review and approval.

PAC Meeting #2 (September 2022)

PAC Meeting #2 was an interactive discussion with the PAC that focused on the Airport's facility needs to meet FAA standards, future growth, as well as the goals of the City and its users. The Consultant presented a series of preliminary alternative concepts capable of satisfying future demand and any non-standard conditions and sought input from the PAC and public.

PAC Study Session (October 2022)

An additional study session was held following PAC meeting #2 to refine the recommended development options (preferred airside and landside alternatives) for the Airport. The refined concepts were then incorporated into the ALP drawing set and used to develop project cost estimates and the updated 20-year airport capital improvement program (CIP), for presentation in PAC Meeting #3.

PAC Meeting #3 (August 2023)

The input provided in PAC #2 and the study session, was used to refine the concepts, and based on technical evaluations, public input and coordination with the City, a preferred alternative was presented to the PAC. The Consultant presented an implementation program with recommended strategies and actions for future land use, transportation, and environmental requirements; a realistic and workable CIP; and current ALP drawings that graphically depict existing and future conditions at the Airport.

Known Issues & Opportunities

At the outset of the ALP Report there were several known issues and opportunities identified by the FAA, City, and airport users/ tenants. These issues and opportunities identified below served as focus areas during the completion of the plan to ensure a comprehensive and thorough assessment that addressed and documented the proposed solutions and methods of implementation.

KNOWN ISSUE #1 – RUNWAY 7 END

As part of the ALP Report project, an Airport Geographic Information System (AGIS) survey will be completed to identify any obstructions surrounding the Airport. A section of Highway 241, located beyond the end of Runway 7 has been identified as a known approach obstruction. Additionally, Highway 241 is located within the inner section of the Runway Projection Zone (RPZ). The FAA has identified roads within RPZs as incompatible land uses that should be mitigated whenever feasible. As part of this plan, the Consultant will prepare alternatives that mitigate the road and any potential obstructions projected airspace surfaces

KNOWN ISSUE #2 – LAND ACQUISITION

The addition of instrument approach and departure A portion of existing runway safety area (RSA) and object free area (OFA) at the east end of Runway 7/25 extends into adjacent Port of Sunnyside property. The 2008 ALP depicts property acquisition at the Runway 25 end intended to address the current RSA/OFA control, and also to support a planned runway extension. The FAA requires airport sponsors to control runway protected surfaces such as the RSA, OFA, and RPZ. Priority is given to fee simple ownership over easements. The additional land area needed to meet current FAA standards for both the existing and future runway configurations will be reviewed and verified in this project.

KNOWN ISSUE #3 – AIRPORT SECURITY & RUNWAY SAFETY

Sunnyside Municipal Airport is bordered by agricultural lands on its north, east, and a portion of its south sides. Due to the close proximity of these farming activities and the limited existing fencing, it is common for farm equipment to enter airport property and cross the runway. Options for adding airport fencing and controlled access gates will be included in the alternatives analyses.

KNOWN ISSUE #4 – MAINTENANCE NEEDS

The majority of the airports pavements including runway and taxiways have been constructed or rehabilitated in the past five years and are in excellent condition. The apron pavements are in fair-to-poor condition and are in need of rehabilitation. A review of WSDOT Aviation 2018 airfield pavement condition inspection data will be performed to help identify and prioritize pavement needs during the next twenty years. A maintenance plan based on remaining useful life and need will be included in the CIP.

OPPORTUNITY #1 – UAS / UAV FACILITIES

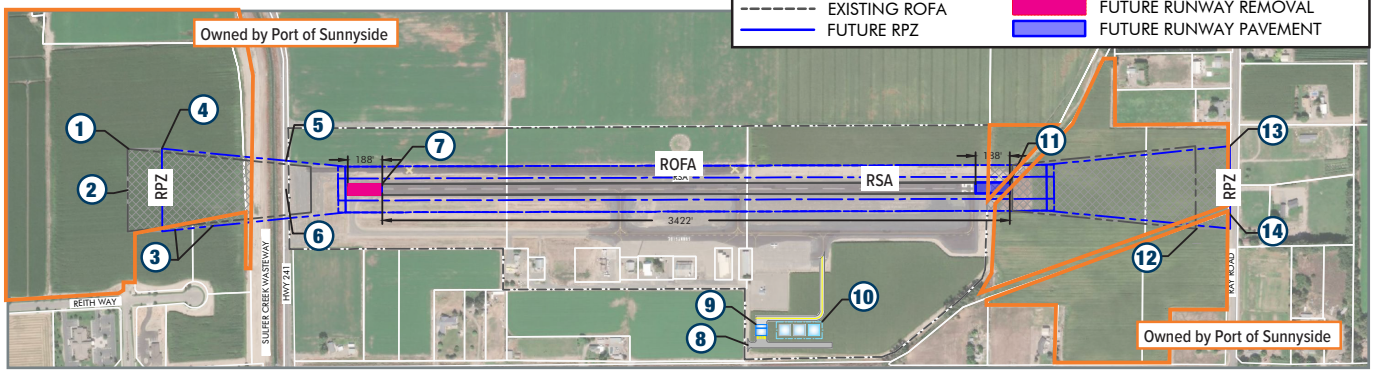
Sunnyside Municipal Airport has been identified as a potential site to accommodate future unmanned aerial systems/vehicles (UAS/UAV) testing and training. With support from local government officials, the Port of Sunnyside has secured funding to construct a hangar to support these operators. As part of the planning process, the Consultant will identify facility improvements to support growth in UAS operations at the Airport.

OPPORTUNITY #2 – INSTRUMENT APPROACH

An AGIS survey is included in this project and the obstruction data will be used to evaluate the feasibility of a future instrument approach procedure. The Consultant will identify facility improvements to support a future approach as well as the need based on historic weather conditions at the Airport.

Existing Conditions

Opportunities



Key for Known Issues & Proposed Opportunities

1	Existing RPZ 1000' X 250' X 450' B-I(S) Visual	8	Future Hangar Access Road
2	Future Property Acquisition 6.9 AC	9	Future UAS Hangar Access Road
3	Potential Private Property Impact	10	Future Hangar Development Area Reserve
4	Future RPZ 1000' X 250' X 450' B-I(S) Visual	11	Extend 188' of Runway
5	Incompatible RPZ Land Use Public Road	12	Existing RPZ 1000' X 250" X 450' B-I(S) Visual
6	Road/Vehicle Clear of 20:1 Approach	13	Future RPZ 1000'X 250' X 450' B-I(S) Visual
7	Remove 188' of Runway	14	Future Property Acquisition 10.7 AC

Chapter 2

Existing Conditions

The Existing Conditions Analysis documents existing airfield facilities and conditions that affect the operation and development of the Sunnyside Municipal Airport (1S5) within the context of the regional setting, landside, airside, and administrative functions. The existing conditions analysis utilized the 2008 Airport Layout Plan Report[1] and other subsequent work products in addition to numerous meetings with tenants, stakeholders, and City staff to support the effort. The findings documented in the Existing Conditions Analysis chapter will be used to support subsequent studies and recommendations throughout the development of the master plan.

Regional Setting

The Regional Setting section is comprised primarily of those features that provide a better understanding of the social, economic, and environmental impacts airports can have in a region, county, and city. This section of the existing conditions analysis includes a discussion of the location & vicinity of Sunnyside Municipal Airport, as well as socio-economic conditions, airport history, airport role, area airports, historic airport operations, relevant studies, environmental data, local surface transportation systems, and land use on and around the Airport.

LOCATION & VICINITY

Sunnyside Municipal Airport is located about 2 miles east of downtown Sunnyside, in Yakima County, Washington. The Airport is located within the Sunnyside city limits and urban growth boundary (UGB). The Airport is owned and operated by the City of Sunnyside.

The Airport is located about 2 miles north of U.S. Interstate 82 (I-82) the major east-west thoroughfare in the region. I-82 extends northwest to I-90 at Ellensburg and southeast to I-84 near Hermiston, Oregon. State Highway 241 (North Hanford Road) abuts the west end of the Airport, and extends north to State Highways 24 and 241. These state highways connect Sunnyside with several nearby communities (Yakima, Moxee, Mabton, Richland, Othello, etc.).

Access to the Airport's terminal area is provided by East Edison Road, which extends directly from downtown Sunnyside with connections to Highway 241 (North Hanford Road) and Ray Road at the east end of the Airport.

Yakima County is located in the south central Washington. It is bordered by Klickitat (south); Skamania, Lewis, and Pierce (west); Kittitas (north); and Grant and Benton (east) counties. The Airport sits in the lower Yakima valley at an elevation of 767.6 feet above mean sea level (MSL). Terrain rises from the valley floor to more than 3,600 feet MSL within 10 nautical miles northeast (Rattlesnake Hills), and southwest, toward Satus Pass (U.S. Highway 97, elev. 3,107 feet MSL) on the Columbia Plateau.

1 Sunnyside Municipal Airport Layout Plan Report (Century West Engineering, December 2008)

Figure 2-1: Location & Vicinity Map

Community Socio-Economic Data

The information presented in **Tables 2-1 through 2-3** is intended to provide a summary of the local and regional economic conditions that may affect activity at Sunnyside Municipal Airport.

Population

Data obtained from the State of Washington Office of Financial Management (OFM) (**Table 2-1**) show that recent historic population in Yakima County has experienced moderate growth over the past decade, but has lagged slightly behind the state average. The county's annual growth rates (AGR) during the period fluctuated from 0.30% to 0.84%, with a 10-year AGR of 0.53%. The net increase in county population during the period is 12,100 (+4.9%).

The same data for the City of Sunnyside show more volatility over the 10-year period. The city's AGR for the period fluctuated from -4.07% to 1.6%, with a 10-year AGR of 0.20%. Within several significant year-over-year changes during the period, the population of Sunnyside increased by 270 (+1.7%).

It is noted that these population changes occurred during the early recovery from The Great Recession and the first two years of the COVID pandemic.

Table 2-1: Historic Population

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Washington	6,817,770	6,882,400	6,968,170	7,061,410	7,183,700	7,310,300	7,427,570	7,546,410	7,707,047	7,766,975
AGR	-	0.95%	1.25%	1.34%	1.73%	1.76%	1.60%	1.60%	2.13%	0.78%
									Average AGR	1.46%
Yakima County	246,000	247,250	248,800	249,970	250,900	253,000	254,500	255,950	256,728	258,100
AGR	-	0.51%	0.63%	0.47%	0.37%	0.84%	0.59%	0.57%	0.30%	0.53%
									Average AGR	0.54%
Sunnyside	16,130	16,200	16,230	16,280	16,540	16,640	16,850	17,070	16,375	16,400
AGR	-	0.43%	0.19%	0.31%	1.60%	0.60%	1.26%	1.31%	-4.07%	0.15%
									Average AGR	0.20%

Source: State of Washington Office of Financial Management Postcensal Estimates of Population (2012-2020); April 1 Official Population Estimates - Revised November 30, 2021 (2021)

Economic Indicators

Gross Regional Product (GRP) and Personal Income per capita (PI) can serve as indicators of economic growth or decline of a particular area. According to data provided by Woods & Poole Economics, summarized in **Tables 2-2 and 2-3**, the GRP and PI for Yakima County showed inter-year volatility, but net growth overall, through the ten-year period.

It should be noted that the effects of the COVID pandemic are evident in the 2020-2021 time period. During that time, County GDP declined sharply as the local economy responded to state and local restrictions put in place to slow the spread of the virus. However, the 2020 losses were largely reversed as the economy recovered in 2021. Inversely, per capita income sharply increased, due to federal stimulus payments in 2020, and receded to 2019 levels as the stimulus programs expired in 2021.

Table 2-2: Historic Gross Regional Product (2012 Dollars)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Yakima County (millions)	$8,748.4	$8,811.7	$9,357.2	$9,343.1	$9,662.0	$10,035.3	$10,496.5	$10,893.8	$10,488.3	$11,313.5
AGR	-	0.72%	6.19%	-0.15%	3.41%	3.86%	4.60%	3.78%	-3.72%	7.87%
									Annual Growth Rate	0.15%

Table 2-3: Historic Per Capita Income (2012 Dollars)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Yakima County	$35,855	$35,341	$36,916	$38,210	$38,571	$39,394	$40,563	$41,654	$44,800	$43,109
AGR	-	-1.43%	4.46%	3.51%	0.94%	2.13%	2.97%	2.69%	7.55%	-3.77%
									Annual Growth Rate	2.12%

Source: Woods & Poole Economics, Inc. Washington, D.C. Copyright 2021. Woods & Poole does not guarantee the accuracy of this data. The use of this data and the conclusion drawn from it are solely the responsibility of Century West Engineering, Inc.

More detailed socio-economic data and analysis is presented in Chapter 3: Aviation Activity Forecasts to supplement the updated 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 the Airport is key to establishing the long-term vision and development of the facility.

National Role

The FAA maintains an inventory of U.S. aviation facilities through the National Plan of Integrated Airport Systems (NPIAS). The NPIAS lists existing and proposed airports significant to the air transportation of the United States, and thus are eligible for federal funding though the Airport Improvement Program (AIP) which cover 90% of eligible costs of planning and development projects. According to the 2021 *National Plan of Integrated Airport Systems (2021-2025)*, Report to Congress, Sunnyside Municipal Airport is classified as a **Basic General Aviation Airport** and as such, provide a means for general aviation flying and link the community to the national airport system. Basic airports support general aviation activities such as emergency response, air ambulance service, flight training, and personal flying.

State Role

The Washington State Department of Transportation (WSDOT) developed the Washington Aviation System Plan (WASP) in 2017. The 2017 WASP updated previous system plans to provide a current look at how the entire state aviation system performs and how individual airports interact to contribute to the system as a whole. The plan builds on prior plans including the 2009 Long-term Air Transportation Study (LATS).

The WASP establishes a new classification system of five categories for Washington airports to better capture system performance. Sunnyside Municipal Airport best fits into the WASP "**Local**" airport classification. Local airports support GA activities including personal transportation, recreational flying, pilot training, and agricultural activities. Airports classified as Local are located outside of metropolitan areas and regional centers; they have paved primary runways; and 15 or fewer based aircraft.

AIRPORT HISTORY

As noted in the 2008 ALP Report, the airport site was acquired by the City of Sunnyside in 1951, and expanded in 1962. A general history of the property and the facility's improvements was assembled based on available data including prior planning documents, property records, and pavement management records:

> *The most recent Exhibit 'A' Property Plan[2] indicates that the original property for the Airport was acquired by the City of Sunnyside in October of 1951 consisting of the north two-thirds of the current property, terminating at approximately the south mid-field connector taxiway. A second property acquisition in 1962 expanded the property to the present boundary.*

Available pavement data indicate that the original runway was unpaved until 1975. In 1975, the runway and west section of the parallel taxiway was paved; the original east section of parallel taxiway was paved in 1985. A 265-foot extension to the runway and taxiway was added in 1999. In 2010 and 2018, the parallel taxiway was shifted to the south to meet ADG II runway/taxiway separation standards.

2 Sunnyside Municipal Airport – Exhibit A Property Plan (Century West, September 2010)

Facility improvements made since completion of the last (2008) ALP Report include an Automated Weather Observation System (AWOS); rehabilitated runway and connector taxiways; parallel taxiway reconstruction; and runway rehabilitation. A summary of the Sunnyside Municipal Airport's recent AIP grant history is presented in **Table 2-4**, totaling in over $4.5 million of improvements and upgrades since 2009. Additional AIP funds were awarded in 2021 for the Airport Layout Plan update.

Table 2-4: FAA AIP Grant History

Fiscal Year	Project Description	AIP Federal Funds	CARES Act Local Match	Supplemental Discretionary
2009	Construct Apron, Construct Taxiway	$273,693	$0	$0
2009	Construct Taxiway	$414,629	$0	$0
2011	Install Weather Reporting Equipment	$114,123	$0	$0
2013	Install Weather Reporting Equipment	$257,266	$0	$0
2015	Rehabilitate Runway - 07/25, Rehabilitate Taxiway	$300,000	$0	$0
2016	Rehabilitate Runway - 07/25, Rehabilitate Taxiway	$3,300,000	$0	$0
2017	Reconstruct Taxiway, Rehabilitate Runway - 07/25	$533,751	$0	$0

Source: FAA AIP Grant Look Up Tool (Accessed 12/10/2021)

AREA AIRPORTS CONTEXTUAL ANALYSIS

The contextual analysis of the airport service area refers to the geographic area surrounding an airport that is directly affected by the activities at that airport. Normally a 30 or 60-minute surface travel time is used to approximate the boundaries of a service area. Airports located beyond a 60-minute travel time have less impact on local airport activity due largely to the redundancy provided by closer facilities. With numerous airports in the vicinity, service areas often overlap, creating competition between airports. Having several airports located within a relatively short distance affects user demand for items such as hangar space, fuel and aviation services. These items are sensitive to cost, convenience, and the quality of facilities or services.

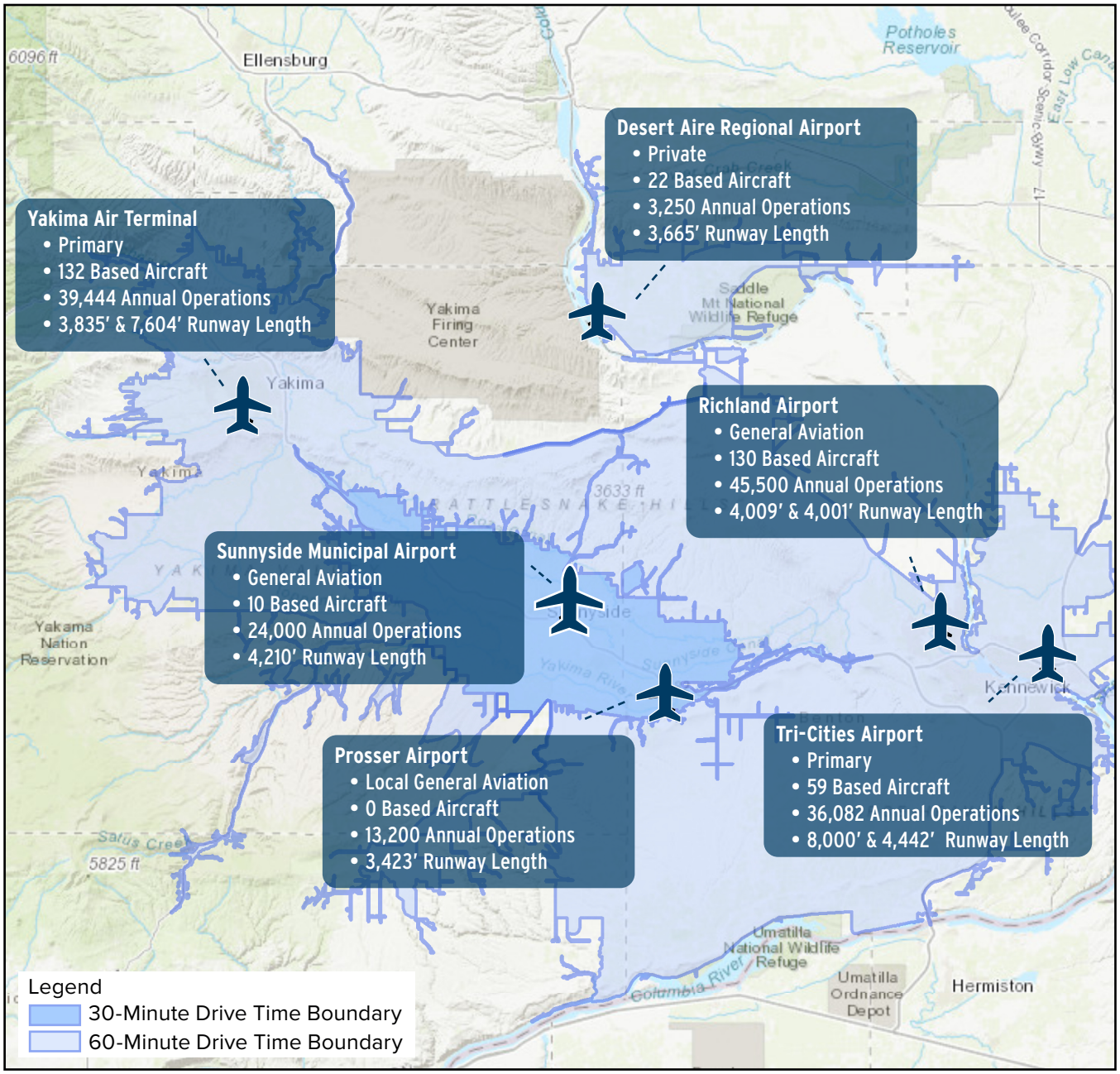
Sunnyside Municipal Airport has overlapping service areas with five other airports. These airports are summarized in **Table 2-5** and depicted in **Figure 2-2**.

Table 2-5: Area Airports Comparison

Airport	Location	Runway Dimension (feet)	Surface	Lighted Runway	Published Procedures	Fuel Available
Sunnyside Municipal		3,423' x 60'	Asphalt	Yes	No	Avgas
Prosser Airport	10.1 NM SE	3,452' x 61'	Asphalt	Yes	No	Avgas
Richland Airport	27.6 NM E	4,009' x 75' (primary rwy)	Asphalt	Yes	Yes	Avgas, Jet-A
Tri-Cities Airport (Pasco)	35.5 NM E	7,707' x 150' (primary rwy)	Asphalt	Yes	Yes	Avgas, Jet-A
Desert Aire Airport	21.7 NM N	3,665' x 60'	Asphalt	Yes	No	None
Yakima Air Terminal	27.8 NM NW	7,604' x 150'	Asphalt	Yes	Yes	Avgas, Jet-A

Source: FAA 5010 Airport Master Record (Accessed 12/03/2021)

Figure 2-2: Area Airports



Source: AirportIQ 5010, Esri, USGS, NOAA

SUMMARY OF AIRPORT OPERATIONS DATA

Sunnyside Municipal Airport accommodates primarily small single-engine aircraft, with the occasional itinerant multi-engine and some smaller business class turbine aircraft.

Sunnyside Municipal Airport's based aircraft count was updated by airport management in November 2021 (13 aircraft). The Airport's based aircraft count in January 2008 was 15. The most recent validated count in the FAA BasedAircraft.com database for Sunnyside Municipal (Accessed 12/6/2021) lists 13 based aircraft. The current based aircraft are primarily small single-engine piston, with the exception of one piston twin-engine (Cessna 310), and one single-engine turboprop agricultural aircraft (Air Tractor 801).

The FAA 5010 Airport Master Record for Sunnyside Municipal Airport and the other airports in the service area are summarized in **Table 2-6**. These data are unverified and are presented for reference only. It is noted that the annual aircraft operations (takeoffs and landings) data for Sunnyside deviates significantly from the previous ALP twenty year forecast (3,750 to 6,300 annual operations). An updated baseline estimate of annual aircraft operations will be developed for use as the baseline for the new aviation activity forecasts for the ALP Report (see Chapter 3).

Table 2-6: FAA 5010 Data

	Sunnyside[1]	Prosser	Richland	Tri-Cities (Pasco)	Desert-Aire Regional	Yakima Air Terminal
Air Carrier	0	0	0	9,154	0	2,026
Air Taxi	0	0	0	4,453	0	4,034
GA Local	6,000	5,500	33,000	15,744	2,500	13,826
GA Itinerant	18,000	7,700	12,000	16,541	750	17,765
Military	0	0	500	2,319	0	1,817
TOTAL OPERATIONS	**24,000**	**13,200**	**45,500**	**48,211**	**3,250**	**39,468**
TOTAL BASED AIRCRAFT	**13**	**35**	**130**	**121**	**22**	**132**
Single Engine	12	35	122	80	20	106
Multi Engine	1	0	4	23	2	15
Jet	0	0	2	14	0	5
Helicopters	0	0	2	4	0	6
Glider	0	0	11	0	0	1
Military	0	0	0	0	0	0
Ultra-Light	0	0	0	0	0	0
OPBA	1846	377	350	398	148	299

SOURCE: AirportIQ 5010 Airport Master Records and Reports (AirportIQ5010.com, Accessed 12/6/2021)
[1] Sunnyside based aircraft numbers presented reflect most recent validated BasedAircraft.com data (Accessed 12/6/2021).

It is important to note that aircraft takeoffs and landings (operations) at non-towered airports, including Sunnyside Municipal Airport, are not routinely recorded. As such, flight activity is estimated through a variety of methods. One method often used is the calculation of Operations per Based Aircraft (OPBA). Where operations are estimated by multiplying the number of based aircraft by a FAA standard multiplier, generally between 250 and 450 for general aviation airports.

A quick calculation of OPBA based on validated based aircraft counts and the operation estimate presented in the current 5010 report result in an estimate of 1846 OPBA for Sunnyside Municipal Airport. This result is well outside of the expected OPBA numbers suggested by the FAA, indicating that the 5010 operations estimates are likely erroneous. As such, the operations estimates were adjusted using the methods described below.

Significant users at the Airport, in terms of operations, were interviewed and asked to provide estimated operations counts for their aircraft. The results of that survey are summarized in **Table 2-7**. The validated based aircraft not accounted for by the user interviews were separated and an operations per based aircraft

Table 2-7: Operator Documented Operations

Validated Based Aircraft: 13

Owner	Based/ Transient	Aircraft	AAC/ADG	Ops
Aerial Applicator 1	Based	AT802	B-II	700
Aerial Applicator 2	Based	AT301	A-I	175
Airlift NW	Transient	PC12	A-II	416
Life Flight	Transient	Heli	A/-	100
Bering Marine Corp	Transient	PC12	A-II	84
			Total A-I	175
			Total A-II	500
			Total B-II	700
			Total ADG-II	1,200
			Helicopter	100
			Total Operations	**1,475**

(OPBA) estimate of 250 was applied to each. This method of using OPBA to estimate airport operations at non-towered airports is described in FAA Order 5090.5. The order states that an OPBA estimate of 250 should be applied to airports classified in the NPIAS as Basic GA in order to generate reasonable operations estimates. **Table 2-8** summarizes the operations estimates that came out of the above-described process.

Table 2-8: Airport Operations Estimate

	Est. OPBA	A/C Count	Operations
Based & Transient Documented Ops	N/A	5	1,475
Based A/C - No Documented Ops	250	11	2,750
		Total Operations	**4,225**

RELEVANT STUDIES

2008 Sunnyside Municipal Airport Layout Plan Report

The 2008 Airport Layout Plan Report provided a detailed assessment of site-specific airport development needs and has guided improvements at Sunnyside Municipal Airport for the 13 years. With the exception of the parallel taxiway shift to meet FAA ARC B-II separation standards, and the reconfiguration of the terminal apron area, few of the proposed improvements have been implemented.

- **Runway:**
  - » Extend the existing runway (3,422’ x 60’) by 576 feet to the east resulting in a total length of 3,998 feet.
  - » Displace Runway 7 threshold (200 feet) in conjunction with instrument approach development (assumes day/night circling procedure developed for Runway 7 end), reconfigure lighting and PAPI.
- **Runway Lighting/Visual Aids:**
  - » Relocate precision approach path indicator (PAPI) in conjunction with extension of Runway 25.
  - » Upgrade existing LIRL to MIRL.
  - » Install wind cone at east end of the runway.
  - » Acquire and install Super Unicom™. (AWOS installed)
- **Parallel Taxiway:** Construct full length parallel taxiway to B-II standards in coordination with future runway extension. (completed)
- **Property Acquisition:** Approximately 17 acres of Port of Sunnyside property was proposed for acquisition to accommodate the planned runway and parallel taxiway extension to the east.
- **Surface Access Roads:** New and extended vehicle access roads to provide access to existing and future apron and hangar areas.
- **Instrument Approach:** The addition of non-precision instrument approach was identified as a possible improvement (assumes day/night circling procedure developed for Runway 7 end).
- **Terminal Area:**
  - » Future aircraft apron with business aircraft, small aircraft, and helicopter parking west of the existing terminal apron, south of future B-II parallel taxiway (A1).
  - » Future East side hangar area with expanded tiedown apron.

Figure 2-3: Sunnyside Municipal Airport
Airfield development since 2008 Airport Layout Plan Report

Source: Google Earth

WASHINGTON AVIATION SYSTEM PLAN (WASP)

In 2017, the State of Washington completed the Washington Aviation System Plan (WASP) for the state airport system which included 136 public use airports throughout the state. The statewide study area included both commercial service and general aviation airports. The WASP updated previous system plans to provide a current look at how the entire state aviation system performs and how individual airports interact to contribute to the system.

Airport classifications generally reflects the type of aircraft and customers the airport serves as well as the characteristics of the airport's service area. The WASP establishes a new classification system of five categories for Washington airports to better capture system performance. Sunnyside Municipal Airport best fits into the WASP Local airport classification.

Local airports support GA activities including personal transportation, recreational flying, pilot training, and agricultural activities. Airports classified as Local are located outside of metropolitan areas and regional centers; they have paved primary runways; and 15 or fewer based aircraft.

As a Local airport, the WASP has identified certain minimum standards that should ideally be in place. The existing facilities at Sunnyside Municipal Airport appear to meet most minimum standards, as they pertain to the Airport's Local role in the WASP. A review of WASP minimum standards compliance will be summarized in the updated facility requirement assessment (Chapter 4).

WASHINGTON AVIATION ECONOMIC IMPACT STUDY

In 2020, Washington State Department of Transportation released the Washington Aviation Economic Impact Study (AEIS). The AEIS measured the annual economic impacts that the State's 134 public-use airports and the state-wide system had on local communities, geographic regions, and the State as a whole.

According to the study, Sunnyside Airport contributed over $3.00 million in value added, and over $5.21 million in business revenue annually to the local and regional economies. Total full-time employment related to the Airport accounted for 38 jobs with an estimated payroll of $1.98 million.

Environmental Data

PHYSICAL GEOGRAPHY

Sunnyside Municipal Airport has a surveyed elevation of 768 feet above mean sea level (MSL). Sunnyside is located in the lower Yakima Valley in eastern Yakima County. The Yakima River is the dominating natural physical feature within the valley, entering the lower valley near Union Gap and traveling south and eastward before connecting with the Columbia River near Richland. The lower Yakima Valley is bordered by moderately mountainous terrain to the north and south. Irrigated farm land comprises the majority of the land surrounding Sunnyside, although non-irrigated farm land is located on the valley foothills. Terrain in the vicinity of Sunnyside is characterized by level to gently sloping irrigated farmland located within the basin valley. Maximum elevation figures (MEF) depicted on the Seattle Sectional Aeronautical Chart provides pilots with information on the highest known terrain elevation (above mean sea level - MSL) within defined areas. The MEFs immediately surrounding Sunnyside Municipal Airport are 3,800 feet to 4,600 feet MSL. The Rattlesnake Hills, located five to eight miles north and northeast of the airport, have elevations rising above 3,000 feet MSL. The Horse Heaven Hills are located south of Sunnyside, rising from 1,000 to 2,000 feet MSL within 10 to 15 miles of the airport, with higher elevations (above 5,000 feet MSL) located 30 to 40 miles west and southwest.

LOCAL CLIMATE ANALYSIS

Sunnyside has a relatively dry climate with cold winters and hot summers due to its position on the leeward side of the Cascade Range. Typical temperatures vary between 26-degrees to 94-degrees throughout the year. Summers are hot and short, spanning from mid-June to mid-September with the hottest month in July, when the average high temperature is 92-degrees. Sunnyside receives small amounts of precipitation throughout the year,

with the rainiest seasons being fall, followed by winter and spring. The month of November brings the highest amount of rain with an average of 0.9 inches, January through March, May and October trail November with 0.6 inches of precipitation. The summer season is dry averaging less than a half- inch monthly between June and September. Annual snowfall averages about 10 inches.

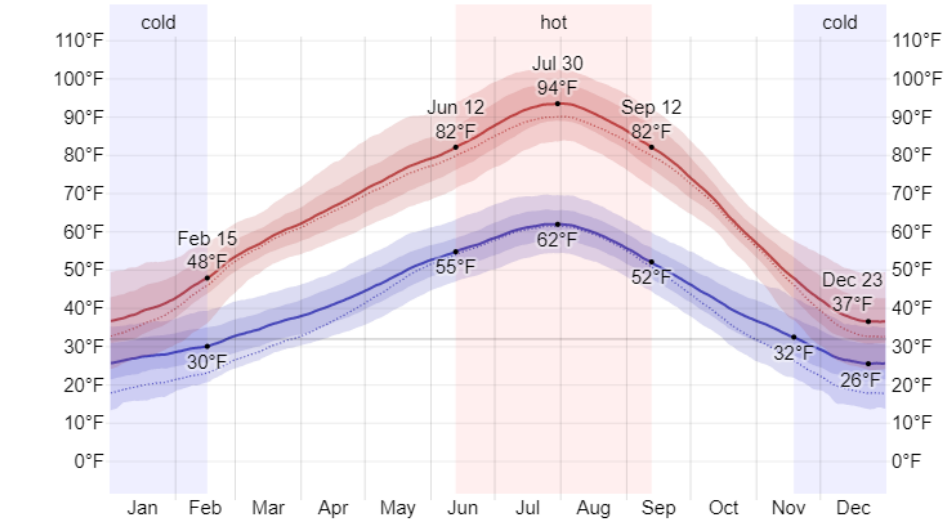
WIND ANALYSIS

Historical on-site wind data are not available for Sunnyside Municipal. In 2012, the Airport began measuring wind data at an on-site AWOS. At this time there is not yet enough recorded wind data to meet FAA requirements. The FAA requires wind roses developed for use on ALP drawing sets to provide a minimum of ten years of data. Once sufficient data has been collected, it will be used to create a supplemental wind rose for the Airport. In cases where on-site observation data is limited, FAA recommends instead using a wind rose from a nearby airport to approximate wind coverage. The FAA recognizes that these data are approximate and may account for unique terrain or localized weather patterns.

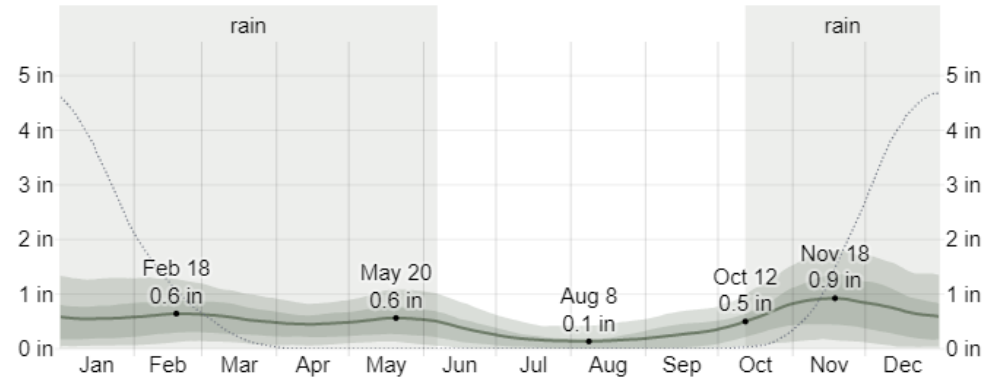
The nearest National Weather Service (NWS) tabulated wind data source acceptable to FAA is located at Yakima Air Terminal. Using the wind data from Yakima and applying the resultant wind rose to Sunnyside Airport's runway configuration, it was determined that the current orientation meets the FAA minimum of 95% wind coverage for all categories of aircraft.

The following climate data charts were retrieved from weatherspark.com to illustrate the typical temperature and precipitation patterns in Sunnyside. These are based on an analysis of historical weather reports and model reconstructions.

Average Annual Temperature, Sunnyside, WA



Average Annual Precipitation, Sunnyside, WA



Environmental Conditions

The Airport Layout Plan Update scope of work includes an overview of environmental conditions and a preliminary assessment of NEPA environmental impact categories. A cultural resource assessment was also performed for the site. A review of recommended improvements is provided in Chapter 5 – Alternatives Analysis. These assessments are summarized below and the full technical memorandums are provided in the listed appendices.

ENVIRONMENTAL REVIEW

A preliminary environmental screening of the airport property and surrounding areas was completed as part of the Airport Layout Plan Update. The screening study examined the following environmental categories on and in vicinity of the Airport:

- Air Quality
- Biological Resources (including fish, wildlife, and plants)
- Department of Transportation Act, Section 4(f)
- Hazardous Materials, Solid Waste, and Pollution Prevention
- Natural Resources and Energy Supply
- Water Resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers

A brief summary of significant findings is below. The complete report is available in **Appendix A**.

Air Quality

Air Quality of the region was found to be generally good with most pollution indicators falling well below the national averages. However the airport property falls within the 94th percentile for PM2.5 levels and within the 73rd percentile for ozone summer seasonal average of daily maximum 8-hour concentrations in the air according to the EPA's Environmental Justice Screening and Mapping Tool.

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 with the immediate vicinity of the Airport. However, there are a few species have the potential to be found in the area, including Gray Wolf, Ferruginous Hawk, Yellow-billed Cuckoo, and the Bull Trout.

It is unlikely that any federally or state protected fish species will occur on airport property. However, Chinook Salmon, and Steelhead, and Rainbow Trout may use the nearby Sulphur Creek Wasteway for seasonal migration.

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 A** 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.

The Sunnyside Municipal Airport falls within the USFWS Birds of Conservation Concern (BCC) Zone 9 (USFWS 2021a). Of the 34 avian species listed under BCC, five species have recorded observations within a 1.5-mile radius of the Airport. These species are American Avocet, California Gull, American White Pelican, Northern Harrier, and Evening Grosbeak.

The Bald Eagle and Golden Eagle are protected under the Bald and Golden Eagle Protection Act of 1940, which provides specific guidance for minimizing effects to these species. While no Golden Eagles or Bald Eagles have been recorded seen within the immediate vicinity of the Sunnyside Municipal Airport, there have been recorded sightings of both species within the vicinity of the town of Sunnyside.

The National Wetland Inventory (NWI) indicates that there are freshwater emergent wetlands bounding the southern and eastern parcels of airport property. Recent aerial photography suggests that these wetlands occur just outside of airport property.

The nearest critical habitat area to the Airport is the Yakima River, which supports bull trout and is located approximately 6.3 miles south of the Airport.

Hazardous Materials, Solid Waste, and Pollution Prevention

A query of publicly accessible databases identified one Superfund site approximately 4.5 miles southeast of the Airport; and seven contamination cleanup sites within one mile of the Airport. In the last six years, there has been one recorded oil or chemical spill on the property - mineral and transformer oil in 2021. Two industrial facilities were identified in the city of Sunnyside that release toxic chemicals to the air, land or water as part of their normal operations – Darigold Dairy (2.5 miles southeast) and Central Pre-Mix (0.75 miles south). Finally, the Airport offers self-serve avgas fueling through an outside contractor, and provides opportunities for aircraft maintenance activities. Both of these activities involve fossil fuels and other types of hazardous materials or wastes.

CULTURAL RESOURCES REVIEW

The Airport Layout Plan Update must meet the requirements of Section 106 of the National Historic Preservation Act (NHPA) and consider impacts of future airfield improvements to any potential historic properties. The Section 106 review was conducted in two phases: pre-field research, and field work.

Pre-field research included the review of known archaeological resources within a 1.0-mile radius of the airport property using publicly available archeological resource databases maintained by the State of Washington. This database includes recorded archaeological resources, historic property inventories (HPIs), National Register of Historic Properties (NRHP) and Washington Heritage Register (WHR) properties, identified cemeteries, and previously conducted cultural resource surveys found throughout the state.

The subsequent fieldwork included inspections to identify surface and subsurface archaeological resources. A pedestrian survey was conducted, and 10 subsurface probes were excavated across the airport property. No Native American or historic-era cultural materials or features were observed during the pedestrian survey or excavations. The survey yielded a final recommendation that future airport improvements will result in No Historic Properties Affected, and no further archaeological investigations are recommended prior to, or during, execution of the Airport Layout Plan Update. The full Section 106 survey report is available in **Appendix B**.

NOISE CONTOURS

A noise analysis is not included in the scope of work for this planning effort due to the relatively low levels of flight activity at the Airport, which falls below the FAA threshold for analysis.

AIRSPACE AND NAVIGATIONAL AIDS

Airspace Classifications

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. See **Figure 2-4**.

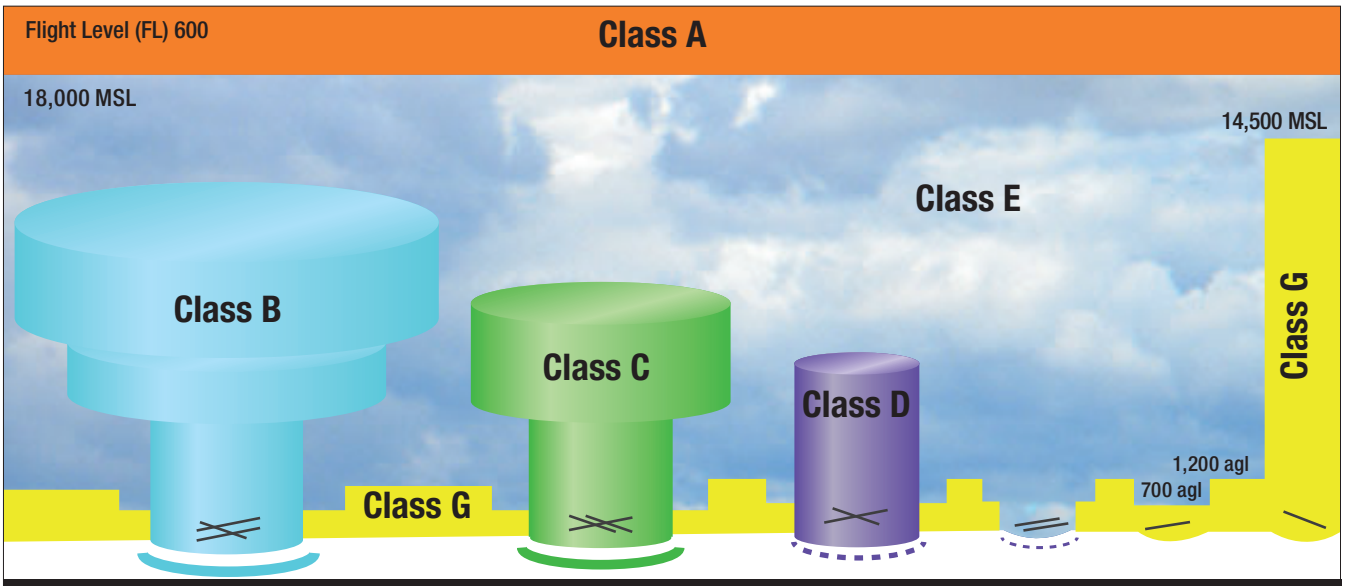
Aircraft operating within controlled airspace are subject to varying levels of positive air traffic control that are unique to each airspace classification. Requirements to operate within controlled airspace vary, with the most stringent requirements associated with very large commercial airports in 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.

Local Area Airspace Structure

The Seattle Sectional Aeronautical Chart depicts nearby airports, notable obstructions, special airspace designations and instrument airways in the vicinity of Sunnyside Municipal Airport. See **Figure 2-5**.

Sunnyside Municipal Airport is located in an area of Class G airspace up to 1200 feet AGL, where it becomes Class E airspace. Radio communication is not required for visual flight rules (VFR) operations in Class G or E airspace, although pilots are encouraged to use the common traffic advisory frequency (CTAF) when operating at the airport. However, aircraft are required to obtain an air traffic control (ATC) clearance prior to operating in Class E airspace when operating under instrument flight rules (IFR).

Figure 2-4: Airspace Classifications



COMMUNICATION REQUIREMENTS AND WEATHER MINIMUMS

	Class A	Class B	Class C	Class D	Class E	Class 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

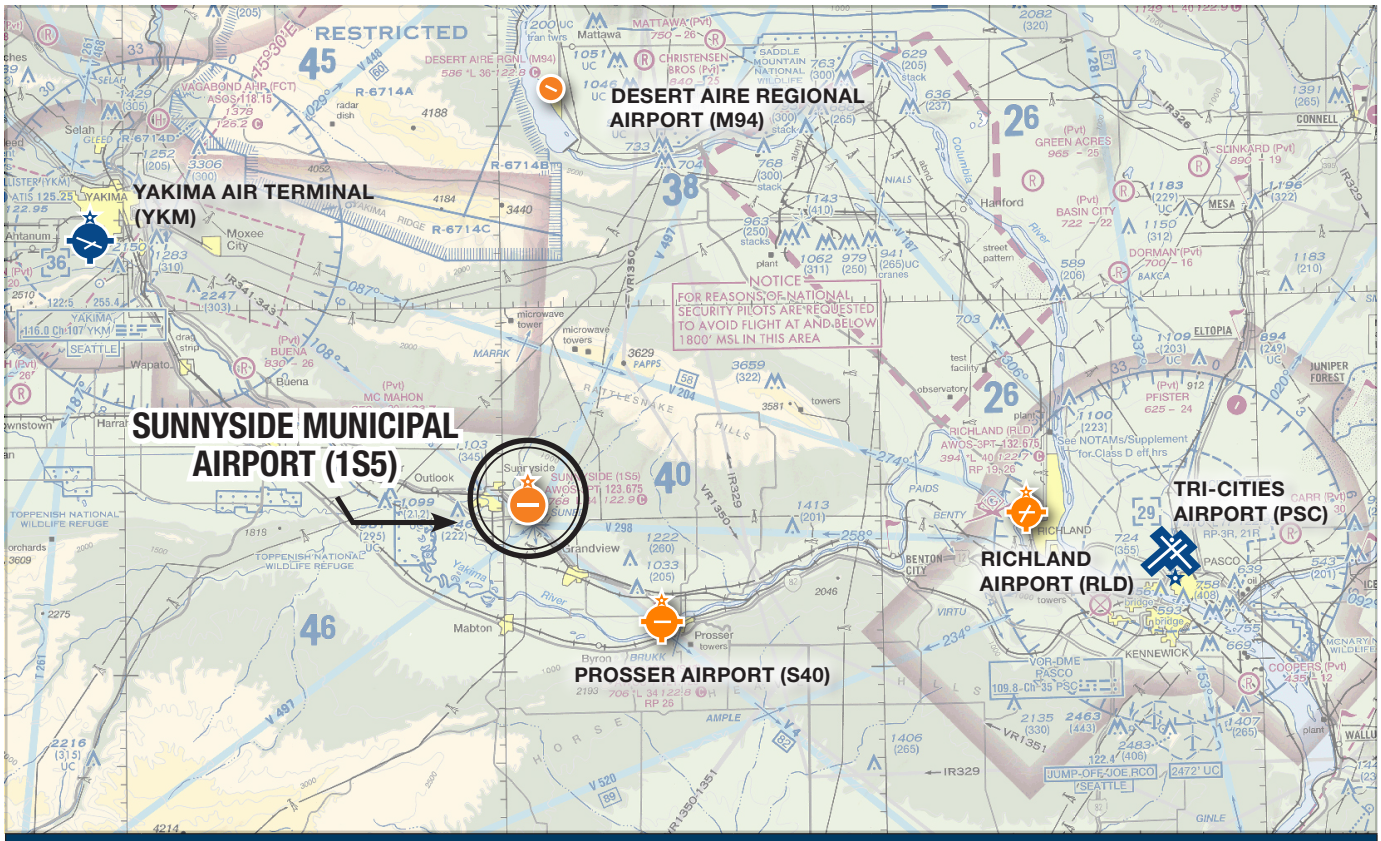
* Prior to operating within Class B, C, or D airspace (or Class E airspace with an operating control tower), student, sport, and recreational pilots must meet the applicable FAR Part 61 training and endorsement requirements. Solo student, sport, and recreational pilot operations are prohibited at those 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.

Two nearby airports (Yakima Air Terminal and Tri-Cities) have air traffic control towers and controlled airspace within 30 nautical miles of Sunnyside Municipal Airport. Class D (controlled) airspace is in effect during the hours of operation for the control towers. When in effect, aircraft are required to obtain air traffic control clearance prior to entering or operating in the controlled airspace. Class D airspace extends from the ground surface to 2,500 feet above ground level.

Figure 2-5: Area Airspace - Seattle Sectional Chart



Special Use Airspace

There are several areas of special use airspace located within 30 miles of Sunnyside Municipal Airport. These areas have various levels of operational restrictions and altitudes that pilots are required to observe. The nearest portions of these areas are noted below.

- Boardman Military Operations Area (MOA) – 30 nautical miles (nm) south
- National Security Area (Handford) – 21 nm northeast
- Restricted Area (R-6714 A-H) – 13nm north
- National Wildlife Refuges (numerous - all directions 5 to 30+ nm)

Controlled & Uncontrolled Airspace

Sunnyside Municipal 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.

Navigational Aids and Airways

Sunnyside Airport operates exclusively under visual flight rules (VFR), and has no electronic navigational aides or published instrument procedures. The runway is equipped with visual landing aids (PAPI-2) serving each runway end.

The nearest electronic navigational aid is the Yakima VORTAC (YKMr 116 kHz), located 24 nautical miles northwest of Sunnyside Municipal Airport. There are three instrument airways in the area: Victor 4-298 Low Altitude Enroute Airway is 2 miles to the south; Victor 497 Low Altitude Enroute Airway is 1 mile to the east; and Victor 204 Low Altitude Enroute Airway is 7 miles to the north.

Airspace - Part 77, TERPS, And Runway Threshold 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 and is summarized below for additional context of airspace evaluation and design to serve the Sunnyside Municipal Airport.

14 CFR, Part 77—Safe, Efficient Use, and Preservation of the Navigable Airspace

Part 77 is the central 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 “imaginary surfaces” are defined for each runway.

FAA Order 8260.3B—United States Standard for Terminal Instrument Procedures (TERPS)

This Order, along with several derivative orders in the 8260 series and other related orders, define criteria for use when designing instrument flight procedures. Airspace protection requirements for instrument flight procedures and obstruction clearance standards are among the criteria analyzed for hazard status in aeronautical studies.

The potential development of instrument approach and departure procedures at the Sunnyside Municipal Airport will reflect obstruction clearance requirements for the applicable TERPS surfaces defined for each end of Runway 07/25.

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 airports. Airspace clearances for key runway end features are defined in the AC’s discussion of Threshold Siting Surfaces.

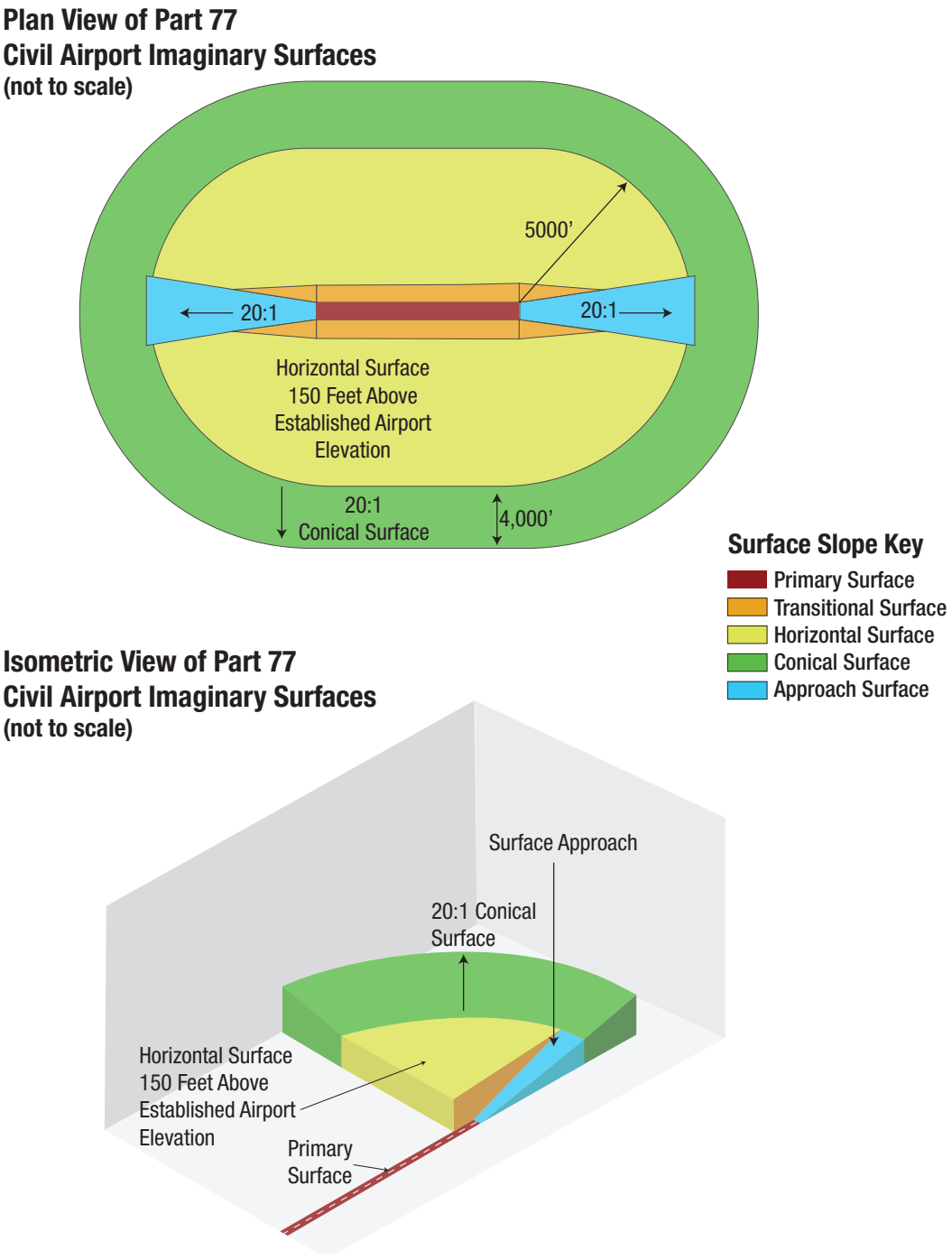
This AC is periodically updated and has undergone extensive revision since the previous ALP Update was completed. A comprehensive review of current FAA design standards will be provided in the facility requirements chapter of this study determine existing facilities conformance to current FAA standards.

Instrument Flight Procedures

Sunnyside Municipal Airport does not currently support instrument procedures. The Airport Layout Plan Report update includes an Airport Geographic Information System (AGIS) survey, which is a required step (obstructed analysis) in evaluating the potential for developing an instrument approach in the future. The Airport’s need and ability to obtain an instrument approach will be included in the Facility Requirements evaluation (see Chapter 4).

Instrument approach and departure procedures are developed by the FAA using electronic navigational aids to guide aircraft through a series of prescribed maneuvers in and out of an airport’s terminal airspace. Procedures are designed to enable continued airport operation during instrument meteorological conditions (IMC), but are also used during visual conditions, particularly in conjunction with an instrument flight plan. The capabilities of each instrument approach are defined by the technical performance of the procedure platform (ground based navigational aids or satellite navigational aids) and the presence of nearby obstructions, which may affect the cloud ceiling and visibility minimums for the approach, and the routing for both the approach and missed approach procedure segments. The aircraft approach speed and corresponding descent rate may also affect approach minimums for different types of aircraft.

Figure 2-6: CFR 14, PART 77 Airspace



For Sunnyside Municipal Airport, the approach surfaces for the runway extend 5,000 feet beyond each runway (beginning 200 beyond the runway end).

LAND USE & ZONING ANALYSIS

Sunnyside Municipal Airport is located within the Sunnyside city limits and urban growth boundary (UGB). All land use actions related to the airport site, and its immediate surroundings are under the City's jurisdiction. The City of Sunnyside zoning ordinance articles associated with the Airport are summarized below and provided in **Appendix C**.

The Airport's Part 77 airspace extends over areas of Yakima County and City of Sunnyside jurisdiction. Each jurisdiction is responsible for protection of the federally defined Part 77 airspace surfaces for the Airport that fall within their boundaries. The county and city are also each responsible for compliance with State of Washington airport land use protections within their respective jurisdictions.

City of Sunnyside

Sunnyside Municipal Airport is zoned as Airport (AP) defined under Chapter 17.62 of the municipal code. This zone intended to "provide for general and commercial aviation uses at the Sunnyside Airport". The city's urban core is located roughly one mile west of the Airport, and includes commercial, residential, industrial, and urban growth area zones.

Airport Vicinity Zoning

Yakima County zoning in the vicinity of Sunnyside Municipal Airport is a mixture of Agricultural (AG), Single-Family Residential (R-1), Rural-10/5 (R-10/5), and Light Industrial (M-1) as described by Yakima County Code, Title 19.

The purpose of the AG district is to preserve and maintain areas for the continued practice of agriculture by limiting the creation of small lots, permitting only those new uses that are compatible with agricultural activities, protection of agricultural lands of long-term commercial significance, and providing measures to notify and separate especially sensitive land uses from customary and innovative agricultural land management practices.

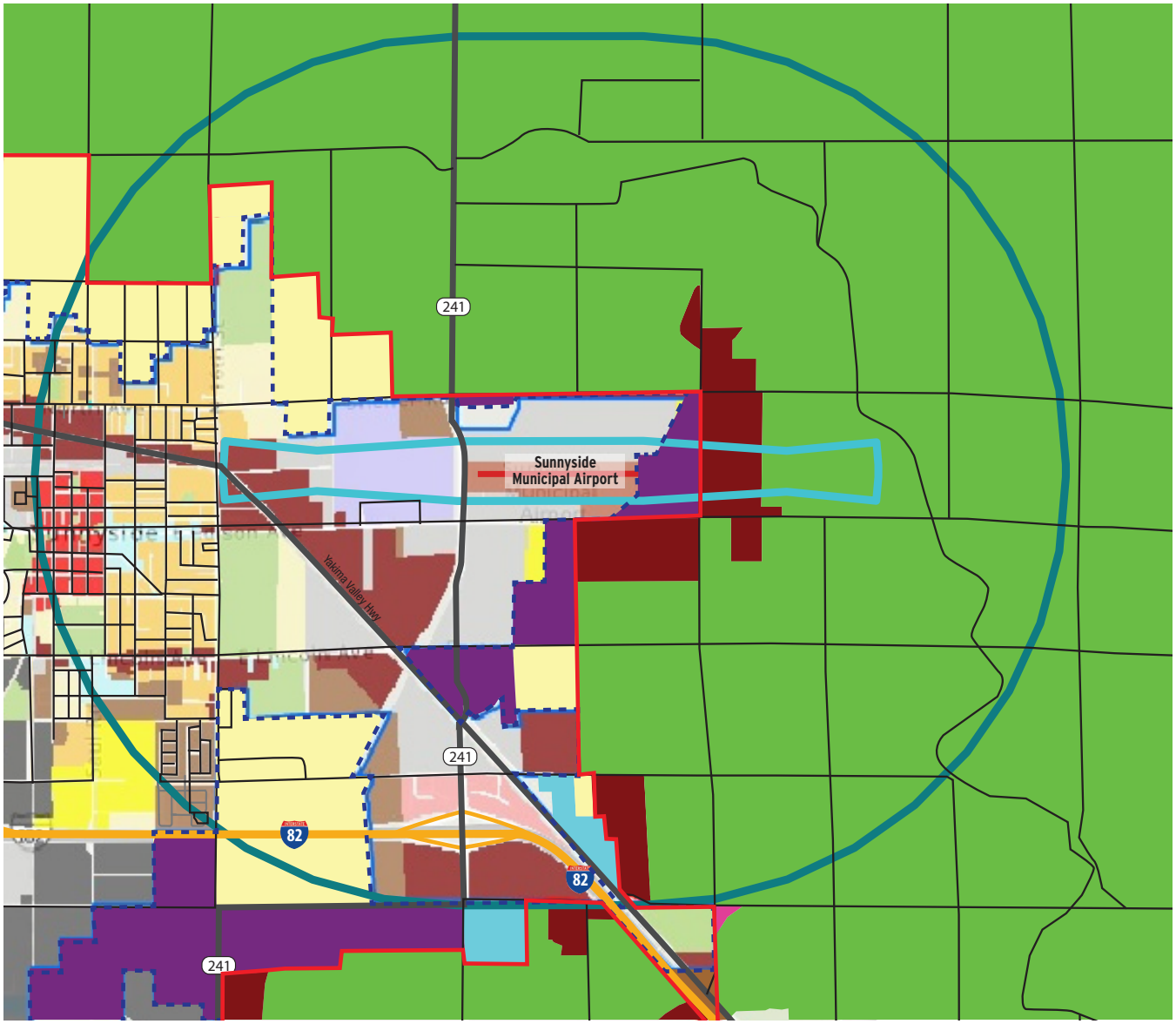
The purpose of the R-1 district is intended to protect single-family neighborhoods from encroachment by potentially incompatible non-residential land uses or impacts; and establish new residential neighborhoods and preserve existing residential neighborhoods for detached single-family dwellings free from other uses, except those which are compatible with and serve the residents of this district.

The R-10/5 zoning district is intended to maintain rural character and provide density incentives to encourage development where fire protection services and access to roads with a paved or other hard surface are available.

The purpose of the Light Industrial (M-1) district is to:

- Establish and preserve areas near designated truck routes, freeways and the railroad for light industrial uses, which should not generate noise levels, light, odor or fumes that would constitute a hazard. Such uses are light manufacturing, processing, research and wholesale trade, storage and distribution facilities;
- Direct truck traffic onto designated truck routes and away from residential streets; and
- Minimize conflicts between uses in the light industrial district and surrounding land uses.

Figure 2-7: Airport Zoning - Airport Safety Overlay (ASO)



Legend
- City Limits
- Urban Growth Boundary
- Sunnyside Primary ASO
- Sunnyside Secondary ASO

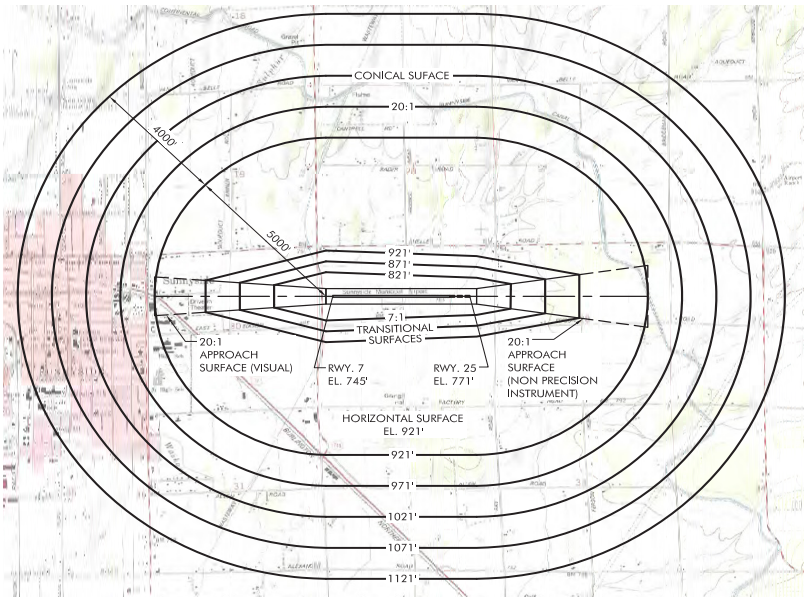
City of Sunnyside Zoning
- Airport (AP)
- Freeway Commercial (B-1)
- General Commercial (B-2)
- Retail Core (B-3)
- Neighborhood Business (BN)
- Light Industrial (M-1)
- Heavy Industrial (M-2)
- Professional Business (PBO)
- Public Facilities (PF)
- Low Density Residential (R-1)
- Medium Density Residential (R-2)
- High Density Residential (R-3)
- Urban Residential Agriculture (URA)
- PUB
- PUD

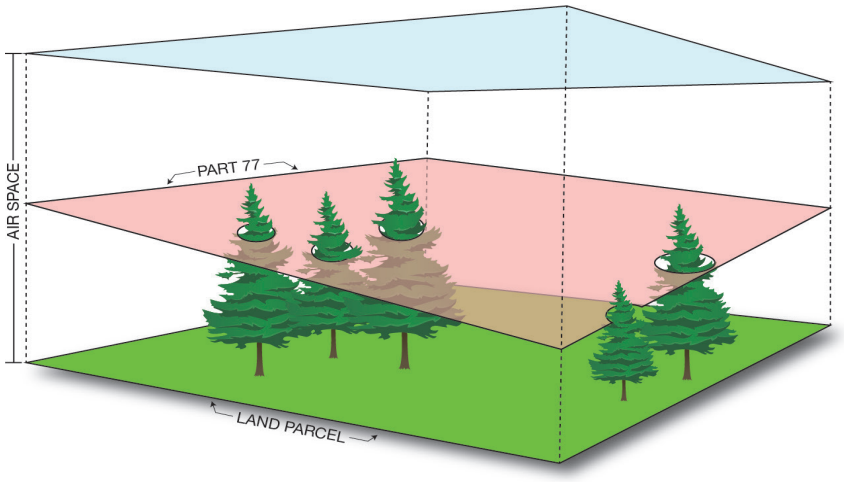
Yakima County Zoning
- Agriculture
- Light Industrial
- Rural-10/5
- Single-Family Residential
- Planned Development (Ord. 8-1974)

AIRPORT OVERLAY ZONING

Yakima County's Airport Protection Zone (Chapter 19.17.030) is intended to protect the airspace around state and federal system airports from airspace obstructions or hazards and incompatible land uses in proximity to Yakima Air Terminal-McAllister Field and Sunnyside Municipal Airport, or other public airports within defined airspace Part 77. In addition to regulations of the principal use district, the Airport Safety Overlay includes provisions for preserving land adjacent to the airport for future commercial and industrial development; and assuring land uses located near the airport are compatible with noise, height obstruction and other impacts from the airport operation.

The City of Sunnyside Zoning Ordinance (Title 17.62A) refers to the Airport Overlay Zoning District, which includes safety zoning, based on WSDOT Safety Zone standards, intended to protect the airspace surfaces associated with Sunnyside Municipal Airport. Portions of Part 77 surfaces for Runway 7/25 extend beyond the City of Sunnyside's land use jurisdiction into Yakima County.





Airside Elements

Airside facilities are comprised of infrastructure that facilitate the movement and operation of aircraft on the ground and in the air. This section of the existing conditions analysis includes a discussion of the Airport's runway-taxiway system, airfield lighting and signage, airfield pavements, and support facilities. Sunnyside Municipal Airport operates in day and night visual flight rules (VFR) conditions. The Airport does not currently have any instrument procedures; the addition of instrument capabilities is identified as a potential improvement that will be examined in the facility requirements and alternatives analyses of the airport layout plan.

RUNWAY

Sunnyside Municipal Airport has one paved runway (7/25) that is oriented in an east-west direction (71-251 magnetic/90-270 true degree bearing). Runway 7/25 is 3,423 x 60 feet with a full-length parallel taxiway (Taxiway A) on the south side. The runway is equipped with lighting systems that are consistent with visual approach requirements and runway use.

A summary of runway conditions is provided below:

- **Runway Pavement:** Asphalt, good condition.
- **Runway Markings:** Both ends of Runway 7/25 have visual markings, consisting of runway numbers and a centerline stripe. The runway markings were observed to be in good condition during recent site visits. All runway markings are consistent with FAA standards for configuration, color (white paint), and approach type.
- **Runway Gradient:** The 2019 Airport Layout Plan (ALP) identifies the end of Runway 25 as the high point (767 feet MSL) Runway 7 end as the low point 745 feet MSL. The effective runway gradient is 0.64%.
- **LIRL:** Runway 7/25 is equipped with a Low Intensity Runway Lighting (LIRL) system, which includes white edge lights (with amber lights located near the runway ends to indicate runway remaining) and split lens (green/red) threshold lights. The threshold lights consist of two sets of three fixtures near each corner of the runway, indicating the beginning and end of the runway. The LIRL is pilot-activated using the common traffic advisory frequency (CTAF) 122.9 MHz.
- **Visual Guidance Indicator (VGI):** Runways 7 and 25 is equipped with a 2-light Precision Approach Path Indicator (PAPI). The PAPIs project light along a glide path to a runway end, with red and white colored lights indicating the aircraft's vertical position (above, below, or on glide path) relative to the glide path. The PAPI glide paths are set at 3 degrees, which is the FAA standard. The PAPI is pilot-activated using the CTAF 122.9 MHz.
- **Taxiway Lighting:** Taxiway A and the terminal apron access taxilane are equipped with retroreflective edge markers (stake-mounted cylinders).
- **Other Lighting:** Limited overhead lighting is available in the terminal area, fueling area, and in various hangar areas. Some hangars also have exterior wall-mounted flood lights.

Table 2-9: Runway Details

Runway 7/25	
Dimensions	3,423' x 60'
Bearing	S 89° 31' W (True)
Effective Gradient	0.64%
Surface/Condition	Asphalt/Good
Weight Bearing Capacity	12,500 pounds - Single Wheel Gear
Markings	Visual/Basic - Runway Designation Numbers, Centerline Stripe
Lighting	Low Intensity Runway Edge Lighting (LIRL) (Rwy 7 & 25) Precision Approach Slope Indicator (PAPI) 2-Light (3.0 degree glide path)
Signage	Mandatory, Location, Directional, and Runway Distance Remaining Signs

Source: FAA 5010 Airport Master Record (Accessed 12/03/2021)

TAXIWAYS & TAXILINES

All currently developed areas of Sunnyside Municipal Airport have paved taxiway or taxilane access. The full-length parallel taxiway (Taxiway A) has four 90-degree exit taxiway connections (A1-A4, west to east) to the runway. Taxiway A is 25 feet wide and has a runway centerline-to-centerline separation of 240 feet. The terminal apron and hangar area taxilanes are adjacent to Taxiway A on the south, which provides access to the rest of the airfield.

Taxiway A, the connector (exit) taxiways, and the apron taxilanes have yellow centerline stripes. Taxilanes accessing hangar areas are not striped. All of the exit taxiways are marked with aircraft hold lines 125 feet from runway centerline, which coincide with the edge of the small aircraft runway obstacle free zone (ROFZ), and the location of mandatory instruction signs based on ADG I standards. Taxiways A2, and A3 have lead-in lines that extend from the south edge of the runway centerline (from both directions) to the taxiway centerlines.

The terminal apron is accessed directly from Taxiway A. Taxilanes accessing hangar, tiedown, and fuel areas are marked on the apron. Apron markings (yellow) include segmented (dashed) edge lines to distinguish the apron area and adjacent parallel taxiway. The tiedown area is also accessible from the south via a taxilane with a 90 degree connection. The taxiways are unlighted and are equipped with retroreflective edge markers. Taxilanes edges are unmarked, except for the taxilane directly adjacent to the tiedown area, which is also marked with reflective edge markers.

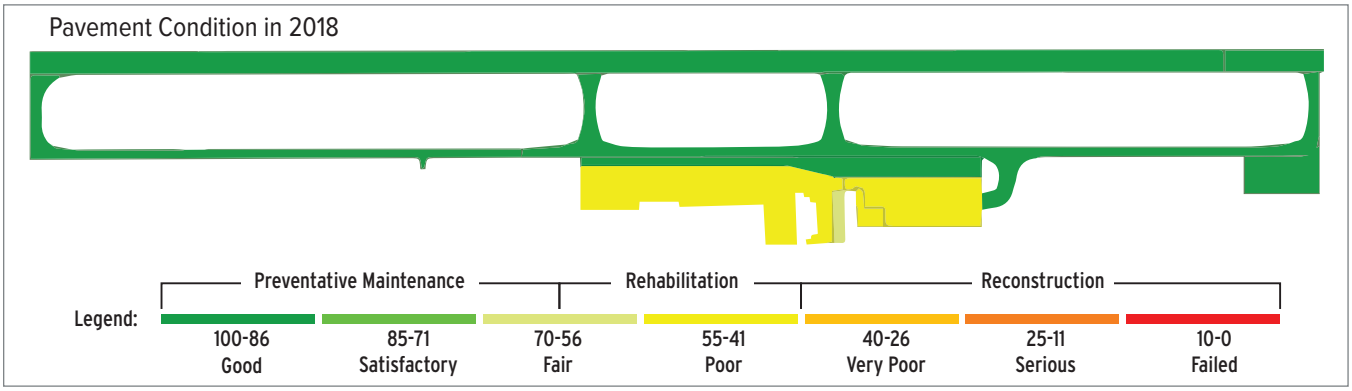
PAVEMENT CONDITION

The WSDOT Aviation Pavement Evaluation Program systematically identifies maintenance, repair, and rehabilitation projects needed to sustain functional pavements at Washington airports. The program provides a thorough evaluation of current conditions and future projections of condition in terms of pavement condition indices (PCI) for all eligible pavements on all paved airports across the state. For NPIAS airports like Sunnyside Municipal Airport that receive federal money, this work assists airport sponsors in meeting their FAA grant assurances.

The PCI inspection data for Sunnyside Municipal Airport referenced in this study is from June 2018. The survey was performed using the methodology developed by the U.S. Army Corps of Engineers, and outlined in the current edition of ASTMD-5340, Standard Test Method for Airport Condition Index Surveys.

Most of the pavements (75.2%) at Sunnyside Municipal Airport, including the runway and taxiways, were rated Good or Satisfactory in the 2018 inspection survey. The west portion of the terminal apron was rated Fair (16.3%), while the east portion of the terminal apron was rated Poor (8.5%). The pavement ratings are consistent with pavement age and use. The current 3,423-foot runway was most recently reconditioned in 2017. The west section of the parallel taxiway (between A1 and A2) was constructed in 2011. The east section taxiway (between A2 and A4) was reconstructed/reconfigured in 2017. The main apron, in its current form, was constructed/reconfigured prior to 1998.

Figure 2-8: Pavement Conditions (2018 Inspection)



Source: WSDOT Aviation, Applied Pavement

AIRSIDE SUPPORT FACILITIES

Support facilities generally include airside support facilities such as airfield lighting, signage, weather reporting equipment and visual aids. Sunnyside Municipal Airport accommodates day and night operations in visual meteorological conditions (VMC) and the corresponding visual flight rules (VFR) for aircraft. All airside support facilities were inspected during site visits conducted in August 2021.

Airport Lighting

The Airport has a pole-mounted rotating beacon located on the north end of a T-hangar, adjacent to the terminal apron. The beacon operates on a dusk-dawn photocell switch and was observed to function 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.

The Airport has two lighted wind cones. The primary windcone is located in the segmented circle on the north side of the runway near mid-field. The second is located next to the rotating beacon on the terminal apron. Both wind cones are equipped with external lighting for night-time illumination and appeared to be in good operating condition. A third, unlighted wind cone, is located approximately 80 feet west of the west end of Taxiway A, near the end of Runway 7. The unlighted wind cone was observed to be in good condition. The airfield lighting observed during recent site visits appeared to be in good condition and fully operational.

Airfield Signage

The airfield is equipped with a variety of signage: Mandatory Instruction, Runway Distance Remaining, Destination, Information signs.

Mandatory Instruction Signs: Runway/Taxiway Hold Position signs are located adjacent to all taxiway connections to the runway. The signs have a red background with white letters. The signs are in good condition and are installed adjacent to the aircraft hold lines painted on each of the runway exit taxiways, approximately 125 feet from runway centerline.

Runway Distance Remaining Signs: Runway 07/25 is equipped with two Runway Distance Remaining (RDR) signs [2] [1] located on the north side of the runway. The RDR signs indicate the amount of runway remaining (for takeoff or landing rollout) in 1,000-foot increments. The signs have a green background with white letters. The signs are in good condition, although it is noted that the current FAA standard for RDR signs is a black background with white letters.

Information Signs: Information signs are located adjacent to the runway reminding pilots to use their checklist and monitor the 121.9 (common traffic advisory frequency 121.9 MHz). The signs have black lettering and white backgrounds and are in good condition. The current FAA standard for Information signs is a yellow background with black letters.

Weather Reporting

Sunnyside Municipal Airport has an automated weather observation system (AWOS-3PT) that provides 24-hour on-site weather information. The AWOS-3PT provides altimeter setting, wind data, temperature, dew point, density altitude, visibility, cloud/ceiling data, precipitation, and thunderstorm/lightning data. The AWOS-3PT is accessed by radio (123.675 MHz) or telephone (509) 836-2384.

Landside Elements

Landside facilities primarily accommodate most aircraft storage and support functions. They include aircraft aprons/tiedowns, hangars, aircraft fueling, utilities, fencing, surface roads, and vehicle parking.

APRONS & TIEDOWN AREAS

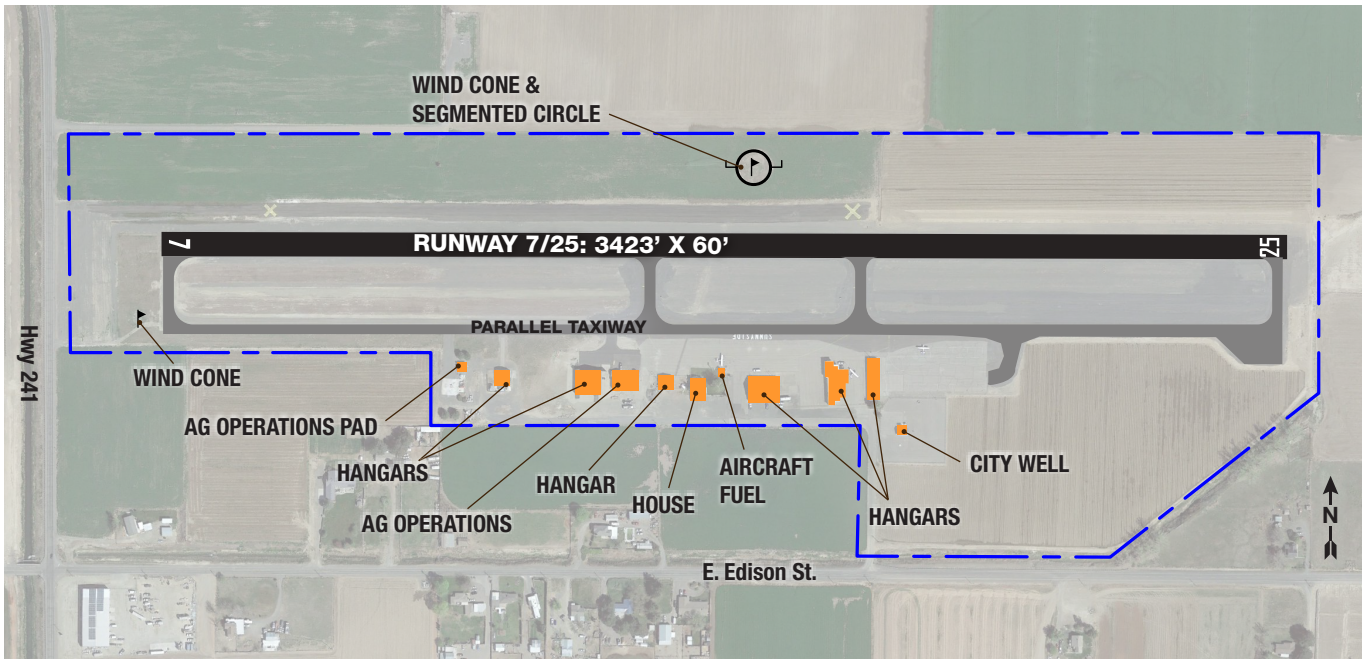
Sunnyside Municipal Airport has two public-use aprons located on the south side of the runway, adjacent to Taxiway A. The main apron supports aircraft ground operations, aircraft fueling, limited aircraft parking, and hangar access. The east apron has 18 small aircraft tiedowns, suitable for ADG I aircraft.

The Airport also has two private aprons used by local aerial applicators, located west of the main apron. The aprons have dedicated taxilane connections to Taxiway A and support aircraft ground operations, aircraft storage, storage of applications, and fueling.

AIRPORT FENCING

Sunnyside Municipal Airport is not fully fenced. The terminal area has sections of 5- and 6-foot chain link fencing, with pedestrian and vehicle gates. The City of Sunnyside's water well facility located east of the terminal area is fully fenced for security. Other areas of the Airport are unfenced or have limited range fencing.

Figure 2-9: Existing Conditions



AIRPORT ROAD ACCESS AND PARKING

Vehicle access to the Airport's south landside facilities is provided by a single paved roadway that connects to East Edison Road, which connects the Airport to downtown Sunnyside. The airport entrance is located one-half mile east of the intersection of East Edison and Hanford Road (State Hwy 241). Vehicle access to the apron and hangar areas is provided through an unfenced opening between the fuel facility and an adjacent large conventional hangar (east). Parking for approximately eight (8) vehicles is provided in a gravel lot adjacent to the airport access road. Airport tenants also park inside or next to their hangars.

AIRCRAFT FUEL

Sunnyside Municipal Airport has 100-octane low lead (100LL) aviation gasoline (AVGAS) available. A private contractor owns and maintains the fuel storage and dispensing system. Existing facilities include one above ground double-wall tank (10,000 gallons) and a 24-hour credit card payment system for self-fueling. The fixed-point fueling system is located near the west end of the main apron. The aircraft fueling system includes a containment area for the tank and overhead lighting.

Two additional fuel tanks located on the Airport are used by the two aerial applicators based at the Airport. Both of these tanks are for the owner's own use and are not accessible to other users.

HANGARS AND BUILDINGS

The Airport currently has six aircraft hangars located on the south side of the runway-taxiway system. Most of the hangars are located on and around the main apron, with additional hangars located adjacent to the western section of Taxiway A. Existing aircraft hangars include three conventional hangars; two T-hangars (4- and 5-unit); and one Quonset-style hangar. Other structures on the Airport include several storage buildings used by airport tenants, a private residence occupied by the airport caretaker, and a City of Sunnyside water well house facility.

UTILITIES

The developed areas of Sunnyside Municipal Airport have water, electrical, and telephone service. Utility lines servicing the facility are located along the airport access road. There are three fire hydrants spaced along the south side of the access road between the fuel area and the ag apron. Overhead electrical and buried telephone lines are located on the south side of the access road, with overhead connections to individual structures. The Airport is not connected to the City's sanitary sewer network. Instead individual septic tanks are used for the caretaker residence, pilot lounge and aerial applicator facilities.

Water service is provided by the City of Sunnyside. Electrical service is provided by Pacific Power. Telephone service is provided by Spectrum. Stormwater on the airport is handled through a system of swales and culverts that direct runoff to nearby drainage ditches.

PUBLIC SAFETY

Sunnyside Municipal Airport is served by city police, located 3 miles west and city fire and ambulance services, located 2.2 miles west. Astria Sunnyside Hospital is located 2.1 miles from the Airport. The hospital does not have an on-site helipad for medevac operations and transports patients to the Sunnyside Municipal Airport for air ambulance to transport.

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

Sunnyside Municipal Airport is owned and operated by the City of Sunnyside. The City's Public Works department is responsible for the day-to-day management of the Airport, in addition to any contractors who perform airfield maintenance and mowing as needed.

The privately-owned aviation fuel system is managed by a local operator. Airport tenants are responsible for managing their facilities and leased areas to meet the requirements defined in their leases.

AIRPORT FINANCE

The Airport operates within the City's General Fund, with all revenue generated through operations remaining in the Airport's budget. This is required by FAA to prevent revenue diversion from airport operations to the sponsor's general services. The primary revenue generating sources for the Airport include ground leases and rents from city-owned hangars and other buildings. Airport fuel sales are privately managed and no revenues (flowage fees, etc.) are currently generated for the Airport fund. The primary expenditures for the Airport include airport administration, maintenance, and facility improvements. Sunnyside Municipal's capital improvement projects are typically funded through FAA grants with a local match.

Table 2-10: Airport Financials (FY 2021 Budget)

AIRPORT EXPENSES	
Airport Operations	$44,092.80
Airport Administration	$11,792.36
TOTAL AIRPORT OPERATING EXPENSES	**$55,885.16**

Source: City of Sunnyside, Adopted 2021 Budget

Fiscal year 2021 operating expense budget for Sunnyside Municipal Airport is summarized in **Table 2-10**.

RULES AND REGULATIONS

The City of Sunnyside 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 Sunnyside 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 should meet the requirements set forth in the Surplus Act of 1944;
- 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 sponsor is contractually bound to various obligations referred to as "Grant Assurances", developed by the FAA and WSDOT 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 Washington) 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 accommodates 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 convert 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. A summary of FAA grant assurances is provided in **Appendix D**.

Project Planning, Design, And Contracting

Sponsor Fund Availability (Assurance #3)

Once a grant is given to the airport sponsor, the sponsor commits to providing the funding to cover their portion of the total project cost. Currently this amount is 10% 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 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 actually 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 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)

Sunnyside Municipal Airport 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 City

of Sunnyside utilizes pavement reports for Sunnyside Municipal Airport developed through the WSDOT Aviation airfield pavement management program. 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 of City limits directly abutting Yakima County. The airport sponsor should work with land use authority (Yakima County) to ensure there are zoning laws that protect the airport from incompatible land uses. Incompatible land uses around airports represents one of the greatest threats to the future viability of airports.

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 for 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 general aviation 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 City 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.

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

WSDOT Aviation Division Grant Assurances

In 2013, WSDOT Aviation adopted new grant assurances (WAC Chapter 468-260) for airport sponsors that are intended to protect the public's investment in the Washington aviation system. The WSDOT grant assurances apply to both NPIAS and non-NPIAS airports that receive funding through the WSDOT Airport Aid Grant Program. The WSDOT grant assurances are consistent and complimentary to FAA grant assurances with a significant emphasis placed on land use planning, public process, and environmental stewardship. A summary of the WSDOT grant assurances is included in **Appendix D**.

Chapter 3

Aviation Activity Forecasts

COVID-19 IMPACTS ON AVIATION ACTIVITY FORECASTS

This forecast was prepared the end of the second full year of the COVID-19 pandemic. The disruption of activity experienced throughout the U.S. airport system related to COVID-19 since 2020 is unprecedented and has led to significant declines in activity that are not consistent with recent historical trends. It is acknowledged that not all elements of general aviation activity have been affected equally. Some segments of personal air travel have demonstrated resilience, partly in response to the heavily impacted commercial airline industry.

Although the limits of the current industry-wide disruption have yet to be defined, it is believed that the underlying elements of demand within general aviation will remain intact until all public health constraints are fully addressed, and economic conditions gradually return to normal.

Federal Aviation Administration (FAA) forecast approval will be based in reference to the data and methodologies used and the conclusions at the time the document was prepared. However, consideration must still be given to the significant impacts of COVID-19 on aviation activity. As a result, there is lower than normal confidence in future growth projections.

FAA approval of the forecast does not provide justification to begin airport development. Justification for future projects will be made based on activity levels at the time the project is requested for development, rather than this forecast approval. Further documentation of actual activity levels reaching the planning activity levels will be needed prior to FAA participation in funding for eligible projects.

Note: The forecasts presented in this chapter were reviewed and approved by the FAA Seattle Airports District Office (07/19/22); see **Appendix E**.

Introduction and Overview

This chapter provides updated aviation activity forecasts for Sunnyside Municipal Airport (1S5) for the 20-year planning horizon (2021-2041). The most recent Federal Aviation Administration (FAA) approved aviation activity forecasts for the Airport were developed in the December 2008 Airport Layout Plan Update report.[1] The Airport can accommodate a full range of general aviation aircraft, including single-engine and multi-engine piston aircraft, aerial applicator aircraft, business class turboprops, small business jets and helicopters.

The forecasts presented in this chapter are consistent with the facility's current and historical role as a local general aviation airport serving the community and surrounding area. The forecasts are unconstrained and assume the City of Sunnyside will be able to make the facility improvements necessary to accommodate the anticipated demand unless specifically noted. The City will consider if any unconstrained demand will not or cannot be met through the evaluation of airport development alternatives later in the Airport Layout Plan (ALP) Report.

As noted in Chapter 2 - Existing Conditions, the 2017 Washington Aviation System Plan (WASP) defines Sunnyside Municipal Airport as "Local" airport classification. Local airports support GA activities including personal transportation, recreational flying, pilot training, and agricultural activities. Local airports are typically located outside of metropolitan areas and regional centers; they have paved primary runways; and 15 or fewer based aircraft.

1 Sunnyside Municipal Airport Layout Plan Update (Century West Engineering, 2008)

In the federal airport system, Sunnyside Municipal Airport is classified as a "Basic" general aviation airport – *2021 National Plan of Integrated Airport Systems (2021-2025)*, report to Congress. Basic airports provide a means for general aviation flying and link the community to the national airport system. Basic airports support general aviation activities such as emergency response, air ambulance service, flight training, and personal flying.

FAA Forecasting Process

The FAA provides aviation activity forecasting guidance for airport master planning projects. This guidance also applies to Airport Layout Plan Report forecast development, although the level of detail is typically reduced. *FAA Advisory Circular (AC) 150/5070-6B, Airport Master Plans*, outlines seven standard steps involved in the forecast process:

1. **Identify Aviation Activity Measures**: The level and type of aviation activities likely to impact facility needs. For general aviation, this typically includes based aircraft and operations.
2. **Previous Airport Forecasts**: May include the FAA Terminal Area Forecast (TAF), state or regional system plans, and previous master plans.
3. **Gather Data**: Determine what data are required to prepare the forecasts, identify data sources, and collect historical and forecast data.
4. **Select Forecast Methods**: There are several appropriate methodologies and techniques available, including regression analysis, trend analysis, market share or ratio analysis, exponential smoothing, econometric modeling, comparison with other airports, survey techniques, cohort analysis, choice and distribution models, range projections, and professional judgment.
5. **Apply Forecast Methods and Evaluate Results**: Prepare the actual forecasts and evaluate for reasonableness.
6. **Summarize and Document Results**: Provide supporting text and tables, as necessary.
7. **Compare Forecast Results with FAA's Terminal Area Forecast (TAF)**: Follow guidance in FAA Order 5090.5, Field Formulation of the National Plan of Integrated Airport Systems and Airport Capital Improvement Program. In part, the Order indicates that forecasts should not vary significantly (more than 10%) from the TAF. When there is a greater than 10% variance, supporting documentation should be supplied to the FAA. The aviation demand forecasts are then submitted to the FAA for their approval.

KEY ACTIVITY ELEMENTS

As noted above, general aviation airport activity forecasting focuses on two key activity segments: based aircraft and aircraft operations (takeoffs & landings). Detailed breakdowns of these activity segments include:

- Aircraft fleet mix
- Peak activity
- Distribution of local and itinerant operations
- Determination of the critical aircraft (also referred to as the design aircraft)

The critical aircraft represents the most demanding aircraft type or family of aircraft that uses an airport on a regular basis (a minimum of 500 annual takeoffs & landings). The critical aircraft is used to establish a variety of FAA design categories, which then establish design standards for airfield facilities. FAA airport design standard groupings reflect the physical requirements of specific aircraft types and sizes. Design items, such as runway length evaluations, are determined by the requirements of current/future critical aircraft. The activity forecasts also support the evaluation of several demand-based facility requirements including runway and taxiway capacity, aircraft parking, and hangar capacity.

Population and Economic Conditions

Historically, downturns in general aviation activity often occur during periods of weak economic conditions while growth typically coincides with favorable economic conditions. The historic depth of the 2008 Great Recession dramatically impacted regions and local communities and rippled throughout general aviation for several years after the official end of the recession. Following a slow economic recovery, the 10-year period of sustained economic growth leading into 2020 significantly improved conditions in general aviation including increased flight activity, sustained growth in new aircraft deliveries, particularly in the business aviation, helicopter, light sport aircraft, and kit aircraft segments. The onset of the COVID-19 pandemic in the United States in early 2020 began a period of rapidly declining economic conditions that once again disrupted civil aviation activity. The effects of the pandemic and related impacts have constrained the aviation industry over the last two years. However, signs of rebound within general aviation began to appear heading into 2021 and have been sustained despite ongoing economic challenges. This period has coincided with unprecedented levels of federal funding to facilitate economic recovery through investment in public facilities, including airports.

The FAA's current long-term Aerospace Forecast, Fiscal Years 2021-2041 was released in 2020. The forecast reflects overall strength in both the U.S. and regional economies and sustained, modest growth in aviation activity over the long-term. The 2021-2041 forecasts reflect areas of depressed general aviation activity in the near term and the assumption that general aviation will return to pre-COVID activity levels later in the forecast period, before resuming previously forecast growth. It appears that long-term growth in general aviation, although positive, may be tempered by the impacts of COVID-19 for the near future. The cumulative impacts of recent domestic and global events and conditions on civil aviation activity will be addressed in the next update of the FAA forecast in 2022 or 2023.

POPULATION

The population within an airport's service area, in broad terms, affects the type and scale of aviation facilities and services that can be supported. Changes in population often reflect broader economic conditions that may also affect airport activity. The service area for Sunnyside Municipal Airport includes the local community and extends into lower Yakima County. For forecasting aviation activity, an evaluation of population for both the City of Sunnyside and Yakima County provides a reasonable indication of trends within the Airport's service area.

Historical Population (2010-2021)

Yakima County's population has grown by about 6% (net gain of 14,869 residents) since the 2010 Census. Annual population growth between 2010 and 2021 (0.54% AAGR[2]) trailed the statewide population growth (1.32% AAGR) during this period, which is consistent for eastern Washington counties. Also worth noting, population growth in unincorporated Yakima County, which includes areas surrounding Sunnyside, averaged 0.48% AAGR over this 11-year period.

During this period, Sunnyside outpaced county-wide growth with a 6.4% overall increase (0.57% AAGR) and a net gain of 990 residents. This rate of growth is virtually identical to the 0.58% AAGR documented for Sunnyside during the 14 years since the last airport plan was completed in 2008.

The recent historical population growth rate in Sunnyside and Yakima County are comparable. For this reason, it appears that the State of Washington Office of Financial Management (OFM) long term population forecasts for Yakima County will provide a reasonable projection of future population growth trends that can be applied to the City of Sunnyside for airport layout plan evaluations. Recent historical population data and average annual growth rates for Sunnyside, Yakima County (overall and unincorporated areas), several other incorporated cities in the county, and Washington are summarized in **Table 3-1**.

2 AAGR = Average Annual Growth Rate (compounded over time)

Table 3-1: Yakima County Population Summary (Historical)

	AAGR[1]	2010	2017	2018	2019	2020	2021
Washington	1.32%	6,724,540	7,310,300	7,427,570	7,546,410	7,707,047	7,766,975
Yakima County	0.54%	243,231	253,000	254,500	255,950	256,728	258,100
Sunnyside	0.57%	15,410	16,640	16,850	17,070	16,375	16,400
Grandview	0.08%	10,862	11,170	11,180	11,200	10,910	10,960
Mabton	-0.13%	2,286	2,315	2,315	2,320	1,959	1,975
Yakima	0.64%	91,196	93,900	94,190	94,440	96,968	97,810
Unincorporated (Outside UGBs)	0.48%	83,755	87,115	87,715	88,155	88,147	88,240

Source: U.S. Census Bureau (2010, 2020); WA Office of Financial Management (OFM) Postcensal Estimates (2017-2021)
1 AAGR: 2010-2021

Forecast Population

In Washington state, the Office of Financial Management (OFM) is responsible for developing long term population forecasts to support various local and state government programs. OFM also generates postcensal estimates of population on April 1 each year to supplement available census data. OFM periodically generates 20-year population forecasts for Growth Management Act (GMA) counties for use in their comprehensive planning; the most recent GMA forecast was issued in 2017.[3] OFM also periodically prepares forecasts of Washington state population outside the GMA updates. The most recent Washington state forecast was issued in December 2021.[4]

The current Yakima County comprehensive plan (Horizon 2040) was adopted in 2017. This plan contains OFM population forecasts that were generated in 2015. The Horizon 2040 forecast (2020-2040) was based on the OFM Medium Series forecast for Yakima County and included a population distribution for 14 incorporated cities and unincorporated Yakima County. A summary of the comprehensive plan forecast (county wide and selected cities) is presented in **Table 3-2**.

Table 3-2: Yakima County Horizon 2040 (Comprehensive Plan) Population Forecast

	AAGR[1]	2020	2025	2030	2035	2040
Yakima County	0.84%	269,347	282,057	294,445	306,636	318,494
Incorporated	0.76%	172,300	179,579	186,661	193,659	200,511
Unincorporated (Outside UGBs)	0.98%	97,047	102,478	107,784	112,977	117,983
Select Cities						
Sunnyside	0.65%	17,030	17,668	18,271	18,850	19,397
Grandview	0.07%	11,762	12,239	12,695	13,137	13,558
Mabton	0.05%	2,401	2,471	2,535	2,595	2,649
Yakima	0.62%	97,493	100,993	104,288	107,433	110,387
Other Recent Forecasts						
Yakima County (2017 GMA)[2]	0.79%	262,887	274,932	287,567	298,162	307,591
Washington (2017 GMA)[2]	0.96%	7,638,415	8,085,043	8,503,178	8,894,306	9,242,022
Washington (2021 Forecast)[3]	0.83%	7,707,047	8,041,743	8,399,102	8,749,819	9,092,210

Source: Yakima County Comprehensive Plan (Horizon 2040), Adopted August 2017
1. AAGR: 2020-2040
2. Washington Office of Financial Management (OFM): 2017 GMA Forecast (County) – Medium Series
3. Washington Office of Financial Management (OFM): Forecast of the State Population, December 2021

3 State of Washington Office of Financial Management (https://ofm.wa.gov/washington-data-research/population-demographics/population-forecasts-and-projections/growth-management-act-county-projections/growth-management-act-population-projections-counties-2010-2040-0)
4 State of Washington Forecast of the State Population, December 2021 Forecast (Forecasting and Research Division, Office of Financial Management, December 2021)

It is noted that Yakima County's Horizon 2040 comprehensive plan was adopted prior to COVID-19 pandemic and its underlying population and economic projections do not reflect recent events. This is indicated by the most recent (April 1, 2021) OFM estimates for Sunnyside and Yakima County presented in **Table 3-1** falling below the 2020 forecast presented in **Table 3-2**. Two more recent OFM forecasts are also noted in **Table 3-2**, although only the 2021 Washington state population forecast reflects impacts related to COVID-19, which pushed down statewide average annual growth from 0.96% to 0.83% between 2020 and 2040.

Summary – Population

Despite recent disruptive events, long-term population growth for Sunnyside, Yakima County, and Washington is expected to be sustained at just less than 1% annually between 2020 and 2040. As with the historical population data, local population growth is expected to trail statewide growth slightly. The anticipated growth in local and county population is consistent with conditions favorable to growth in air traffic activity at Sunnyside Municipal Airport.

ECONOMY

Yakima County's economy is heavily influenced by agriculture and the region's economic output reflects a diverse range of production. Dan Meseek, regional labor economist with the Washington Employment Security Department (ESD) characterizes the Yakima County job market as being moderated by agriculture "in good years we grow slower than Washington state, but in the bad years we do not lose jobs as rapidly as the state." The current Yakima County profile[5] summarizes the local and regional economy, with a preliminary assessment of COVID impacts and subsequent events. According to the County profile, agriculture is the single largest employment segment in Yakima County, with health services and local government rounding out the top three segments (accounting for 55% of total employment in the county in 2020).

The Washington State Dairy Federation reports that in 2012 the Yakima Valley region supported 91 dairies and over 110,000 cows – one of the largest dairy-producing areas in the nation. Industrial processing and transportation services are critical components of the local agricultural economy. An example is Lynden Transport Industries (LTI) Sunnyside terminal that supports a wide range of food grade product transport, including fruit juices and milk. This facility is part of the company's network of trucking services, a business that uses Sunnyside Municipal Airport with company aircraft. LTI's Milky Way division, recognized as the leading milk hauler in the Pacific Northwest, supports a network of local milk producers and the recently expanded Darigold Sunnyside Plant. As reported in 2016, the Darigold plant processes nearly 9 million pounds of raw milk daily, most of it from dairies located within 30 miles.[6]

Table 3-3 summarizes the county's leading employment sectors. It is noted that agricultural-related manufacturing (food processing) accounts for just under half of total manufacturing employment in Yakima County. The economic impacts of agriculture in Yakima County are well established and this industry is a major part of the Sunnyside economy. State of Washington 2020 data indicate total employment for Yakima County was 110,800, down about 2.3% from 2019 levels. The county experienced a decline in employment during the COVID-19 pandemic, which led that sharp increase in the unemployment rate. Preliminary 2021 data indicate improvement across most industry sectors as employment levels gradually returned to pre-pandemic levels both locally and statewide.

5 Yakima County Profile, Washington Employment Security Department (April 2022)
6 Tri-Cities Area Journal of Business (https://www.tricitiesbusinessnews.com/2016/07/darigold-completes-97-million-expansion-sunnyside-plant/), July 2016.

Table 3-3: Yakima County Employment (2020)

	Number of jobs	Share of employment
Agriculture, forestry, fishing	30,767	27.8%
Health services	16,543	14.9%
Local government	13,079	11.8%
Retail trade	10,623	9.6%
Manufacturing	8,010	7.2%
All other industries	31,778	28.7%
Total	**110,800**	**100%**

Source: Washington Employment Security Department – Yakima County Profile (April 2022)

Personal Income

Yakima County trails state and national per capita income levels and has a higher level of poverty. The conditions are consistent with a seasonal agricultural economy where access to full-time year-round employment is limited. The current ESD Yakima County profile provides the following summaries related to personal income:

- Inflation-adjusted per capita income in Yakima County in 2020 was $49,099 compared to the state at $67,126 and the nation at $59,510.
- Median household income from 2016 through 2020 (in 2020 dollars) was $54,917 in Yakima County, 71.3% of the state's median household income of $77,006 and 84.5% of the United States at $64,994.
- Yakima County's poverty rate in 2020 was higher (14.8%) than the state's (9.5%) and the nation's (11.4%) poverty rates.

Unemployment

Yakima County's reliance on the agricultural economy is reflected in its distinct seasonal shifts in unemployment rates. Typically, peak unemployment levels occur in the winter and the lowest unemployment levels are found during peak summer months. A review of eleven years (pre COVID: 2009-2019) of historical unemployment data indicates an average spread of 5.12 percentage points between the high and low recorded monthly unemployment levels each year. The range within the spread is narrow and consistent with recognized seasonal patterns in the industry.

Data indicate that in the years following The Great Recession (2009-2012), both the high and low unemployment rates were elevated, and seasonal variation was reduced. The peak level of unemployment (14.4%) recorded during the COVID-19 pandemic was in April 2020, and the seasonal variation was significantly higher than normal (8.2 percentage points). The data for 2021 are consistent with the extended (pre-COVID) period for peak seasonal variation (5.0 percentage point spread), indicating some re-stabilization in the local economy. The April 2022 unemployment rate was 6.2%, down from the recent peak of 8.9% in January.

Economic Outlook

The Washington Employment Security Department (ESD) generates annual short and long-term employment forecasts by region. Yakima County is in the South-Central region, which also includes Asotin, Benton, Columbia, Franklin, Garfield, Kittitas, and Walla Walla counties. The ESD projections show expected changes in employment by industry and occupation, current and projected employment counts, estimated growth rates and average annual openings.

The current five- and ten-year forecasts for the South-Central region are summarized in **Table 3-4**. The near-term forecast (2019-2024) reflects a net decline in employment for 2024 based on the mid-2021 update performed in the second year of the current COVID -19 pandemic. The longer-term forecast (2024-2029) shows more traditional growth, averaging just under 1% annually.

Table 3-4: South Central Region Employment Forecast By Industry (Updated July 2021)

Job Categories	Estimated employment 2019	Estimated employment 2024	Estimated employment 2029	Average annual growth rate 2019-2024	Average annual growth rate 2024-2029
TOTAL NONFARM	113,400	109,000	114,100	-0.79%	0.92%
NATURAL RESOURCES and Mining	300	300	300	0.00%	0.00%
Logging	200	200	200	0.00%	0.00%
Mining	100	100	100	0.00%	0.00%
CONSTRUCTION	5,700	5,500	5,800	-0.71%	1.07%
MANUFACTURING	11,000	10,200	10,200	-1.50%	0.00%
Durable Goods	4,600	4,300	4,200	-1.34%	-0.47%
Wood Product Manufacturing	700	700	600	0.00%	-3.04%
Nonmetallic Mineral Product Manufacturing	100	100	100	0.00%	0.00%
Primary Metal Manufacturing	0	0	0	0.00%	0.00%
Fabricated Metal Product Manufacturing	1,000	1,000	1,000	0.00%	0.00%
Machinery Manufacturing	700	600	600	-3.04%	0.00%
Aerospace Product and Parts Manufacturing	1,400	1,200	1,200	-3.04%	0.00%
Other Transportation Equipment	200	200	200	0.00%	0.00%
Other Durable Manufacturing	400	400	400	0.00%	0.00%
Non-Durable Goods	6,400	5,900	6,000	-1.61%	0.34%
Food and Beverages Manufacturing	4,100	3,900	4,000	-1.00%	0.51%
Paper Manufacturing	400	400	400	0.00%	0.00%
Printing and Related Support Activities	100	100	100	0.00%	0.00%
Other Non-Durable	1,800	1,500	1,500	-3.58%	0.00%
WHOLESALE TRADE	5,400	5,400	5,500	0.00%	0.37%
RETAIL TRADE	13,500	13,000	12,900	-0.75%	-0.15%
Food and Beverage Stores	2,900	3,000	3,000	0.68%	0.00%
Motor Vehicle and Parts Dealers	2,000	1,800	1,800	-2.09%	0.00%
Other Retail Trade	8,600	8,200	8,100	-0.95%	-0.25%
TRANSPORTATION, WAREHOUSING AND UTILITIES	4,200	4,400	4,600	0.93%	0.89%
Utilities	200	300	300	8.45%	0.00%
Transportation and Warehousing	4,000	4,100	4,300	0.50%	0.96%
INFORMATION	1,000	700	700	-6.89%	0.00%
Software Publishers	100	100	100	0.00%	0.00%
Other Information	700	500	500	-6.51%	0.00%
FINANCIAL ACTIVITES	3,300	3,200	3,300	-0.61%	0.62%
Finance and Insurance	2,100	2,000	2,100	-0.97%	0.98%
Real Estate, Rental and Leasing	1,200	1,200	1,200	0.00%	0.00%
PROFESSIONAL and BUSINESS SERVICES	5,700	5,500	6,000	-0.71%	1.76%
Professional, Scientific and Technical Services	2,200	2,200	2,400	0.00%	1.76%
Management of Companies and Enterprises	700	700	800	0.00%	2.71%
Other Professional Services	2,600	2,400	2,600	-1.59%	1.61%
Employment Services	200	200	200	0.00%	0.00%
EDUCATION and HEALTH SERVICES	20,400	21,400	23,100	0.96%	1.54%
Education Services	1,600	1,500	1,600	-1.28%	1.30%
Health Services and Social Assistance	18,800	19,900	21,500	1.14%	1.56%
LEISURE and HOSPITALITY	12,000	9,000	9,600	-5.59%	1.30%
Arts, Entertainment and Recreation	1,500	1,000	1,100	-7.79%	1.92%
Accommodation and Food Services	10,500	8,000	8,500	-5.29%	1.22%
OTHER SERVICES	3,700	3,100	3,700	-3.48%	3.60%
GOVERNMENT	27,200	27,300	28,400	0.07%	0.79%
Federal Government	1,600	1,600	1,600	0.00%	0.00%
State and Local Government Other	11,300	11,200	11,700	-0.18%	0.88%
Government Educational Services	14,300	14,500	15,100	0.28%	0.81%

Source: Washington Employment Security Department/LMEA, South-Central Region (July 2021 update)

Woods & Poole Forecasts

A review of Woods & Poole Economics, Inc., population, and economic forecasts for the region reflect similar long-term growth expectations. Woods & Poole forecasts are recognized nationally for the demographic detail provided down to the county level, with additional breakouts provided for a variety of defined place designations. The Woods & Poole 2021 State Profile Series[7] forecast for Washington state contains regional data and projections for all Combined Statistical Areas (CSAs), Metropolitan Statistical Areas (MSAs), Micropolitan Statistical Areas (MICROs), Metropolitan Divisions (MDIVs), and counties in the state. The current forecasts extend to 2050 and provide a useful comparison to shorter term projections developed by state or local government. Although some differences in data organization may exist from the forecasts noted earlier, the overall growth rates within the forecasts provide relevant evaluations of long-term economic growth for comparison. **Table 3-5** summarizes key growth rates for Yakima County from the Woods & Poole 2021-2050 forecasts. The economic data are presented in 2012 dollars, referred to as "constant" dollars, which are used to measure real change in earnings and income when inflation is considered.

Table 3-5: Yakima County – Forecast Annual Growth Rates (2021-2050)

Annual Growth Rates (2021-2050) Data Category	Average
Total Population	0.43%
Total Employment (includes farm employment)	1.02%
Total Earnings (2012 $)	1.75%
Personal Income (2012 $)	1.98%
Income Per Capita (2012 $)	1.55%
Mean Household Income (2012 $)	1.55%
Gross Regional Product (2012 $)	1.77%

Source: Woods & Poole Economics, 2021 State Profile Series (Idaho, Washington, Oregon)
2012 referenced data represents "constant" dollars used to measure real change over time when inflation is considered.

Summary – Economic Outlook

Modest population growth is expected for Yakima County during the current ALP 20-year planning horizon. Annual population growth is projected to average about 0.4% over this period, which is comparable to the historical growth experienced over the last 20 years. As with historical population trends, local growth is expected to be slower than statewide growth. Long term economic forecasts project more robust growth in terms of employment levels and measures of economic output (post-COVID-19 pandemic recovery).

The Woods & Poole 2021-2050 forecast for Yakima County highlights several key long-term indicators. The forecast projects employment growth to increase at twice the rate of population growth over the 29-year period. In addition, forecast per capita income, household income, and gross regional product outpaces employment growth over the long term. This suggests a long-term strengthening in the economy that will generate demand for services and transportation.

Data indicates that the agricultural components of the Yakima County economy will continue leading economic growth in the county. It is reasonable to assume that the influence of agriculture on activity at Sunnyside Municipal Airport will continue in the future with growth that is consistent with overall industry trends and growth within the community.

Several changes in activity experienced at the Airport since the last Airport Layout Plan (ALP) project are directly attributed to growth in key industries (agriculture, health services, and transportation). This includes private investment in hangar facilities associated a new aerial applicator business established at the Airport and an increase in transient aircraft activity associated with local hospital medevac flights and corporate operational support for a major trucking freight terminal. The ability of the Airport to accommodate a variety of business and personal travel activities and recreational aviation is a critical factor in attracting these industries to the local community.

7 2021 State Profile – Idaho, Oregon, and Washington. Copyright 2021, Woods & Poole Economics, Inc. Washington, D.C.

The anticipated growth in local population and economic output is expected to be modest during the current ALP planning period. The expected underlying growth will provide a solid foundation for generating additional air traffic demand at Sunnyside Municipal Airport that is consistent with overall expectations for the community and region.

Historical Aviation Activity

Historical activity data for Sunnyside Municipal Airport is limited to FAA Airport Record Forms (5010-1), the FAA Terminal Area Forecast (TAF), and periodic airport plans. As noted earlier in this chapter, the primary data used in general aviation airport planning includes based aircraft and annual aircraft operations. The methods used to develop these data are described below.

The two cited FAA records appear to rely on common data, although the directional relationship between the records is not always clear. The current TAF and 5010 for Sunnyside Municipal Airport have exact data (based aircraft and annual aircraft operations totals) representing current activity. The current 5010 (data for 12 months ending 12/31/2018) and TAF (2020) both report 10 based aircraft and 24,000 annual aircraft operations. The source of the annual operations totals is unknown, although it is noted that the TAF lists the same number dating back to 1994. The extended timeline of TAF historical aircraft operations data directly corresponding to the current 5010 form appears to demonstrate that the TAF was used to populate the 5010. FAA 5010 forms are periodically updated by airport sponsors with best available data and submitted to FAA for publication; the TAF is updated by FAA without a formal data verification process for airport sponsors. The inconsistencies noted above indicates that the two FAA data sets cannot be assumed to be independent indicators of activity.

The process for updating based aircraft counts has become significantly more dependable in recent years with the FAA National Based Aircraft Inventory Program that relies on airport owner visual verification and records searches. The data base allows FAA to verify reporting of “validated counts” by eliminating inactive or non-airworthy aircraft and aircraft reported by other airports.

The process for updating 5010 form aircraft operations data at non-towered airports is far more challenging. Accurately tracking aircraft operations numbers by airport management is not feasible without actual counts (e.g., air traffic control tower or other on-site traffic counts). Without actual traffic counts, airport sponsors typically interpolate/extrapolate available airport master plan forecasts, rely on the current year TAF data, or simply carry forward the existing 5010 entry. These methods are not considered highly accurate and will not be used to define baseline operations levels for the ALP Report. However, these data are summarized below for reference.

The 2008 ALP Report forecasts also concluded that available TAF operations data could not be adequately documented, and they were not used in the recommended forecast. The forecasts noted the inconsistency reflected in the TAF’s 24,000 annual operations total (unchanged since 1994) and the resulting ratio of 1,200 operations per based aircraft (OPBA) was not consistent with FAA activity expectations at small GA airports.

A recent review of Sunnyside Municipal Airport’s TAF historical data (1990 forward) indicates that the 2008 ALP Report’s updated baseline activity data was only partially incorporated into the TAF. The annual aircraft operations total (3,750) was not entered in the TAF, while the TAF’s 2007 based aircraft total (15) was updated to match the 2007 baseline for the ALP Report forecast.

The current National Based Aircraft Inventory Program (December 2021) validated count for Sunnyside Municipal Airport is 13 aircraft. This data is not yet reflected in the current 5010 or the March 2022 TAF update but is accepted as the baseline for developing updated based aircraft forecasts for the ALP. The updated aircraft operations data presented in Chapter 2 - Existing Conditions will be used as the baseline for the aviation activity forecasts.

A summary of current and historical activity data for the Airport is presented in **Figure 3-1**.

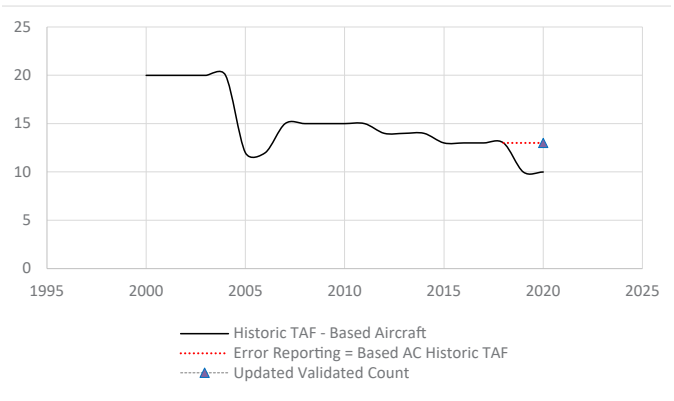
Figure: 3-1: Activity Summary - FAA TAF, FAA 5010 Airport Record Form; 2008 ALP Report

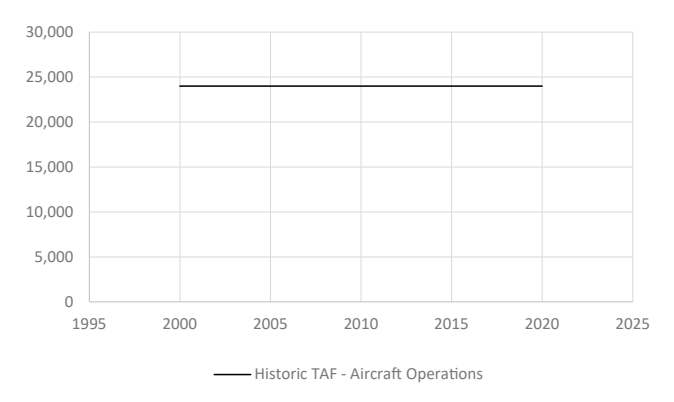
Available activity estimates for Sunnyside Municipal Airport from FAA Terminal Area Forecast (TAF), Airport Record Form (5010-1), the 2008 ALP Report, and the Airport's 2021 validated based aircraft count are summarized below.

Based Aircraft and Operations

Aircraft Type	Updated Airport Count[1] (2021)	Airport Master Record[2] (12 months ending 12/31/18)	2008 ALP Update Report[3] (2007 Baseline)
Single Engine	12	9	14
Multi Engine	1	1	1
Jet	0	0	0
Helicopter	0	0	0
Glider	0	0	0
Military	0	0	0
Ultra-Light	0	0	0
Total Based Aircraft	13	10	15
Annual Operations	**4,225**	**24,000**	**1,980**

1. www.BasedAircraft.com (Validated June, 2020)
2. Airport Master Record (5010) June 18, 2020
3. Airport Layout Plan Report – Sunnyside Municipal Airport Layout Plan Update (Final Report, December 2008, Century West Engineering)





Current Aviation Activity

Updated estimates of existing based aircraft and aircraft operations (takeoffs and landings) were prepared based on airport records and data provided by individual operators at Sunnyside Municipal Airport. Aircraft takeoffs and landings are defined as operations by FAA, with a single takeoff or landing counted as one operation. A touch-and-go landing is counted as two operations since it involves both a takeoff and landing. Since air traffic counts are not available to document most flight activity at the Airport, an FAA-recommended operations per based aircraft (OPBA) formula was applied to the 2021 verified based aircraft count to approximate this activity.

FAA Order 5090.5 Formulation of the NPIAS and ACIP, suggests a methodology for non-towered airports that relies on a general formula for estimating operations by utilizing an activity ratio that is applied to based aircraft. The Order identifies a typical range of 250 to 450 OPBA for distinct types of general aviation airports depending on the airport's role in the NPIAS. Consistent with FAA NPIAS guidance, the recommended multiplier (250 OPBA) for a Basic General Aviation airport was used. In addition to the basic flight activity, three individual activity segments (medevac, aerial applicator, and regular transient corporate operator) were identified for specific evaluation based on their unique operations and the ability to obtain accurate activity data from the operators. The activity for these segments is summarized below and in **Table 3-6**. Current activity at the Airport is 13 based aircraft and 4,225 annual operations.

AERIAL AMBULANCE (MEDEVAC)

Two aerial ambulance operators (Life Flight and Air Lift Northwest) conduct most medevac flights at Sunnyside Municipal Airport. The operators provide critical patient transports from Astria Sunnyside Hospital, an Adult Trauma Level IV facility.[8] Critical patient transports are performed when life threatening conditions require emergency treatment at higher level trauma care facilities, typically located in large population centers. Life Flight and Air Lift Northwest provide close support with fixed-wing and rotor aircraft based at nearby airports in Yakima and Richland.

Source: Google Images

Currently 100% of Astria Sunnyside Hospital's medevac flights are accommodated at Sunnyside Municipal Airport. This includes fixed-wing aircraft that require a runway and helicopters (the hospital is not equipped with helipad facilities). The aircraft types typically stationed in the region include the Pilatus PC-12 (pressurized single engine turboprop) and the Agusta AW119 (single-engine turbine helicopter). All current medevac flights at Sunnyside Municipal Airport are limited to visual flight rules (VFR) weather conditions based on existing airport facilities capabilities.

Local emergency medical service (EMS) staff report the current operations level for the Pilatus PC-12 medevacs at Sunnyside Municipal Airport averages 4 flights per week. This equates to 8 operations per week and 416 annual operations. The current operations level for the medevac helicopters at the Airport averages 1 flight per week. This equates to 2 operations per week and 100 annual operations. Weekly demand levels can vary and are often higher during peak periods.

8 Trauma Level IV defined by WA. Department of Health.

It is anticipated that future demand for critical patient transports will increase as the local community and surrounding area grows. It is reasonable to assume that Sunnyside Municipal Airport will continue to accommodate fixed-wing medevac flights for Astria Sunnyside Hospital based on established service and demand levels. It also appears that the Airport will continue to support helicopter medevac flight activity for the foreseeable future. However, if helipad facilities are added at the hospital in the future, it is assumed that the majority of helicopter medevac flight activity would move to the hospital.

The Pilatus PC-12 is included in Aircraft Approach Category A (Approach Speed in landing configuration: 87 knots) and Airplane Design Group II (wingspan 53' 3"; tail height 14'). The PC-12 has a maximum takeoff weight below 12,500 pounds and is included in the small aircraft category. These design components correspond to **Airport Reference Code (ARC) A-II (Small Aircraft)**. The medevac helicopters are also included in Aircraft Approach Category A.

AERIAL APPLICATORS

Sunnyside Municipal Airport currently accommodates two locally based aerial applicators with one aircraft each. The current activity reported by local aerial applicators is 875 annual operations. Demand levels vary by season, with the heaviest periods running from spring to late fall. The flight activity generated by the two commercial operators accounts for about 20% of all activity at the Airport. The aircraft currently operated are described below.

AG Air Flying Service operates an Air Tractor 802 (AT-802A), a single engine turboprop. The AT-802A is included in Aircraft Approach Category A (Approach Speed in landing configuration: 70 knots) and Airplane Design Group II (wingspan 59' 3"; tail height 11' 1.5"). The AT-802A has a maximum takeoff weight of 16,000 pounds and is included in the large aircraft category. These design components correspond to **Airport Reference Code (ARC) A-II.**

The second locally based aerial applicator (Jorn Tronstad) operates an Air Tractor 301 (AT-301), a single engine piston engine aircraft. The AT-301 is included in Aircraft Approach Category A (Approach Speed in landing configuration: 64 knots) and Airplane Design Group I (wingspan 45' 1.25"; tail height 8' 6"). The AT-301 has a maximum takeoff weight of 7,400 pounds and is included in the small aircraft category. These design components correspond to **Airport Reference Code (ARC) A-I (Small Aircraft)**.

Based on local aerial applicator reporting, the current level of 875 annual operations at Sunnyside Municipal Airport includes 700 A-II and 175 A-I operations. The current volume of flight activity at the Airport is relatively stable and reflects market opportunities and competition among spray operators. However, it is reasonable to assume that growth in regional agricultural will contribute to increased demand for aerial applicator services during the current planning period.

BUSINESS AVIATION USERS

Sunnyside Municipal Airport accommodates a variety of business aviation users with aircraft ranging from single-engine piston aircraft to small jets. The volume of flight activity by individual users is limited to several trips per year. Since there are no definitive estimates for this activity grouping (estimated to be 100 to 200 annual operations), the transient activity is captured in the OPBA ratio applied to locally based aircraft in Table 3-6.

A transient corporate user that operates regularly at the Airport is Bering Marine Corporation, which is part of the Lynden Transport (LTI) family of businesses. Bering Marine operates a Pilatus PC-12 with an average of 3 to 4 trips to Sunnyside per month, depending on weather. This equates to 84 annual operations. The aircraft is based at Skagit Regional Airport in Burlington (163 nautical air miles, 236 road miles from Sunnyside) and is used to transport management and operations staff to LTI's Sunnyside freight terminal. The aircraft allows staff from the various locations to routinely conduct business in Sunnyside and make the roundtrip back home in a single day. The operator indicates that some planned flights to Sunnyside are cancelled, delayed, or re-routed to Yakima when local weather conditions do not permit flight in visual conditions. The addition of instrument approach and departure procedures was identified by the operator as an airport improvement that would increase their use of the Airport. As noted earlier, the Pilatus PC-12 is included in **Airport Reference Code (ARC) A-II (Small Aircraft)**.

OTHER GA AIRCRAFT ACTIVITY

Sunnyside Municipal Airport currently has 13 based aircraft, including 2 aerial applicator aircraft described earlier in this section. The remaining 11 based aircraft are privately owned non-commercial piston engine aircraft, including 10 single engine and 1 multi engine aircraft. Based on FAA methodology, annual flight activity attributed to these aircraft is captured within the 250 OPBA ratio used to approximate the overall airport activity generated by both non-duplicated based aircraft and transient users. Current flight activity generated by non-specific aircraft without operator-reported data is estimated to total 2,750 annual operations (11 x 250 OPBA). This aircraft activity includes primarily single engine and multi engine piston, turboprops, small jets, and helicopters. Most of this fixed wing activity is generated by small ADG I aircraft.

Summary – Current Activity

The current mix of air traffic at Sunnyside Municipal Airport includes users that have direct ties to the local economy and a wide range of personal and business travel and recreational aviation. Agricultural aviation is represented by two local aerial applicator tenants with based aircraft. The remaining commercial activity is generated by transient aircraft, including air ambulance flights and aircraft used for business travel. Eleven of the Airport's 13 based aircraft are used primarily for personal travel. **Table 3-6** summarizes the current level of aircraft activity for Sunnyside Municipal Airport that will be the baseline for all new aviation activity forecasts developed in the 2021-2041 ALP Report Update.

Table 3-6: Airport Activity Summary (2021)

Operator	A/C Type	ARC	Annual Operations
Aerial Applicator[1]	Air Tractor 802	A-II	700
	Air Tractor 301	A-I	175
Medevac[1]	Pilatus PC-12	A-II	416
	Agusta Westland AW119Kx	Heli	100
Corporate User 1[2]	Pilatus PC-12	A-II	84
Other Local & Transient Activity[3]	SE Piston	A-I	2,600
	ME Piston	B-I	60
	Turboprop	B-I	30
	Jet	B-II	10
	Helicopter	Heli	50
TOTAL OPS - ALL			4,225
TOTAL OPS - A-I			2,775
TOTAL OPS - B-I			90
TOTAL OPS - A-II			1,200
TOTAL OPS - B-II			10
TOTAL OPS - HELI			150
TOTAL OPS - ALL A/C			4,225
Based Aircraft			13

1. Operations counts provided by aircraft operators.
2. Bering Air Pilatus PC-12 based at BVS.
3. Operations are estimates using 250 OPBA applied to based aircraft counts and are exclusive of counts provided by operators.

Existing Aviation Activity Forecasts

Existing forecasts for Sunnyside Municipal Airport include the FAA Terminal Area Forecast (TAF), the previous ALP Report completed in 2008, and an outdated Washington aviation system plan completed in 2007. Each of these forecasts have relevancy issues that do not support valid comparisons with current activity or updated forecasts presented later in this chapter.

FAA TERMINAL AREA FORECAST

The March 2022 TAF lists 10 based aircraft and 24,000 annual operations for the Airport in its most recent historical year (2020) and maintains these numbers unchanged through 2045. The TAF baseline and projected activity data are not considered to accurately reflect current or future potential activity for the Airport. The deviations will need to be considered by FAA when the recommended ALP Report forecasts are compared to the TAF, as required by FAA. **Table 3-7** summarizes the 2022 TAF and notes the updated baseline activity, which represents 2021 activity.

Table 3-7: FAA TAF – Sunnnyside Municipal Airport 2008 ALP Report – Forecast Summary

Forecast	AAGR	2020	2025	2030	2035	2040
Based Aircraft	0.00%	10	10	10	10	10
Annual Aircraft Operations	0.00%	24,000	24,000	24,000	24,000	24,000
FAA National Based Aircraft Inventory Program	-	13*	-	-	-	-
* December 2021 Validated Count						

Source: FAA Terminal Area Forecast (1S5) Issued March 2022; National Based Aircraft Inventory Validated Based Aircraft Count, December 2021
AAGR: Average Annual Growth Rate

2008 ALP REPORT FORECASTS

The 2008 ALP Report provided forecasts for the 2007-2027 planning period. The forecast projected based aircraft to increase from 15 to 20, which represents an average annual growth rate of 1.7%. Annual aircraft operations were projected to increase from 3,750 to 6,300, which represents an average annual growth rate of 2.63%. The updated baseline data noted above can be compared to the 2022 forecast to determine current relevance. **Table 3-8** summarizes the 2008 ALP Report forecasts and notes the updated baseline activity, which represents 2021 activity.

Table 3-8: 2008 ALP Report – Forecast Summary

Forecast	AAGR	2007	2012	2017	2022	2027
Based Aircraft	1.70%	15	17	18	19	21
Annual Aircraft Operations	2.63%	3,750	4,420	4,860	5,320	6,300
2021 Baseline (Based Aircraft)	-	-	-	-	13	-
2021 Baseline (Aircraft Operations)	-	-	-	-	4,250	-

Source: Century West Engineering; AAGR: Average Annual Growth Rate

WASHINGTON STATE AVIATION SYSTEM PLAN FORECAST

The 2017 WASP does not include individual airport activity forecasts. The most recent system plan forecasts prepared for individual airports were included in the 2007 Long Term Air Transportation Study (LATS). The LATS was replaced with the 2017 WASP, although no new airport specific forecasts were included. The LATS forecasts are considered obsolete and are not currently used by WSDOT to support its system planning analyses.

Updated Aviation Activity Forecasts

Updated aviation activity forecasts developed for the ALP Report's 20-year planning period (2021-2041) are presented in this section. The updated activity forecasts use the common baseline activity data presented earlier in **Table 3-6** and provide projections in 5-year increments. A review of the preliminary based aircraft and annual aircraft operations models presented is provided at the end of this section, with recommended forecasts identified for each.

The recommended ALP Report forecasts will be compared to the TAF (APO TAF Detail Report 2020-2045, Issued March 2022) when presented to FAA for review and approval. Additional information about the TAF based aircraft and operations comparison is presented at the end of the chapter.

BASED AIRCRAFT

Three new based aircraft forecasts were developed for evaluation. The growth trends established by these models were applied to the 13 based aircraft count established for 2021 to generate 20-year forecasts.

MODIFIED FAA AEROSPACE GA FLEET MODEL

This model was developed by applying the FAA's national Aerospace Forecast[9] annual growth rates for the U.S. general aviation (GA) fleet to the current based aircraft fleet at the Airport. The FAA forecast provides projections in 5-year increments beginning with the 2021 forecast that extend to 2041. The FAA forecast provides fleet projections by individual GA aircraft types ranging from single-engine piston to jet aircraft. The underlying annual forecast growth rates were then applied with specific fleet adjustments to Sunnyside Municipal Airport.

The FAA forecast projects that the overall GA fleet will grow at 0.1% annually over the next 20 years, but the fixed wing piston fleet will shrink, with an average annual decline of -0.9% for single-engine aircraft and -0.4% for multi-engine aircraft. The general expectation is the GA fleet of aging conventional piston aircraft will continue to decline due to fleet attrition and the comparatively slow rate of new aircraft manufacturing needed to replenish these aircraft types in the fleet. The forecast projects the number of light sport aircraft (LSA) and experimental aircraft in the fleet will grow, averaging 4.00% and 1.4% annually. The number of turboprops, jets, and helicopters in the fleet are all projected to increase at rates ranging from 0.6 to 2.3% per year through 2041.

The model reflects anticipated shifts in the GA fleet that includes increased use of LSA and/or experimental aircraft, as a replacement for conventional (legacy) single-engine piston aircraft. LSAs and experimental aircraft are cheaper to buy, own and operate, and are rapidly growing in popularity nationwide at a time where factory production of single-engine piston aircraft remains low.

The model assumes that the loss of conventional single-engine piston aircraft at the Airport will occur in line with broader FAA fleet expectations. However, based on local market conditions, the model assumes that these aircraft will be replaced on a 1:1 basis with LSA or experimental aircraft, effectively offsetting the anticipated decline in older aircraft. Although this assessment is more optimistic than the FAA's national forecast, it reflects the Airport's ability to attract existing conventional aircraft and newly manufactured aircraft within its service area, consistent with the long-term economic outlook for the region.

The Modified FAA Aerospace GA Fleet Model projects an **average annual growth rate of 0.72%**. When applied to the current based aircraft count, this model predicts an increase from **13 to 15 aircraft** at Sunnyside Municipal Airport by 2041. This represents an increase of 2 aircraft (15%) over the planning period. This model is consistent with long-term FAA forecast assumptions for the general aviation fleet segments that regularly operate at Sunnyside Municipal Airport.

9 FAA Aerospace Forecasts Fiscal Years 2021-2041 (Table 28).

YAKIMA COUNTY PER CAPITA INCOME/LONG TERM EMPLOYMENT FORECAST

Woods & Poole Economics, Inc. forecasts[10] of per capita income for Yakima County, adjacent Benton County, and the state of Washington were reviewed to gauge long term income expectations as a potential indicator of airport activity trends. The 2021 Woods & Poole forecast indicates per capita income (using "constant" dollars) in Yakima County is expected to increase at annual rate of 1.76% between 2010 and 2050. This annual growth rate is comparable to the forecast growth rate for Washington (1.76%) and outpaces Benton County (1.27%) over the next thirty years. Yakima County's forecast growth in per capita income accelerates between 2020 and 2050, averaging 2.05% annually, slightly ahead of Washington's forecast (1.99%).

A review of Woods & Poole's long term employment forecasts for Yakima County was also conducted. Employment in Yakima County is forecast to increase at annual rate of 1.14% between 2010 and 2050. The forecast rate is maintained at 1.15% annually for the period between 2020 and 2050, which trails Washington's forecast rate of 1.44%.

An increase in per capita income and employment indicates underlying economic durability, which suggests, although not empirically, that the conditions are favorable to sustained growth in airport activity. Since both economic indicators provide important foundations for economic growth, their 2020-2050 growth rates were combined (averaging 1.45%) for use is projecting future based aircraft.

The Yakima County Income/Employment Model projects an **average annual growth rate of 1.45%**. When applied to the current based aircraft count, this model predicts an increase from **13 to 17 aircraft** at Sunnyside Municipal Airport by 2041. This represents an increase of 4 aircraft (31%) over the planning period.

Terminal Area Forecast (TAF) – All Facilities (Washington) Model

This model applies the TAF "All Facilities" Washington 2021-2045 forecast annual growth rate for based aircraft to Sunnyside Municipal Airport for the 20-year planning period. The model is non-linear and year-over-year growth rates vary. The model assumes that the Airport's based aircraft fleet growth will be in line with the aggregated growth at the 64 listed Washington airports. The TAF All Facilities - Washington Model projects an **average annual growth rate of 1.04%**. When applied to the current based aircraft count, this model predicts an increase from **13 to 16** aircraft at Sunnyside Municipal Airport by 2041. This represents an increase of 4 aircraft (31%) over the planning period.

RECOMMENDED BASED AIRCRAFT SUMMARY

The TAF All Facilities - Washington Model is recommended as the preferred based aircraft model for use in the Sunnyside Municipal Airport – Airport Layout Plan Report. This projection assumes that the Airport will be able to sustain growth in its fleet that is in line with the FAA's aggregated forecast growth for 64 listed Washington airports. This model produces the same net increase in based aircraft as the Yakima County Income/Employment Model due to rounding. The forecast assumes similar shifts in aircraft types noted in the model based on the FAA's Aerospace Forecast.

The preferred forecast results in an increase from **13 to 16 aircraft** at Sunnyside Municipal Airport by 2041, which reflects an **average annual growth rate of 1.04%**. This represents an increase of 3 aircraft (23%) over the planning period. The based aircraft forecast models that were developed, including the recommended model, are summarized in **Table 3-9**, and depicted on **Figure 3-2**.

Table 3-9: Based Aircraft Forecast Models (1S5)

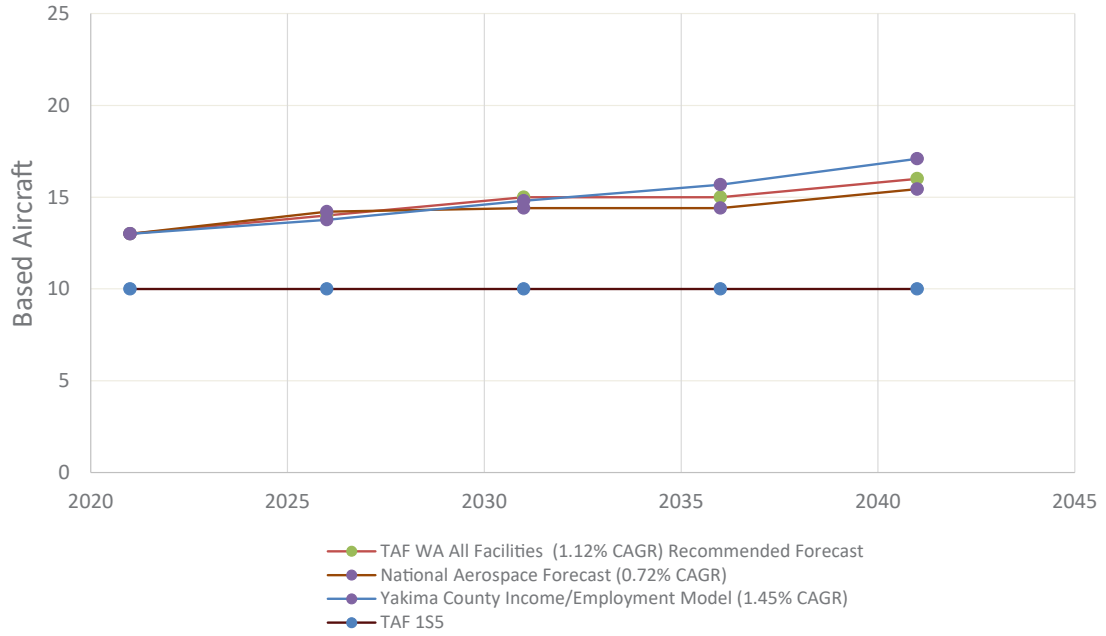
Forecast	AAGR	2021	2026	2031	2036	2041
Yakima County Wages Per Capita/ LT Employment Forecast	1.45%	13	14	15	16	17
National Aerospace Forecast - GA Fleet Model	0.72%	13	14	14	15	15
Terminal Area Forecast – WA/ANM All Facilities (Recommended)	**1.04%**	**13**	**14**	**15**	**15**	**16**

Source: Century West Engineering; AAGR: Average Annual Growth Rate

10 2021 State Profile - Idaho, Washington and Washington, Woods & Poole Economics, Inc. © 2021 ISSN 1044-4947

Based aircraft forecasts are primarily intended to identify future facility needs in forthcoming sections of the ALP Report, particularly aircraft storage – apron parking and hangar space. The use of development reserves is recommended for defining activity-dependent facility needs that may exceed forecasted growth. The proposed development reserve should have the capacity to accommodate 100% of the projected net increase (+3) of based aircraft over the planning period. Accordingly, the long-term planning of landside facilities at Sunnyside Municipal Airport should be capable of accommodating 6 additional based aircraft over the next 20 years.

Figure 3-2: Based Aircraft Forecast Models (1S5)



BASED AIRCRAFT FLEET MIX

Conventional single-engine piston aircraft account for 85% (11 of 13) of the current based aircraft fleet at Sunnyside Municipal Airport. The two other existing based aircraft include a multi-engine piston and single-engine turboprop. **Table 3-10** summarizes the current and forecast fleet mix for the planning period. The based aircraft fleet mix at Sunnyside Municipal Airport is expected to become slightly more diverse as it is anticipated that as a portion of the single-engine piston aircraft are retired over time, they are likely be replaced by LSA or experimental home-built aircraft, following national trends.

Table 3-10: Based Aircraft Fleet Mix Summary (1S5)

Aircraft Type	AAGR	2021	2026	2031	2036	2041
Single Engine Piston	-0.48%	11	10	10	10	10
Multi Engine Piston	0.0%	1	1	1	1	1
Turboprop	0.0%	1	1	1	1	1
Jet	0.0%	0	0	0	0	0
Helicopter	0.0%	0	0	0	0	0
LSA / Experimental	≈20.3%	0	2	3	3	4
TOTAL	**1.04%**	**13**	**14**	**15**	**15**	**16**

Source: Century West Engineering
1. Includes LSA and Experimental AC

AIRCRAFT OPERATIONS

Three new operations forecasts were prepared for the ALP Report. The first two forecasts apply growth rates established by national planning efforts (2021-2041 FAA Aerospace Forecasts and March 2022 FAA Terminal Area Forecast database). The third projects a growth trend based on a modified operations per based aircraft (OPBA) formula recognized by FAA for estimating activity at non-towered GA airports. The current TAF operations projection (APO TAF Detail Report 2021-2046, Issued March 2022) for Sunnyside Municipal Airport is provided for comparison only, as this airport particular TAF projection is not considered valid.

FAA Aerospace GA Operations Growth Rate

This model was developed by applying the FAA Aerospace Forecast – Fiscal Years (2021- 2041) annual growth rates for GA and air taxi operations for the current planning period. However, since the FAA forecast for GA and air taxi operations is limited to airports with control towers, a second FAA projection for GA and air taxi hours flown was evaluated. These forecasts project similar annual growth rates ranging from 0.8% to 1.1%. Merging the FAA's long term flight activity expectations for towered airports and the entire GA fleet provides a reasonable basis for a broad projection of aircraft operations at Sunnyside Municipal Airport. Based on a weighted distribution of commercial and non-commercial flight activity at the Airport, the FAA Aerospace Forecast model projects an **average annual growth rate of 0.95%**. When applied to the current baseline operations, this model predicts an increase from **4,225 to 5,105 annual aircraft operations** at Sunnyside Municipal Airport by 2041. This represents an 20.8% increase above the current air traffic level over the planning period.

Modified FAA NPIAS Operations Per Based Aircraft (OPBA) Formula

This model utilizes the same methodology that was used to calculate the baseline operations presented earlier. The modified OPBA formula was applied to the recommended based aircraft forecast noted earlier to project future aircraft operations. The fixed 250 OPBA was applied to forecast non-duplicated based aircraft through the planning period. The user-specific activity segments were individually projected, with growth rates slightly lower than the 1.12% annual growth assumed for based aircraft. Agricultural aircraft operations were projected to increase in line with long-term forecast growth in Yakima County farm employment (0.6% annually); Medevac operations were projected to increase in line with the FAA long-term forecast for air taxi TRACON operations (0.8% annually); and the regular transient user's activity was maintained at current levels with a slight increase midway in the planning period to account for potential facility upgrades (instrument approach) and increased airport utilization. The combination of these forecast inputs results in an average annual growth rate of 1.04% over the planning period. This approach assumes that aircraft operations at Sunnyside Municipal Airport will increase at a rate comparable to forecast based aircraft.

The Modified NPIAS OPBA model projects an **average annual growth rate of 1.04%**. When applied to the current baseline operations, this model predicts an increase from **4,225 to 5,196 annual aircraft operations** at Sunnyside Municipal Airport by 2041. This represents an 23.0% increase above the current air traffic level over the planning period.

Terminal Area Forecast (TAF) – All Facilities (Washington)

This model applies the March 2022 TAF "All Facilities" Washington 2021-2045 forecast annual growth rate for annual aircraft operations to Sunnyside Municipal Airport for the 20-year planning period. The model is non-linear and year-over-year growth rates vary. The model assumes that the Airport's future flight activity will be in line with the aggregated growth at the 64 listed Washington airports. The TAF All Facilities - Washington Model projects an **average annual growth rate of 1.31%**. When applied to the 2021 baseline operations, this model predicts an increase from **4,225 to 5,484 annual aircraft operations** at Sunnyside Municipal Airport by 2041. This represents an 29.8% increase above the current air traffic level over the planning period.

Terminal Area Forecast (TAF) – Sunnyside Municipal Airport (1S5)

The current TAF for the Airport is provided for comparison to the updated operations forecast models. As noted earlier, the current TAF (APO TAF Detail Report 2021-2046, Issued March 2022) projects a static 24,000 annual operations at Sunnyside Municipal Airport 2046 (AAGR 0.00%). This projection is not consistent with the updated baseline operations estimate developed for the ALP Report and the absence of future growth is not consistent with the Airport's potential.

RECOMMENDED AIRCRAFT OPERATIONS FORECAST

The recommended forecast of aircraft operations at Sunnyside Municipal Airport is the **Modified FAA NPIAS Operations per Based Aircraft (OPBA) Formula**. This model projects an average **annual growth rate of 1.04%** over the planning period, resulting in an increase from **4,225 to 5,196 operations** at Sunnyside Municipal Airport by 2041. The use of the modified NPIAS OPBA model is consistent with FAA guidance for estimating operations at non-towered airports and the projected estimates derived from the model are in line with operational estimates of other area airports of comparable size and characteristics.

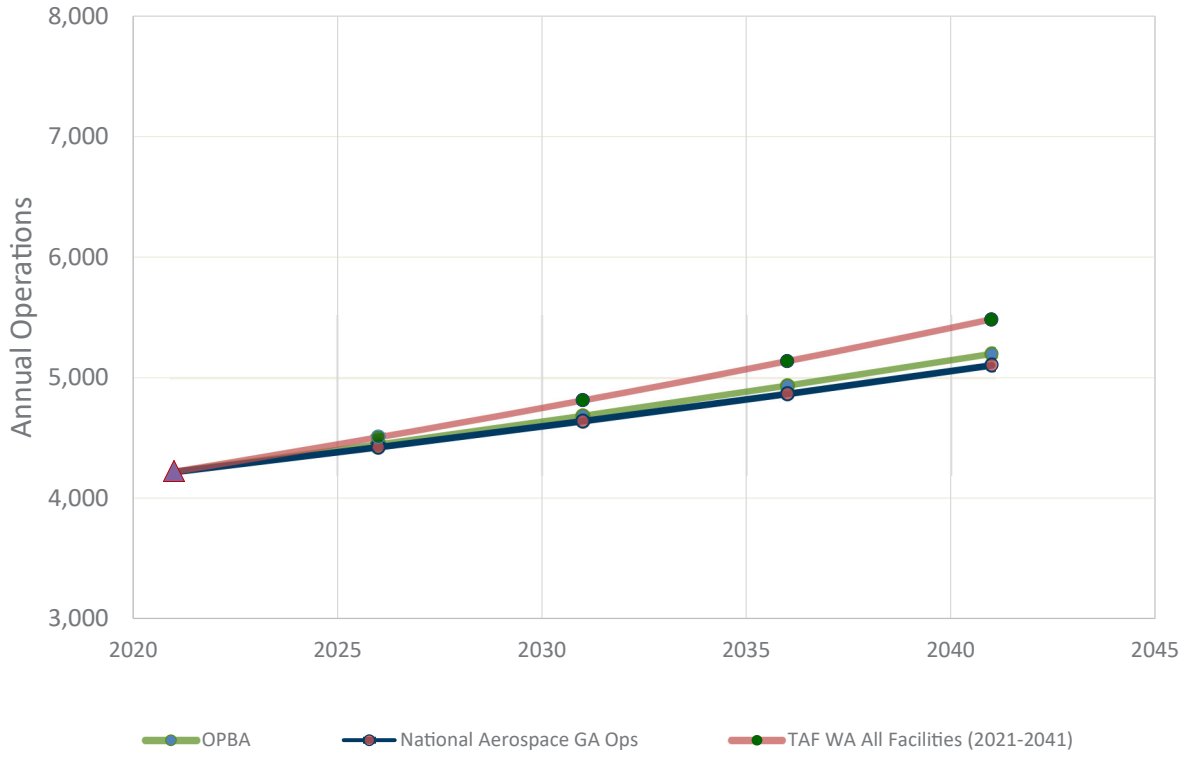
The new aircraft operations forecast models that were evaluated, including the recommended model, are summarized in **Table 3-11**, and depicted on **Figure 3-3**. The current TAF operations data specific to the Airport (1S5) is provided for reference in the table but is not charted.

Table 3-11: Forecast Annual Operations Rates (1S5)

Forecast	AAGR	2021	2026	2031	2036	2041
OPBA (Recommended)	**1.04%**	**4,225**	**4,449**	**4,686**	**4,934**	**5,196**
National Aerospace Forecast - GA Fleet Model	0.95%	4,225	4,430	4,644	4,869	5,105
Terminal Area Forecast – WA All Facilities	1.31%	4,225	4,510	4,814	5,138	5,484
1S5 TAF (2021-2041)	0.00%	24,000	24,000	24,000	24,000	24,000

Source: Century West Engineering; AAGR: Average Annual Growth Rate

Figure 3-3: Aircraft Operations Forecast Models (1S5)



LOCAL AND ITINERANT OPERATIONS

Aircraft operations are classified by FAA as local or itinerant. Local operations are conducted in the vicinity of an airport and include flights that begin and end at the airport. These include aerial applicators, flight training, training flights within the airport traffic pattern such as touch and go landings, and other flights that do not involve a landing at another airport. Itinerant operations include flights between airports such as on-demand air charter, air cargo/express, cross-country flight training, and personal or business travel.

The 2008 ALP Report forecasts estimated the local/itinerant operations split to be 25%/75%. This operational split is reasonable for current activity and is recommended for use in the forecast. As noted earlier in **Table 3-6**, the two locally based aerial applicator aircraft currently account for approximately 21% of total airport operations. Most aerial applicator flights at the Airport are categorized as local operations since the aircraft depart and return without landing at another airport. The local and itinerant distribution for each forecast year is summarized in **Table 3-12**.

Table 3-12: Forecast Itinerant/Local Operations Mix (1S5)

Activity	AAGR	2021	2026	2031	2036	2041
Total Itinerant Operations (75%)	1.04%	3,170	3,338	3,514	3,700	3,898
Local Operations (25%)	1.04%	1,055	1,112	1,172	1,234	1,298
Total Local & Itinerant Operations	1.04%	4,225	4,450	4,686	4,934	5,196

Source: Century West Engineering; AAGR: Average Annual Growth Rate

AIRCRAFT OPERATIONS FLEET MIX

Single-engine piston aircraft currently account for just over 65% of operations at Sunnyside Municipal Airport, followed by single-engine turboprops at about 29%. Multi-engine piston, multi-engine turboprops, business jets, and helicopters generate the remaining flight activity. As documented in the updated baseline operations total, one locally based single-engine turboprop (aerial applicator) currently generates approximately 17% of total operations at the Airport; the fixed wing aircraft medevac operator serving the local hospital generates just under 10% of total operations. Commercial and corporate operators use of turbine aircraft at the Airport is well established. Based on current aircraft manufacturing trends, it is reasonable to assume that turbine aircraft activity will increase during the planning period and the overall mix of air traffic will shift slightly to include more turboprops, helicopters, and smaller jets. Additional information about the critical aircraft is provided in the following section. The aircraft operations fleet mix forecast is summarized in **Table 3-13**.

Table 3-13: Operations Fleet Mix (1S5)

Activity	AAGR	2021	2026	2031	2036	2041
Single Engine Piston[1]	1.04%	2,775	2,928	3,144	3,308	3,412
Multi Engine Piston	0.8%	60	60	70	70	70
Turbo Prop	1.03%	1,230	1,294	1,364	1,436	1,510
Jet	3.53%	10	10	12	16	20
Helicopters	1.03%	150	158	166	174	184
Total Operations	1.04%	4,225	4,450	4,686	4,934	5,196

1. Includes LSA and Experimental AC
Source: Century West Engineering; AAGR: Average Annual Growth Rate

Critical Aircraft

The selection of design standards for airfield facilities is based upon the characteristics of the most demanding aircraft that are expected to use an airport, which is designated as the "critical aircraft." The FAA provides the following definition:

"The critical aircraft is the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the airport. Regular use is 500 annual operations, including both itinerant and local operations, but excluding touch- and-go operations. An operation is either a takeoff or landing." (FAA AC 150/5000-17)

The FAA groups aircraft into five categories (A-E) based upon their approach speeds. Aircraft Approach Categories (AAC) A and B include small propeller aircraft, many small or medium business jet aircraft, and some larger aircraft with approach speeds of less than 121 knots (nautical miles per hour). Categories C, D, and E consist of the remaining business jets, and larger jet and propeller aircraft associated with commercial and military use with approach speeds of 121 knots or more. The FAA also establishes six airplane design groups (I-VI), based on the wingspan and tail height of the aircraft. The categories range from Airplane Design Group (ADG) I, for aircraft with wingspans of less than 49 feet, to ADG VI for the largest commercial and military aircraft. The combination of airplane design group and aircraft approach speed for the critical aircraft creates the **Airport Reference Code (ARC)**, which is used to define applicable airfield design standards.

CURRENT CRITICAL AIRCRAFT

The identification of the current critical aircraft for an airport is required by FAA to define the appropriate design standards for airport facilities currently and in the near term. **Table 3-14** summarizes the 2021 (baseline) estimate of aircraft operations at Sunnyside Municipal Airport by aircraft type and ARC. The future critical aircraft is determined by forecast aircraft operations (see Table 3-15).

Table 3-14: Aircraft Activity By Arc (2021)

ARC	Representative A/C Type	2021 Operations
TOTAL OPS – ALL		**4,225**
TOTAL OPS - A-I	Cessna 182	2,775
TOTAL OPS - B-I	Cessna 310, Beech Baron 58	90
TOTAL OPS - A-II	Air Tractor 802, Pilatus PC-12	1,200
TOTAL OPS - B-II	Beechcraft King Air, Cessna Citation Bravo	10
TOTAL OPS - HELI	Agusta Westwind	150

Source: Century West Engineering

The assessment of current air traffic at Sunnyside Municipal Airport identifies sufficient ADG II operations to meet the FAA's regular use threshold of 500 annual operations. The Airport currently accommodates regular ADG II aircraft activity, generated by both locally based and transient aircraft:

- One locally based Air Tractor 802 (AT-802) single-engine turboprop aerial applicator. The AT-802 has a maximum takeoff weight above 12,500 pounds, which places it in the "large" aircraft category.
- Multiple transient Pilatus PC-12 single engine turboprops operated by a fixed wing medevac provider and a corporate aircraft owner with local business operations. The PC-12 has a maximum takeoff weight below 12,500 pounds, which places it in the "small" aircraft category.

Other ADG II transient aircraft including single-engine and multi-engine turboprops and business jets identified through FAA TFMSC instrument flight plan filings associated with the Airport. Over the last 10 years, this activity has averaged about 20 operations per year, which is limited by the absence of instrument approach and departure procedures at the Airport. These aircraft are required to conduct the local flight segments (takeoff or landing on either end of an IFR flight plan) to be conducted under visual flight rules (VFR).

Source: Air Tractor, Inc. (www.airtractor.com)

Source: Google Image

When combined, the ADG II activity generated by these users totals approximately 1,200 annual operations. Both critical aircraft types are included in ADG II and Aircraft Approach Category (AAC) A, which corresponds to ARC A-II. Since there are more than 500 annual operators by a large airplane, large airplane standards will apply to the airfield.

Future Critical Aircraft

Based on forecast activity, no change in critical aircraft designation or ARC A-II is anticipated during the current 20-year planning period.

Summary – Critical Aircraft

The current and future critical aircraft identified for Sunnyside Municipal Airport is a single-engine turboprop, **Air Tractor 802**. This aircraft is representative of large aerial applicator aircraft commonly used throughout the region. The AT802 is included in Aircraft Approach Category A and Airplane Design Group II, which corresponds to **Airport Reference Code (ARC) A-II**. The AT802 is classified as a large airplane based on a maximum takeoff weight above 12,500 pounds. **Table 3-15** summarizes forecast operations for Sunnyside Municipal Airport by ARC. The current (2021) fleet mix percentages are maintained through the forecast period.

Table 3-15: Operations Fleet Mix by ARC

Activity	%	2021	2026	2031	2036	2041
TOTAL OPS - A-I	66%	2,775	2,920	3,086	3,224	3,400
TOTAL OPS - B-I	2%	90	90	100	110	120
TOTAL OPS - A-II/B-II	29%	1,210	1,280	1,340	1,430	1,496
TOTAL OPS - HELI	3%	150	160	160	170	180
TOTAL OPS - ALL A/C	100.00%	4,225	4,450	4,686	4,934	5,196

Source: Century West Engineering; AAGR Average Annual Growth Rate; "%" based on 2021 air traffic estimate.

Activity by Approach Category B aircraft is expected to increase over the course of the planning period, assuming increased utilization by business aircraft. However, there are no significant differences in the corresponding FAA design standards because the FAA consolidates Approach Category A and B into a single set of standards for all design groups.[11] As a result, the design standards for ARC A-II and B-II are the same.

Specific taxiway standards are defined by Taxiway Design Group (TDG), which are driven by the landing gear configuration of the critical aircraft. It is noted that the runway length requirements for the current and future critical aircraft (single engine turboprop) may be less demanding than for smaller aircraft that also use the runway, such as multi-engine piston pr turboprop aircraft. An evaluation of runway length requirements will be conducted in the facility requirements chapter.

The 2008 ALP Report identified the existing and future critical aircraft for the Airport as a Cessna 421, a small multi-engine piston aircraft included in ARC B-I (small). The previous critical aircraft designations should be updated to ARC A-II for current and future designations on the updated ALP.

11 FAA Advisory Circular (AC) 150-5300-13B, G, Table G-4.

Figure 3-4 depicts the aircraft design criteria used to define ARC, and representative aircraft in each ARC category. The applicable dimensional standards for Sunnyside Municipal Airport are shown in bold.

Figure 3-4: Critical Aircraft & Airport Reference Code (ARC)

Aircraft Approach Category	Aircraft Approach Speed knots	Airplane Design Group	Aircraft Wingspan
A	**less than or equal to 91 - Existing/Future**	I	less than or equal to 49'
B	92 to 121	**II - Existing/Future**	**50' to 79'**
C	122 to 141	III	80' to 118'
D	142 to 166	IV	119' to 171'

A-I
12,500 lbs. or less

Beech Baron 55
Beech Bonanza
Cessna 182
Piper Archer

B-I(small)
12,500 lbs. or less

Beech Baron 58
Beech King Air C90
Cessna 402
Cessna 421

A-II, B-II
12,500 lbs. or less

Super King Air 200
Pilatus PC-12
DHC-6 Twin Otter
Cessna Caravan

ARC - B-II
Greater than 12,500 lbs.

Super King Air 300, 350
Beech 1900
Cessna Citation
Falcon 20, 50

A-III, B-III
Greater than 12,500 lbs.

DHC Dash 7, Dash 8
Q-200, Q-300
DC-3
Convair 580

C-I, D-I

Lear 25, 35, 55, 60
Israeli Westwind
HS 125-700

C-II, D-II

Gulfstream II, III, IV
Canadair 600
Canadair Regional Jet
Lockheed JetStar

C-III, D-III

Boeing Business Jet
Gulfstream 650
B 737-300 Series
MD-80, DC-9

C-IV, D-IV

B - 757
B - 767
DC - 8-70
DC - 10

Source: Century West Engineering

Operational Peaks

Activity peaking is evaluated to identify potential capacity related issues that may need to be addressed through facility improvements or operational changes. The Peak Month represents the month of the year with the greatest number of aircraft operations (takeoffs and landings). The peak month for most general aviation airports occurs during the summer when weather conditions and daylight are optimal.

For planning purposes, the peak month for aircraft operations at Sunnyside Municipal Airport is assumed to account for 20% of annual operations, which effectively captures increased summer (July or August) flight activity.

Peak Day operations are defined by the average day in the peak month (Design Day) and the busy day in the typical week during peak month (Busy Day). The Design Day is calculated by dividing peak month operations by 30. For planning purposes, the Busy Day is estimated to be 50% higher than the average day in the peak month (Design Day x 1.5), based on common activities generating significant surges in flight activity.

The peak activity period in the Design Day is the Design Hour. For planning purposes, the Design Hour operations are estimated to account for 20% of Design Day operations (Design Day x 0.20).

The operational peaks for each forecast year are summarized in **Table 3-16**. This level of peaking is consistent with the mix of airport traffic and is expected to remain unchanged during the planning period. These measures of activity are considered when calculating runway/taxiway capacity and transient aircraft parking requirements. No significant runway or taxiway capacity issues have been identified at the Airport based on current or forecast activity levels.

Table 3-16: Peak Operations (1S5)

Aircraft Type	2021	2026	2031	2036	2041
Annual Operations	4,225	4,449	4,686	4,934	5,196
Peak Month Operations (20%)	845	899	937	987	1,039
Design Day Operations (average day in peak month)	28	30	31	33	35
Busy Day Operations (assumed 150% of design day)	42	45	45	49	52
Design Hour Operations (assumed 20% of design day)	6	6	6	7	7

Source: Century West Engineering; AAGR: Average Annual Growth Rate

Military Activity

The FAA Terminal Area Forecast (TAF) lists no military flight activity at Sunnyside Municipal Airport. However, occasional military use with helicopters or small fixed-wing aircraft in support of emergency response, search and rescue, and training activities would be consistent with activity (Washington Army National Guard, etc.) experienced at other Washington general aviation airports. A normal amount of military flight activity at the Airport (50 annual operations) is assumed during the planning period.

Air Taxi Activity

Air taxi activity includes for-hire charter flights, medevac flights, and some scheduled commercial air carriers operating under FAR Part 135. The current FAA TAF and 5010 Airport Record Form lists a 0 air taxi operations at Sunnyside Municipal Airport. Actual air taxi activity at the Airport includes flights by the two area Medevac providers (LifeFlight and Airlift NW), that operate under FAR 135. Other air taxi activity may include on-demand charter flights.

Air Taxi operations for 2021 are estimated at 530 operations, which includes all medevac flights and a small number of charter flights. Future activity is projected to increase at the annual rate of 0.97%, which is reflects the FAA TAF consolidated forecast growth rate for Air Taxi/Commuter operations in Washington and the Northwest-Mountain region (ANM) for the 2021-2045 period.

Forecast Summary

A summary of the based aircraft and annual aircraft operations forecast is presented in **Table 3-17**. These forecasts project modest growth over the 20-year planning period that is consistent with FAA's long-term expectations for general aviation in the region. The average annual growth rate for the forecasts is 1.04% for based aircraft and aircraft operations between 2021 and 2041.

Table 3-17: Forecast Summary

Activity	2021	2026	2031	2036	2041
Itinerant Operations					
General Aviation	2,590	2,731	2,880	3,037	3,208
Air Taxi (Fire & Medevac)	530	556	584	613	644
Military	50	50	50	50	50
Total Itinerant Operations	**3,170**	**3,337**	**3,514**	**3,700**	**3,902**
Local Operations	1,055	1,112	1,172	1,234	1,294
Total Local & Itinerant Operations	**4,225**	**4,449**	**4,686**	**4,934**	**5,196**
Based Aircraft	13	14	15	15	16
Operations per Based Aircraft	325	318	312	329	325

Source: Century West Engineering

TERMINAL AREA FORECAST COMPARISON

As discussed previously, the evaluation of the existing TAF[12] for Sunnyside Municipal Airport has identified significant issues related to data accuracy. Based on this review, it was determined that the TAF's based aircraft and aircraft operations data do not provide an accurate long-term indication of future aeronautical activity. Data from the most recent historical year (2020) is presented for all future years through 2045 for both based aircraft and annual aircraft operations. Other inaccuracies identified include the absence of air taxi operations (listed as 0) that are documented in ALP Report updated baseline and forecast data.

FAA review will be required for both the based aircraft and the aircraft operations models for comparison to the current TAF, as presented in **Table 3-18** and **Figure 3-5**.

Table 3-18: TAF Comparison

Based Aircraft	2021	2026	2031	2036	2041
Recommended Forecast	13	14	15	15	16
TAF	10	10	10	10	10
Percent Difference	**30.0%**	**40.0%**	**50.0%**	**50.0%**	**60.0%**

Aircraft Operations	2021	2026	2031	2036	2041
Recommended Forecast	4,225	4,449	4,686	4,934	5,196
TAF	24,000	24,000	24,000	24,000	24,000
Percent Difference	**-82.4%**	**-81.5%**	**-80.5%**	**-79.4%**	**-78.4%**

Source: Century West Engineering

12 APO Terminal Area Forecast Detail Report – Forecast Issued March 2022, 1S5

Figure 3-5: FAA TAF and ALP Forecast Comparison

Forecast Summary

1S5 — Base Year: 2021

						Average Annual Compound Growth Rates			
	Base Yr. Level	Base Yr.+1yr.	Base Yr.+5yrs.	Base Yr.+10yrs.	Base Yr.+15yrs.	Base Yr. to +1	Base Yr. to +5	Base Yr. to +10	Base Yr. to +15
Passenger Enplanements									
Air Carrier	0	0	0	0	0	N/A	N/A	N/A	N/A
Commuter	0	0	0	0	0	N/A	N/A	N/A	N/A
TOTAL	0	0	0	0	0	N/A	N/A	N/A	N/A
Operations									
Itinerant									
Air carrier	0	0	0	0	0	N/A	N/A	N/A	N/A
Commuter/air taxi	530	535	556	584	613	0.9%	1.0%	1.0%	1.0%
Total Commercial Operations	530	535	556	584	613	0.9%	1.0%	1.0%	1.0%
General aviation	2,590	2,618	2,732	2,880	3,037	1.1%	1.1%	1.1%	1.1%
Military	50	50	50	50	50	0.0%	0.0%	0.0%	0.0%
Local									
General aviation	1,055	1,066	1,112	1,172	1,234	1.0%	1.1%	1.1%	1.1%
Military	0	0	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
TOTAL OPERATIONS	4,225	4,269	4,450	4,686	4,934	1.0%	1.0%	1.0%	1.0%
Instrument Operations	**0**	**0**	**0**	**0**	**0**	#NUM!	#NUM!	#NUM!	#NUM!
Peak Hour Operations	**6**	**6**	**6**	**6**	**7**	0.0%	0.0%	0.0%	1.0%
Cargo/mail (enplaned + deplaned tons)	**0**	**0**	**0**	**0**	**0**	N/A	N/A	N/A	N/A
Based Aircraft									
Single Engine (Nonjet)	12	12	14	14	15	0.0%	3.1%	1.6%	1.5%
Multi Engine (Nonjet)	1	1	1	1	1	0.0%	0.0%	0.0%	0.0%
Jet Engine	0	0	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
Helicopter	0	0	0	0	0	#NUM!	#NUM!	#NUM!	#NUM!
Other	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%
TOTAL	13	13	15	15	16	0.0%	2.9%	1.4%	1.4%
GA Operations Per Based Aircraft	**325**	**328**	**297**	**312**	**308**	0.9%	-1.8%	-0.4%	-0.4%

Airport Planning and TAF Forecast Comparison

	Year	Airport Forecast	TAF	AF/TAF (% Difference)
Passenger Enplanements				
Base yr.	2021	0	0	0.0%
Base yr. + 5yrs.	2026	0	0	0.0%
Base yr. + 10yrs.	2031	0	0	0.0%
Base yr. + 15yrs.	2036	0	0	0.0%
Commercial Operations				
Base yr.	2021	530	0	#DIV/0!
Base yr. + 5yrs.	2026	556	0	#DIV/0!
Base yr. + 10yrs.	2031	584	0	#DIV/0!
Base yr. + 15yrs.	2036	613	0	#DIV/0!
Total Operations				
Base yr.	2021	4,225	24,000	-82.4%
Base yr. + 5yrs.	2026	4,450	24,000	-81.5%
Base yr. + 10yrs.	2031	4,686	24,000	-80.5%
Base yr. + 15yrs.	2036	4,934	24,000	-79.4%

Note: TAF data is on a U.S. government fiscal year basis (October through September).

FIFTY-YEAR FORECAST

Fifty-year demand forecasts were prepared as required in the FAA-approved ALP Report scope of work by extrapolating the average annual growth rates (AAGR) for the recommended 20-year based aircraft and aircraft operations forecasts. The purpose of the 50-year projection is to provide an estimate of demand to approximate long-term aviation use land requirements for the Airport. **Table 3-19** summarizes the 50-year forecast including the intermediate 30- and 40-year projections.

Table 3-19: 50-Year Forecast (1S5)

	2021	2041	2051	2061	2071
Annual Operations (1.04%AAGR)	4,225	5,196	5,763	6,391	7,088
Based Aircraft (1.04%AAGR)	13	16	18	20	22

Source: Century West Engineering

Chapter 4

Airport Facility Requirements

The evaluation of airport facility requirements is intended to determine the facility needs for Sunnyside Municipal Airport (1S5) for the current 20-year planning period based on updated aviation activity forecasts and conformance to established FAA airport design criteria.

Introduction

The evaluation of airport facility requirements combines the results of the inventory and forecasts contained in Chapters 2 and 3, and established planning criteria to determine the future facility needs for the Airport during the current 20-year planning period. All airfield items are evaluated based on established Federal Aviation Administration (FAA) standards and the functional role of the Airport.

Airside facilities include the runways, taxiways, navigational aids, and lighting systems. Airside facilities are often protected by airspace or clear areas that are defined by applicable FAA standards. Landside facilities include hangars, terminal/fixed base operator (FBO) facilities, aircraft parking apron(s), aircraft fueling facilities, and aerial applicator facilities. Surface access roads, automobile parking, security/perimeter fencing, and utilities are generally identified as support facilities.

The facility requirements evaluation identifies the adequacy or inadequacy of existing facilities and identifies what new facilities may be needed during the planning period based on forecast demand or conformance to FAA standards. The evaluation of demand-driven elements quantify facility needs such as runway length requirements, hangar space, and aircraft parking positions based on forecast demand and the type of aircraft being accommodated. Items such as lighting, navigational aids, and approach capabilities are evaluated based on overall airport activity and facility classification. Options for accommodating current and future facility needs will be evaluated in the Airport Development Alternatives (Chapter 5). A summary of the facility requirements defined for the current 20-year planning period is provided at the end of this chapter (See **Table 4-6**).

Demand/Capacity Analysis

The evaluation of runway capacity is used to identify existing or future operational constraints that may require specific facility improvements such as taxiways, aircraft hold areas, etc. Runway 07/25 has a full-length parallel taxiway, four 90-degree exit taxiways, and an aircraft hold area located adjacent to the Runway 25 end. This configuration provides a high level of functionality and operational capacity that provides for effective movement between the runway and adjacent landside facilities.

Annual service volume (ASV) is a broad measure of airport capacity and delay used for long-term planning as defined in *FAA Advisory Circular (AC) 150/5060-5, Airport Capacity and Delay.* Although the generic ASV calculation assumes optimal conditions (air traffic control, radar, the ability to operate in both visual flight rules (VFR) and instrument flight rules (IFR) conditions, etc.) that do not exist at Sunnyside Municipal Airport, it provides a reasonable basis for approximating existing and future capacity for planning purposes.

The FAA estimates the ASV for a single runway with no air carrier traffic is approximately 230,000 annual operations. Hourly capacity is estimated to be 98 operations during VFR conditions and 59 operations during IFR conditions (assuming the runway supports instrument operations). The existing and future demand-capacity ratios for Runway 07/25 presented below are based on the aviation forecasts presented in Chapter 3.

- *Existing Capacity: 4,225 Annual Operations / 230,000 ASV = 1.8% (demand/capacity ratio)*
- *Future Capacity: 5,196 Annual Operations / 230,000 ASV = 2.3% (demand/capacity ratio)*

Based on these ratios, the annual capacity of Runway 07/25 exceeds demand through the current 20-year planning period. Hourly capacity is also expected to be adequate to accommodate normal demand. The average delay per aircraft would be expected to remain below one minute through the planning period.

Critical Aircraft and Airport Design Standards Discussion

The existing and future critical aircraft is determined based on the current and projected level of activity described in Chapter 3, Aviation Activity Forecasts. The critical aircraft establishes existing and future airport planning & design standards organized in series of code categories. The groupings are applied to specific runways, taxiways and taxilanes to guide future planning, design, and development of the Airport. FAA design criteria are determined by the physical characteristics of the critical aircraft. Definitions for the FAA design standards are provided throughout the chapter. The primary airfield design groupings sharing common aircraft-specific components include:

- Runway Design Code (RDC)
- Approach and Departure Reference Cost (APRC and DPRC)
- Taxiway Design Group (TDG)

The runway standards incorporate different combinations of aircraft elements including approach speed, wingspan, and weight with approach visibility criteria. Additional information is provided in the sections below. The taxiway design standard applies physical characteristics of the aircraft's landing gear configuration and overall dimensions.

FAA AC 150/5300-13B, Airport Design, serves as the primary reference in establishing the geometry of airfield facilities.

Note: Current FAA airport planning standards have eliminated use of the Airport Reference Code (ARC) as the primary designation for airfield categories, in favor of Runway Design Code (RDC). The Aircraft Approach Category (AAC) and Airplane Design Group (ADG) components of the current/future for the Runway 7/25 RDC are the same components used to define 'ARC' in the 2008 ALP Report. However, based on current and forecast activity, the design aircraft, and the corresponding categories change to A-II.

CRITICAL AIRCRAFT

The critical aircraft is intended to represent the most demanding aircraft using the Airport on a regular basis (defined by FAA as ≥ 500 annual operations). This designation does not mean that larger aircraft cannot operate on the runway, but it does define the design guidance to be used for FAA-funded improvements.

The updated evaluation of current and forecast air traffic at Sunnyside Municipal Airport, presented In Chapter 3, Aviation Activity Forecast, identified the Air Tractor 802 (AT-802), a single engine turboprop aerial applicator, as the current and future critical aircraft. Based on published aircraft manufacturer's specifications, the AT-802 is **AAC/ADG A-II**.

The aircraft manufacturer (Air Tractor, Inc.) lists the AT-802 approach speed as 70 knots in the normal landing configuration, which is well within AAC A range (<91 knots). The FAA's approach speed categories (A-E) are defined by a common 1.3 times reference stall speed (also known as V^{sr}) for aircraft certified under FAR Part 25 (14 CFR 25.103). The FAA Aircraft Characteristics Database (2018 update)[1] lists the AT-802 as AAC B, which is not consistent with the aircraft manufacturer specifications noted above. For planning purposes, aircraft manufacturer data is considered the primary source and should be used to define the applicable AAC/ADG for this aircraft. The AT-802 has a maximum operating weight above 12,500 pounds, which is classified by FAA as a "large airplane."

As noted in Table 3-6, one locally based AT-802 currently generates approximately 700 annual operations at the Airport. This activity alone exceeds the FAA "regular use" threshold of 500 annual operations required for definition of the critical aircraft. Other locally based and transient aircraft traffic at the Airport increases current AAC/ADG A-II annual operations to approximately 1,200. For more information see *FAA AC 150/5000-17, Critical Aircraft and Regular Use Determination*.

The 2008 ALP identified a Cessna 421 (multi-engine piston) as the existing and future critical aircraft. This aircraft is **AAC/ADG "B-I (small)**."

RUNWAY DESIGN CODE (RDC)

The RDC defines specific runway dimensional standards based on a composite of aircraft-specific and runway-specific factors. The RDC inputs include critical aircraft characteristics: approach speed (AAC) and wingspan/tail height (ADG), and the approach visibility minimums of a specific runway end. The approach visibility refers to the minimum visibility required for aircraft operation, expressed by runway visual range (RVR) values in feet. Runways with only visual approaches use the 'VIS' designation in lieu of the prescribed RVR value. **The existing and future RDC for Runway 7/25 is A/B-II-VIS**.

The existing RDC for Runway 07/25 is A/B-II-VIS. The future RDC will be determined through the identification of the preferred runway/instrument approach alternatives in Chapter 5, Development Alternatives. For more detailed information on determining RDC see *FAA AC 150/5300-13B, Airport Design*.

APPROACH AND DEPARTURE REFERENCE CODE (APRC AND DPRC)

The APRC and DPRC represent the current operational capabilities of each specific runway end and adjacent taxiways. For detailed information on determining APRC and DPRC see *FAA AC 150/5300-13B, Airport Design*.

The APRC uses the performance characteristics of the critical aircraft (approach speed and wingspan/tail height) and the approach visibility minimums (expressed in RVR values) and runway-to-taxiway separation on the airfield to define specific standards. **The existing APRC for Runway 07/25 is B-II/4000**. This is the nearest definition to AAC/ADG A-II listed in the current version of the FAA airport design advisory circular.[2] The future APRC is dependent upon future approach capabilities and will be determined through the identification of a preferred alternative in Chapter 5, Development Alternatives.

1 Aircraft Characteristics Database (faa.gov)
2 AC 150/5300-13B, Appendix L, Table L-1.

The DPRC uses only the physical characteristics of the design aircraft and runway-to-taxiway separation. **The existing and planned DPRC for Runway 07/25 is B/II**. This is the nearest definition to AAC/ADG A-II listed in the FAA airport design advisory circular.[3]

TAXIWAY DESIGN GROUP (TDG)

The TDG is based on the dimensions of the aircraft landing gear including distance from the cockpit to the main gear (CMG) and main gear width (MGW) (see **Figure 4-1**). These dimensions affect an aircraft's ability to safely maneuver on airport taxiways and dictate pavement fillet design.

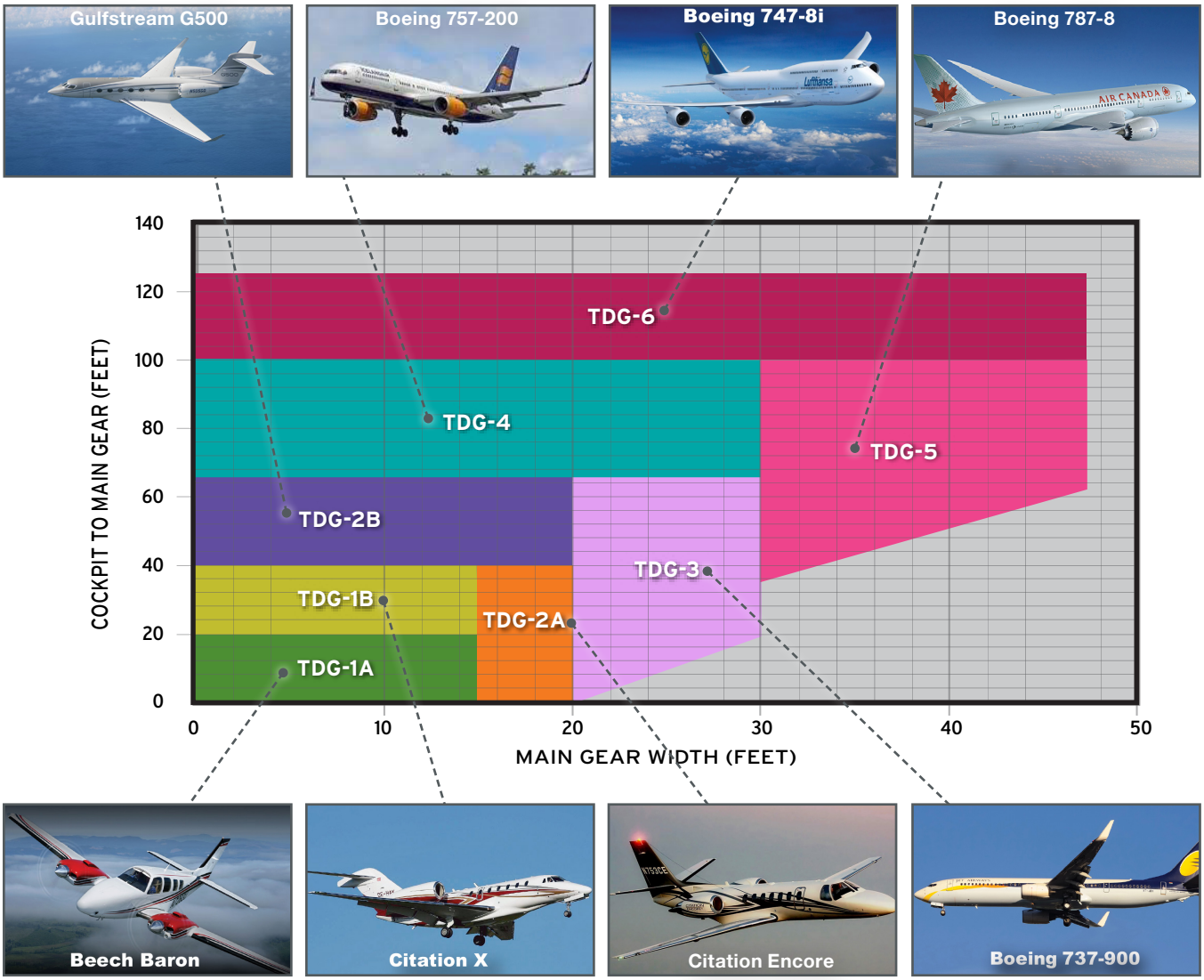
The current and future critical aircraft (AT-802) is listed in the FAA Aircraft Characteristics Database as **TDG 1B**. A review of ADG II aircraft types indicates that TDG 1A is common for other single-engine turboprops (Pilatus PC-12, Cessna Caravan, etc.) while TDG 1B is common for medium size business jets (Cessna Citation Excel, Bravo; Pilatus PC-24, etc.).

It is noted that the current version of the FAA airport design advisory circular[4] indicates that the TDG definition does not reflect landing year geometry for tailwheel equipped aircraft: *"Tail wheel aircraft maneuver differently than aircraft with tradition tricycle landing gear. This AC does not cover designs based on tail wheel aircraft."* Since the AT-802 is a tailwheel aircraft, the source for the FAA aircraft database entry is unknown. However, it is worth noting the significant difference in wheelbase between the AT-802 and the Pilatus PC-12, the next most common ADG II aircraft operating at the Airport (AT-802: 23' 10"; PC-12: 11' 5"), suggests the use of TDG 1B is appropriate.

The parallel taxiway (Taxiway A) and the four connector taxiways (A1-A4) are constructed to TDG 1B standards, which appears to be appropriate for current large airplane use. Hangar and apron taxiways/taxilanes can be constructed to different TDGs based on the expected aircraft use. The east tiedown apron is designed to accommodate small single-engine or twin-engine aircraft (TDG 1A).

3 AC 150/5300-13B, Appendix L, Table L-2.
4 AC 150/5300-13B, Page 1-4, Section 1.6.5

Figure 4-1: Taxiway Design Group Components



Source: Century West Engineering

FAA DESIGN STANDARDS

FAA AC 150/5300-13B, Airport Design, serves as the primary reference in establishing the geometry of airfield facilities at Sunnyside Municipal Airport. Existing condition dimensions and design standards based on the updated critical aircraft determination are summarized in **Table 4-1**. The existing design standards identified in the 2008 ALP (ADG I small) are also provided for reference.

FAA DESIGN STANDARDS

Specific design standards and conditions applicable to Sunnyside Municipal Airport facilities are presented in the following sections of this chapter within the sidebar "FAA Design Standards" text box. For additional information reference appropriate sections within AC 150/5300-13B.

The change in critical aircraft noted earlier triggers a change in airport design standards that will be applied to existing facilities. The most significant change is an increase from ADG I to ADG II standards for the runway-taxiway system.

A summary of taxiway and taxilane design standards is provided in **Table 4-2**. As noted earlier, these standards are determined by the critical aircraft for major facilities used by all aircraft operating at the Airport. For facilities intended for use by a specific aircraft type (e.g., small airplane tiedowns) the aircraft-appropriate standard is used.

Table 4-1: Runway 07/25 Airport Design Standards Summary (Dimensions In Feet)

FAA STANDARD	RUNWAY 07/25 EXISTING CONDITIONS[1]	RUNWAY 07/25 (EXISTING/FUTURE STANDARD)[2] AAC/ADG A/B-II VISUAL OR NOT LOWER THAN 1-MILE	RUNWAY 07/25 (PREVIOUS STANDARD)[3] AAC/ADG A/B-I (SMALL) VISUAL OR NOT LOWER THAN 1-MILE
Runway Length	3,423	See Runway Analysis Discussion	
Runway Width	60	75	60
Runway Shoulder Width	10	10	10
Runway Blast Pads [9] • Width • Length	none	 95 150	 80 60
Runway Safety Area • Width • Beyond RWY End • Prior to Landing Threshold	 120 240 240	 150 300 300	 120 240 240
Runway Obstacle Free Zone • Width • Beyond RWY End • Prior to Landing Threshold	 250 200 200	 400[7] 200 200	 250 200 200
Object Free Area • Width • Beyond RWY End • Prior to Landing Threshold	 250 200 200	 500 300 300	 250 200 200
Runway Protection Zone Length	RWY 07: 1,000 RWY 25: 1,000	RWY 07: 1,000 RWY 25: 1,000	RWY 07: 1,000 RWY 25: 1,000
Runway Protection Zone Inner Width	RWY 07: 250 RWY 25: 250	RWY 07: 500 RWY 25: 500	RWY 07: 250 RWY 25: 250
Runway Protection Zone Outer Width	RWY 07: 450 RWY 25: 450	RWY 07: 700 RWY 25: 700	RWY 07: 450 RWY 25: 450
Runway Centerline to: Parallel Taxiway/Taxilane CL Aircraft Hold Position Aircraft Parking Area 18' Building Restriction Line (BRL) Nearest Building to Runway	 240 125 288[4] 370[5] 340[6]	 240 200 305.5[8] 376 340	 150 125 194.5 251 340

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

Table 4-1 Notes:

1. Based on 2019 signed ALP drawing, the existing facilities inventory (2021), and review of as-built drawings for newly constructed facilities.
2. Based on updated critical aircraft and AAC/ADG (A-II).
3. As depicted on 2019 ALP drawing.
4. Distance between Runway 07/25 centerline and east facing aircraft tiedowns located near fueling area (includes 5 feet for nose of aircraft in tiedown position). The current ALP drawing depicts "Existing APL" at 284.5 feet south of runway centerline, which is based on ADG I 44.5-foot clearance to the parallel taxiway.
5. As depicted on 2019 ALP drawing.
6. North end of T-hangar located adjacent to east tiedown apron; roof peak elevation <18 feet.
7. Standard for Large Airplanes (>12,500 pounds)
8. Distance required to clear the Taxiway A TOFA (based on 240-foot runway-taxiway separation). This setback will clear a 7.9-foot aircraft (tail height) in the Part 77 transitional surface; larger aircraft parking will require increased runway separation to avoid penetrating the transitional surface.
9. Per FAA guidelines, blast pad for ADG II runway "stabilizing soil treatments, per standards in AC 150/5370-10."

Table 4-2: Sunnyside Municipal Airport – Taxiway And Taxilane Standards (Current/Future)

DESIGN STANDARD	AIRPLANE DESIGN GROUP (ADG) STANDARDS	TAXIWAY DESIGN GROUP STANDARD
Taxiway A, A1-A5	**ADG II**	**TDG 1B**
Taxiway Safety Area (width)[1]	79 feet	-
Taxiway Object Free Area (width)[1]	124 feet	-
Taxiway centerline to fixed or moveable object	62 feet	-
Taxiway Width	-	25 feet
Taxiway Shoulder Width	-	10 feet
Main Apron	**ADG I/ADG II**	**TDG 1A/1B**
Taxilane Width	-	25 feet
Taxilane Object Free Area (width)[1]	79 feet/110 feet	
Taxilane centerline to fixed or moveable object	39.5 feet/55 feet	-
East Tiedown Apron	**ADG I**	**TDG 1A**
Taxilane Width	-	25 feet
Taxilane Object Free Area (width)[1]	79 feet	-
Taxilane centerline to fixed or moveable object	55 feet	-

Source: FAA AC 150/5300-13B (Table 4-1, 4-2)

Table 4-2 Notes:

1. The required obstacle clearances are measured from the taxiway/taxilane centerline to the nearest fixed or moveable object, which includes items such as parked aircraft, hangars, fences, equipment storage, and parked vehicles. Current FAA design guidance requires additional separation be provided beyond the top of the tiedown marking to account for the distance "from main gear to nose of critical aircraft at the outer edge of the TLOFA." An acceptable design approach is to provide clearance for a common aircraft type that uses the apron (e.g., small single engine or small twin-engine piston aircraft).

Airport Facilities Analysis

Based on the updated inventory of facilities presented in Chapter 2, Existing Conditions, existing airfield facilities were evaluated for their conformance with applicable FAA standards. Additionally, any other airport facility issues and/or opportunities that may have been identified or need to be addressed during the planning process are also depicted and discussed further within this chapter.

The change to AAC/ADG A-II standards noted earlier will apply to existing facilities since the "regular use" threshold of 500 annual operations by the critical aircraft has been reached. As a result, the review will identify several existing facilities that were designed and constructed based on ADG I design standards, as non-conforming to ADG II standards.

The affected facility and airspace design standards are briefly summarized below:

- **Change in RDC**: A-II – increased dimensions for runway width, runway safety area (RSA), runway object free area (OFA), and taxiways.

  Note: The existing runway-parallel taxiway separation meets current A-II standards and TDG 1B standards. The taxiway safety area (TSA) and object free area (TOFA) clearances increase with ADG II. The existing taxiway width (25 feet) meets the TDG 1B standard.

- **Change in Critical Aircraft Size** (Large Airplane) - increases width of OFA.
- **Change in TDG** – increases standard from TDG 1A to 1B based on critical aircraft, although no dimensional changes occur.

Upgrading airfield facilities to meet ADG II standards will be a primary focus of the Airport's near-term capital improvement program. It is anticipated that compliance will require several individual projects or groups of projects depending on the availability of FAA and local financial resources.

Figure 4-2 depicts existing airside and landside facilities ADG II conformance issues identified at Sunnyside Municipal Airport. Conformance issues related to the configurations of runways, taxiways and apron pavements are primarily due to the code change from A/B-I (small) to A/B-II. Issues related to the FAA's incompatible land use policy for Runway Protection Zones (RPZ) affect the Runway 7 RPZ (road and property ownership).

As noted previously in the ALP Report, Sunnyside Municipal Airport currently operates exclusively under VFR, with no instrument capabilities. Runway 07/25 is designated as a "visual" runway in the Code of Federal Regulations (CFR) Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace. The addition of instrument procedures at the Airport has been identified by users as a potential facility improvement need that should be considered in the ALP Report. Options for providing instrument approach and departure capabilities will be examined in the alternatives evaluation, including options that would require a change in Part 77 runway designation to non-precision instrument (NPI). **Figure 4-3** depicts the building restriction line (BRL) and aircraft parking line (APL) based on the current visual (large airplane) Part 77 setback and the ADG II taxiway OFA. **Figure 4-4** depicts existing landside facilities with taxilane object free are (TOLA) clearance issues.

Figure 4-2: FAA Design Group (ADG) Comparison

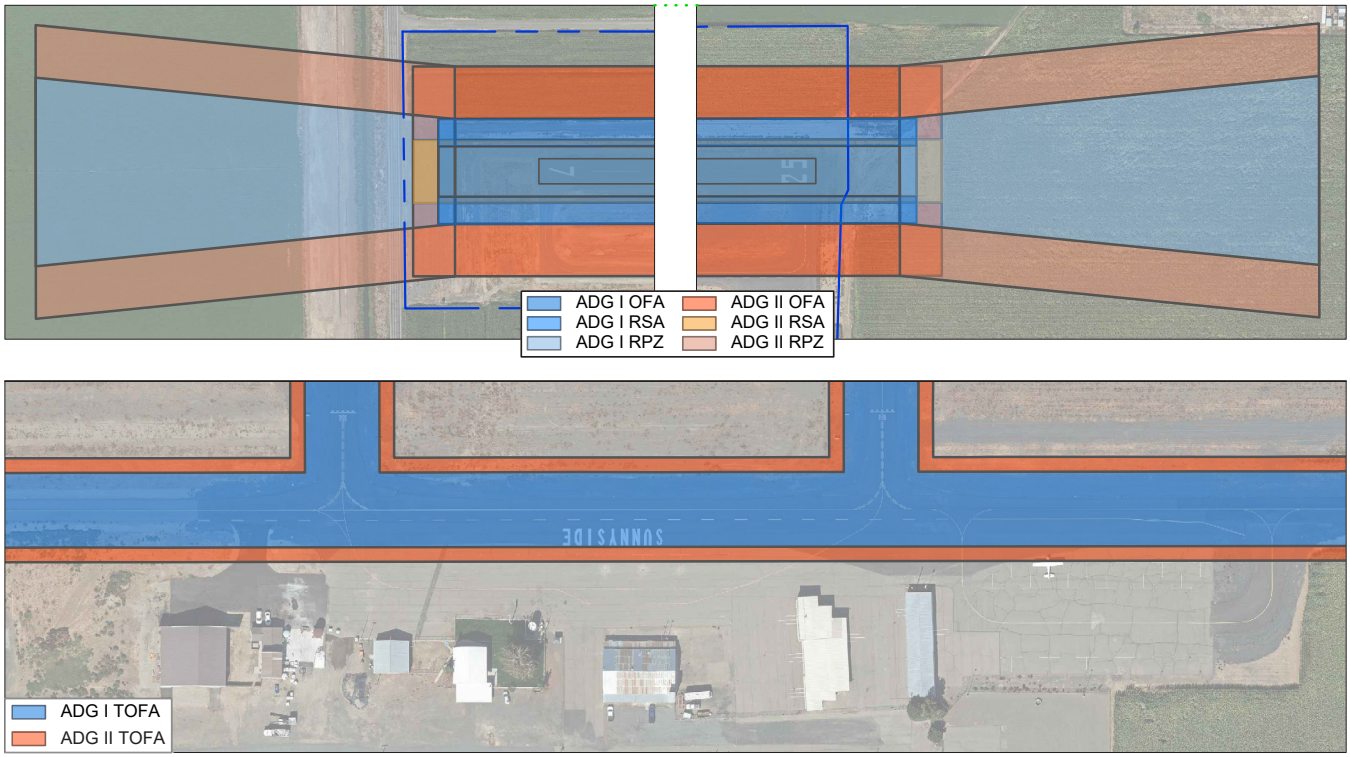


Figure 4-3: Part 77 Runway Setback

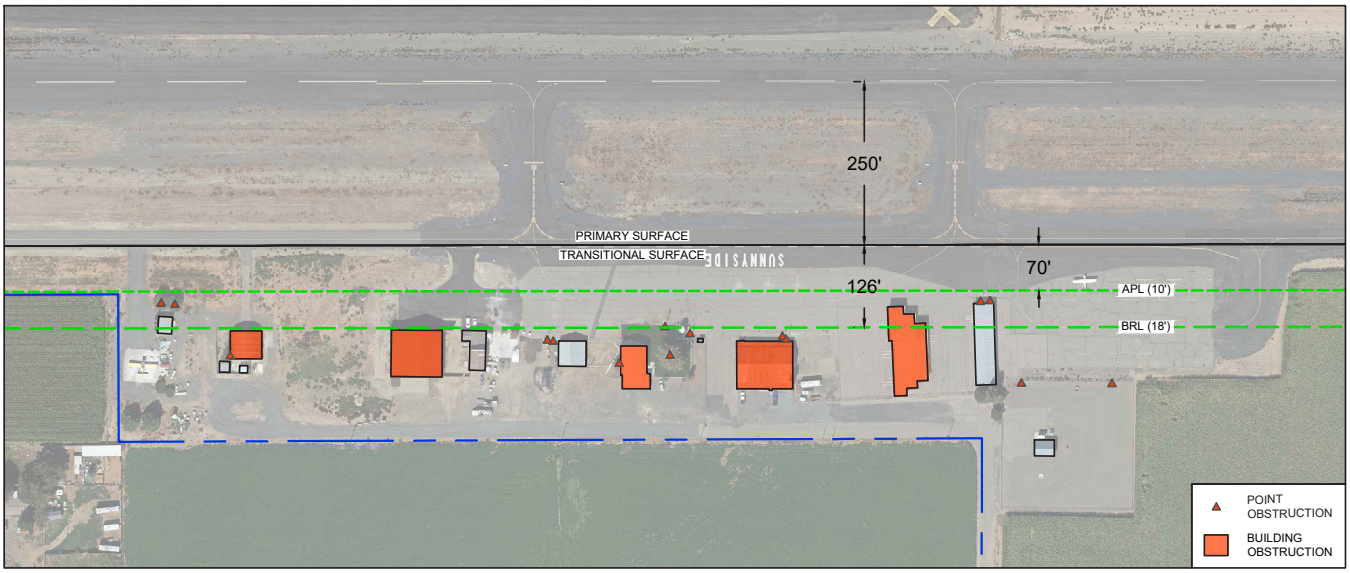
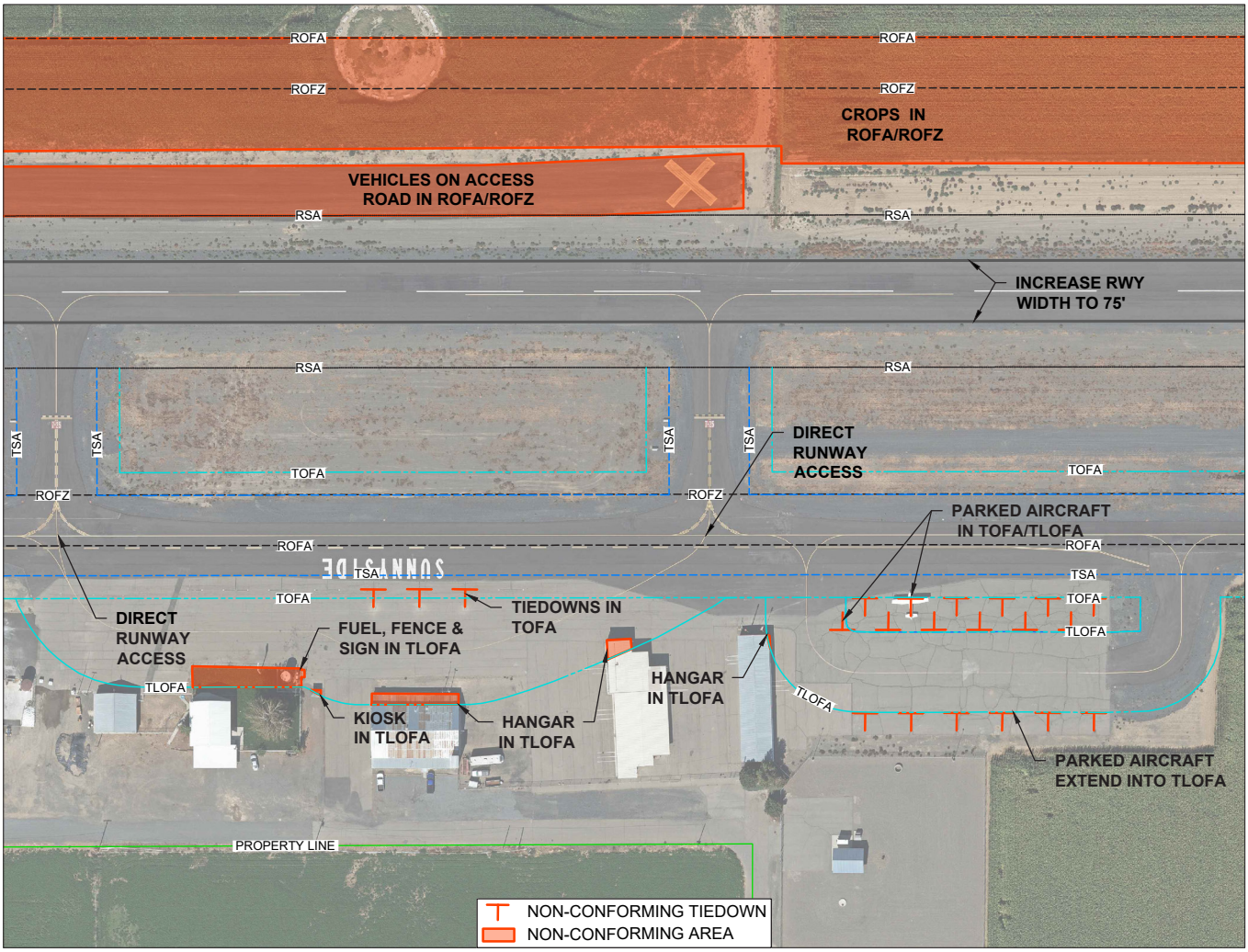


Figure 4-4: Terminal Area Conformance

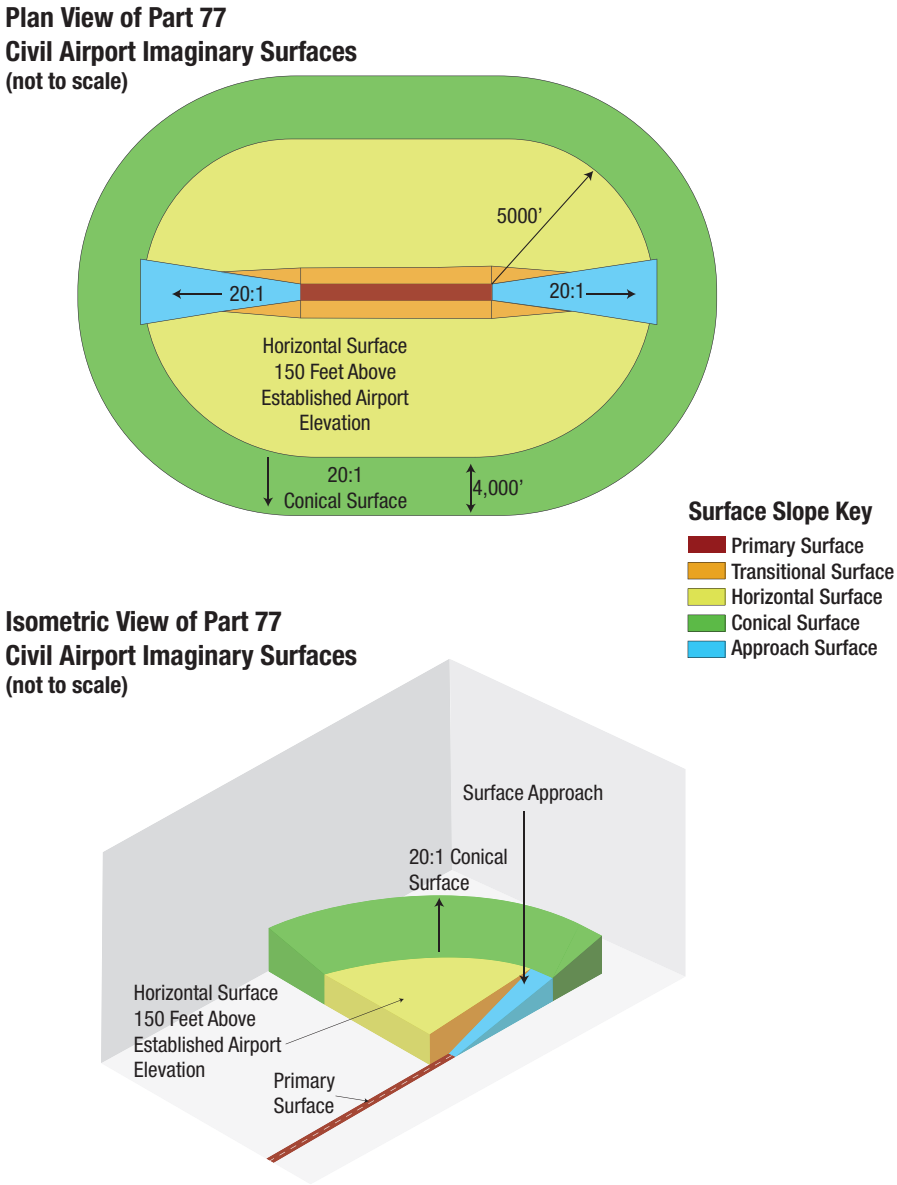


Airside Facility Requirements

PART 77 AIRSPACE

U.S. airport airspace is defined by Title 14, CFR Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace.[5] Part 77 defines five types of airport imaginary surfaces that are established to protect the airspace immediately surrounding a runway. The airspace surfaces should be free of obstructions (i.e., terrain, structures, parked aircraft, trees, etc.) to the maximum extent possible to provide a safe aircraft operating environment. Runways that support instrument operations typically have larger or more demanding surfaces that protect aircraft operating closer to the ground without visual references. A generic Part 77 diagram illustrating each type of airspace surface is provided in **Figure 4-5**. Note: the generic runway configuration and depicted surfaces are for reference only and do not apply to Runway 07/25.

Figure 4-5: Part 77 Airspace (Generic)



Source: Century West Engineering, Airspace Plan; Part 77
Note: Precision approach airspace is provided for reference and is not applicable to Runway 07/25 at 1S5.

5 Part 77 is contained in Code of Federal Regulations (CFR), Title 14 – Aeronautics and Space, Chapter 1, Subchapter E, Part 77.

RUNWAY 07/25 AIRSPACE PLANNING CRITERIA

The definition of FAR Part 77 surfaces at an airport reflects a variety of factors, but a primary defining factor is runway category (visual, non-precision instrument, or precision instrument) which reflects approach capabilities. Runway 07/25 is designated as a visual runway. It does not currently support existing or planned instrument procedures.

Developing instrument approach capabilities at Sunnyside Municipal Airport has been identified as a potential upgrade of interest among airport users. The airports geographic information systems (AGIS) survey, being completed as part of the ALP update, will provide obstruction data required to support the feasibility analysis and subsequent design of instrument procedures. For general aviation (GA) airports, NPI approaches are the most common. Most new instrument procedures developed by FAA now utilize satellite navigation (SATNAV) technology with global positioning system (GPS) platforms. The most common NPI approach is an RNAV (GPS).[6] This type of approach provides electronic course guidance to the runway environment or a specific runway end. Pilots are responsible for maintaining prescribed altitudes during each stage of the procedure.

Although potentially confusing, it is important to note that NPI approaches can be developed at airports with instrument or visual airspace defined for their runway(s). From a Part 77 airspace perspective, an NPI approach to a runway end (e.g., RNAV GPS Rwy 7) will require NPI airspace surfaces, whereas an approach to the airport is designated as a circling *(or circle-to-land)* procedure and requires only visual airspace surfaces. The key distinction with a circling procedure is that the pilot must maintain visual contact with the runway environment after reaching the missed approach point (MAP), when proceeding to a runway end for landing. For a straight-in procedure, the pilot is guided electronically to the designated MAP. If visual contact with the airport environment is not established before reaching the MAP, the pilot is required to execute a missed approach procedure.

Both straight-in and circling RNAV GPS procedures typically require at least one-mile of visibility unless the runway is equipped with an approach lighting system (ALS). Instrument departure procedures are designed based on required aircraft climb gradients and obstruction clearance standards. An NPI circling procedure can be accommodated without any modifications to the existing airspace or markings for Runway 07/25. An NPI straight-in procedure would require larger and more restrictive approach surfaces, larger horizontal surface radii, and NPI runway markings.

A summary of visual and NPI Part 77 surface requirements for Runway 07/25 is provided in **Table 4-3**.

Table 4-3: Runway 07/25 - Part 77 Airspace Summary

	EXISTING STANDARD	OPTIONAL FUTURE STANDARD
PART 77 SURFACE	LARGER THAN UTILITY VISUAL (VIS)	LARGER THAN UTILITY NPI VISIBILITY > ¾-MILE
Width of Primary Surface	500 feet	500 feet
Approach Surface Length	5,000 feet	10,000 feet
Approach Surface Width (Outer End)	1,500 feet	3,500 feet
Approach Surface Slope	20:1	34:1
Transitional Surface	7:1 Slope to 150 feet above runway	Same1
Horizontal Surface Elevation	150 feet above airport elevation	Same
Horizontal Surface Radius	5,000 feet	10,000 feet
Conical Surface	**20:1 for 4,000 feet**	**Same**

Source: Code of Federal Regulations (CFR), Title 14, Subpart E#, Part 77
It is recommended that the option of upgrading the runway and airspace to NPI be evaluated in the alternatives analysis (Chapter 5). The evaluation would include the physical requirements and potential impacts on adjacent landside development (setbacks for hangars, aircraft parking, etc.) and off airport development. The FAA's assessment of approach feasibility and approximate approach minimums expected for both types of procedures will help define the incremental benefits of pursuing a more demanding approach type.

6 RNAV is an FAA acronym for "Area Navigation"

RUNWAY 07/25 AIRSPACE SURFACES AND OBSTRUCTIONS

This section describes the Part 77 airspace surfaces for Runway 07/25 based on the existing visual approach and large airplane standards.

For reference, the obstructions identified on the 2008 Part 77 Airspace Plan drawing (Sheet 4 of 7) are noted below. Major reconstruction projects for the runway and portions of the parallel taxiway have been completed since the 2008 ALP was completed and all previously identified obstructions will be reviewed based on 2021 AGIS obstruction survey data developed as part of this ALP Report update. The AGIS data will be used to populate obstruction tables in the updated Part 77 Airspace Plan, and related drawings in the ALP set (see Chapter 7). Part 77 obstruction clearing standards will also apply to any future changes in runway configuration.

Based on interest in adding instrument approach capabilities, an option to upgrade airspace to NPI will be evaluated in the airside alternatives (Chapter 5). As noted in **Table 4-2**, the option of upgrading the runway to NPI would increase the dimensions/slopes of several Part 77 surfaces. The NPI runway designation corresponds to straight-in NPI approaches to a specific runway end, rather than a circling procedure to the airport, which includes a visual final landing segment.

The updated ALP drawing set will depict the recommended future runway configuration and will serve as the primary reference for future obstacle removal projects in the Capital Improvement Plan (CIP) (Chapter 6).

Approach Surfaces (20:1, 5,000')

Approach surfaces provide defined descent paths for landing aircraft on runways (and helipads). The approach surface extends outward and upward from each runway end (at the end of the primary surface) along the extended runway centerline. The surface slope and dimensions are determined by the type of aircraft intended to use the runway, the most demanding approach planned for the runway, and the minimum visibility required for the approach.

2008 Part 77 Drawing Obstructions: Two approach surface obstructions were listed: Rwy 07 – Road (Hwy 241) and Runway 25 – a pole (overhead power pole) located on the west side of Ray Road. Vehicles traveling on Highway 241 penetrated the future (relocated) Runway 07 approach surface by approximately 10 feet; the pole penetrated the future Runway 25 approach surface by approximately 16 feet. These items were based on a reconfigured and extended (4,000 feet) runway that was shifted east. The future runway configuration also included a 200-foot displaced threshold on the Runway 07 end coupled with a 20:1 obstacle clearing surface (OCS) intended to support night circling instrument approach procedures. The future runway configuration will be evaluated based on current FAA standards in the airside alternatives evaluation (Chapter 5).

All approach surface penetrations identified in the AGIS for both the existing runway and any recommended future runway configuration will be noted with recommended mitigation to the extent required by FAA. This may include removing, lowering, or lighting the object. Part 77 surfaces cannot be modified, although the FAA recognizes use of design features such as displaced thresholds and threshold siting surfaces/obstacle clearance surfaces to mitigate airspace penetrations.

Primary Surface (500' wide)

The primary surface is a flat rectangular plane of airspace longitudinally centered on the runway, extending 200 feet beyond each runway end (for hard surfaced runways). The primary surface has the same elevation as the runway centerline at its nearest point. The outer ends of the primary surface connect to the inner portion of the runway approach surfaces.

The width of the primary surface depends on runway category, approach capability, and approach visibility minimums. Based on the larger-than-utility designation associated with the critical aircraft (>12,500#), the primary surface width is 500 feet for both NPI and visual approaches. The Runway 07/25 primary surface was previously 250 feet wide, consistent with the small airplane identified as the critical aircraft. The wider primary surface shifts the lateral 7:1 transitional surfaces outward on both sides of the runway, which may affect existing and future landside facilities and adjacent development.

The primary surface should be free of terrain or built item penetrations, except items with locations fixed-by-function (e.g., approach lighting, runway or taxiway edge lights, visual guidance indicators, airfield signs, etc.). Those items are required to be mounted on break-away (frangible) mounts. Other common items such as wind cones require a red obstruction light at the top of the mounting pole if it penetrates Part 77 airspace.

2008 Part 77 Drawing Obstructions: No obstructions listed.

All primary surface penetrations identified in the AGIS will be noted with recommended mitigation to the extent required by FAA for the current and future runway.

Transitional Surface

The runway transitional surface is located along the lateral edges of the primary surface and is represented by two planes rising perpendicularly to the runway centerline at a slope of 7 to 1. The transitional surface extends outward and upward to an elevation 150 feet above the airport elevation. The outer edges of the transitional surface connect with the horizontal surface (see below).

The transitional surface should be free of obstructions (i.e., parked aircraft, structures, trees, terrain, etc.). Common facilities located adjacent to runways such as hangars and parked aircraft are located to avoid transitional surface penetrations. When penetrations exist, the FAA typically requires removal or lowering when possible; fixed objects penetrations such as buildings may also be identified with roof-mounted obstruction lighting, although long-term removal is generally expected by FAA.

2008 Part 77 Drawing Obstructions: Two transitional surface obstructions are listed to the future NPI transitional surface: The T-hangar located adjacent to the east tiedown apron (2 feet estimated penetration, 339 feet from runway centerline) and a group of hangars located along the back of the terminal area apron (undetermined penetrations based on variable building heights and distances to runway centerline). Survey and obstruction lighting were recommended for verified penetrating items.

Is noted that the 500-foot-wide primary surface associated with the future non-precision instrument utility Part 77 designation previously recommended is the same dimension as both the visual and NPI primary surface currently required for larger-than-utility runways. As a result, the beginning of the 7:1 transitional surface slope begins in the same location relative to runway centerline. The 2021 AGIS survey provides current elevation data for all existing structures that will be evaluated.

Horizontal Surface

The Horizontal Surface is a flat plane located 150 feet above the airport elevation. The horizontal surface boundaries are defined by radii (5,000 or 10,000 feet) extended from each end of the runway primary surface. The outer edges of the radii for each runway end are connected with tangent lines, which taken together define the horizontal surface.

Based on its existing visual approaches, 5,000-foot radii are used on Runway 07/25. The option of upgrading airspace to non-precision instrument (NPI) would increase the horizontal surface radii to 10,000 feet. Where feasible, horizontal surface obstructions identified in the AGIS should be removed, lighted, or lowered to a height where they are no longer penetrating the surface.

2008 Part 77 Drawing Obstructions: No obstructions listed.

Conical Surface

The conical surface is an outer band of airspace that encircles the horizontal surface. The conical surface begins at the outer edge of the horizontal surface and extends outward 4,000 feet and upward at a slope of 20:1. The outer edge of the conical surface is 350 feet above airport elevation.

Where feasible, conical surface obstructions identified in the AGIS should be removed, lighted, or lowered to a height where they are no longer penetrating the surface.

2008 Part 77 Drawing Obstructions: No obstructions listed.

Airfield Pavement Strength and Condition

Airfield pavements are the single most important asset on an airport. Monitoring and planning for future improvements to the strength and condition of airfield pavements is critical to satisfying existing and future aeronautical demand.

AIRFIELD PAVEMENT STRENGTH

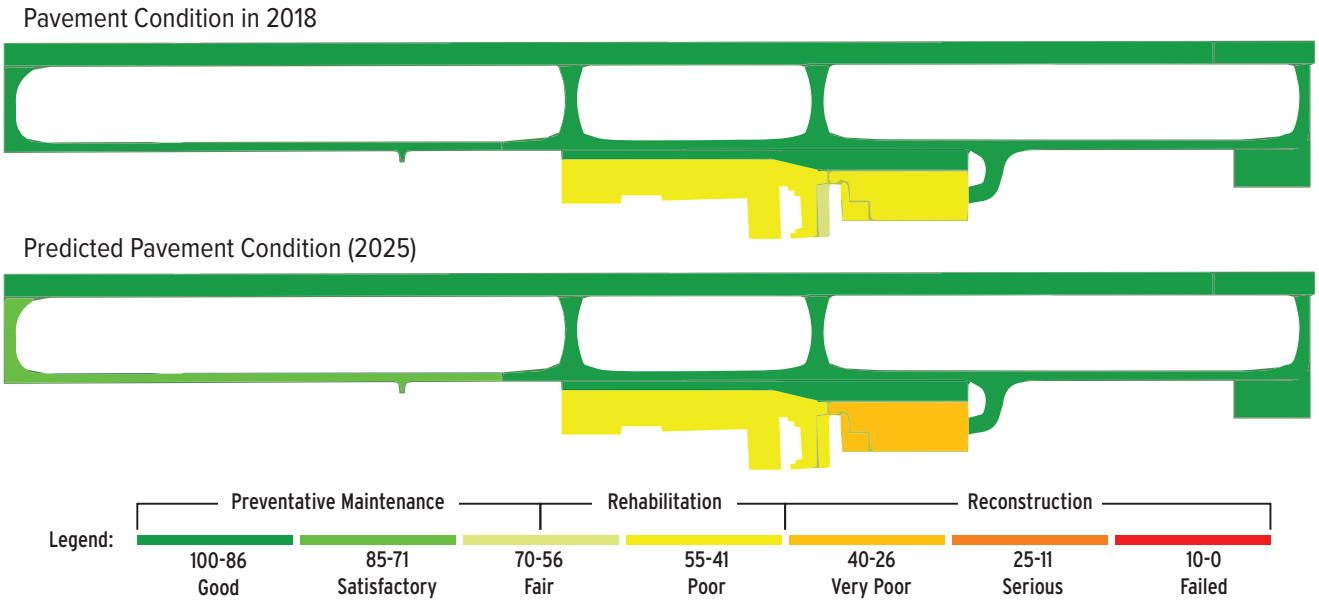
The published pavement strength rating for Runway 07/25 is 12,500 pounds for aircraft equipped with single-wheel landing gear.[7] The critical aircraft, AT-802, has a maximum takeoff weight (MTOW) of 16,000 pounds on a single-wheel configuration landing gear. The pavement sections used for all taxiway and apron pavements are identical to the runway. It is recommended that the airfield pavements be upgraded to accommodate 16,000-pound single-wheel gear aircraft as part of the next runway pavement construction project.

AIRFIELD PAVEMENT CONDITION

The most recent WSDOT Aviation airfield pavement management system (APMS) inspection at Sunnyside Municipal Airport was completed in 2018. This onsite inspection captured several new or rehabilitated pavement sections completed earlier in 2018, including the runway (reconstructed), the eastern section of the parallel taxiway (new), the aircraft hold area (new) adjacent to the Runway 25 threshold, and the northern section of apron (overlay) that directly abuts the south edge of the parallel taxiway. The study provides projected conditions for existing pavement, assuming no intervening maintenance, through 2025. **Figure 4-6** depicts the pavement condition for 2018 and 2025 on a scale of 0-100. A pavement maintenance plan is outlined through 2025 which prioritizes recommended work items based on pavement condition. Major rehabilitation was recommended for all sections of existing aircraft apron in 2019, except for the northern section of apron noted above. No other pavement-related actions are identified on the airfield in the APMS through 2025.

Major rehabilitation of asphalt pavements (overlay, crack cutouts, patching, etc.) is typically programmed on a 15 to 20-year cycle for planning purposes, depending on use and pavement design. A regular schedule of crack filling and fog/slurry seals should be performed for all asphalt pavement sections to maximize useful life. The required change in airfield design standards noted earlier may result in some existing pavements being reconstructed or modified before the end of their useful life to meet FAA standards. A prioritized list of pavement rehabilitation or reconstruction projects, and any recommended new pavements, will be provided in the updated capital improvement program.

Figure 4-6: Pavement Conditions



Source: Washington State Department of Transportation Aviation 2018 Pavement Management Program Update

7 FAA Airport Record Form 5010-1, FAA Chart Supplement





Source: Century West Engineering

FAA Design Standards

The airport design standards depicted on the 2008 ALP (and the 2019 As-built ALP) are summarized in this section to represent existing conditions. As noted earlier, the applicable airport design standards defined in this study are based on the critical aircraft identified in the updated aviation activity forecasts. In broad terms, the change in critical aircraft results in larger dimensions for most defined areas (see **Table 4-1**). It is noted that the change in design standards from Airplane Design Group I to II has not been implemented in recent airfield design projects. As a result, a group of "non-standard" facility conditions are identified that will likely require multiple projects completed over an extended period to bring all facilities into compliance with FAA standards.

RUNWAY 07/25

Runway 07/25 was analyzed relative to runway orientation, runway length and width, and FAA design standards.

Runway Orientation and Crosswind Coverage

The preferred orientation of runways is a function of wind velocity, combined with the ability of aircraft to operate under given conditions. FAA has defined the maximum allowable direct crosswind (90-degrees) for small aircraft as 10.5 knots and 13 knots for larger general aviation aircraft. The 13-knot crosswind component corresponds to the current and future critical aircraft and ARC (A/B-II).

The FAA recommends that primary runways accommodate at least 95% of wind conditions. When this level of wind coverage is not provided, the FAA recommends consideration of a crosswind runway.

Although there is an automated weather observation system (AWOS) onsite, ten years of wind data are not available for the facility. In cases where the required data are not available, the FAA requires use of wind data from the nearest available airport(s). Yakima Air Terminal (YKM), located 28 nautical miles northwest of Sunnyside Municipal Airport, is the nearest airport with sufficient wind data.

YKM Wind Data

An evaluation of Runway 07/25 wind coverage was performed based on YKM wind data (All Weather, VFR, and IFR). The tabulated wind data is summarized in **Table 4-4**. A review of the YKM wind rose suggests that the Runway 07/25 orientation accommodates slightly more than 95% of all weather wind conditions for general aviation aircraft, suggesting that the runway meets the FAA's wind coverage threshold for a primary runway.

The new wind rose will be added to the Airport Layout Plan (ALP).

Table 4-4: Wind Analysis (YKM Data)

Runway 07/25	
All Weather	
10.5 KNOTS	95.23%
VFR	
10.5 KNOTS	95.19%
IFR	
10.5 KNOTS	95.65%

Source: Yakima Air Terminal (YKM) ALP Wind Rose. National Climate Data Center AGIS Windrose (2011-2020)
Runway 07/25 Bearing = S 89° 31' W True

Runway Length

For general aviation airports the FAA recommends using a "family of design aircraft" approach to defining runway length requirements. FAA *AC 150/5325-4B, Runway Length Requirements for Airport Design* provides runway length curves based on three families of aircraft differentiated by certificated MTOW, small airplanes with MTOW of 12,500 pounds or less; airplanes with MTOW of more than 12,500 pounds up to and including 60,000 pounds; and regional jets and airplanes with MTOW of greater than 60,000 pounds.

The current and future critical aircraft (Air Tractor 802) for Sunnyside Municipal Airport has a MTOW of 16,000 pounds, which would suggest that the runway length requirements should be determined based upon curves provided for Airplanes with a MTOW between 12,500 and 60,000 pounds. However, the runway length curves for that family of airplanes were developed using performance characteristics of business class jets which typically require longer runways for takeoff and landing than propeller-driven aircraft such as single-engine turboprops.

Furthermore, since the AT-802 is an agricultural aerial applicator, it typically dispatches its load (800 gallon hopper capacity) during flight and returns to the Airport at weights often below 12,500 pounds. According to data published by the manufacturer, the AT-802 has a takeoff distance of 2,000 feet at its maximum weight of 16,000 pounds.[8] Another single-engine turboprop with regular transient operations at the Airport is the Pilatus PC-12, operated by air ambulance and corporate users. The PC-12 has a MTOW 10,450 pounds with a takeoff distance of 2,455 feet. (MTOW, ISA, sea level, dry paved runway).[9]

Considering the performance characteristics of the critical aircraft and other similar aircraft, it appears that the runway length requirements for smaller ADG I and II piston aircraft operating at the Airport are more demanding. Based on this, it is appropriate to use the runway length standards for small airplanes with a MTOW 12,500 pounds and less. This captures group most of the single-engine and multi-engine piston activity at the Airport.

Chapter 2 of *AC 150/5325-4B*, provides runway length curves based on approach speeds and seating capacity of the critical aircraft, and percent of fleet groupings based on the airport's location and activity levels. For Sunnyside Municipal Airport, the standard based on small airplanes with approach speeds of 50 knots or more and seating capacity of 10 or fewer seats that make up 95% of the general aviation fleet is appropriate for long term planning.

8 https://airtractor.com/aircraft/at-802a/
9 https://www.pilatus-aircraft.com/en/fly/pc-12

FAA DESIGN STANDARDS

Runway Safety Area (RSA)
Standards: A/B-II standard is 150 feet wide or 75 feet each side of runway centerline and 300 feet beyond runway ends. Additional FAA standards include gradient, object clearing, and surface compaction.

Condition: The current RSA for Runway 07/25 meets ADG I dimensional standards, although the east end of the RSA extends off airport property beyond the end of Runway 25. To fully protect the surface, the entire RSA should be owned by the Airport.

Upgrading the RSA to ADG II standards will be required for the current runway and any future runway reconfigurations.

Runway Object Free Area (OFA)
Standards: A/B-II standard is 500 feet wide or 250 feet each side of runway centerline and 300 feet beyond runway ends. Additional FAA standards include gradient and object clearing.

Condition: The current OFA for Runway 07/25 meets ADG I dimensional standards, although the east end of the OFA extends off airport property beyond the end of Runway 25. To fully protect the surface, the entire OFA should be owned by the Airport.

Upgrading the RSA to ADG II standards will be required for the current runway and any future runway reconfigurations.

Runway Obstacle Free Zone (OFZ)
Standards: A/B-II standard for large airplanes is 400' wide or 200' each side of runway centerline and 200' beyond runway ends. Additional FAA standards include object clearing.

Condition: The current OFZ for Runway 07/25 meets small airplane dimensional standards, consistent with ADG I, although the east end of the OFZ extends off airport property beyond the end of Runway 25. To fully protect the surface, the entire OFZ should be owned by the Airport.

Upgrading the OFZ to large airplane (ADG II) standards will be required for the current runway and any future runway reconfigurations.

Runway Length Requirements
Rwy 7/25

Condition: 3,423 feet

Standards: 3,350 feet
(FAA Defined Length Required to accommodate 95% of small airplane fleet based on local airport conditions)

The FAA provide the following information regarding percentage of fleet: “This category applies to airports that are primarily intended to serve medium size population communities with a diversity of usage and a greater potential for increased aviation activities. Also included in this category are those airports that are primarily intended to serve low-activity locations, small population centers, and remote recreational areas.” The appropriate runway length curves are presented in Figure 2-1 of *AC 150/5325-4B*.

Utilizing the provided runway length curves referencing the airport elevation (768 feet) and mean daily maximum temperature (92 degrees F) for Sunnyside Municipal Airport, a recommended runway length of 3,350 feet is calculated.

The existing runway is 3,423 feet long, which exceeds the recommended length by 73 feet. It is recommended that the current length of 3,423 feet be maintained while the runway remains in its current configuration. When the runway is reconfigured to meet other ADG II design standards, its length may be reduced to 3,350 feet. The City also has the option of maintaining the existing length or a longer runway length that would not be eligible for FAA funding.

Runway Protection Zones (RPZ)

The RPZs depicted on the most recent ALP reflect ARC B-I (small) dimensional standards (250 x 450 x 1,000 feet). The Runway 7 RPZ has public roadway (SR 241) traversing the inner portion of the RPZ. Most of the Runway 7 RPZ is located off airport on Port of Sunnyside property; an existing avigation easement is depicted on the ALP. The Runway 25 RPZ also extends off airport property into Port of Sunnyside-owned property. The RPZ extends over agricultural land use and does not contain incompatible land uses such as public roadways or structures. The ALP depicts a future RPZ (with avigation easement to be acquired) in conjunction with a future 577-foot runway extension/shift. This results in a portion of the future Runway 25 RPZ extending east past Ray Road with one residential structure located in the RPZ.

Based on the current ARC A/B-II standards, the RPZ dimensional footprint increases in size (500 x 700 x 1000 feet) and the net area of incompatible land uses such as roads may also increase. In addition to applying the ADG II RPZ dimensions, the change in RPZ size triggers an RPZ land use review by FAA. Mitigation of incompatible land uses for both the current and future configuration of Runway 7/25 will be addressed through the development alternatives process described in Chapter 5, Development Alternatives.

The most recent update of the FAA Airport Design advisory circular (*AC 150/5300-13B, Appendix I*) identifies several common conditions and facilities that are considered compatible with RPZs. This design guidance is supplemented by the FAA’s September 2012 interim guidance memorandum regarding RPZs and incompatible land uses.

FAA DESIGN STANDARDS

Runway Protection Zone (RPZ)

Standards: A/B-II standard for runway ends with visual or not lower than 1-mile visibility minimums is 500 x 700 x 1,000 feet (13.77 acres). If a runway end has a displaced threshold or uses declared distances to compensate for non-standard runway clearances, separate approach, and departure RPZs are required. RPZs should be owned by the Airport or under control by easement and should be clear of incompatible land uses such as roads and buildings.

FAA Advisory Circular 150/5300-13B, Appendix I (section I.3; I.3.1-I.3.3) defines permissible land uses within RPZs, which include farming activities that meet other design clearance requirements, compliant irrigation channels, and non-public airport service roads that are under airport control. Incompatible land uses are defined by FAA in a 2012 interim guidance memorandum.

Condition: The Runway 7 and 25 RPZs defined in the 2008 Airport Layout Plan Report the previous planning standard (ARC: B-I Small-Visual) and depicted on the current ALP drawing extend beyond Airport property on to Port of Sunnyside-owned properties. The Runway 7 RPZ contains SR 241 and Sulphur Creek Wasteway ROWs.

The current ALP depicts an avigation easement for the Runway 7 RPZ. No avigation easement is depicted for the Runway 25 RPZ. ARC A/B-II RPZ dimensions will be applied to the current runway (existing RPZ) and any future runway configuration (future RPZ). A review of RPZ configurations and property ownership/easement options will be included in the airside alternatives evaluation in Chapter 5 for proposed runway configurations.

Among other things, the FAA's interim guidance directs airport sponsors to evaluate any planned changes to existing RPZs that introduce or increase the presence of roads in RPZs. Existing roads within RPZs are also to be evaluated during planning to determine if feasible alternatives exist for realignment of a road outside RPZs or for changes to the RPZs themselves. The FAA Seattle Airports District Office has subsequently indicated that the primary focus of this policy is related to proposed changes to RPZs—as the result of a change to a runway end/RPZ location, approach visibility minimums, or the built items located in an RPZ. Any proposed changes in the length or configuration of the runway that changes the location of existing RPZs evaluated in this study are subject to review by FAA headquarters in Washington D.C.

Runway Width/Shoulders

Runway 07/25 is 60 feet wide with 10-foot gravel shoulders. The ARC A/B-II-dimensional standard for runways with visual or not lower than 1-mile approach visibility minimums is 75 feet with 10-foot shoulders. The runway should be widened to 75 feet with 10-foot unpaved shoulders to meet standards.

Runway Blast Pads

Runway 07/25 does not accommodate significant jet operations and therefore does not require blast pads, per FAA design guidance. However, if significant propeller wash is generated beyond the runway ends, a surface treatment may be considered to stabilize loose material within a standard blast pad footprint in the extended runway safety area.

TAXIWAY/TAXILANE NETWORK

The taxiways and taxilanes on the Airport were designed based on the previous ARC standards (A/B-I small). Based on current standards and planning criteria, all major taxiways and taxilanes at the Airport used by both ADG I and II aircraft should be upgraded to the more demanding ADG II standards. The increased clearance requirements for ARC A/B-II standards result in nonstandard conditions for existing taxiways and taxilanes. It is appropriate for taxilanes that are used exclusively by small airplanes to access tiedown aprons, T-hangars, etc. to be maintained at ADG I and the smallest taxiway design group.

ADDITIONAL FAA TAXIWAY AND TAXILANE DESIGN GUIDANCE

(AC 150/5300-13B, CHAPTER 4, SECTION 4.3.5. RUNWAY ACCESS FROM APRON)

Taxiways connecting an apron directly to a runway can lead to confusion by creating a false expectation of a parallel taxiway prior to a runway. This loss of situational awareness can result in a pilot entering a runway unknowingly, thus resulting in a runway incursion.

Standard: Design taxiways leading from an apron to a runway to make at least one turn between 75 and 90 degrees prior to reaching the runway hold line.

Condition: Taxiways A2 and A3 provide direct runway access from the main apron and hangar areas.

FAA DESIGN STANDARDS

Runway Width/Shoulders

Standards: A/B-II standard width for runways with visual or not lower than ¾-mile visibility is 75 feet. The standard is 10 feet for shoulders.

Condition: Existing Runway 07/25 width is 60 feet, which does not meet standards. The 10-foot gravel shoulders meet standards.

Options for widening the runway with standard shoulders will be included in the airside alternatives evaluation in Chapter 5 for both the current runway and any proposed future runway configurations.

FAA DESIGN STANDARDS

Taxiway Width/Shoulders

Standards: TDG 1B standard width is 25 feet with 10-foot shoulders is recommended for all major taxiways at the Airport. TDG 1A standards are recommended for taxiways/taxilanes used exclusively by small aircraft (small airplane tiedown aprons, T-Hangar access). TDG 1A and 1B standards are identical.

Condition: Existing Taxiway A width is 25 feet, which meets standards. The 10-foot gravel shoulders meet standards.

Issues related to specific taxiway and taxilane components are described below.

Parallel Taxiway

Taxiway A is 25 feet wide and has a 240-foot centerline-to-centerline offset from the runway, both of which meet RDC A/B-II standards. It is noted that the future increase in runway width associated with ADG II standards will not affect the parallel taxiway.

The RDC A/B-II TOFA for Taxiway A is penetrated by three north-facing aircraft tiedowns (parked aircraft) on the main apron, located directly adjacent to the painted "SUNNYSIDE" markings. It is noted that parked aircraft in these tiedowns will also penetrate the shifted Part 77 transitional surface for Runway 07/25 required for large aircraft. Established crop areas are located within the TOFA on the eastern section (south side) of Taxiway A, east of the tiedown apron, and adjacent to the outer edge of the aircraft hold area at the Runway 25 end. Clearing obstacles within the ADG II TOFA is recommended with related improvements.

FAA DESIGN STANDARDS

Runway – Parallel Taxiway/Taxilane Separation
Standards: A/B-II standard is 240 feet centerline-to-centerline separation between runway and parallel taxiway for visual runways and runways with visibility minimums not lower than 1-mile.

Condition: The separation between the runway and Taxiway A is 240 feet, which meets standards.

Taxiway Safety Area (TSA)
Standards: A/B-II standard is 79 feet wide, or 39.5 feet each side of taxiway centerline along the sides the taxiway. Additional gradient standards apply.

Condition: Taxiway A and Taxiways A1-A4 meet all TSA gradient and clearance standards.

The terminal apron taxilane TSA does not meet clearance standards. Parked aircraft in adjacent aircraft tiedowns, the NW corner of an adjacent multi-unit hangar, the fence adjacent to the fueling area, fuel tank components, and vehicles parked on adjacent apron areas are located within the defined TSA.

The east tiedown apron is designed to accommodate ADG I aircraft parking. However, some taxilane clearances are less than the ADG I standard. Some tiedown markings and parked aircraft (located in a tiedown) are located within the TSA for the apron taxilanes.

Taxiway Object Free Area (TOFA)
Standards: A/B-II standard is 124 feet wide, or 62 feet each side of taxiway centerline.

Condition: The western section of the parallel taxiway (Taxiway A) meets A/B-II TOFA clearance requirements. The A/B-II TOFA on the eastern section of Taxiway A is penetrated by parked aircraft and crops.

The northern row of small airplane tiedowns (6 positions) on the east apron are located at the outer edge of the A/B-II TOFA for Taxiway A, with the top of the painted "T" marking approximately 62 feet from centerline. However, when occupied, portions of aircraft parked in this row are located within the TOFA. The amount of surface penetration varies by aircraft but is typically in the range of 3 to 7 feet.

The northern boundary of crops planted along the south side of Taxiway A and the Runway 25 aircraft hold area are located within the TOFA.

Taxilane Object Free Area (TOFA)
Standards: A/B-II standard is 110 feet wide, or 55 feet each side of taxilane centerline. This standard will be applied to all aprons that serve ADG II aircraft. A/B-1 standard is 79 feet wide or 39.5 feet each side of taxilane centerline

Condition: The terminal apron does not meet ADG II TLOFA clearance standards due to obstructions (aircraft parking, hangars, fuel equipment, fences, and crops). The east apron internal taxilanes also have the OFA clearance issue described for the parallel taxiway. Although the clear dimension (approximately 80 feet) between the adjacent "T" markings meets the 79-foot ADG I TLOFA standard, the clear opening is reduced to less than 79 feet when aircraft occupy the adjacent rows. Reconfiguration of the east tiedown apron to meet the applicable ADG I/II TLOFA standard is recommended.

Exit Taxiways A1-A4

Taxiways A2-A4 meet current FAA standards for angular interior fillet design, which replaced the traditional uniform radius for interior fillets used on Taxiway A1. The narrowest sections (near mid-point) on the exit taxiway connectors range from 28 to 32 feet, which exceeds the TDG 1B width standard of 25 feet. The fillet design for Taxiway A1 may be updated as part of the next major construction required for the taxiway.

Taxiway A2 and A3 provide direct access to the runway from the adjacent main apron and hangar areas, which is not consistent with current FAA design guidance intended to avoid runway incursions (see text box). Options for modifying these direct connections will be evaluated in the airside alternatives.

The existing aircraft hold lines for the runway are located 125 feet from the runway centerline, which coincides with the outer edge of the small aircraft runway obstacle free zone (OFZ) previously applied. The OFZ standard for runways accommodating large airplanes is 400 feet, and the aircraft hold lines should be relocated 200 feet from runway centerline.

The future runway width increase noted earlier will require minor adjustments to Taxiways A1-A4 at each connection on the south edge of the runway.

Taxilanes

The Airport has two public-use aprons with defined taxilanes. The taxilanes provide aircraft access to hangars, parking, and fueling facilities. The existing taxilanes were originally designed to accommodate small (ADG I) aircraft.

Three private taxilanes connect to the western section of Taxiway A. The taxilanes are used to support aerial applicator facilities and hangars and are privately maintained.

Main Apron

The main apron, located near mid-runway, has a single taxilane that partially parallels Taxiway A. The main parallel section of the taxilane (approximately 375 feet long) meets the ADG II standard (94 feet) for parallel taxiway to parallel taxilane separation. However, the taxilane object free area (TLOFA) is limited by numerous obstacles including a fence, hangar, the aircraft fueling position, and parked vehicles.

The main apron is regularly used by transient ADG II air ambulance and corporate aircraft that park in available apron areas, often within the defined TLOFA. The apron has no designated parking positions for larger ADG II aircraft. The use and configuration of the existing main apron will be examined in the landside development alternatives evaluation.

The east-west taxilane on the main apron has two connections to Taxiway A, at Taxiways A2 and A3. Direct aircraft access between aprons and runways is not recommended by FAA due to concerns about reduced situational awareness by pilots. The preferred design approach requires multiple changes in taxiing direction as aircraft transition toward active runways. Options for relocating the taxilane connection points on Taxiway A (offset from A2 and A3) will be evaluated in the airside alternatives as part of the overall review for ADG II conformance.

Main Apron Hangars

Several hangars located east of the aircraft fueling area are sited to provide aircraft access on their east and west sides, effectively creating (unmarked) stub taxilanes. The space between hangars varies, but none meet ADG I TLOFA standards on both sides of the hangars. Since relocating these hangars does not appear economically feasible, the areas adjacent to the hangars should be maintained as open aprons and pilots are responsible for safely moving their aircraft. When the hangars reach the end of their useful life, replacement hangars should be configured to meet applicable TLOFA standards.

East Apron

The east tiedown apron is designed to accommodate ADG I aircraft parking. However, the existing TLOFA clearances are less than the ADG I standard when aircraft are parked in a tiedown and partially extend into the TLOFA.

The FAA provides the following design guidance: *"From the edge of the TLOFA: a. Locate wing tiedown anchors at a distance so the nose of aircraft using the tiedown does not penetrate the adjacent TLOFA." (FAA AC 150/5300-13B, Appendix E).*

FAA AC 150/5300-13B APPENDIX J.5.7

(note: cited figure references are specific to the AC)

Direct Access from the Apron to a Runway.

Taxiways leading directly from an apron to a runway, as shown in Figure J-20, can create the false expectation of a parallel taxiway prior to the runway. This results in pilot confusion that could lead to a runway incursion. Taxiway geometries forcing the pilot to make turns promotes situational awareness and minimizes the risk of runway incursions. Refer to Figure 4-2 for standard taxiway configurations between the apron and a runway.

1. Taxiways from the terminal area with a straight path to the middle third of a runway present a risk of taxiing aircraft entering a high-energy area of a runway during an operation.

2. Taxiways from an apron area or holding bay leading directly to a runway end present the risk of a taxiing aircraft entering the runway during an operation.

Taxiway/Taxilane Recommendations

Based on the critical aircraft determination and evaluation of existing taxiways and taxilanes, the following recommendations are presented:

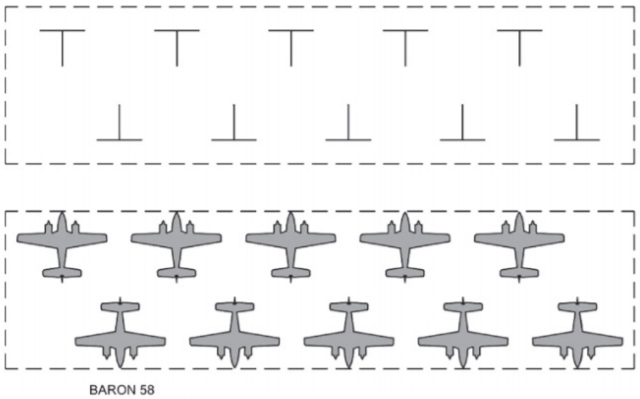
- The apron taxilanes should be reconfigured to meet taxilane object free area (TLOFA) obstacle clearance standards.
- The connections between the adjacent landside facilities and the runway via Taxiways A2 and A3 should be modified to meet FAA design guidance for direct access.
- Relocate aircraft hold lines on Taxiways A1-A4 to 200 feet from the runway centerline to meet current OFZ clearing standard.
- Modify agricultural leases to prevent tall crops from being planted in TOFAs and TLOFAs.
- Options for reconfiguring the existing aprons will be included in the landside alternatives analysis in addition to considering construction of new/replacement aprons. Issues to be addressed include defining designated aircraft parking positions, aircraft fueling positions, and aircraft taxiing routes within the aprons that do not conflict with applicable TLOFA standard.

Landside Facility Requirements

Landside facilities include aircraft parking apron(s), hangars, terminal, FBO facilities, aircraft fueling, surface access and automobile parking. The landside facilities were analyzed relative to existing conditions based on conformance to current FAA design standards; future facility demand is derived from the updated aviation activity forecasts presented in Chapter 3.

AIRCRAFT PARKING APRON

The evaluation of existing aprons will consider the type of aircraft to be accommodated. Small airplane tiedown aprons are typically designed to meet ADG I standards, whereas aprons that accommodate both ADG I and ADG II aircraft should be designed to meet the more demanding standard. Based on current use, ADG II standards should be used for the main apron taxilane and ADG I standards should be used on the east tiedown apron. Aircraft parking areas located adjacent to the parallel taxiway must also meet ADG II TOFA clearance requirements.


BARON 58
Source: Delta Airport Consultants, Inc.

The existing aircraft parking areas and tiedowns at the Airport are designed to meet the standards for small airplanes (ADG I) defined in the 2008 ALP Report. The use of ADG II standards on the main apron results in several non-conforming items, primarily related to the required larger TLOFA clear area. As noted in the previous section, the current tiedown configuration on the east apron does not fully conform with ADG I TLOFA standards. These will be addressed below and in the landside development alternatives.

East Apron

The east apron has 18 marked tiedowns that are accessed by a circular taxilane with two connections to the parallel taxiway. It is observed that the anchors for two tiedown positions at the southeast corner of the apron have been recently paved over, reducing the number positions with anchors to 16.

As noted earlier, the spacing between the taxilane centerline and adjacent tiedown “T” markings is approximately 39.5 feet, but when occupied by parked aircraft the “clear” TLOFA is reduced significantly below ADG I standard. A similar condition exists for the northern row of 6 tiedowns located directly adjacent to the parallel taxiway. The tops of the tiedown markings are located approximately 63 feet from the taxiway centerline, which is just beyond the 62-foot edge of the TOFA, but the noses of aircraft parked in these tiedowns penetrate the TOFA by several feet.

Current FAA design guidance for nested tiedowns is to provide a minimum of 6 feet of end-to-end clearance between the tails of parked aircraft. Current spacing in the nested row is tightly interlocked (approximately 5 feet), with no end-to-end separation for aircraft tails.

Based on current FAA design guidance, none of the existing tiedowns on the east apron meet FAA standards. As a result, the current number of aircraft parking positions may be reduced as part of an overall apron reconfiguration required to accommodate the increased TLOFA clearances and tiedown configuration on the apron. All new aircraft parking areas will be designed to meet the applicable TLOFA standards. Since these reconfigurations will not be determined until the landside alternatives are developed, this assessment will note loss of parking based on clearances from existing taxilanes.

The aircraft parking apron facility requirements were analyzed relative to existing FAA apron and aircraft parking analysis provided in *FAA AC 150/5300-13B, Airport Design*. Facility needs are summarized in **Table 4-5**.

Main Apron

The main apron has 3 small airplane tiedowns located directly adjacent to the parallel taxiway. The tiedowns are located partially in the ADG II TOFA for the parallel taxiway (54 feet from taxiway centerline).

There are no designated parking positions for larger aircraft on the apron, including the regular ADG II transient aircraft and helicopters that operate at the Airport. These aircraft park in available areas of the apron, adjacent to hangars, the aircraft fueling area, or in the small airplane tiedowns. As noted earlier, ADG II TLOFA clearance is not consistent within the main apron.

Based and Transient Aircraft Parking

To quantify the based and transient aircraft parking needs/requirements presented in **Table 4-5**, the based aircraft forecasts and operations forecasts were used to determine the parking spots necessary to satisfy existing and future demand.

Although not specifically defined in current FAA general aviation apron design guidance, the FAA's previous planning standard of 300 square yards for each based aircraft and 360 square yards for transient aircraft was used to calculate apron space requirements for long-term planning purposes. Space requirements for transient business aircraft and helicopter parking were estimated based on typical configurations. The evaluation of apron configurations in the Airport Development Alternatives (Chapter 5) will reflect the aircraft using the facility, consistent with current FAA design guidance:

AC 150/5300-13B, Appendix E Section E.2.1. General aviation Apron, General Design Considerations.

1. *Evaluate apron parking positions and tie-downs for aircraft entry and exit under self-power and by tow.*
2. *Segregate parking areas for small aircraft (e.g., ADG I) from larger aircraft (e.g., ADG II) to optimize utility and efficiency of apron space.*
3. *Design separate apron areas to accommodate the critical aircraft intended to use the segment of apron.*
4. *Account for the effects of jet blast and propeller wash on adjacent aircraft and facilities…"*

Table 4-5: Apron And Hangar Facility Requirements Summary

ITEM	BASE YEAR (2021)	2027	2032	2037	2042
Based Aircraft Forecast	13	14	14	15	16
Aircraft Parking Apron - Existing Aircraft Parking Type/Capacity					
Existing Tiedown Apron[1]	18,700 sy				
Aircraft Fuel Apron[2]	350 sy				
Small Aircraft Parking	21 Tiedowns				
Large Aircraft Parking	0				
Projected Needs (Gross Demand)[3]					
Locally Based Tiedowns (@ 300 SY each)	1 space / 300 sy	1 space / 300 sy	1 space / 300 sy	1 space / 300 sy	1 space / 300 sy
Small Airplane Itinerant Tiedowns (@ 360 SY each)	3 spaces / 1,080 sy	4 spaces / 1,440 sy	4 spaces / 1,440 sy	4 spaces / 1,440 sy	4 spaces / 1,440 sy
Large Aircraft Parking Positions (@ 625 SY each)	1 space / 625 sy	2 spaces / 1,250 sy	2 spaces / 1,250 sy	2 spaces / 1,250 sy	2 spaces / 1,250 sy
Transient Helicopter Parking Positions (@ 380 SY each)	1 space / 380 sy	1 space / 380 sy	1 space / 380 sy	1 space / 380 sy	1 space / 380 sy
Aircraft Fueling Apron (@ 470 SY per position)	1 space / 470 sy	1 space / 470 sy	1 space / 470 sy	2 spaces / 940 sy	2 spaces / 940 sy
Total Apron Needs	**7 spaces / 2,855 sy**	**9 spaces / 3,840 sy**	**9 spaces / 3,840 sy**	**10 spaces / 4,310 sy**	**10 spaces / 4,310 sy**
Aircraft Hangars (Existing Facilities)					
Existing Hangar Units/Aircraft Storage Capacity (≈22,800 SF)	13 Units[4]				
Projected Needs (Net Increase in Demand) [5]					
(New) Hangar Space Demand (@ 1,500 SF per space)[6] (Cumulative 20-year projected demand: 3 Units / 4,500 SF)		1 Unit / 1,500 sf	0 Unit / - sf	1 Unit / 1,500 sf	1 Unit / 1,500 sf
Hangar Development Reserve		1 Unit / 1,500 sf	0 Unit / - sf	1 Unit / 1,500 sf	1 Unit / 1,500 sf
Total Hangar Units Forecast and Reserve (Cumulative projected Demand and Reserve: 6 Units / 9,000 SF)		**2 Unit2 / 3,000 sf**	**0 Unit / - sf**	**2 Unit2 / 3,000 sf**	**2 Unit2 / 3,000 sf**

Source: Century West Engineering

Table 4-4 Notes:

1. Apron pavement area as defined in WSDOT Airport Pavement Database (IDEA).
2. Fueling area included in main apron area. The fueling position (approx. 350 SY) is adjacent to the fuel tank and is located within TLOFA.
3. Apron parking demand levels identified for each forecast year represents estimated gross demand.
4. Six (6) existing hangars including two multi-unit T-hangars (4 unit and 5 unit), two large conventional hangars, and two small/medium conventional hangars. Total hangar area is estimated at 22,800 square feet, which currently accommodate 12 aircraft. Current average hangar space per aircraft stored is 1,900 square feet, although some conventional hangars also accommodate commercial activities and aircraft support.
5. Aircraft hangar demand levels identified for each forecast year represent forecast cumulative demand; assumed 95% of new based aircraft will be stored in hangars.
6. Hangar square footage approximated by type/size of aircraft and reflects existing hangar development patterns at 1S5.

Historically, the number of based aircraft parked on the apron full time has been low, typically less than 10%. Currently, one based aircraft is stored on the apron. For planning purposes, it is estimated that 5% of future based aircraft would be parked on the apron full-time and 95% stored in hangars. Using this ratio with the updated based aircraft forecast, it is estimated the Airport will require one or two parking positions (tiedowns) for based aircraft through the 20-year planning period.

Transient aircraft parking demand was calculated using a method described in Airport Cooperative Research Program (ACRP) Report 113. The ACRP method applies the following formula to the updated operations forecast to estimate future demand for transient aircraft parking:

$$(X/2 * T)/365 * P = \text{Number of Transient Parking Positions}$$

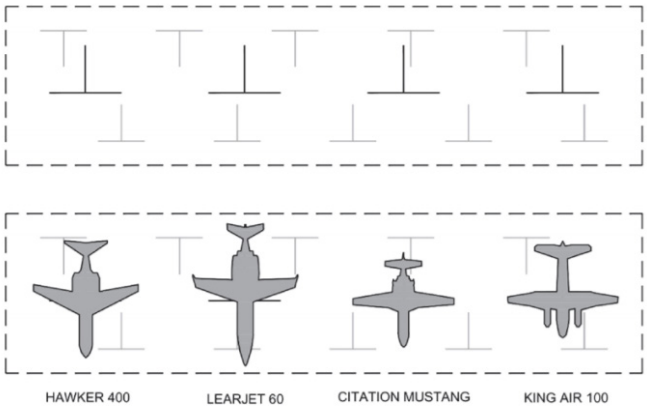
Where:
X = number of operations
T = percent of operations that are transient (50% estimated)
P = percent of transient aircraft that are parked on the apron at the same time (50% estimated)

A review of the 2021 aircraft operations presented in **Table 3-6**, in the Aviation Activity Forecasts chapter, provides an indication of parking demand by aircraft type. Based on 2021 activity, the split between transient and local aircraft was about equal. The largest portion of transient aircraft operations (66%) were generated by small single-engine and multi-engine piston aircraft; 27% were generated by larger turbine fixed wing aircraft including air ambulance aircraft, corporate aircraft, and other transient users; and 7% were generated by helicopters, primarily air ambulances.

Transient ADG II aircraft, primarily air ambulance and business aircraft (Pilatus PC-12 is typical) use the main apron for short-term loading/unloading and parking. Currently these users park near the three small tiedowns, or adjacent to existing hangars. As noted earlier, aircraft parked on the main apron are often located at least partially within the OFA for the apron taxilane or the parallel taxiway.

Development options for the main apron will be included in the landside alternatives evaluation with the intent to meet applicable FAA standards. The options may include reconfiguration to accommodate ADG II aircraft, limiting use to ADG I aircraft (with a replacement ADG II apron provided), or some combination of the two.

Based on current activity levels, two designated parking position should be provided for large aircraft (drive-through parking) and one position for helicopters. Additional parking for these aircraft should be included in long-term development reserves. The balance of transient parking needs will be accommodated in small airplane tiedowns.



Note: The lighter lines depict the nested tiedown positions available for small aircraft
Source: Delta Airport Consultants, Inc.

Both locally based aerial applicator aircraft, including the critical aircraft, are stored and fueled at privately developed facilities with direct access to the parallel taxiway. These aircraft do not regularly use the main apron.

It is noted that the standard parking area layout dimensions for ADG I aircraft provided in *FAA AC 150/5300-13B, Airport Design*, would accommodate these larger transient aircraft, and the Airport's smaller fleet, although the TLOFA clearances may create practical limitations for larger aircraft movement in and out of the parking areas. Conceptual parking area configurations capable of accommodating larger business or medevac aircraft within small aircraft parking areas are depicted in the diagram to the right.

Aircraft Parking Recommendations

Based on the overall demand projections, a total of 5 small aircraft tiedowns will be required for locally based and transient aircraft; 2 parking positions for larger transient fixed wing airplanes; and 1 parking position for transient helicopters through the current 20-year planning period. For long-term planning purposes a development reserve equal to 100% of 20-year demand projection is recommended.

AIRCRAFT HANGARS

Currently, 12 of the Airport's 13 based aircraft (92%) are stored in hangars. Only one hangar has been constructed (commercial conventional hangar) at the Airport since the last ALP Report was completed in 2008.

For planning purposes, it is assumed that 95% of the Airport's future based aircraft will be stored in hangars with the remaining 5% parked on the apron. This allocation assumes that 15 of the 16 based aircraft forecast for 2042 will be hangared, resulting in a net increase of three hangar units over the 20-year planning period.

For private aircraft storage, the local preference toward multi-unit T-hangars (nine units) results in an average of less than 1,100 square feet per hangared aircraft. When both conventional hangars and multi-unit hangars are considered, the average per hangared aircraft is approximately 1,900 square feet. A planning standard of 1,500 square feet per based aircraft stored in hangars is used to project gross space requirements based on a variety of individual/ multi-unit hangar options for aircraft storage.

The projected hangar storage requirements are included in **Table 4-5**, presented in the previous section. Demand for new hangar space (aircraft storage only) is estimated to be three spaces totaling approximately 4,500 square feet over the 20-year planning period.

It is recommended that space adequate to accommodate forecast demand for general aviation hangars, and 100% hangar development reserve be defined during the landside development alternatives process.

GA TERMINAL/PILOT LOUNGE

The existing airport pilot lounge provides a restroom and an indoor waiting area in the large conventional hangar located near the aircraft fueling area. The facilities are accessible 24 hours a day with use of the Airport's common traffic advisory frequency (CTAF) on the door lock. The facility provides basic services that may require updating during the current planning period.

AIRFIELD INSTRUMENTATION, SIGNAGE, LIGHTING, AND MARKINGS

Runway & Taxiway Lighting

The runway lighting systems associated with Runway 07/25 are in fair condition. The useful life for airfield lighting systems is assumed to be 20 years, although some systems remain reliable and functional for longer periods. For aging systems, the availability of technical support and parts often impacts reliability. Since all existing airfield lighting systems will exceed the assumed 20-year useful life during the current planning period, replacement systems will be included in the 20-year capital improvement program. The transition to LED fixtures is anticipated for all airfield lighting systems.

Runway 07/25 is equipped with Low Intensity Runway Lighting (LIRL), which consists of runway edge and threshold lights.

Both runway ends are equipped with 2-Box Precision Approach Path Indicators (PAPI), with standard 3-degree glide paths. 4-Box PAPIs are the FAA's current standard for Visual Glide Slope Indicators (VGSI) at GA Airports. As noted earlier, the FAA is transitioning to LED airfield systems, including PAPIs. In addition to requiring less energy to create the same light output, FAA indicates that the life of the PAPI lamps is extended from 2,000 hours to at least 40,000 hours when converting from conventional incandescent to LED. The LIRL and PAPIs operate on dusk-dawn photocell switch.

The taxiways at the Airport are equipped with blue retroreflective edge markers, which appear to be adequate for current use. However, the Airport could consider installation of Medium Intensity Taxiway Lights (MITL) if taxiway recognition at night needs to be enhanced. Regular replacement of existing reflective markers should be assumed as units are damaged or fade.

It is recommended that existing runway lighting be upgraded to Medium Intensity Runway Lighting (MIRL) when the current system reaches the end of useful life. Until that time, the existing LIRL should be maintained and updated accordingly based on function and operating reliability. Adding MITL to Taxiway A, A1-A4 is optional.

Runway Markings

The runway markings at the Airport are consistent with FAA standards for color (white), configuration, and current approach type, and they are in good condition (repainted with 2018 runway project).

The existing basic/visual markings are consistent with FAA requirements for both visual approaches and NPI approaches with circling (or circle-to-land) procedures. A future NPI approach with a straight-in procedure would require NPI runway markings (threshold and aiming point markings). Future approach options and the facility needs associated with each will be evaluated in the airside development alternatives.

It is recommended that runway markings be maintained consistent with the type of instrument approach developed for the Airport and the WSDOT Pavement Maintenance Program.

Taxiway Markings

The taxiway markings at the Airport are consistent with FAA standards for color (yellow) and configuration and are in good condition. Each of the four connecting taxiways (A1-A4) have enhanced taxiway centerline markings (dashed lines on both sides of the centerline stripe) that extend from the connection on Taxiway A to the aircraft hold line. Taxiways A1-A4 also have surface painted holding position signs located directly before the aircraft hold line. The enhanced taxiway markings are designed to increase situational awareness and minimize the potential for runway incursions. The taxiway markings were painted in 2018-2019 and the markings are in very good condition. It is recommended taxiway markings be maintained consistent with the WSDOT Pavement Maintenance Program.

Airfield Signage

The reflective runway/taxiway hold position signs and taxiway location signs at the Airport are consistent with FAA standards for color and configuration, and they are generally in good condition. All airfield signage should be maintained and updated accordingly based on condition. Internally illuminated signage may also be considered for increased visibility.

Two sets of runway distance remaining signs [1/2, 2/1] (green background and white numbers) are located along the north edge of Runway 07/25. The existing signs do not meet current FAA standards for color (black background and white numbers) and should be updated in conjunction with future runway improvements and/or changes in configuration.

Airfield Lighting

The airfield lighting systems (airport beacon, primary and secondary wind cones, visual guidance systems, etc.) meet standards for location, type, and color. It is recommended that existing airfield lighting be maintained and updated accordingly based on function and operating reliability. A transition to LED lighting is recommended for future systems.

Airfield Instrumentation

The AWOS 3PT system, located on the north side of Runway 07/25, and west of the segmented circle, reportedly operates normally. As with lighting systems, replacement of AWOS units should be assumed on a 20-year schedule.

Surface Access And Vehicle Parking

Vehicle access to the Airport's south landside facilities is provided by a single paved drive that connects to East Edison Road. The entrance is located one-half mile east of the intersection of East Edison and Hanford Road (State Hwy 241). Vehicle access to the aprons and hangar areas is provided along the access road and through an unfenced opening between the fuel facility and the large conventional hangar.

Parking for approximately eight vehicles is provided on the south side of the conventional hangar nearest the aircraft fueling area that also houses the pilot lounge. The vehicle parking spaces are directly adjacent to the airport access road. Additional vehicle parking area is available in a 7,200-square foot gravel area between the airport access road and fence located along the east end of the landside area.

Airport tenants often park vehicles inside or next to their hangars. Airport management should review current tenant vehicle parking practices to identify areas commonly used for parking that are within an adjacent TLOFA. All areas used for vehicle parking should be clear of active aircraft movement areas, primarily the nearest TLOFA.

It is recommended that the existing vehicle access points and parking facilities be maintained and improved as required to serve developed areas of the Airport.

Support Facilities Requirements

Support facilities such as aircraft fueling, security/ perimeter fencing, and utilities were also examined.

FUEL FACILITIES

As described in Chapter 2 – Inventory and Existing Conditions, the Airport has one privately owned aboveground fuel tank with secondary containment and a 24-hour credit card controlled dispensing system. The 10,000-gallon capacity of the 100LL AVGAS tank appears to be adequate for forecast demand during the current planning period. For long term planning, providing space for a second fuel tank should be considered to accommodate different fuel grades when defining fueling area requirements as part of any future apron reconfiguration/expansion.

The aircraft fueling area is not marked, although the area adjacent to the storage tank is well defined. Most fueling aircraft park on the north side of the fuel tank on the main apron, but inside the ADG II TLOFA. In doing so the fueling aircraft blocks access to the apron by taxiing aircraft. This issue will be addressed in the landside development alternatives evaluation. A marked fueling area should be identified in a location that does not conflict with defined taxilanes. This may involve relocation of the fuel area or reconfiguring the main apron. Future aircraft electrification charging stations may also be located near aircraft fueling areas, or in aircraft parking areas.

UTILITIES

The existing airport utilities as discussed in the Inventory Chapter appear to be adequate to support future development in the landside development areas of the Airport. It is recommended the existing utilities be maintained and extended as required to accommodate new development during the planning period.

PERIMETER FENCING/GATES

The Airport is not fully fenced. The south edge of the landside area has a 6-foot chain link fence with barbed-wire topper. The existing fencing has limited pedestrian and vehicle gates. Other facilities in the terminal area are fenced, including the aviation fuel storage tank and the adjacent caretaker residence. Other areas of the airport have limited range fencing. There is no fencing between the runway ends and the adjacent public roads. Vehicles access the airfield through an unfenced opening near the fuel area. FAA recommends that airports are completely fenced for security purposes and to prevent wildlife from entering the operations area. Fencing should be added along the airfield perimeter, or the active airfield operations area. Vehicle and pedestrian gates should be added at necessary access points.

In addition to fencing improvements, it is recommended that airport management formalize surface access routes for on-airport agricultural lease areas to avoid runway crossings and vehicle movements in the FAA-defined runway/taxiway protected areas. Consistent with FAA airport operational guidelines, non-airport vehicles and equipment are not permitted to cross active runways and taxiways. Alternative routes and connections to adjacent public roads may be required to access agricultural fields on the north side of the runway. Fencing the exposed perimeter sections of the runway and parallel taxiway object free area may provide the best airfield protection and help to define alternative access routes to be developed outside the airfield operation area. Temporary airfield maintenance involving vehicle activity on or near the runway requires a date and time-specific FAA Notice to Air Missions (NOTAM) to be filed by the airport owner. Extended activities may require a runway closure through a NOTAM.

ON-AIRPORT LAND USE

On-airport land use needs consist primarily of airfield facilities such as runways, aprons, taxiways/taxilanes, hangars, aircraft storage, and other typical aviation services. The existing City of Sunnyside Airport (AP) zoning for the Airport is appropriate to support landside development (hangars, aircraft parking, etc.). Any future land acquisitions identified in the development alternatives process should be rezoned to match the existing airport property.

The required facility upgrades, and the clearance requirements of RDC A-II may impact both existing developed areas and areas that are currently undeveloped. The previous ALP drawing depicts a runway shift and extension that requires acquisition of property adjacent to the east end of the Airport that is owned by the Port of Sunnyside. As noted earlier, an extension of the runway beyond its current length is not required to accommodate the current and future design aircraft. However, the property requirements associated with the future configuration of Runway 07/25, including the RDC A-II protected areas and RPZ will be re-defined in the airside alternatives evaluation.

The previous ALP also depicts future landside development within existing airport property. Future aircraft apron and hangars were planned at the east end of the terminal area, east of the airport access road. A future aircraft apron is depicted west of the main apron. The development of the new commercial agricultural hangar and apron in the area west of the main apron will require changes in future planning for this area. Opportunities for infill development exist between existing leases along the western section of the landside area. The configuration of future landside facilities within existing airport property will be re-defined in the airside alternatives evaluation. However, it appears that forecast demand for aeronautical landside facilities can be met within existing airport property.

OFF-AIRPORT LAND USE

The City of Sunnyside has land use jurisdiction for the Airport and its immediate surroundings, while portions of the Airport's Part 77 airspace surfaces extend over Yakima County jurisdiction. The City of Sunnyside and Yakima County have adopted airport overlay zoning ordinances to protect the airspace from obstruction or hazards and incompatible land uses.

To continue ensuring airport land use compatibility, it is recommended that the City continue to work with Yakima County to remove or mitigate any Part 77 surface obstructions identified in the 2021-22 AGIS survey and referenced on the updated Part 77 Airspace Plan. A primary focus will initially be related to mitigation of obstacles that may affect runway approaches and threshold locations/configurations.

If changes are made to the runway geometry or instrument approach capabilities that would affect the Part 77 airspace surfaces, local ordinances and mapping should be updated for consistency with the updated ALP drawing set.

SUMMARY OF FACILITY REQUIREMENTS

A summary of facility requirements for the 20-year planning period is presented in **Table 4-6.** Development reserves are recommended for all demand-driven facility needs such as aircraft parking and hangars.

Table 4-6: Facility Requirements Summary

Facility	Short Term (0-10 years)	Long Term (10-20 years)
Runway 7/25	RDC A-II Widen to 75 feet Increase Pavement Strength to ≥16,000 pounds single wheel Install runway markings consistent with approach type	RDC A-II Pavement Maintenance
Taxiway A, A1-A4	TDG 2 Pavement Maintenance Relocate aircraft hold line markings/signs (clear of OFZ)	TDG 2 Pavement Maintenance Rehabilitate west section of Taxiway A and Taxiway A1 Replace Edge Reflectors
Main Apron	Reconfigure Apron and Taxilane to meet ARC A-II standards Rehabilitate Main Apron	Pavement Maintenance
East Apron	Rehabilitate East Apron Reconfigure Apron, Tiedowns, and Taxilane to meet ARC A-I standards	Pavement Maintenance
Aircraft Fueling	Define Aircraft Fueling Area that does not conflict with adjacent TLOFA	Reserve for additional tanks
Navigational Aids and Lighting	MIRL – Rwy 07/25 (LED – replace existing LIRL) PAPI – Rwy 07/25 (LED - replace existing PAPIs)	Replace Airport Beacon (LED)
Weather	Maintain existing AWOS	Replace AWOS at end of useful life
Hangars	Define Hangar Development Areas	Same Replace/Reconfigure hangars at end of useful life
Agricultural Leases	Define access routes that do not conflict with runway/taxiway system	Same
Surface Access	Maintain, resurface	Same
Security	Airport Perimeter/Airport Operating Area (AOA) and Terminal Area Frontage Fencing Automated Vehicle Gates (Main Apron, Landside Developments)	Same Upgraded Exterior Lighting (with cutoff fixtures to control glare)
Utilities	Electrical and Water to New Hangar Sites	Same
Property	Acquire property at east end of the Airport for runway/taxiway improvements Acquire avigation easements for Future RPZs	Same

Chapter 5

Alternatives Analysis

The evaluation of future development alternatives represents a critical step in the airport master planning process. The primary goal is to define a path for future development that provides an efficient use of resources and is capable of accommodating the forecast demand and facility needs defined in the master plan.

Introduction

As noted in the facility requirements evaluation, current and long-term planning for Sunnyside Municipal Airport is based on maintaining and improving the Airport's ability to serve a range of general aviation aircraft. Existing facilities accommodate a variety of conventional fixed-wing and rotary-wing aircraft. Existing airfield facilities generally meet or exceed FAA ADG I standards, although the runway-taxiway system routinely accommodates ADG II aircraft. As noted in the facility requirements evaluation, a change in runway design standards, from ADG I to ADG II, is recommended based on both current and forecast aircraft activity. Non-conforming items identified in the facility requirements assessment will be addressed in the appropriate airside or landside development alternatives.

The FAA recommends that airport master plans be initially developed in an "unconstrained" manner, rather than establishing pre-defined limits that drive the planning process. The evaluation of development alternatives for the Airport is unconstrained, consistent with FAA guidance, forecast demand, and defined facility requirements. Development reserves have are also defined to address potential demand for airside or landside improvements beyond forecast demand.

Preferred Alternative

RECOMMENDED DEVELOPMENT ALTERNATIVE

The preliminary development concepts in this chapter were presented for public review, which included multiple Airport Master Plan – Planning Advisory Committee (PAC) meetings and public open houses, and posts on the project web page. Staff from the City of Sunnyside, members of the PAC, the Federal Aviation Administration (FAA) Seattle Airports District Office, WSDOT Aviation Division, airport users, and the public provided input into the master planning process.

Comments provided were organized and presented to the City of Sunnyside to assist in their selection of the preferred alternative. This input provided important guidance in the refinement of development concepts leading to the selection of the preferred alternative.

The following section describes the proposed improvements for specific airside and landside facilities which have been consolidated into the preferred alternative. **Figures 5-1 and 5-2** depict the recommended facility improvements. The preliminary development alternatives are presented in their original form (unmodified) in the following section.

Once approved by the City, the recommended preferred alternative elements were incorporated into the draft ALP and submitted to FAA for formal review. The final ALP drawing set is presented in Chapter 7.

2022-2042 RECOMMENDED IMPROVEMENTS (PREFERRED ALTERNATIVE)

Airside Facilities (Runway/Taxiway System)

The primary development focus for airside facilities is to widen and shift Runway 07/25 while improving overall airfield function and safety. The most notable airside projects are described below:

- Runway 07/25
  - » Maintain runway length of 3,425 feet; upgrade OFA, RSA, etc. to ADG II standards
  - » Shift runway 172 feet to the east and widen runway to 75 feet
  - » Require pavement removal and reconstruction of Taxiway A1 and A4
  - » Improve RPZ Land Use control through:
    - Estimated 23 acres of property acquisition on the east (Runway 25) end (up-to Ray Road)
    - Estimated 23 acres of property acquisition or avigation easement on the west (Runway 7) end
    - Runway 7 RPZ incompatible land use (HWY 241) is improved, but still remains within the RPZ
  - » Clear all Part 77 20:1 (visual) approach surfaces to both runway ends

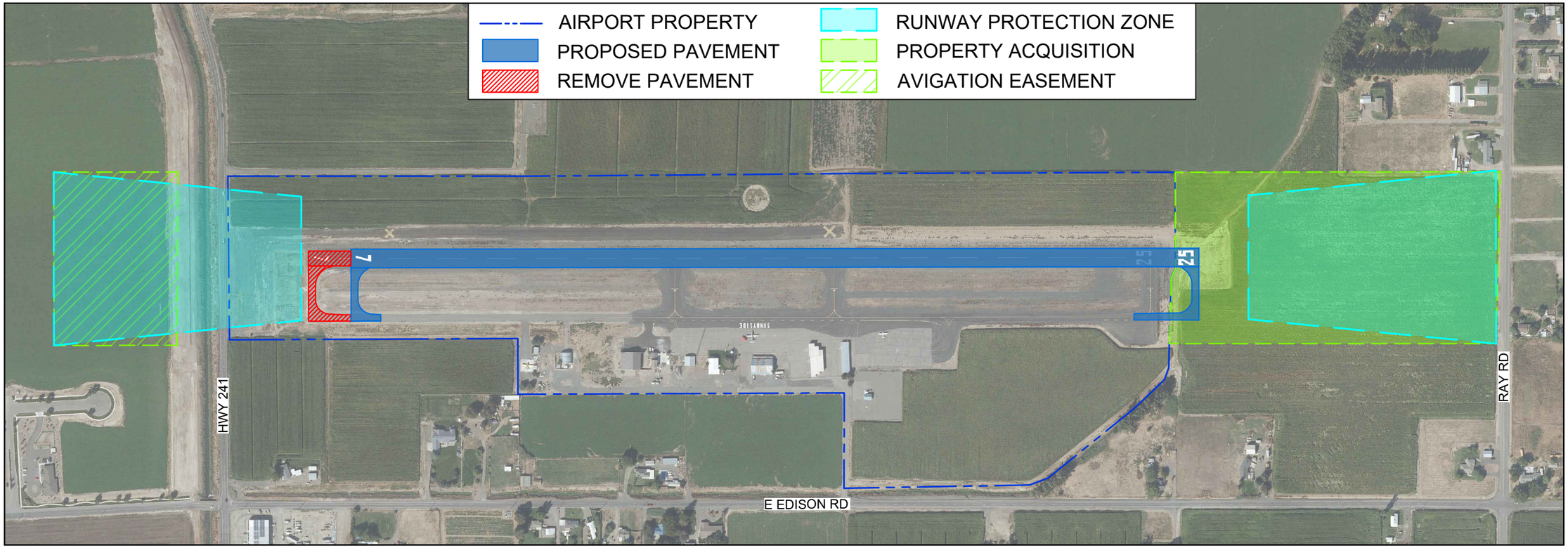
Landside Facilities

The development of landside facilities at the Airport focuses on improving the Airport's aircraft fueling and tiedown aprons while developing future hangar and reserve areas. The most notable landside projects are described below:

- Reconfigure aircraft fueling apron
- Reconfigure and expand east tiedown apron
  - » Small airplane tiedowns
  - » Two (2) large aircraft drive-through positions
  - » One (1) helicopter parking position
- Future hangar development areas
  - » Small conventional box hangar sites
  - » T-hangar site
- Development reserve area (long-term demand)
- Vehicle access road and parking areas

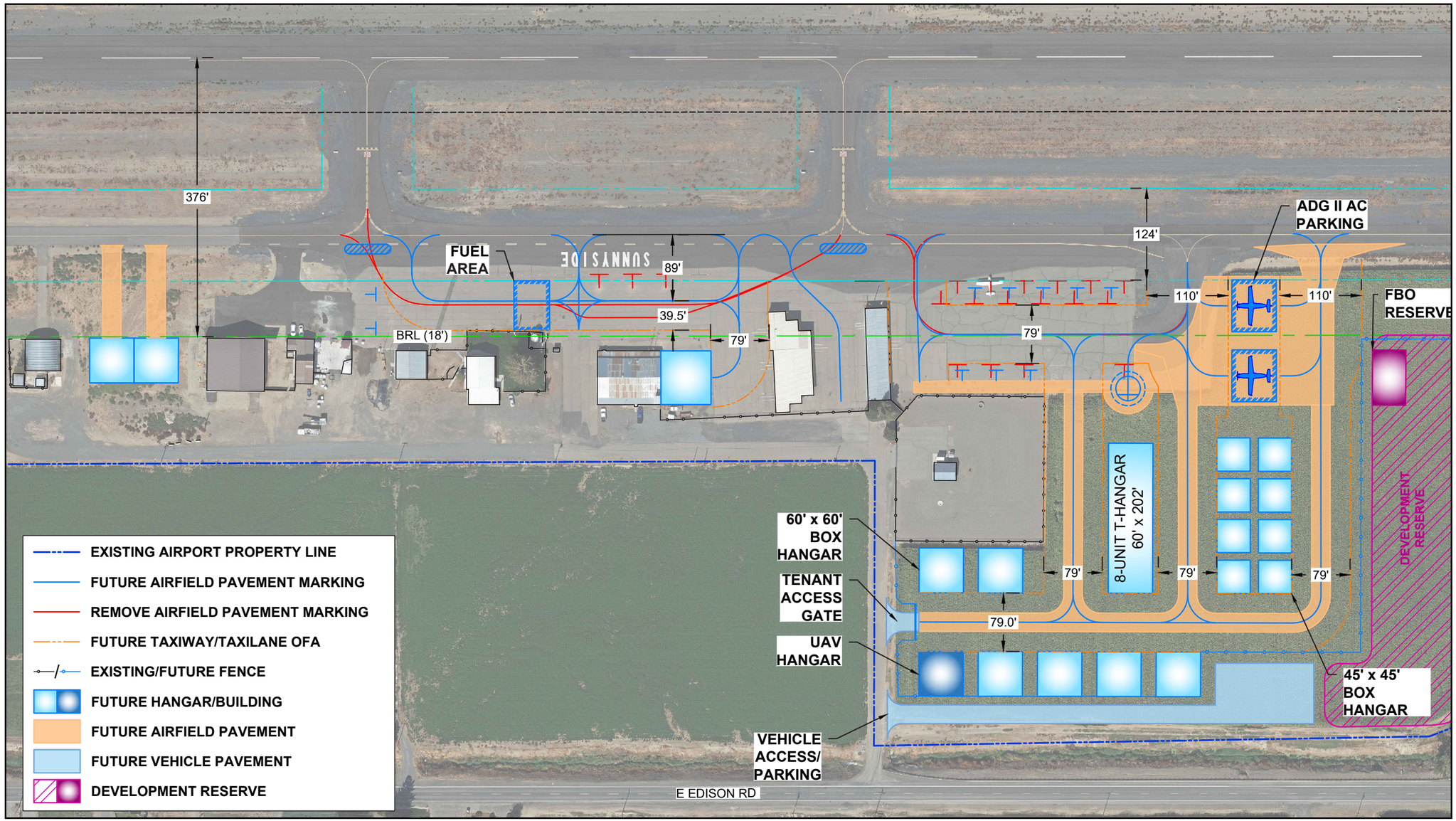
Figure 5-1 depicts the airside facility improvements to Runway 07/25 that are included in the Preferred Alternative graphic. The runway shift and widening is depicted, along with the pavement removal, property acquisition, and avigation easement. **Figure 5-2** depicts the landside facility improvements primarily focusing on the aircraft fueling and tiedown apron reconfiguration. Future hangar development reserves are depicted to accommodate long-term demand.

Figure 5-1: Airside Preferred Alternative



RUNWAY: 75’ X 3,425’, 172’ SHIFT (EAST)

Figure 5-2: Landside Preferred Alternative



Development Alternatives Analysis Process

The preliminary alternatives focus primarily on the airside and landside improvements needed to accommodate current and future demand, including reserves based on activity beyond the needs of current and future design aircraft. Based on available land capacity, options include reconfiguration or expansion of existing on-airport development areas. Property acquisition for both airside and landside improvement is anticipated, and the reconfiguration of some parcels may be considered beneficial to the Airport.

Airport development challenges to be resolved include:

1. Optimize operational efficiency and safety for all aircraft.
2. Identify the highest and best use of existing and future airport landside capacity.
3. Define future aeronautical needs to support definition of future non-aeronautical areas available for development on the Airport.
4. Increase conformance with all applicable FAA design standards.

AIRSIDE ELEMENTS

The airside evaluation elements required to meet the facility requirements and goals include:

- Runway 07/25
  - » Increase Runway Width
  - » Direct Runway Access from Apron
  - » Removal of Object Free Area Obstructions:
    - Taxilane (TLOFA) Penetrations
    - Taxiway (TOFA) Penetrations

LANDSIDE ELEMENTS

The landside evaluation elements required to meet the facility requirements and goals include:

- Redevelopment Area
  - » Main Apron
    - Reconfiguration of aircraft fueling station
  - » East Apron
    - Reconfiguration of tiedown apron
- New Development Area
  - » Future Infill Hangar Site
  - » Future Unmanned Aircraft System (UAS) Hangar Area
  - » Future Aviation Development
- Existing Access Road

FAA PLANNING GUIDANCE

The evaluation process utilized in this study is based on guidance provided in *AC 150/5070-6B Airport Master Planning*. Evaluation criteria categories selected to support the evaluation of development alternatives include:

Operational Capability – Includes criteria that evaluate how well the airport functions as a system and can satisfy future activity levels, meet functional objectives such as accommodating the design aircraft, and provide for the most efficient taxiway system or aircraft parking layout.

FAA Design Standards – Includes an analysis of existing FAA design standards and various requirements or areas of focus currently identified by Advisory Circulars.

Airspace Compatibility – Includes the identification and analysis of the impacts that proposed changes to the airport environment would have on the local and regional airspace systems.

Land Use, Transportation, and Environmental Compatibility – Includes an analysis of best planning practices as they relate to land use, transportation systems, and a cursory analysis/identification of potential environmental effects as defined in *FAA order 1050.1 Environmental Impacts Policies and Procedures* and *FAA Order 5050.4 FAA Airports Guidance for Complying with NEPA*.

By analyzing the development alternatives against the evaluation criteria presented above, and subsequently discussed with local stakeholders and interested airport users, an interactive process of identifying and selecting elements of a preferred alternative has resulted that can best accommodate all required facility improvements.

Throughout this process, the City of Sunnyside sought public input and coordination with the Planning Advisory Committee (PAC) and FAA to shape the preferred alternative. Once the preferred alternative was selected by the City of Sunnyside, a detailed capital improvement program was created identifying and prioritizing specific projects to be implemented. The elements of the preferred alternative are integrated into the updated ALP drawings that will guide future improvements at the airport.

Development Alternative Summaries

The development alternatives are intended to facilitate a discussion about the most effective way to meet the facility needs of the Airport. The facility needs identified in the previous chapter, and depicted accordingly within each development alternative, include a variety of airside and landside needs. Items such as lighting improvements, minor roadway extensions, and pavement maintenance do not typically require an alternatives analysis and are incorporated into the preferred development alternative and the ALP. The development alternatives have been organized accordingly:

- No-Build Alternative (no graphic)
- Airside Alternatives
  - » Airside Alternative 1 (Figure 5-3)
  - » Airside Alternative 2 (Figure 5-4)
  - » Airside Alternative 3 (Figure 5-5)
  - » Airside Alternative 4 (Figure 5-6)
  - » Airside Alternative 5 (Figure 5-7)
- Landside Alternatives:
  - » Landside Alternative 1 (Figure 5-8)
  - » Landside – Alternative 2 (Figure 5-9)
  - » Landside – Alternatives 3a & 3b (Figures 5-10 and 5-11)

No Build Alternative

A No-Build Alternative is included to represent the maintenance of existing facilities and capabilities. Unlike the active development alternatives that are intended to respond to future demand for facility needs, the No-Build Alternative represents a “no-action” option. The existing airfield would remain unchanged from its present configuration and the Airport would be operated in a “maintenance-only” mode.

No improvement in public use facilities would be planned, although construction of private hangars or related facilities could be accommodated within currently developed areas.

The primary result of this alternative would be the inability of the Airport to accommodate aviation demand beyond current facility capabilities. Future aviation activity would be constrained by the capacity, safety, and operational limits of the existing airport facilities. In addition, the absence of new facility development effectively limits the sponsor’s ability to increase revenues and operate the Airport on a financially sustainable basis over the long term.

The no-action alternative establishes a baseline from which the other alternatives can be developed and compared. The purpose and need for the alternatives are defined by the findings of the forecasts and facilities requirements analyses. The need to safely accommodate access and use of the public transportation facility provides the underlying rationale for making facility improvements. The timing of public investment in facilities is driven by safety, capacity, and the ability to operate an airport on a financially sustainable basis, whereas market factors generally determine the level and pace of private investment in hangars or other facilities at an airport.

Based on the factors noted above, the No-Build Alternative is inconsistent with the management and development policies established by the City of Sunnyside and its commitment to providing a safe and efficient air transportation facility that is socially, environmentally, and economically sustainable.

AIRSIDE DEVELOPMENT ALTERNATIVES

Overview

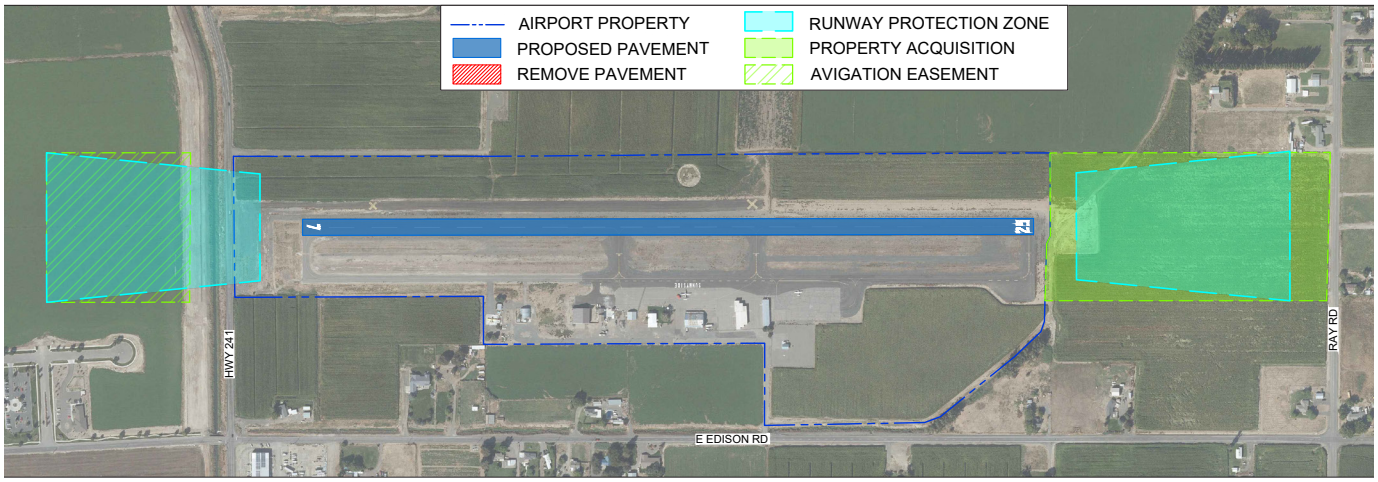
The proposed airside alternatives address facility improvements for aircraft operational areas, including runways, taxiways, and helicopter landing areas. The evaluations are primarily focused on accommodating forecast demand and improving conformance with FAA design standards for the runway-taxiway system. It is recognized that the preliminary alternatives can meet all applicable FAA design standards and have therefore been evaluated on the degree of improvement provided.

The 2008 ALP was based on ARC (now RDC) B-I (small) design aircraft, whereas this updated ALP is based on RDC A-II design aircraft. Previous airfield projects (parallel taxiway reconstruction) have been partly based on meeting ADG II design standards (increased runway separation). A single conventional hangar was constructed by a new commercial tenant, and the tenant maintains their own fueling storage. The facility requirement analysis identified facilities that require upgrading to meet FAA ADG II standards such as runway width, safety area, and object free area dimensions.

Airside Alternative 1

The runway configuration in Airside Alternative 1 (see **Figure 5-3**) maintains the current position of Runway 07/25 and the current runway length (3,425 feet). The runway width in this alternative is increased to 75 feet, and the runway's protected surfaces are upgraded to ADG II. RPZ land use control is achieved through the 21-acre property acquisition on the east end and the 11-acre avigation easement on the west end. The HWY 241 Part 77 20:1 approach obstruction is cleared using a 20:1 OCS. HWY 241 remains in the Runway 07 RPZ.

Figure 5-3: Airside Alternative 1

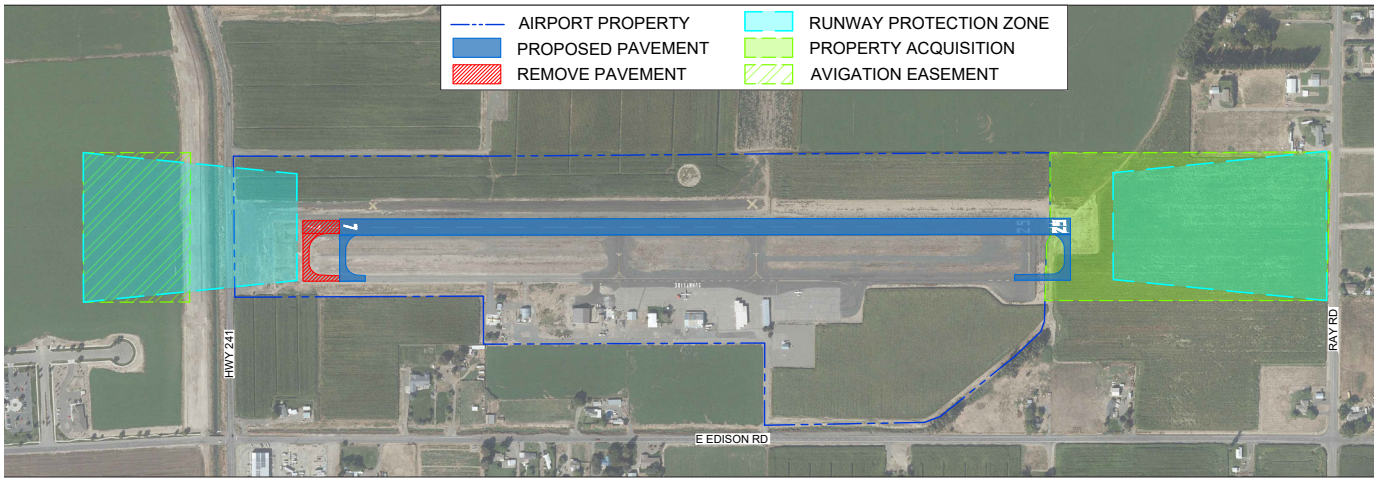


RUNWAY: 75' X 3425', CURRENT POSITION

Airside Alternative 2

The runway configuration in Airside Alternative 2 (**Figure 5-4**) shifts the runway 172 feet to the east, while maintaining the runway length and widening to 75 feet. This alternative includes pavement removal and reconstruction of Taxiway A1 and A4. RPZ land use control is achieved through the 21-acre property acquisition on the east end and the avigation easement on the west end (reduced to 8-acres). Runway 07's approach clearance over HWY 241 is improved. Alternative 2 provide all Part 77 20:1 approach surfaces for both runway ends.

Figure 5-4: Airside Alternative 2

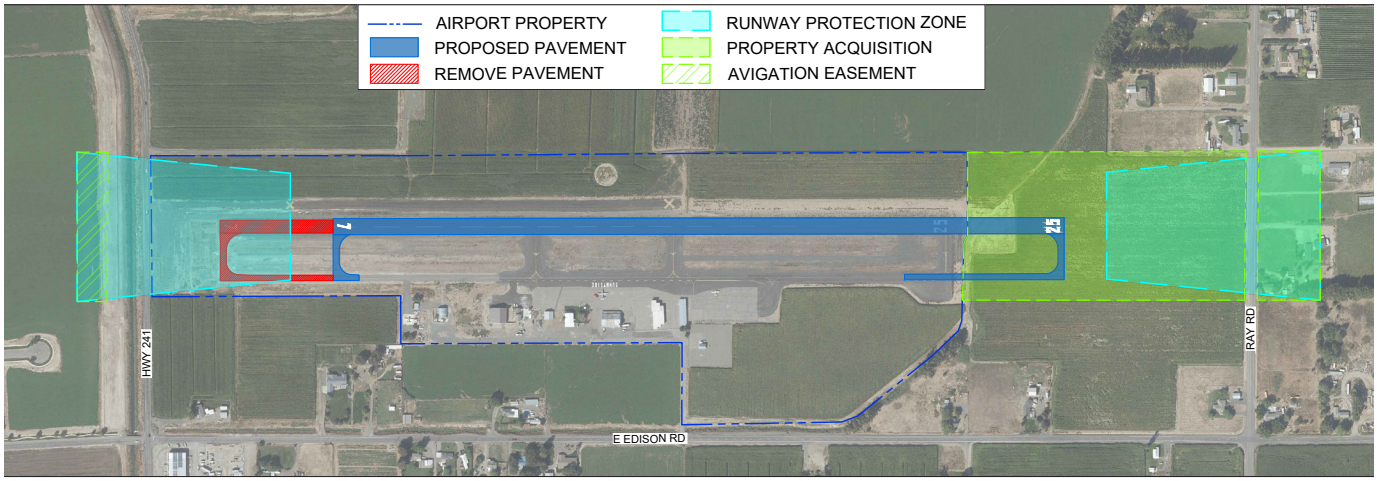


RUNWAY: 75' X 3425', 172' SHIFT (EAST)

Airside Alternative 3

The runway configuration in Airside Alternative 3 (see **Figure 5-5**) shifts the runway 529 feet to the east, while maintaining the runway length and widening to 75 feet. Pavement removal and reconstruction of Taxiway A1 and A4 are included. RPZ land use control is achieved through a 26-acre property acquisition on the east end and 2.3-acre avigation easement on the west end. The incompatible RPZ land use (HWY 241) for Runway 07 is improved with the runway shift, although a new incompatible land use (Ray Road) is added in the Runway 25 RPZ. All Part 77 20:1 approach surfaces are cleared. This alternative impacts neighboring Port and residential properties (two private residences).

Figure 5-5: Airside Alternative 3

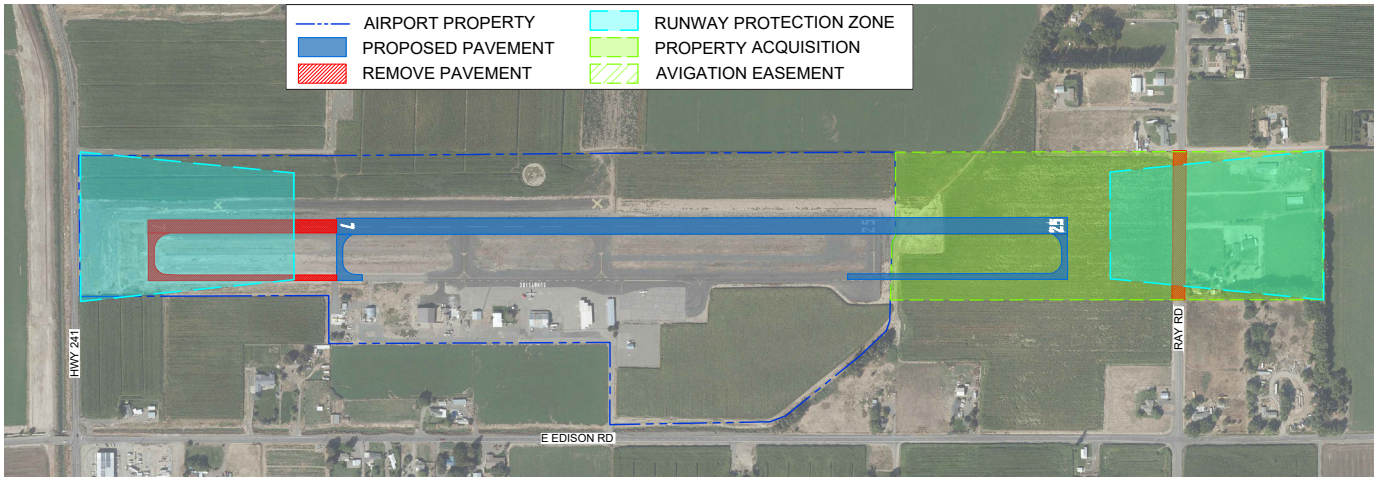


RUNWAY: 75' X 3425', 529' SHIFT (EAST)

Airside Alternative 4

The runway configuration in Airside Alternative 4 (see **Figure 5-6**) shifts the runway 882 feet to the east, while maintaining the runway length and widening to 75 feet. Pavement removal and reconstruction of Taxiway A1 and A4 are included in this alternative. Alternative 4 addresses RPZ land use control through a 32-acre property acquisition on the east end and closes a portion of Ray Road, requiring alternate traffic routing. The Runway 07 RPZ incompatible land use (HWY 241) is eliminated. All Part 77 20:1 approach surfaces are cleared. This alternative impacts neighboring Port and residential properties.

Figure 5-6: Airside Alternative 4

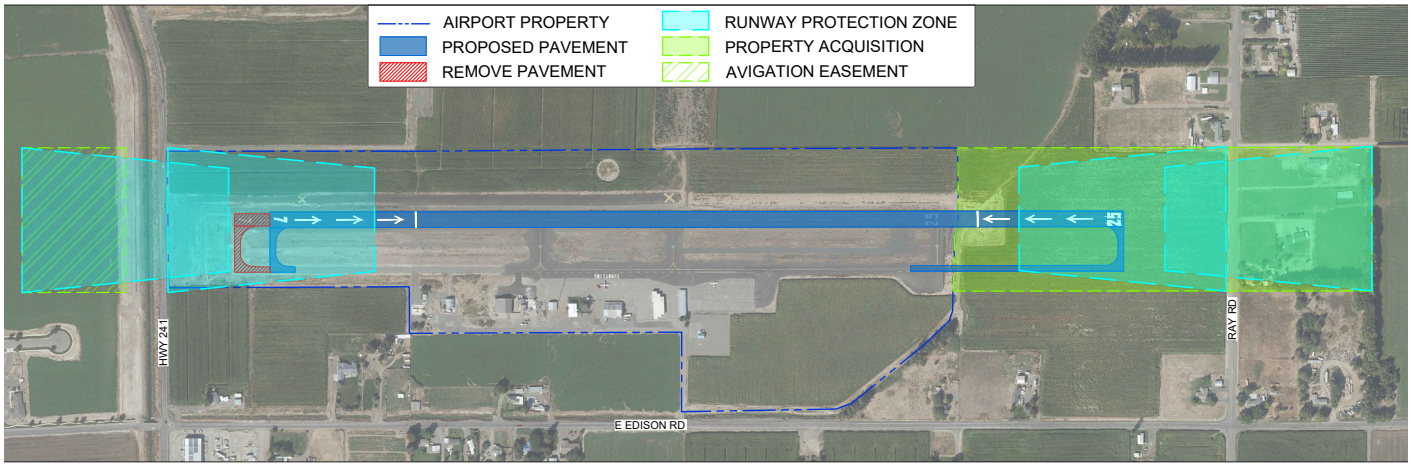


RUNWAY: 75' X 3425', 882' SHIFT (EAST)

Airside Alternative 5

The runway configuration in Airside Alternative 5 (see **Figure 5-7**) removes HWY 241 and Ray Road from the approach RPZs by adding 706-foot displaced thresholds to the east and west ends of the runway, in conjunction with lengthening Runway 7/25 to 4,131 feet. The addition of the displaced thresholds allows for a full runway length for takeoff in both directions and a landing distance availability of 3,425 feet for both runway ends. The runway is widened to 75 feet, along with the pavement removal and reconstruction of Taxiway A1 and A4. Alternative 5 addresses RPZ land use control through 32-acres of property acquisition on the east end and 8-acres of avigation easement on the west end. HWY 241 and Ray Road remain incompatible land uses in both departure RPZs. The Runway 07 approach surface obstruction (HWY 241) is mitigated with displaced threshold. Three private residential structures (east of Ray Road) are impacted by this alternative.

Figure 5-7: Airside Alternative 5



Landside Development Alternatives

OVERVIEW

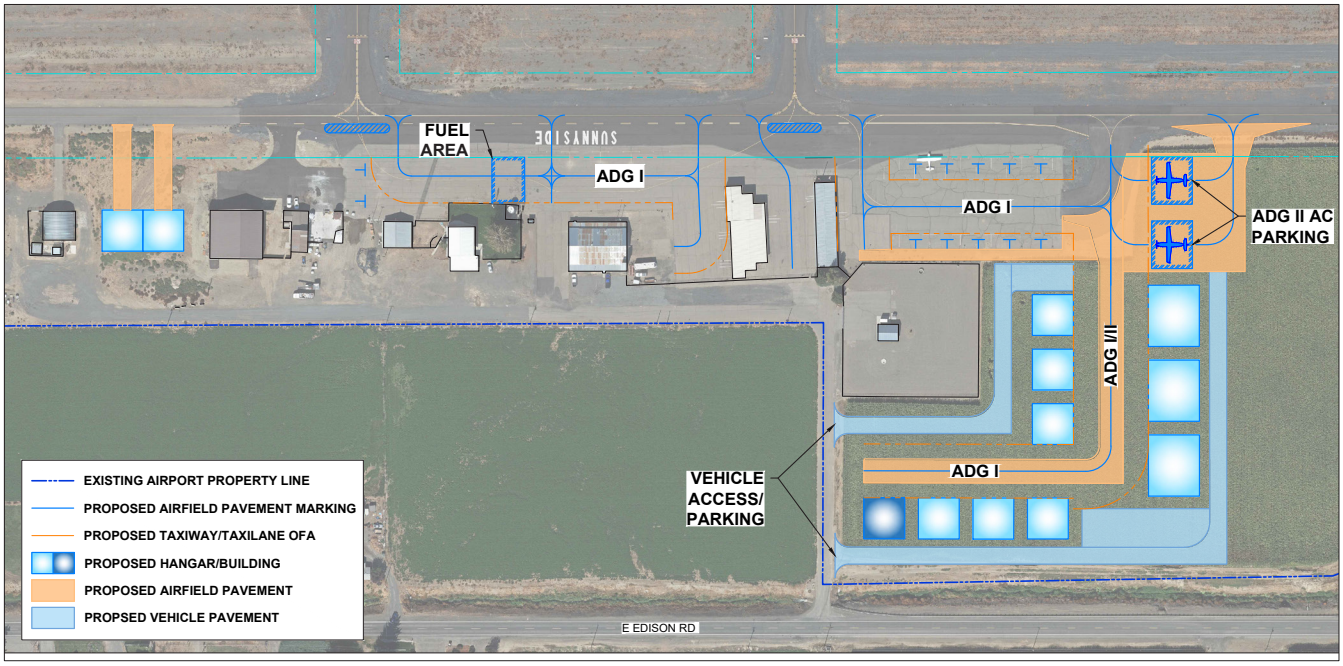
Three landside development concepts were created to address current and future facility needs. The primary needs addressed in Landside Alternatives 1-3A include:

- Maintain aircraft access to existing hangars and fueling area (Main Apron)
- Accommodate parking for small and large fixed wing aircraft and helicopters
- Meet FAA TLOFA standards for existing and future aprons, and TOFA clearances for adjacent taxiways
- Provide near term hangar sites for conventional aircraft and unmanned aerial vehicles (UAV)
- Plan for long-term development of new hangars, fuel, and FBO facilities
- Site new hangars without Part 77 airspace penetrations (376-foot building restriction line (BRL) required to site 18-foot hangar)

Landside Alternative 1

Landside Alternative 1 (see **Figure 5-8**) depicts changes to the main apron and east apron to provide ADG I access to fuel area and hangars from Taxiway A. Infill hangar development (2 sites) west of the main apron is also included. The east tiedown apron is reconfigured to meet FAA TOFA and TLOFA standards. The reconfigured apron provides 10 ADG I tiedowns with two taxilane connections to Taxiway A. The option also includes construction of a new apron section for transient ADG II parking. This option proposes a new hangar access taxilane capable of accommodating both ADG I and II aircraft and several conventional hangar sites. Dedicated vehicle access and parking are provided through a connection to the main airport access road.

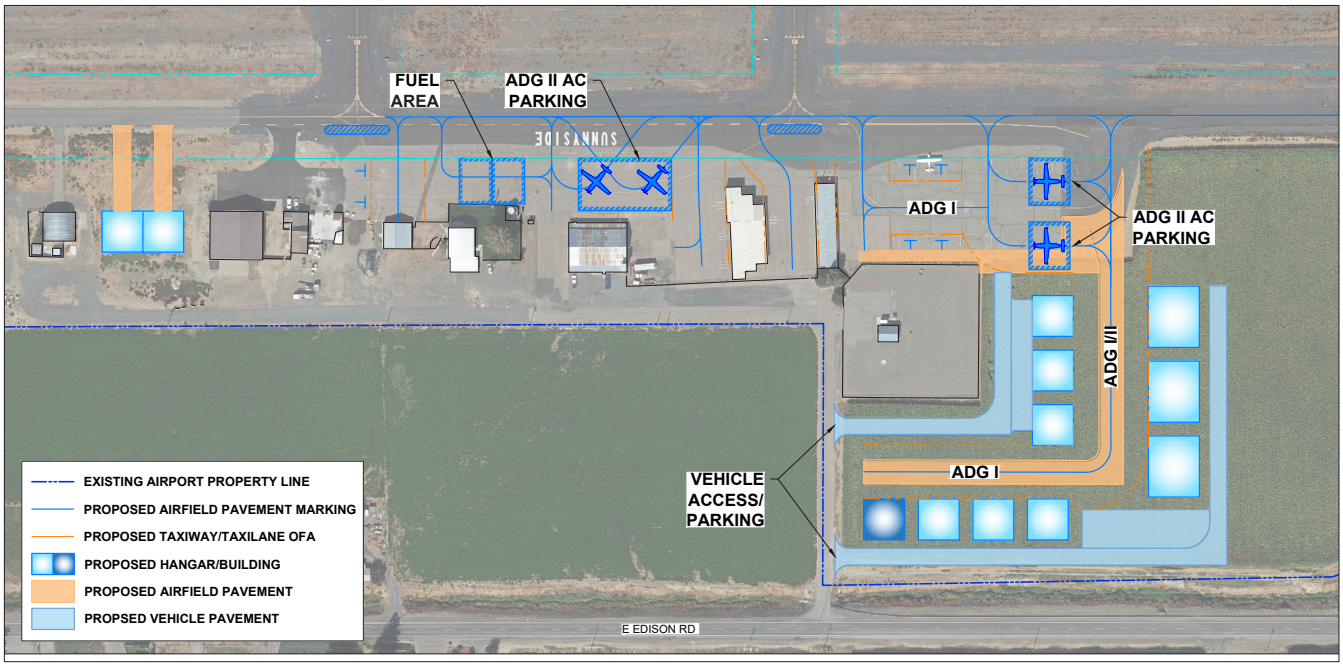
Figure 5-8: Landside Alternative 1



Landside Alternative 2

Landside Alternative 2 (see **Figure 5-9**) proposes a modified reconfiguration of the main apron to separate areas for ADG I and ADG II aircraft. The ADG I access to fuel area on the west end of the main apron presented in Landside Alternative 1, is maintained. The east end of the main apron is reconfigured to provide parking space for two (2) ADG II aircraft. This area would have direct access from the adjacent Taxiway A. The large airplane parking area could also be used for transient helicopter parking and Medevac loading/unloading. This option reconfigures the east apron to provide ADG I and II aircraft parking. As proposed, the option provides four (4) small airplane tiedowns and two (2) ADG II drive-through positions. The remaining hangar and taxilane elements presented in Landside Alternative 1 are maintained.

Figure 5-9: Landside Alternative 2



Landside 3 and 3A

Landside Alternatives 3 and 3A (see **Figure 5-10**, **Figure 5-11**) depict a modified version of Landside Alternative 1, with reconfigured main and east aprons. Both options provide ten (10) ADG I tiedowns on the east apron, with a loop taxilane connecting to Taxiway A.

Additional aircraft parking and hangar development is accommodated east of the current landside development, within the Airport's southeastern corner. The options provide two (2) ADG II drive-through parking positions and one or two transient helicopter parking positions. The eastern development area includes ADG I/II taxilane access, a new fuel storage and dispensing area, T-hangar and conventional hangar sites, an FBO building site, and vehicle access that is extended from the existing airport access road.

Figure 5-10: Landside Alternative 3

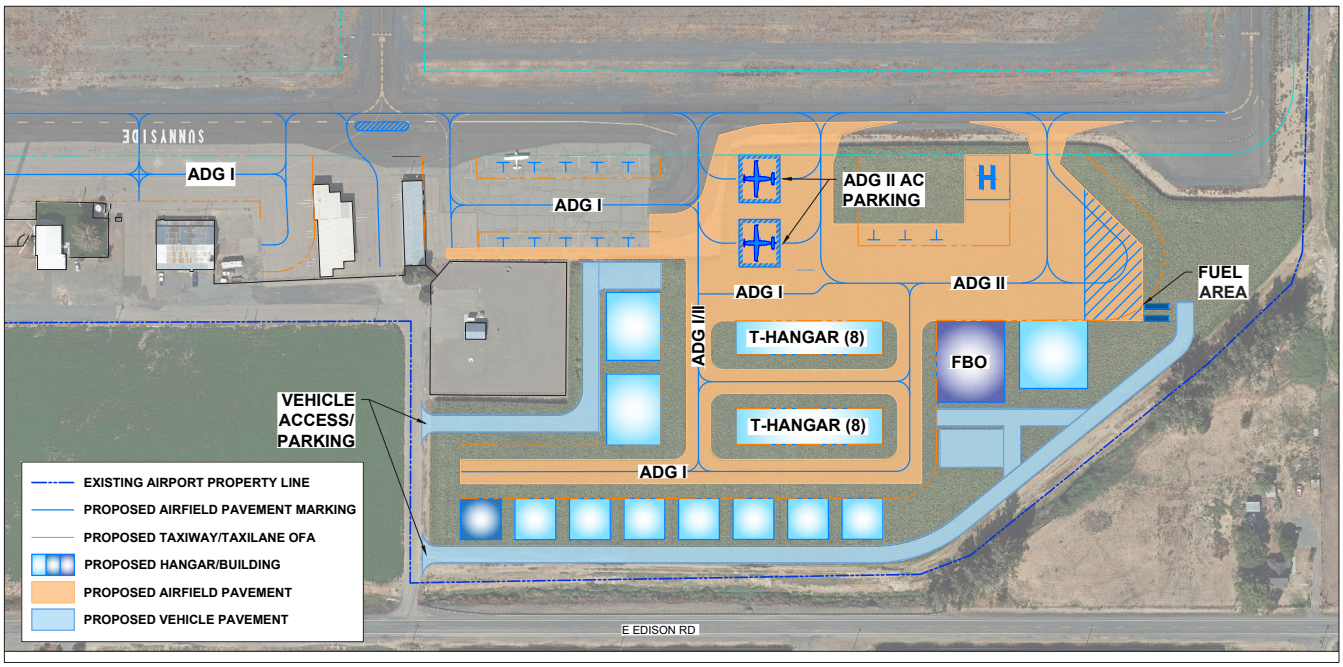
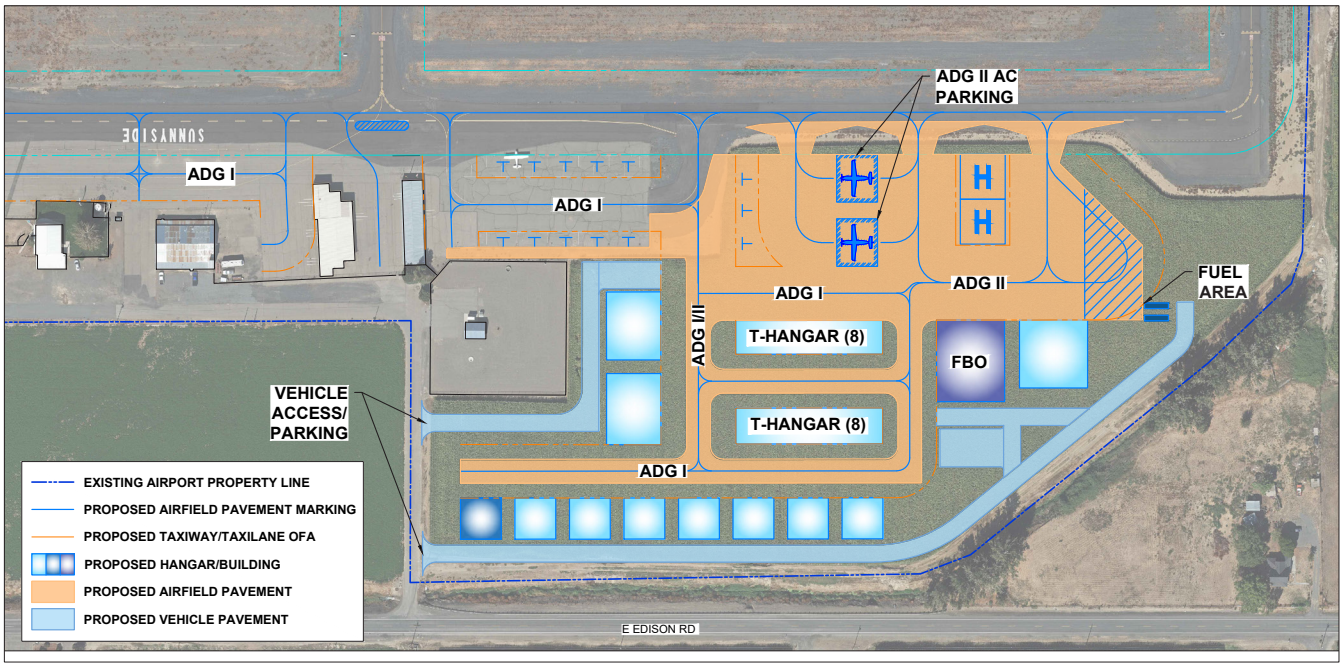


Figure 5-11: Landside Alternative 3A



SUMMARY OF LANDSIDE ALTERNATIVES

Table 5-1 details a summary of the proposed landside alternatives in tabular format showcasing the new improvements and landside development for the Airport.

Table 5-1: Summary of Landside Alternatives

Alternative	1	2	3	3A
New Conventional Storage Hangar Sites	9	9	10	10
T-Hangar Units	0	0	16	16
New Taxilanes Required	Yes	Yes	Yes	Yes
Transient Large Aircraft	Yes	Yes	Yes	Yes
Transient Helicopter Parking	No	Limited	Yes	Yes
Small Airplane Tiedowns	10	4	13	13
Part 77 Airspace Impacts (New Items)	No	No	No	No

VIS = Visual FAR Part 77 Airspace (supports NPI circling procedure to Airport)
NPI = Non Precision Instrument FAR Part 77 Airspace (required for NPI straight-in procedure to Runway 15)

Chapter 6

Implementation Plan

Introduction

The purpose of this chapter is to present the proposed implementation program for the 2022-2042 Sunnyside Municipal Airport Layout Plan (ALP). The main feature of this information is the 20-year Airport Capital Improvement Program (ACIP) that was developed based on the analyses conducted in the Facility Requirements and Development Alternatives evaluations (Chapters 4 and 5).

The ACIP projects are summarized in **Table 6-1**, later in the chapter. The ACIP is organized into short, intermediate, and long-term planning periods that reflect project prioritization and the City of Sunnyside's ability to support the proposed financial investments.

Several factors were considered in determining project prioritization, including safety, forecast demand, the need to maintain/ replace existing airfield facilities, and financial capabilities of both the City and FAA to support the development program based on existing funding sources. Minor pavement maintenance items such as vegetation removal and crack filling are not included in the ACIP but will need to be undertaken by the City on an annual or semi-annual basis.

Airport Development Schedule and Cost Estimates

Cost estimates for each individual project were developed in 2023 dollars based on typical construction costs associated with the specific type of project. The project costs listed in the ACIP represent order-of-magnitude estimates that approximate design, engineering, environmental, other related costs, and contingencies. The estimates are intended only for preliminary planning and programming purposes. Specific project analysis and detailed engineering design will be required prior to project implementation to provide more refined and detailed estimates of the development costs.

These cost estimates can continue to assist management through adjustments to the 2023-dollar amounts to account for subsequent inflation as the plan is carried out in future years. This can be accomplished by converting the appropriate change in the United States Consumer Price Index (USCPI) to a multiplier using the following formula:

$$\frac{X}{I} = y$$

Where:
X = USCPI in any given future year
Y = Change Ratio
I = Current Index (USCPI)[1]

USCPI-U
307.789
(1982-1984 = 100)
September 2023

Multiplying the change ratio (Y) times any 2023-based cost estimate presented in this study will yield the adjusted dollar amounts appropriate in any future year evaluation. Several different CPI-based indices are available for use and any applicable index may be substituted by the airport sponsor in its financial management program.

Overall project scheduling is defined based on the facility requirements needs identified in the ALP evaluation. The projected staging of development projects is based on a combination of needs, development priorities, and anticipated funding.

ACIP PROJECTS

The ACIP projects in **Table 6-1** are summarized below for short-term and long-term periods. The summaries provide a general time frame for implementation of individual projects. However, the actual timing for project implementation is subject to change, based on a variety of factors including availability of funding. Projects that are not completed during the current 20-year planning period will be reevaluated based on need, with determinations on future timing made by the City of Sunnyside.

1 U.S. Consumer Price Index for All Urban Consumers (USCPI-U)

TABLE 6-1: 20-YEAR CIP

Short Term Projects (2023-2027)	FAA (90%)	Local (10%)	Total Project Costs
Airport Fencing Project	$683,280	$75,920	$759,200
Runway 25 RPZ Acquisition (23 acres)	$1,552,500	$172,500	$1,725,000
Reconstruct East Apron (Existing Apron – No Expansion)	$1,792,296	$199,144	$1,991,440
SHORT-TERM TOTAL (1-5 Years)	**$4,028,076**	**$447,564**	**$4,475,640**

Intermediate Term Projects (2028-2032)	FAA (90%)	Local (10%)	Total Project Costs
Replace AWOS	$123,503	$13,723	$137,226
Reconfigure & Slurry Seal Main Apron –Fuel Apron	$116,864	$12,985	$129,849
INTERMEDIATE-TERM TOTAL (6-10 Years)	**$654,120**	**$72,680**	**$726,800**

Long Term Projects (2033-2042)	FAA (90%)	Local (10%)	Total Project Costs
Reconstruct and Shift Runway 7/25 – Includes Lighting/ Signs	$7,813,440	$868,160	$8,681,600
Runway Lighting Replacement – Standalone Project	$997,020	$110,780	$1,107,800
Visual Aids & Signs Replacement – Standalone Project	$501,570	$55,730	$557,300
Parallel Taxiway Extension – East Section	$580,500	$64,500	$645,000
Overlay Parallel Taxiway – Western Section	$489,960	$54,440	$544,400
Remove Existing Taxiway A1 & Construct Replacement Taxiway A1 at New RWY End	$399,906	$44,434	$444,340
Replace Taxiway Edge Reflectors	$107,730	$11,970	$119,700
East Apron Expansion – Helicopter Parking (South Edge Expansion)	$885,366	$98,374	$983,740
East Apron Expansion – ADG-II Transient Parking	$1,467,081	$163,009	$1,630,090
Replace Airport Beacon & Tower	$94,590	$10,510	$105,100
East Hangar Area Taxilane Construction – Phase 1	$583,839	$64,871	$648,710
East Hangar Area Taxilane Construction – Phase 2	$583,839	$64,871	$648,710
East Hangar Area Taxilane Construction – Phase 3	$583,839	$64,871	$648,710
Vehicle Access Road & Parking	$392,823	$43,647	$436,470
Overlay Main Apron	$744,840	$82,760	$827,600
LONG-TERM TOTAL (11-20 Years)	**$16,226,343**	**$1,802,927**	**$18,029,270**
20-YEAR CIP TOTALS	**$20,908,539**	**$2,323,171**	**$23,231,710**

* "Local" costs may include city (Airport Sponsor), state of Washington, or tenant/private funds.

Capital Funding Sources & Programs

FAA grants provided through the federal Airport Improvement Program (AIP) are the primary source of funding for public use airports in the federal airport system. **Table 6-1** identifies the typical federal and local share of project costs based on current funding formulas. It is important to note that overall project eligibility for FAA funding does not guarantee availability of funding within the defined twenty-year time frame of the master plan.

FEDERAL GRANTS

The current AIP, reauthorized in 2018, is the latest evolution of a funding program originally authorized by Congress in 1946 as the Federal Aid to Airports Program (FAAP). Other appropriations of AIP funds go to states, general aviation airports, commercial service airports, and for noise compatibility planning. Any remaining AIP funds at the national level are designated as Discretionary funds and may be used by the FAA to fund eligible projects. Discretionary funds are typically used to enhance airport capacity, safety, and/or security and are often directed to specific national priorities such as the recent program to improve runway safety areas. AIP funds can only be used for eligible capital improvement projects and may not be used to support airport operation and maintenance costs. AIP funding for eligible projects is described in FAA Order 5100.38D (Change 1), *Airport Improvement Program Handbook*.

Funds for the AIP are derived from the Airport and Airway Trust Fund, which is supported by user fees, fuel taxes, and other similar revenue sources. Currently, AIP grants cover 90% of eligible project costs for general aviation airports like Packwood Airport.

The FAA Reauthorization Act of 2018 extends funding through fiscal year 2023. AIP funding programs for general aviation (GA) airports include:

- **AIP General Aviation Non-Primary Entitlement (NPE) Grants:** The AIP provides Non-Primary Entitlement (NPE) funds for general aviation airports based on fixed amount of $150,000 per year. The NPE funds can be carried over for up to four years, or a maximum of $600,000. Unused NPEs may be "donated" to other GA airports within the state through the ADO, or the funds revert into a national pot for reallocation among all FAA regions.
- **AIP Discretionary Grants:** The AIP provides Discretionary funds to airports for projects that have a high federal priority or to enhance safety, security, or capacity. These grants are over and above NPE funding. Discretionary grant amounts can vary significantly compared to NPE and are awarded at the FAA's sole discretion. Discretionary grant applications are evaluated based on:
  - » Need;
  - » The FAA's project priority ranking system; and
  - » The FAA's assessment of a project's significance within the national airport and airway system.
- **FAA Facilities and Equipment Funds:** Additional funds are available under the FAA Facilities and Equipment (F&E) program to purchase navigational aids and air safety-related technical equipment, including Airport Traffic Control Towers (ATCTs) for use at commercial service airports in the National Airport System. Each F&E project is evaluated independently using a cost-benefit analysis to determine funding eligibility and priority ranking. Qualified projects are funded in total (i.e., 100 percent) by the FAA, while remaining projects would likely be eligible for funding through the AIP or PFC programs. In addition, an airport can apply for NAVAID maintenance funding through the F&E program for those facilities not funded through the F&E program.

FAA funding is limited to projects that have a clearly defined need and are identified through preparation of an FAA approved Airport Layout Plan (ALP). Periodic updates of the ALP are required when new or unanticipated project needs or opportunities exist that require use of FAA funds and to reflect the status of completed projects. The FAA will generally not participate in projects involving vehicle parking, utilities, building renovations, or projects associated with non-aviation development. Projects such as hangar construction or fuel systems are eligible for funding, although the FAA considers these types of projects as a much lower priority than other airfield needs.

As part of the economic recovery response to the COVID-19 pandemic, several supplemental funding programs were introduced that benefited airports. These included the American Rescue Plan (APRA) and the Bipartisan Infrastructure Law (BIL). These grant programs created temporary funding streams for airports beyond traditional AIP funding.

Airport sponsors accept obligations (grant assurances) when accepting FAA AIP grants. A summary of the applicable grant assurances is provided in **Appendix D.**

STATE FUNDING

The Washington State Department of Transportation - Aviation Division (WSDOT Aviation) provides an additional source of funding for airport projects in the form of grants through its Airport Aid Grants program. The Aviation Division has established grant criteria for airport sponsors requesting aid to define projects related to pavement, safety, maintenance, security, or planning.

Although Aviation Division funding is distributed widely to general aviation airports throughout the state, predicting any consistent level of funding for purposes of long-term financial planning is not possible. Competition for the limited grant funds is consistently high, with priority often given to airports with limited resources or to airports that are not eligible to receive FAA grants. Project funding is determined on a case-by-case basis and is affected by overall funding levels and competition among airports during any state budget cycle (biennium).

The current maximum grant award through the Aviation Division is $750,000. Due to the volume of grant applications received in any given cycle, large grant awards under this program remain relatively uncommon.

The WSDOT Aviation web page provides the following information:

> *"On projects seeking state funds only, the airport sponsor must contribute a minimum 5 percent match of the entire project cost. If the sponsor is able, and would like to contribute a larger match amount, they certainly can and will receive additional points towards their total project application score during WSDOT Aviation's prioritization review of all grant applications.*
>
> *For projects receiving federal funds, it has been a long-standing practice of the Airport Aid Program to support airports in matching their Airport Improvement Program (AIP) grants. Currently, AIP grants require 10 percent of the project total to come from the airport sponsor. WSDOT supports grants to airports for up to half of their match requirement."*

For long-term planning purposes, the local share (10%) of FAA-eligible projects is assumed to be evenly split (5%/5%) between local and state levels in the updated CIP. However, since available funding levels in the state grant program may vary year to year, it is recommended that whenever possible, the City of Sunnyside manage its capital program where WSDOT grants are supportive, but not essential to fully fund the local match required for FAA grants.

When WSDOT Aviation Division grant requests are successful, the required City of Sunnyside expenditure (local match) for FAA grants or funding non-FAA eligible projects will be reduced.

Community Aviation Revitalization Loan Program (description provided by WSDOT)

The new Community Aviation Revitalization Loan Program was established by EHB 1102 and funded initially with $5 million. The revolving loan program is for revenue-producing capital projects that help public-use general aviation airports become more self-sustainable. The program funds are distributed with the guidance of the Community Aviation Revitalization Board (CARB).

As currently authorized, the program provides loans up to $750,000 at 3% interest to airports with less than 75,000 annual commercial enplanements, as reported to the FAA. Loans can have a maximum 20-year loan period and recipients can opt to have up to a 3-year loan repayment grace period. Loan recipients must commit to providing public access to the airport for a period of time equivalent to one and one-half times the length of the loan. Eligible projects can include hangars, fueling facilities, business parks on airport property, paid parking facilities, passenger amenities, and other revenue-generating or cost-cutting developments that help make the airport more self-sustaining and less dependent on public funding.

State Capital Improvement Program (SCIP)

The FAA's Seattle Airports District Office (ADO) coordinates its capital improvement programming with state aviation agencies in Washington and Oregon. The coordinated program is known as the "state" capital improvement program, or "SCIP." The SCIP is the primary tool used by FAA, state aviation agencies, and local airport sponsors to prioritize current and near-term future funding decisions through evaluation formulas and ongoing coordination. Airport sponsors provide annual updates to the short-term project lists in order to maintain a current system of defined project needs. For Washington airports, the FAA and WSDOT Aviation schedule annual "joint planning conferences" (JPC) with airport sponsors to update the regularly SCIP.

LOCAL FUNDING

The locally funded portion of the CIP for the 20-year planning period is estimated to be approximately $2.3 million, as currently defined. Local matching funds are generated through airport operating revenues and may include other capital funds, interfund loans or the issuance of long-term debt (revenue or general obligation bonds). The WSDOT CARB loan program is a similar form of long-term debt available to support eligible projects at Washington GA airports.

Chapter 7

Airport Layout Plan

Introduction

This chapter presents the Airport Layout Plan (ALP) for Sunnyside Municipal Airport (1S5). The ALP describes and graphically depicts recommended development for the airport based on facility needs and forecast demand. The recommendations shown on the ALP reflect the preferred alternative selected by the City of Sunnyside, with input provided by the Federal Aviation Administration (FAA), WSDOT Aviation, project stakeholders, airport users, and members of the community. The analyses and findings of the previous chapters provided the technical and policy guidance for this plan's outcome as reflected in the ALP.

The following sheets make up the ALP set for Sunnyside Municipal Airport:

- Sheet 1 – Title Sheet
- Sheet 2 – Airport Data Sheet
- Sheet 3 – Airport Layout Plan
- Sheet 4 – Terminal Area Plan
- Sheet 5 – Airport Airspace Plan (Part 77)
- Sheet 6 – Runway 7-25 Approach Plan and Profile
- Sheet 7 – Runway 7-25 Inner Approach Surface Plan & Profile
- Sheet 8 – Runway 7-25 Departure Surface Plan & Profile
- Sheet 9 – On-Airport Land Use Plan
- Sheet 10 – Off-Airport Land Use Plan
- Sheet 11 – Airport Property Map
- Sheet 12 – Airspace Obstruction Data Tables (1 of 2)
- Sheet 13 – Airspace Obstruction Data Tables (2 of 2)

A brief summary of the individual drawings is provided below:

Title Sheet (Sheet 1 of 13)

The Title Sheet serves as an introduction to the ALP drawing set. It includes airport location and vicinity maps, and an index of the drawings. The FAA ALP approval letter is embedded into the Title Sheet, in leu of signing the individual ALP sheets.

Airport Data Sheet (Sheet 2 of 13)

The Airport Data Sheet contains detailed runway and taxiway dimensions, FAA dimensional standards, wind roses, and other data that is reflected within the drawing set. Dimensional changes associated with the change from ADG I to ADG II design standards are noted on the drawing.

Airport Layout Plan (Sheet 3 of 13)

The Airport Layout Plan (ALP) drawing graphically depicts existing and future airfield facilities. Future facilities are color-coded to distinguish them from existing facilities. Future facilities are represented in the airport master plan's twenty-year capital improvement program (CIP) as individual projects or project groupings. Property acquisition required for future runway-taxiway improvements are depicted.

Terminal Area Plan (Sheet 4 of 13)

The Terminal Area Plan provides additional details for existing and new landside facilities. The Terminal Area Plan focuses on the main apron area, east aprons, fuel facilities, existing/future hangar areas, and vehicle parking.

Airport Airspace Plan (Part 77) (Sheet 5 of 13)

The Part 77 Airspace drawings depict the protected airspace defined for Runway 07/25, as codified in Title 14 of the Code of Federal Regulations (CFR), Part 77 - Safe, Efficient Use and Preservation of the Navigable Airspace. The airspace plan drawings depict the five "imaginary surfaces" defined in Part 77.25 including the primary, transitional, approach, horizontal, and conical surfaces, previously described in the Facility Requirements Chapter. Part 77 surfaces should be free of built or terrain obstructions to the greatest extent possible. Objects that penetrate Part 77 surfaces may require action to mark or remove depending on their severity, location, and the feasibility of the action. The drawings are supplemented by tables detailing the obstacles with recommended dispositions. Obstacles presented on the Airspace Plan and related sheets were documented by the AGIS survey data.

The physical characteristics of the Part 77 surfaces for Runway 07/25 are defined by the size of aircraft using the runway and the visual approach capabilities of the runway.

- **Runway 7/25 Approach Surfaces**: Extend 5,000 feet from the ends of the runway primary surface. Each runway end has an approach surface slope of 20:1, which represents the horizontal distance required for each increment of vertical rise.
- **Runway 7/25 Primary Surface**: The primary surface is 500 feet wide extending 200 feet beyond each end of the runway. The primary surface is a flat plane of airspace centered on the runway, with the same elevation as the nearest point on the runway centerline.
- **Transitional Surface**: The runway transitional surfaces extend outward and upward from the outer edges of the primary surface. The transitional surfaces have a slope of 7:1 and extend to an elevation 150 feet above airfield elevation and connect to the runway horizontal surface.
- **Horizontal Surface**: The horizontal surface is drawn from 5,000-foot radii that extends from both ends of the primary surface to form an oval. The horizontal surface is a flat plane of airspace with an elevation approximately 150 feet above airport elevation.
- **Conical Surface**: The conical surface extends from the outer edge of the horizontal surface at a slope of 20:1 for 4,000 feet.

The Part 77 airspace surfaces are depicted in the drawing, along with the obstacles identified in the AGIS survey. The drawing depicts obstacles in the approach, primary, and transitional surfaces. No horizontal or conical surface obstructions are noted on the drawing.

Runway 7-25 Approach Plan and Profile (Sheet 6 of 13)

The Approach Plan and Profile drawings depict a detailed plan and profile view of the Airport's visual approach surfaces and threshold siting surfaces. The drawings provide additional detail in identifying obstacles, non-listed obstacles, and primary and transitional surface obstructions. The obstructions depicted in the drawing use the same numbering identifiers from the overall Part 77 Airport Airspace Plan.

Runway 7-25 Inner Approach Surface Plan & Profile (Sheet 7 of 13)

The Inner Approach Surface Plan and Profile drawings depict a detailed plan and profile view of the Airport's inner approach surfaces and runway protection zones (RPZs). The drawings provide additional detail in identifying obstructions, terrain, and other features such as runway OFA, OFZ, and RSA. The obstructions depicted on the drawing use the same numbering identifiers from the overall Part 77 Airspace Plan.

Runway 7-25 Departure Surface Plan & Profile (Sheet 8 of 13)

The Departure Surface Plan and Profile drawing depicts a detailed plan and profile view of the Airport's departure surfaces. The drawing provides additional detail in identifying obstructions, non-penetrating obstacles, airport property boundaries, and the departure surface's 50-foot contour. The obstructions depicted on the drawing use the same numbering identifiers from the overall Part 77 Airspace Plan.

On-Airport Land Use Plan (Sheet 9 of 13)

The On-Airport Land Use Plan depicts land use categories common to general aviation airports, including:

- **Aeronautical Operations** (runway, taxiway, RPZ, and protected areas)
- **Aeronautical Support** (aviation related development; hangars, aircraft parking, etc.)
- **Agriculture** (agricultural use that is compatible with the airfield's primary aeronautical functions)

The land use classifications are consistent with the ALP drawing and reflect both existing and future facilities. The aeronautical operations area is intended to protect the function of the runway-taxiway system. All aircraft parking and hangar development is located in the aeronautical support area. Areas suitable for airport-compatible agricultural use are located at the east end of the landside area (southeast corner of the Airport).

Off-Airport Land Use Plan (Sheet 10 of 13)

The On-Airport and Off-Airport Land Use Plans depict the existing land use designations for the Airport and surrounding areas. It also identifies land that is impacted by Part 77 surfaces and associated airspace overlay zoning districts. Land use classifications were derived from city and county comprehensive plans and zoning districts. The City of Sunnyside has land use jurisdiction for Sunnyside Municipal Airport and most of the surrounding area. A portion of the Airport's Horizontal and Conical Surfaces extend over areas of Yakima County jurisdiction. Future property acquisition is depicted at the east end of the Airport with current zoning/land use designations. These parcels may be rezoned when incorporated into the Sunnyside city limits.

Airport Property Map (Sheet 11 of 13)

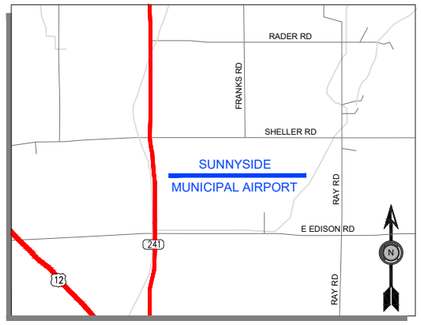
The Airport Property Map depicts all property owned or controlled by the City of Sunnyside. The drawing notes the form of ownership or control (fee simple, avigation easement, etc.), the date of acquisition per FAA guidelines, and the purpose for ownership. Proposed property acquisition is depicted at the east end of the Airport to support the recommended runway shift and the protected surfaces.

Airspace Obstruction Data Tables (Sheets 12-13 of 13)

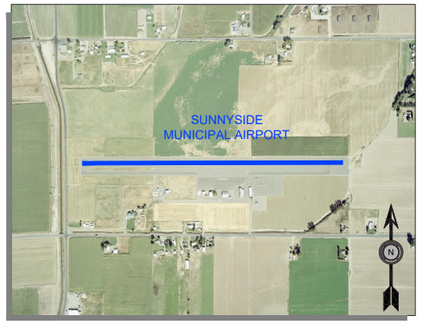
The obstacles depicted on several drawings in the ALP set are listed in tabular form on two separate drawings. All listed obstructions fall under their respective Part 77 surface category and details the location, elevation information, and a proposed disposition for each.

SUNNYSIDE MUNICIPAL AIRPORT (1S5)
AIRPORT LAYOUT PLAN

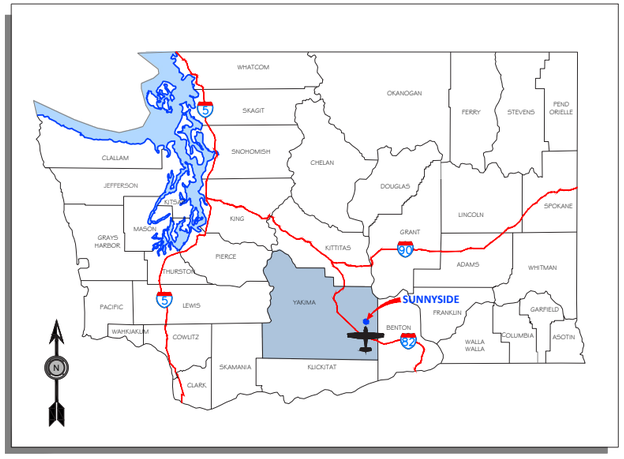
CITY OF SUNNYSIDE, WASHINGTON
AIP NO. 3-53-0074-011-2021
AIRPORT LAYOUT PLAN
JANUARY 2024



VICINITY MAP



AERIAL PHOTO



LOCATION MAP

SHEET INDEX

FAA APPROVAL LETTER

ALP APPROVAL

Sunnyside Municipal Airport | Sunnyside, WA

February 12, 2024

Background

The updated Airport Layout Plan (ALP) for the Sunnyside Municipal Airport (1S5) represents a change to the general aviation area of the airport. This change was developed based on the conclusions of an informal planning study completed over the course of 2021-2024. An aeronautical study (no. 2023-ANM- 5501-NRA) was conducted on the proposed development. This determination does not constitute FAA approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground.

ALP

Major changes in this January 2024 ALP from the previous 2008 version include:

Sheet 3 – Airport Layout Plan

- Property Acquisition

  Approximately 23 acres located immediately east of the runway required to accommodate a recommended runway shift (see below), all required runway-taxiway surfaces, and the future RPZ for Runway 25 entirely on airport property. This is a change from the 2008 ALP, where the future Runway 25 RPZ extended over a public road. The runway shift is intended to mitigate obstacles within the existing Runway 7 approach and to reduce to portion of the Runway 7 RPZ located off airport property.
- Runway 07/25
  - AAC/ADG (A-II) and Part 77 Designation (Larger than Utility – Visual). This is a change from the 2008 ALP (previously identified as ARC B-I (Small), future NPI).
  - The existing/future runway length is 3,425'. This is a change from the 2008 ALP that identified a future runway length of 4,000'.
  - The future runway width is 75'. This is a change from the 2008 ALP that identified a future runway width of 60'.
  - The future runway configuration includes a 200' eastern shift and reconstruction to include widening and surface grading to meet ADG II standards for the RSA, OFA and OFZ.
  - The previous recommendation to replace LIRL with MIRL and install PAPIs on both runway ends is maintained.
- Taxiways
  - The previous recommendation to construct a new south parallel taxiway with ADG II runway separation (240') was completed prior to the ALP update and is depicted as an existing facility.
  - New 90-degree taxiway connection at future Runway 25 end.
- Landside
  - Taxilane reconfigurations are planned within the existing main apron to meet ADG I taxilane OFA clearing standards (based on the aircraft use). Three existing transient parking tiedowns are removed. Two existing direct access points from the apron to the runway at two adjacent 90-degree runway exit taxiways are eliminated.

Page 1 of 2

- The existing east small airplane tiedown apron is reconfigured to meet ADG I OFA clearing standards for apron taxilanes, and ADG II OFA standards for the parallel taxiway.
  - The reconfiguration reduces the number of small airplane tiedowns from 18 to 8.
  - Add 1 new transient helicopter parking position.
  - Add 2 new ADG I south hangar taxilane connections.
- The planned expansion of aircraft parking and hangar sites in the east landside area has been revised since the 2008 ALP.
  - Add 2 transient ADG II parking positions at the east end of the tiedown apron with ADG II taxilane connections to the parallel taxiway.
  - Add 1 new south ADG I hangar taxilane connection.
  - Long term development reserve depicted for southeast section of airport.

This ALP approval is conditioned on acknowledgement that any development on airport property requiring Federal environmental approval must receive such written approval from FAA prior to commencement of the subject development. This ALP approval is also conditioned on acceptance of the plan under local land use laws. We encourage appropriate agencies to adopt land use and height restrictive zoning based on the plan.

Approval of the plan does not indicate that the United States will participate in the cost of any development proposed. AIP funding requires evidence of eligibility and justification at the time a funding request is ripe for consideration. When construction of any proposed structure or development indicated on the plan is undertaken, such construction requires normal 45 day advance notification to FAA for review in accordance with applicable Federal Aviation Regulations (i.e., Parts 77, 157, 152, etc.). More notice is generally beneficial to ensure that all statutory, regulatory, technical and operational issues can be addressed in a timely manner.

Signature Blocks

The FAA signature below acknowledges approval of the ALP.

FAA: Agnes Fisher, Community Planner – Seattle Airports District Office

Agnes O. Fisher — Digitally signed by Agnes O. Fisher Date: 2024.03.12 11:44:29 -07'00'

Airport Sponsor – City of Sunnyside: Elizabeth Alba, City Manager

02/12/24

Consultant – Century West Engineering: Samantha Peterson, Project Manager

Samantha Peterson

Page 2 of 2.

"THE PREPARATION OF THIS DOCUMENT MAY HAVE BEEN SUPPORTED, IN PART, THROUGH THE AIRPORT IMPROVEMENT PROGRAM FINANCIAL ASSISTANCE FROM THE FEDERAL AVIATION ADMINISTRATION (PROJECT NUMBER 3-53-0074-011-2021) AS PROVIDED UNDER TITLE 49, UNITED STATES CODE, SECTION 47104. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THIS REPORT BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED THEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

NO.	DATE	BY	APPR	REVISIONS

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING. 0" ——— 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

FEDERAL AVIATION ADMINISTRATION APPROVAL

APPROVAL DATE: _____

SIGNATURE

CITY OF SUNNYSIDE APPROVAL

APPROVAL DATE: _____

SIGNATURE

CENTURY WEST ENGINEERING

BEND OFFICE
1020 SW EMKAY DRIVE
SUITE #100
BEND, OR 97702
541.322.8962 OFFICE

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
DM	TDS	WMR	AS SHOWN
DATE: JANUARY 2024		PROJECT NO: 12427.005.01	

SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

TITLE SHEET

FIGURE NO. -

SHEET NO. 1 OF 13

AIRPORT DATA

	Existing	Future
AIRPORT REFERENCE CODE	A-II	SAME
MEAN MAX TEMPURATURE	88.2	SAME
AIRPORT ELEVATION	768.0'	SAME
NAVAIDS	APBN, PAPI-2	SAME
AIRPORT REFERENCE POINT	46° 19' 37.47" N, 119° 58' 13.30" W	46° 19' 37.46" N, 119° 58' 10.853" W
MISCELLANEOUS FACILITIES	LIRL, TWY EDGE REFLECTORS, AWOS, LIGHTED WIND CONE (2)	SAME
CRITICAL AIRCRAFT	AIR TRACTOR 802	SAME
MAGNETIC DECLINATION, See Note 1	14° 31' E ± 0° 23'	0° 6' W ANNUALLY
NPIAS SERVICE LEVEL	BASIC GA	SAME
STATE SERVICE LEVEL	LOCAL	SAME

Note 1: National Geodetic Survey Magnetic Declination Calculator (https://www.ngdc.noaa.gov/geomag/calculators/magcalc.shtml) accessed on April 5, 2023

RUNWAY DATA

		EXISTING	FUTURE
RUNWAY IDENTIFICATION		7/25	SAME
RUNWAY DESIGN CODE - RDC		A-II / VIS	SAME
APPROACH REFERENCE CODE - APRC		A-II / VIS	SAME
DEPARTURE REFERENCE CODE - DPRC		A-II	SAME
PAVEMENT TYPE		ASPHALT	SAME
PAVEMENT STRENGTH		12,500 SW	16,000 SW
RUNWAY PAVEMENT STRENGTH - PCN		N/A	N/A
RUNWAY SURFACE TREATMENT		NONE	SAME
RUNWAY GRADIENT		0.64%	SAME
PERCENT WIND COVERAGE		SEE WIND ROSE	
RUNWAY DIMENSIONS LENGTH AND WIDTH		3,425' x 60'	3,425' x 75'
DISPLACED THRESHOLD		N/A	N/A
RUNWAY END COORDINATES			
	RUNWAY 7	46° 19' 37.56"N, 119° 58' 37.71"W ELEV: 745.7	46° 19' 37.54" N, 119° 58' 35.25" W
	RUNWAY 25	46° 19' 37.37"N, 119° 57' 48.90"W ELEV: 767.7	46° 19' 37.36" N, 119° 57' 46.45" W
RUNWAY END ELEVATION	RUNWAY 7	745.66'	746.67'
	RUNWAY 25	767.71'	767.71'
RUNWAY LIGHTING		LIRL	MIRL
RUNWAY PROTECTION ZONE		SEE RUNWAY DESIGN SURFACES TABLE	
RUNWAY MARKING		VISUAL	SAME
14 CFR PART 77 APPROACH CATEGORY		20:1	SAME
RUNWAY APPROACH		VISUAL	SAME
RUNWAY VISIBILITY MINIMUMS		VISUAL	SAME
AERONAUTICAL SURVEY REQUIRED		NVGS	SAME
RUNWAY DEPARTURE SURFACE		N/A	YES
RUNWAY SAFETY AREA - RSA		SEE RUNWAY DESIGN SURFACES TABLE	
RUNWAY OBJECT FREE AREA - OFA			
RUNWAY OBSTACLE FREE ZONE - OFZ			
THRESHOLD SITING SURFACE - TSS		TYPE 3	TYPE 4
RUNWAY VISUAL AND INSTRUMENT NAVAIDS		PAPI	SAME
TOUCHDOWN ZONE ELEVATION			
RUNWAY 7		766.5'	767.3'
RUNWAY 25		768.0'	SAME
TAXIWAY AND TAXILANE SAFETY AREA - TSA		SEE TAXIWAY DATA TABLE	
TAXIWAY AND TAXILANE OBJECT FREE AREA - TOFA			
TAXIWAY AND TAXILANE SEPARATION			
TAXIWAY AND TAXILANE LIGHTING		REFLECTORS	SAME
HORIZONTAL DATUM		NAD83 (2011)	SAME
VERTICAL DATUM		NAVD88	SAME
Notes:			

RUNWAY PROTECTION DATA

Runway Protection Zone

	Inner Width	Length	Outer Width
Existing Rwy 7	500'	1,000'	700'
Existing Rwy 25	500'	1,000'	700'
Future Rwy 7	500'	1,000'	700'
Future Rwy 25	500'	1,000'	700'

Runway Safety Area

	Width	Length Beyond Runway End
Existing Rwy 7/25	150'	300'
Future Rwy 7/25	150'	300'

Runway Object Free Area

	Width	Length Beyond Runway End
Existing Rwy 7/25	500'	300'
Future Rwy 7/25	500'	300'

Runway Obstacle Free Zone

	Width	Length Beyond Runway End
Existing Rwy 7/25	400'	200'
Future Rwy 7/25	400'	200'

Notes:

DECLARED DISTANCES

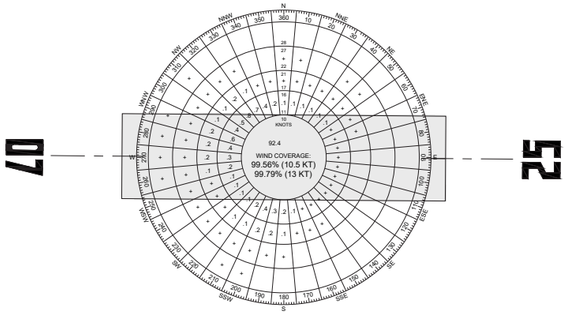
	EXISTING		FUTURE	
	RWY 7	RWY 25	RWY 7	RWY 25
TORA	3,425'	3,425'	3,425'	3,425'
TODA	3,425'	3,425'	3,425'	3,425'
ASDA	3,425'	3,425'	3,425'	3,425'
LDA	3,425'	3,425'	3,425'	3,425'

Modifications to Design Standards

Approval Date	Case Number	Modification	Description
NONE REQUIRED			

TAXIWAY DATA

	Taxiway A (Existing)	Taxiway A (Future)	Taxilane (Existing)	Taxilane (Future)
Design Group	ADG-II/TDG-1B	SAME	ADG-I & II/TDG-1B	SAME
Lighting	Edge Reflectors	SAME	N/A	N/A
Width	25'	SAME	25'	SAME
Object Free Area Width	124'	SAME	79' / 110'	SAME
Safety Area Width	79'	SAME	79'	SAME
Runway Separation	240'	SAME	N/A	N/A



VFR WIND ROSE

RUNWAY WIND COVERAGE

RUNWAY ALIGNMENT	CROSSWIND COMP. (KNOTS)	ALL-WEATHER WIND COVERAGE	VFR WIND COVERAGE	IFR WIND COVERAGE
RUNWAY 7	10.5	41.51%	38.73%	60.68%
	13	41.84%	39.09%	60.78%
RUNWAY 25	10.5	80.76%	80.15%	85.16%
	13	82.42%	82.02%	85.20%
COMBINED	10.5	95.57%	95.09%	99.34%
	13	97.55%	97.30%	99.49%

SOURCE: YKM ASOS.

WIND DATA ACCESSED FROM NATIONAL CLIMATE DATA CENTER (NCDC) INTEGRATED SURFACE HOURLY / INTEGRATED SURFACE DATE (ISH/ISD) INVENTORY

PERIOD: 2013 TO 2022

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CITY OF SUNNYSIDE APPROVAL

APPROVAL DATE: _____

SIGNATURE

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE
SUITE #100
BEND, OR 97702
541.322.8962 OFFICE

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
DM	TDS	WMR	AS SHOWN
DATE: JANUARY 2024		PROJECT NO: 12427.005.01	

SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

AIRPORT DATA SHEET

FIGURE NO. -

LEGEND

	EXISTING	FUTURE
PROPERTY LINE		
BUILDINGS		
RUNWAY/AIRFIELD PAVEMENT		
PAVEMENT REMOVAL	N/A	
VEHICLE PARKING/ACCESS ROAD	N/A	
TAXIWAY MARKING		
RUNWAY MARKING		
PAVEMENT MARKING REMOVAL		N/A
BUILDING RESTRICTION LINE (BRL)	—17' BRL—	N/A
RUNWAY SAFETY AREA (RSA)		
OBJECT FREE AREA (OFA)		
OBSTACLE FREE ZONE (OFZ)		
TAXIWAY OBJECT FREE AREA (TOFA)		
TAXIWAY SAFETY AREA (TSA)		
RUNWAY PROTECTION ZONE (RPZ)		
APPROACH SURFACE		
THRESHOLD SITING SURFACE		
GROUND CONTOURS	10'	N/A
AIRPORT REFERENCE POINT (ARP)		
VISUAL GUIDANCE INDICATORS (PAPI)		
FENCE (6' CHAINLINK)	x x x	
THRESHOLD LIGHTS		
AWOS		
RUNWAY EDGE LIGHTING (LIRL/MIRL)		SAME
BEACON		
WIND CONE		
REILS	N/A	
DEVELOPMENT RESERVE AREA / BUILDING	N/A	/
AVIGATION EASEMENT	N/A	
PROPERTY ACQUISITION	N/A	

BUILDING/FACILITY KEY

NO.	DESCRIPTION	NO.	DESCRIPTION
1	CITY WATER FACILITY - WELL (E)	11	FUEL (E)
2	T-HANGAR (E)	12	HANGARS 60' x 60' TYP. (F)
3	T-HANGAR (E)	13	HANGAR 70' X 70' TYP. (F)
4	HANGAR (E)	14	HANGARS 60' x 60' TYP. (F)
5	HOUSE (E)	15	T-HANGAR 60' X 202.5' TYP. (F)
6	HANGAR (E)	16	HANGARS 45' X 45' TYP. (F)
7	OFFICE (E)		
8	HANGAR (E)		
9	HANGAR (E)		
10	EQUIPMENT STORAGE (E)		

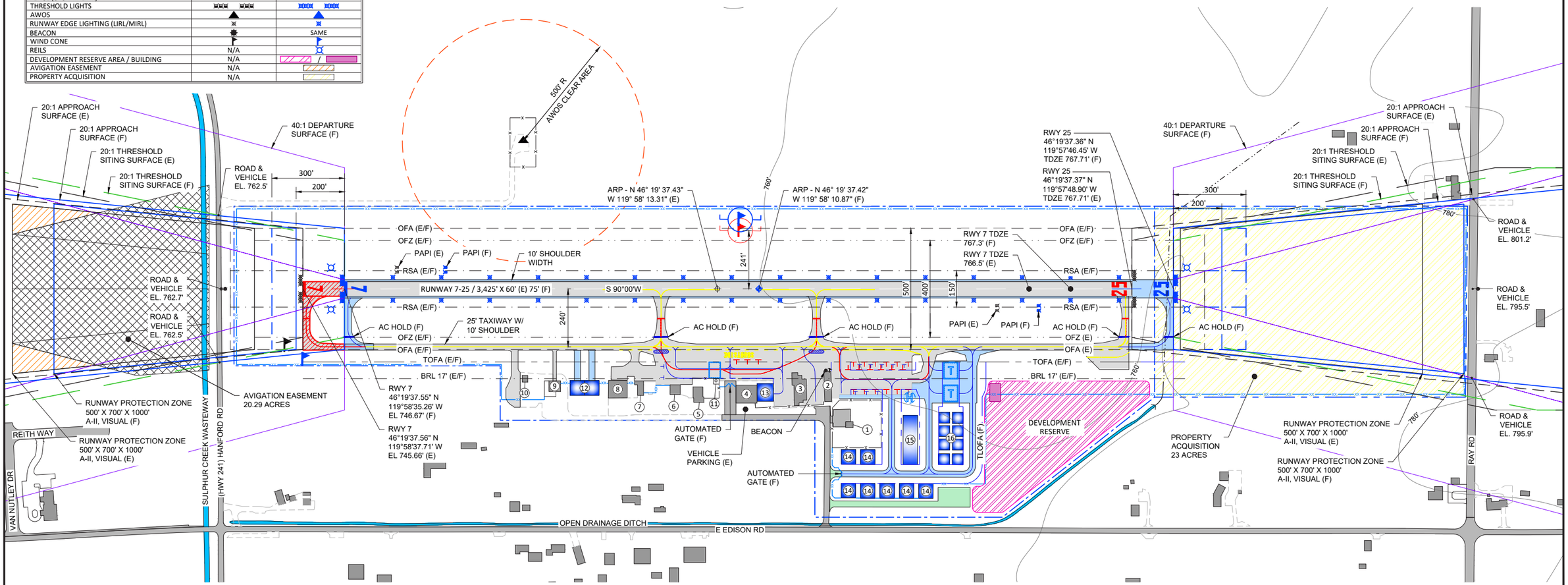
APRON DIMENSIONS

	SQUARE FOOTAGE APPROX.
APRON EXISTING	96,248 SF
APRON FUTURE	144,260 SF

MAGNETIC DEC. 14° 32' EAST (2020 VALUE)

0 200 400

SCALE OF FEET
SCALE: 1"=200'



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SIGNATURE

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SUITE #100
BEND, OR 97702
541.322.8962 OFFICE

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
DM	TDS	WMR	AS SHOWN
DATE: JANUARY 2024		PROJECT NO: 12427.005.01	

SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

AIRPORT LAYOUT PLAN

FIGURE NO.

SHEET NO. 3 OF 13

LEGEND

	EXISTING	FUTURE
PROPERTY LINE		
BUILDINGS		
RUNWAY/AIRFIELD PAVEMENT		
PAVEMENT REMOVAL	N/A	
VEHICLE PARKING/ACCESS ROAD	N/A	
TAXIWAY MARKING		
RUNWAY MARKING		
PAVEMENT MARKING REMOVAL		N/A
BUILDING RESTRICTION LINE (BRL)	17' BRL	N/A
RUNWAY SAFETY AREA (RSA)		
OBJECT FREE AREA (OFA)		
OBSTACLE FREE ZONE (OFZ)		
TAXIWAY OBJECT FREE AREA (TOFA)		
TAXIWAY SAFETY AREA (TSA)		
RUNWAY PROTECTION ZONE (RPZ)		
APPROACH SURFACE		
THRESHOLD SITING SURFACE		
GROUND CONTOURS	10'	N/A
AIRPORT REFERENCE POINT (ARP)		
VISUAL GUIDANCE INDICATORS (PAPI)		
FENCE (6' CHAINLINK)	X X	XX XX
THRESHOLD LIGHTS		
AWOS		
RUNWAY EDGE LIGHTING (LIRL/MIRL)		
BEACON		SAME
WIND CONE		
REILS	N/A	
DEVELOPMENT RESERVE AREA / BUILDING	N/A	/
AVIGATION EASEMENT	N/A	
PROPERTY ACQUISITION	N/A	

BUILDING/FACILITY KEY

NO.	DESCRIPTION	TOP ELEV.	NO.	DESCRIPTION	TOP ELEV.
1	CITY WATER FACILITY - WELL (E)	775.5'	11	FUEL (E)	778'
2	T-HANGAR (E)	772.4'	12	HANGARS 60' X 60' TYP. (F)	X.X
3	T-HANGAR (E)	781.7'	13	HANGAR 70' X 70' TYP. (F)	X.X
4	HANGAR (E)	787.9'	14	HANGARS 60' X 60' TYP. (F)	X.X
5	HOUSE (E)	781.8'	15	T-HANGAR 60' X 202.5' TYP. (F)	X.X
6	HANGAR (E)	774.2'	16	HANGARS 45' X 45' TYP. (F)	X.X
7	OFFICE (E)	781.4'			
8	HANGAR (E)	784.0'			
9	HANGAR (E)	771.5'			
10	EQUIPMENT STORAGE (E)	UNKNOWN			

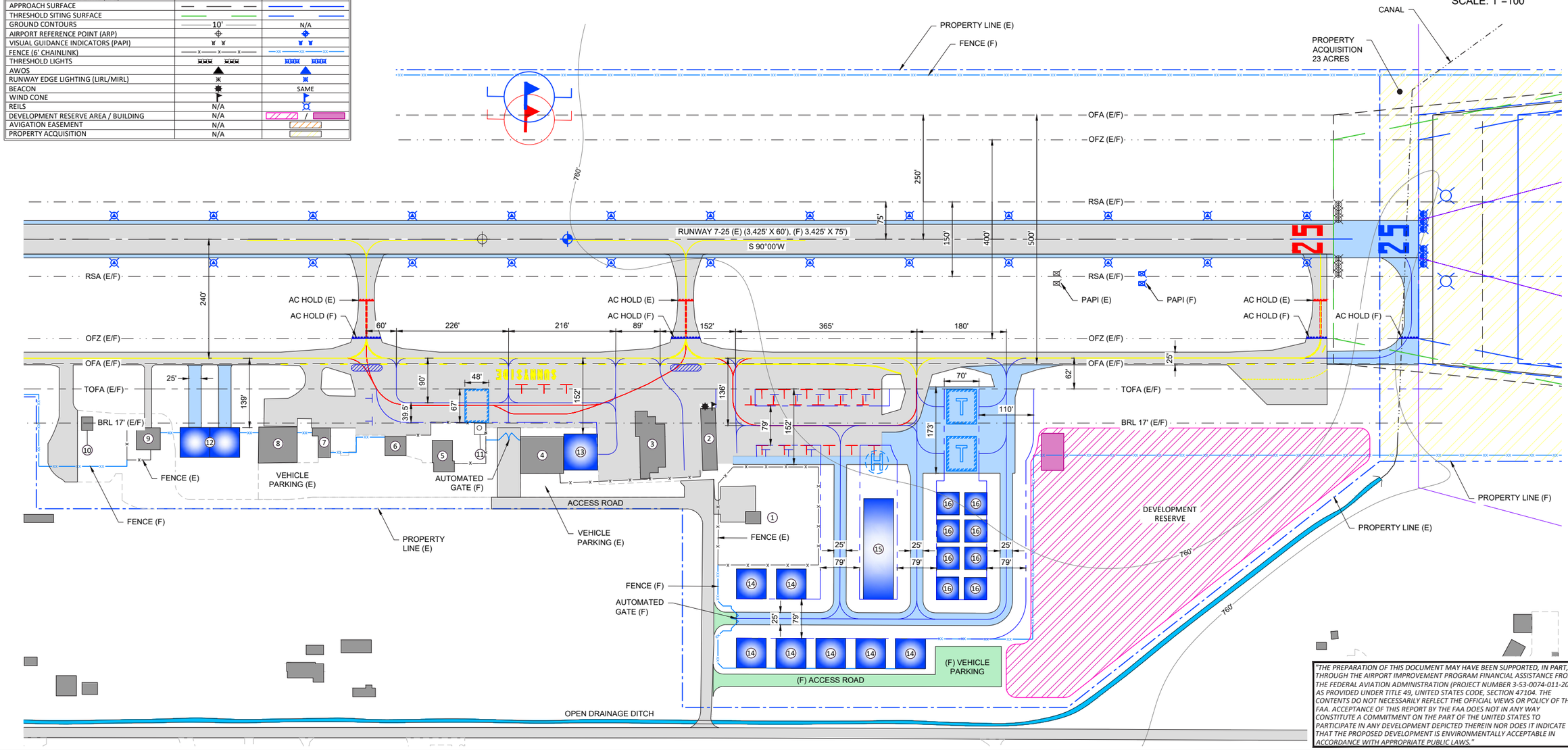
APRON DIMENSIONS

	SQUARE FOOTAGE APPROX.
APRON EXISTING	96,248 SF
APRON FUTURE	144,260 SF

MAGNETIC DEC. 14° 32' EAST (2020 VALUE)

0 100 200

SCALE OF FEET
SCALE: 1"=100'



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SUITE #100
BEND, OR 97702
541.322.8962 OFFICE

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DATE: JANUARY 2024		PROJECT NO: 12427.005.01	

SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

TERMINAL AREA PLAN

FIGURE NO.

SHEET NO. 4 OF 13

NOTES:

1. DISTANCES FOR NOTED OBSTRUCTIONS ARE BASED ON THE FUTURE RUNWAY CONFIGURATION. DIMENSIONS INCLUDE 200' DISTANCE FROM RUNWAY END TO BEGINNING OF APPROACH.

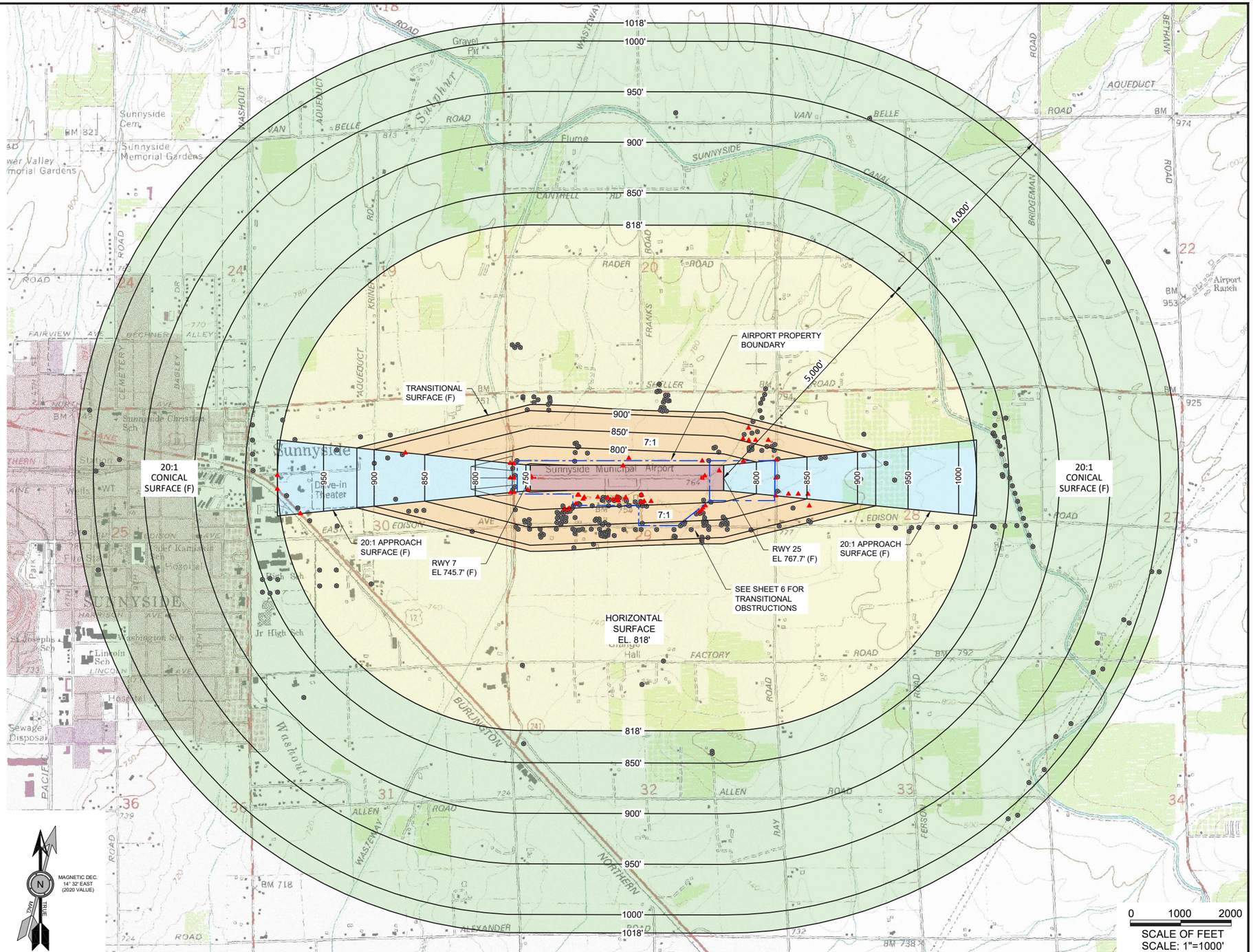
2. OBSTRUCTION ELEVATIONS ESTIMATED, EXCEPT FOR CONTROLLING OBSTRUCTION ITEMS FOR EACH EXISTING RUNWAY END FROM WSDOT AVIATION DATA BASE (SURVEY).

3. SURVEY REQUIRED TO VERIFY ROOF ELEVATIONS OF STRUCTURES TO VERIFY/DETERMINE HEIGHT OF OBSTRUCTIONS.

4. NO HORIZONTAL OR CONICAL SURFACE OBSTRUCTIONS EXIST.

5. ZONING HEIGHT RESTRICTIONS
SEE CITY OF SUNNYSIDE - AIRPORT OVERLAY ZONING CHAPTER 17.62A.
SEE YAKIMA COUNTY - OVERLAY DISTRICTS CHAPTER 19.17

6. SEE SHEETS 12 AND 13 FOR OBSTRUCTION TABLES.



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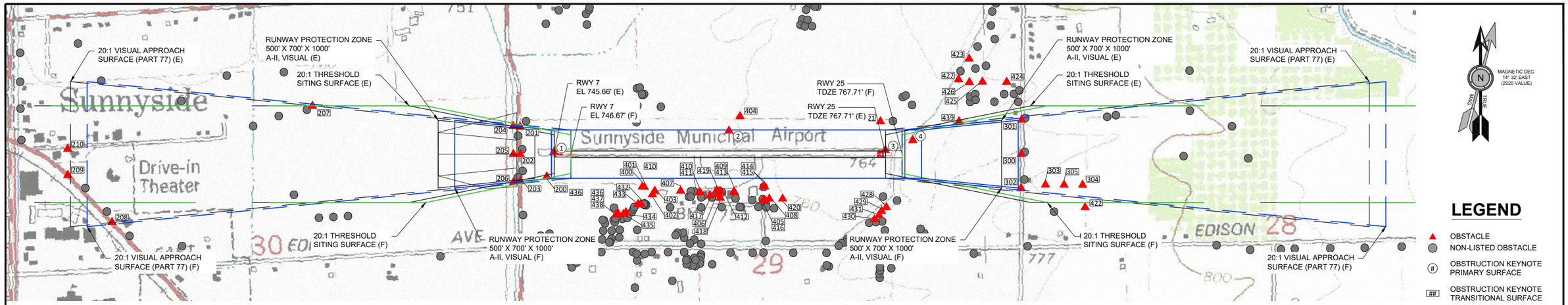
SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

AIRPORT AIRSPACE PLAN (PART 77)

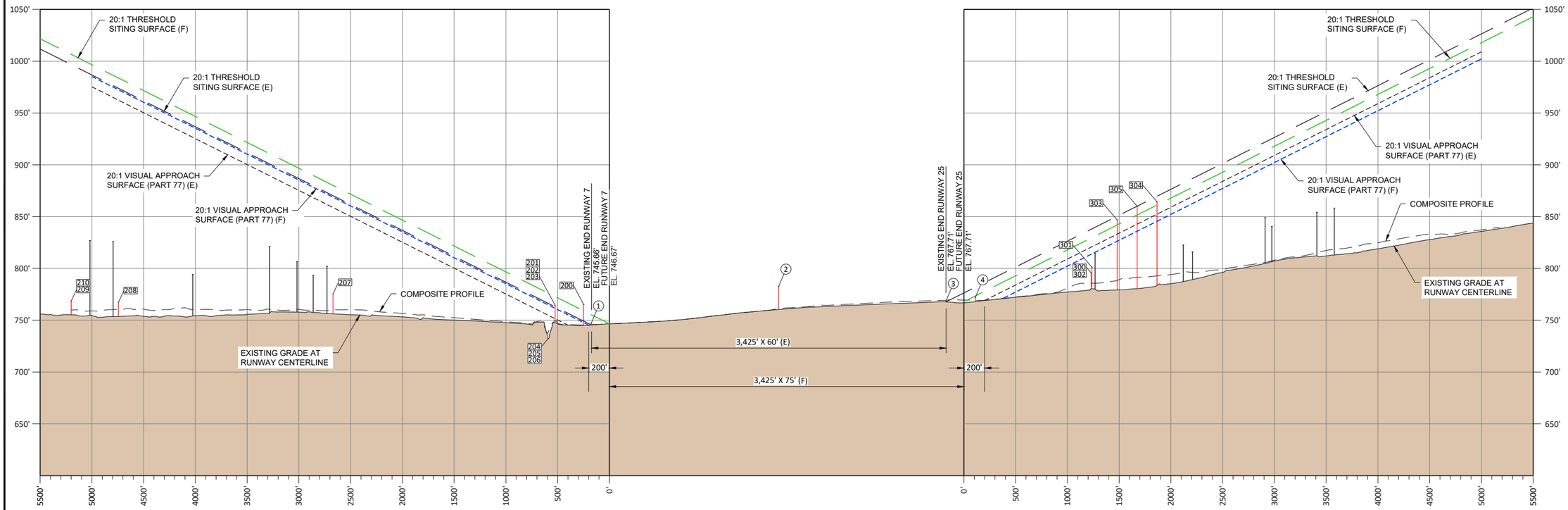
FIGURE NO. -

SHEET NO. 5 OF 13



RUNWAY 7-25 PLAN VIEW

0 500 1000
SCALE: 1"=500'



RUNWAY 7-25 PROFILE VIEW

0 50 100
SCALE OF FEET
VERTICAL SCALE: 1"=50'

0 500 1000
SCALE OF FEET
HORIZONTAL SCALE: 1"=500'

NOTE:
1. SEE SHEETS 12 AND 13 FOR OBSTRUCTION TABLES.

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NO.	DATE	BY	APPR	REVISIONS

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0" ■■■■■■■■ 1"
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APPROVAL DATE: _____
_____
SIGNATURE

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_____
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1020 SW EMKAY DRIVE
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BEND, OR 97702
541.322.8962 OFFICE

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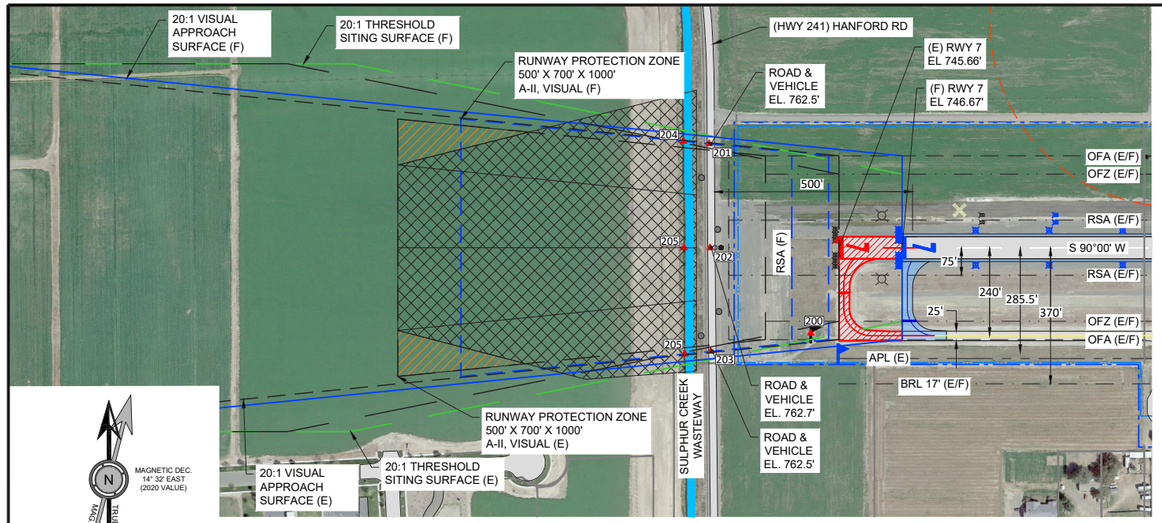
DM	TDS	WMR	AS SHOWN
DATE: JANUARY 2024		PROJECT NO: 12427.005.01	

SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

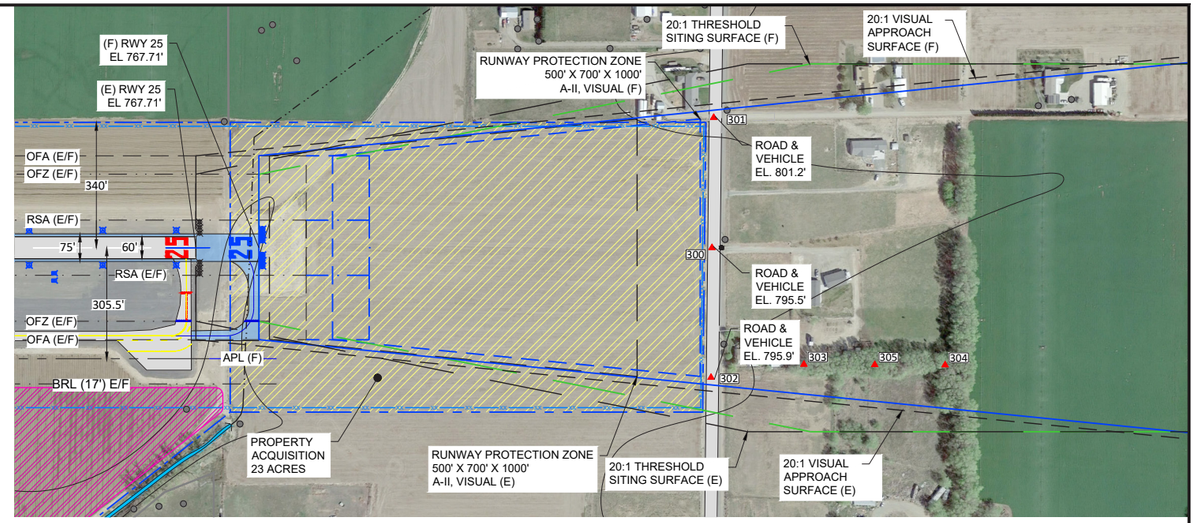
RUNWAY 7-25 APPROACH PLAN AND PROFILE

FIGURE NO.

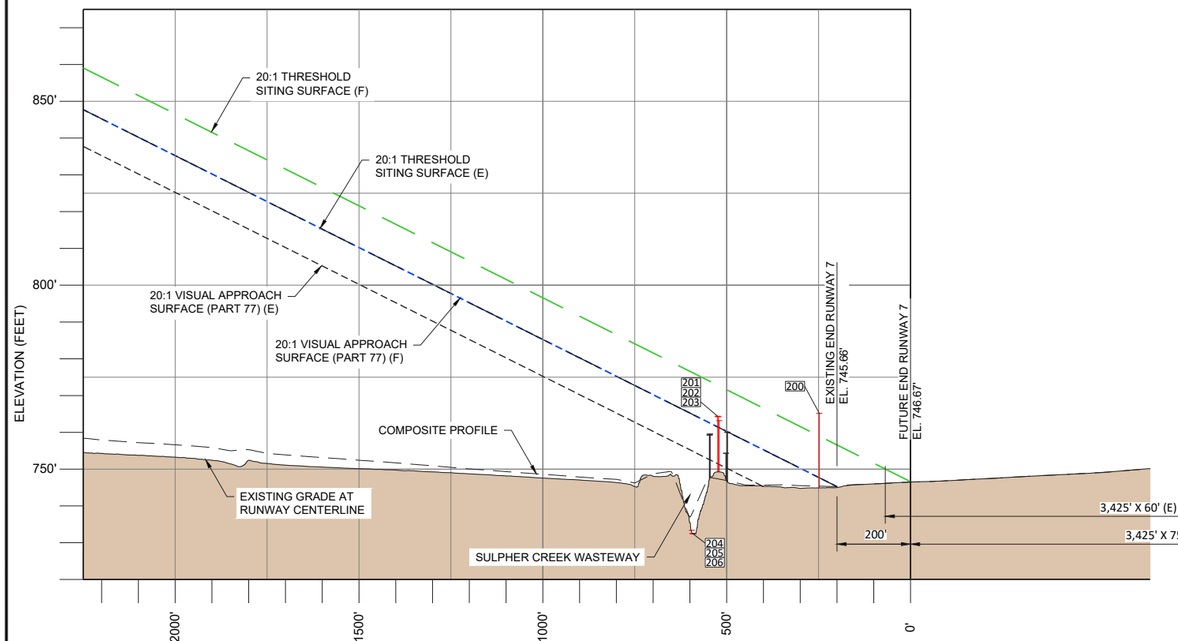
SHEET NO. 6 OF 13



RUNWAY 7 PLAN VIEW

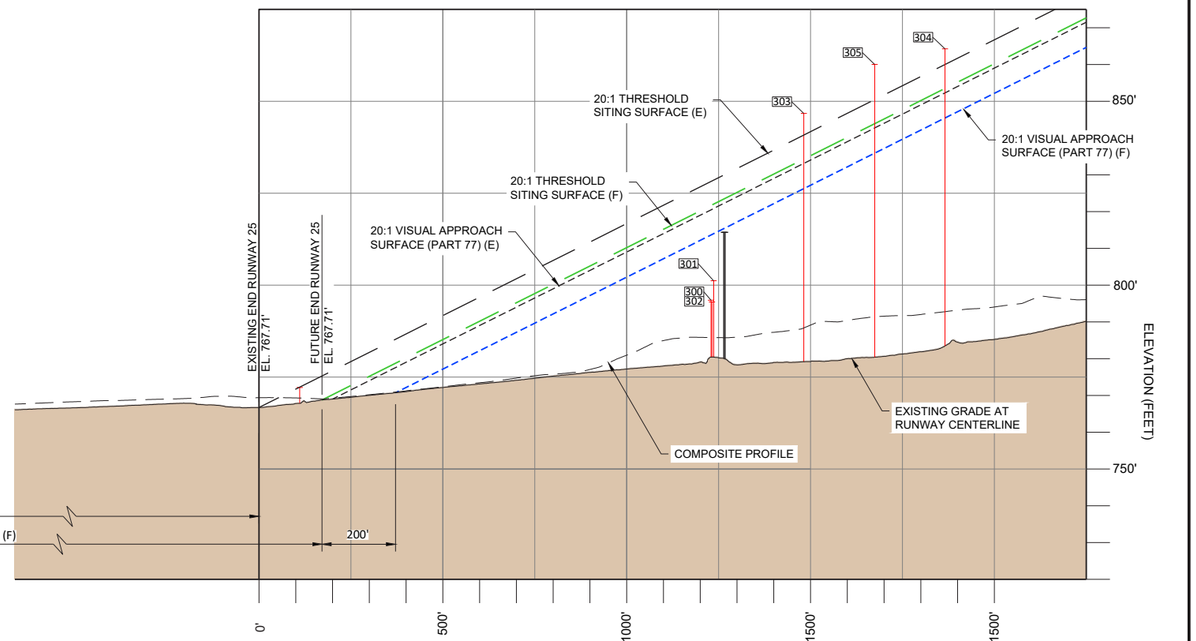


RUNWAY 25 PLAN VIEW



RUNWAY 7 PROFILE VIEW

0 20 40
SCALE OF FEET
VERT. SCALE: 1"=20'



RUNWAY 25 PROFILE VIEW

0 200 400
SCALE OF FEET
HORIZ. SCALE: 1"=200'

NOTES:
1. SEE SHEETS 12 AND 13 FOR OBSTRUCTION TABLES.
2. SEE SHEET 3 FOR FULL LEGEND.

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DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
DM	TDS	WMR	AS SHOWN

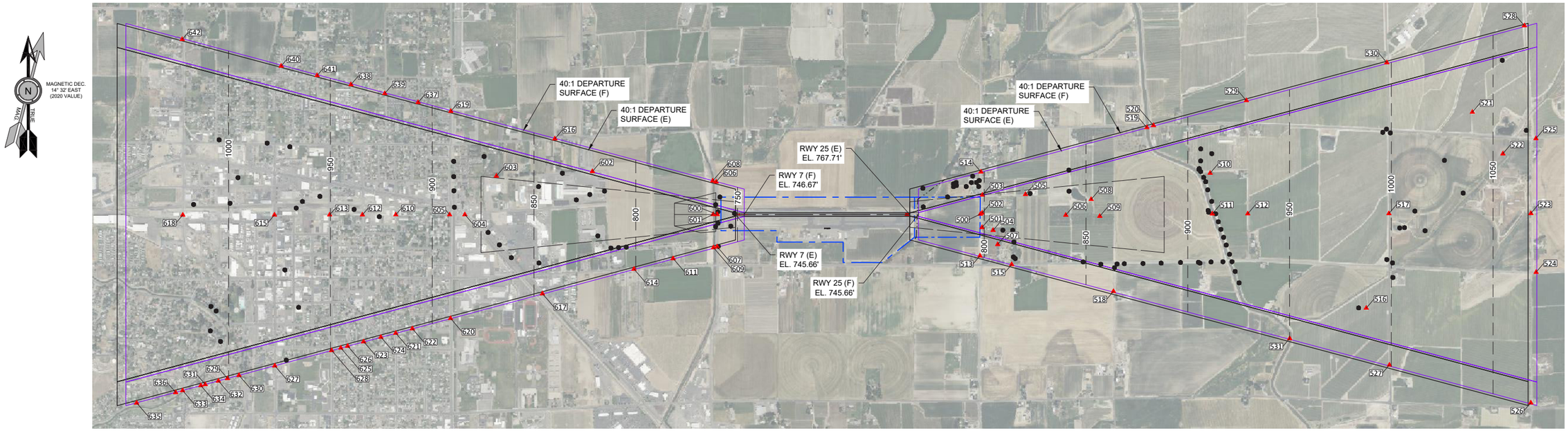
DATE: JANUARY 2024
PROJECT NO: 12427.005.01

SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

RUNWAY 7-25 INNER APPROACH SURFACE PLAN AND PROFILE

FIGURE NO.

SHEET NO. 7 OF 13



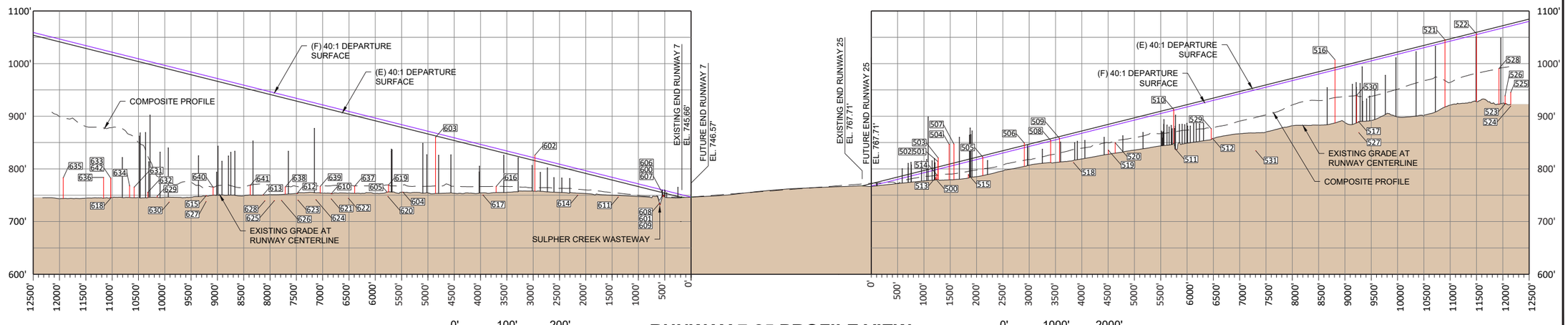
LEGEND

- OBSTRUCTION
- NON-PENETRATING OBSTACLE
- AIRPORT PROPERTY BOUNDARY (E)
- AIRPORT PROPERTY BOUNDARY (F)
- —700— DEPARTURE SURFACE 50' CONTOUR

RUNWAY 7-25 PLAN VIEW

0' 1000' 2000'

Horizontal Scale: 1"=1000'



RUNWAY 7-25 PROFILE VIEW

0' 100' 200'

Vertical Scale: 1"=100'

0' 1000' 2000'

Horizontal Scale: 1"=1000'

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NOTE:
1. SEE SHEETS 12 AND 13 FOR OBSTRUCTION TABLES.

NO.	DATE	BY	APPR	REVISIONS

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CITY OF SUNNYSIDE APPROVAL

APPROVAL DATE: _____

SIGNATURE

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE
SUITE #100
BEND, OR 97702
541.322.8962 OFFICE

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
DM	TDS	WMR	AS SHOWN
DATE: JANUARY 2024		PROJECT NO: 12427.005.01	

SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

RUNWAY 7-25 DEPARTURE SURFACE PLAN AND PROFILE

FIGURE NO.

SHEET NO. 8 OF 13

NOTE:

1. SEE SHEET 3 FOR FULL LEGEND.

AIRPORT LAND USE

- AERONAUTICAL OPERATIONS
- AERONAUTICAL SUPPORT
- AGRICULTURE
- EXISTING AVIGATION EASEMENT
- FUTURE AERONAUTICAL SUPPORT
- FUTURE AVIGATION EASEMENT
- FUTURE PROPERTY ACQUISITION
- CITY LIMITS
- UGA

500' R
AWOS CLEAR AREA

20:1 VISUAL APPROACH SURFACE (PART 77) (F)

20:1 VISUAL APPROACH SURFACE (PART 77) (E)

RWY 25
767.71' (F)

RWY 25
767.71' (E)

20:1 VISUAL APPROACH SURFACE (PART 77) (E)

20:1 VISUAL APPROACH SURFACE (PART 77) (F)

RAY RD

RUNWAY 7-25 / 3,425' X 60' (E) 75' (F)

RWY 7
EL 746.67' (F)

RWY 7
EL 745.66' (E)

RUNWAY PROTECTION ZONE
500' X 700' X 1000'
A-II, VISUAL (F)

RUNWAY PROTECTION ZONE
500' X 700' X 1000'
A-II, VISUAL (E)

(HWY 241) HANFORD RD

E EDISON RD

RUNWAY PROTECTION ZONE
500' X 700' X 1000'
A-II, VISUAL (E)

RUNWAY PROTECTION ZONE
500' X 700' X 1000'
A-II, VISUAL (F)

MAGNETIC DEC.
14° 32' EAST
(2020 VALUE)

0 200 400
SCALE OF FEET
SCALE: 1"=200'

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BEND, OR 97702
541.322.8962 OFFICE

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
DM	TDS	WMR	AS SHOWN
DATE: JANUARY 2024		PROJECT NO: 12427.005.01	

SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

ON AIRPORT LAND USE PLAN

FIGURE NO.

SHEET NO.
9 OF 13

CITY OF SUNNYSIDE ZONING

- AIRPORT **(AP)**
- LIGHT INDUSTRIAL **(M-1)**
- URBAN RES. AG. **(URA)**
- PUD **(PUD)**
- RETAIL CORE **(B-3)**
- LOW DENSITY RES. **(R-1)**
- MEDIUM DENSITY RES. **(R-2)**
- PROFESSIONAL BUSINESS **(PBO)**
- HEAVY INDUSTRIAL **(M-2)**
- FREEWAY COMMERCIAL **(B-1)**
- HIGH DENSITY RES. **(R-3)**
- GENERAL COMMERCIAL **(B-2)**
- CITY LIMITS
- UGA

YAKIMA COUNTY ZONING

- PLANNED DEVELOPMENT *(PD)*
- RURAL - 10/5 *(R-10)*
- AGRICULTURE *(AG)*
- SINGLE-FAMILY RES. *(SFR)*
- RURAL TRANSITIONAL *(RT)*

LEGEND

- ZONING BOUNDARY
- AIRPORT TRAFFIC PATTERN (TYP.)
- EXISTING AIRPORT PROPERTY LINE
- FUTURE AIRPORT PROPERTY LINE

NOTES:

1. ZONING HEIGHT RESTRICTIONS: SEE CITY OF SUNNYSIDE - AIRPORT OVERLAY ZONING CHAPTER 17.62A. SEE YAKIMA COUNTY - OVERLAY DISTRICTS CHAPTER 19.17
2. PARCEL TO BE ACQUIRED AND ANNEXED INTO THE CITY SUNNYSIDE. PARCEL TO BE REZONED "AP".
3. 14 CFR, PART 77 AIRSPACE DEPICTED FOR FUTURE RUNWAY CONFIGURATION.

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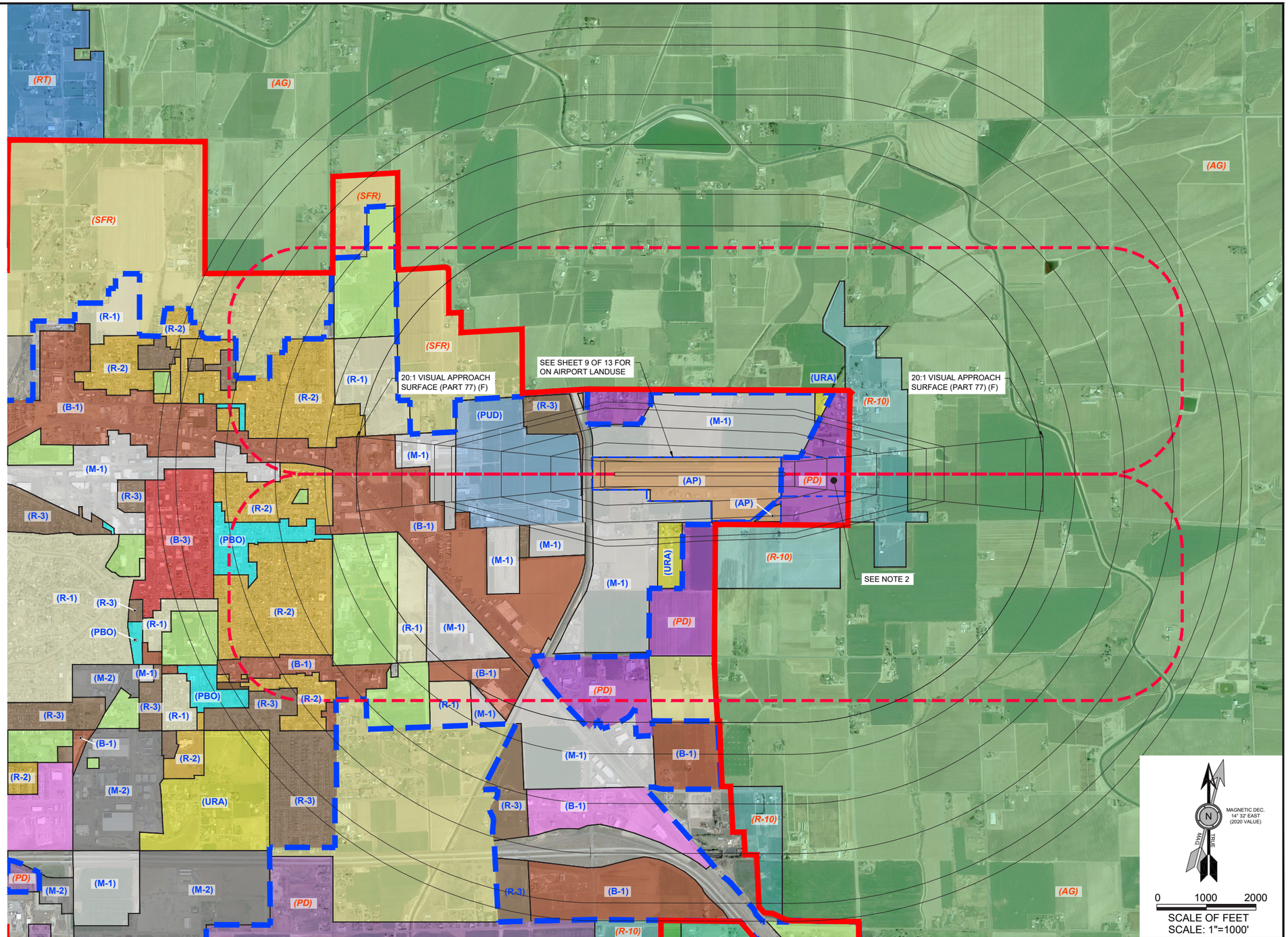

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APPROVAL DATE: _____

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SIGNATURE

CITY OF SUNNYSIDE APPROVAL

APPROVAL DATE: _____

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SIGNATURE

CENTURY WEST ENGINEERING
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BEND, OR 97702
541.322.8962 OFFICE

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
DM	TDS	WMR	AS SHOWN
DATE: JANUARY 2024		PROJECT NO: 12427.005.01	

SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

OFF AIRPORT LAND USE PLAN

FIGURE NO.

SHEET NO. 10 OF 13

LEGAL DESCRIPTIONS

PARCEL A - THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 29, TOWNSHIP 10 NORTH, RANGE 23, E.W.M. LYING EASTERLY OF THE SULPHUR CREEK, EXCEPT THE WESTERLY 40 FEET THEREOF ADJACENT TO THE SULPHUR CREEK WASTEWAY. SITUATED IN THE COUNTY OF YAKIMA, STATE OF WASHINGTON.

PARCEL B - THE NORTH 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 AND THE NORTH 225 FEET OF THE SOUTH 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 29, TOWNSHIP 10 NORTH, RANGE 23, E.W.M., AND THE EAST 30 FEET OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER, ALL IN SECTION 29, TOWNSHIP 10 NORTH, RANGE 23, E.W.M., SUBJECT TO AN EASEMENT FOR A COUNTY DRAIN.
SITUATED IN THE COUNTY OF YAKIMA, STATE OF WASHINGTON. FURTHER SUBJECT TO AN EASEMENT IN FAVOR OF ERNEST N. MOORE AND CATHERINE N. MOORE, FOR AN UNDERGROUND PIPE OVER THE NORTH 3 FEET OF SAID PREMISES.

PARCEL C - THAT PORTION OF THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 29, TOWNSHIP 10 NORTH, RANGE 23, E.W.M., LYING NORTH AND WEST OF THE CENTERLINE OF THE RIGHT OF WAY OF YAKIMA COUNTY DRAINAGE DISTRICT NO. 188. EXCEPT THAT PORTION CONVEYED TO YAKIMA COUNTY WASHINGTON, FOR SAID DRAIN. SITUATED IN THE COUNTY OF YAKIMA, STATE OF WASHINGTON.

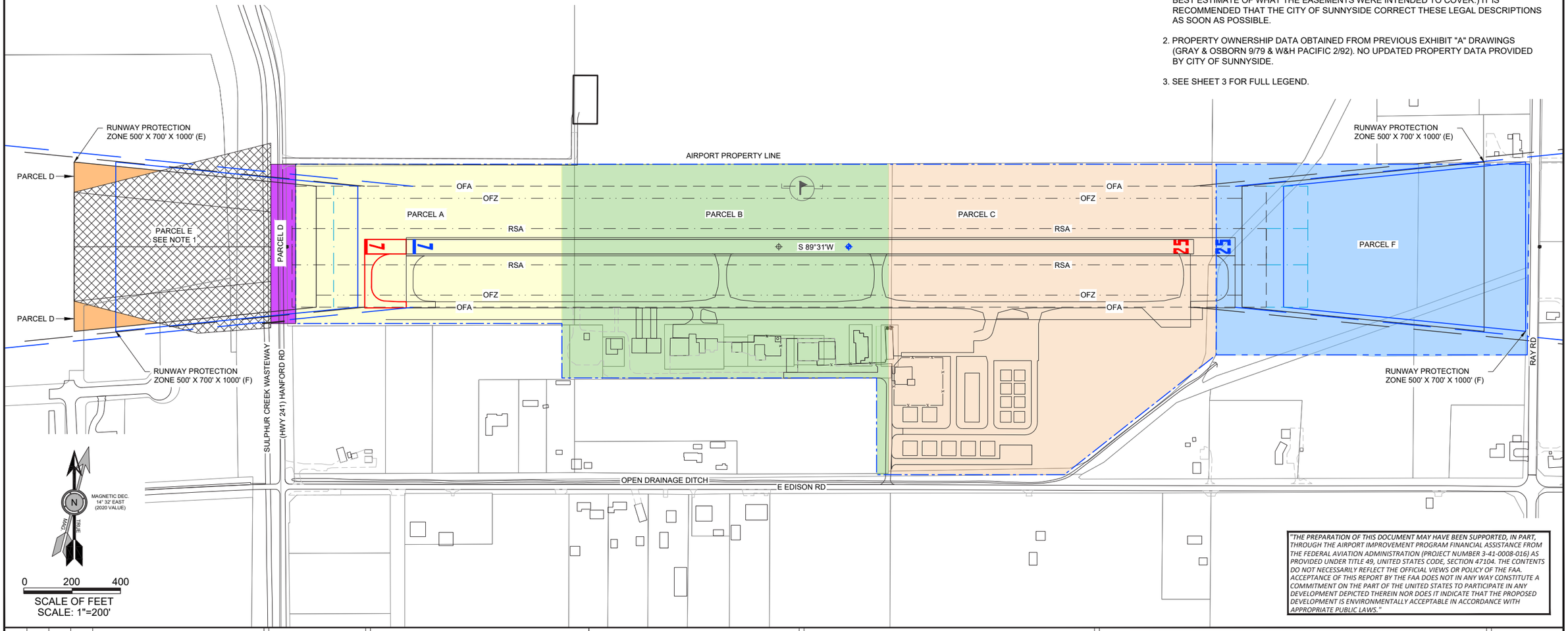
OWNERSHIP DATA TABLE

PARCEL	LAND OWNER	ACRES	RECORDING INFORMATION VOL., PAGE	INTEREST	PREVIOUS OWNER	ACQUISITION YEAR	PURPOSE
A	CITY OF SUNNYSIDE	17.86	569, 748	FEE	ERNEST & CATHERINE MOORE	OCT. 1951	AIRPORT PROPERTY
B	CITY OF SUNNYSIDE	* 27.19	562, 435	FEE	MIKE AND MARY DZURICK	OCT. 1951	AIRPORT PROPERTY
C	CITY OF SUNNYSIDE	35.67	631, 275	FEE	W.J. HAVENER	JULY 1962	AIRPORT PROPERTY
D	PORT OF SUNNYSIDE	1.01	N/A	AVIGATION EASEMENT	N/A	TO BE ACQUIRED	AIRPORT PROPERTY
E	PORT OF SUNNYSIDE	11.9	N/A	AVIGATION EASEMENT	N/A	SEPTEMBER 1979	AIRPORT PROPERTY
F	PORT OF SUNNYSIDE	23.36	N/A	FEE	N/A	TO BE ACQUIRED	RUNWAY OFA/RPZ
G	WSDOT (HWY 241 ROW)	1.55	N/A	AVIGATION EASEMENT	N/A	TO BE ACQUIRED	RUNWAY OFA/RPZ

* INCLUDE AN EASEMENT IN FAVOR OF ERNEST N. MOORE & CATHERINE M. MOORE, FOR AN UNDERGROUND IRRIGATION PIPE OVER THE NORTH 3 FEET OF SAID PARCEL.

NOTES:

1. ACCORDING TO RECORDS FILED WITH THE SUPERIOR COURT OF YAKIMA COUNTY, THE CITY OF SUNNYSIDE ACQUIRED CERTAIN AVIGATION RIGHTS IN SEPTEMBER OF 1979 FOR PORTIONS OF PROPERTY LOCATED WEST OF THE SULPHUR CREEK WASTEWAY. THESE EASEMENTS WERE INTENDED TO PROTECT PORTIONS OF THE APPROACH SURFACE AND TRANSITIONAL SURFACES FOR RUNWAY 7. HOWEVER, IT APPEARS THAT THE LEGAL DESCRIPTIONS FILED DO NOT COVER THE INTENDED AREA OF THE RUNWAY PROTECTION ZONE. (THE AREAS DEPICTED ON THIS PLAN ARE THE CONSULTANT'S BEST ESTIMATE OF WHAT THE EASEMENTS WERE INTENDED TO COVER.) IT IS RECOMMENDED THAT THE CITY OF SUNNYSIDE CORRECT THESE LEGAL DESCRIPTIONS AS SOON AS POSSIBLE.
2. PROPERTY OWNERSHIP DATA OBTAINED FROM PREVIOUS EXHIBIT "A" DRAWINGS (GRAY & OSBORN 9/79 & W&H PACIFIC 2/92). NO UPDATED PROPERTY DATA PROVIDED BY CITY OF SUNNYSIDE.
3. SEE SHEET 3 FOR FULL LEGEND.



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DATE: JANUARY 2024		PROJECT NO: 12427.005.01	

SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

AIRPORT PROPERTY MAP

FIGURE NO.

SHEET NO. 11 OF 13

PART 77 PRIMARY SURFACE OBSTRUCTIONS

OBSTACLE ID	DESCRIPTION	SURVEY DATE	PART 77 SURFACE	GROUND ELEVATION (FT)	AGL (FT)	TOP HEIGHT (FT)	SURFACE HEIGHT (FT)	PENETRATION (FT)	DISPOSITION
1	AIRFIELD LIGHT	9/13/2021	PRIMARY	745.4	1.6	747.0	746.6	0.5	FIXED BY FUNCTION
2	WINDSOCK	9/13/2021	PRIMARY	760.4	22.1	782.5	760.4	22.1	FIXED BY FUNCTION
3	AIRFIELD LIGHT	9/13/2021	PRIMARY	766.9	1.8	768.6	767.7	0.9	FIXED BY FUNCTION
4	DIRT PILE	9/13/2021	PRIMARY	772.2	0.0	772.2	767.7	4.5	TO BE REMOVED

PART 77 RW 7 APPROACH SURFACE OBSTRUCTIONS

OBSTACLE ID	DESCRIPTION	SURVEY DATE	PART 77 SURFACE	GROUND ELEVATION (FT)	AGL (FT)	TOP HEIGHT (FT)	SURFACE HEIGHT (FT)	PENETRATION (FT)	DISPOSITION
200	WINDSOCK	9/13/2021	RWY7 APPROACH	744.4	20.8	765.2	749.0	16.2	FIXED BY FUNCTION
201	ROAD	9/13/2021	RWY7 APPROACH	749.3	15.0	764.3	762.5	1.8	TO BE REMOVED
202	ROAD	9/13/2021	RWY7 APPROACH	749.2	15.0	764.2	762.7	1.5	TO BE REMOVED
203	ROAD	9/13/2021	RWY7 APPROACH	748.2	15.0	763.2	762.5	0.6	TO BE REMOVED
204	CANAL	9/13/2021	RWY7 APPROACH	733.4	0.0	733.4	766.3	-33.0	NO OBSTRUCTION
205	CANAL	9/13/2021	RWY7 APPROACH	732.5	0.0	732.5	766.2	-33.8	NO OBSTRUCTION
206	CANAL	9/13/2021	RWY7 APPROACH	732.4	0.0	732.4	766.1	-33.7	NO OBSTRUCTION
207	ROAD	9/13/2021	RWY7 APPROACH	760.3	15.0	775.3	870.1	-94.7	NO OBSTRUCTION
208	ROAD	9/13/2021	RWY7 APPROACH	737.3	15.0	752.3	973.7	-221.4	NO OBSTRUCTION
209	ROAD	9/13/2021	RWY7 APPROACH	753.4	15.0	768.4	996.6	-228.2	NO OBSTRUCTION
210	ROAD	9/13/2021	RWY7 APPROACH	754.9	15.0	769.9	996.6	-226.7	NO OBSTRUCTION

PART 77 RW 25 APPROACH SURFACE OBSTRUCTIONS

OBSTACLE ID	DESCRIPTION	SURVEY DATE	PART 77 SURFACE	GROUND ELEVATION (FT)	AGL (FT)	TOP HEIGHT (FT)	SURFACE HEIGHT (FT)	PENETRATION (FT)	DISPOSITION
300	ROAD	9/13/2021	RWY25 APPROACH	780.5	15.0	795.5	819.4	-23.9	NO OBSTRUCTION
301	ROAD	9/13/2021	RWY25 APPROACH	786.2	15.0	801.2	819.7	-18.5	NO OBSTRUCTION
302	ROAD	9/13/2021	RWY25 APPROACH	780.9	15.0	795.9	819.3	-23.4	NO OBSTRUCTION
303	TREE	9/13/2021	RWY25 APPROACH	786.8	59.9	846.7	831.8	14.9	TO BE REMOVED
304	TREE	9/13/2021	RWY25 APPROACH	789.0	75.2	864.3	851.0	13.3	TO BE REMOVED
305	TREE	9/13/2021	RWY25 APPROACH	788.2	71.8	860.0	841.4	18.6	TO BE REMOVED

RUNWAY 7 DEPARTURE SURFACE OBSTRUCTIONS

OBSTACLE ID	DESCRIPTION	SURVEY DATE	SURFACE	GROUND ELEVATION (FT)	AGL (FT)	TOP HEIGHT (FT)	SURFACE HEIGHT (FT)	PENETRATION (FT)	DISPOSITION
503	POWER POLE	9/13/2021	RWY7 DEPARTURE	785.7	35.3	821.0	799.5	21.4	TO BE LIGHTED
502	POWER POLE	9/13/2021	RWY7 DEPARTURE	778.1	36.2	814.4	799.4	15.0	TO BE LIGHTED
506	WINDMILL	9/13/2021	RWY7 DEPARTURE	804.7	44.4	849.1	840.5	8.6	TO BE LIGHTED
509	WINDMILL	9/13/2021	RWY7 DEPARTURE	814.5	43.7	858.2	857.2	1.0	TO BE LIGHTED
508	WINDMILL	9/13/2021	RWY7 DEPARTURE	809.2	45.0	854.2	852.9	1.3	TO BE LIGHTED
505	FLAGPOLE	9/13/2021	RWY7 DEPARTURE	796.6	26.0	822.6	820.7	1.9	TO BE LIGHTED
501	POWER POLE	9/13/2021	RWY7 DEPARTURE	781.6	32.8	814.4	799.3	15.1	TO BE LIGHTED
510	TREE	9/13/2021	RWY7 DEPARTURE	846.8	66.1	912.9	911.4	1.5	TO BE REMOVED
507	TREE	9/13/2021	RWY7 DEPARTURE	788.4	59.0	847.4	852.1	-4.8	NO OBSTRUCTION
504	TREE	9/13/2021	RWY7 DEPARTURE	786.8	59.9	846.7	804.8	42.0	TO BE REMOVED
516	POWER PYLON	9/13/2021	RWY7 DEPARTURE	878.1	129.4	1007.5	988.1	19.4	TO BE LIGHTED
522	POWER PYLON	9/13/2021	RWY7 DEPARTURE	928.9	127.7	1056.7	1055.3	1.4	TO BE LIGHTED
521	POWER PYLON	9/13/2021	RWY7 DEPARTURE	942.2	103.4	1045.5	1040.3	5.2	TO BE LIGHTED
517	ROAD	9/13/2021	RWY7 DEPARTURE	890.0	15.0	905.0	999.2	-94.2	NO OBSTRUCTION
514	ROAD	9/13/2021	RWY7 DEPARTURE	789.4	15.0	804.4	948.0	-143.6	NO OBSTRUCTION
513	ROAD	9/13/2021	RWY7 DEPARTURE	783.4	15.0	798.4	946.5	-148.1	NO OBSTRUCTION
500	ROAD	9/13/2021	RWY7 DEPARTURE	780.4	15.0	795.4	798.5	-3.1	NO OBSTRUCTION
518	ROAD	9/13/2021	RWY7 DEPARTURE	812.0	15.0	827.0	1012.0	-185.0	NO OBSTRUCTION
515	ROAD	9/13/2021	RWY7 DEPARTURE	789.2	15.0	804.2	962.6	-158.5	NO OBSTRUCTION
526	ROAD	9/13/2021	RWY7 DEPARTURE	938.7	15.0	953.7	1071.5	-117.8	NO OBSTRUCTION
527	ROAD	9/13/2021	RWY7 DEPARTURE	868.8	15.0	883.8	1071.5	-187.7	NO OBSTRUCTION
523	ROAD	9/13/2021	RWY7 DEPARTURE	924.0	15.0	939.0	1069.0	-129.9	NO OBSTRUCTION
524	ROAD	9/13/2021	RWY7 DEPARTURE	919.3	15.0	934.3	1071.5	-137.2	NO OBSTRUCTION
528	ROAD	9/13/2021	RWY7 DEPARTURE	990.7	15.0	1005.7	1071.5	-65.8	NO OBSTRUCTION
525	ROAD	9/13/2021	RWY7 DEPARTURE	945.3	15.0	960.3	1071.5	-111.2	NO OBSTRUCTION
529	ROAD	9/13/2021	RWY7 DEPARTURE	876.4	15.0	891.4	1071.5	-180.1	NO OBSTRUCTION
530	ROAD	9/13/2021	RWY7 DEPARTURE	939.3	15.0	954.3	1071.5	-117.2	NO OBSTRUCTION
519	CANAL	9/13/2021	RWY7 DEPARTURE	835.8	0.0	835.8	1027.0	-191.1	NO OBSTRUCTION
520	ROAD	9/13/2021	RWY7 DEPARTURE	849.8	15.0	864.8	1031.4	-166.6	NO OBSTRUCTION
512	ROAD	9/13/2021	RWY7 DEPARTURE	857.9	15.0	872.9	929.9	-57.1	NO OBSTRUCTION
511	ROAD	9/13/2021	RWY7 DEPARTURE	836.8	15.0	851.8	912.5	-60.7	NO OBSTRUCTION
531	CANAL	9/13/2021	RWY7 DEPARTURE	834.5	0.0	834.5	1071.5	-237.0	NO OBSTRUCTION

PART 77 TRANSITIONAL SURFACE OBSTRUCTIONS

OBSTACLE ID	DESCRIPTION	SURVEY DATE	PART 77 SURFACE	GROUND ELEVATION (FT)	AGL (FT)	TOP HEIGHT (FT)	SURFACE HEIGHT (FT)	PENETRATION (FT)	DISPOSITION
400	TREE	9/13/2021	TRANSITIONAL	750.7	28.4	779.1	763.6	15.5	TO BE REMOVED
401	TREE	9/13/2021	TRANSITIONAL	750.2	27.0	777.1	764.0	13.2	TO BE REMOVED
402	TREE	9/13/2021	TRANSITIONAL	752.0	27.0	778.9	776.2	2.7	TO BE REMOVED
403	BUILDING	9/13/2021	TRANSITIONAL	752.4	19.0	771.5	771.1	0.4	TO BE LIGHTED
404	VEGETATION	9/13/2021	TRANSITIONAL	762.8	15.1	778.0	781.4	-3.4	NO OBSTRUCTION
405	TREE	9/13/2021	TRANSITIONAL	759.5	35.8	795.3	795.4	-0.2	NO OBSTRUCTION
406	TREE	9/13/2021	TRANSITIONAL	758.0	52.4	810.4	783.5	26.9	TO BE REMOVED
407	BUILDING	9/13/2021	TRANSITIONAL	755.5	28.4	784.0	774.1	9.8	TO BE LIGHTED
408	LIGHT POLE	9/13/2021	TRANSITIONAL	759.6	34.8	794.3	793.3	1.0	TO BE LIGHTED
409	LIGHT POLE	9/13/2021	TRANSITIONAL	758.1	28.3	786.4	780.7	5.7	TO BE LIGHTED
410	LIGHT POLE	9/13/2021	TRANSITIONAL	757.1	25.0	782.2	778.8	3.3	TO BE LIGHTED
411	LIGHT POLE	9/13/2021	TRANSITIONAL	756.7	25.2	781.8	778.5	3.4	TO BE LIGHTED
412	POWER POLE	9/13/2021	TRANSITIONAL	757.5	31.9	789.3	779.0	10.3	TO BE LIGHTED
413	POWER POLE	9/13/2021	TRANSITIONAL	758.3	25.4	783.6	781.5	2.2	TO BE LIGHTED
414	BEACON POLE	9/13/2021	TRANSITIONAL	759.4	31.4	790.8	774.0	16.8	FIXED BY FUNCTION
415	WINDSOCK	9/13/2021	TRANSITIONAL	759.6	27.5	787.0	774.3	12.7	FIXED BY FUNCTION
416	TREE	9/13/2021	TRANSITIONAL	759.3	28.8	788.1	794.2	-6.1	NO OBSTRUCTION
417	TREE	9/13/2021	TRANSITIONAL	757.6	29.6	787.2	784.5	2.7	TO BE REMOVED
418	TREE	9/13/2021	TRANSITIONAL	757.3	23.6	780.9	788.6	-7.7	NO OBSTRUCTION
419	SIGN	9/13/2021	TRANSITIONAL	758.0	24.5	782.5	777.1	5.4	FIXED BY FUNCTION
420	LIGHT POLE	9/13/2021	TRANSITIONAL	760.5	34.8	795.3	794.0	1.3	TO BE LIGHTED
421	VEGETATION	9/13/2021	TRANSITIONAL	770.1	13.8	783.9	780.3	3.6	TO BE REMOVED
422	TREE	9/13/2021	TRANSITIONAL	792.2	72.8	865.0	871.1	-6.1	NO OBSTRUCTION
423	TREE	9/13/2021	TRANSITIONAL	780.4	106.4	886.7	890.4	-3.7	NO OBSTRUCTION
424	TREE	9/13/2021	TRANSITIONAL	783.8	114.9	898.7	870.1	28.6	TO BE REMOVED
425	TREE	9/13/2021	TRANSITIONAL	782.4	114.4	896.8	861.3	35.5	TO BE REMOVED
426	TREE	9/13/2021	TRANSITIONAL	777.6	115.5	893.1	855.9	37.2	TO BE REMOVED
427	TREE	9/13/2021	TRANSITIONAL	776.1	111.7	887.8	856.1	31.7	TO BE REMOVED
428	TREE	9/13/2021	TRANSITIONAL	760.0	74.2	834.1	810.6	23.5	TO BE REMOVED
429	TREE	9/13/2021	TRANSITIONAL	759.3	85.8	845.1	816.6	28.5	TO BE REMOVED
430	TREE	9/13/2021	TRANSITIONAL	765.4	83.1	848.5	828.5	20.0	TO BE REMOVED
431	TREE	9/13/2021	TRANSITIONAL	763.8	73.3	837.1	822.6	14.5	TO BE REMOVED
432	TREE	9/13/2021	TRANSITIONAL	751.0	33.5	784.5	788.8	-4.3	NO OBSTRUCTION
433	TREE	9/13/2021	TRANSITIONAL	750.7	32.7	783.3	788.9	-5.6	NO OBSTRUCTION
434	TREE	9/13/2021	TRANSITIONAL	749.1	42.4	791.5	799.9	-8.4	NO OBSTRUCTION
435	TREE	9/13/2021	TRANSITIONAL	748.4	48.1	796.5	802.4	-5.9	NO OBSTRUCTION
436	TREE	9/13/2021	TRANSITIONAL	748.3	50.7	799.0	802.0	-3.0	NO OBSTRUCTION
437	TREE	9/13/2021	TRANSITIONAL	748.6	50.9	799.5	802.4	-3.0	NO OBSTRUCTION
438	TREE	9/13/2021	TRANSITIONAL	748.5	44.0	792.5	800.9	-8.4	NO OBSTRUCTION
439	TREE	9/13/2021	TRANSITIONAL	777.7	22.8	800.4	794.0	6.4	TO BE REMOVED

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DATE: JANUARY 2024		PROJECT NO: 12427.005.01	

SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

AIRSPACE OBSTRUCTION DATA TABLES

FIGURE NO. -

SHEET NO. 12 OF 13

RUNWAY 7 DEPARTURE SURFACE OBSTRUCTIONS

OBSTACLE ID	DESCRIPTION	SURVEY DATE	SURFACE	GROUND ELEVATION (FT)	AGL (FT)	TOP HEIGHT (FT)	SURFACE HEIGHT (FT)	PENETRATION (FT)	DISPOSITION
503	POWER POLE	9/13/2021	RWY7 DEPARTURE	785.7	35.3	821.0	799.5	21.4	TO BE LIGHTED
502	POWER POLE	9/13/2021	RWY7 DEPARTURE	778.1	36.2	814.4	799.4	15.0	TO BE LIGHTED
506	WINDMILL	9/13/2021	RWY7 DEPARTURE	804.7	44.4	849.1	840.5	8.6	TO BE LIGHTED
509	WINDMILL	9/13/2021	RWY7 DEPARTURE	814.5	43.7	858.2	857.2	1.0	TO BE LIGHTED
508	WINDMILL	9/13/2021	RWY7 DEPARTURE	809.2	45.0	854.2	852.9	1.3	TO BE LIGHTED
505	FLAGPOLE	9/13/2021	RWY7 DEPARTURE	796.6	26.0	822.6	820.7	1.9	TO BE LIGHTED
501	POWER POLE	9/13/2021	RWY7 DEPARTURE	781.6	32.8	814.4	799.3	15.1	TO BE LIGHTED
510	TREE	9/13/2021	RWY7 DEPARTURE	846.8	66.1	912.9	911.4	1.5	TO BE REMOVED
507	TREE	9/13/2021	RWY7 DEPARTURE	788.4	59.0	847.4	852.1	-4.8	NO OBSTRUCTION
504	TREE	9/13/2021	RWY7 DEPARTURE	786.8	59.9	846.7	804.8	42.0	TO BE REMOVED
516	POWER PYLON	9/13/2021	RWY7 DEPARTURE	878.1	129.4	1007.5	988.1	19.4	TO BE LIGHTED
522	POWER PYLON	9/13/2021	RWY7 DEPARTURE	928.9	127.7	1056.7	1055.3	1.4	TO BE LIGHTED
521	POWER PYLON	9/13/2021	RWY7 DEPARTURE	942.2	103.4	1045.5	1040.3	5.2	TO BE LIGHTED
517	ROAD	9/13/2021	RWY7 DEPARTURE	890.0	15.0	905.0	999.2	-94.2	NO OBSTRUCTION
514	ROAD	9/13/2021	RWY7 DEPARTURE	789.4	15.0	804.4	948.0	-143.6	NO OBSTRUCTION
513	ROAD	9/13/2021	RWY7 DEPARTURE	783.4	15.0	798.4	946.5	-148.1	NO OBSTRUCTION
500	ROAD	9/13/2021	RWY7 DEPARTURE	780.4	15.0	795.4	798.5	-3.1	NO OBSTRUCTION
518	ROAD	9/13/2021	RWY7 DEPARTURE	812.0	15.0	827.0	1012.0	-185.0	NO OBSTRUCTION
515	ROAD	9/13/2021	RWY7 DEPARTURE	789.2	15.0	804.2	962.6	-158.5	NO OBSTRUCTION
526	ROAD	9/13/2021	RWY7 DEPARTURE	938.7	15.0	953.7	1071.5	-117.8	NO OBSTRUCTION
527	ROAD	9/13/2021	RWY7 DEPARTURE	868.8	15.0	883.8	1071.5	-187.7	NO OBSTRUCTION
523	ROAD	9/13/2021	RWY7 DEPARTURE	924.0	15.0	939.0	1069.0	-129.9	NO OBSTRUCTION
524	ROAD	9/13/2021	RWY7 DEPARTURE	919.3	15.0	934.3	1071.5	-137.2	NO OBSTRUCTION
528	ROAD	9/13/2021	RWY7 DEPARTURE	990.7	15.0	1005.7	1071.5	-65.8	NO OBSTRUCTION
525	ROAD	9/13/2021	RWY7 DEPARTURE	945.3	15.0	960.3	1071.5	-111.2	NO OBSTRUCTION
529	ROAD	9/13/2021	RWY7 DEPARTURE	876.4	15.0	891.4	1071.5	-180.1	NO OBSTRUCTION
530	ROAD	9/13/2021	RWY7 DEPARTURE	939.3	15.0	954.3	1071.5	-117.2	NO OBSTRUCTION
519	CANAL	9/13/2021	RWY7 DEPARTURE	835.8	0.0	835.8	1027.0	-191.1	NO OBSTRUCTION
520	ROAD	9/13/2021	RWY7 DEPARTURE	849.8	15.0	864.8	1031.4	-166.6	NO OBSTRUCTION
512	ROAD	9/13/2021	RWY7 DEPARTURE	857.9	15.0	872.9	929.9	-57.1	NO OBSTRUCTION
511	ROAD	9/13/2021	RWY7 DEPARTURE	836.8	15.0	851.8	912.5	-60.7	NO OBSTRUCTION
531	CANAL	9/13/2021	RWY7 DEPARTURE	834.5	0.0	834.5	1071.5	-237.0	NO OBSTRUCTION

RUNWAY 25 DEPARTURE SURFACE

OBSTACLE ID	DESCRIPTION	SURVEY DATE	SURFACE	GROUND ELEVATION (FT)	AGL (FT)	TOP HEIGHT (FT)	SURFACE HEIGHT (FT)	PENETRATION (FT)	DISPOSITION
600	ROAD	9/13/2021	RWY25 DEPARTURE	749.2	15.0	764.2	759.5	4.7	TO BE REMOVED
601	CANAL	9/13/2021	RWY25 DEPARTURE	732.5	0.0	732.5	761.4	-28.9	NO OBSTRUCTION
602	LIGHT POLE	9/13/2021	RWY25 DEPARTURE	761.7	64.4	826.1	825.0	1.1	TO BE LIGHTED
603	TREE	9/13/2021	RWY25 DEPARTURE	760.0	100.1	860.1	867.9	-7.8	NO OBSTRUCTION
604	ROAD	9/13/2021	RWY25 DEPARTURE	755.9	15.0	770.9	883.4	-112.5	NO OBSTRUCTION
605	ROAD	9/13/2021	RWY25 DEPARTURE	756.0	15.0	771.0	890.9	-120.0	NO OBSTRUCTION
606	ROAD	9/13/2021	RWY25 DEPARTURE	749.5	15.0	764.5	908.2	-143.7	NO OBSTRUCTION
607	ROAD	9/13/2021	RWY25 DEPARTURE	746.8	15.0	761.8	908.8	-147.0	NO OBSTRUCTION
608	CANAL	9/13/2021	RWY25 DEPARTURE	734.5	0.0	734.5	910.0	-175.6	NO OBSTRUCTION
609	CANAL	9/13/2021	RWY25 DEPARTURE	732.2	0.0	732.2	910.2	-178.0	NO OBSTRUCTION
610	ROAD	9/13/2021	RWY25 DEPARTURE	753.3	15.0	768.3	917.4	-149.1	NO OBSTRUCTION
611	ROAD	9/13/2021	RWY25 DEPARTURE	746.5	15.0	761.5	929.9	-168.4	NO OBSTRUCTION
612	ROAD	9/13/2021	RWY25 DEPARTURE	753.4	15.0	768.4	933.8	-165.3	NO OBSTRUCTION
613	ROAD	9/13/2021	RWY25 DEPARTURE	750.5	15.0	765.5	949.9	-184.4	NO OBSTRUCTION
614	ROAD	9/13/2021	RWY25 DEPARTURE	750.1	15.0	765.1	950.0	-184.9	NO OBSTRUCTION
615	ROAD	9/13/2021	RWY25 DEPARTURE	748.8	15.0	763.8	977.0	-213.1	NO OBSTRUCTION
616	ROAD	9/13/2021	RWY25 DEPARTURE	766.8	15.0	781.8	987.9	-206.1	NO OBSTRUCTION
617	ROAD	9/13/2021	RWY25 DEPARTURE	750.4	15.0	765.4	993.5	-228.1	NO OBSTRUCTION
618	ROAD	9/13/2021	RWY25 DEPARTURE	745.5	15.0	760.5	1022.0	-261.5	NO OBSTRUCTION
619	ROAD	9/13/2021	RWY25 DEPARTURE	769.8	15.0	784.8	1038.2	-253.4	NO OBSTRUCTION
620	ROAD	9/13/2021	RWY25 DEPARTURE	747.7	15.0	762.7	1039.6	-276.9	NO OBSTRUCTION
621	ROAD	9/13/2021	RWY25 DEPARTURE	743.1	15.0	758.1	1050.4	-292.3	NO OBSTRUCTION
622	ROAD	9/13/2021	RWY25 DEPARTURE	744.3	15.0	759.3	1050.4	-291.1	NO OBSTRUCTION
623	ROAD	9/13/2021	RWY25 DEPARTURE	740.8	15.0	755.8	1050.4	-294.6	NO OBSTRUCTION
624	ROAD	9/13/2021	RWY25 DEPARTURE	741.6	15.0	756.6	1050.4	-293.8	NO OBSTRUCTION
625	ROAD	9/13/2021	RWY25 DEPARTURE	739.8	15.0	754.8	1050.4	-295.6	NO OBSTRUCTION
626	ROAD	9/13/2021	RWY25 DEPARTURE	740.2	15.0	755.2	1050.4	-295.2	NO OBSTRUCTION
627	ROAD	9/13/2021	RWY25 DEPARTURE	738.0	15.0	753.0	1050.4	-297.4	NO OBSTRUCTION
628	ROAD	9/13/2021	RWY25 DEPARTURE	739.5	15.0	754.5	1050.4	-295.9	NO OBSTRUCTION
629	ROAD	9/13/2021	RWY25 DEPARTURE	748.3	15.0	763.3	1050.4	-287.0	NO OBSTRUCTION
630	ROAD	9/13/2021	RWY25 DEPARTURE	736.9	15.0	751.9	1050.4	-298.5	NO OBSTRUCTION
631	ROAD	9/13/2021	RWY25 DEPARTURE	765.5	15.0	780.5	1050.4	-269.9	NO OBSTRUCTION
632	ROAD	9/13/2021	RWY25 DEPARTURE	755.5	15.0	770.5	1050.4	-279.9	NO OBSTRUCTION
633	ROAD	9/13/2021	RWY25 DEPARTURE	782.5	15.0	797.5	1050.4	-252.8	NO OBSTRUCTION
634	ROAD	9/13/2021	RWY25 DEPARTURE	767.8	15.0	782.8	1050.4	-267.6	NO OBSTRUCTION
635	ROAD	9/13/2021	RWY25 DEPARTURE	783.2	15.0	798.2	1050.4	-252.2	NO OBSTRUCTION
636	ROAD	9/13/2021	RWY25 DEPARTURE	783.8	15.0	798.8	1050.4	-251.5	NO OBSTRUCTION
637	ROAD	9/13/2021	RWY25 DEPARTURE	767.4	15.0	782.4	1050.4	-267.9	NO OBSTRUCTION
638	ROAD	9/13/2021	RWY25 DEPARTURE	765.8	15.0	780.8	1050.4	-269.6	NO OBSTRUCTION
639	ROAD	9/13/2021	RWY25 DEPARTURE	766.7	15.0	781.7	1050.4	-268.7	NO OBSTRUCTION
640	ROAD	9/13/2021	RWY25 DEPARTURE	765.3	15.0	780.3	1050.4	-270.1	NO OBSTRUCTION
641	ROAD	9/13/2021	RWY25 DEPARTURE	768.9	15.0	783.9	1050.4	-266.4	NO OBSTRUCTION
642	ROAD	9/13/2021	RWY25 DEPARTURE	781.0	15.0	796.0	1050.4	-254.3	NO OBSTRUCTION

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DATE: JANUARY 2024

PROJECT NO: 12427.005.01

SUNNYSIDE MUNICIPAL AIRPORT
CITY OF SUNNYSIDE

AIRSPACE OBSTRUCTION DATA TABLES

FIGURE NO. -

Appendix A

Environmental Memo

Final

SUNNYSIDE MUNICIPAL AIRPORT

Environmental Screening

Prepared for
Century West Engineering

January 2022

Final

SUNNYSIDE MUNICIPAL AIRPORT

Environmental Screening

Prepared for
Century West Engineering

January 2022

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Sunnyside Municipal Airport Environmental Screening

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Acronyms and Abbreviations

Airport	Sunnyside Municipal Airport
AVGAS	aviation gasoline
CO	Carbon Monoxide
Corps	U.S. Army Corps of Engineers
Ecology	Washington State Department of Ecology
EJSCREEN	Environmental Justice Screening and Mapping Tool
EPA	U.S. Environmental Protection Agency
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
MS4	municipal separate storm sewer system
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NO_x	Nitrogen Oxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
O_3	Ozone
Pb	Lead
PHS	Priority Habitats and Species
PM_{10} and $PM_{2.5}$	Particulate Matter
SO_2	Sulfur Dioxide
SVID	Sunnyside Valley Irrigation District
TOT	time of travel
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WDFW	Washington Department of Fish and Wildlife

SUNNYSIDE MUNICIPAL AIRPORT

Airport Layout Plan Update – Environmental Screening

Overview

Environmental Science Associates (ESA) has prepared this Environmental Screening to identify potential environmental sensitivities and present an environmental overview of the Sunnyside Municipal Airport (Airport) in consideration of future improvements included in the Airport Layout Plan Update. The environmental overview is based on the National Environmental Policy Act (NEPA) Environmental Impact Categories outlined in Federal Aviation Administration (FAA) Order 1050.1F Environmental Impacts: Policies and Procedures (FAA 2015). ESA performed a desktop analysis for the following environmental impact categories described within the FAA's Order 1050.1F:

- Air Quality.
- Biological Resources (including fish, wildlife, and plants).
- Department of Transportation Act, Section 4(f) resources.
- Hazardous Materials, Solid Waste, and Pollution Prevention.
- Natural Resources and Energy Supply.
- Water Resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers).

Air Quality

Local air quality is described by the concentration of various pollutants in the atmosphere. The significance of a pollution concentration is determined by comparing it to state and federal air quality standards. In 1971, the U.S. Environmental Protection Agency (EPA) established standards that specify the maximum permissible short-term and long-term concentrations of various air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of primary and secondary standards for six criteria pollutants: Ozone (O_3), Carbon Monoxide (CO), Sulfur Dioxide (SO_2), Nitrogen Oxide (NO_x), Particulate matter (PM_{10} and $PM_{2.5}$), and Lead (Pb).

Based on both federal and state air quality standards, a specific geographic area can be classified as either an "attainment," "maintenance," or "non-attainment" area for each pollutant. The

threshold for non-attainment designation varies by pollutant. The Sunnyside Municipal Airport is in a portion of Yakima County, Washington, that attains all NAAQS (EPA 2021b, 2021c). Yakima County currently complies with federal NAAQS standards and, therefore, general conformity review per the Clean Air Act is not required.

Although the airport is an area that attains all NAAQS, according to the EPA's Environmental Justice Screening and Mapping Tool (EJSCREEN), a tool created to highlight locations that may be candidates for further environmental review, the Sunnyside Municipal Airport property falls within an "Area of Concern" for $PM_{2.5}$ levels. "Areas of Concern" indicate census block groups where an environmental hazard index is above the 80th percentile nationwide. The Airport property falls within the 94th percentile for $PM_{2.5}$ levels and within the 73rd percentile for ozone summer seasonal average of daily maximum 8-hour concentrations in the air (EPA 2020). For all other mapped environmental air quality hazards (including diesel particulate matter, cancer risk from the inhalation of air toxics, and other respiratory hazards), the Airport and surrounding areas fall under the 20th percentile nationwide (EPA 2020).

The climate in Sunnyside, Washington, includes hot, arid summers and cold, dry and partially cloudy winters. National Oceanic and Atmospheric Administration (NOAA) data from 1981 to 2010 indicate that the annual average temperatures at the Airport are a high of 66.1 degrees Fahrenheit (F) and a low of 40.0 degrees F. The lowest temperatures occur in the month of December, when the average daily low is 24.5 degrees F and the average daily high is 38.6 degrees F (NOAA 2021). The highest temperatures occur in the month of July, when the average daily high is 90.7 degrees F and the average daily low is 57.1 degrees F (NOAA 2021). The annual precipitation average is 7.5 inches, with the wettest month typically being December with an average of 1.27 inches and the driest month being July with an average of 0.14 inch (NOAA 2021).

Biological Resources

Biological resources are valued for their intrinsic, aesthetic, economic, and recreational qualities and include fish, wildlife, plants, and their respective habitats. Categories of biological resources evaluated in this document include:

- State or federally listed species and Washington Priority Habitats and Species (PHS).
- Birds protected under the Migratory Bird Treaty Act (MBTA).
- Bald and golden eagles.
- Critical habitats.

State or Federally Listed Species and Washington Priority Habitats and Species

The purpose of the federal Endangered Species Act is to protect and recover imperiled species and the ecosystems upon which they depend. It is administered by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). The Endangered Species Act requires all federal agencies to seek to conserve species listed as threatened and endangered and associated designated critical habitat.

The Washington Department of Fish and Wildlife's (WDFW) Priority Habitats and Species (PHS) Program is a publicly accessible tool provided by WDFW for evaluating the potential impact of development actions on fish and wildlife habitat (WDFW 2008, 2021f). Mapping and data provided by PHS is WDFW's primary means of transferring fish and wildlife information from resource experts to local governments, landowners, and others. Priority habitats are classified by PHS as: "*habitat types or elements with unique or significant value to a large number of species*," and may consist of unique vegetation types, dominant plant species, or a specific habitat feature (WDFW 2021g).

The USFWS Information for Planning and Consultation (IPaC) and the WDFW PHS on the Web tool list the following federally or state protected species as having the potential to occur in the vicinity of the Airport:

- **Gray Wolf (*Canis lupus*):** Federally delisted due to recovery (Status Under Review), Washington State listed endangered west of Highway 97 and PHS species statewide. Wolves are highly adaptable to a variety of habitats if sufficient prey is available. Wolf pack territories typically average 140 to 400 square miles, and they tend to prefer remote unpopulated areas over urban or human-inhabited environments; however, dispersing wolves can travel up to 500 miles or more (WDFW 2021e).

- **Ferruginous Hawk (*Buteo regalis*)**: State-listed endangered. Ferruginous hawks are affected by the loss and fragmentation of arid grassland and shrub-steppe habitat as well as declines in the abundance of prey species such as jackrabbits and ground squirrels (WDFW 2021d). WDFW PHS maps the area surrounding the Airport as ferruginous hawk habitat and there are citizen scientist reports of ferruginous hawks in the vicinity of the City of Sunnyside and surrounding areas (eBird 2021).

- **Yellow-billed Cuckoo (*Coccyzus americanus*)**: Federally listed threatened, Washington State listed endangered. Yellow-billed cuckoos prefer to inhabit large, continuous riparian zones with cottonwood trees and willows, and nesting habitat typically occurs in fir woodlands and open brushy hillsides (WDFW 2021j).

- **Bull Trout (*Salvelinus confluentus*):** Federally listed threatened, Washington State listed threatened. Bull trout may inhabit a variety of environments including small streams, large rivers, lakes, and reservoirs (WDFW 2021a).

There are no recorded sightings of any federally-protected species within the immediate vicinity of the Airport. The developed and agricultural use of the lands surrounding the Airport do not provide high quality habitat for these listed species. The only WDFW PHS mapped habitats in the area are the freshwater emergent and freshwater forested/shrub wetlands mapped by NWI (**Figure 1**).

Sulphur Creek Wasteway is located approximately 100 feet west of the Airport property (see **Figure 1**). Sulphur Creek Wasteway is considered fish habitat for the following species from its confluence with the Yakima River upstream to Sheller Road approximately 1,500 feet north of the Airport (StreamNet 2021, WDFW 2021g, WDFW 2018):

- **Coho Salmon (*Oncorhynchus kisutch*):** Game species designated by WDFW PHS. Coho are anadromous and spawn in small coastal streams and the tributaries of larger rivers with mid-velocity water flow and small to medium sized gravels (WDFW

2021c). StreamNet indicates that coho use Sulphur Creek Wasteway for spawning and rearing.

- **Chinook Salmon (*Oncorhynchus tshawytscha*):** Game species designated by WDFW PHS. Chinook salmon are anadromous and typically spawn in the mainstems of large rivers where water flow is high (WDFW 2021b). Fry remain in streams for approximately 3 months to 1 year before swimming to the ocean (WDFW 2021b). StreamNet maps fall and spring Chinook salmon as using the Sulphur Creek Wasteway for migration.

- **Rainbow Trout (*Oncorhynchus mykiss*):** Game species designated by WDFW PHS. Rainbow trout are the same species as steelhead but are not anadromous and live their entire lives in freshwater (WDFW 2021h). StreamNet maps rainbow trout as using the Sulphur Creek Wasteway for migration.

- **Middle Columbia River Steelhead (*Oncorhynchus mykiss*):** Federally listed threatened and a Washington State candidate for listing. Steelhead are anadromous and they prefer fast-flowing water in small to large mainstem rivers and medium to large tributaries (WDFW 2021i). StreamNet maps summer steelhead as using the Sulphur Creek Wasteway for migration.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS. Protected MBTA resources generally include native birds and their active nests and young. Under the requirements of the MBTA, all project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project. Migratory birds known to occur in the vicinity of the Airport are listed in **Table 1**. The species listed below are only representative of species found in the vicinity, not necessarily on Airport property.

TABLE 1
BIRD SPECIES THAT COULD OCCUR IN THE VICINITY OF THE AIRPORT PROTECTED UNDER THE MIGRATORY BIRD TREATY ACT

American Avocet	Cliff Swallow	Lesser Goldfinch	Rock Wren
American Coot	Common Goldeneye	Lesser Scaup	Rough-legged Hawk
American Crow	Common Grackle	Lewis's Woodpecker	Ruby-crowned Kinglet
American Goldfinch	Common Loon	Lincoln's Sparrow	Ruddy Duck
American Kestrel	Common Merganser	Loggerhead Shrike	Sandhill Crane
American Pipit	Common Nighthawk	Long-billed Curlew	Savannah Sparrow
American Robin	Common Raven	Long-billed Dowitcher	Say's Phoebe
American Tree Sparrow	Common Redpoll	Long-eared Owl	Sharp-shinned Hawk
American White Pelican	Common Yellowthroat	Mallard	Short-eared Owl
American Wigeon	Cooper's Hawk	Marsh Wren	Snow Goose
Anna's Hummingbird	Dark-eyed Junco	Merlin	Song Sparrow
Bald Eagle	Double-crested Cormorant	Mountain Chickadee	Sora
Bank Swallow	Downy Woodpecker	Mourning Dove	Spotted Sandpiper
Barn Owl	Dunlin	Northern Flicker	Spotted Towhee
Barn Swallow	Eastern Kingbird	Northern Goshawk	Steller's Jay

Barred Owl	Evening Grosbeak	Northern Harrier	Swainson's Hawk
Belted Kingfisher	Fox Sparrow	Northern Pintail	Swamp Sparrow
Bewick's Wren	Gadwall	Northern Pygmy-Owl	Townsend's Solitaire
Black-billed Magpie	Golden Eagle	Northern Rough-winged Swallow	Tree Swallow
Black-capped Chickadee	Golden-crowned Kinglet	Northern Saw-whet Owl	Trumpeter Swan
Black-chinned Hummingbird	Golden-crowned Sparrow	Northern Shoveler	Tundra Swan
Black-crowned Night-Heron	Gray Catbird	Northern Shrike	Turkey Vulture
Black-headed Grosbeak	Great Blue Heron	Orange-crowned Warbler	Varied Thrush
Black-necked Stilt	Great Egret	Osprey	Vesper Sparrow
Blue-winged Teal	Great Horned Owl	Pacific Loon	Violet-green Swallow
Bohemian Waxwing	Greater Scaup	Pacific Wren	Virginia Rail
Brewer's Blackbird	Greater White-fronted Goose	Pacific-slope Flycatcher	Western Grebe
Brown Creeper	Greater Yellowlegs	Peregrine Falcon	Western Kingbird
Brown-headed Cowbird	Green-winged Teal	Pied-billed Grebe	Western Meadowlark
Bufflehead	Hairy Woodpecker	Pine Siskin	Western Screech-Owl
Bullock's Oriole	Harris's Sparrow	Prairie Falcon	Western Wood-Pewee
Bushtit	Hermit Thrush	Purple Finch	White-breasted Nuthatch
Cackling Goose	Hooded Merganser	Red-breasted Nuthatch	White-crowned Sparrow
California Gull	Horned Lark	Redhead	White-throated Sparrow
Canada Goose	House Finch	Red-necked Grebe	Willow Flycatcher
Canvasback	House Wren	Red-shouldered Hawk	Wilson's Snipe
Canyon Wren	Killdeer	Red-tailed Hawk	Wood Duck
Cedar Waxwing	Lapland Longspur	Red-winged Blackbird	Yellow Warbler
Chipping Sparrow	Lark Sparrow	Ring-billed Gull	Yellow-breasted Chat
Cinnamon Teal	Lazuli Bunting	Ring-necked Duck	Yellow-headed Blackbird

Source: USFWS (2020), USGS (2021), Audubon (2021a, 2021b), and USFWS (2021c). USFWS (2021a).

Bald and Golden Eagle Protection Act

The bald eagle and golden eagle are protected under the Bald and Golden Eagle Protection Act of 1940, which provides specific guidance for minimizing effects to these species. The act's primary purpose is the protection of nesting sites. Bald eagles generally construct nests in large trees, and golden eagles nest in cliff habitats. Neither of these habitats occur at the Airport. However, both bald and golden eagles have recorded sightings within the vicinity of the City of Sunnyside (eBird 2021), and likely utilize the agricultural lands in the area for foraging small mammals as prey.

Critical Habitats

There is no designated critical habitat on the Sunnyside Municipal Airport property. The nearest critical habitat area is the Yakima River, which supports bull trout (USFWS 2021b), located approximately 6.3 miles south of the Airport.

Department of Transportation Act, Section 4(f) Resources

Section 4(f) protects the following types of properties: publicly owned park and recreation areas that are open to the general public, publicly owned wildlife and waterfowl refuges, and public or privately owned historic sites (FHWA 2021). No Section 4(f) resources are located within the nearby vicinity of the Airport. The closest Section 4(f) resource is Don Hughes Park, located more than 1 mile west of the Airport.

Hazardous Materials, Solid Waste, and Pollution Prevention

Federal, state, and local laws regulate the use, storage, transport, and disposal of hazardous materials. These laws may extend to past and future landowners of properties containing these materials. In addition, disrupting sites containing hazardous materials or contaminants may cause significant impacts on soil, surface water, groundwater, air quality, and the organisms using these resources. Potential sources of these materials include brownfield sites, listed cleanup and spill sites, and industrial facilities, as described below.

According to the EPA's EJSCREEN, there are no brownfield sites within 5 miles of the Airport; however, there is one Superfund site approximately 4.5 miles southeast of the Airport. The Superfund site is located at 1303 West Wine Country Road in Grandview, Washington at the Wilbur-Ellis Pesticide Warehouse (EPA 2020). The Wilbur-Ellis Pesticide Warehouse is still functioning on site and is a removal-only Superfund site that is not on the National Priorities List.

According to the Washington State Department of Ecology's (Ecology) "What's in my Neighborhood Map," there are seven contamination cleanup sites within a 1-mile radius of the Airport, including one contamination site on Airport property. Five of the sites are located approximately 0.75 to 1 mile west of the Airport, and one of the sites is located approximately 1 mile south of the Airport. These cleanup sites with varying types of contaminants include: Green Valley Implement GVI leasing, the Pet Health Clinic, Bleyhl Farm Service, Sunnyside School District Bus Garage, McDonalds, and Lower Valley Towing (Ecology 2021c).

The cleanup site identified by Ecology on the Airport property is located at the former Sunnyside Municipal Airport Pesticide Spray Shed (Ecology 2021c). According to the Ecology Cleanup Site Details, unspecified pesticides contaminated the soils on site, and the event was reported in 2008. The amounts of pesticides present were confirmed above cleanup level by Ecology, and the cleanup process has started (Ecology 2021c).

Ongoing agricultural aviation use at the Airport includes fixed-wing or rotor-wing aircraft based at the Airport that are used in the aerial application of fertilizers, pesticides, and other agricultural products (Century West Engineering 2008). The aerial applicator facilities located west of the main apron include a private fuel storage with an aboveground tank (Century West Engineering 2008).

According to the Ecology spills map, within the past 6 years there has been one recorded oil or chemical spill into open waters in the town of Sunnyside. In January 2021, 31 gallons of mineral oil and transformer oil were released from a power generation utility approximately 1.5 miles west of the Airport property (Ecology 2021a).

The EPA Toxics Release Inventory Tool lists two industrial facilities in the town of Sunnyside that release toxic chemicals to the air, land, or water as a part of their regular activities. The two industries mapped include the Darigold Dairy (approximately 2.5 miles southwest of the Airport) and Central Pre-Mix (approximately 0.75 mile south of the Airport). In 2019, Darigold Dairy had a total off-site release of 192,786 lbs. of nitrate compounds (water dissociable) (EPA 2021a). Central Pre-Mix is a cement and concrete product manufacturing plant that in 2019 released 9 lbs. of lead and 713 lbs. of nitrate compounds (water dissociable) into the soils on and off site of its property (EPA 2021a).

On the Airport property, facilities for aircraft maintenance could involve fossil fuels or other types of hazardous materials or wastes; these operations are regulated and monitored by the appropriate regulatory agencies, such as EPA and Ecology.

Concerning other hazards not covered above, see the *Natural Resources and Energy Supply* section for further information on airport fueling stations, and the *Water Resources* section for additional information on water contamination.

Natural Resources and Energy Supply

Aviation gasoline (AVGAS) is available for purchase from the Fixed Based Operator (AirNav.com 2021). The pumps are located at the edge of the apron, and the fueling facilities include a 10,000-gallon aboveground storage tank in a concrete lined box within a chain-link fence containment/security area (Century West Engineering 2008).

The Airport has water, telephone, and electrical utilities on site (Century West Engineering 2008). Utility lines are located along the access road to the Airport from East Edison Road (Century West Engineering 2008). Overhead electrical utilities are provided by Pacific Power, buried telephone lines are supplied by Embarq and Sprint, and water service is provided by the City of Sunnyside (Century West Engineering 2008). Additionally, the Sunnyside Valley Irrigation District (SVID) water pipes cross the Airport property.

According to the Yakima County Tax Assessor's Office, most parcels on the Airport property have electric, sewer, water, and natural gas hookups available at the edge of the parcels (Yakima County n.d). The City of Sunnyside also maps a sewer drain field, sewer manhole, and four sewer cleanout locations on Airport property (City of Sunnyside n.d). In addition, a City water pump building is located adjacent to the east tiedown apron and is fully fenced with an automated vehicle access gate at the connection to the Airport access road. There are five fire hydrants located on Airport property (City of Sunnyside n.d).

Water Resources

Wetlands

The U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into waters of the United States, including adjacent wetlands, under Section 404 of the Clean Water Act. Wetlands are defined in Executive Order 11990, *Protection of Wetlands*, as "*those areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetation or aquatic life that requires saturated or seasonably saturated soil conditions for growth and reproduction.*"

No wetlands are mapped as occurring on Airport property (USFWS 2021d, USGS 2018). The National Wetlands Inventory (NWI) mapping in the vicinity of the Airport is shown on **Figure 1**.

While no wetlands appear to be on Airport property, the Natural Resources Conservation Service (NRCS) Web Soil Survey indicates hydric soils that may support wetlands are mapped on the western edge of the property, near Hanford Road. In this vicinity, west of Airport property, the NWI has a mapped riverine wetland (Sulphur Creek Wasteway). Along East Edison Road, the NWI maps a freshwater emergent wetland located where the SVID irrigation ditch occurs. The ditch extends up the eastern boundary of the Airport property. To the north of the Airport property, along Sheller Road, there is another SVID irrigation ditch mapped as freshwater emergent wetland as well as some areas of freshwater forested/shrub wetlands (USFWS 2021d).

Floodplains

Executive Order 11988 (Floodplain Management) directs federal agencies to take action to reduce the risk of flood loss; minimize the impact of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by the floodplains. Based on a review of Federal Emergency Management Agency (FEMA) maps, there are no 100-year floodplains on Airport property. The closest 100-year floodplain is located approximately 5.5 miles southwest of the Airport and is associated with the Yakima River. The Airport property lies in a FEMA Zone X, which is considered a moderate to low-risk flood area (FEMA 2021a). In Zone X areas, the risk of being flooded is reduced, but not completely removed outside of the 0.2 percent annual chance floodplain (FEMA 2021b).

Surface Waters

The Airport property is in the watershed defined by the 8-digit Hydrologic Unit Code 17030003 (USGS 2018). No National Hydrography Dataset (NHD) surface waters are mapped on Airport property (see **Figure 1**). However, several SVID irrigation ditches are mapped by NHD as surface waters in the vicinity of the Airport along Sheller Road and East Edison Road. The irrigation ditch that parallels East Edison Road turns north and flows along the east property line. West of the Airport, along the western edge of Hanford Road, is Sulphur Creek Wasteway, which flows south to the Yakima River

Both the irrigation ditch along East Edison Road to the south/east of the Airport and a portion of Sulfur Creek Wasteway downstream of the Airport property are classified as impaired waters under Section 303[d] of the Clean Water Act (Ecology 2016). The irrigation ditch to the south/east is listed as “Joint Drain 37.9” and is on the 303(d) list for high levels of bacteria and high pH levels (Ecology 2016, 2021b).

Approximately 5 miles southwest of the Airport property, a segment of Sulphur Creek Wasteway is classified as an impaired water under Section 303[d] of the Clean Water Act (Ecology 2016). It is listed for high levels of bacteria, high water temperatures, high pH levels, and high levels of the following chemicals: DDT (and metabolites), Chlorpyrifos, 4,4’-DDE, 4,4’-DDD, and Dieldrin (Ecology 2016).

Currently, the Airport does not have any open surface waters on the property. A stormwater collection system comprised of swales and culverts directs surface runoff to the surrounding drainage ditches (Century West Engineering 2008).

Discharges to waters of the state, including municipal separate storm sewer systems (MS4s), are regulated by Ecology and permitted by jurisdictions through the National Pollutant Discharge Elimination System (NPDES) permit. The City of Sunnyside holds an Ecology Eastern Washington Phase II Municipal Stormwater Permit, which outlines stormwater program activities and milestones the City must implement (City of Sunnyside 2021). Under the City's MS4 permit, the City is required to sample all of its outfalls.

Groundwater

According to the U.S. Geological Survey (USGS) Principal Aquifers of the 48 Conterminous United States, the general aquifer type in the vicinity of the Sunnyside Municipal Airport is Columbia Plateau basin-fill aquifers composed of unconsolidated sand and gravel aquifers (USGS 2003). This type of unconsolidated deposit aquifer is the most productive and widespread type of aquifer in Washington, Oregon, and Idaho, and is prevalent in stream valleys and lowlands associated with structural or erosional basins (USGS 1994). These types of aquifers provide freshwater for domestic, commercial, and industrial purposes and are important for providing agricultural irrigation (USGS 1994). The City of Sunnyside falls generally within an area designated by Yakima County as a Critical Recharge Area of moderate susceptibility to contamination (Yakima County 2017). The Airport is not within an EPA-designated drinking water sole source aquifer (EPA 2021d).

During a site evaluation related to the parallel taxiway realignment at the Airport in 2009, Reid Middleton Engineering determined that along the alignment of the new taxiway, below a 0.5 to 1 foot thick topsoil layer, the native subgrade consists of medium dense sandy silt to silt with sand, and that groundwater in the project vicinity is "*judged to be high, as perched ground water was observed in some pits at depths of 2.5 to 3.5 feet*" (Reid Middleton 2009). The NRCS maps four soil types on Airport property (see **Table 2**). Most of these soil types are recorded to have a water table at depths greater than 80 inches; however, Outlook silt loam soils found on the westernmost portion of the Airport are reported to have a depth to water table between 12 and 48 inches (NRCS 2021).

TABLE 2
NRCS SOILS ON AIRPORT PROPERTY

Map Unit Symbol	Map Unit Name	Depth to Water Table	Hydric Soil Rating	Farmland Classification
32	Esquatzel silt loam, 0 to 2 percent slopes	More than 80 inches	No	Prime farmland if irrigated
92	Outlook silt loam	About 12 to 48 inches	Yes	Not prime farmland
176	Warden silt loam, 0 to 2 percent slopes	More than 80 inches	No	Prime farmland if irrigated
177	Warden silt loam, 2 to 5 percent slopes	More than 80 inches	No	Farmland of statewide importance

Source: NRCS (2021).

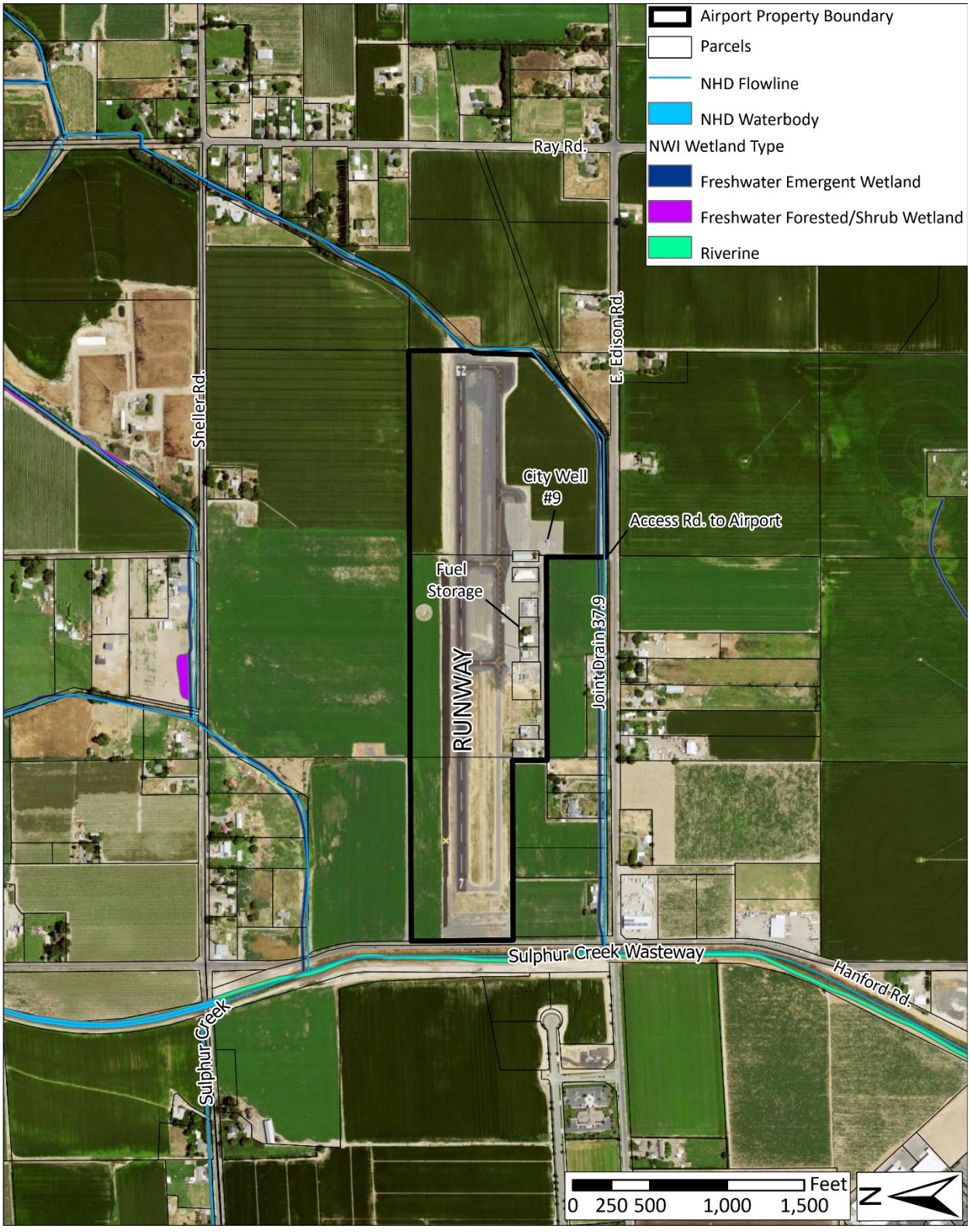
The City of Sunnyside provides water to its residents via seven wells, one of which is located on the Airport property (City of Sunnyside 2016). Well 9 is located on the south side of the runway, is drilled to a depth of 919 feet, and is derived from a Saddle Mountain Basalt aquifer (City of Sunnyside 2016). The geologic basalt barrier lowers the probability of a chemical spill contaminating the Saddle Mountain Basalt aquifer from which Well 9 is pumped. As of 2020, the water pumped from all wells contributing to the Sunnyside Water District meets all state and federal standards (City of Sunnyside 2020). The capture area for Well 9 includes the following

extents: the 10-year capture area extends around the entire Airport (624 acres), The 5-year capture area also extends around the Airport and covers a total of (320 acres), and the 1-year capture area covers 62 acres around the immediate vicinity of the well (City of Sunnyside 2005) (**Appendix A**).

For the City of Sunnyside, wellhead protection areas are defined by groundwater time of travel (TOT) and include the sanitary control area (a 100-foot radius extending from wellhead), zone one (1-year TOT), zone two (1- to 5-year TOT) and zone three (5- to 10-year TOT) (City of Sunnyside 2005) (**Appendix B**). The Sunnyside Municipal Airport property falls within the sanitary control area, zone one, zone two, and zone three for Well 9 (City of Sunnyside 2005). The sanitary control area is established for tight control of any potential direct well contamination (City of Sunnyside 2005). Zone one is established to prevent viral, microbial, and direct chemical contamination, and septic field and other biological contaminants within this zone should be strictly managed (City of Sunnyside 2005). Chemicals with potential for contamination should not be stored or used within this zone or should at least have sufficient precautions in place to protect groundwater (City of Sunnyside 2005). Zone two should be managed to control potential contaminant sources, and zone three provides an educational and awareness opportunity for long-term activity effects on the water supply source (City of Sunnyside 2005).

National Wild and Scenic Rivers

There are no Wild and Scenic Rivers in the vicinity of the Sunnyside Municipal Airport (USFS 2017).



SOURCE: USFWS (2021d), USGS (2018), Yakima County (2021)

Sunnyside Municipal Airport

Figure 1
Parcels, Wetlands, and Water Resources Map

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_____. 2021c. Coho salmon (*Oncorhynchus kisutch*). Accessed: August 23, 2021. Available: https://wdfw.wa.gov/species-habitats/species/oncorhynchus-kisutch#locations.

_____. 2021d. Ferruginous hawk (*Buteo regalis*). Accessed: August 23, 2021. Available: https://wdfw.wa.gov/species-habitats/species/buteo-regalis#conservation.

_____. 2021e. Gray wolf (*Canis lupus*). Accessed: August 23, 2021. Available: https://wdfw.wa.gov/species-habitats/species/canis-lupus#desc-range.

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_____. 2021g. Priority Habitats and Species (PHS). Accessed: August 23, 2021. Available: https://wdfw.wa.gov/species-habitats/at-risk/phs.

_____. 2021h. Rainbow trout (*Oncorhynchus mykiss*). Accessed: August 23, 2021. Available: https://wdfw.wa.gov/species-habitats/species/oncorhynchus-mykiss#desc-range.

_____. 2021i. Steelhead (*Oncorhynchus mykiss*). Accessed: August 23, 2021. Available: https://wdfw.wa.gov/species-habitats/species/oncorhynchus-mykiss-steelhead#desc-range.

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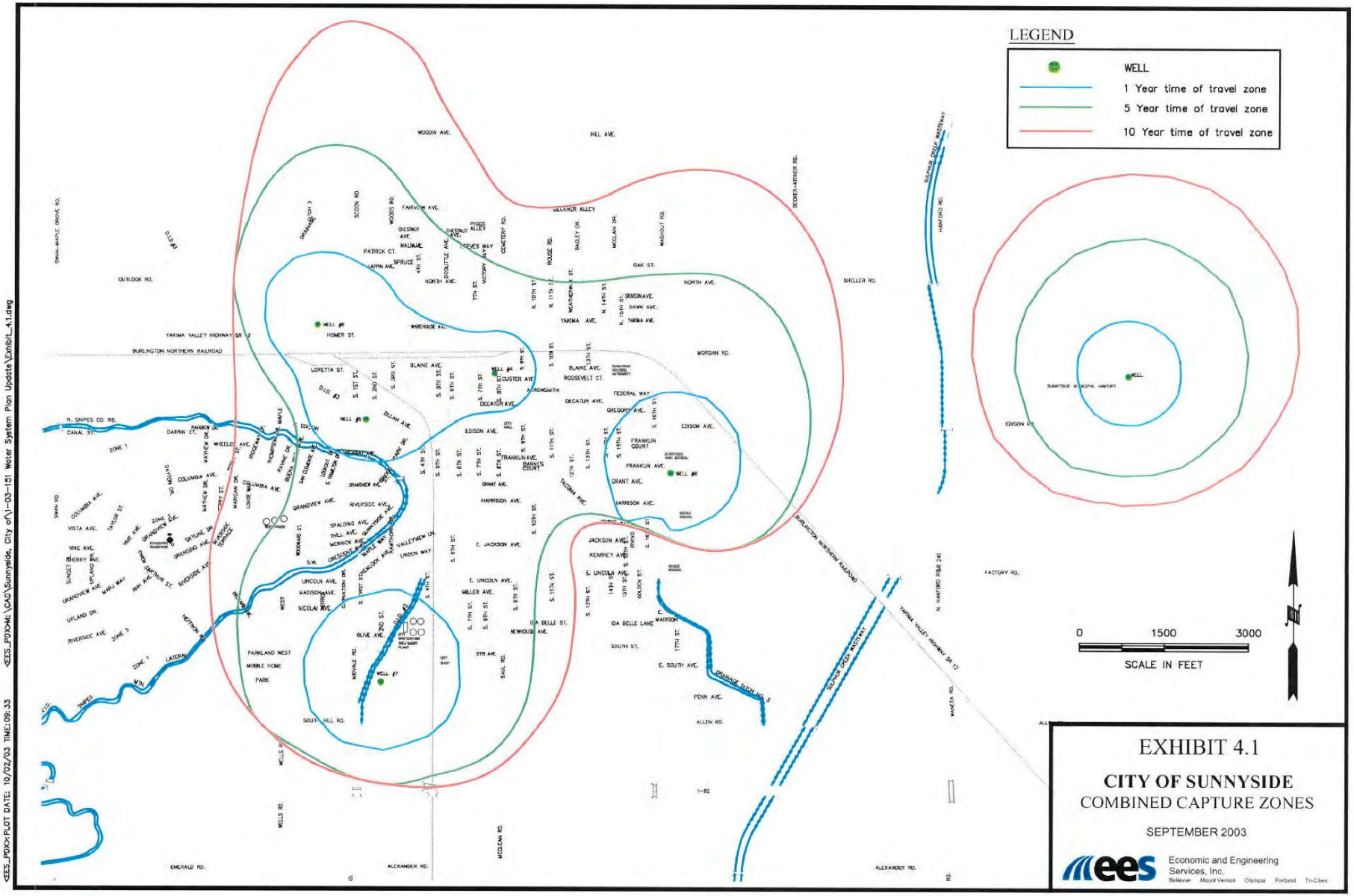
Appendix A

City of Sunnyside Wellhead Combined Capture Zones

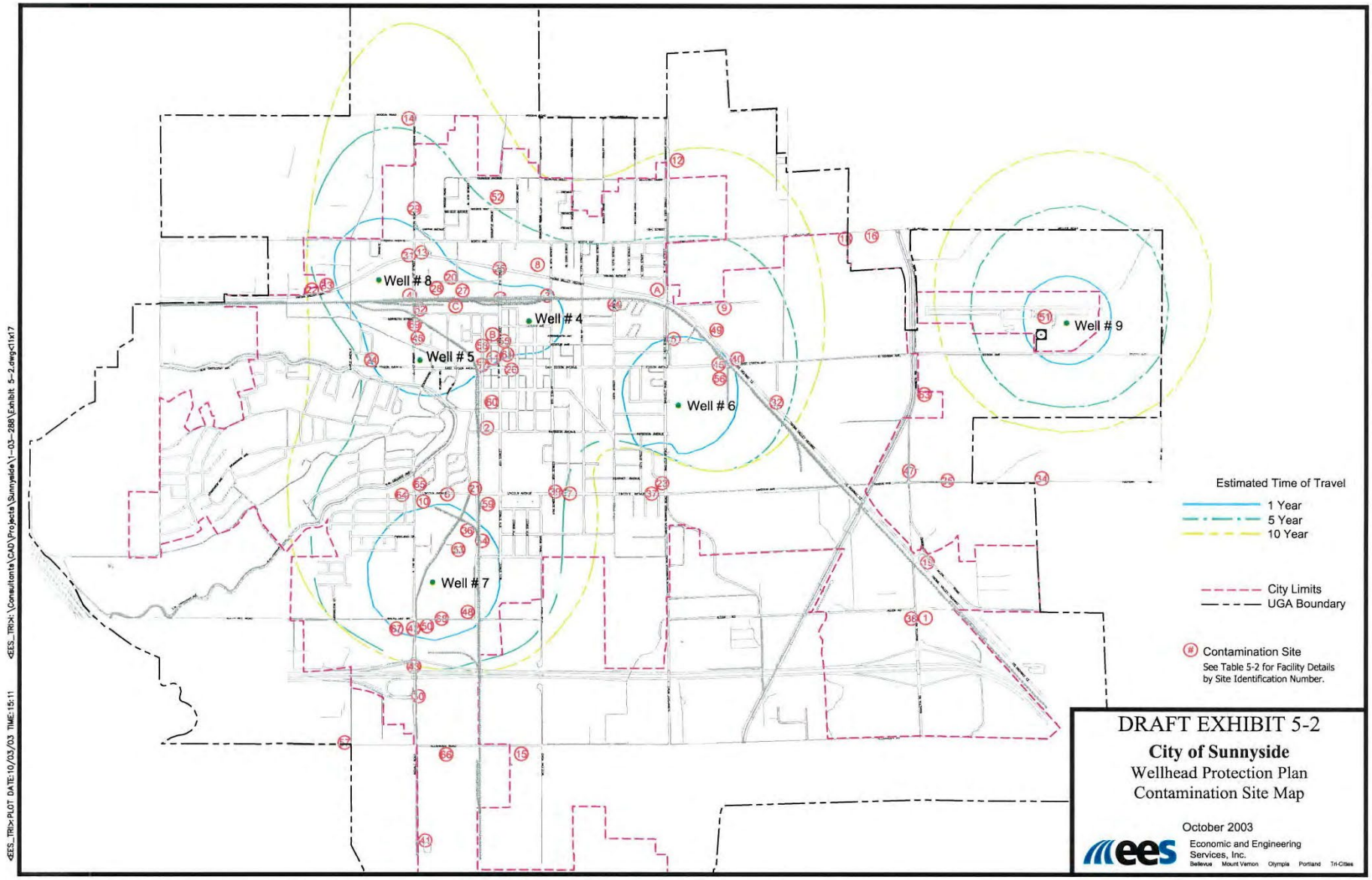
ESA



Source: City of Sunnyside (2005).

Appendix B
City of Sunnyside Wellhead Protection Zones

ESA



Source: City of Sunnyside (2005).

Appendix B

Cultural Resources Assessment

CULTURAL RESOURCES REPORT COVER SHEET

DAHP Project Number:

Author: Justin Fitzpatrick, Lori B. Phillips, Jordan J. Thompson, and David A. Harder

Title of Report: Cultural Resource Survey for the Sunnyside Municipal Airport, Airport Layout Plan Update Project, Yakima County, Washington

Date of Report: December 20, 2021

County(ies): Yakima Sections: 28, 29, and 30 Township: 10 N Range: 23 E

Quad: Grandview, 1978 (1979) Acres: 94.5

PDF of report submitted (REQUIRED) [X] Yes

Historic Property Inventory Forms to be Approved Online? [ ] Yes [X] No

Archaeological Site(s)/Isolate(s) Found or Amended? [ ] Yes [X] No

TCP(s) found? [ ] Yes [X] No

Replace a draft? [ ] Yes [X] No

Satisfy a DAHP Archaeological Excavation Permit requirement? [ ] Yes [X] No

Were Human Remains Found? [ ] Yes DAHP Case # [X] No

DAHP Archaeological Site #:

Cultural Resource Survey for the Sunnyside Municipal Airport, Airport Layout Plan Update Project, Yakima County, Washington

By:
Justin Fitzpatrick, Lori B. Phillips,
Jordan J. Thompson, and David A. Harder

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December 2021

ABSTRACT

Cultural Resource Survey for the Sunnyside Municipal Airport, Airport Layout Plan Update Project, Yakima County, Washington

Century West Engineering is assisting the City of Sunnyside with an Airport Layout Plan for the Sunnyside Municipal Airport in Yakima County, Washington. The project will entail future land acquisitions, hangar construction, and construction of other facilities, parking lots, and access roads. The project area covers approximately 94.5 acres and lies in Section 29 of Township 10 North, Range 23 East, Willamette Meridian.

This project will be funded and/or permitted by the Federal Aviation Administration (FAA); therefore, the City of Sunnyside must meet the requirements of Section 106 of the National Historic Preservation Act (NHPA) and consider the impacts to any potential historic properties prior to ground-disturbing activities.

Pre-field research included the review of known archaeological resources within a 1.0-mile radius of the area of potential effect (APE) as inventoried at the Washington State Department of Archaeology and Historic Preservation (DAHP). This review was completed using DAHP's secure electronic database known as the Washington Information System for Architectural and Archaeological Data (WISAARD). This database includes recorded archaeological resources, historic property inventories (HPIs), National Register of Historic Properties (NRHP) and Washington Heritage Register (WHR) properties, identified cemeteries, and previously conducted cultural resource surveys found throughout the state. The DAHP's predictive model places the APE in areas of "Moderately Low" to "High Risk" for encountering cultural resources, stating that "survey is recommended" or "survey is highly advised" for this location.

The fieldwork was completed in a manner consistent with RCW 27.53.030, and included inspection techniques to identify both surface and subsurface archaeological resources. Plateau archaeologists conducted a pedestrian survey and excavated 10 subsurface probes. The pedestrian survey covered the entire APE and subsurface probes were placed opportunistically throughout the Project Area based on the location of irrigation lines and active agricultural fields. No Native American or historic-era cultural materials or features were observed during the pedestrian survey or excavations. Plateau recommends that the proposed undertaking will result in **No Historic Properties Affected**, and no further archaeological investigations are recommended prior to, or during, execution of this project.

KEY INFORMATION

PROJECT

Cultural Resource Survey for the Sunnyside Municipal Airport, Airport Layout Plan Update Project, Yakima County, Washington

REPORT AUTHORS

Justin Fitzpatrick, Lori B. Phillips, Jordan J. Thompson, and David A. Harder

COUNTY

Yakima County

LEGAL LOCATION OF PROJECT

Sections 28, 29, 30 of Township 10 North, Range 23 East, Willamette Meridian

USGS QUADS

Grandview, Washington 7.5 minute, 1978 (1979)

ACREAGE

94.5 acres

PROJECT DATA

No previously recorded historic properties
No new cultural resources located and/or recorded

DAHP PROJECT NUMBER

MANAGING AGENCY

Federal Aviation Administration

REPORT PREPARED FOR

Century West Engineering

FIELD NOTE DISPOSITION

Archived at the office of Plateau Archaeological Investigations LLC, Pullman.

PRINCIPAL INVESTIGATOR

David A. Harder, M.A.

CERTIFICATION OF RESULTS

I certify that this investigation was conducted and documented according to Secretary of Interior's Standards and Guidelines and that the report is complete and accurate to the best of my knowledge.

Signature of Reporter

December 20, 2021

Date

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PROJECT DESCRIPTION

Century West Engineering is assisting the City of Sunnyside with. an Airport Layout Plan for the Sunnyside Airport located in Yakima County, Washington (Figure 1). The project will include construction of new buildings and facilities, parking lots, and access roads. Anticipated impacts include excavations, compaction of sediments, and other ground-disturbing construction activities. The area of potential effect (APE) covers approximately 94.5 acres, and lies within Section 29 of Township 10 North, Range 23 East, Willamette Meridian (Figure 2). The APE hereafter will be referred to as the "Project Area."

This project will be funded and/or permitted by the Federal Aviation Administration (FAA), the project proponents must meet the requirements of Section 106 of the National Historic Preservation Act (NHPA) and consider the impacts to any potential historic properties prior to ground-disturbing activities.

STATEMENT OF OBJECTIVES FOR SURVEY

The cultural resource survey of the Sunnyside Municipal Airport, Airport Layout Plan Update Project is intended to identify potential historic properties, including archaeological and built environment cultural resources, within the Project Area prior to execution of the proposed project. The pre-field research is designed to identify any known historic properties, including archaeological sites and isolates; historic property inventories of buildings, structures, and historic districts; and cemeteries located in or near the Project Area. Fieldwork procedures are intended to identify areas of moderate to high probability for such cultural resources, previously recorded or otherwise. This report describes the pre-field research, methodology, results, and recommendations for the cultural resources aspect of the proposed project.

PRE-FIELD RESEARCH

Pre-field research included the review of known archaeological resources within a 1.0 mile (mi) (1.6 kilometer [km]) radius of the Project Area as inventoried at the Washington State Department of Archaeology and Historic Preservation (DAHP) in Olympia, Washington. This review was completed using DAHP's secure electronic database known as the Washington Information System for Architectural and Archaeological Data (WISAARD). This database includes recorded archaeological resources, historic property inventories (HPIs), properties and districts on the National Register of Historic Places (NRHP) and the Washington Heritage Register (WHR), identified cemeteries, and previously conducted cultural resource surveys found throughout the state.

Plateau also conducted cartographic analysis of landform, topography, proximity to water using topographic maps, and the United States Department of Agriculture (USDA) online soil survey. Secondary historic resources, on file at the DAHP and the Plateau office in Pullman, were consulted to identify other potential historic resources. In addition, available survey and overview reports

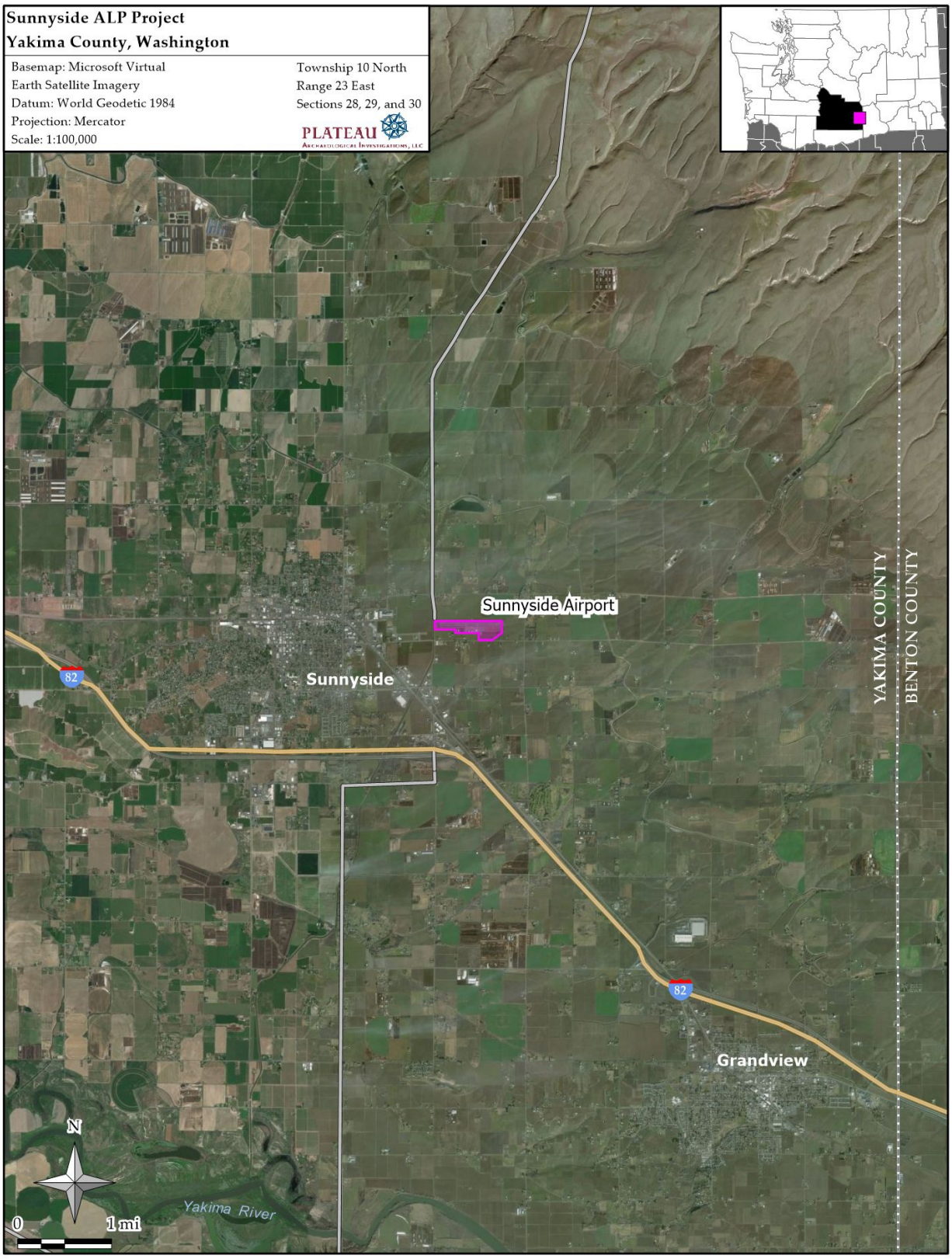

Figure 1. The location of the Project Area within Yakima County.

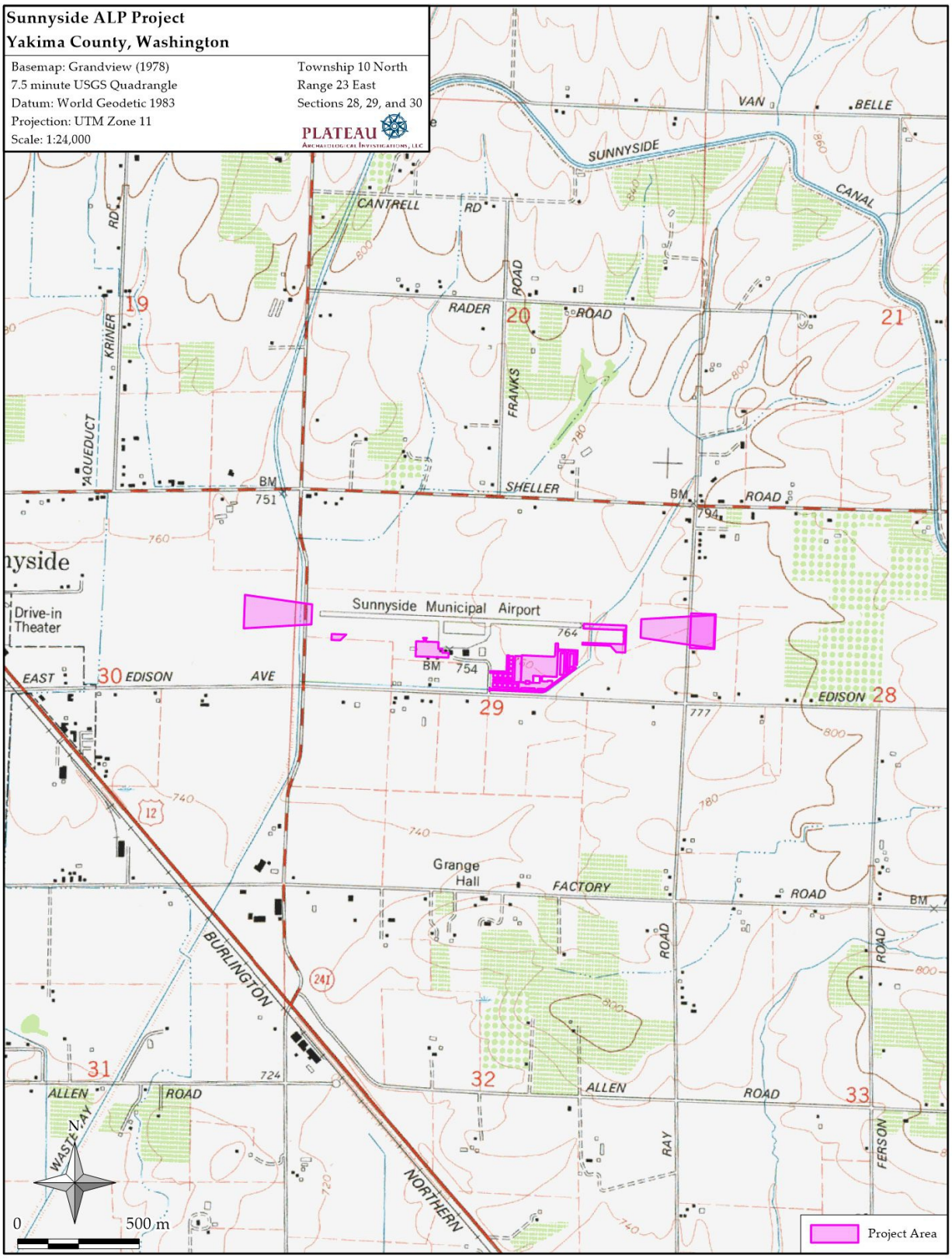

Figure 2. The Project Area shown on a portion of the Grandview USGS map.

and ethnographic accounts of the region were consulted. This background review allows for the identification of previously recorded historic and archaeological resources within or near the Project Area.

ENVIRONMENTAL SETTING

The Project Area is within the Columbia Basin, situated between the Rocky Mountain and Cascade Mountain ranges. The region consists of gently rolling hills amidst the Channeled Scablands, which are features that resulted from Pleistocene-era mega-floods ranging in size from small stream-like trenches to large coulees measuring miles wide and hundreds of feet deep. Elevations in this region range between 200 feet (ft) (61 meters [m]) above mean sea level (AMSL) near the Columbia River to over 4,500 ft (1,372 m) AMSL in outlying ridges and low mountains (Fenneman 1946; Hunt 1967).

According to the Natural Resources Conservation Service (2021), the Project Area contains three soil types: Esquatzel silt loam (0-2% slopes), Warden silt loam (0-5% slopes), and Outlook silt loam (0-2% slopes). Esquatzel silt loam is silt loam from 0–60 inches (in) (0-152 centimeters [cm]) and stratified fine sandy loam to silt loam from 60–64 in (152-162 cm). Warden silt loam is silt loam from 0–19 in (0-48 cm) and stratified very fine sandy loam to silt loam from 19–60 in (48-152 cm). Outlook silt loam is fine sandy loam from 0–8 in (0-20 cm) and silt loam from 8–60 in (20-152 cm).

The predominant draw for Native American and Euroamerican populations in this region was, and still is, the extensive river systems. The most significant environmental feature is the Columbia River, which flows for more than 1,200 mi (2,000 km) from the base of the Canadian Rockies in southeastern British Columbia to the Pacific Ocean at Astoria, Oregon. Ten major tributaries—the Cowlitz, Deschutes, Kootenay, Lewis, Okanogan, Spokane, Snake, Wenatchee, Willamette, and Yakima—complete the drainage system. The Project Area is approximately 6.0 mi (9.6 km) northeast of the Yakima River, 0.5 mi (0.8 km) southeast of Sulphur Creek, 0.8 mi (1.3 km) west of Sunnyside Canal.

The vegetation around the Project Area falls within the *Artemisia tridentata—Agropyron spicatum* habitat type, characterized by arid sagebrush steppe (Daubenmire 1970; Taylor 1992). Big sagebrush *(Artemisia tridentata)* and bluebunch wheatgrass *(Agropyron spicatum)* are dominant in this environment. The plant community includes threetip sagebrush (*Artemisia tripartita*), gray horsebrush (*Tetradymia canescens*), spiny hopsage (*Grayia spinosa*), green rabbitbrush (*Chrysothamnus viscidiflorus*), and gray rabbitbrush (*Chrysothamnus nauseosus*). Grasses and forbs include needle and thread (*Stipa comata*), *Stipa thurberana* (no common name known), bottlebrush squirreltail (*Sitanion hystrix*), Cusick's bluegrass (*Poa cusikii*), Indian paintbrush (*Castilleja* spp.), lupine (*Lupinus* spp.), plantain (*Plantago patagonica*), longleaf phlox (*Phlox longifolia*) and balsamroot (*Balsamorhiza sagittata*). Additional species of flora thrive along the shores of the Columbia River, including bitterbrush (*Purshia tridentata*), quaking aspen (*Populus tremuloides*), willow *(Salix* spp.) and currant (*Ribes* spp.) (Daubenmire 1970). Many of these plants have been incorporated in Native American use as medicinal plants, food sources, and other employment.

The Project Area lies within a region that historically contained an abundance of life. It is likely, though, that Native Americans had access to an even larger variety of resources during the past that played a role in aboriginal use, settlement, and travel patterns in relation to the Project Area. Mammals include sagebrush voles (*Lemmiscus curtatus*), Great Basin pocket mice (*Perognathus parvus*), deer mice (*Peromyscus maniculatus*), bushy-tailed wood rat (*Neotoma cinerea*), Washington ground squirrel (*Spermophilus washingtoni*), northern pocket gopher (*Thomomys talpoides*), yellow bellied marmot (*Marmota flaviventris*), white-tailed hare (*Lepus townsendii*), Nuttal cottontail (*Sylvilagus nuttallii*), porcupine (*Erethizon dorsatum*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethica*), Bighorn sheep (*Ovis canadensis*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), badger (*Taxidea taxus*), and long-tailed weasel (*Mustela frenata*). The occasional bison (*bison bison*) is also thought to be available prehistorically (Burt and Grossenheider 1961; Ingles 1965; Schroedl 1973).

Many types of fowl were also available in the past including Swarth blue grouse (*Dendragapus obscurus pallidus*), Columbian ruffed grouse (*Bonasa umbellus affinis*), Columbian sharp-tailed grouse (*Pedioecetes phasianellus*), western sage grouse *(Centrocercus urophasianus phaios*), mallard duck (*Anas platyrhynchos platyrhynchos*), western harlequin duck (*Histrionicus histrionicus pacificus*), American common merganser *(Mergus merganser americanus*), the lesser snow goose (*Chen hyperborea hyperborea*), and the Great Basin Canada goose (*Branta canadensis moffitti*). Seasonally available birds such as Gadwall (*Anas strepera*), wood duck (*Aix sponsa*), redhead (*Aythya americana*), and the northern ruddy duck (*Oxjura jamaicensis rubida*) resided in the region in the summer. Winter game birds of the region included canvasback (*Aythya valisineria*) and American greater scaup *(Aythya marila nearctica*) (Lothson 1977).

The climate in the Columbia Basin was cool and moist at the end of the last glacial period. Gradually, climatic conditions became markedly warmer and dryer by approximately 9,000 years before present (B.P.). The warm dry climatic trend reached its maximum around 6,500 B.P. and then conditions reverted to a cooler and moister regime (Fryxell and Daugherty 1962). Comparatively, the present climate is arid with mild moist winters and hot dry summers (Meinig 1968). The mean seasonal temperatures recorded at the Sunnyside weather station (#458207) between 1894 and 2012 are 33° Fahrenheit (F) in winter and 70° F in the summer. Extreme temperatures of -30° F and 112° F have been recorded at the same station. Yearly precipitation averages 7.0 inches (Western Regional Climate Center 2021).

REGIONAL PRECONTACT BACKGROUND

The Project Area is included in the Plateau culture area, which corresponds roughly to the geographic region drained by the Fraser, Columbia, and Snake rivers. The Plateau culture area is bordered on the west by the Cascade Mountains and on the east by the Rocky Mountains. The northern border of the culture area is in Canada where it gives way to Arctic culture patterns. The southern border of the Plateau culture area mixes gradually with the Great Basin culture area (Walker 1998:1-3).

A cultural chronology provides a time line describing the adaptations, material culture, subsistence, and sometimes settlement patterns of the people who inhabited a specific area. Based originally on archaeological investigations at 45KT28, the Sunset Creek Site, a chronological sequence identifying technological trends through time emerged for the middle Columbia River region (Nelson 1969). Over the succeeding years, this chronology changed as new archaeological discoveries added to the body of knowledge for the middle Columbia River area, resulting in the identification of five distinct cultural phases; the Paleoindian Phase (11,500 to 10,000 B.P.) (Meltzer 1993), the Windust Phase (10,000 to 8,000 B.P.) (Leonhardy and Rice 1970), the Vantage Phase (8,000 to 4,000 B.P.), the Frenchmen Springs Phase (4,000 to 2,500 B.P.) (Galm et al. 1981:55), and the Sunset Creek Phase (2,500 to 250 B.P.) (Galm et al. 1981:82). The culture chronology of the middle Columbia River has been discussed at length in Nelson (1969), Rice (1969), Leohnhardy and Rice (1970), Galm et al. (1981), and Meltzer (1993), and, if pertinent, will be discussed further within the results of this report.

Ethnography

Ethnographic sources that depict the geographic distribution of Native American traditional territories provide a general guide for identifying the range of occupation for Indigenous groups in the precontact and historic eras. However, these boundaries are oversimplified and should not be viewed as rigid considering that they are arbitrarily defined, with sharp lines that neither depict joint or disputed occupations nor historical changes in range distributions prior to and after the early- to mid-19th century (Walker, ed. 1998:viii). The sources that were used to identify the traditional territory in which the Project Area is situated are the Yakama Nation (2019), Ray (1936:119), and Schuster (1998:Figure 1). These sources portray occupational ranges that largely overlap; however, it's important to recognize the variability in the geographic distribution of groups on the Plateau and the broader relationships between people and place that make these boundaries permeable (see Thom 2009:179).

The Project Area falls within the traditional territory of the Yakama. There remains confusion about the grouping and designation of the Yakama and surrounding bands and tribes. While some use "Yakama" to refer to constituent members of the Confederated Tribes and Bands of the Yakama Nation (Yakama Nation), Hunn (2003:7) noted that the Yakama "proper" may be understood as the Native people who lived on the Yakima River at the time of the Walla Walla Treaty Council in 1855. In the mid-nineteenth century, Yakama territory was divided into the Upper Yakama and Lower Yakama, with Wenas Creek dividing the two closely connected bands (Schuster 1998:327). Some suggest that the Lower Yakama (*mámachatpam*) are the Yakama proper, and that the Upper Yakama are the same as, or nearly indiscernible from, the Kittitas (*pshwánwapam*) (Gibbs 1855; see also Hunn 2003:7, Schuster 1998:327). The Yakama and neighboring groups (Klikitat, Kittitas, and Taitnapam [Upper Cowlitz]) spoke dialects of the Northwest Sahaptin dialect cluster (Ray 1936:108; Schuster 1998:327), while the Wanapum, who were also closely related to the Yakama, spoke a dialect of the Northeast Sahaptin cluster (Kinkade et al. 1998:58).

The Yakama and neighboring groups are traditionally related through language, contiguous territories, reciprocal exchange systems, recurring social interactions, and similar lifeways, yet each consisted of independent, politically autonomous bands and villages prior to the treaty era (Schuster 1998:327). The geographic subsistence, political, social, and spiritual areas in which these related groups maintained their lifeways both then and now is often referred to as "Yakama country," perhaps as a legacy of the Treaty of 1855 and the U.S. Government's attempt to lump numerous discrete bands into a single representative tribe for exploitative and administrative purposes. Today, these groups and their sovereign rights and interests are represented within the Yakama Nation (Schuster 1998).

Traditionally, the primary political unit in the region occupied by the Yakama and other closely related tribes and bands was the village, while the basic residential unit was the bilateral (mother's and father's) extended family. The introduction of the horse, which came about through trading or raiding with the Western Shoshone during the 1730s, had a notable impact on the lives of Plateau Native Americans (Nelson 1973). Prior to the horse, winter villages were comprised of residential structures that were typically semi-subterranean, circular mat lodges measuring between 12 and 30 ft (3.7 and 9.1 m) in diameter and 6.0 to 7.0 ft (1.8 to 2.1 m) in total depth, with a ladder exit and smoke hole at the apex of the conical roof (Schuster 1998:335). After the introduction of the horse, winter villages were typically comprised of 5 to 15 multi-family lodges, or longhouses, which accommodated extended affinal families. These lodges were rectangular mat structures measuring 40 to 60 ft (12.2 to 12.3 m) long, 12 to 15 ft (3.7 to 4.5 m) wide, approximately 10 ft (3.1 m) tall, and with entrances at each rounded end. Longhouses (*káatnam*) could be dismantled in the spring and moved if necessary, and were not only the primary winter living spaces of Yakama and Kittitas groups, but were also the centers of ceremonial and religious life in the winter village until the latter 18th century when community ceremonial longhouses began to appear (Schuster 1998:335).

In addition to the larger multifamily lodges, villages typically contained several smaller, conical lodges that housed nuclear families, as well as a few sweat lodges (Schuster 1998:335). Larger Kittitas and Yakama winter villages between the present-day unincorporated communities of Thorp and Parker were home to 500 to 2,000 people or more, respectively (Schuster 1998:327-329). Verne Ray identified 77 or more villages or camps in the surrounding areas (1936:143-151), and Schuster (1998:327) pointed to additional work done by Spier (1936) and others that depict dozens of discrete villages, camps, and bands. The Yakama and Kittitas winter villages described here were arranged in river valleys, which offered not only water transportation and access to salmon, eels, and other riverine resources, but also shelter from harsh elements and late-fall and winter pastures for grazing horses (Ray 1939:135; Schuster 1998:335).

Residential patterns and subsistence procurement followed seasonal changes and the accompanying annual round. Settlement and subsistence centered along the river courses, although the Yakama would extensively utilize the Cascades in the summer and fall as resources became available (Ray 1936). River valleys were occupied during the fall salmon runs in September and October, and winter villages were usually settled by November. During the coldest months of the year, the Yakama relied upon stored foods from their previous annual round and any game

that could be taken. In early spring, winter supplies began to dwindle and people began making forays to gather emergent root crops (Nelson 1973). Snowmelt in February or March saw the "first foods feast," held in a community longhouse, which marked the first stalks of the earliest harvestable wild plant, celery (*Lomatium grayi*), as villagers eagerly awaited the opportunity to begin salmon fishing (Schuster 1998:331).

Mid-spring salmon fishing marked the departure of permanent and semi-permanent winter villages for fisheries along the Columbia, Yakima, Klikitat, White Salmon, and Cowlitz rivers, as well as several tributaries (Schuster 1998:331). Late spring and summer camps were situated in the uplands, where hunting, berry picking, and root digging occurred. Deer were particularly important game, as they provided venison and materials for much of the Yakama and Kittitas material culture. Individuals or small groups often went to specific areas to hunt a variety of game, quarry toolstone, collect camas and berries, or gather other resources such as tules to make mats (Aikens 1993:90). Some Yakama would occasionally travel to hunt buffalo on the Plains, east of the Rockies, in cooperative hunts with other eastern Plateau groups (Schuster 1998:333).

After another salmon run and multiple camp movements based on specific resources throughout the summer, people would return to the river valleys for massive gatherings, as discussed by Ray (1936, 1939). These gatherings involved thousands of people who engaged in trading, horse races, marriages and family visits, dispute settlements, oral narratives, and every other complexity of life on the Plateau. Such gatherings took place in late-May, early-June, and August near the present-day City of Kittitas and the community of Teanaway, and served as the social, economic, and political highlights of the year. Following the summer, families and village communities would make their ways back to the river valleys in time for fall salmon runs and elk hunting, before settling into their winter village sites by October or November when the heavy frost arrived (Schuster 1998:328).

The Yakama engaged in an expansive trade system that extended from the Plateau and Northwest Coast to the Plains and Great Basin. Access to complex trade networks was essential for maintaining the traditional economy and lifeways of the Yakama (Walker 1997:71). The adoption of the horse allowed the Yakama to greatly expand their range of travel and intensify their existing patterns of trade and exchange (Walker 1997:77). Horses allowed bulk packages of root cakes, dried berries, buffalo robes, and other goods to be transported with relative ease (Teit 1928). Allan Smith (1964) documented an expansive trans-Cascades trade network that was utilized by the Yakama and surrounding groups. The Yakama would frequently travel across the Cascades in order to obtain supplies of natural resources that were not available in the Plateau and to establish and maintain friendly relationships with their Northwest Coast neighbors (Smith 1964). These and other trade networks allowed the Yakama to obtain and exchange aquatic resources, game, decorative objects, desert products, and other materials, as well as slaves (Walker 1997:90).

The Yakama traditionally emphasized and continue to maintain the importance of intergenerational teaching and learning. One such example is found in dance, which is a key component of Yakama life. As noted by Yakama member Sue Rigdon, each dance has a "spirit and its own life;" thus,

learning traditional dances is a spiritual act (Jacob 2013:22, 38). These lessons contain "important teachings about cultural pride, leadership, and responsibility to the future generations"(Jacob 2013:38). Dance is one of multiple pathways to cultural revitalization and healing the wounds of colonialism for Yakama people (Jacob 2013:4, 41).

While ethnographies such as those referenced above provide a useful means of understanding the traditional lifeways of Indigenous peoples, it is important to remember that Indigenous groups were, and continue to be, markedly complex and diverse. Uncritical applications of the ethnographic record to representations of past lifeways have the potential to produce reductionist views of tribes and bands that portray them as homogenous or static. The above depictions of the Yakama and their neighboring groups serve as generalized portrayals of the traditional lives of these groups, and should be viewed in light of these complexities.

The ethnographic records of the groups and areas surrounding the Project Area and the larger Plateau is much more complex, with a wider cultural diversity than can be summarized here. Ethnographic studies by Anastasio (1972), Boas and Teit (1996), Ray (1936, 1939, 1942), Relander (1986), Ruby and Brown (1981, 1989), Schuster (1998), Smith (1988), Spier (1936), and others offer the reader a more thorough examination of the represented Native culture groups.

Places of Cultural Significance

Traditional Cultural Places (TCP) are important for the "role the property plays in a community's historically rooted beliefs, customs and practices" as stated in the *National Register Bulletin 38* (U.S. Department of the Interior 1990). Although these properties can be difficult to identify and evaluate, an initial search of pertinent publications can be helpful toward identifying the types of properties that may be expected. The *National Register Bulletin 38* goes on to state that "examples of properties possessing such significance include:

- a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- a rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents;
- an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
- a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity."

A review of ethnographies was undertaken to help identify any known TCPs within or near the Project Area. This is a preliminary TCP review performed using publicly available resources, and should not be construed as an exhaustive identification of potential resources. The works of Angelo Anastasio (1972), Verne F. Ray (1936, 1939, 1942), Helen Schuster (1998), Leslie Spier (1936), and Allan Smith (1988) were consulted. Three known Yakama villages are located within 10 mi of the Project Area: *tsi wa'la* approximately 8 mi (13 km) south, *ts'a'kit* approximately 8.7 mi (14 km) southwest, and *pala xi'* approximately 9 mi (14.7 km) southwest of the Project Area (Table 1, Figure 3).

Table 1. Ethnographic Villages Near the Project Area (after Ray 1936:119-151).

Traditional Name	Translation	Location
tsi wa'la	fresh water clams	south side of Yakima River, below Mabton
ts'a'kit	N/A	south side of the Yakima River, below the Satus creek mouth
pala xi'	hoofs	south side of the Yakima River, below present village of Alfalfa

Numerous collections of published legends were consulted to identify points of legendary significance near the Project Area. These include publications by Franz Boas (1917), Ella Clark (1969), Richard Erdoes and Alfonso Ortiz (1984), Verne Ray (1933), and M. Terry Thompson and Steven Egesdal (2008). Multiple legends exist regarding the landscape surrounding the Project Area. None of those consulted reference locations are within the Project Area.

The Yakama have a legend about the Great Flood entitled *Mount Jefferson and the Great Flood* (Clark 1969:45). The flood occurred near the beginning of their people and came as a punishment for wars and bloodshed among the people. Word that a great flood was coming was sent to one of the remaining good men. The good people gathered together and decided to build a canoe from a large cedar to survive the flood. The flood came, filling the landscape with water and drowning the bad people. Finally, the water abated and the canoe came to rest where it was made, on the east side of Toppenish Ridge (located approximately 12.1 mi (19 km) to the southwest of the Project Area).

Mount Adams, also referred to as *Pahto*, is located approximately 72.8 mi (115 km) west of the Project Area and features prominently within Yakama legend. In one story (Clark 1969:16), Pahto was one of the mountain wives of Sun. She grew jealous that he would speak to *Wahkshum* (present-day Simcoe Mountain, located to the west of Satus Pass) first every morning followed by *Plash Plash* (White Spots, located near present-day Goat Rocks) as he made his journey east to west every day. Pahto resolved to get rid of the first two wives and fought them, breaking down their heads. Pahto was happy to be the highest mountain around. Soon she became discontent and

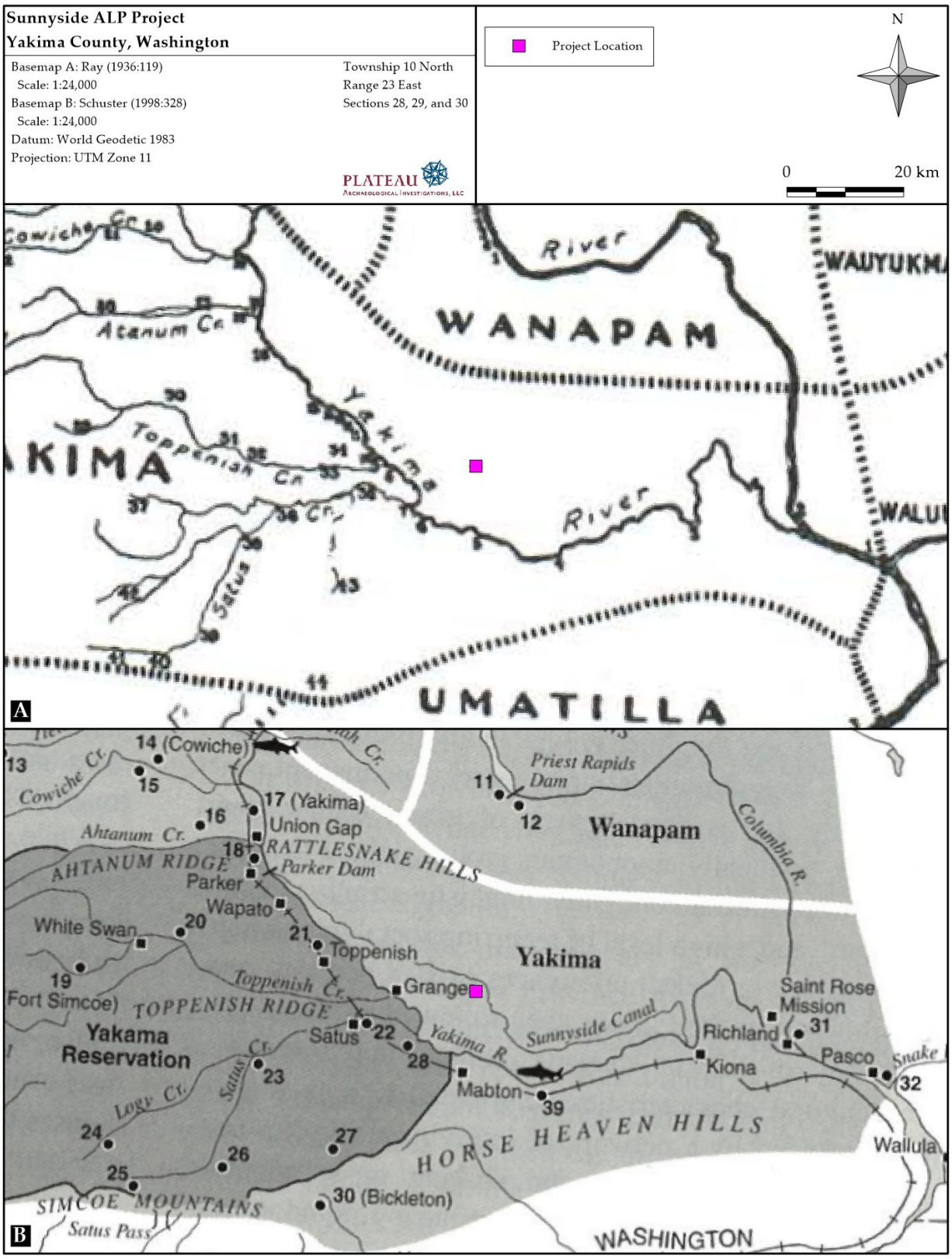

Figure 3. The Project Area shown in relation to documented TCPs.

decided to take plants and animals from the mountains south of her and place them on herself. The other mountains were afraid to rise up against her for her wrongdoings except *Wyeast* (Mount Hood), which agreed to fight Pahto and return all she had stolen. Pahto would not give up anything she had stolen peacefully and so Wyeast hit her, knocking off her head, which scattered as small rocks to the north. Pahto was angry and caused large floods throughout Yakima Valley. The Great Spirit sent down White Eagle and his son to be Pahto's head and made her agree to cease flooding the valley.

It should be noted that TCPs, place names, and landscape narratives are highly sensitive and often sacred. Native American traditional knowledge and landscape narratives are extensive within traditional territories, which extend well-beyond current Reservation boundaries and include the Project Area. Due to the significance of TCPs, as well as their esoteric and sacred importance, and out of genuine and reasonable concern for their safety, tribes often do not share information regarding TCPs, and published materials often do not reveal locations of sensitive properties or narratives. Given their access to qualitative data, narratives, and traditional knowledge, the Confederated Tribes of the Yakama Reservation are uniquely qualified to do additional review. If further review of TCPs is required, it is recommended that one make arrangements with the Tribes directly.

REGIONAL HISTORIC BACKGROUND

In 1809, Oregon Territory saw an influx of trappers and fur traders, beginning with the Canadian-owned North West Company as they made their way into the region and built Spokane House in 1810, located near the confluence of the Spokane River and Hangman Creek. Spokane House became the first permanent European settlement in the State of Washington (McCart and McCart 2000:213). For a time, Spokane House thrived as both a trading center and a gathering place for fur traders. Despite its successes, Spokane House was abandoned in 1816. By that time, trading routes had shifted largely to the Columbia River, leaving the Spokane House no longer logistically or economically important (Meinig 1968). In 1825, the Hudson's Bay Company closed Spokane House and moved its local operations north to Fort Colville at Kettle Falls.

Subsequent to the opening of the Oregon Trail in 1840, Euroamerican settlers flooded the area, bringing trade, religion, and disease into Native-occupied areas. In 1846, the United States took control of the Oregon territory in the Oregon Treaty. With increasing population and economic and political pressures of immigrants and the Whitman massacre, the Territory of Oregon (Oregon Territory) was officially established in 1848. By 1850, nearly 12,000 immigrants had passed through the Plateau region along the Oregon Trail (Beckham 1998; Walker and Sprague 1998). With the establishment of the Oregon Territory in 1848 and Washington Territory in 1853, federal involvement proliferated. Treaties between Native tribes and the new state and federal governments were soon underway.

Washington Governor Isaac Stevens, also appointed as Superintendent of Indian Affairs by President Pierce, worked jointly with Joel Palmer, Superintendent of Indian Affairs in Oregon, to negotiate a series of treaties between 1854 and 1855. These treaties were difficult to maintain in light of the Chinook jargon used in negotiations, rapid influx of miners following the several "rushes," and settlers who were eager for property. Almost immediately after signing the Walla Walla Council Treaty of 1855, gold was discovered on several promised reservations in the Plateau, and miners began to confiscate the mineral-rich lands. The introduction of disease, treaty violations, and other stresses introduced by the new settlers caused mistrust and eventually, warfare. Several battles took place in the area between 1855 and 1858 during the Plateau Indian War.

The Confederated Tribes and Bands of the Yakama Nation were established as a result of one of these treaties (Schuster 1998; Sprague 1998; and Yakama Nation 2013). On June 9, 1855, the Yakama, Palouse, Pisquouse, Klikitat, Klinquit, Kowwassayee, Liaywas, Skin, Wishram, Shyiks, Ochechotes, Kahmiltpah, and Seapcat, along with the Wenatchi, signed a treaty that ceded 10,816,000 acres of ancestral homeland to the U.S. Government. Among the fourteen signatories of the Yakama Treaty of 1855 was Kamiakin and Wenatchi Chief Tecolekun. The fourteen tribes, not necessarily assembled by traditional ways, language, or by mutual agreement, but by administrative ease, were grouped as one: the Yakima (Yakama).

In exchange for the ceded lands, the Yakama negotiated and secured agreements for the 1,200,000-acre Simcoe Reservation, as well as agreements that no Euroamericans could live on the reservation without express permission. Under the terms of the treaty, the U.S. Government agreed to provide two schools, a hospital and physician, a sawmill, a flour mill, a farmer and craftsmen to teach trades, as well as annuities (Schuster 1998:343). Additionally, the treaty reserved the rights of the Confederated Tribes and bands of the Yakama Nation to hunt, fish, access and use traditional cultural sites, gather traditional foods and medicines, graze livestock, and access water in sufficient quantity and quality in all their usual and accustomed places in the ceded areas. Finally, the terms of the treaty provided a period of two years to allow the various bands and tribes to migrate to and resettle on their new reservations (Schuster 1998; Sprague 1998; Yakama Nation 2013).

Fatefully, twelve days after the treaty was signed, gold was discovered east of the Cascades and the rush was on. Governor Stevens illegally opened the reserved lands to afford miners passage and access to the newfound resources. Believing the reserved areas open to settlement, Euroamericans rushed onto the sovereign Native American land. Seeing that the government had failed to observe the terms of the treaty within days of the council, and in light of immediate mistreatment of the Yakama, Chief Kamiakin withdrew what had been his abiding support for cooperation. The Yakama attempted to protect their reserved land and resources, and resulting confrontations led to the death of several miners as well as Indian Agent Andrew J. Bolon (Schuster 1998: 343-344). The Yakama Wars had begun.

As the U.S. Army moved in to retaliate for Bolon's killing, Chief Kamiakin led a group of warriors in attacking Major Granville O. Haller's troops near Toppenish Creek. Major Haller, recognizing that Governor Stevens had illegally opened lands, an action that resulted in the violence at hand, acquitted the Yakama of wrongdoing in their attack (Schuster 1998:344).

On November 14, 1855, Major Gabriel Rains and his soldiers advanced on the Saint Joseph Mission. During the raid, soldiers "discovered" a cask of gunpowder buried in the garden. Citing this as an act of aggression toward the U.S. Army, and believing that the priests were aiding the Native Americans, the soldiers burned Saint Joseph Mission to the ground. This was only one of countless travesties that marked the era of policymaking, gross treaty violations, and Indian Wars that would play out for the next several years. On March 26, 1856, Yakama, Klikitat, and Cascades warriors attacked an Army outpost, killing 14 settlers and three U.S. soldiers in what became known as the Cascades Massacre. Army reinforcements drove out the warriors and nine Cascade Indians, including Chief Chenoweth (Schuster 1998:344]).

Between 1855 and 1858, ineffectual efforts were made to limit the incursion of emigrants and others into reserved Indian territories. After the Puget Sound War broke out in the summer of 1856, Fort Simcoe was established 20 mi (32.8 km) southwest of the modern City of Yakima in order to create a stronghold in the Yakima Valley, as well as to prevent Euroamerican settlement (Schuster 1998:344). General Wool pointed out that "the army cannot furnish guards to farm houses dotted among hostile tribes" (Meinig 1968:165).

The settlement prohibition, established in 1855, was only a temporary solution to an inevitability. People settled and volunteer militias attacked indiscriminately and fueled the fire under uncertain relations. The unrest culminated with Colonel Wright's campaign in 1858 that resulted in the executions and murders of sixteen Indians, including a Yakama chief named Owhi and his son, Qualchan (Beckham 1998).

While Wright's campaign was underway, Major R.S. Garnett led approximately 300 soldiers on a sweep from Fort Simcoe up through the Yakama country, through Wenatchee, and as far as the Similkameen River. Garnett's sweep resulted in the summary executions of ten Indians suspected of having attacked miners, and the loss of one private who was lagging behind the company and was presumably shot by an Indian (Wilson 1990:62). This sweep resulted in the end of armed Native resistence within the region.

Most Wenatchis refused to take allotments on the Yakama Reservation, as they were more closely related to Middle Columbia River Salishans, and were more distantly tied to the Upper Yakama through the Wentashapam Fishery. Through this refusal by most to settle on the Yakama Reservation, the Wenatchi managed to remain on their homeland for many years after the cessation of the Yakama Wars. As a term of the 1855 Yakama Treaty, which they had been lumped into though was later ratified, the Wenatchi had reserved a 36 square-mile tract of land and rights to the Wenatshapam Fishery at the confluence of Icicle Creek and the Wenatchee River (Thompson 2002).

The war ended after Colonel Wright's and Major Garnett's campaigns and the ratification of the Yakama Treaty in 1895. An area of 1,200,000 acres was designated as the Yakama Reservation, creating the modern boundaries of the reservation. As part of the treaty, control of Fort Simcoe was given to the Indian Department and turned into a boarding school, as well as a hospital and doctor, sawmill and flour mill, and an annuity were to be provided by the Federal government (Schuster 1998: 343-345).

Yakima County

Yakima County was established on January 21, 1865. Stretching from the Wenatchee River to the north, the Columbia River to the east, the Simcoe Mountains to the south, and the Cascade Mountains to the west, the original county encompassed the area now known as Yakima and Kittitas counties. Even after Kittitas County was established on November 24, 1883, Yakima County has remained the second largest county in Washington State, encompassing 4,296 square miles (2.7 million acres). According to the 2000 Federal census, the county ranked in the top ten in per county population with 222,581 persons (Becker 2006).

Though cattle ranching proved to be the initial boon in the valley, agriculture would prove to be the future of the region. The first irrigation works in the area was constructed as a joint venture between the Fathers of the Oblates and Chief Kamiakin and the Yakama at Saint Joseph's Mission. Little did they know the future impact of irrigation throughout the region. By 1880 much larger canals would be dug, eventually irrigating over 350,000 acres of farm ground, orchards, and vineyards (Lyman 1919). Speculators from far and wide publicized the advantages of the Yakima Valley and its booming economy. Many romanticized about the orchardist as being a "fascinating occupation, and remunerative as it is interesting...a life of independence, of health and contentment (Edwards 1982:79). The first vineyard was planted in 1869 and hops in 1872. Henry Pinchwell planted the first commercial fruit orchard in Yakima Valley. The property consisted of five acres primarily of peach and plum (prune) trees. Another successful orchardist was Fred Thompson, who began growing commercial fruit in 1889. It would not be until the completion of the Yakima Irrigation Project that widespread fruit growing exploded in the region. Two primary nurseries that supplied seedlings to the area growers were the Toppenish and May operations in Yakima. Unlike neighboring Kittitas Valley, Yakima Valley offered excellent growing conditions for fruit, especially apples. Essential nutrients in the soil produced noticeably larger fruit, while the aridity reduced the pest problem. These factors have helped Yakima develop both national and international markets for their fruit.

Cartographic Analysis of the Project Area

The Project Area is located in the northeastern quadrant of Section 30, the northern half of Section 29, and the northwestern quadrant of Section 28 of Township 10 North, Range 23 East, Willamette Meridian. The 1871 cadastral map (Garfield 1871) shows no development within Sections 28, 29, or 30 (Figure 4).

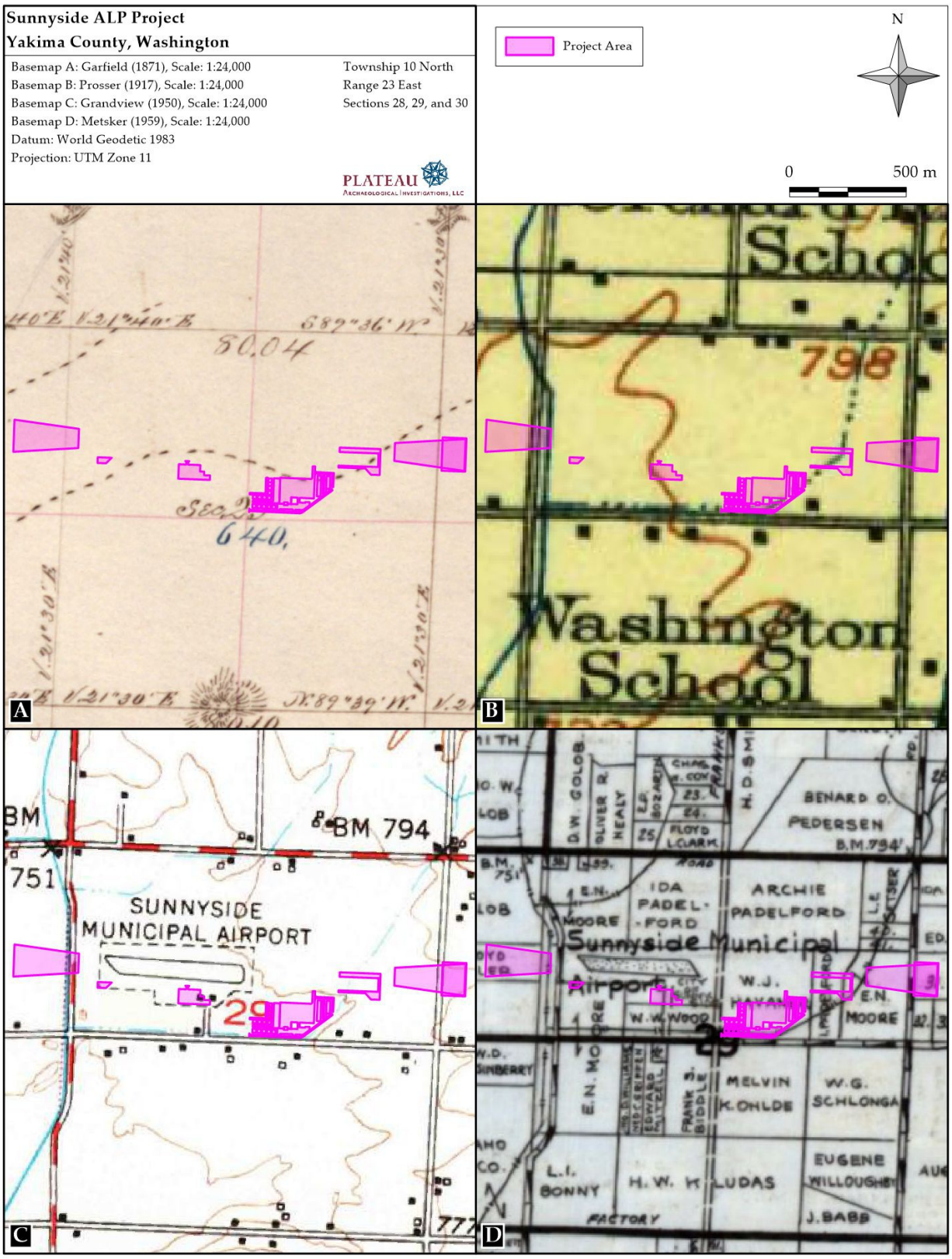

Figure 4. The Project Area shown on selected historical maps.

According to the Bureau of Land Management (2021), in 1894 four patents were issued within Section 28, one of which intersects with the Project Area. In 1894, a Sale-Cash Entry was issued to Amasa C. Walker for 160 acres within the northwest quadrant of Section 28, intersecting the eastern edge of the Project Area. Two patents were issued within Section 29 in 1895. Both were issued to the Northern Pacific Railroad Company, neither of which intersect the Project Area. Four patents were issued within Section 30 between 1896 and 1903, one of which intersects the Project Area. In 1898, a Homestead Entry was issued to Joseph F. Kunz for 160 acres in the northeastern quadrant of Section 30, intersecting the western edge of the Project Area.

The 1917 Prosser USGS topographic map shows three roads intersecting, or adjacent to, the Project Area and correspond to modern Ray Road, East Edison Road, and State Route 241 (USGS 1917). Orchard Ridges School is to the north of the Project Area while Washington School is to the south. Six structures are depicted south of the Project Area.

The 1950 Grandview USGS topographic map shows a medium-duty road labeled Hanford Road intersecting the western edge of the project and two unlabeled light-duty roads to the south and east. The Sunnyside Municipal Airport is depicted in its current location.

The 1959 atlas (Metsker 1959) shows significant development of the area. The previously unlabeled light-duty roads are now East Edison Avenue and Ray Road. Land intersecting the Project Area is depicted as being owned by H. Lloyd Miller, E. N. Moore, W. W. Wood, the City of Sunnyside, W. J. Havaner, and I. Padelford.

PREVIOUS ARCHAEOLOGY

A review of previously recorded cultural resources and archaeological surveys was completed through the WISAARD on July 26, 2021. The review covered areas within Sections 19, 20, 21, 27, 28, 29, 30, 32, 33, and 34 of Township 10 North, Range 23 East; and Sections 24 and 25 of Township 10 North, Range 22 East, Willamette Meridian. This review revealed zero cultural resources within 1.0 mi (1.6 km) of the Project Area.

A total of 15 HPIs have been inventoried, or derived from the Yakima County Assessor's records within 1.0 mi (1.6 km) of the Project Area. Ten properties have been determined Not Eligible, three have no determination, and two have been determined Eligible for inclusion on the NRHP. None of these properties intersect with the Project Area.

There have been seven previously conducted cultural resource surveys within 1.0 mi (1.6 km) of the Project Area (Table 2). None of these surveys intersect with the Project Area, although three are adjacent to the Project Area (Holstine 1999;Trost 2011, and Woody 2016). One of these surveys yielded new cultural materials, however they are outside of the Project Area (Trost 2011).

In 1999, Archaeological and Historical Services of Eastern Washington University completed a cultural resource survey of the Washington State Department of Transportation's SR 241 Project (Holstine 1999). The project consisted of widening portions of SR 241 for a turning lane and shoulder improvements on approximately 2.0 acres. A pedestrian survey was completed over the entire area and no cultural materials were observed.

Table 2. Previously Conducted Cultural Resource Surveys within 1.0 mi of the Project Area.

Author	Project	Distance from P/A	Results
Amara (2004)	Erasmo Cerda EQIP Site Identification	0.25–0.5 mi E	Negative
Dubois (2019)	USDA NRCS J&K Dairy EQIP Project	0.75–1.0 mi SE	Negative
Holstine (1999)	SR 241 Expansion	0.1–0.25 mi N	Negative
Landreau (2018)	East Edison Avenue Half Street Improvements	0.25–0.5 mi W	Negative
Trost (2011)	Sunnyside Valley Irrigation District	0.1–0.25 mi S	Positive, outside of PA
Woody (2016)	Jason Sheehan NRCS EQIP Project	0.1–0.25 mi S	Negative
Woody (2017)	J&K Dairy EQIP Project	0.75–1.0 mi SE	Negative

In 2011, Cascadia Archaeology, LLC., completed a cultural resource survey of the Sunnyside Valley Irrigation District Project (Trost 2011). The project consisted of enclosing, repairing, and upgrading 170 miles of previously installed irrigation pipelines on approximately 742 acres of land. Eighty-two structures were recorded as significant and eligible for inclusion on the NRHP; however, none of these intersect with the Project Area.

In 2016, Field Journal Archaeological Investigations completed a cultural resource survey of the Jason Sheehan NRCS EQIP Project (Woody 2016). The project consisted of irrigation installation on approximately 38 acres of property. A pedestrian survey of the entire area was conducted as well as the examination of open trenches that had been excavated for irrigation installation. No cultural materials were observed.

FIELD METHODS AND SURVEY RESULTS

Survey work was completed in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716, September 29, 1983) and under the supervision of Principal Investigator, David Harder. Plateau archaeologists Jordan Thompson, Moira Riggs, and Justin Fitzpatrick completed the cultural resource survey on July 15, 29, and 30, 2021. The limits of the Project Area were identified using maps provided by the client. Survey

conditions were intermittent overcast, temperatures in the 90s to 100s, intermittent rain, and intermittent wind. During pedestrian survey, there was no cloud coverage, which provided optimal conditions for ground observation.

The Project Area is northeast of Sunnyside, Washington, in discontiguous parcels on the western, southern, and eastern boundaries of the Sunnyside Airport, and has East Edison Road to the south. The environment of the Project Areas were either an agricultural field, a corn field, or a built environment. Vegetation does not match native vegetation as described in the Environmental Setting section of the report. Prior to the field visit, a utility locate was requested under ticket #21332004. This locate identified no subsurface utility lines.

The archaeologists conducted pedestrian survey consisting of east/west transects throughout all of the Project Areas, spaced at intervals no more than 20 m (66 ft) (Figure 5). Ground surface visibility varied between 20% in the field of corn portion of the Project Area to 70% in the Project Area near the western extent of the runway. Plant debris and vegetation impeded ground visibility throughout (Figures 6 and 7).

A total of 10 subsurface probes (SSPs) were excavated throughout the Project Area as 40 cm holes (Table 3). SSPs were placed opportunistically throughout the Project Area based on the location of irrigation lines and active agricultural fields. The archaeologist removed sediment in arbitrary 10 cm levels, screened spoils through ¼-inch wire mesh, and recorded sediment characteristics on standardized forms with the color, composition, and degree of compaction noted. The archaeologist took representative photographs of the Project Area, and all subsurface probes and other relevant geospatial data were recorded using a handheld GPS unit. The soils revealed from the SSPs roughly did match the Esquatzel, Warden silt loam, and Outlook silt loams predicted by the NRCS model. All of the SSPs, except one, reached the target depth of 100 cm below surface (cmbs). SSP 08, located adjacent to an access road, was terminated at 18 cmbs due to compaction. SSPs ranged in depth from 18–106 cm (7–42 in), averaging 93 cm (37 in).

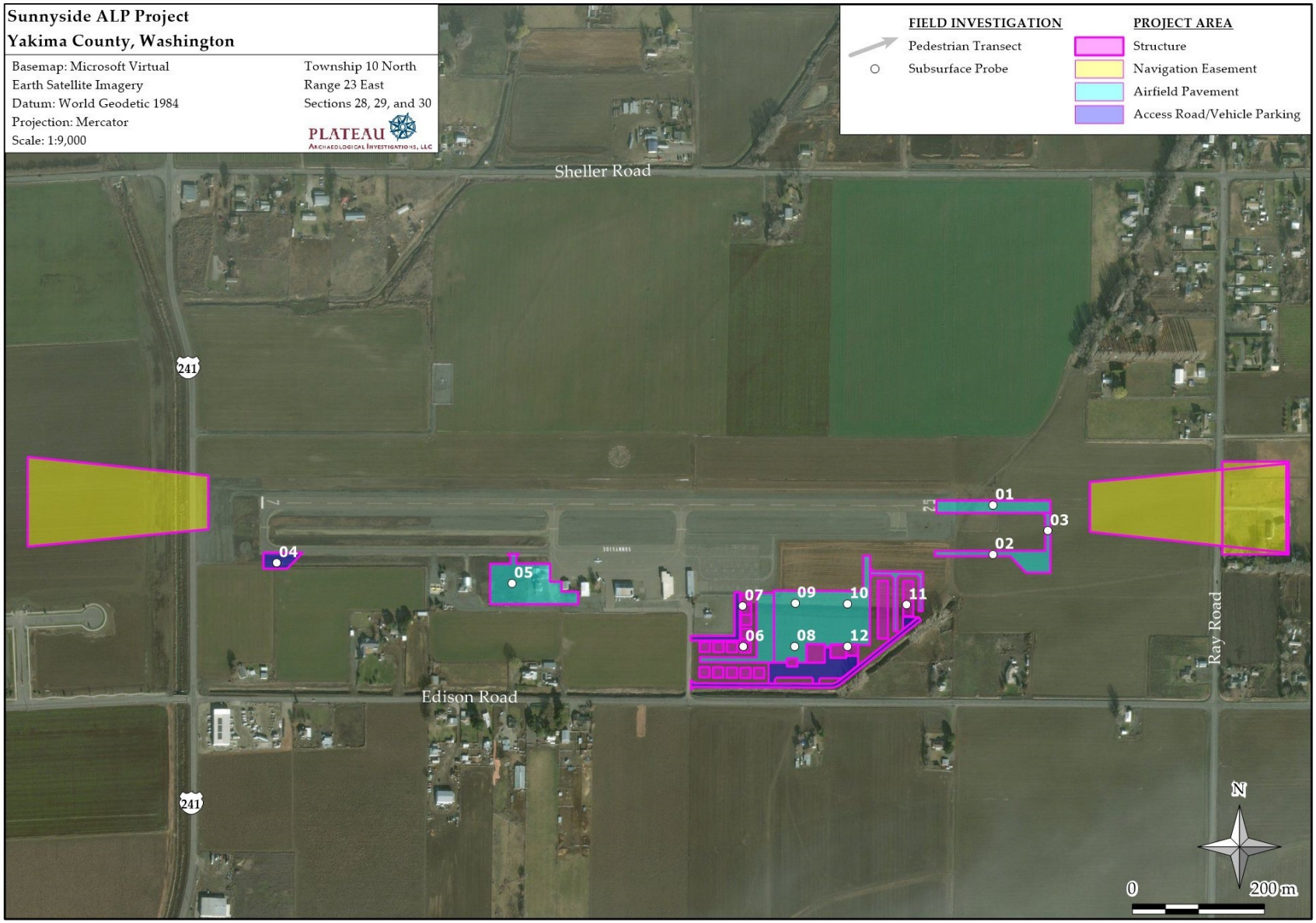

Figure 5. The Project Area and field investigation inventoried on an aerial photograph.

Figure 6. Overview of the east field of the Project Area. View to the northeast.

Figure 7. Overview of the west field of the Project Area. View to the northeast.

Table 3. Subsurface Probe Results.

SSP#	NAD83 Zone 11	Depth	Results	Sediments and notes
01	0271973m E, 5134656m N	100 cm	Negative	0–100 cmbs: Strat I, minimal gravel, damp after 20 cmbs.
02	0271906m E, 5134585m N	100 cm	Negative	0–24 cmbs: Strat I. 25–38 cmbs: Strat I faintly modeled with 5YR 5/8, yellowish red, silty sand loam. 39–100 cmbs: Strat I, few gravels.
03	0271969m E, 5134616m N	100 cm	Negative	0–100 cmbs: Strat I, minimal gravel, damp after 20 cmbs.
04	0270838m E, 5134610m N	100 cm	Negative	0–100 cmbs: Strat I.
05	0271200m E, 5134559m N	100 cm	Negative	0–100 cmbs: Strat I.
06	0271558m E, 5134468m N	100 cm	Negative	0–50 cmbs: Strat I. 51–100 cmbs: Strat II with diffused boundary.
07	0271579m E, 5134510m N	100 cm	Negative	0–100 cmbs: Strat I, minimal gravel.
08	0271659m E, 5134577m N	18 cm	Negative	0–18 cmbs: Dry and compact Strat I with sparse cut road gravels at surface. Terminated due to compaction.
09	0271747m E, 5134572m N	106 cm	Negative	0–106 cmbs: Strat I, sparse road gravels in top 10 cm, damp after 20 cmbs.
10	0271832m E, 5134548m N	103 cm	Negative	0–103 cmbs: Strat I, damp after 20 cmbs.

Strat I: 10YR 6/4, light yellowish brown, sandy silt loam with <10% small angular – subangular gravels., progressively fewer gravels with depth.
Strat II: 10YR 3/3, dark brown, silty sand, minimal gravels.

No Native American or historic-era cultural materials or features were observed during the pedestrian survey or excavations.

CONCLUSIONS AND RECOMMENDATIONS

Plateau archaeologists conducted a pedestrian survey over the entire Project Area, and excavated 10 subsurface probes. Subsurface probes ranged in depth from 18-106 cm (7-42 in). The pedestrian survey and subsurface investigations for the project resulted in no newly recorded archaeological resources. Plateau recommends that the proposed undertaking will result in **No Historic Properties Affected**, and no further archaeological investigations are recommended prior to, or during, execution of this project.

Should ground-disturbing activities reveal any cultural materials (e.g., structural remains, European American artifacts, or Native American artifacts), activity will cease and the Washington State Historic Preservation Officer should be notified immediately. The results and recommendations in this document concern the specified APE. The proponent is advised that the results and recommendations reported herein do not apply to areas of potential effect altered or expanded after the cultural resource survey. A supplementary cultural resource review will be necessary should the APE be altered or changed, as per 36 CFR 800.4.

If ground-disturbing activities encounter human skeletal remains during the course of construction, then all activity ***will*** cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance to those remains. The area of the find will be secured and protected from further disturbance until the State provides notice to proceed. The finding of human skeletal remains ***will*** be reported to the county medical examiner/coroner ***and*** local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the DAHP who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

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APPENDIX A:

Inadvertent Discovery Plan (IDP)

Sunnyside Municipal Airport, Airport Layout Plan Update, Yakima County, Washington

Inadvertent Discovery Plan

Treatment of Archaeological Materials Discovered During Project Implementation

By:
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December 2021

The City of Sunnyside is creating an Airport Layout Plan for the Sunnyside Municipal Airport in Yakima County, Washington. The project will include construction of new buildings and facilities, parking lots, and access roads. Anticipated impacts include excavations, compaction of sediments, and other ground-disturbing construction activities.

Century West Engineering. retained Plateau Archaeological Investigations, LLC (Plateau) to complete the cultural resource survey and identify potential impacts to cultural and historical resources. The area of potential effect, referred to as the Project Area, covers approximately 94.5 (do not include "acres") acres and lies in Section(s) 29 of Township 10 North, Range 23 East, Willamette Meridian. (Figure 2). The survey was subsequently reported in *Cultural Resource Survey for the Sunnyside Municipal Airport, Airport Layout Plan Update, Yakima County, Washington* (Fitzpatrick et al. 2021), and recorded with the Washington State Department of Archaeology and Historic Preservation (DAHP) under Project Number _____.

Pre-field research consisted of a file review completed through the Washington Information System for Architectural and Archaeological Records Data (WISAARD) on July 26, 2021. The review covered areas within Sections 19, 20, 21, 27, 28, 29, 30, 32, 33, and 34 of Township 10 North, Range 23 East; and Sections 24 and 25 of Township 10 North, Range 22 East, Willamette Meridian. This review revealed zero cultural resources and seven previously conducted cultural resource surveys within 1.0 mile (mi) (1.6 kilometer [km]) of the Project Area. This database includes recorded archaeological resources, historic property inventories (HPIs), National Register of Historic Properties (NRHP) and Washington Heritage Register (WHR) properties, identified cemeteries, and previously conducted cultural resource surveys found throughout the state of Washington. Additionally, a review of Bureau of Land Management (BLM) records, both General Land Office (GLO) online records and land patent information, was completed. Topographic maps and aerial photos were reviewed to identify additional indicators of past land use.

Plateau conducted a cultural resource survey of the Project Area and no cultural materials were discovered. Plateau recommends that the proposed undertaking will result in **No Historic Properties Affected**, and no further archaeological investigations are recommended prior to, or during, execution of this project.

Laws and Regulations Regarding Archaeological and Cultural Resources

Several laws and regulations, set forth on both federal and state levels, address concerns for burials, rock cairns, archaeological sites, historic structures, and other cultural resources. Those pertinent to this project are the National Historic Preservation Act, and several Chapters of the Revised Code of Washington.

The National Historic Preservation Act (NHPA) was passed in 1966 and Section 106 is codified in 36 CFR 800 (Protection of Historic Properties). This act requires federal agencies to consider the effects of undertakings on historic properties and consult with the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) as appropriate to help identify the APE and the level of effort necessary to comply. This is intended to be done prior to the expenditure of funds or issuance of a license or permit, although it is recognized that some properties may not be identified, recognized, or discovered until the project begins.

Chapter 27.44 of the Revised Code of Washington offers protection for Indian burials, cairns, glyptic markings, and historic graves on private and public property. This regulation provides civil and criminal penalties for the intentional disturbance or removal of these types of properties.

Chapter 27.53 of the Revised Code of Washington requires that a permit be acquired through the Washington State Department of Archaeology and Historic Preservation (DAHP) prior to the intentional disturbance, excavation, removal, or alteration of any known historic or archaeological resource through any means.

Chapter 68.50 of the Revised Code of Washington describes the investigations, treatment, scientific study, and final disposition of human remains. This chapter includes very little information that pertains to the inadvertent discovery of archaeological materials.

Chapter 68.60 of the Revised Code of Washington outlines protections for cemeteries, historic graves, and other human remains. This chapter further outlines procedures pertaining to the inadvertent discovery of human remains.

Inadvertent Discovery Plan

Proper application and management of this IDP requires that a professional archaeologist be contacted if ground-disturbing activities reveal potential Native American or historic-era cultural materials or features (Figure 3, Figure 4, and Figure 5). The archaeologist shall meet the Secretary of the Interior's standards for a professional archaeologist as defined at 36CFR61 Appendix A. Construction within 200 ft (60 m) of the discovery will stop, and the area will be secured to protect the find from additional damage. The archaeologist will document the find, prepare a brief written statement, and take photographs of the find for submission to the lead agency and the SHPO at the DAHP. The find will also be reported to the THPO of the Confederated Tribes and Bands of the Yakama Nation. It is the responsibility of the lead agency, the Federal Aviation Adminstration, to contact the affected Tribes. This consultation process will take place even if the pre-contact or historic-era cultural materials appear to have lost their depositional integrity. Work within 200 ft (60 m) of the find will not resume until a plan for management or preservation of the materials has been approved. Following the project, the archaeologist will provide a report detailing the procedures and results of the investigation.

During the investigation, the archaeologist will observe rules of safety and will comply with any safety requirements of the excavation contractor and project engineers. Entry into any excavation will only be done under the direct supervision and approval of the construction foreman (or his or her agent) and verification that entry and exit is safe.

Discovery of Human Remains

If ground-disturbing activities encounter human skeletal remains during the course of construction, then all activity ***will*** cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance to those remains. The area of the find will be secured and protected from further disturbance until the State provides notice to proceed. The finding of human skeletal remains ***will*** be reported to the county medical examiner/coroner ***and*** local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the Department of Archaeology and Historic Preservation (DAHP) who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

Protocol to Follow When No Archaeologist is Present
If an archaeologist is not on-site when cultural materials (e.g., pre-contact artifacts and/or features, historic-era artifacts and/or features) are uncovered, the following steps shall be followed:

Suspend work within 200 ft (60 m) of the find.
Take a photo of the artifact(s) or feature(s). Include a common object such as a quarter, a tape measure, a person, or a pickup as a scale to show the size of the find.
Take photos of the location of the find from several angles and distances.
Record a GPS point if possible.
Contact Plateau by telephone to notify us of the find.
Provide an email with photos and any additional information you are able to gather.

Precontact Artifacts Precontact artifacts can include stone, wood, or bone tools. Stone tools are the most common artifact encountered since they do not deteriorate over time.

Precontact Features Precontact features can include fire pits, hearths, burn deposits, ash, rock alignments, rock mounds, and midden deposits.

Historic-Era Artifacts Historic-era artifacts may include various items manufactured from metal, glass, or wood. If an individual identifiable historic artifact is encountered, the above protocol should be followed. "Historic-era artifacts" does not include "recent" items such as chip bags, styrofoam, modern beverage cans and bottles, or other typical roadside debris.

Historic-Era Features Any identifiable remains of buildings, foundations, rock alignments, or rock mounds might be historic-era features.

Human Remains Human remains, suspected human remains, burials, funerary objects, sacred objects, or items of cultural patrimony are to be treated in the manner outlined above. **Additionally, Plateau is to be notified by phone immediately**.

Emergency Dispatch in Yakima County

Emergency Dispatch	911
Sunnyside Police Department	509-836-6200
Sheriff, non-emergency	509-574-2501
Yakima County Coroner	509-574-1610
	509-574-1613 (fax)

Confederated Tribes and Bands of the Yakama Nation

Casey Barney, Cultural Resources Program Manager
509-865-5121, ext. 4378
Casey@yakama.com

Department of Archaeology and Historic Preservation

DAHP Reception	360-586-3065
DAHP fax	360-586-3067

Guy Tasa, State Physical Anthropologist
360-586-3534 Guy.Tasa@dahp.wa.gov

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360-586-3080 Rob.Whitlam@dahp.wa.gov

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Main Office/Fax	509-332-3830	
David Harder, Archaeologist	509-336-1525 (cell)	dharder@plateau-crm.com

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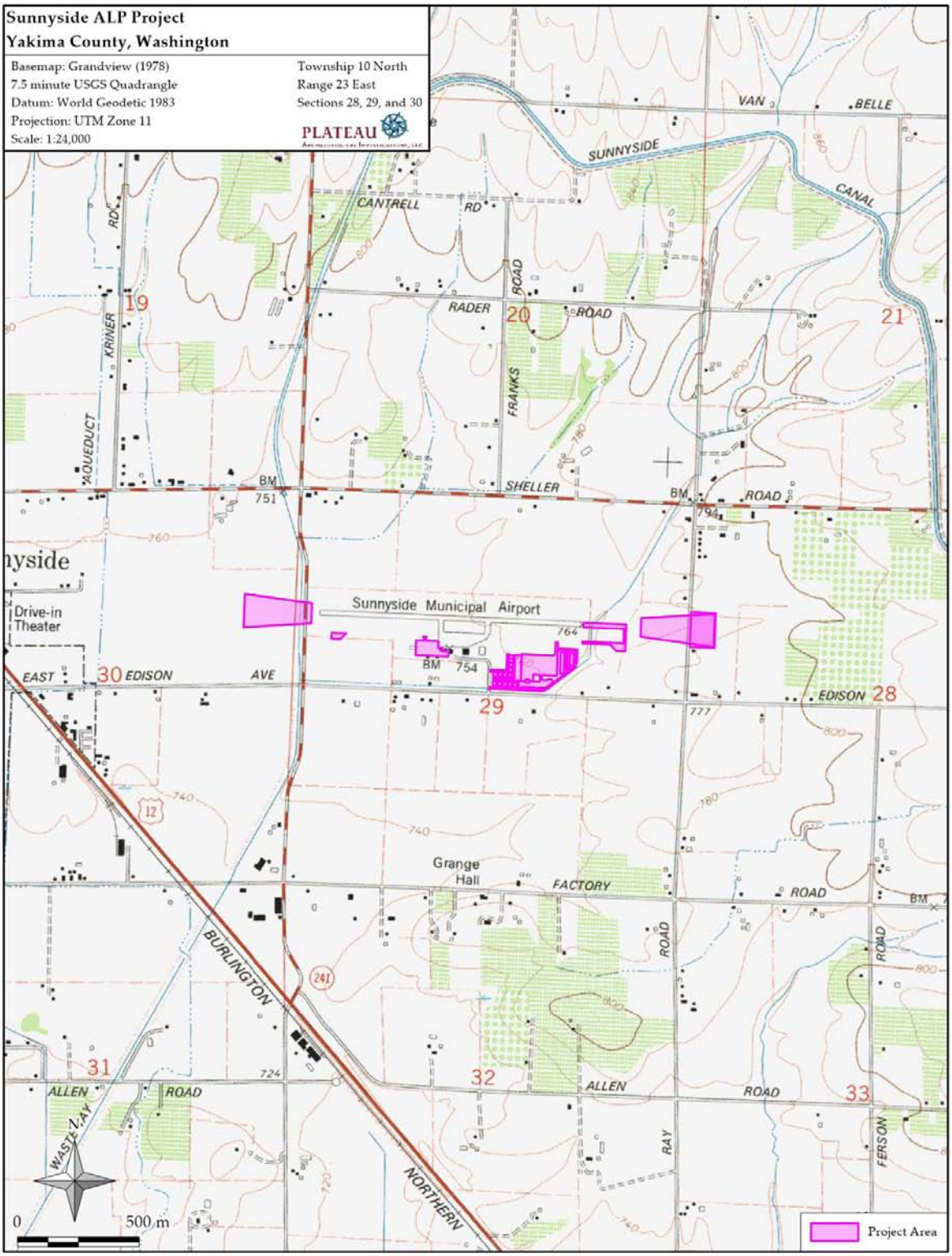

Figure 1. The Project Area on a portion of the Grandview USGS quad map.

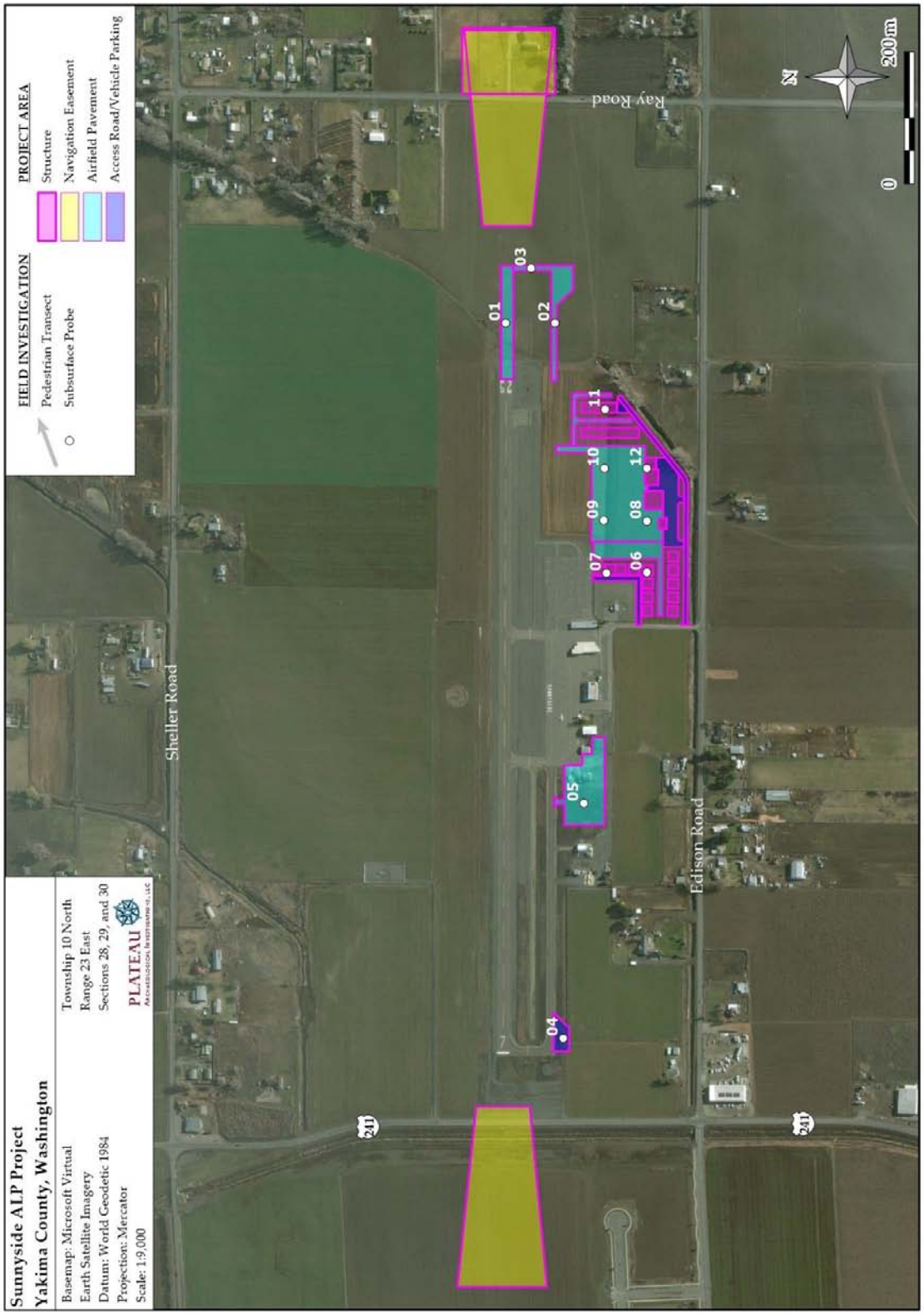

Figure 2. The Project Area on an aerial photograph.

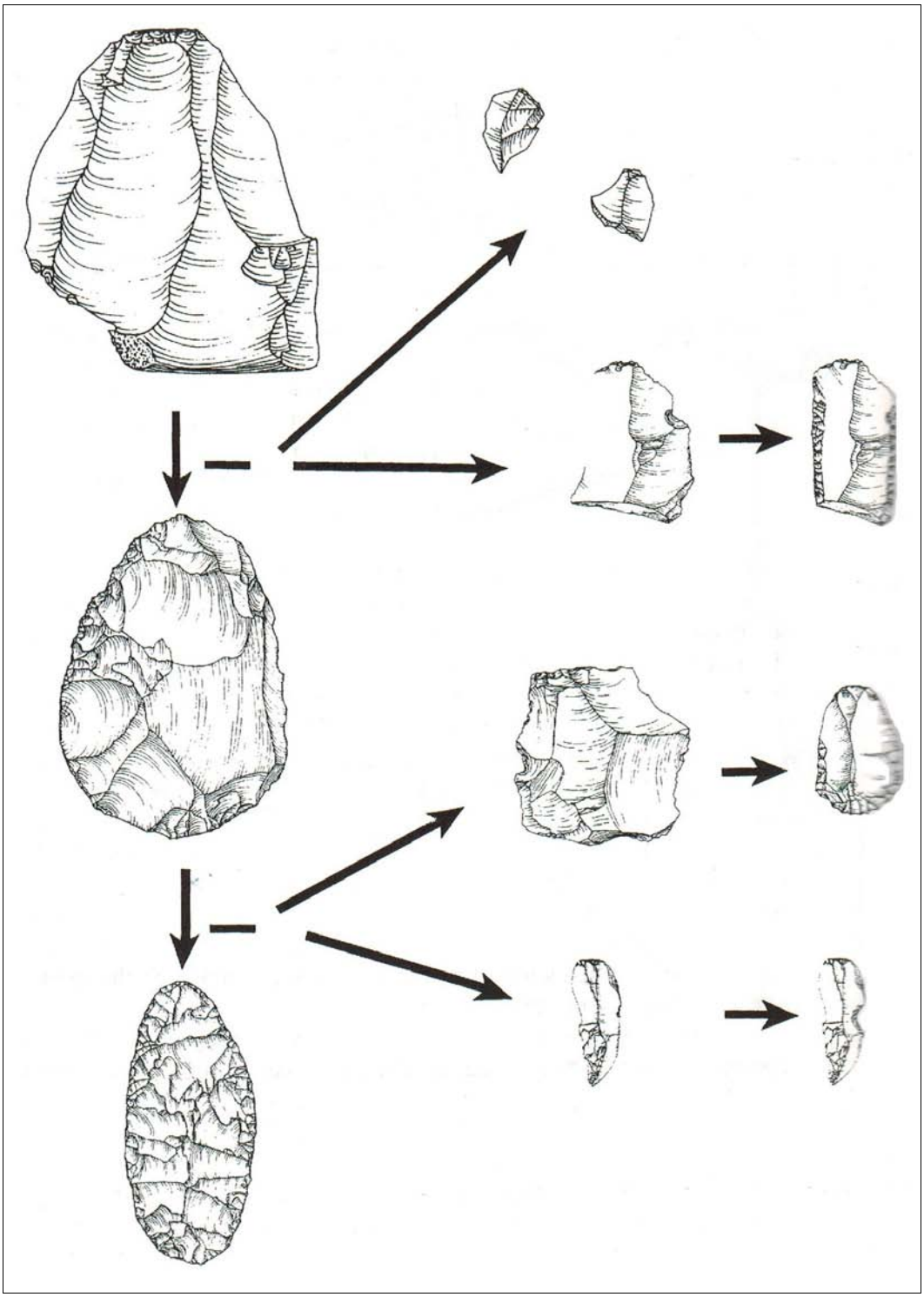

Figure 3. Reduction of a lithic blank to a tool (Andrefsky 1998:158)

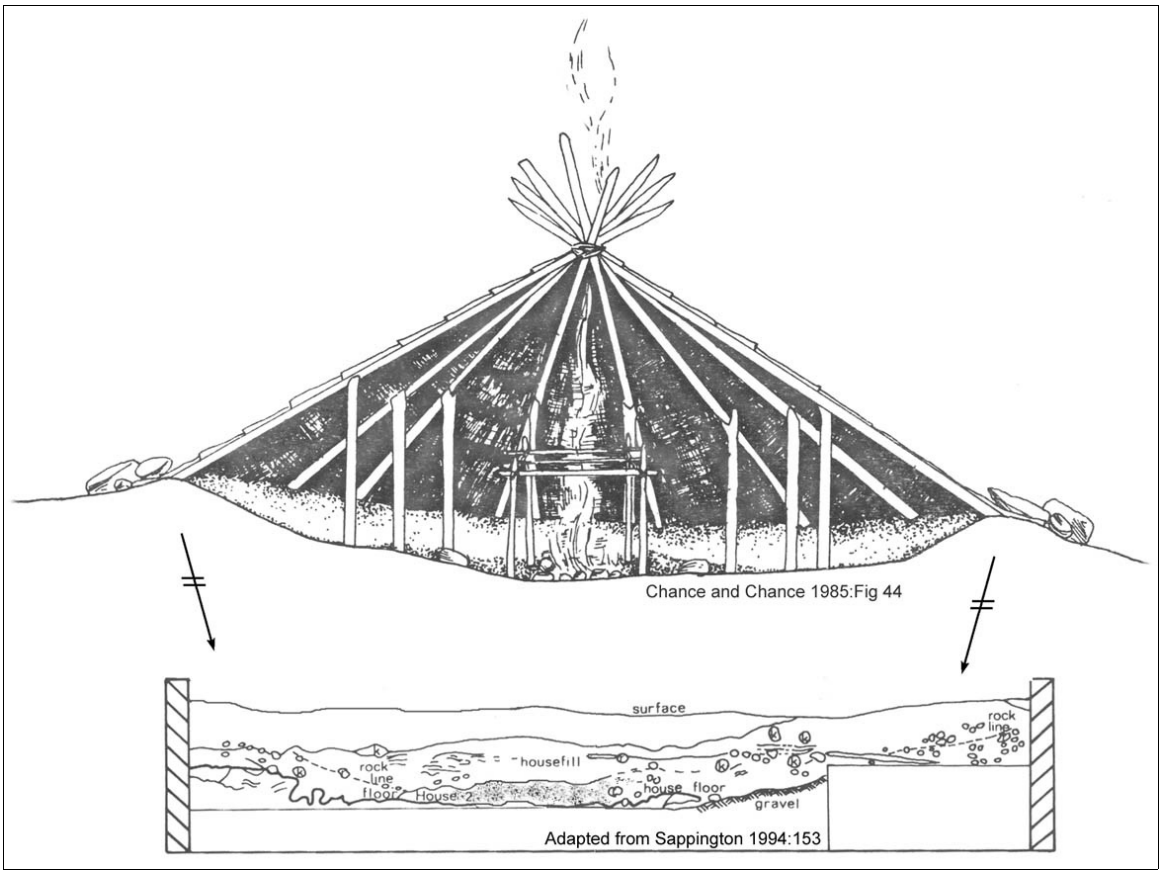

Figure 4. An illustration of a housepit and the resulting archaeological feature (Sappington 1994: 153).

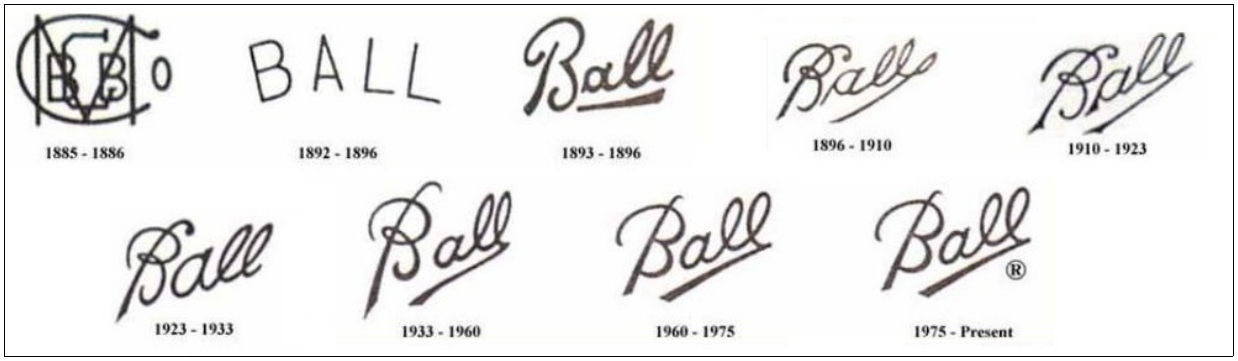

Figure 5. An example of logo changes over time, which can aid in determining the date of historic artifacts.

Appendix C

Yakima County/City of Sunnyside Zoning

Chapter 19.17
OVERLAY DISTRICTS

Sections:

19.17.010 Legislative Intent.

Overlay districts are established to coordinate the provisions established in this Title with the goals, policies and standards adopted in other plans and ordinances. They are intended to provide flexibility for master planned developments and to provide protection for state and federal system airports and for the Yakima River Greenway.

(Ord. 7-2013 § 1 (Exh. A) (part), 2015).

19.17.020 Applicability of Overlay Development Standards.

(1) Applicability. This Chapter shall apply when all or a portion of a development, or modification thereto, is proposed within the boundaries of an overlay district and when changes to the area of an overlay district is proposed.

(2) Special Development Standards for the Overlay Districts. This Chapter specifies certain standards that under special circumstances may apply to, or be required for approval of, a proposed development or modifications to development. The adopted plans, programs and regulations listed below shall be implemented, as applicable, for a use proposed within the indicated overlay district.

OVERLAY DISTRICT	PLANS, PROGRAMS, REGULATIONS
Airport Safety Overlay	Yakima Air Terminal at McAllister Field Master Plan and comprehensive plans.
Master Planned Development Overlay	The particular Master Development Plan adopted when the MPDO was established, or as subsequently amended.

OVERLAY DISTRICT	PLANS, PROGRAMS, REGULATIONS
Greenway Overlay	Yakima Greenway Foundation Master Plan Update 1995, or subsequent revisions, as adopted by the Board of Yakima County Commissioners.

(3) Project Review in Greenway and Master Planned Development Overlay Districts. To assure the appropriate standards are applied, the following uses, when located within the Greenway Overlay District or the Master Planned Development Overlay District, unless otherwise specified, shall be reviewed as provided below. Provided that uses within the Master Planned Development Overlay District that are approved in a Master Development Plan shall be reviewed subject to Type 1 review.

(a) All Type 1 (permitted) uses shall be subject to Type 2 review.

(b) All Type 2 (administrative) uses shall be subject to Type 2 review.

(c) All Type 3 (conditional) uses shall be subject to Type 3 review.

(4) Decision Authority. A Reviewing Official may approve, condition, or deny approval of any use, development, or modification thereto, in an overlay based on the provisions set forth and adopted by this Chapter.

(Ord. 7-2013 § 1 (Exh. A) (part), 2015).

19.17.030 Airport Safety Overlay District (ASO).

(1) Legislative Intent. The Airport Safety Overlay is intended to protect the airspace around State and Federal system airports from airspace obstructions or hazards and incompatible land uses in proximity to The Yakima Air Terminal at McAllister Field and the Sunnyside Municipal Airport or other public airports within defined airspace per Federal Aviation Regulations (FAR), Part 77. In addition to regulations of the principal use district, the Airport Safety Overlay includes provisions for:

(a) Preserving land adjacent to the airport for future commercial and industrial development; and

(b) Assuring land uses locating near the airport are compatible with noise, height obstruction and other impacts from the airport operation.

(2) Application of Airport Safety Overlay Provisions.

(a) Applicability. All zoning districts regulated under this Title lying within the Airport Safety Overlay are subject to the requirements of this overlay, except as may be otherwise stated.

(b) Definition. The Airport Safety Overlay contains those spaces lying over and under the areas defined by Federal Aviation Regulations (FAR), Part 77 as imaginary surfaces and the Runway Protection Zone(s) as illustrated on the Airport Layout Plan (ALP) and zoning map, and comprised of two parts.

(i) Primary Airport Safety Overlay. The primary Airport Safety Overlay area addresses land use compatibility with airport operations and structure height. Located in an area bounded by the limits of the runway protection zone and the Federal Aviation Administration (FAA) defined approach and transitional surfaces within the conical surface area; and

(ii) Secondary Airport Safety Overlay. The secondary Airport Safety Overlay principally addresses structure height, particularly where a structure may constitute an incompatible land use under this Title. It is bounded by the exterior of the conical surface and the approach, and transitional approach surfaces extending beyond the conical surface.

(3) Permitted Uses.

(a) Height Limit. The uses listed in the Allowable Land Use Table 19.14-1 in Chapter 19.14 as Permitted Uses shall be subject to the height restrictions in Subsection 19.17.030(6) or Chapters 19.11 through 19.13, whichever is more restrictive. No separate application for a Permitted Use in the Airport Safety Overlay is required, provided the Reviewing Official can determine that the proposed structure or use:

(i) Does not constitute a potentially incompatible land use;

(ii) Will not exceed 35 feet in height; or, if greater than 35 feet in height, will not penetrate the approach, transitional, horizontal, or conical surface zones of the airport for any existing or planned approaches as defined by FAR, Part 77; and

(iii) Is not within a designated runway protection area or an identified future 65 Day Night Average Sound Level (DNL) aircraft noise impacted area within the airport master plan or the FAA approved airport layout plan. Such structures and uses shall be subject to the limitation of Subsection 19.17.030(6) and to recording an avigation easement.

(b) Potentially Incompatible Land Uses. Type 1 Permitted Uses shall be subject to Type 2 application and review procedures under Subsection 19.17.030(5) Application Requirements where the use is a potentially incompatible land use, as defined in Section 19.01.070, or where the Reviewing Official cannot make a determination as required in Subsection 19.17.030(3)(a) above.

(4) Administrative and Conditional Uses.

(a) The Administrative and Conditional Uses are subject to:

(i) The height restrictions in Subsection 19.17.030(6) and in Chapters 19.11 through 19.13, whichever are the more restrictive;

(ii) The provision of Chapters 19.11 through 19.13 and any other review criteria for the use required by the underlying zoning district; and

(iii) A determination that the use is not incompatible with the airport or can be appropriately conditioned to mitigate airport safety concerns such as noise impacts.

(b) Where an airspace hazard has been determined to exist by the Reviewing Official, the FAA determination on obstructions and hazards to air navigation shall be balanced with special consideration for unique characteristics of local terrain, reporting points for pilots using Visual Flight Rules (VFR), airport operations, and development patterns.

(5) Application Requirements.

(a) Applications for uses within the Airport Safety Overlay established by this Chapter, when required, shall include the following information:

(i) Property boundary lines as they relate to the boundaries of the primary and secondary Airport Safety Overlay;

(ii) Location, elevation and height of all existing and proposed buildings, structures, utility lines, and trees taller than 35 feet in height;

(iii) A description of the proposed use; and

(iv) A statement of compatibility from the airport manager when the use is located within the Airport Safety Overlay relative to the impact of the use on airport operations and safety.

(b) In consideration of an application for a building, structure, or other use that will exceed 35 feet in height, the Reviewing Official may require the applicant to submit either of the following:

(i) A certificate from a registered professional engineer or a licensed land surveyor that states that no airspace obstruction will result from the proposed use, or

(ii) Either or both of the following:

(A) The maximum elevations of proposed structures based on the established airport elevation and U.S. Geological Survey (USGS) datum. Elevations shall be determined by a registered professional engineer or a licensed land surveyor, accurate to plus or minus one foot shown as mean sea level elevation or other available survey data. The accuracy of all elevations shall be certified by the engineer and surveyor; and/or

(B) A map of topographic contours with not more than five foot intervals, showing all land within 100 feet of the proposed structure(s) for which the permit is being sought. This map shall also bear the verification of a licensed land surveyor or registered professional engineer.

(6) Height Limitations and Additional Requirements.

(a) A building, structure, communication tower, use or tree that penetrates the FAA designated imaginary surfaces constitutes an obstruction within the Airport Safety Overlay. Therefore, the allowable height of any building, structure, communication tower, use or tree with the Airport Safety Overlay shall conform to the following:

(i) No building, structure, communication tower, use or tree at its proposed location shall penetrate any FAR; Part 77 designated imaginary surfaces of an airport;

(ii) Structures may penetrate the imaginary surfaces when the Reviewing Official, in consultation with Washington State Department of Transportation (WSDOT) Aviation Division or the airport manager, can determine the structure is not likely to constitute an airspace hazard;

(iii) The Reviewing Official may require lights or markers as a warning to aircraft on the building, structure, communication tower, use or tree(s), or to top the tree to reduce the height when recommended by the FAA, WSDOT Aviation Division or the airport manager. Lights and markers shall meet FAA specifications; and

(iv) Notwithstanding any other provision of this Title, the Reviewing Official shall not approve any buildings, structures, communication tower, use or tree when the FAA has designated it a hazard to air navigation.

(b) Whenever the height limitation of this Section differs from those of any other Section of this Title, or is adopted by another local ordinance or regulation, the more restrictive limitation shall

apply.

(c) No use or activity shall take place within the Airport Safety Overlay in such a manner as to: make it difficult for pilots to distinguish between airport lights and others; create electrical interference with navigational signals or radio communication between the airport and aircraft; result in glare in the eyes of pilots using the airport; impair visibility in the vicinity of the airport; create bird-strike hazards; or otherwise create a hazard that may endanger the landing, takeoff, or maneuvering of aircraft to use the airport.

(d) The regulations prescribed by this Chapter shall not be construed to require a property owner to remove, lower, or make changes or alterations to any structure that legally existed prior to the effective date of this Chapter, except as compelled by state or federal regulation. However, such structures shall be considered nonconforming if such structure is in conflict with these regulations.

(e) An avigation easement and deed declaration that recognizes the preexistence of the airport and the right of over flight shall be recorded for all uses within the approach and transitional surfaces of the conical surface area.

(7) New Airports, Heliports and Landing Fields. Section 19.18.040 contains special provisions for new airports, heliports and landing fields.

(Ord. 7-2013 § 1 (Exh. A) (part), 2015).

Chapter 17.62A
AIRPORT OVERLAY ZONING DISTRICT

Sections:

17.62A.010 Purpose and intent.

The purpose and intent of this chapter is to establish an Airport Overlay Zoning District on properties located on, adjacent to, and in the vicinity of the Sunnyside Municipal Airport, in order to protect the health, welfare, safety and quality of life of the general public, property owners, airport operators, and aviation community; and also to ensure compatible land uses in the vicinity of the affected environments of the Airport Overlay Zoning District, with regulations set forth in the adopted 14 CFR Federal Aviation Regulations Part 77. [Ord. 2010-02 § 1 (Exh. A), 2010.]

17.62A.020 Statutory authority.

This chapter is adopted pursuant to RCW 36.70.547 and 36.70A.200 which require a county, city or town to enact development regulations to discourage the siting of incompatible land uses adjacent to general aviation airports. [Ord. 2010-02 § 1 (Exh. A), 2010.]

17.62A.030 Definitions.

As used in this chapter, unless the context otherwise requires:

1. “Airport” means Sunnyside Municipal Airport.

2. “Airport elevation” means 767 feet above mean sea level.

3. “Airport Overlay Zoning District” shall include the runway protection zone, inner safety zone, inner turning zone, outer safety zone, sideline zone, and the airport operation zone as depicted on Map B – Airport Safety Zones and numbered Zones 1 through 6, respectively, and shall also encompass the area identified within 14 CFR Federal Aviation Regulations (FAR) Part 77, as amended and depicted on Map A – Part 77.

4. “Airport surface” means a surface longitudinally centered on the extended runway centerline, extending outward and upward from the end of the primary surface and along the same slope as the approach zone height limitation slope set forth in SMC 17.62A.040. The perimeter of the approach surface coincides with the perimeter of the approach zone.

5. Approach, Transitional, Horizontal, and Conical Zones. These zones are set forth and defined in SMC 17.62A.040.

6. “Conical surface” means a surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 feet upward to one foot outward for a horizontal distance of 4,000 feet.

7. “Flammable and combustible liquids” shall be defined as the type and design of underground and above ground liquid storage tanks; the location and design of the fuel dispensers and dispenser nozzles; the design and specifications for related piping, valves and fittings; the location and classification of electrical equipment, including emergency fuel shutdown devices; and specifications for fuel storage and pressure-relief components, and shall be in accordance with Article 52 (5201.3.2 (No. 1) Motor Vehicle Fuel-Dispensing Stations), Article 79 (Flammable and Combustible Liquids, specifically Special Options 7904), Standard 52-1 of the Uniform Fire Code (1997) and all applicable codes.

8. “Hazard to air navigation” means an obstruction determined to have a substantial adverse effect on the safe and efficient utilization of the navigable airspace.

9. “Height” for the purposes of determining the height limits in all zones set forth in this chapter and shown on the Airport Overlay Zoning District Map A, the datum shall be the mean sea level elevation unless otherwise specified.

10. “Horizontal surface” means a horizontal plane 150 feet above the established airport elevation.

11. “Larger than utility runway” means a runway that is constructed for and intended to be used by propeller-driven aircraft of greater than 12,500 pounds maximum gross weight and jet-powered aircraft.

12. “Nonconforming use” means any pre-existing structure, object of natural growth, or use of land, which is inconsistent with the provisions of this chapter.

13. “Nonprecision instrument runway” means a runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance, or area type navigation equipment, for which a straight-in nonprecision instrument approach procedure has been approved or planned.

14. “Obstruction” means any structure, growth, or other object, including a mobile object, which exceeds a limiting height set forth in SMC 17.62A.040.

15. “Person” means an individual, firm, partnership, corporation, company, association, joint stock association or government entity. “Person” includes a trustee, a receiver, an assignee, or a similar representative.

16. Precision Instrument Approach. The precision instrument approach is designed to provide an approach path for exact alignment and descent of an aircraft on final approach to a runway.

17. Precision Instrument Runway. The precision approach is a 50,000-foot long trapezoid that is 1,000 feet wide at the point where it meets the primary surface. It has a 50 to one slope for the first 10,000 feet and a slope of 40 to one for the remaining 40,000 feet. The approach surface is 16,000 feet wide at the outermost point.

18. “Primary surface” means a surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway. For military runways or when the runway has no specially prepared hard surface, or planned hard surface, the primary surface ends at each end of that runway. The width of the primary surface is set forth in SMC 17.62A.040. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline.

19. “Runway” means a defined area on an airport prepared for landing and takeoff of aircraft along its length.

20. Transitional Surfaces. These surfaces extend outward at 90-degree angles to the runway centerline and the runway centerline extended at a slope of seven feet horizontally for each one foot vertically from the sides of the conical surfaces. Transitional surfaces for most of those portions of the precision approach surfaces, which project through and beyond the limits of the conical surfaces. Transitional surfaces for those portions of the precision approach surfaces, which project through and beyond the limits of the conical surface, extend a distance of 5,000 feet measured horizontally from the edge of the approach surface and at 90-degree angles to the extended runway centerline.

21. “Tree” means any object of natural growth.

22. “Utility runway” means a runway that is constructed for and intended to be used by propeller-driven aircraft of 12,500 pounds maximum gross weight or less.

23. “Visual runway” means a runway intended solely for the operation of aircraft using visual approach procedures. [Ord. 2010-02 § 1 (Exh. A), 2010.]

17.62A.040 Airport Overlay Zoning District.

In order to carry out the provisions of this chapter, there is hereby created an Airport Overlay Zoning District that is composed of the following surface and safety zones. The zones cover a geographic area that is affected by airport activities and are defined on the basis of factors including, but not limited to, aircraft noise, aircraft flight patterns, airport safety zones, local circulation patterns and area development patterns. The boundaries of the airport surface and safety zones are shown on the Airport Overlay Zoning District Map A, Part 77, and on Map B, Airport Safety Zones, which are attached to the ordinance codified in this chapter and incorporated by this reference, and which shall also be on file and open for inspection in the City Planning and Community Development Department. The surface and safety zones are overlaid on top of the existing underlying zoning, which remains in full force and effect. Where the requirements imposed by the surface and safety zones conflict with the requirements of the underlying zoning, the more restrictive requirement shall be enforced.

A. Surface Zones. In order to carry out the provisions of this chapter, there are created and established certain surface zones which include all the land lying beneath the approach surfaces, transitional surfaces, horizontal surfaces, and conical surfaces as they apply to the airport. Such zones are shown on the Airport Overlay Zoning District Map A, as such currently exists or is hereafter amended. Within each of the surface zones there are hereby established certain height restrictions for structures and trees. The surface zones are established and defined as follows:

1. Runway, Nonprecision Instrument Approach Zone. The 1,000-foot inner edge of this approach zone coincides with the width of the primary surface. The approach zone expands uniformly to a width of 16,000 feet at a horizontal distance of 50,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway as depicted on Map A. Height restrictions: No object shall penetrate the imaginary line created by a slope 50 feet outward for each one foot upward for the first 10,000 feet of this zone and 40 feet outward for each one foot upward for the remaining 40,000 feet of this zone.

2. Transitional Zones. This zone is defined by a slope seven feet outward for each one foot upward beginning at the sides of and at the same elevation as the primary surface and the approach surface, and extending to a height of 150 feet above the airport elevation which is 814 feet above mean sea level. Height restrictions: No object

shall penetrate the imaginary line created by the slope seven feet outward for each one foot upward beginning at the sides of and the same elevation as the approach surface, and extending to where they intersect the conical surface.

3. Horizontal Zone. The zone is established at 150 feet above the airport elevation or 814 feet above mean sea level by swinging arcs of 5,000 feet radial for all runways designated utility or visual and 10,000 feet for all other runways from the centers of the primary surface of each runway and connecting adjacent arcs by drawing lines tangent to those arcs. The horizontal zone does not include the approach and transitional zones. Height restrictions: No object shall penetrate the imaginary line created at 150 feet above the airport elevation or at a height of 814 feet above mean sea level.

4. Conical Zone. The conical zone is established as an area that commences at the periphery of the horizontal zone and extends outward there for a horizontal distance of 4,000 feet as depicted in Map A. Height restrictions: No objects shall penetrate the imaginary line created by a slope 20 feet outward for each one foot upward beginning at the periphery of the horizontal zone and at 150 feet above the airport elevation extending to a height up to 3,500 feet above the surface of the land.

B. Safety Zones. In order to carry out the provisions of this chapter and to promote land use compatibility on lands within and adjacent to and in the vicinity of the airport, there are created and established certain safety zones. Such safety zones are shown on the Airport Overlay Zoning District Map B, as such now exists or is hereafter amended. Within each of the safety zones, certain land use limitations are established and certain development standards are imposed in addition to the land uses and development standards of the underlying zoning. Where the requirements imposed by these safety zones conflict with the requirements of the underlying zoning, the more restrictive requirements shall be enforced. The safety zones are established and defined as follows:

1. Runway Protection Zone 1. An area extending beyond the centerline of Runway 07-25 as depicted on Map B (shaded area number 1). This zone begins from the outer boundaries of the primary surface, 200 feet from the ends of the runway and extends 1,700 feet to its widest point, which measures 1,010 feet across, 505 feet of the runway centerline.

2. Inner Safety Zone 2. An area extending beyond the centerline of Runway 07-25 as depicted on Map B (shaded area number 2). This zone begins at the end of runway protection zone 1 and extends out 2,800 feet. The zone measures 1,010 feet across, 505 feet on either side of the runway centerline.

3. Inner Turning Zone 3. A fan shaped area extending beyond the centerline of Runway 07-25 as depicted on Map B (shaded area number 3). This zone begins at the primary surface, 200 feet from the end of the runway centerline and extends out with a 60-foot radius arc on either side of the runway centerline to 4,500 feet and connects to the centerline of the inner safety zone with sweeping arcs.

4. Outer Safety Zone 4. Area extending beyond the centerline of Runway 07-25 as depicted on Map B (shaded area number 4). This zone begins at the end of the inner safety zone and extends out 3,000 feet. The zone measures 1,000 feet across, 500 feet on either side of the runway centerline.

5. Sideline Zone 5. An area adjacent to the Runway 07-25 as depicted on Map B (shaded area number 5). This zone begins from the outer boundaries of the primary surface, and extends 1,000 feet perpendicular to the primary surface and connects to the 60-degree sector of the inner turning zone.

6. Airport Operations Zone 6. This zone is depicted on Map B (shaded area number 6) and begins from the outer boundaries of the sideline zone and extends out 5,000 feet perpendicular to the primary surface and connects to the 60-degree sector of the inner turning zone. [Ord. 2010-02 § 1 (Exh. A), 2010.]

17.62A.050 Uses – Development requirements and restrictions.

A. General Development Requirements and Restrictions Applicable to All Zones.

1. Underlying Zoning Requirements. In addition to the Airport Overlay Zoning District development requirements and restrictions set forth in subsections (A)(2) through (9) of this section, all uses and activities are at all times subject to the requirements of the underlying zoning district. Where the requirements and restrictions imposed by the Airport Overlay Zoning District surface and safety zones conflict with the requirements of the underlying zoning district, the more restrictive requirement shall be applied.

2. Height. All uses shall be subject at all times to the height restrictions set forth in SMC 17.62A.040(A).

3. Signal and Radio Communication Interference. Electrical interference with navigational signals or radio communications between the airport and aircraft is prohibited and will be regulated in accordance with rules and regulations promulgated and enforced by the Federal Communications Commission (FCC) and Federal Aviation Administration (FAA).

4. Lighting and Glare. Activities and uses that create lighting which makes it difficult for pilots to distinguish between airport lights and nonairport lights, or that create glare in the eyes of pilots using the airport is prohibited. All outdoor lighting fixtures shall be arranged and shielded so that area lighting shall not shine into the sky.

5. Visibility. Activities or uses that create excessive amounts of dust, smoke, or other emissions that may result in impairment of visibility in the vicinity of the airport are discouraged and will be regulated in accordance with rules and regulations promulgated and enforced by the clean air authority for Yakima County under the Clean Air Act and other state and federal regulations.

6. Large Bodies of Water. Activities or uses that create large areas of standing water are discouraged and shall be reviewed and regulated in accordance with the City's State Environmental Policy Act (SEPA) ordinances and regulations.

7. Flammable and Combustible Material. Flammable and combustible liquids and specifications for fuel storage shall be in accordance with the Uniform Fire Code and all applicable codes as adopted in the Sunnyside Municipal Code.

8. Noise Insulation. Noise insulation for new structures shall be in accordance with the International Building Code and the Washington State Energy Code as adopted by the City.

9. Subdivision. When any division of land including short plats, plats, cluster subdivisions, and planned unit developments occur on any land within the Airport Overlay Zoning District safety zones 1 through 6, a note located on the first page of the plat shall be recorded with the Yakima County Auditor as follows:

This property is located within the Airport Overlay Zoning District of the City of Sunnyside in which a variety of airport aviation activities occur. Such airport aviation activities will impact the use of your property.

[Ord. 2010-02 § 1 (Exh. A), 2010.]

17.62A.060 Safety zones – Land use requirements.

A. Runway Protection Zone – Zone 1.

1. Land Use Characteristics. Zone 1 is the runway protection zone on the western and eastern ends of the runway. This safety zone is 1,010 feet wide at its widest point and 1,700 feet long.

On the western end, properties within the zone are zoned planned unit development with industrial, commercial, professional uses.

On the eastern end, the properties are primarily agricultural in current use, with an ancillary single-family residence.

2. Land Use Requirements. Density of population and use within Zone 1 will be subject to the following factors:

a. Properties Within City Limits. Properties within City limits will be governed by this title. Permitted and conditional uses will be as set forth in the applicable chapters of this title pertaining to the subject property, subject to the following:

i. All residential uses are prohibited.

ii. Any change of use or expansion of existing nonresidential use that increases population on the subject property by more than 10 people per acre inside buildings for more than 12 hours in any day, or more than 15 people per acre outside buildings for more than 12 hours in any day, shall be subject to approval of a conditional use permit, after consideration of the factors below.

The conditional use permit will address and condition all necessary and appropriate impacts of the proposed development, or deny such development, after consideration of such impacts and the following:

(A) Height limitations applicable to the use;

(B) Use and location of high overhead lighting;

(C) Configuration of lighting to avoid glare;

(D) Noise sensitive uses and needs of the proposed development and conditions to address noise sensitive uses;

(E) Storage of large quantities of hazardous or flammable materials;

(F) Restrictions on large areas of standing water, generation of smoke, steam or other obstruction to visibility;

(G) Any other condition necessary or appropriate to promote safety of airport operations.

iii. Any change of use or expansion of existing use that increases population on the subject property by less than the densities and/or duration set forth in subsection (A)(2)(a)(ii) of this section shall be subject to approval of a site plan review during the construction permitting process addressing the factors in subsection (A)(2)(a)(ii) of this section.

B. Inner Safety Zone – Zone 2.

1. Land Use Characteristics. Zone 2 is the inner safety zone on the western and eastern ends of the runway. This safety zone is 1,000 feet wide and 2,800 feet long.

On the western end, properties within the zone are generally developed as industrial and commercial uses.

On the eastern end, the properties are primarily agricultural in current use, with ancillary single-family residences.

2. Land Use Requirements. Density of population and use within Zone 2 will be subject to the following factors:

a. Properties Within City Limits. Properties within City limits will be governed by this title. Permitted and conditional uses will be as set forth in the applicable chapters of this title pertaining to the subject property, subject to the following:

i. Residential uses shall be limited to one dwelling unit per five acres.

ii. For nonresidential uses, any change of use or expansion of existing use that increases population on the subject property by more than 100 people per acre inside buildings for more than 12 hours in any day, or more than 150 people per acre outside buildings for more than 12 hours in any day, shall be subject to approval of a

conditional use permit, after consideration of the factors below. The density per acre is cumulative. For example, if an expansion is two acres in area, the allowable combined densities would be 200 persons in buildings; 300 persons outside buildings within and upon the two acres.

The conditional use permit will address and condition all necessary and appropriate impacts of the proposed development, or deny such development, after consideration of such impacts and the following:

(A) Height limitations applicable to the use;

(B) Use and location of high overhead lighting;

(C) Configuration of lighting to avoid glare;

(D) Noise sensitive uses and needs of the proposed development and conditions to address noise sensitive uses;

(E) Storage of large quantities of hazardous or flammable materials;

(F) Restrictions on large areas of standing water, generation of smoke, steam or other obstruction to visibility;

(G) Any other condition necessary or appropriate to promote safety of airport operations.

iii. Any change of use or expansion of existing use that increases population on the subject property by less than the densities and/or duration set forth in subsection (B)(2)(a)(ii) of this section shall be subject to approval of a site plan review during the construction permitting process addressing the factors in subsection (B)(2)(a)(ii) of this section.

C. Inner Turning Zone – Zone 3.

1. Land Use Characteristics. Zone 3 is the inner turning zone on the western and eastern end of the runway. The shape of this safety zone corresponds with aircraft landing and takeoff approaches and exits.

On the western end, properties within the zone are generally developed as industrial and commercial uses, with some high-density residential.

On the eastern end, the properties are primarily agricultural in current use, with ancillary single-family residences.

2. Land Use Requirements. Density of population and use within Zone 3 will be subject to the following factors:

a. Properties Within City Limits. Properties within City limits will be governed by this title. Permitted and conditional uses will be as set forth in the applicable chapters of this title pertaining to the subject property, subject to the following:

i. For residential development occurring after the effective date of this chapter, and for any change of use or expansion of existing residential use, only low density residential use shall be allowed (R-1, URA), subject to approval of a conditional use permit.

The conditional use permit will address and condition all necessary and appropriate impacts of the proposed development, or deny such development, after consideration of such impacts and the following:

(A) Height limitations applicable to the use;

(B) Use and location of high overhead lighting;

(C) Configuration of lighting to avoid glare;

(D) Noise sensitive uses and needs of the proposed development and conditions to address noise sensitive uses;

(E) Storage of large quantities of hazardous or flammable materials;

(F) Restrictions on large areas of standing water, generation of smoke, steam or other obstruction to visibility;

(G) Any other condition necessary or appropriate to promote safety of airport operations.

ii. Any change of use or expansion of existing nonresidential use that increases population on the subject property by more than 100 people per acre inside buildings for more than 12 hours in any day, or more than 150 people per acre outside buildings for more than 12 hours in any day, shall be subject to approval of a conditional use permit, after consideration of the factors in subsection (C)(2)(a)(i) of this section. The density per acre is cumulative. For example, if an expansion is two acres in area, the allowable combined densities would be 200 persons in buildings; 300 persons outside building within and upon the two acres.

iii. Any change of use or expansion of existing use that increases population on the subject property by less than the densities and/or duration set forth in subsections (C)(2)(a)(i) or (ii) of this section, shall be subject to approval of a site plan review during the construction permitting process addressing the factors in subsection (C)(2)(a)(i) of this section.

D. Outer Safety Zone – Zone 4.

1. Land Use Characteristics. Zone 4 extends 3,000 feet toward the west and east from the boundary of Zone 3, and is 1,000 feet wide.

On the western end, Zone 4 includes Yakima Valley Highway with its primarily commercial properties. On the eastern end, Zone 4 extends over properties primarily agricultural in use.

2. Land Use Requirements. Density of population and use within Zone 4 will be subject to the following factors:

a. Properties Within City Limits. Properties within City limits will be governed by this title. Permitted and conditional uses will be as set forth in the applicable chapters of this title pertaining to the subject property, subject to the following:

i. Any change of use or expansion of existing use that increases population on the subject property by more than 100 people per acre inside buildings for more than 12 hours in any day, or more than 150 people per acre outside buildings for more than 12 hours in any day, shall be subject to approval of a conditional use permit. The density per acre is cumulative. For example, if an expansion is two acres in area, the allowable combined densities would be 200 persons in buildings; 300 persons outside buildings within and upon the two acres.

The conditional use permit will address and condition all necessary and appropriate impacts of the proposed development, or deny such development, after consideration of such impacts and the following:

(A) Height limitations applicable to the use;

(B) Use and location of high overhead lighting;

(C) Configuration of lighting to avoid glare;

(D) Noise sensitive uses and needs of the proposed development and conditions to address noise sensitive uses;

(E) Storage of large quantities of hazardous or flammable materials;

(F) Restrictions on large areas of standing water, generation of smoke, steam or other obstruction to visibility;

(G) Any other condition necessary or appropriate to promote safety of airport operations.

ii. Any change of use or expansion of existing use that increases population on the subject property by less than the densities and/or duration set forth in subsection (D)(2)(a)(i) of this section, shall be subject to approval of a site plan review during the construction permitting process addressing the factors in subsection (D)(2)(a)(i) of this section.

E. Sideline Zone – Zone 5.

1. Land Use Characteristics. Properties within Zone 5 are generally agricultural in use, with ancillary single-family residences. Parcels within the City limits of the City of Sunnyside are zoned industrial or awaiting appropriate zoning. Parcels in Yakima County are zoned either agricultural, valley rural or industrial.

2. Land Use Requirements. Density of population and use within Zone 5 will be subject to the following factors:

a. Properties Within City Limits. Properties within the City Limits shall be subject to the following:

i. All residential land uses are prohibited within 1,000 feet of the edge of runway.

ii. Population density shall be limited to zero to 100 persons per acre.

iii. Zoning of properties will be industrial or zoning appropriate to allow uses within population density limitations.

iv. Permitted and conditional uses within the zone classification for properties shall also be subject to the following requirements:

Each land use or development permit affecting the subject parcel will address and condition all necessary and appropriate impacts of the proposed development, or deny such development, after consideration of such impacts and the following:

(A) Height limitations applicable to the use;

(B) High overhead utilities and high overhead lighting prohibited;

(C) Configuration of lighting to avoid glare;

(D) Noise sensitive uses and needs of the proposed development and conditions to address noise sensitive uses;

(E) Storage of large quantities of hazardous or flammable materials;

(F) Prohibition of large areas of standing water, generation of smoke, steam or other obstruction to visibility;

(G) Any other condition necessary or appropriate to promote safety of airport operations.

v. Schools, playfields, parks, hospitals, nursing homes, day care facilities, and churches are prohibited.

vi. Permitted uses will not create large areas of standing water or generate smoke, steam or other obstruction to visibility.

F. Airport Operations Zone – Zone 6.

1. Land Use Characteristics. This safety zone encompasses properties within the City limits of the City of Sunnyside and parcels lying within Yakima County. Parcels within the City limits are currently zoned in accordance with this title. Parcels within Yakima County are currently assigned county zoning.

The City of Sunnyside parcels are generally characterized by urban development and densities. The applicable zoning includes residential, commercial and industrial. The western portion of Zone 6 includes public and

private school facilities, shopping malls, higher density residential developments, commercial properties, industrial properties and churches. These have been developed in accordance with the specific zoning previously established. The City of Sunnyside parcels also include properties that are currently in agriculture, pasture or undeveloped.

2. Land Use Requirements. Density of population and use within Zone 6 will be subject to the following factors:

a. Properties Within City Limits. Properties within City limits will be governed by this title. Permitted and conditional uses will be as set forth in the applicable chapters of this title pertaining to the subject property, subject to the following:

i. Any change of use or expansion of existing use that increases population on the subject property by more than 100 people per acre inside buildings for more than 12 hours in any day, or more than 150 people per acre outside buildings for more than 12 hours in any day, shall be subject to approval of a conditional use permit. The density per acre is cumulative. For example, if an expansion is two acres in area, the allowable combined densities would be 200 persons in buildings; 300 persons outside buildings within and upon the two acres.

The conditional use permit will address and condition all necessary and appropriate impacts of the proposed development, or deny such development, after consideration of such impacts and the following:

(A) Height limitations applicable to the use;

(B) Use and location of high overhead lighting;

(C) Configuration of lighting to avoid glare;

(D) Noise sensitive uses and needs of the proposed development and conditions to address noise sensitive uses;

(E) Storage of large quantities of hazardous or flammable materials;

(F) Restrictions on large areas of standing water, generation of smoke, steam or other obstruction to visibility;

(G) Any other condition necessary or appropriate to promote safety of airport operations.

ii. Any change of use or expansion of existing use that increases population on the subject property by less than the densities and/or duration set forth in subsection (F)(2)(a)(i) of this section, shall be subject to approval of a site plan review during the construction permitting process addressing the factors in subsection (F)(2)(a)(i) of this section. [Ord. 2010-02 § 1 (Exh. A), 2010.]

17.62A.070 Permits.

A. Future Uses. Except as specifically provided in subsections (A)(1), (2) and (3) of this section, no material change shall be made in the use of land, no structure shall be erected or otherwise established, and no tree shall be planted in any zone created unless a permit therefor has been applied for and granted. Each application for a permit shall indicate the purpose for which the permit is desired, with sufficient particularity to allow it to be determined whether the resulting use, structure or tree is consistent with the provisions of this chapter. No permit for a use inconsistent with the provisions of this chapter shall be granted unless a variance has been approved in accordance with subsection (D) of this section.

1. In the area lying within the limits of the horizontal zone and the conical zone, no permit shall be required for any tree or structure less than 75 feet of vertical height above the ground except when, because of terrain, land contour, or topographic features, such tree or structure would extend above the height limits prescribed for such zones.

2. In areas lying within the limits of the approach zones but at a horizontal distance of not less than 4,200 feet from each end of the runway, no permit shall be required for any tree or structure less than 75 feet of vertical height above the ground, except when such tree or structure, because of terrain, land contour, or topographic features, would extend above the height limit prescribed for such approach zones.

3. In the areas lying within the limits of the transition zones beyond the perimeter of the horizontal zone, no permit shall be required for any tree or structure less than 75 feet of vertical height above the ground, except when such tree or structure, because of terrain, land contour, or topographic features, would extend above the height limit prescribed for such transition zones.

B. Existing Uses. No permit shall be granted that would allow the establishment or creation of an obstruction or permit a nonconforming use, structure, or tree to become a greater hazard to air navigation than it was on the effective date of the ordinance codified in this chapter or any amendments thereto or than it is when the application for a permit is made.

C. Nonconforming Uses, Abandoned or Destroyed. Whenever the City Manager, or his or her designee, determines that a nonconforming use or structure has been abandoned or more than 80 percent torn down, physically deteriorated or decayed, no permit shall be granted that would allow such structure to exceed the applicable height limit or otherwise deviate from the zoning regulations of this chapter.

D. Variances. Any person desiring to erect or increase the height of any structure, or permit the growth of any tree, or use the property, not in accordance with the regulations prescribed in this chapter, may apply to the City's Hearing Examiner for a variance from such regulations. The application for variance shall be accompanied by a determination from the Federal Aviation Administration as to the effect of the proposal on the operation of air navigation facilities and the safe, efficient use of navigable airspace. Such variances shall be allowed where it is duly found that a literal application or enforcement of the regulations will result in unnecessary hardship, and relief granted will not be contrary to the public interest, will not create a hazard to air navigation, will do substantial justice, and will be in accordance with the spirit of this chapter.

E. Obstruction Marking and Lighting. Any permit or variance granted may, if such action is deemed advisable to effectuate the purposes of this chapter, be so conditioned as to require the owner of the structure or tree in question to install, operate and maintain, at owner's expense, such markings and lights as may be necessary. [Ord. 2010-02 § 1 (Exh. A), 2010.]

17.62A.080 Nonconforming use – Regulations not retroactive.

The regulations prescribed in this chapter shall not be construed to require the removal, lowering, or other change or alteration of any structure or tree not conforming to the regulations at the effective date of the ordinance codified in this chapter, nor shall such be construed to require any change in the construction or alteration of any structure or tree which was begun prior to the effective date of the ordinance codified in this chapter and which is diligently being prosecuted. [Ord. 2010-02 § 1 (Exh. A), 2010.]

17.62A.090 Violations and enforcement.

It shall be the duty of the City Manager to administer and enforce the regulations prescribed in this chapter. [Ord. 2010-02 § 1 (Exh. A), 2010.]

17.62A.100 Appeals.

Any appeal by any person aggrieved by any order, requirement, decision or determination made by an administrative official in the processing of any application made under this chapter or in the actual decision made as required by this chapter, shall be made to the Hearing Examiner as provided in Chapter 2.46 SMC. [Ord. 2010-02 § 1 (Exh. A), 2010.]

17.62A.110 Judicial review.

Any person aggrieved by any decision of the Hearing Examiner may seek judicial review in superior court or other appropriate court. [Ord. 2010-02 § 1 (Exh. A), 2010.]

17.62A.120 Conflicting regulations.

Where there exists a conflict between any of the provisions or limitations prescribed in this chapter and any other regulations applicable to the same subject or area, whether the conflict be with respect to the height of structures or trees, and the use of land, or any other matter, the more stringent limitation or requirement shall govern and prevail. [Ord. 2010-02 § 1 (Exh. A), 2010.]

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Chapter 17.62
AP – AIRPORT ZONE

Sections:

17.62.010 Purpose.
The purpose of this zone is to provide for general and commercial aviation uses at the Sunnyside Airport. [Ord. 1387 § 1, 1983.]

17.62.020 Permitted uses.
The following are permitted uses in the AP – Airport zone:

A. Private and commercial flight operations as permitted by the FAA;

B. Fuel storage and sale;

C. Chemical storage and loading for agricultural spraying;

D. Storage of aircraft and related equipment;

E. Other airport related activities;

F. On-site hazardous waste treatment and storage as an accessory use to any activity generating hazardous waste and lawfully allowed in this zone; provided, that such facilities meet the State siting criteria adopted pursuant to the requirements of RCW 70.105.210. [Ord. 1628 § 6, 1988; Ord. 1387 § 1, 1983.]

17.62.030 Prohibited uses.
All uses not permitted in SMC 17.62.020 are prohibited. [Ord. 1387 § 1, 1983.]

The Sunnyside Municipal Code is current through Ordinance 2024-01, passed January 8, 2024.

Disclaimer: The City Clerk's Office has the official version of the Sunnyside Municipal Code. Users should contact the City Clerk's Office for ordinances passed subsequent to the ordinance cited above.

City Website: https://www.sunnyside-wa.gov/
City Telephone: (509) 837-3782

Code Publishing Company

Appendix D

Grant Assurances

FAA
Airports

ASSURANCES

AIRPORT SPONSORS

A. General.

1. These assurances shall be complied with in the performance of grant agreements for airport development, airport planning, and noise compatibility program grants for airport sponsors.
2. These assurances are required to be submitted as part of the project application by sponsors requesting funds under the provisions of Title 49, U.S.C., subtitle VII, as amended. As used herein, the term "public agency sponsor" means a public agency with control of a public-use airport; the term "private sponsor" means a private owner of a public-use airport; and the term "sponsor" includes both public agency sponsors and private sponsors.
3. Upon acceptance of this grant offer by the sponsor, these assurances are incorporated in and become part of this Grant Agreement.

B. Duration and Applicability.

1. **Airport development or Noise Compatibility Program Projects Undertaken by a Public Agency Sponsor.**

   The terms, conditions and assurances of this Grant Agreement shall remain in full force and effect throughout the useful life of the facilities developed or equipment acquired for an airport development or noise compatibility program project, or throughout the useful life of the project items installed within a facility under a noise compatibility program project, but in any event not to exceed twenty (20) years from the date of acceptance of a grant offer of Federal funds for the project. However, there shall be no limit on the duration of the assurances regarding Exclusive Rights and Airport Revenue so long as the airport is used as an airport. There shall be no limit on the duration of the terms, conditions, and assurances with respect to real property acquired with federal funds. Furthermore, the duration of the Civil Rights assurance shall be specified in the assurances.

2. **Airport Development or Noise Compatibility Projects Undertaken by a Private Sponsor.**

   The preceding paragraph (1) also applies to a private sponsor except that the useful life of project items installed within a facility or the useful life of the facilities developed or equipment acquired under an airport development or noise compatibility program project shall be no less than ten (10) years from the date of acceptance of Federal aid for the project.

3. **Airport Planning Undertaken by a Sponsor.**

   Unless otherwise specified in this Grant Agreement, only Assurances 1, 2, 3, 5, 6, 13, 18, 23, 25, 30, 32, 33, 34, and 37 in Section C apply to planning projects. The terms, conditions, and

assurances of this Grant Agreement shall remain in full force and effect during the life of the project; there shall be no limit on the duration of the assurances regarding Exclusive Rights and Airport Revenue so long as the airport is used as an airport.

C. Sponsor Certification.

The sponsor hereby assures and certifies, with respect to this grant that:

1. General Federal Requirements

It will comply with all applicable Federal laws, regulations, executive orders, policies, guidelines, and requirements as they relate to the application, acceptance, and use of Federal funds for this Grant including but not limited to the following:

FEDERAL LEGISLATION

a. 49 U.S.C. subtitle VII, as amended.
b. Davis-Bacon Act, as amended — 40 U.S.C. §§ 3141-3144, 3146, and 3147, et seq.[1]
c. Federal Fair Labor Standards Act – 29 U.S.C. § 201, et seq.
d. Hatch Act – 5 U.S.C. § 1501, et seq.[2]
e. Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, 42 U.S.C. § 4601, et seq.[1, 2]
f. National Historic Preservation Act of 1966 – Section 106 – 54 U.S.C. § 306108.[1]
g. Archeological and Historic Preservation Act of 1974 – 54 U.S.C. § 312501, et seq.[1]
h. Native Americans Grave Repatriation Act – 25 U.S.C. § 3001, et seq.
i. Clean Air Act, P.L. 90-148, as amended – 42 U.S.C. § 7401, et seq.
j. Coastal Zone Management Act, P.L. 92-583, as amended – 16 U.S.C. § 1451, et seq.
k. Flood Disaster Protection Act of 1973 – Section 102(a) - 42 U.S.C. § 4012a.[1]
l. 49 U.S.C. § 303, (formerly known as Section 4(f)).
m. Rehabilitation Act of 1973 – 29 U.S.C. § 794.
n. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin).
o. Americans with Disabilities Act of 1990, as amended, (42 U.S.C. § 12101 et seq.) (prohibits discrimination on the basis of disability).
p. Age Discrimination Act of 1975 – 42 U.S.C. § 6101, et seq.
q. American Indian Religious Freedom Act, P.L. 95-341, as amended.
r. Architectural Barriers Act of 1968, as amended – 42 U.S.C. § 4151, et seq.[1]
s. Powerplant and Industrial Fuel Use Act of 1978 – Section 403 – 42 U.S.C. § 8373.[1]
t. Contract Work Hours and Safety Standards Act – 40 U.S.C. § 3701, et seq.[1]
u. Copeland Anti-kickback Act – 18 U.S.C. § 874.[1]

v. National Environmental Policy Act of 1969 – 42 U.S.C. § 4321, et seq.[1]

w. Wild and Scenic Rivers Act, P.L. 90-542, as amended – 16 U.S.C. § 1271, et seq.

x. Single Audit Act of 1984 – 31 U.S.C. § 7501, et seq.[2]

y. Drug-Free Workplace Act of 1988 – 41 U.S.C. §§ 8101 through 8105.

z. The Federal Funding Accountability and Transparency Act of 2006, as amended (P.L. 109-282, as amended by section 6202 of P.L. 110-252).

aa. Civil Rights Restoration Act of 1987, P.L. 100-259.

bb. Build America, Buy America Act, P.L. 117-58, Title IX.

EXECUTIVE ORDERS

a. Executive Order 11246 – Equal Employment Opportunity[1]

b. Executive Order 11990 – Protection of Wetlands

c. Executive Order 11998 – Flood Plain Management

d. Executive Order 12372 – Intergovernmental Review of Federal Programs

e. Executive Order 12699 – Seismic Safety of Federal and Federally Assisted New Building Construction[1]

f. Executive Order 12898 – Environmental Justice

g. Executive Order 13166 – Improving Access to Services for Persons with Limited English Proficiency

h. Executive Order 13985 – Executive Order on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government

i. Executive Order 13988 – Preventing and Combating Discrimination on the Basis of Gender Identity or Sexual Orientation

j. Executive Order 14005 – Ensuring the Future is Made in all of America by All of America's Workers

k. Executive Order 14008 – Tackling the Climate Crisis at Home and Abroad

FEDERAL REGULATIONS

a. 2 CFR Part 180 – OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement).

b. 2 CFR Part 200 – Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards. [4, 5]

c. 2 CFR Part 1200 – Nonprocurement Suspension and Debarment.

d. 14 CFR Part 13 – Investigative and Enforcement Procedures.

e. 14 CFR Part 16 – Rules of Practice for Federally-Assisted Airport Enforcement Proceedings.

f. 14 CFR Part 150 – Airport Noise Compatibility Planning.

g. 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services.

h. 28 CFR § 50.3 – U.S. Department of Justice Guidelines for the Enforcement of Title VI of the Civil Rights Act of 1964.

i. 29 CFR Part 1 – Procedures for Predetermination of Wage Rates.[1]

j. 29 CFR Part 3 – Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States.[1]

k. 29 CFR Part 5 – Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction (Also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act).[1]

l. 41 CFR Part 60 – Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor (Federal and Federally-assisted contracting requirements).[1]

m. 49 CFR Part 20 – New Restrictions on Lobbying.

n. 49 CFR Part 21 – Nondiscrimination in Federally-Assisted Programs of the Department of Transportation - Effectuation of Title VI of the Civil Rights Act of 1964.

o. 49 CFR Part 23 – Participation by Disadvantage Business Enterprise in Airport Concessions.

p. 49 CFR Part 24 – Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally-Assisted Programs.[1, 2]

q. 49 CFR Part 26 – Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs.

r. 49 CFR Part 27 – Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance.[1]

s. 49 CFR Part 28 – Enforcement of Nondiscrimination on the Basis of Handicap in Programs or Activities Conducted by the Department of Transportation.

t. 49 CFR Part 30 – Denial of Public Works Contracts to Suppliers of Goods and Services of Countries That Deny Procurement Market Access to U.S. Contractors.

u. 49 CFR Part 32 – Governmentwide Requirements for Drug-Free Workplace (Financial Assistance).

v. 49 CFR Part 37 – Transportation Services for Individuals with Disabilities (ADA).

w. 49 CFR Part 38 – Americans with Disabilities Act (ADA) Accessibility Specifications for Transportation Vehicles.

x. 49 CFR Part 41 – Seismic Safety.

FOOTNOTES TO ASSURANCE (C)(1)

[1] These laws do not apply to airport planning sponsors.

[2] These laws do not apply to private sponsors.

[3] 2 CFR Part 200 contains requirements for State and Local Governments receiving Federal assistance. Any requirement levied upon State and Local Governments by this regulation shall

apply where applicable to private sponsors receiving Federal assistance under Title 49, United States Code.

[4] Cost principles established in 2 CFR part 200 subpart E must be used as guidelines for determining the eligibility of specific types of expenses.

[5] Audit requirements established in 2 CFR part 200 subpart F are the guidelines for audits.

SPECIFIC ASSURANCES

Specific assurances required to be included in grant agreements by any of the above laws, regulations or circulars are incorporated by reference in this Grant Agreement.

2. Responsibility and Authority of the Sponsor.

a. Public Agency Sponsor:

It has legal authority to apply for this Grant, and to finance and carry out the proposed project; that a resolution, motion or similar action has been duly adopted or passed as an official act of the applicant's governing body authorizing the filing of the application, including all understandings and assurances contained therein, and directing and authorizing the person identified as the official representative of the applicant to act in connection with the application and to provide such additional information as may be required.

b. Private Sponsor:

It has legal authority to apply for this Grant and to finance and carry out the proposed project and comply with all terms, conditions, and assurances of this Grant Agreement. It shall designate an official representative and shall in writing direct and authorize that person to file this application, including all understandings and assurances contained therein; to act in connection with this application; and to provide such additional information as may be required.

3. Sponsor Fund Availability.

It has sufficient funds available for that portion of the project costs which are not to be paid by the United States. It has sufficient funds available to assure operation and maintenance of items funded under this Grant Agreement which it will own or control.

4. Good Title.

a. It, a public agency or the Federal government, holds good title, satisfactory to the Secretary, to the landing area of the airport or site thereof, or will give assurance satisfactory to the Secretary that good title will be acquired.

b. For noise compatibility program projects to be carried out on the property of the sponsor, it holds good title satisfactory to the Secretary to that portion of the property upon which Federal funds will be expended or will give assurance to the Secretary that good title will be obtained.

5. Preserving Rights and Powers.

a. It will not take or permit any action which would operate to deprive it of any of the rights and powers necessary to perform any or all of the terms, conditions, and assurances in this Grant Agreement without the written approval of the Secretary, and will act promptly to acquire, extinguish or modify any outstanding rights or claims of right of others which would interfere

with such performance by the sponsor. This shall be done in a manner acceptable to the Secretary.

b. Subject to the FAA Act of 2018, Public Law 115-254, Section 163, it will not sell, lease, encumber, or otherwise transfer or dispose of any part of its title or other interests in the property shown on Exhibit A to this application or, for a noise compatibility program project, that portion of the property upon which Federal funds have been expended, for the duration of the terms, conditions, and assurances in this Grant Agreement without approval by the Secretary. If the transferee is found by the Secretary to be eligible under Title 49, United States Code, to assume the obligations of this Grant Agreement and to have the power, authority, and financial resources to carry out all such obligations, the sponsor shall insert in the contract or document transferring or disposing of the sponsor's interest, and make binding upon the transferee all of the terms, conditions, and assurances contained in this Grant Agreement.

c. For all noise compatibility program projects which are to be carried out by another unit of local government or are on property owned by a unit of local government other than the sponsor, it will enter into an agreement with that government. Except as otherwise specified by the Secretary, that agreement shall obligate that government to the same terms, conditions, and assurances that would be applicable to it if it applied directly to the FAA for a grant to undertake the noise compatibility program project. That agreement and changes thereto must be satisfactory to the Secretary. It will take steps to enforce this agreement against the local government if there is substantial non-compliance with the terms of the agreement.

d. For noise compatibility program projects to be carried out on privately owned property, it will enter into an agreement with the owner of that property which includes provisions specified by the Secretary. It will take steps to enforce this agreement against the property owner whenever there is substantial non-compliance with the terms of the agreement.

e. If the sponsor is a private sponsor, it will take steps satisfactory to the Secretary to ensure that the airport will continue to function as a public-use airport in accordance with these assurances for the duration of these assurances.

f. If an arrangement is made for management and operation of the airport by any agency or person other than the sponsor or an employee of the sponsor, the sponsor will reserve sufficient rights and authority to ensure that the airport will be operated and maintained in accordance with Title 49, United States Code, the regulations and the terms, conditions and assurances in this Grant Agreement and shall ensure that such arrangement also requires compliance therewith.

g. Sponsors of commercial service airports will not permit or enter into any arrangement that results in permission for the owner or tenant of a property used as a residence, or zoned for residential use, to taxi an aircraft between that property and any location on airport. Sponsors of general aviation airports entering into any arrangement that results in permission for the owner of residential real property adjacent to or near the airport must comply with the requirements of Sec. 136 of Public Law 112-95 and the sponsor assurances.

6. Consistency with Local Plans.

The project is reasonably consistent with plans (existing at the time of submission of this application) of public agencies that are authorized by the State in which the project is located to plan for the development of the area surrounding the airport.

7. Consideration of Local Interest.

It has given fair consideration to the interest of communities in or near where the project may be located.

8. Consultation with Users.

In making a decision to undertake any airport development project under Title 49, United States Code, it has undertaken reasonable consultations with affected parties using the airport at which project is proposed.

9. Public Hearings.

In projects involving the location of an airport, an airport runway, or a major runway extension, it has afforded the opportunity for public hearings for the purpose of considering the economic, social, and environmental effects of the airport or runway location and its consistency with goals and objectives of such planning as has been carried out by the community and it shall, when requested by the Secretary, submit a copy of the transcript of such hearings to the Secretary. Further, for such projects, it has on its management board either voting representation from the communities where the project is located or has advised the communities that they have the right to petition the Secretary concerning a proposed project.

10. Metropolitan Planning Organization.

In projects involving the location of an airport, an airport runway, or a major runway extension at a medium or large hub airport, the sponsor has made available to and has provided upon request to the metropolitan planning organization in the area in which the airport is located, if any, a copy of the proposed amendment to the airport layout plan to depict the project and a copy of any airport master plan in which the project is described or depicted.

11. Pavement Preventive Maintenance-Management.

With respect to a project approved after January 1, 1995, for the replacement or reconstruction of pavement at the airport, it assures or certifies that it has implemented an effective airport pavement maintenance-management program and it assures that it will use such program for the useful life of any pavement constructed, reconstructed or repaired with Federal financial assistance at the airport. It will provide such reports on pavement condition and pavement management programs as the Secretary determines may be useful.

12. Terminal Development Prerequisites.

For projects which include terminal development at a public use airport, as defined in Title 49, it has, on the date of submittal of the project grant application, all the safety equipment required for certification of such airport under 49 U.S.C. § 44706, and all the security equipment required by rule or regulation, and has provided for access to the passenger enplaning and deplaning area of such airport to passengers enplaning and deplaning from aircraft other than air carrier aircraft.

13. Accounting System, Audit, and Record Keeping Requirements.

a. It shall keep all project accounts and records which fully disclose the amount and disposition by the recipient of the proceeds of this Grant, the total cost of the project in connection with which this Grant is given or used, and the amount or nature of that portion of the cost of the project supplied by other sources, and such other financial records pertinent to the project. The

accounts and records shall be kept in accordance with an accounting system that will facilitate an effective audit in accordance with the Single Audit Act of 1984.

b. It shall make available to the Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, for the purpose of audit and examination, any books, documents, papers, and records of the recipient that are pertinent to this Grant. The Secretary may require that an appropriate audit be conducted by a recipient. In any case in which an independent audit is made of the accounts of a sponsor relating to the disposition of the proceeds of a grant or relating to the project in connection with which this Grant was given or used, it shall file a certified copy of such audit with the Comptroller General of the United States not later than six (6) months following the close of the fiscal year for which the audit was made.

14. Minimum Wage Rates.

It shall include, in all contracts in excess of $2,000 for work on any projects funded under this Grant Agreement which involve labor, provisions establishing minimum rates of wages, to be predetermined by the Secretary of Labor under 40 U.S.C. §§ 3141-3144, 3146, and 3147, Public Building, Property, and Works), which contractors shall pay to skilled and unskilled labor, and such minimum rates shall be stated in the invitation for bids and shall be included in proposals or bids for the work.

15. Veteran's Preference.

It shall include in all contracts for work on any project funded under this Grant Agreement which involve labor, such provisions as are necessary to insure that, in the employment of labor (except in executive, administrative, and supervisory positions), preference shall be given to Vietnam era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns owned and controlled by disabled veterans as defined in 49 U.S.C. § 47112. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

16. Conformity to Plans and Specifications.

It will execute the project subject to plans, specifications, and schedules approved by the Secretary. Such plans, specifications, and schedules shall be submitted to the Secretary prior to commencement of site preparation, construction, or other performance under this Grant Agreement, and, upon approval of the Secretary, shall be incorporated into this Grant Agreement. Any modification to the approved plans, specifications, and schedules shall also be subject to approval of the Secretary, and incorporated into this Grant Agreement.

17. Construction Inspection and Approval.

It will provide and maintain competent technical supervision at the construction site throughout the project to assure that the work conforms to the plans, specifications, and schedules approved by the Secretary for the project. It shall subject the construction work on any project contained in an approved project application to inspection and approval by the Secretary and such work shall be in accordance with regulations and procedures prescribed by the Secretary. Such regulations and procedures shall require such cost and progress reporting by the sponsor or sponsors of such project as the Secretary shall deem necessary.

18. Planning Projects.

In carrying out planning projects:

a. It will execute the project in accordance with the approved program narrative contained in the project application or with the modifications similarly approved.

b. It will furnish the Secretary with such periodic reports as required pertaining to the planning project and planning work activities.

c. It will include in all published material prepared in connection with the planning project a notice that the material was prepared under a grant provided by the United States.

d. It will make such material available for examination by the public, and agrees that no material prepared with funds under this project shall be subject to copyright in the United States or any other country.

e. It will give the Secretary unrestricted authority to publish, disclose, distribute, and otherwise use any of the material prepared in connection with this grant.

f. It will grant the Secretary the right to disapprove the sponsor's employment of specific consultants and their subcontractors to do all or any part of this project as well as the right to disapprove the proposed scope and cost of professional services.

g. It will grant the Secretary the right to disapprove the use of the sponsor's employees to do all or any part of the project.

h. It understands and agrees that the Secretary's approval of this project grant or the Secretary's approval of any planning material developed as part of this grant does not constitute or imply any assurance or commitment on the part of the Secretary to approve any pending or future application for a Federal airport grant.

19. Operation and Maintenance.

a. The airport and all facilities which are necessary to serve the aeronautical users of the airport, other than facilities owned or controlled by the United States, shall be operated at all times in a safe and serviceable condition and in accordance with the minimum standards as may be required or prescribed by applicable Federal, state, and local agencies for maintenance and operation. It will not cause or permit any activity or action thereon which would interfere with its use for airport purposes. It will suitably operate and maintain the airport and all facilities thereon or connected therewith, with due regard to climatic and flood conditions. Any proposal to temporarily close the airport for non-aeronautical purposes must first be approved by the Secretary. In furtherance of this assurance, the sponsor will have in effect arrangements for:

   1. Operating the airport's aeronautical facilities whenever required;

   2. Promptly marking and lighting hazards resulting from airport conditions, including temporary conditions; and

   3. Promptly notifying pilots of any condition affecting aeronautical use of the airport. Nothing contained herein shall be construed to require that the airport be operated for aeronautical use during temporary periods when snow, flood, or other climatic conditions interfere with such operation and maintenance. Further, nothing herein shall be construed as requiring the maintenance, repair, restoration, or replacement of any structure or

facility which is substantially damaged or destroyed due to an act of God or other condition or circumstance beyond the control of the sponsor.

b. It will suitably operate and maintain noise compatibility program items that it owns or controls upon which Federal funds have been expended.

20. Hazard Removal and Mitigation.

It will take appropriate action to assure that such terminal airspace as is required to protect instrument and visual operations to the airport (including established minimum flight altitudes) will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards.

21. Compatible Land Use.

It will take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft. In addition, if the project is for noise compatibility program implementation, it will not cause or permit any change in land use, within its jurisdiction, that will reduce its compatibility, with respect to the airport, of the noise compatibility program measures upon which Federal funds have been expended.

22. Economic Nondiscrimination.

a. It will make the airport available as an airport for public use on reasonable terms and without unjust discrimination to all types, kinds and classes of aeronautical activities, including commercial aeronautical activities offering services to the public at the airport.

b. In any agreement, contract, lease, or other arrangement under which a right or privilege at the airport is granted to any person, firm, or corporation to conduct or to engage in any aeronautical activity for furnishing services to the public at the airport, the sponsor will insert and enforce provisions requiring the contractor to:

   1. Furnish said services on a reasonable, and not unjustly discriminatory, basis to all users thereof, and

   2. Charge reasonable, and not unjustly discriminatory, prices for each unit or service, provided that the contractor may be allowed to make reasonable and nondiscriminatory discounts, rebates, or other similar types of price reductions to volume purchasers.

c. Each fixed-based operator at the airport shall be subject to the same rates, fees, rentals, and other charges as are uniformly applicable to all other fixed-based operators making the same or similar uses of such airport and utilizing the same or similar facilities.

d. Each air carrier using such airport shall have the right to service itself or to use any fixed-based operator that is authorized or permitted by the airport to serve any air carrier at such airport.

e. Each air carrier using such airport (whether as a tenant, non-tenant, or subtenant of another air carrier tenant) shall be subject to such nondiscriminatory and substantially comparable rules, regulations, conditions, rates, fees, rentals, and other charges with respect to facilities directly and substantially related to providing air transportation as are applicable to all such air carriers which make similar use of such airport and utilize similar facilities, subject to reasonable

classifications such as tenants or non-tenants and signatory carriers and non-signatory carriers. Classification or status as tenant or signatory shall not be unreasonably withheld by any airport provided an air carrier assumes obligations substantially similar to those already imposed on air carriers in such classification or status.

f. It will not exercise or grant any right or privilege which operates to prevent any person, firm, or corporation operating aircraft on the airport from performing any services on its own aircraft with its own employees (including, but not limited to maintenance, repair, and fueling) that it may choose to perform.

g. In the event the sponsor itself exercises any of the rights and privileges referred to in this assurance, the services involved will be provided on the same conditions as would apply to the furnishing of such services by commercial aeronautical service providers authorized by the sponsor under these provisions.

h. The sponsor may establish such reasonable, and not unjustly discriminatory, conditions to be met by all users of the airport as may be necessary for the safe and efficient operation of the airport.

i. The sponsor may prohibit or limit any given type, kind or class of aeronautical use of the airport if such action is necessary for the safe operation of the airport or necessary to serve the civil aviation needs of the public.

23. Exclusive Rights.

It will permit no exclusive right for the use of the airport by any person providing, or intending to provide, aeronautical services to the public. For purposes of this paragraph, the providing of the services at an airport by a single fixed-based operator shall not be construed as an exclusive right if both of the following apply:

a. It would be unreasonably costly, burdensome, or impractical for more than one fixed-based operator to provide such services, and

b. If allowing more than one fixed-based operator to provide such services would require the reduction of space leased pursuant to an existing agreement between such single fixed-based operator and such airport. It further agrees that it will not, either directly or indirectly, grant or permit any person, firm, or corporation, the exclusive right at the airport to conduct any aeronautical activities, including, but not limited to charter flights, pilot training, aircraft rental and sightseeing, aerial photography, crop dusting, aerial advertising and surveying, air carrier operations, aircraft sales and services, sale of aviation petroleum products whether or not conducted in conjunction with other aeronautical activity, repair and maintenance of aircraft, sale of aircraft parts, and any other activities which because of their direct relationship to the operation of aircraft can be regarded as an aeronautical activity, and that it will terminate any exclusive right to conduct an aeronautical activity now existing at such an airport before the grant of any assistance under Title 49, United States Code.

24. Fee and Rental Structure.

It will maintain a fee and rental structure for the facilities and services at the airport which will make the airport as self-sustaining as possible under the circumstances existing at the particular airport, taking into account such factors as the volume of traffic and economy of collection. No part of the Federal share of an airport development, airport planning or noise compatibility project for

which a Grant is made under Title 49, United States Code, the Airport and Airway Improvement Act of 1982, the Federal Airport Act or the Airport and Airway Development Act of 1970 shall be included in the rate basis in establishing fees, rates, and charges for users of that airport.

25. Airport Revenues.

a. All revenues generated by the airport and any local taxes on aviation fuel established after December 30, 1987, will be expended by it for the capital or operating costs of the airport; the local airport system; or other local facilities which are owned or operated by the owner or operator of the airport and which are directly and substantially related to the actual air transportation of passengers or property; or for noise mitigation purposes on or off the airport. The following exceptions apply to this paragraph:

   1. If covenants or assurances in debt obligations issued before September 3, 1982, by the owner or operator of the airport, or provisions enacted before September 3, 1982, in governing statutes controlling the owner or operator's financing, provide for the use of the revenues from any of the airport owner or operator's facilities, including the airport, to support not only the airport but also the airport owner or operator's general debt obligations or other facilities, then this limitation on the use of all revenues generated by the airport (and, in the case of a public airport, local taxes on aviation fuel) shall not apply.

   2. If the Secretary approves the sale of a privately owned airport to a public sponsor and provides funding for any portion of the public sponsor’s acquisition of land, this limitation on the use of all revenues generated by the sale shall not apply to certain proceeds from the sale. This is conditioned on repayment to the Secretary by the private owner of an amount equal to the remaining unamortized portion (amortized over a 20-year period) of any airport improvement grant made to the private owner for any purpose other than land acquisition on or after October 1, 1996, plus an amount equal to the federal share of the current fair market value of any land acquired with an airport improvement grant made to that airport on or after October 1, 1996.

   3. Certain revenue derived from or generated by mineral extraction, production, lease, or other means at a general aviation airport (as defined at 49 U.S.C. § 47102), if the FAA determines the airport sponsor meets the requirements set forth in Section 813 of Public Law 112-95.

b. As part of the annual audit required under the Single Audit Act of 1984, the sponsor will direct that the audit will review, and the resulting audit report will provide an opinion concerning, the use of airport revenue and taxes in paragraph (a), and indicating whether funds paid or transferred to the owner or operator are paid or transferred in a manner consistent with Title 49, United States Code and any other applicable provision of law, including any regulation promulgated by the Secretary or Administrator.

c. Any civil penalties or other sanctions will be imposed for violation of this assurance in accordance with the provisions of 49 U.S.C. § 47107.

26. Reports and Inspections.

It will:

a. submit to the Secretary such annual or special financial and operations reports as the Secretary may reasonably request and make such reports available to the public; make available to the

public at reasonable times and places a report of the airport budget in a format prescribed by the Secretary;

b. for airport development projects, make the airport and all airport records and documents affecting the airport, including deeds, leases, operation and use agreements, regulations and other instruments, available for inspection by any duly authorized agent of the Secretary upon reasonable request;

c. for noise compatibility program projects, make records and documents relating to the project and continued compliance with the terms, conditions, and assurances of this Grant Agreement including deeds, leases, agreements, regulations, and other instruments, available for inspection by any duly authorized agent of the Secretary upon reasonable request; and

d. in a format and time prescribed by the Secretary, provide to the Secretary and make available to the public following each of its fiscal years, an annual report listing in detail:

   1. all amounts paid by the airport to any other unit of government and the purposes for which each such payment was made; and

   2. all services and property provided by the airport to other units of government and the amount of compensation received for provision of each such service and property.

27. Use by Government Aircraft.

It will make available all of the facilities of the airport developed with Federal financial assistance and all those usable for landing and takeoff of aircraft to the United States for use by Government aircraft in common with other aircraft at all times without charge, except, if the use by Government aircraft is substantial, charge may be made for a reasonable share, proportional to such use, for the cost of operating and maintaining the facilities used. Unless otherwise determined by the Secretary, or otherwise agreed to by the sponsor and the using agency, substantial use of an airport by Government aircraft will be considered to exist when operations of such aircraft are in excess of those which, in the opinion of the Secretary, would unduly interfere with use of the landing areas by other authorized aircraft, or during any calendar month that:

a. Five (5) or more Government aircraft are regularly based at the airport or on land adjacent thereto; or

b. The total number of movements (counting each landing as a movement) of Government aircraft is 300 or more, or the gross accumulative weight of Government aircraft using the airport (the total movement of Government aircraft multiplied by gross weights of such aircraft) is in excess of five million pounds.

28. Land for Federal Facilities.

It will furnish without cost to the Federal Government for use in connection with any air traffic control or air navigation activities, or weather-reporting and communication activities related to air traffic control, any areas of land or water, or estate therein as the Secretary considers necessary or desirable for construction, operation, and maintenance at Federal expense of space or facilities for such purposes. Such areas or any portion thereof will be made available as provided herein within four months after receipt of a written request from the Secretary.

29. Airport Layout Plan.

a. Subject to the FAA Reauthorization Act of 2018, Public Law 115-254, Section 163, it will keep up to date at all times an airport layout plan of the airport showing:

1. boundaries of the airport and all proposed additions thereto, together with the boundaries of all offsite areas owned or controlled by the sponsor for airport purposes and proposed additions thereto;

2. the location and nature of all existing and proposed airport facilities and structures (such as runways, taxiways, aprons, terminal buildings, hangars and roads), including all proposed extensions and reductions of existing airport facilities;

3. the location of all existing and proposed non-aviation areas and of all existing improvements thereon; and

4. all proposed and existing access points used to taxi aircraft across the airport's property boundary.

Such airport layout plans and each amendment, revision, or modification thereof, shall be subject to the approval of the Secretary which approval shall be evidenced by the signature of a duly authorized representative of the Secretary on the face of the airport layout plan. The sponsor will not make or permit any changes or alterations in the airport or any of its facilities which are not in conformity with the airport layout plan as approved by the Secretary and which might, in the opinion of the Secretary, adversely affect the safety, utility or efficiency of the airport.

b. Subject to the FAA Reauthorization Act of 2018, Public Law 115-254, Section 163, if a change or alteration in the airport or the facilities is made which the Secretary determines adversely affects the safety, utility, or efficiency of any federally owned, leased, or funded property on or off the airport and which is not in conformity with the airport layout plan as approved by the Secretary, the owner or operator will, if requested, by the Secretary:

1. eliminate such adverse effect in a manner approved by the Secretary; or

2. bear all costs of relocating such property (or replacement thereof) to a site acceptable to the Secretary and all costs of restoring such property (or replacement thereof) to the level of safety, utility, efficiency, and cost of operation existing before the unapproved change in the airport or its facilities except in the case of a relocation or replacement of an existing airport facility due to a change in the Secretary's design standards beyond the control of the airport sponsor.

30. Civil Rights.

It will promptly take any measures necessary to ensure that no person in the United States shall, on the grounds of race, color, and national origin (including limited English proficiency) in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4); creed and sex (including sexual orientation and gender identity) per 49 U.S.C. § 47123 and related requirements; age per the Age Discrimination Act of 1975 and related requirements; or disability per the Americans with Disabilities Act of 1990 and related requirements, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in any program and activity conducted with, or benefiting from, funds received from this Grant.

a. Using the definitions of activity, facility, and program as found and defined in 49 CFR §§ 21.23(b) and 21.23(e), the sponsor will facilitate all programs, operate all facilities, or conduct all programs in compliance with all non-discrimination requirements imposed by or pursuant to these assurances.

b. Applicability

   1. Programs and Activities. If the sponsor has received a grant (or other federal assistance) for any of the sponsor's program or activities, these requirements extend to all of the sponsor's programs and activities.

   2. Facilities. Where it receives a grant or other federal financial assistance to construct, expand, renovate, remodel, alter, or acquire a facility, or part of a facility, the assurance extends to the entire facility and facilities operated in connection therewith.

   3. Real Property. Where the sponsor receives a grant or other Federal financial assistance in the form of, or for the acquisition of real property or an interest in real property, the assurance will extend to rights to space on, over, or under such property.

c. Duration.

   The sponsor agrees that it is obligated to this assurance for the period during which Federal financial assistance is extended to the program, except where the Federal financial assistance is to provide, or is in the form of, personal property, or real property, or interest therein, or structures or improvements thereon, in which case the assurance obligates the sponsor, or any transferee for the longer of the following periods:

   1. So long as the airport is used as an airport, or for another purpose involving the provision of similar services or benefits; or

   2. So long as the sponsor retains ownership or possession of the property.

d. Required Solicitation Language. It will include the following notification in all solicitations for bids, Requests For Proposals for work, or material under this Grant Agreement and in all proposals for agreements, including airport concessions, regardless of funding source:

   "The (**[Selection Criteria: Sponsor Name]**), in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders or offerors that it will affirmatively ensure that for any contract entered into pursuant to this advertisement, [select businesses, or disadvantaged business enterprises or airport concession disadvantaged business enterprises] will be afforded full and fair opportunity to submit bids in response to this invitation and no businesses will be discriminated against on the grounds of race, color, national origin (including limited English proficiency), creed, sex (including sexual orientation and gender identity), age, or disability in consideration for an award."

e. Required Contract Provisions.

   1. It will insert the non-discrimination contract clauses requiring compliance with the acts and regulations relative to non-discrimination in Federally-assisted programs of the Department of Transportation (DOT), and incorporating the acts and regulations into the contracts by reference in every contract or agreement subject to the non-discrimination in Federally-assisted programs of the DOT acts and regulations.

2. It will include a list of the pertinent non-discrimination authorities in every contract that is subject to the non-discrimination acts and regulations.

3. It will insert non-discrimination contract clauses as a covenant running with the land, in any deed from the United States effecting or recording a transfer of real property, structures, use, or improvements thereon or interest therein to a sponsor.

4. It will insert non-discrimination contract clauses prohibiting discrimination on the basis of race, color, national origin (including limited English proficiency), creed, sex (including sexual orientation and gender identity), age, or disability as a covenant running with the land, in any future deeds, leases, license, permits, or similar instruments entered into by the sponsor with other parties:

    a. For the subsequent transfer of real property acquired or improved under the applicable activity, project, or program; and

    b. For the construction or use of, or access to, space on, over, or under real property acquired or improved under the applicable activity, project, or program.

f. It will provide for such methods of administration for the program as are found by the Secretary to give reasonable guarantee that it, other recipients, sub-recipients, sub-grantees, contractors, subcontractors, consultants, transferees, successors in interest, and other participants of Federal financial assistance under such program will comply with all requirements imposed or pursuant to the acts, the regulations, and this assurance.

g. It agrees that the United States has a right to seek judicial enforcement with regard to any matter arising under the acts, the regulations, and this assurance.

31. Disposal of Land.

a. For land purchased under a grant for airport noise compatibility purposes, including land serving as a noise buffer, it will dispose of the land, when the land is no longer needed for such purposes, at fair market value, at the earliest practicable time. That portion of the proceeds of such disposition which is proportionate to the United States' share of acquisition of such land will be, at the discretion of the Secretary, (1) reinvested in another project at the airport, or (2) transferred to another eligible airport as prescribed by the Secretary. The Secretary shall give preference to the following, in descending order:

    1. Reinvestment in an approved noise compatibility project;

    2. Reinvestment in an approved project that is eligible for grant funding under 49 U.S.C. § 47117(e);

    3. Reinvestment in an approved airport development project that is eligible for grant funding under 49 U.S.C. §§ 47114, 47115, or 47117;

    4. Transfer to an eligible sponsor of another public airport to be reinvested in an approved noise compatibility project at that airport; or

    5. Payment to the Secretary for deposit in the Airport and Airway Trust Fund.

    If land acquired under a grant for noise compatibility purposes is leased at fair market value and consistent with noise buffering purposes, the lease will not be considered a disposal of the land. Revenues derived from such a lease may be used for an approved airport development

project that would otherwise be eligible for grant funding or any permitted use of airport revenue.

b. For land purchased under a grant for airport development purposes (other than noise compatibility), it will, when the land is no longer needed for airport purposes, dispose of such land at fair market value or make available to the Secretary an amount equal to the United States' proportionate share of the fair market value of the land. That portion of the proceeds of such disposition which is proportionate to the United States' share of the cost of acquisition of such land will, upon application to the Secretary, be reinvested or transferred to another eligible airport as prescribed by the Secretary. The Secretary shall give preference to the following, in descending order:

    1. Reinvestment in an approved noise compatibility project;
    2. Reinvestment in an approved project that is eligible for grant funding under 49 U.S.C. § 47117(e);
    3. Reinvestment in an approved airport development project that is eligible for grant funding under 49 U.S.C. §§ 47114, 47115, or 47117;
    4. Transfer to an eligible sponsor of another public airport to be reinvested in an approved noise compatibility project at that airport; or
    5. Payment to the Secretary for deposit in the Airport and Airway Trust Fund.

c. Land shall be considered to be needed for airport purposes under this assurance if (1) it may be needed for aeronautical purposes (including runway protection zones) or serve as noise buffer land, and (2) the revenue from interim uses of such land contributes to the financial self-sufficiency of the airport. Further, land purchased with a grant received by an airport operator or owner before December 31, 1987, will be considered to be needed for airport purposes if the Secretary or Federal agency making such grant before December 31, 1987, was notified by the operator or owner of the uses of such land, did not object to such use, and the land continues to be used for that purpose, such use having commenced no later than December 15, 1989.

d. Disposition of such land under (a), (b), or (c) will be subject to the retention or reservation of any interest or right therein necessary to ensure that such land will only be used for purposes which are compatible with noise levels associated with operation of the airport.

32. Engineering and Design Services.

If any phase of such project has received Federal funds under Chapter 471 subchapter 1 of Title 49 U.S.C., it will award each contract, or sub-contract for program management, construction management, planning studies, feasibility studies, architectural services, preliminary engineering, design, engineering, surveying, mapping or related services in the same manner as a contract for architectural and engineering services is negotiated under Chapter 11 of Title 40 U S.C., or an equivalent qualifications-based requirement prescribed for or by the sponsor of the airport.

33. Foreign Market Restrictions.

It will not allow funds provided under this Grant to be used to fund any project which uses any product or service of a foreign country during the period in which such foreign country is listed by

the United States Trade Representative as denying fair and equitable market opportunities for products and suppliers of the United States in procurement and construction.

34. Policies, Standards, and Specifications.

It will carry out any project funded under an Airport Improvement Program Grant in accordance with policies, standards, and specifications approved by the Secretary including, but not limited to, current FAA Advisory Circulars (https://www.faa.gov/airports/aip/media/aip-pfc-checklist.pdf) for AIP projects as of [Selection Criteria: Project Application Date].

35. Relocation and Real Property Acquisition.

a. It will be guided in acquiring real property, to the greatest extent practicable under State law, by the land acquisition policies in Subpart B of 49 CFR Part 24 and will pay or reimburse property owners for necessary expenses as specified in Subpart B.

b. It will provide a relocation assistance program offering the services described in Subpart C of 49 CFR Part 24 and fair and reasonable relocation payments and assistance to displaced persons as required in Subpart D and E of 49 CFR Part 24.

c. It will make available within a reasonable period of time prior to displacement, comparable replacement dwellings to displaced persons in accordance with Subpart E of 49 CFR Part 24.

36. Access By Intercity Buses.

The airport owner or operator will permit, to the maximum extent practicable, intercity buses or other modes of transportation to have access to the airport; however, it has no obligation to fund special facilities for intercity buses or for other modes of transportation.

37. Disadvantaged Business Enterprises.

The sponsor shall not discriminate on the basis of race, color, national origin, or sex, in the award and performance of any DOT-assisted contract covered by 49 CFR Part 26, or in the award and performance of any concession activity contract covered by 49 CFR Part 23. In addition, the sponsor shall not discriminate on the basis of race, color, national origin or sex in the administration of its Disadvantaged Business Enterprise (DBE) and Airport Concessions Disadvantaged Business Enterprise (ACDBE) programs or the requirements of 49 CFR Parts 23 and 26. The sponsor shall take all necessary and reasonable steps under 49 CFR Parts 23 and 26 to ensure nondiscrimination in the award and administration of DOT-assisted contracts, and/or concession contracts. The sponsor's DBE and ACDBE programs, as required by 49 CFR Parts 26 and 23, and as approved by DOT, are incorporated by reference in this agreement. Implementation of these programs is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the sponsor of its failure to carry out its approved program, the Department may impose sanctions as provided for under Parts 26 and 23 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. § 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C. §§ 3801-3809, 3812).

38. Hangar Construction.

If the airport owner or operator and a person who owns an aircraft agree that a hangar is to be constructed at the airport for the aircraft at the aircraft owner's expense, the airport owner or operator will grant to the aircraft owner for the hangar a long term lease that is subject to such terms and conditions on the hangar as the airport owner or operator may impose.

39. Competitive Access.

a. If the airport owner or operator of a medium or large hub airport (as defined in 49 U.S.C. § 47102) has been unable to accommodate one or more requests by an air carrier for access to gates or other facilities at that airport in order to allow the air carrier to provide service to the airport or to expand service at the airport, the airport owner or operator shall transmit a report to the Secretary that:

   1. Describes the requests;
   2. Provides an explanation as to why the requests could not be accommodated; and
   3. Provides a time frame within which, if any, the airport will be able to accommodate the requests.

b. Such report shall be due on either February 1 or August 1 of each year if the airport has been unable to accommodate the request(s) in the six month period prior to the applicable due date.

WAC 468-260-010 General. (1) Airport sponsors shall comply with these assurances pursuant to and for the purpose of carrying out the provisions of the state of Washington airport aid program grant agreements.

(2) Airport sponsors will submit these assurances as part of the project application requesting funds under the provisions of RCW 47.68.090. As used herein, the term "public agency sponsor" means any municipality or municipalities acting jointly or any Indian tribe recognized by the federal government or such tribes acting jointly in the planning, acquisition, construction, improvement, maintenance, or operation of an airport, owned or controlled, or to be owned or controlled by such municipality or municipalities or Indian tribe or tribes, to be held available for the general use of the public; the term "private sponsor" means any person or persons acting jointly in the planning, acquisition, construction, improvement, maintenance, or operation of an airport, owned or controlled, or to be owned or controlled by such person or persons, to be held available for the general use of the public; and the term "sponsor" includes both public agency sponsors and private sponsors.

(3) Upon a sponsor's acceptance of a grant offer by the department, these assurances are incorporated in and become part of the grant agreement.

[Statutory Authority: RCW 47.68.090. WSR 13-07-037, § 468-260-010, filed 3/14/13, effective 4/14/13.]

WAC 468-260-020 Duration and applicability. (1) **Washington airport aid program projects undertaken by a sponsor.** The terms, conditions, and assurances of this grant agreement shall remain in full force and effect throughout the useful life of the facilities developed or equipment acquired for an airport project, not to exceed twenty years from the date of acceptance of a grant offer of state funds for the project. However, there shall be no limit on the duration of the assurances regarding exclusive rights and airport revenue so long as the airport is used as an airport. There shall be no limit on the duration of the terms, conditions, and assurances with respect to real property acquired with state funds.

(2) **Airport planning undertaken by a sponsor.** Unless otherwise specified in this grant agreement, only Assurances C:1, 2, 3, 4, 6, 7, 8, 13, 20, 33, 34, and 35 apply to planning projects. The terms, conditions, and assurances of this grant agreement shall remain in full force and effect during the life of the project.

[Statutory Authority: RCW 47.68.090. WSR 13-07-037, § 468-260-020, filed 3/14/13, effective 4/14/13.]

WAC 468-260-030 Sponsor certification. The sponsor certifies, with respect to this grant that:

(1) **General state requirements.** It will comply with all applicable Washington state laws, regulations, executive orders, policies, guidelines, and requirements as they relate to the application, acceptance and use of state funds for this project including, but not limited to, the following:

(a) State legislation:

• Chapter 8.26 RCW (Relocation assistance—Real property acquisition policy)

• Chapter 27.34 RCW (State historical societies—Historic preservation)

• Chapter 27.44 RCW (Indian graves and records)

• Chapter 27.48 RCW (Preservation of historical materials)

• RCW 29A.84.620 (Hindering or bribing voter)

• Chapter 36.70A RCW (Growth management—Planning by selected counties and cities)

• Title 37 RCW (Federal areas—Indians)

• Chapter 39.12 RCW (Prevailing wages on public works)

• RCW 47.29.200 (Prevailing wages)

• RCW 47.68.280 (Investigations, hearings, etc.—Subpoenas—Compelling attendance)

• RCW 47.68.310 (Enforcement of aeronautics laws)

• Title 49 RCW (Labor regulations)

• Title 64 RCW (Real property and conveyances)

• Chapter 70.94 RCW (Washington Clean Air Act)

• Title 86 RCW (Flood control)

• Title 91 RCW (Waterways)

• Title 12 WAC (Transportation, department of (aeronautics commission))

• Title 18 WAC (Air pollution)

• Title 25 WAC (Archaeology and historic preservation, department of)

• WAC 330-01-050 (dispositions, metropolitan municipal corporations)

• Title 167 WAC (Drug abuse prevention office)

• Title 197 WAC (Ecology, department of (environmental policy, council on))

• Title 198 WAC (Environmental and land use hearings office)

• Title 199 WAC (Environmental hearings office (environmental and land use hearings board))

• Title 254 WAC (Historic preservation, advisory council on)

• Title 326 WAC (Minority and women's business enterprises, office of)

• Chapter 330-01 WAC (Procedures for corridor and design public hearings under RCW 35.58.273)

• Chapter 468-100 WAC (Uniform relocation assistance and real property acquisition)

• WAC 468-100-008 (Compliance with other laws and regulations)

• Title 357 WAC (Financial management, office of—State human resources director)

• Title 508 WAC (Ecology, department of (water resources))

(b) Executive orders:

• Governor's Executive Order 92-01 (Establishing Governor's Policy on a Drug-Free Work Place)

• Governor's Executive Order 96-04, Implementing the Americans with Disabilities Act and superseding Executive Order 93-03

• Governor's Executive Order 05-05 (Archaeological and Cultural Resources) Governor's Executive Order 11-01, superseding Executive Order 09-04, Amending Washington Council on Aerospace

• Governor's Executive Order 12-02 (Workforce Diversity and Inclusion)

(2) **General legal requirements.** It will comply with all applicable laws and ordinances, orders, guidelines, policies, directives, rules and regulations of municipal, county, and federal governmental authorities or regulatory agencies.

(3) **Responsibility and authority of the sponsor.**

(a) Public agency sponsor: It has legal authority to apply for this grant, and to finance and carry out the proposed project; that a resolution, motion or similar action has been duly adopted or passed as an official act of the applicant's governing body authorizing the filing of the application, including all understandings and assurances contained therein, and directing and authorizing the person identified as the official representative of the applicant to act in connection with the application and to provide such additional information as may be required.

(b) Private sponsor: It has legal authority to apply for this grant and to finance and carry out the proposed project and comply with all terms, conditions, and assurances of this grant agreement. It shall designate an official representative and shall in writing direct and authorize that person to file this application, including all understandings and assurances contained therein; to act in connection with this application; and to provide such additional information as may be required.

(4) **Sponsor fund availability.** It has sufficient funds available for the portion of the project which is not paid by the state of Washington. It has sufficient funds available to assure operation and maintenance of items funded under this grant agreement which it will own or control.

(5) **Good title.** It holds good title, satisfactory to the department, to the areas of the airport or site thereof necessary for aircraft takeoff and landing as well as those necessary for the movement of aircraft to and from the landing and takeoff areas, or gives assurances satisfactory to the department that good title will be acquired prior to accepting grant funds.

(6) **Preserving rights and powers.**

(a) It will not take or permit any action which would operate to deprive it of any of the rights and powers necessary to perform any or all of the terms, conditions, and assurances in this grant agreement without the written approval of the department, and will act promptly to acquire, extinguish or modify any outstanding rights or claims of right of others which would interfere with such performance by the sponsor. This shall be done in a manner acceptable to the department.

(b) It will not sell, lease, encumber, or otherwise transfer or dispose of any part of its title or other interests in the property associated with this application or that portion of the property upon which state funds have been expended, for the duration of the terms, conditions, and assurances in this grant agreement without approval by the department. If the transferee is found by the department to be eligible to assume the obligations of this grant agreement and to have the power, authority, and financial resources to carry out all such obligations, the sponsor shall insert in the contract or document

transferring or disposing of the sponsor's interest, and make binding upon the transferee all of the terms, conditions, and assurances contained in this grant agreement.

(c) If the sponsor is a private sponsor, it will, to the department's satisfaction, ensure that the airport will continue to function as a public-use airport in accordance with these assurances for the duration of these assurances.

(d) If an arrangement is made for management and operation of the airport by any agency or person other than the sponsor or an employee of the sponsor, the sponsor will, to the department's satisfaction, reserve and document in arrangements with said party sufficient rights and authority to ensure that the airport will be operated and maintained in accordance with the regulations and the terms, conditions, and assurances in this grant agreement and shall ensure that such arrangement also requires compliance therewith.

(e) Sponsors of commercial service airports will not permit or enter into any arrangement that allows an owner or tenant of a property used as a residence, or zoned for residential use, to taxi an aircraft between that property and any location on airport.

(f) Sponsors of general aviation airports entering into any arrangement that allows an owner of residential real property adjacent to or near the airport must comply with the requirements set forth in Section 136 of Public Law 112-95.

(7) **Consistency with local plans.** Certify, to the department's satisfaction, that the project is consistent with plans (existing at the time of submission of this application) of public agencies that are authorized to plan for the development of the area surrounding the airport.

(8) **Consideration of local interest.** Certify, to the department's satisfaction, that it considered the interest of communities in or near where the project is located.

(9) **Consultation with users.** Certify to the department's satisfaction that when it made a decision to undertake any project, that it consulted with affected parties using the airport.

(10) **Public hearings.** In projects involving the location of an airport, an airport runway, or a major runway extension, it held public hearings for the purpose of considering the economic, social, and environmental effects of the airport or runway location and its consistency with goals and objectives of such planning as has been carried out by the community and it shall, when requested by the department, submit a copy of the transcript of such hearings to the department. Further, for such projects, its management board contain(s/ed) either voting representation from the communities where the project is located or it advised communities that they have the right to petition the department concerning a proposed project.

(11) **Air and water quality standards.** In projects involving airport location, a major runway extension, or runway location, it will provide the department appropriate written certification that the project will be located, designed, constructed, and operated so as to comply with applicable federal, state, and local air and water quality standards. In any case where such standards have not been approved and where applicable air and water quality standards have been promulgated by the administrator of the Environmental Protection Agency, or the secretary of the Department of Ecology, certification shall be obtained. Notice of certification or refusal to certify shall be provided within sixty days after the project application has been received by the department.

(12) **Pavement preventive maintenance.** With respect to a project for the replacement or reconstruction of airport pavement, it assures or certifies to the department's satisfaction that it has implemented an effective airport pavement maintenance-management program and it assures that it will use such program for the useful life of any pavement constructed, reconstructed or repaired with state financial assistance at the airport. It will provide such reports on pavement condition and pavement management programs as the department determines may be useful.

(13) **Accounting system, audit, and recordkeeping requirements.**

(a) It shall keep all project accounts and records which fully disclose the amount and disposition of the proceeds of this grant, the total cost of the project in connection with which this grant is given or used, and the amount or nature of that portion of the cost of the project supplied by other sources, and such other financial records pertinent to the project. The accounts and records shall be kept in accordance with RCW 43.09.200 and the Washington state budgetary, accounting, and reporting system (BARS) manuals and financial reporting packages.

(b) It shall make available to the department and the Washington state auditor's office, or any of their duly authorized representatives, for the purpose of audit and examination, any books, documents, papers, and records of the recipient that are pertinent to this grant. The department may require that an appropriate audit be conducted by a recipient. In any case in which an independent audit is made of the accounts of a sponsor relating to the disposition of the proceeds of a grant or relating to the project in connection with which this grant was given or used, it shall file a certified copy of such audit with the department not later than six months following the close of the fiscal year for which the audit was made.

(14) **Wage rates.** It shall include in all contracts in excess of two thousand five hundred dollars, or as outlined in WAC 296-127-050, for work on any projects funded under this grant agreement which involve labor, provisions establishing minimum rates of wages under the Washington State Prevailing Wages on Public Works Act, chapter 39.12 RCW, which contractors shall pay to skilled and unskilled labor, and such minimum rates shall be stated in the invitation for bids and shall be included in proposals or bids for the work. This shall be documented by a statement of intent to pay prevailing wages and an affidavit of wages paid.

(15) **Nondiscrimination requirements.** It shall prohibit discrimination in all phases of contracted employment, contracting activities and training pursuant to Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, the Justice System Improvement Act of 1979, the Americans with Disabilities Act of 1990, the Civil Rights Restoration Act of 1987, 49 C.F.R. Part 21, chapter 49.60 RCW and other related laws and statutes.

(16) **Equal employment opportunity (EEO) responsibilities.** It shall comply with regulations relative to nondiscrimination in state-assisted programs of the department, which are herein incorporated by reference and made a part of this project. With regard to the work performed during the project, it shall not discriminate on the grounds of race, color, gender, creed, national origin, age, sexual orientation, gender identity, marital status, disability or veteran status in the selection and retention of contractors, consultants and service providers, including procurement of materials and leases of equipment.

(17) **Veteran's preference.** It shall include in all contracts for work on any project funded under this grant agreement which involve labor, such provisions as are necessary to ensure that, in the employment of labor (except in executive, administrative, and supervisory positions), preference shall be given to honorably discharged military personnel who are veterans of any war of the United States, or of any military campaign for which a campaign ribbon shall have been awarded, and their widows or widowers, shall be preferred for appointment and employment. Age, loss of limb, or other physical impairment, which does not in fact incapacitate, shall not be deemed to disqualify them, provided they possess the capacity necessary to discharge the duties of the position involved as defined in RCW 73.16.010. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

(18) **Conformity to plans and specifications.** It will execute the project subject to plans, specifications, and schedules approved by the department. Such plans, specifications, and schedules shall be submitted to the department prior to commencement of site preparation, construction, or other performance under this grant agreement, and, upon approval of the department, shall be incorporated into this grant agreement. Any modification to the approved plans, specifications, and schedules shall also be subject to approval of the department, and incorporated into this grant agreement.

(19) **Construction inspection and approval.** It will provide and maintain competent technical supervision at the construction site throughout the project to assure that the work conforms to the plans, specifications, and schedules approved by the department for the project. It shall subject the construction work on any project contained in an approved project application to inspection and approval by the department and such work shall be in accordance with regulations and procedures prescribed by the department. Such regulations and procedures shall require such cost and progress reporting by the sponsor or sponsors of such project as the department shall deem necessary.

(20) **Planning projects.** In carrying out planning projects:

(a) It will execute the project in accordance with the approved program narrative contained in the project application or with the modifications similarly approved by the department.

(b) It will furnish the department with reports pertaining to the planning project and planning work activities, as designated by the department.

(c) It will include in all published material prepared in connection with the planning project a notice that the material was prepared under a grant provided by the state of Washington.

(d) It will make all material prepared in connection with this grant available for examination by the public, and agrees that no material prepared with funds under this project shall be subject to copyright in the United States or any other country.

(e) It will give the department unrestricted authority to publish, disclose, distribute, and otherwise use any of the material prepared in connection with this grant.

(f) It will grant the department the right to disapprove the sponsor's selection of specific consultants and their subcontractors to do all or any part of projects funded by this grant as well as the right to disapprove the proposed scope and cost of professional services.

(g) It will grant the department the right to disapprove the use of the sponsor's employees to do all or any part of the project.

(h) It understands and agrees that the department's approval of this project grant or the department's approval of any planning material developed as part of this grant does not constitute or imply any assurance or commitment on the part of the department to approve any pending or future application for an airport aid grant.

(21) **Operation and maintenance.** The airport and all facilities which are necessary to serve the aeronautical users of the airport, other than facilities owned or controlled by the United States or the state of Washington, shall be operated at all times in a safe and serviceable condition and in accordance with the minimum standards as may be required or prescribed by applicable federal, state, and local agencies for maintenance and operation. It will not cause or permit any activity or action thereon which would interfere with its use for airport purposes. It will suitably operate and maintain the airport and all facilities thereon or connected therewith, with due regard to climatic and flood conditions. Any proposal to temporarily close the airport for nonaeronautical purposes must first be approved by the department. In furtherance of this assurance, the sponsor will have in effect arrangements for:

(a) Operating the airport's aeronautical facilities whenever required;

(b) Promptly marking and lighting hazards resulting from airport conditions, including temporary conditions; and

(c) Promptly notifying airmen of any condition affecting aeronautical use of the airport. Nothing contained herein shall be construed to require that the airport be operated for aeronautical use during temporary periods when snow, flood, or other climatic conditions interfere with such operation and maintenance. Further, nothing herein shall be construed as requiring the maintenance, repair, restoration, or replacement of any structure or facility which is substantially damaged or destroyed due to an act of God or other condition or circumstance beyond the control of the sponsor.

(22) **Hazard removal and mitigation.** It assures that such terminal airspace under the appropriate category of Federal Air Regulation Part 77, 14 C.F.R. 77, as is required to protect instrument and visual operations to the airport (including established minimum flight altitudes) will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards. Where hazards are on land owned by others, the sponsor will make every effort to coordinate with owners to mitigate airport hazards.

(23) **Compatible land use.** It shall, either by the acquisition and retention of property interest, in fee or easement, or by seeking enforcement of local zoning action, prevent the construction of any object which may constitute an incompatible land use such as residential encroachment, wildlife attractants, uses that emit smoke, steam, glare, or electromagnetic interference, and height hazards. Sponsor will take proactive measures to discourage incompatible land uses adjacent to the airport, to include a formal consultation with local jurisdictions on land use issues, and support and/or recommend land use regulations consistent with WSDOT best management practices found in WSDOT's *Airports and Compatible Land Use Guidebook*.

(24) **Economic nondiscrimination.**

(a) It will make the airport available as an airport for public use and without discrimination to all types, kinds and classes of aeronautical activities, including commercial aeronautical activities offering services to the public at the airport.

(b) In any agreement, contract, lease, or other arrangement under which a right or privilege at the airport is granted to any person, firm, or corporation to conduct or to engage in any aeronautical activity for furnishing services to the public at the airport, the sponsor will insert and enforce provisions requiring the contractor to:

(i) Furnish said services on a reasonable, nondiscriminatory, basis to all users thereof; and

(ii) Charge reasonable, and nondiscriminatory, prices for each unit or service, provided that the contractor may be allowed to make reasonable and nondiscriminatory discounts, rebates, or other similar types of price reductions to volume purchasers.

(c) Each fixed-based operator at the airport shall be subject to the same rates, fees, rentals, and other charges as are uniformly applicable to all other fixed-based operators making the same or similar uses of such airport and utilizing the same or similar facilities.

(d) Each air carrier using such airport shall have the right to service itself or to use any fixed-based operator that is authorized or permitted by the airport to serve any air carrier at such airport.

(e) Each air carrier using such airport (whether as a tenant, nontenant, or subtenant of another air carrier tenant) shall be subject to such nondiscriminatory and substantially comparable rules, regulations, conditions, rates, fees, rentals, and other charges with respect to facilities directly and substantially related to providing air transportation as are applicable to all such air carriers which make similar use of such airport and utilize similar facilities, subject to reasonable classifications such as tenants or nontenants and signatory carriers and nonsignatory carriers. Classification or status as tenant or signatory shall not be unreasonably withheld provided an air carrier assumes obligations substantially similar to those already imposed on air carriers in such classification or status.

(f) It will not exercise or grant any right or privilege which operates to prevent any person, firm, or corporation operating aircraft on the airport from performing any services on its own aircraft with its own employees (including, but not limited to, maintenance, repair, and fueling) that it may choose to perform. In the event the sponsor itself exercises any of the rights and privileges referred to in this assurance, the services involved will be provided on the same conditions as would apply to the furnishing of such services by commercial aeronautical service providers authorized by the sponsor under these provisions.

(g) The sponsor may establish such reasonable, and nondiscriminatory, conditions to be met by all users of the airport as may be necessary for the safe and efficient operation of the airport. The sponsor may prohibit or limit any given type, kind or class of aeronautical use of the airport if such action is necessary for the safe operation of the airport or necessary to serve the civil aviation needs of the public.

(25) **Exclusive rights.** It will not grant exclusive right for the use of the airport to any person(s) providing, or intending to provide, aeronautical services to the public. For purposes of this subsection, the providing of the services at an airport by a single fixed-based operator shall not be construed as an exclusive right if the following apply:

(a) It would be unreasonably costly, burdensome, or impractical for more than one fixed-based operator to provide such services;

(b) If allowing more than one fixed-based operator to provide such services would require the reduction of space leased pursuant to an existing agreement between such single fixed-based operator and such airport. It further agrees that it will not, either directly or indirectly, grant or permit any person, firm, or corporation, the exclusive right at the airport to conduct any aeronautical activities including, but not limited to, charter flights, pilot training, aircraft rental and sightseeing, aerial photography, crop dusting, aerial advertising and surveying, air carrier operations, aircraft sales and services, sale of aviation petroleum products whether or not conducted in conjunction with other aeronautical activity, repair and maintenance of aircraft, sale of aircraft parts, and any other activities which because of their direct relationship to the operation of aircraft can be regarded as an aeronautical activity, and that it will terminate any exclusive right to conduct an aeronautical activity existing at such an airport before the grant of any assistance under RCW 47.68.090; and

(c) It has received approval from the department.

(26) **Fee and rental structure.** It will maintain a competitive fee and rental structure for the facilities and services at the airport which will make the airport as self-sustaining as possible under the circumstances existing at the particular airport, taking into account factors such as the volume of traffic and economy of collection. No part of the state share of an airport development or airport planning project for which a grant is made under RCW 47.68.090 shall be included in the rate basis in establishing fees, rates, and charges for users of that airport.

(27) **Airport revenues.** All revenues generated by the airport and any local taxes established after December 30, 1987, on aviation fuel, will be expended by it for the capital or operating costs of the airport; the local airport system; or other local facilities which are owned or operated by the owner or operator of the airport and which are directly and substantially related to the actual air transportation of passengers or property; or for noise mitigation purposes on or off the airport. The following exceptions apply to this subsection:

(a) If covenants or assurances in debt obligations issued before September 3, 1982, by the owner or operator of the airport, or provisions enacted before September 3, 1982, in governing statutes controlling the owner or operator's financing, provide for the use of the revenues from any of the airport owner or operator's facilities, including the airport, to support not only the airport but also the airport owner or operator's general debt obligations or other facilities, then this limitation on the use of all revenues generated by the airport (and, in the case of a public airport, local taxes on aviation fuel) shall not apply.

(b) If the department approves the sale of a privately owned airport to a public sponsor and provides funding for any portion of the public sponsor's acquisition of land, this limitation on the use of all revenues generated by the sale shall not apply to certain proceeds from the sale. This is conditioned on repayment to the secretary by the private owner of an amount equal to the remaining unamortized portion (amortized over a twenty-year period) of any airport improvement grant made to the private owner for any purpose other than land acquisition on or after October 1, 1996, plus an amount equal to the federal share of the current fair market value of any land acquired

with an airport improvement grant made to that airport on or after October 1, 1996.

(c) When requested by the department, the sponsor will obtain an audit that will review, and the resulting audit report will provide an opinion concerning, the use of airport revenue and taxes, and indicate whether funds paid or transferred to the owner or operator were paid or transferred in a manner consistent with state law and any other applicable provision of law, including any regulation promulgated by the secretary. Any civil penalties or other sanctions will be imposed for violation of this assurance in accordance with state law.

(28) **Reports and inspections.** It will:

(a) Submit to the department such annual or special financial and operations reports as the department may request and make such reports available to the public; make available to the public at reasonable times and places a report of the airport budget in a format prescribed by the department; for airport development projects, make the airport and all airport records and documents affecting the airport, including deeds, leases, operation and use agreements, regulations and other instruments, available for inspection by any duly authorized agent of the department upon request;

(b) In a format and time prescribed by the department, provide to the department and make available to the public following each of its fiscal years, an annual report listing in detail:

(i) All amounts paid by the airport to any other unit of government and the purposes for which each such payment was made; and

(ii) All services and property provided by the airport to other units of government and the amount of compensation received for provision of each such service and property.

(29) **Use by government aircraft.** It will not charge the state or its agencies (except for those under contract), for limited but reasonable, nonroutine, search and rescue, law enforcement or public safety use of public landing and aircraft parking facilities. The sponsor may require written verification of an entity's official government business status, and notification prior to use of facilities.

(30) **Land for state facilities.** It will furnish without cost to the state of Washington for use in connection with any air traffic control or air navigation activities, or weather reporting and communication activities related to air traffic control, any areas of land or water, or estate therein, or for these same purposes, rights in buildings of the sponsor as the department considers necessary for construction, operation, and maintenance at state expense of space or facilities. Such areas or any portion thereof will be made available as provided herein within four months after receipt of a written request from the department.

(31) **Airport layout plan.**

(a) It will provide airport layout plans (ALPs) as prescribed in WSDOT's *Aviation Grant Procedures Manual*. It will keep up-to-date at all times an airport layout plan of the airport showing:

(i) Boundaries of the airport and all proposed additions thereto, together with the boundaries of all off-site areas owned or controlled by the sponsor for airport purposes and proposed additions thereto;

(ii) The location and nature of all existing and proposed airport facilities and structures (such as runways, taxiways, aprons, terminal buildings, hangars, and roads), including all proposed extensions and reductions of existing airport facilities;

(iii) The location of all existing and proposed nonaviation areas and of all existing improvements thereon; and

(iv) All proposed and existing access points used to taxi aircraft across the airport's property boundary. Such airport layout plans and each amendment, revision, or modification thereof, shall be subject to the approval of the department which approval shall be evidenced by the signature of a duly authorized representative of the department on the face of the airport layout plan. The sponsor will not make or permit any changes or alterations to the airport or any of its facilities which are not in conformity with the airport layout plan as approved by the department and which might, in the opinion of the department, adversely affect the safety, utility, or efficiency of the airport.

(b) If a change or alteration in the airport or the facilities is made which the department determines adversely affects the safety, utility, or efficiency of any state-owned, leased, or funded property on or off the airport and which is not in conformity with the airport layout plan as approved by the department, the owner or operator will, if requested, by the department.

(i) Eliminate such adverse effect in a manner approved by the department; or

(ii) Bear all costs of relocating such property (or replacement thereof) to a site acceptable to the department and all costs of restoring such property (or replacement thereof) to the level of safety, utility, efficiency, and cost of operation existing before the unapproved change in the airport or its facilities except in the case of a relocation or replacement of an existing airport facility due to a change in the department's design standards beyond the control of the airport sponsor.

(32) **Disposal of land.**

(a) For land purchased under a grant for airport development purposes, it will, when the land is no longer needed for airport purposes, dispose of such land at fair market value or make available to the department an amount equal to the states' proportionate share of the fair market value of the land. The portion of the proceeds proportionate to the states' share of the cost of acquisition of such land will, upon application to the department, be reinvested or transferred to another eligible airport as prescribed by the department. The department shall give preference to the following, in descending order:

(i) Payment to the state of Washington for deposit in the aeronautics account; or

(ii) Reinvestment in an approved project that is eligible for grant funding under RCW 47.68.090.

(b) Land shall be considered to be needed for airport purposes under this assurance if:

(i) It may be needed for aeronautical purposes (including runway protection zones) or serve as noise buffer land; and

(ii) The revenue from interim uses of such land contributes to the financial self-sufficiency of the airport.

(c) Disposition of such land will be subject to the retention or reservation of any interest or right therein necessary to ensure that such land will only be used for purposes which are compatible with noise levels associated with operation of the airport.

(33) **Engineering and design services.** It will award each contract, or subcontract for program management, construction management, planning studies, feasibility studies, architectural services, preliminary engineering, design, engineering, surveying, mapping or related services with respect to the project in the same manner as a contract for architectural and engineering services is negotiated under

WSDOT *Consultant Services Manual M-27-50.02* or an equivalent qualifications-based requirement prescribed for or by the sponsor of the airport.

(34) **Foreign market restrictions.** It will not allow funds provided under this grant to be used to fund any project which uses any product or service of a foreign country during the period in which such foreign country is listed by the United States trade representative as denying fair and equitable market opportunities for products and suppliers of the United States in procurement and construction. Sponsors are encouraged to "Buy American" whenever feasible and appropriate.

(35) **Policies, standards, and specifications.** It will carry out the project in accordance with policies, standards, and specifications approved by the department and included in this grant, and in accordance with applicable state policies, standards, and specifications.

(36) **Relocation and real property acquisition.** It will be guided in acquiring real property, to the greatest extent practicable under state law, by the land acquisition policies in RCW 8.26.180.

(37) **Disadvantaged business enterprises.** The recipient shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any department-assisted contract or in the administration of its DBE program or the requirements of Governor's Executive Order 12-02.

(38) **Hangar construction.** If the airport owner or operator and a person who owns an aircraft agree that a hangar is to be constructed at the airport for the aircraft at the aircraft owner's expense, the airport owner or operator will grant to the aircraft owner for the hangar a long-term lease that is subject to such terms and conditions on the hangar as the airport owner or operator may impose. For the purpose of this section, a long-term lease is defined as not to exceed fifty years.

[Statutory Authority: RCW 47.68.090. WSR 13-07-037, § 468-260-030, filed 3/14/13, effective 4/14/13.]

Appendix E

FAA Forecast Approval

U.S. Department
of Transportation
**Federal Aviation
Administration**

Northwest Mountain Region
Colorado · Idaho · Montana · Oregon · Utah
Washington · Wyoming

Seattle Airports District Office
2200 S 216th Street, Rm 1W-422
Des Moines, WA 98198

August 19, 2022

Mr. Shane Fisher
Director of Public Works
City of Sunnyside
818 E. Edison Avenue
Sunnyside, WA 98944

Sunnyside Municipal Airport, Washington
AIP: 3-53-0074-011-2021
Approval of Forecast

Dear Mr. Fisher:

The Federal Aviation Administration (FAA), Seattle Airports District Office has reviewed the aviation forecast for the Sunnyside Airport (1S5) Airport Layout Plan Update with narrative report, submitted July 7, 2022. The FAA approves these forecasts for airport planning purposes, including Airport Layout Plan (ALP) development. The FAA approval is based on the information submitted in Chapter 3 of the Master Plan Update, summarized as shown below:

Table 3-17: Forecast Summary

Activity	2021	2026	2031	2036	2041
Itinerant Operations					
General Aviation	2,590	2,731	2,880	3,037	3,208
Air Taxi (Fire & Medevac)	530	556	584	613	644
Military	50	50	50	50	50
Total Itinerant Operations	**3,170**	**3,337**	**3,514**	**3,700**	**3,902**
Local Operations	1,055	1,112	1,172	1,234	1,294
Total Local & Itinerant Operations	**4,225**	**4,449**	**4,686**	**4,934**	**5,196**

Forecast Summary

1S5 — Base Year: 2021

	Base Yr. Level	Base Yr.+1yr.	Base Yr.+5yrs.	Base Yr.+10yrs.	Base Yr.+15yrs.	Average Annual Compound Growth Rates: Base Yr. to +1	Base Yr. to +5	Base Yr. to +10	Base Yr. to +15
Operations									
Itinerant									
Air carrier	0	0	0	0	0	N/A	N/A	N/A	N/A
Commuter/air taxi	530	535	556	584	613	0.9%	1.0%	1.0%	1.0%
Total Commercial Operations	530	535	556	584	613	0.9%	1.0%	1.0%	1.0%
General aviation	2,590	2,618	2,732	2,880	3,037	1.1%	1.1%	1.1%	1.1%
Military	50	50	50	50	50	0.0%	0.0%	0.0%	0.0%
Local									
General aviation	1,055	1,066	1,112	1,172	1,234	1.0%	1.1%	1.1%	1.1%
Military	0	0	0	0	0	N/A	N/A	N/A	N/A
TOTAL OPERATIONS	4,225	4,269	4,450	4,686	4,934	1.0%	1.0%	1.0%	1.0%
Instrument Operations	**0**	**0**	**0**	**0**	**0**	N/A	N/A	N/A	N/A
Peak Hour Operations	**6**	**6**	**6**	**6**	**7**	0.0%	0.0%	0.0%	1.0%
Cargo/mail (enplaned + deplaned tons)	**0**	**0**	**0**	**0**	**0**	N/A	N/A	N/A	N/A
Based Aircraft									
Single Engine (Nonjet)	12	12	14	14	15	0.0%	3.1%	1.6%	1.5%
Multi Engine (Nonjet)	1	1	1	1	1	0.0%	0.0%	0.0%	0.0%
Jet Engine	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%
Helicopter	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%
Other	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%
TOTAL	13	13	15	15	16	0.0%	2.9%	1.4%	1.4%
GA Operations Per Based Aircraft	**325**	**328**	**297**	**312**	**308**	0.9%	-1.8%	-0.4%	-0.4%

Airport Planning and TAF Forecast Comparison				
	Year	Airport Forecast	TAF	AF/TAF (% Difference)
Total Operations				
Base yr.	2021	4,225	24,000	-82.4%
Base yr. + 5yrs.	2026	4,450	24,000	-81.5%
Base yr. + 10yrs.	2031	4,686	24,000	-80.5%
Base yr. + 15yrs.	2036	4,934	24,000	-79.4%

The FAA also approves the A-II (small) family of aircraft for the existing and A/B-II for the future critical aircraft. The forecast is supported by reasonable planning assumptions and current data. The forecast appears to be developed using acceptable forecasting methodologies.

This forecast was prepared during the impacts of COVID-19. The forecast approval is based on reference to the data and methodologies used and the conclusions at the time the document was prepared. However, consideration must still be given to the significant impacts of COVID-19 on aviation activity and the historical changes including the continuation of Sunnyside Municipal Airport; as a result, there is lower than normal confidence in future growth projections. FAA approval of the forecast does not provide justification to begin airport development.

Justification for future projects will be made based on activity levels at the time the project is requested for development, rather than this forecast approval. Further documentation of actual activity levels reaching the planning activity levels will be needed prior to FAA participation in funding for eligible projects. Further, the approved forecasts may be subject to additional analysis or the FAA may request a sensitivity analysis if this data is to be used for environmental or Part 150 noise planning purposes.

If you have questions, please call me at 206 231-3498

Sincerely,

AGNES O. FISHER

Digitally signed by AGNES O. FISHER
Date: 2022.08.19 15:54:21 -07'00'

Community Planner, SEA - 637
Seattle Airports District Office

Appendix F

NRA Notification

Federal Aviation Administration

January 03, 2024

TO:
Sunnyside Airport
Attn: Raul Sanchez -Public Works Director
City of Sunnyside
E. Edison Road
Sunnyside, WA 98944
rsanchez@sunnyside-wa.gov

CC:
Century West Engineering
Attn: Samantha Peterson
11707 E. Montgomery Drive
Spokane Valley, WA 99206
SPeterson@CenturyWest.com

RE: *(See attached Table 1 for referenced case(s))*
ALP 7460 No Objection Letter
FINAL DETERMINATION

Table 1 - Letter Referenced Case(s)

ASN	Prior ASN	Location	Latitude (NAD83)	Longitude (NAD83)	AGL (Feet)	AMSL (Feet)
2023-ANM-5501-NRA		SUNNYSIDE,WA	46-19-37.47N	119-58-13.30W	0	768

Description: Sunnyside Master Plan Update: -On Airport / Off Airport Land Use Plan updates with Land Acquisition and capital development projects. -RWY 25 end RPZ Improvement - Main Apron Reconstruction - Perimeter fence installation - AGIS + Obstruction analysis - Runway profiles updates

The proposed change to your currently approved Airport Layout Plan (ALP) submitted, 2023-11-29 00:00:00.0 has been reviewed under the authority of Part 77 and under the requirements of the Terms and Conditions of Accepting Airport Improvement Program Grants dated September 1, 1999. This review has considered the safety and utility of aircraft operations and planned navigational aids as related to this proposal.

The proposal does not exceed any federal obstruction standard and has no effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, we have no objection to this proposal.

It should be noted that this study did not consider the height of construction equipment. This information needs to be coordinated with this office via an "Airspace Study Checklist" before construction begins.

This study did not evaluate the plans for operational safety during construction. Those plans should be submitted to this office for coordination and review prior to construction.

This determination does not include any environmental analysis or environmental approval for this proposal. All local and state requirements and/or permits must be obtained to prior to construction of this proposal.

This determination does not include approval of any lease, does not release any surplus or grant agreement acquired airport property, nor does it relieve the airport owner or the proponent of compliance with Part 155, or any other law, ordinance, or regulation of federal, state, or local government body or organization. Furthermore,

the design and location of any stormwater retention/detention facilities on or near the airport must comply with FAA Advisory Circular 150/5200-33 "Hazardous Wildlife Attractants on or Near Airports", and must be approved on the ALP prior to construction.

We look forward to working with you in the continued development of your airport. If you have any questions, please contact me at (206) 231-3984, agnes.fisher@faa.gov.

Agnes Fisher
ADO
Signature Control No: 605816212-608627015

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