

# 2. Inventory

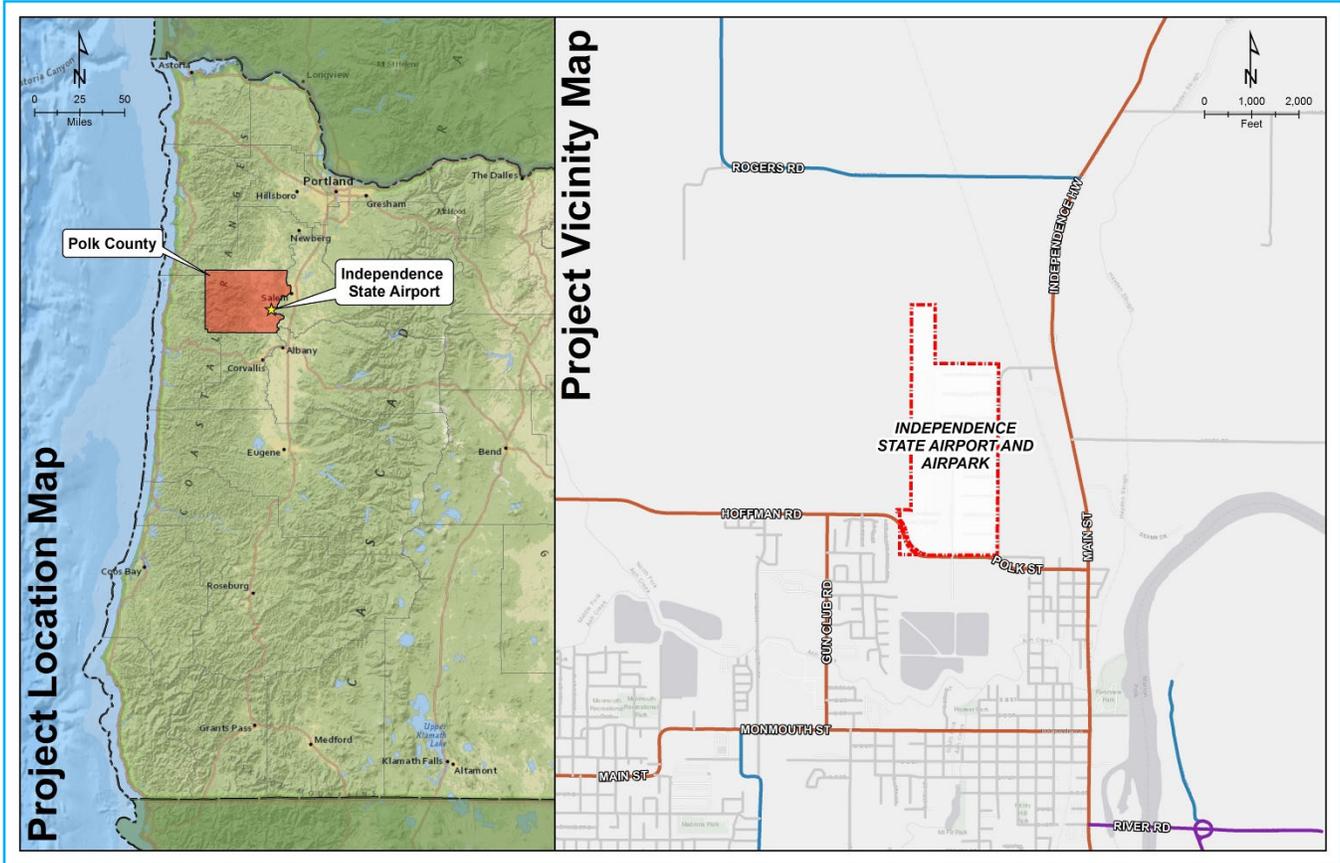


Figure 2A: Project Location and Vicinity Maps

## 2.1 Background Data

The City of Independence, is located approximately 10 miles south west of Salem and about 10 miles east of the foothills of the Coast Range. Independence State Airport is located in Oregon’s central Willamette Valley, to the east of Oregon Coastal Range, with peaks averaging 2,000-3,000 feet mean sea level (MSL). The Airport sits on the valley floor with a recorded elevation of 180 feet MSL. The City is located in Polk County and sits just west of the Willamette River. Access to the Airport is provided by two of the State’s primary transportation routes: Interstate 5 and Highway 99W. Exhibit 2A provides a location and vicinity map of Polk County and Independence State Airport.

### 2.1.1 Climate and Weather

Independence experiences mild, wet winters and moderate, dry summers (Figures 2B and 2C). The

average annual participation is 45 inches, with less than 5 inches of snow. November through February is when majority of the precipitation falls. The number of days with any measurable precipitation is 91. The mean maximum temperature of 84 degrees F is in August (Figure 2D). Prevailing winds are typically out of the south or north (Figure 2E).

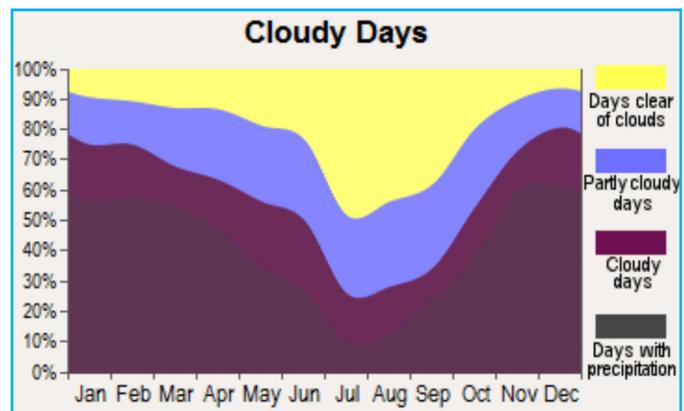


Figure 2B: Cloudy Days

### 2.1.2 Airport History

The history of Independence State Airport can be traced back to 1959 and the preparation for the Centennial anniversary of the statehood of Oregon. Due to the large volume of people expected to descend on the state, and specifically the City of Independence, the temporary landing strip for small planes was laid out in a grass seed field of a local farmer.

The beginnings of the Airport, as we know it today, began in 1961 with initial discussions with local, state, and federal officials. The current site was selected in 1962, land was purchased in 1963, and construction began in 1964 and ended in 1965. The Airport began as a turf aggregate runway used mainly by local pilots and agricultural applicators.

Improvements continued through the next several decades and included the Airport’s first Fixed Base Operator in the late 1960’s, construction of a paved runway in 1975, and development of the Independence Airpark in 1974 with 2 additional airpark annexes in 1992 and 1994. Since 1994, the Airport and Airpark have grown steadily at the rate 1-2 hangars per year on the Airport and 5-6 hangar homes per year on the Airpark (Figure 2F).

Recent improvements have been primarily focused on landside facilities including the addition of a second FBO, extension of the Experimental Aircraft Association (EAA) building, and additional hangar development and renovation.

### 2.1.3 Community Data

The following section provides a brief overview of the community’s existing conditions by providing a summary of select socio- economic data and a cursory review of relevant local planning studies and other relevant reports and documents. While there are numerous studies relevant to Polk County, The City of Independence, Independence State Airport, and the additional information presented throughout this master plan, a few select studies and documents providing pertinent information to the Independence State Airport and this master plan are summarized here.

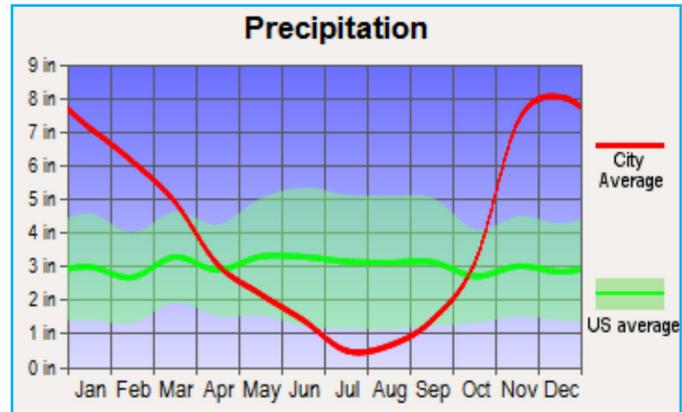


Figure 2C: Precipitation

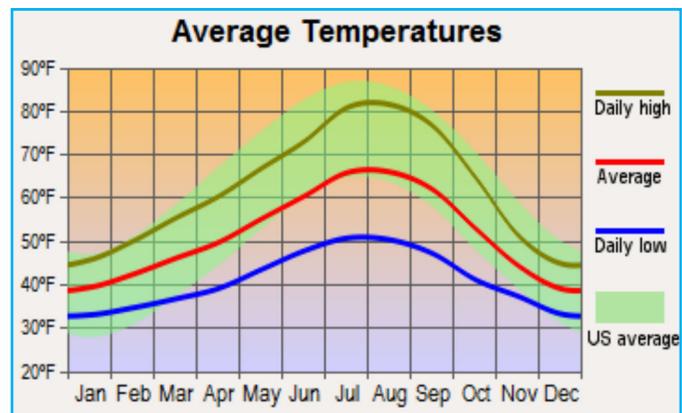


Figure 2D: Average High and Low Temperature

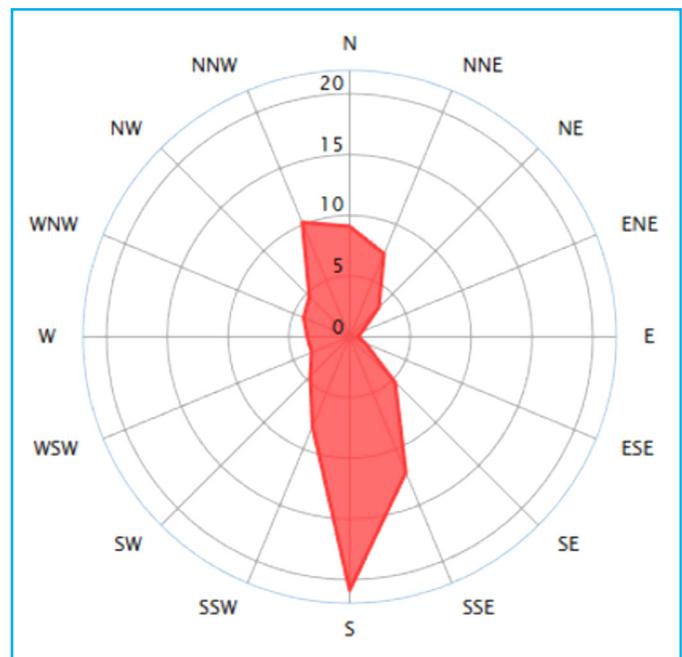
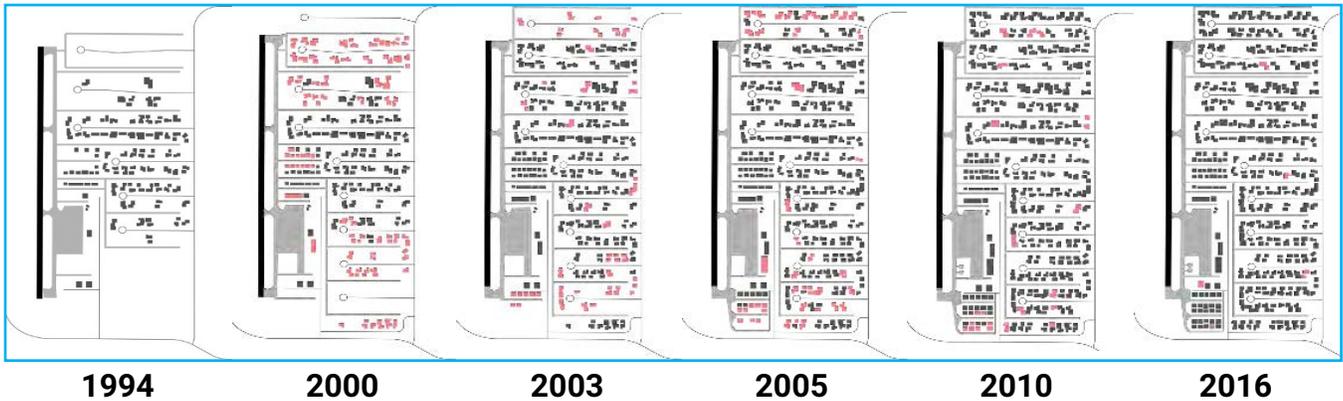


Figure 2E: Annual Wind Direction % Distribution



**Figure 2F: Independence State Airport and Airpark Development**

An historical depiction of development from 1994 to 2016. Red buildings depict new structures erected since the previous year depicted

## Relevant Studies

### Polk County Comprehensive Plan

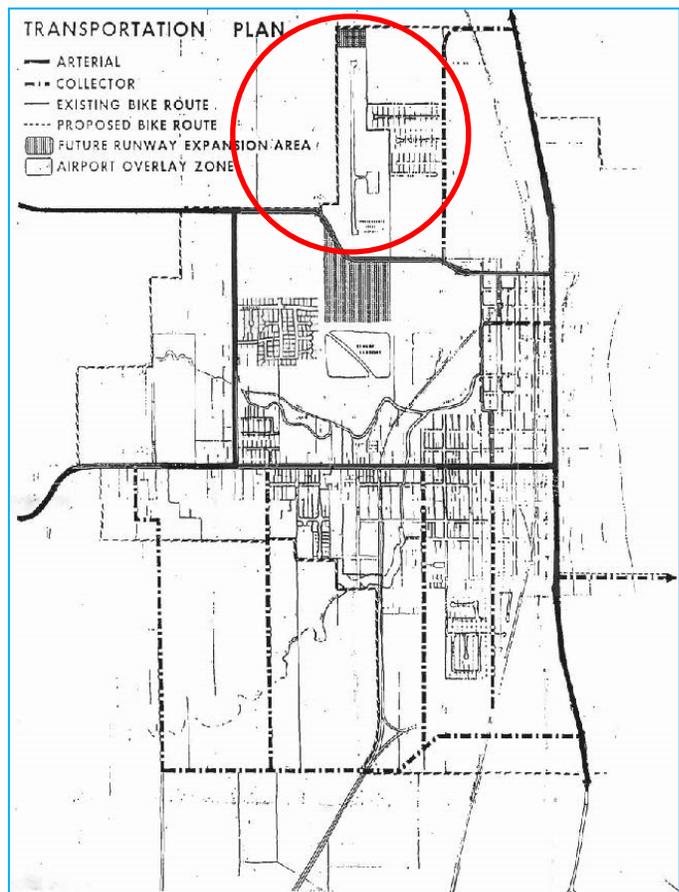
The Polk County Comprehensive Plan generally addresses airports within the County within Section 4 - Land Use Plan Designations. The Commercial land use designation within the comprehensive plan is used mostly to accommodate existing commercial uses in rural areas and to provide for commercial development in districts that have access to major arterials, airports, and railroad. The Industrial Plan designation indicates the sites of existing industrial developments in rural areas and provides for future industrial uses in districts which are close to cities, major arterials, railroad or airports.

### The City of Independence Comprehensive Plan

The City of Independence Comprehensive Plan addresses the Independence State Airport primarily in the Transportation and Land Use elements of the plan (**Figure 2G**). The document references the 1985 Airport Master Plan with special emphasis on airport development that is consistent with ODA plans and financial capabilities as well as local community desires. The 1985 Airport Master Plan is incorporated into the City's plan in the Background Report. The Transportation Plan graphic provided in the Comprehensive Plan, depicts planned runway expansion areas and airport overlay zones within the City's Comprehensive Plan. (**Figure 2G**)

Following this Airport Master Plan projects conclusion, the Comprehensive Plans for both

Polk County and the City of Independence will be updated with the information developed over the course of this 2018 Airport Master Plan per the OAR 660-013 Airport Planning Rule.



**Figure 2G: City of Independence Comprehensive Plan—Transportation Plan**

## Independence Vision 2020

**Independence Vision 2020** Community Strategy #6 is to “Support the Airport and utilize it as an Economic Development Tool.” The six specific actions identified to support this strategy include:

1. Promote Fly-Ins
2. Investigate Opportunities to provide transportation from airport to downtown such as through flex cars or bicycles.
3. Develop opportunities for airport industries such as
4. light sport aircraft, flight school, etc.
5. Create paths and/or connections between the airport and City destinations.
6. Continue to support RTTF access.
7. Develop visitor information center at airport cafe.

## 1997 Airport Layout Plan Report

The 1997 ALP has served the Airport and ODA well since it's completion over 20 years ago. Many of the issues and solutions identified in that plan were either resolved or are still relevant today.

## 2009 Airport Layout Plan Update

The 2009 Airport Layout Plan (ALP) Update shown as **Figure 2H**, was developed to provide an updated depiction of existing and planned improvements that had occurred on the airport since the 1997 ALP. The updated ALP was developed as an “as-built” ALP of improvements that include runway, taxiway, and apron improvements in 1999-2000; taxilane and apron improvements in 2001; taxilane, apron, and fence improvements in 2004; updated hangar and water line construction in 2006; and updated hangar and buildings in 2008. The ALP Update also depicts a potential development pattern for the west-side of the airport identified as “Airport Development Reserve” in the 1997 ALP Report.

The 2009 ALP is the current active plan on file with the FAA that is used to make determinations regarding eligibility of Airport Improvement Program (AIP) funding for proposed development. FAA requires an airport with an ALP to update plans when they no longer provide for

future needs, do not conform with current airport design standards, no longer accurately reflect existing features, or do not reflect critical land use changes which may affect the navigable airspace or the ability of the airport to expand.

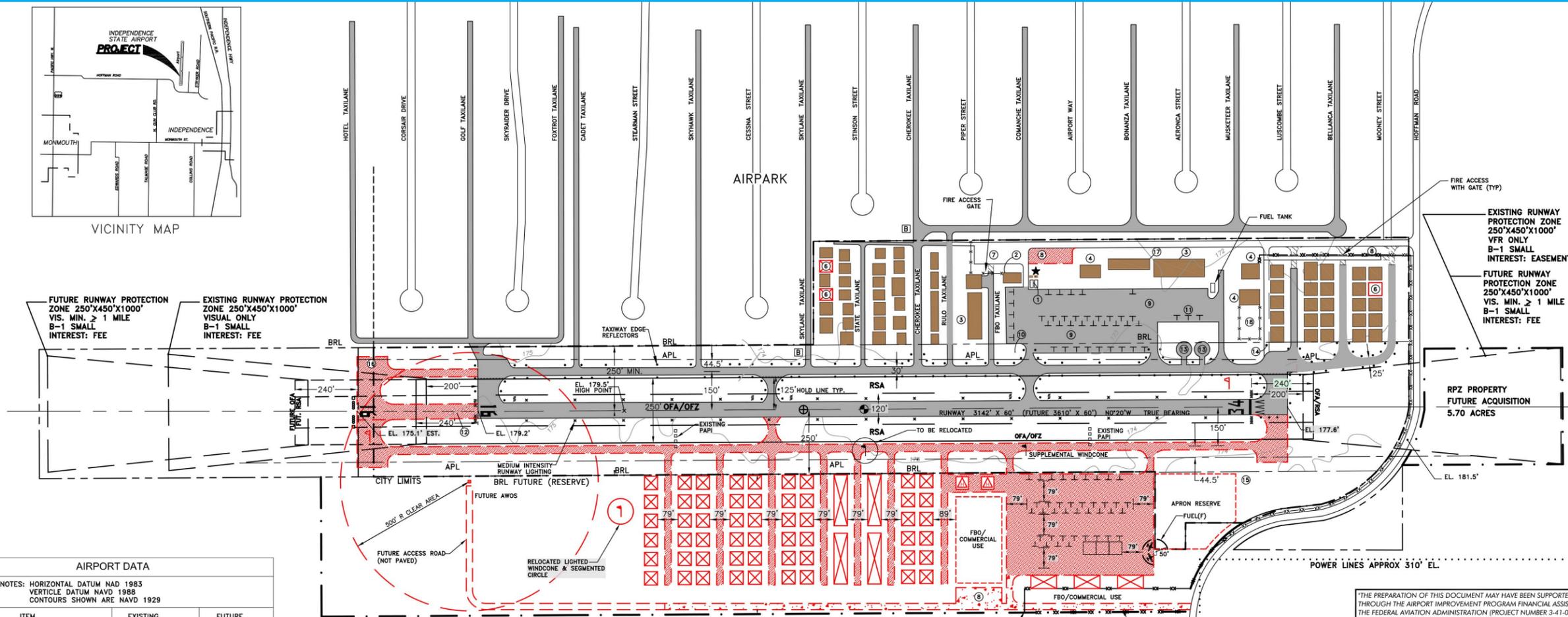
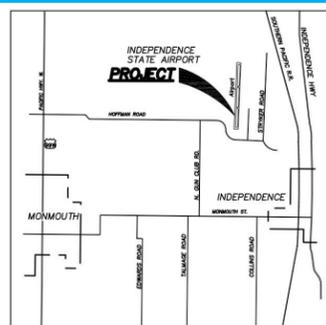
## Oregon Aviation Plan

The Oregon Aviation Plan (OAP) is a comprehensive evaluation of Oregon's aviation system that serves as a guide for future aviation development. The plan looks beyond the traditional state aviation system planning elements by combining three planning studies that assess the condition of the existing aviation infrastructure, the economic benefit of the aviation industry, and the national importance and state significance of each airport.

As previously described in State System Role, section 1.4.2, in Chapter 1 of this Master Plan, the Independence State Airport is classified as a Category IV Local GA Airport within OAP. As a Category IV airport, OAP outlines a minimum set of criteria as well as a desired set of criteria for Category IV airports like Independence State Airport. The OAP provides an individual report card for each airport within the state system that clearly depicts any deficiencies that may exist against the State's identified minimum and desired criteria for Category IV airports. The Independence State Airport - Individual Airport Report is provided as appendix to this master plan as **Appendix E**.

For the minimum criteria identified for Category IV airports, and the Independence State Airport, the only facility improvement lacking according to the OAP is a taxiway lighting system. It should be noted that the installation of a taxiway lighting system has been depicted on all previous planning studies.

For the desired criteria of Category IV airports, the OAP identified several significant airport facility improvements that will require additional consideration and planning before they could be realized. Specifically, the desired criteria for the Independence State Airport, as identified in the OAP, to have a non-precision/visual instrument approach procedure, to sell Jet A fuel on the Airport, and to meet B-II airport reference code design standards. As previously discussed within the Airport Role Conclusions in section 1.4.4 of



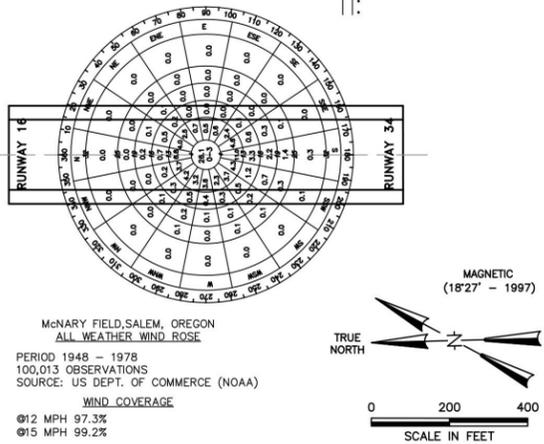
AIRPORT DATA		
DATUM NOTES: HORIZONTAL DATUM NAD 1983 VERTICAL DATUM NAVD 1988 CONTOURS SHOWN ARE NAVD 1929		
ITEM	EXISTING	FUTURE
DATUM FOR ALL ITEMS	NAD 1983	SAME
AIRPORT ELEVATION (MSL)	179.5'	SAME
AIRPORT REFERENCE POINT	LAT: 45°52'01.05" LONG: 123°11'53.89"	LAT: 44°52.05' LONG: 123°11.90"
MEAN MAXIMUM DAILY TEMPERATURE	83.2°	SAME
AIRPORT REFERENCE CODE	B-1 (SMALL)	SAME
NPIAS ROLE	GENERAL AVIATION	SAME
LAND OWNED IN FEE (ACRES)	SEE EXHIBIT A 88.10	PROPOSED 138.17
AIRPORT CODE	755	SAME

BUILDINGS AND FACILITIES	
1. FUELING AREA AND UST'S	10. OVERFLOW PARKING
2. FBO OFFICE	11. TIEDOWN APRON (RESERVE)
3. FBO HANGAR	12. RUNWAY EXTENSION (FUTURE)
4. FBO/AIRCRAFT MAINTENANCE HANGAR	13. HELICOPTER PARKING
5. PRIVATE HANGARS	14. EMERGENCY FIRE ACCESS
6. HANGARS (FUTURE)	15. AG LOADING AREA (FUTURE)
6T. NOT USED	16. RUN UP AREA (FUTURE)
7. AUTO PARKING	17. EAA HANGER
8. AUTO PARKING (FUTURE)	18. SALVAGE YARD
9. TIEDOWN APRON	

RUNWAY DATA			
ITEM	RUNWAY 16-34		
	EXISTING	FUTURE	
LENGTH AND WIDTH	3142' X 60'	3470' X 60'	
EFFECTIVE GRADIENT	0.037%	SAME	
PAVEMENT STRENGTH (WHEEL-POUNDS)	SINGLE - 12,500	SINGLE - 12,500	
PAVEMENT SURFACE	ASPHALT	SAME	
RUNWAY SAFETY AREA	3622' X 120'	3950' X 120'	
OBJECT FREE AREA	3622' X 250'	3950' X 250'	
OBJECT FREE ZONE	NO OFZ OBJECT PENETRATIONS		
CRITICAL AIRCRAFT	BE100 (TYP.)	SAME	
APPROACH TYPE	16 VISUAL	NONPRECISION CIRCLING GPS	
	34 VISUAL	NONPRECISION CIRCLING GPS	
APPROACH SLOPE: REQUIRED/CLEAR	16 20:1/20:1	SAME	
	34 20:1/20:1	SAME	
APPROACH AND LANDING AIDS	16 PAPI-4	GPS, REIL	
	34 PAPI-4	GPS, REIL	
RUNWAY END COORDINATES	16 Latitude 44°52'16.56" STET	44°52.35'	
	Longitude 123°11'53.73"	123°11'53.72"	
RUNWAY LIGHTING	16 Latitude 44°51'46.94"	44°51.78'	
	Longitude 123°11'54.66"	123°11'53.65"	
RUNWAY LIGHTING	MEDIUM INTENSITY	MEDIUM INTENSITY	
TAXIWAY LIGHTING	REFLECTORS MITL	REFLECTORS MITL	
RUNWAY MARKING	VISUAL	SAME	
WIND COVERAGE (%) - 12/15 MPH	97.3/99.2	SAME	

**NOTES:**  
 A GPS INSTRUMENT APPROACH WITH VISIBILITY MINIMUMS > 1 MILE IS PLANNED FOR AIRPORT, BASED ON VISIBILITY REQUIREMENTS. FINAL APPROACH SEGMENT WILL BE VISUAL.  
 B INGRESS/EGRESS AGREEMENT AND EASEMENT.

	EXISTING		FUTURE	
	16	34	16	34
TAKEOFF RUN AVAILABLE (TORA)	3142'	3000'	3610'	3470'
TAKEOFF DISTANCE AVAILABLE (TODA)	3142'	3000'	3610'	3470'
ACCELERATE - STOP DISTANCE AVAILABLE (ASDA)	3142'	3000'	3610'	3470'
LANDING DISTANCE AVAILABLE (LDA)	3142'	3000'	3610'	3470'



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 3-41-0027-004) 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.

LEGEND		
ITEM	EXISTING	FUTURE
AIRFIELD PAVEMENT	---	---X---
ACCESS ROAD/VEHICLE PARKING	N/A	---X---
PERIMETER FENCE	---XX---	---XX---
AIRPORT PROPERTY LINE	---	---
BUILDING RESTRICTION LINE	---BRL---	SAME
AIRCRAFT PARKING LIMIT	---APL---	SAME
BUILDINGS	---X---	---X---
TOPOGRAPHIC CONTOURS (2 FT)	---3410---	SAME
WIND CONE	1	9
AIRPORT REFERENCE POINT	⊕	⊕
THRESHOLD LIGHTS (FUTURE W/ REIL)	---X---	---X---
ROTATING BEACON W/ METAL TOWER	★	SAME
GRAVEL ACCESS FOR FIRE FIGHTING EQUIPMENT	---X---	---
CITY LIMITS	---	---



**APPROVALS**  
 OREGON DEPARTMENT OF AVIATION DATE \_\_\_\_\_  
 FEDERAL AVIATION ADMINISTRATION DATE \_\_\_\_\_

**VERIFY SCALES**  
 BAR IS ONE INCH ON ORIGINAL DRAWING. 1" = 1000'  
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR	REVISIONS
1.	5/1/01	GRH	REA	AIP NO. 3-41-0027-03 R/W, T/W, & APRON IMPR. (1999-2000)
2.	11/22/02	REA	REA	AIP NO. 3-41-0027-04 TAXILANE & APRON IMPR. (2001)
3.	9/24/04	WHB	JNR	NON-PRI. GA 410018, TAXILANE, APRON, AND FENCE IMPR.(2004)
4.	3/9/06	JJB	JNR	UPDATED FOR HANGAR & WATERLINE CONST (2006)
5.	5/1/06	JLS	JNR	UPDATE EXISTING BLDGS
6.	11/3/09	JLS	JNR	UPDATED

**WHPACIFIC**  
 8405 SW NIMBUS AVENUE  
 BEAVERTON, OR 97006-7120  
 WWW.WHPACIFIC.COM  
 TEL: (503)626-0455 FAX: (503)626-0775  
 Planning • Engineering • Surveying  
 Landscape Architecture • Environmental Services

INDEPENDENCE STATE AIRPORT  
 AIRPORT LAYOUT PLAN UPDATE  
 AIRPORT LAYOUT PLAN

DRAWING  
**1**

this report, these desired criteria, and others, identified in OAP will be recurring themes and the focus of discussions to come throughout the development of this master planning process.

## Socio-Economic Data

The socio-economic are summarized in **Figures 2I - 2M** and general consensus derived from members of the PAC at the first PAC meeting favors a positive economic outlook for Polk County and Independence. All indicators analyzed depict a growing or improving trend for industry, homes, jobs, income and population.

*"We are a growing community, things are happening, downtown is growing, industrial base is growing, we don't want to stagnate and the community is actively trying not to. Polk County as a region has a lot of opportunity due to geographic location, proximity to other population centers and employment bases... there is a lot to work with in the community." - Shawn Irvine, City of Independence Economic Development Director during the first PAC meeting.*

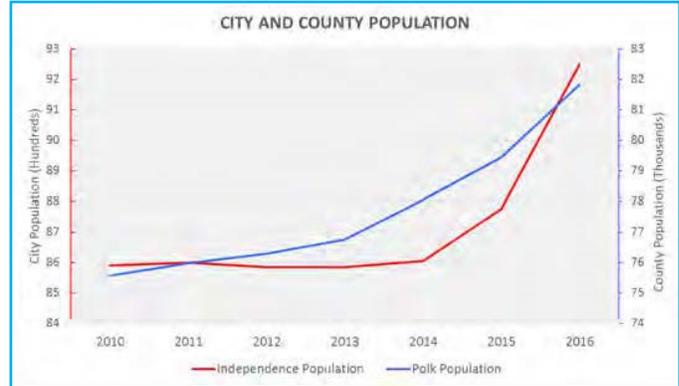
Population in the City of Independence had historically grown faster than Polk County and the State of Oregon, but after the 2008 recession growth slowed significantly to a rate below that of the County and State. In 2015, however, data estimates provided from the PSU, Population Research Center suggest the trends have reversed and the City of Independence began growing at a significantly rate higher than both Polk County and the State of Oregon (**Figure 2J**).

Employment data within Polk County has improved significantly in the last 5 years. The unemployment rate has declined in concert with the State unemployment rate and is currently averaging between 4-5% according to the latest figures provided in 2017.

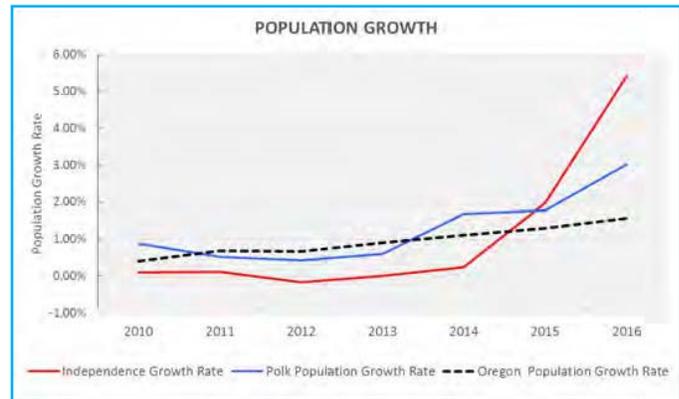
The number of employers within Polk County has also shown regular growth since 2012 at a rate nearly consistent with State of Oregon data.

The average annual Polk County income, while significantly below statewide averages, has also increased in Polk County since 2010.

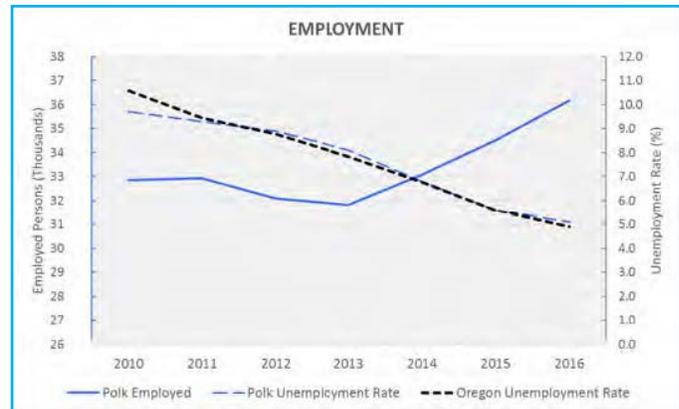
Real estate data for the City of Independence appears to be consistent with State and National data showing growth since the recovery from the recession. According to data found on



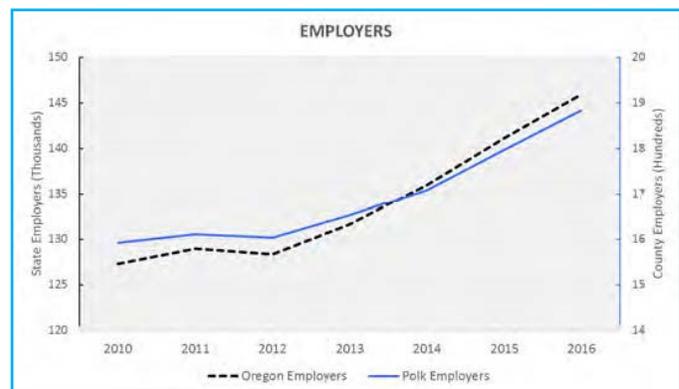
**Figure 2I: City and County Population**



**Figure 2J: Population Growth**



**Figure 2K: Employment**



**Figure 2L: Employers**

CLRsearch, in 2012 there were approximately 2,000 owner occupied homes in the City of Independence, the median value for a home was \$203,851. The largest percentage of homes (21%) were valued at \$150,000-\$174,999. According to data from Zillow, the average estimated home price for a house in the Airpark is nearly double the median value. Data suggests that the average price for the 184 hangar homes is approximately \$386,000, which is well above the average home price in the City of Independence.

As depicted here within, discussed at the first PAC meeting, and provided in the forecast data from numerous outside sources, the City of Independence, greater Mid- Willamette Valley, and the State of Oregon is expected to experience significant growth over the next 20 years in almost all socio-economic categories. This data and general community outlook will serve as supplemental information and guidance for generating the Airport's aviation activity forecasts presented in Chapter 3 of this report.

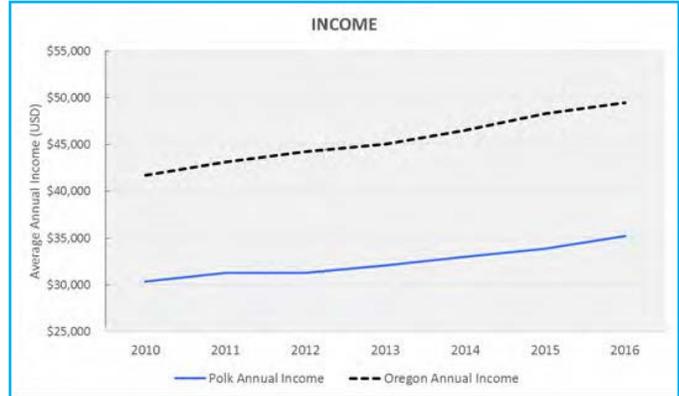


Figure 2M: Income

## 2.2 Existing Facilities

The primary focus of this Airport Master Plan is the Airport property, or more specifically, the facilities and land owned by the State of Oregon. However, consideration of the connection to the adjacent Airpark neighborhood is essential to the completion of a successful Master Plan as these two entities are clearly not mutually exclusive. The symbiotic relationship between the Airport and Airpark ranging from the physical infrastructure to the social/governmental interfaces was considered throughout the course of the planning process.

The format for presentation and understanding of the existing facilities and management of the Airport, while also giving consideration to the airport-urban interface, will consist of three sections:

- Landside
- Airside
- Administration

Landside facilities include areas such as utilities/storm drains, security fencing, hangars, GA terminal area, Airpark and residential-through-the-fence (RTTF), and Airport access/auto parking. Airside facilities generally include areas such as runways, taxiways, and aprons; as well as FAA design standards and airspace.

The Administration section covers miscellaneous administration and maintenance of airport facilities.

## 2.3 Landside

The landside area of the Airport generally encompasses the land areas within an airport that support its operations but are not dedicated to aircraft operations. However, due to the economic and land-use impacts airports can have in a region, the landside area is expanded to include an analysis of those land areas and facilities immediately outside of the airport boundary.

### 2.3.1 Land Use and Zoning

The majority of the Independence State Airport land is located entirely within the City of Independence's Urban Growth Boundary (UGB)

and city limits. There is a small portion of Airport property that extends beyond city limits and the Urban Growth Boundary (UGB) on the north side of the Airport. The portion of airport property extending beyond city limits is subject to Polk County zoning (**Figure 2N**).

For the portion of the Airport and Airpark within city limits, the base zoning map designations assigned to the airport and airpark in Subchapters 76 and 48 of the Independence Development Code are Airport Development District (AD) and Residential Single Family Airport (RSA) respectively.

Additionally, Subchapters 77 and 78 of the Independence Development Code include the Airport Zone Height Limitations and Airport Safety and Compatibility Overlay Zone. The overlay zones apply primarily to properties that lie within the runway approaches and runway protection zones. The overlay zones are intended to prevent airspace obstructions through height restrictions on structures and vegetation. Additionally, the overlay zones serve as a guide to ensuring land use compatibility between airport operations and the other base zones in the community that may fall under the overlay zones.

Compliance with FAA and ODA regulations is required within the overlay zones and subject to FAR Part 77 airspace regulations discussed further in section 2.4.9 Airspace of this Master Plan. A schematic of FAR Part 77 imaginary surfaces are displayed on Figure 2N.

Polk County zoning of airports is regulated in [Chapter 180 - Airport Development District](#) and [Chapter 181 - Airport Zone Height Limitations](#). The zoning code language available in the County's development code appears to be outdated due to the use of terminology no longer used in airport planning and design. While the terminology is outdated, the intent of the zones is generally compliant with State and Federal requirements.

### 2.3.2 Utilities/Storm Drainage

Utilities and public services provided at the Airport include City of Independence Water; City of Independence Sanitary Sewer; communications is provided by CenturyLink,

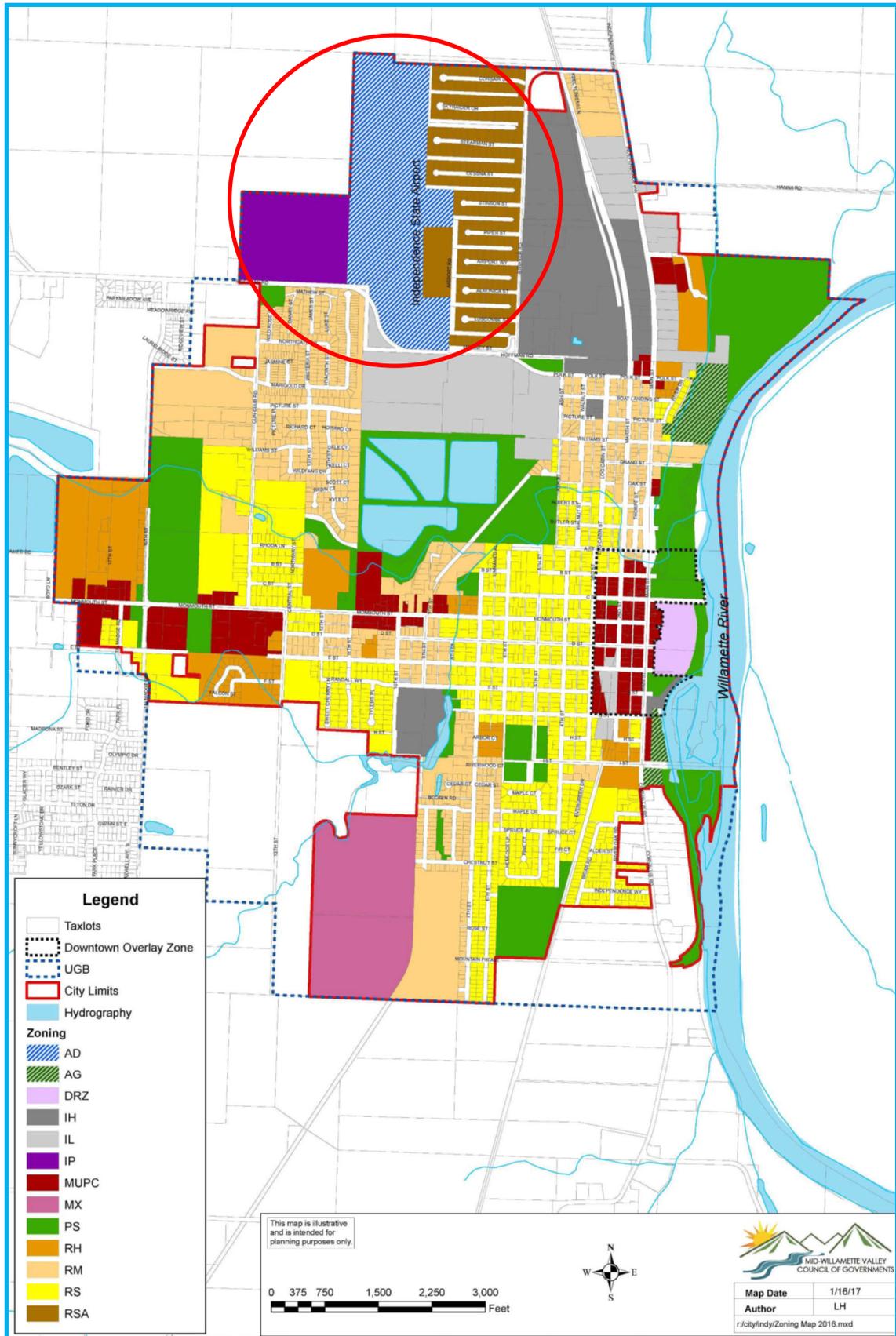


Figure 2N: City of Independence Zoning Map, 2017

Charter, or MINET; and power is provided by Pacific Power.

The existing infrastructure serving the Airport is generally considered to be adequate and in working order. However, any future expansion west of the Airport, as depicted in previous planning efforts, will require extension of both sewer and water lines in a manner consistent with local planning and development policy and regulations. Storm Drainage has been an ongoing concern at the Airport due to recurring issues with standing water on both the Airport and Airpark. In a 2013 Independence Airport Drainage Analysis completed by 3J Consulting, numerous system deficiencies and recommendations were identified. Since that analysis, many improvements have occurred and the issue with standing water on the Airport and Airpark appears to have improved. The City of Independence, ODA and Airpark HOA have all taken steps to improve the conditions of drainage and, based on feedback from individual meetings and the first PAC meeting, are committed to the continued improvement of storm drainage infrastructure on and around the Airport.

The following areas on and in the vicinity of the Airport/RTTF Community identified in the Drainage Analysis Map shown in Figure 20 will continue to be considered throughout the completion of this Master Plan:

1. The 12" standpipe in this area was identified as too high and small to convey the flow. However, increasing the capacity of the inlet would exacerbate problems downstream. It was recommended the grate be maintained to reduce clogging potential.
2. The drainage ditch running parallel to Skylane Taxilane has the same inlet and outlet elevations. It was recommended the ditch and culvert entrance/exits be kept clean of debris and blockage
3. Areas 3 and 4 were identified as having flat or negative slopes. It was recommended entrance and exits be cleaned and maintained. Additionally, a survey was recommended on upstream ditches to determine if surcharging is causing issues.
4. See area #3.

5. The area around Golf Taxilane was not identified as an issue in the 2013 drainage analysis. However, it was recently identified as an area with system capacity issues and additional study is required.
6. The areas north and south of the curve of Hoffman Road has been the focus of several recent improvements by the City of Independence including the installation of a 3rd culvert crossing, cleaning/mowing detention areas, and redigging swales to improve flow towards Ash Creek. ODA has indicated cleaning/mowing the ditch running directly north of this area is a priority.
7. Improvements around the south hangar area were completed in summer 2017 to improve issues with standing water.

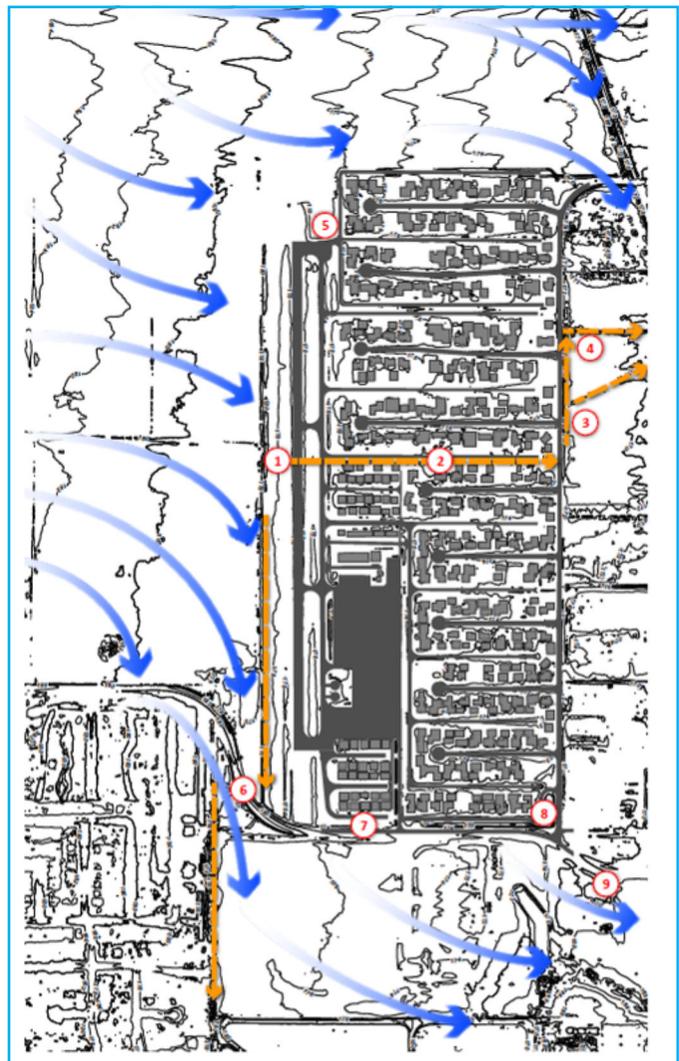


Figure 20: Airport/Airpark Drainage Analysis Map

8. In response to the 2013 drainage analysis, the detention pond at Mooney Street was dug out and lowered by one foot. Additionally, regular maintenance and mowing has occurred in this area.
9. The areas southeast of the Airport and Airpark as they drain in to City infrastructure and subsequently Ash Creek appear to be adequate as flooding does not occur.

Drainage in and around the Airport/Airpark will require additional study and improvements as development occurs and additional issues are identified. As discussed in the first PAC meeting, it may be beneficial for the City of Independence, the Airport, and the Airpark, in cooperation with any future development west of the Airport, conduct an Airport Area Stormwater Detention/ Drainage Master Plan to address drainage issues and concerns.

### 2.3.3 Airport Fencing

The Airport is not fully fenced. An approximately 1500' stretch of fencing runs along Hoffman Road at the south end of the Airport. The security style fence is 6' tall chain link with barbwire strands at the top. Recently, several gates were installed at two key points along Airport Road. The lack of fencing at the Airport does not appear to be a problem according to PAC members and Airport users. Due to the proximity of the Airpark and it's residents there are many full time residents that are able to watch for suspicious activity.

Based on discussions with PAC members and the public at the first PAC meeting, the location of existing and future vehicle access gates and any additional security fencing will require additional coordination and discussion between all stakeholders.

### 2.3.4 Hangar Access

Airport hangar access is provided from Hoffman Road on to Airport Road. Airport Road is the primary access road to hangars on Airport property, as well as both FBOs and the Starduster Cafe. Access for the RTTF hangar/homes is generally provided via Stryker Road and the small neighborhood streets stemming off of Stryker Road.

### 2.3.5 Vehicle Parking

Vehicle parking on the Airport is generally served by the paved parking lot located on the east side of the Starduster Cafe, which provides approximately 32 parking spaces. There is also an overflow gravel parking area directly north of Independence Aviation.

Nutsch Aviation, EAA, and Independence Aviation all have parking directly in front of the building, which provides an additional 20-30 combined parking spaces. Additionally, it is customary for airport users to park personal vehicles either in or adjacent to their personal hangar in the hangar areas on the north and south of the Airport when they are using their aircraft.

### 2.3.6 Hangars

There are 62 individual buildings/structures total on Airport property. Of these 62 structures, there are 58 total hangar buildings (approximately 160,000 SF) dedicated solely to aircraft storage. Specifically, there are 56 conventional box hangars, one 5-unit T-hangar, and one 7-unit T-hangar. There are few remaining sites available for development of hangars as the majority of vacant space has already been planned for future development.

### 2.3.7 Airpark

The Independence State Airport and the Independence Airpark have a symbiotic relationship in that one could not achieve it's potential without the other's existence. The privately owned hangar-homes on the Airpark are clearly dependent on the State-owned aviation facilities and it is easily argued that the Independence State Airport would not be as active as it is without the existence of the Airpark.

On the Airpark there are 184 private hangar/homes constructed to date and approximately 23 more developable sites that allow owners immediate access to the Airport through the latest [Independence State Airport Ingress/Egress Agreement](#) effective January 1, 2009.

The "residential-through-the-fence" (RTTF) concept has proven very successful at Independence State Airport and other Airports throughout the country for many years. However, 10 years ago the FAA began to reevaluate RTTF

agreement, which caught the attention of many in the general aviation community and Airparks like Independence Airpark. When the FAA Modernization and Reform Act of 2012 was signed into law on February 14, 2012 the FAA eventually allowed general aviation airports to enter into RTTF agreements with property owners or, as the case in Independence, association representing property owners. However, to be successful in the FAA purview, RTTF agreements must comply with specific terms and conditions contained in the law and reflected in the ingress/ egress agreements.

The potential issues with any RTTF agreement could include safety and liability risks associated with direct access to taxiways and the runway as well as potential compliance issues with federal grant assurances. To be in compliance with federal assurances related to RTTF the State must ensure:

1. The residential through-the-fence user pays airport access charges that are comparable to tenants and operators on-airport making similar use of the airport.
2. Residential through-the-fence users bear the cost of building and maintaining the infrastructure the airport sponsor determines is necessary to provide aircraft located on the adjacent property to or near the airport access to the airfield of the airport.
3. The residential through-the-fence user is prohibited from using their property, or permitting any third party from using their property, for any commercial aeronautical purpose for the duration of the access agreement.
4. Access to the airport from unauthorized users, through the property of the residential through-the- fence access agreement holder, is prohibited.
5. The residential through-the-fence user is prohibited from selling aviation fuel on their property.

Based on this guidance from the FAA and through ongoing collaboration and the continued commitment from both the Airpark HOA and ODA, the RTTF concept can continue in to perpetuity. However, the Airpark and Airport are not immune



**Figure 2P: Airpark**

to the challenges facing general aviation, airports, or any other regular neighborhood in the State of Oregon.

For the purpose of this Master Plan, the seven physical RTTF access points identified in Figure 2P will be the primary consideration for the planning of future infrastructure. These access points serve as both the physical and social connection between the Airport and Airpark and are critical to forming better and more comprehensive understanding of future development needs, goals, and actions, both on and off the Airport.

### 2.3.8 GA Terminal Area

The General Aviation (GA) Terminal Area is the central area for the Airport. The terminal area at Independence State Airport consists of two fixed base operators (FBO), a restaurant, and the Experimental Aircraft Association (EAA) Chapter 292 clubhouse.

An FBO is an individual or a business that offers aviation-related services such as a pilot lounge, restroom facilities, flight instruction, aircraft rental, aircraft maintenance, hangar/tiedown storage, and aircraft fueling to Airport users. There are two FBOs at Independence State Airport. Independence Aviation LLC which provides flight training, glider instruction, and 100 LL fuel through 2 x 10,000 gallon tanks. The second FBO, Nutsch Aviation provides 100 LL fuel in a single 12,000 gallon above ground tank, aircraft hangar space, instruction & airplane rental, pilot supplies, and a courtesy vehicle.

The restaurant located on the airfield “The Starduster Cafe” operates between 6:00 am and 3:00 pm daily and has become a regular staple at the Airport and in the community bringing in pilots throughout the State for breakfast and brunch.

The EAA 292 is a community of passionate aviation enthusiasts that promote and support recreations flying with the mission to grow participation in aviation by promoting the “Spirit of Aviation.”

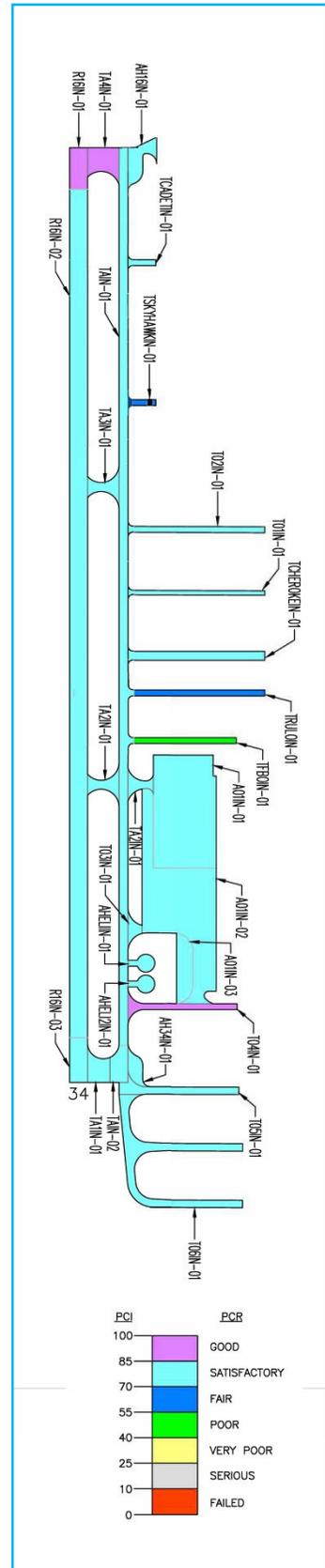
## 2.4 Airside

The airside area of the airport consists of physical infrastructure and facilities used for the movement of aircraft (i.e., runways, taxiways, taxilanes, and aprons). In addition to these ground facilities, the airspace and imaginary

surfaces surrounding the Airport and facilities is also included the airside discussion; this includes runway and taxiway safety areas, runway protection zones, and the FAR Part 77 Surfaces discussed in the land use section.

### 2.4.1 Pavement Condition Index

The single most valuable asset on the Airport is the pavement. In 2018 the Airport’s Pavement Condition Index (PCI) was updated for those pavements located on Airport Property as part of the Pavement Management Program (PMP). The PMP is completed every three years. The next iteration of the program is scheduled for 2021. The PMP rates the condition of the Airport’s pavements on a scale of 0-100, with zero being an unusable paved surface and 100 reflecting a newly-constructed paved surface. Using each pavement section’s PCI, a Pavement Condition Rating (PCR) is assigned. Generally, ratings with a PCR of “Good” (PCI of 85 – 100) and “Satisfactory” (PCI of 70 – 84) require only preventative maintenance in the short term, while ratings of “Fair” (PCI of 55 – 69) and “Poor” (PCI of 40 –



**Figure 2Q: 2015 Airport Pavement Condition**

54) require major rehabilitation and ratings of “Very Poor” (PCI of 25 – 39), “Serious” (PCI of 10 – 24), and “Failed” (PCI of 0 – 9) typically require reconstruction.

Figure 2Q depicts the pavement condition map for the Airport produced for the State by Pavement Consultants, Inc based on a visual condition survey completed in May 2018. At that time the section PCIs at Independence State Airport range from a low of 47 (a PCR of “Poor”) to a high of 100 (PCR of “Good”). The area-weighted average PCI for all airport pavements is 78, corresponding to an overall PCR of “Good.”

### 2.4.2 Runway 16-34

The single runway at Independence State Airport (Runway 16-34) is 3,142 feet long by 60 feet wide. The Runway is asphalt and in good condition. The weight rating is 12,500 pounds for Single Wheel Gear (SWG). Runway 34 has a documented 140 foot displaced threshold, however during a pavement marking project the displaced threshold was painted yellow therein creating a segment of the taxiway that is aligned with the runway and effectively reducing the length of the runway to 3,002 feet. This aligned taxiway or displaced threshold issue will need to be corrected to meet FAA Design Standards.

### 2.4.3 Taxiways and Taxilanes

There is one existing full-length parallel taxiway (Taxiway A) on the east side of Runway 16-34. This taxiway is 30 feet wide and has four runway connector taxiways. Taxiway connector A2 is considered nonstandard by FAA design criteria as it is providing direct access from the apron to the taxiway and will need to be relocated. The parallel taxiway is also directly connected to multiple taxilanes that serve the apron area, airport hangars, as well as the RTTF hangar homes through seven access points through Airport property.

### 2.4.4 Aprons and Aircraft Parking

Total aircraft apron area at the Airport is estimated at 18,600 square yards, or an estimated 3.8 acres. 38 tiedowns are provided on the apron serving both based and transient aircraft. There are two designated helipads on the airfield, located near the apron. During the first

PAC meeting, several areas on the south side of the apron were identified as potential problem areas and required additional consideration during the solutions phase of the planning process.

### 2.4.5 Airfield Lighting and Signage

Airfield edge lighting systems are categorized as low, medium, or high intensity. Runway 16-34 is equipped with medium intensity runway edge lighting (MIRL). Taxiway A is currently unlit and marked with blue reflectors. There is lighted signage identifying the connector taxiways at the respective hold positions. Additionally there are unlighted signs for taxilanes providing access to RTTF hangar homes.

### 2.4.6 Airport Navigational Aids (NAVAIDS)

NAVAIDS provide navigational assistance to aircraft for approaches to an airport. NAVAIDS are classified as visual approach aids or instrument approach aids; the former providing a visual navigational tool and the latter being an instrument-based navigational tool. The types of approaches available at an airport are based on the NAVAIDS provided. The following sections describe existing NAVAIDS at the Airport.

#### Visual Approach Aids

Runway 16-34 is established as a visual approach runway. There is a segmented circle containing a lighted wind indicator to the West of Runway 16-34 at mid-field. A rotating beacon is located on the east side of Runway 16-34 on top of a tower adjacent to the airport restaurant.

Both ends of Runway 16-34 have a four-light Precision Approach Path Indicator (PAPI). A PAPI provides glideslope information to pilots on final approach by displaying sequences of different colored lights to maintain a safe glide path for landing.

#### Instrument Approach Aids

Instrument approach aids include the equipment associated with an airport’s instrument approach. The Airport does not have any instrument approach aids or approach procedures at this time.



- |                                       |  |                           |
|---------------------------------------|--|---------------------------|
| 1 Auto Parking                        | 7 Hangars                                | 13 Runway Protection Zone |
| 2 Commercial / Industrial Development | 8 Helicopter Parking                     | 14 Tiedown Apron          |
| 3 Displaced Runway Threshold Marking  | 9 Lighted Wind Cone and Segmented Circle |                           |
| 4 Fixed Base Operator Office          | 10 Precision Approach Path Indicator     |                           |
| 5 Fixed Base Operator Hangar          | 11 Residential Development               |                           |
| 6 Fuel Tank                           | 12 Runway Designator                     |                           |

Existing Conditions

## 2.4.7 Weather Observation System

The Airport currently does not have a weather observation system in place. The preferred modern system for an airport like Independence State Airport would be an Automated Weather Observing System (AWOS), which reports significant weather changes as they occur up to the minute. The system reports cloud ceiling, visibility, temperature, dew point, wind direction, wind speed, altimeter setting, and density altitude (airfield elevation corrected for temperature).

## 2.4.8 FAA Airfield Design Standards

FAA Advisory Circular 150/5300-13, *Airport Design*, sets forth the FAA's recommended standards for airport design. A few of the more critical design standards are those for runways.

They are listed below and shown graphically on the Existing Conditions Map (Figure 2R).

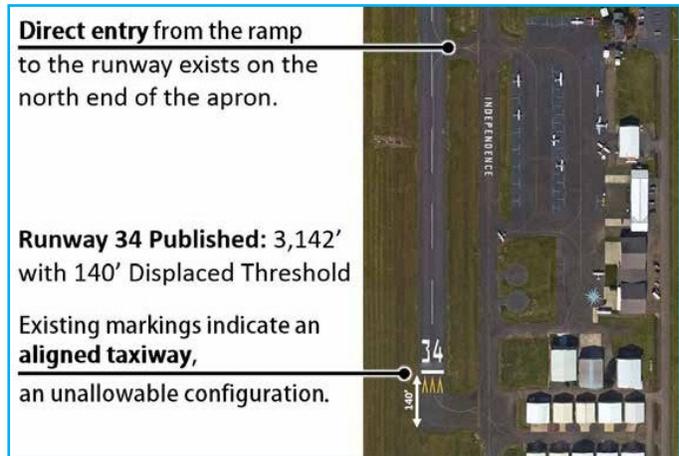
- Runway Safety Area (RSA)
- Object Free Area (OFA)
- Obstacle Free Zone (OFZ)
- Runway Protection Zone (RPZ)

The Runway Safety Area (RSA) is a defined surface surrounding the runway that is prepared or suitable for reducing the risk of damage to airplanes in the event of an airplane undershoot, overshoot, or an excursion from the runway.

The Object Free Area (OFA) is an area on the ground centered on the runway or taxiway centerline that is provided to enhance the safety of aircraft operations. No above ground objects are allowed except for those that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

The Obstacle Free Zone (OFZ) is a volume of airspace that is required to be clear of obstacles, except for frangible items required for the navigation of aircraft. It is centered along the runway and extended runway centerline.

The Runway Protection Zone (RPZ) is defined as a trapezoidal area off each runway end intended to enhance the protection of people and property on the ground. The dimensions of an RPZ are a function of the runway ARC and approach visibility minimums. The FAA recommends that



**Figure 2S: FAA Design Standards/Issues**

RPZs be clear of all residences and places of public assembly (churches, schools, hospitals, etc.) and that airports own the land within the RPZs.

Generally speaking, all of the design standards mentioned above meet the requisite standards. However, there is a potential issue with the Runway 34 RPZ that may need to be addressed as the plan progresses. The incompatible land use of Hoffman Road within the RPZ, which serves as a major community thoroughfare, may need to be mitigated to meet FAA standards outlined in the memorandum "Interim Guidance on Land Uses Within a Runway Protection Zone" (2012). This guidance prohibits public roads from transiting through the RPZ. However, according to the State of Oregon Airport Land Use Compatibility Guidebook (2003), roads are permitted in the RPZ only upon demonstration that there are not practicable alternatives.

There are two other notable issues related to FAA standards that will need to be addressed as the plan progresses. The first is the indirect entry from the apron to the runway that exists at Connector Taxiway A2 (**Figure 2S**). The FAA recommends designers to not design taxiways to lead directly from an apron to a runway without requiring a turn as such configurations can lead to confusion when a pilot typically expects to encounter a parallel taxiway but instead accidentally enters a runway.

The second issue to be addressed is the published Runway 34 displaced threshold that has been marked as an aligned taxiway (**Figure**

2S). The aligned taxiway is not allowed by FAA standards.

These issues described above as well as the potential solutions will be discussed in greater detail in subsequent chapters of this plan.

### 2.4.9 Airspace

Federal Aviation Regulation 14 CFR Part 77, *Objects Affecting Navigable Airspace* defines and establishes the standard for determining obstructions that affect airspace in the vicinity of an airport. FAR Part 77 is published separately and is primarily concerned with the identification of objects on and near airports that could be hazards to air navigation. Airports and/or their sponsors are responsible for identifying FAR Part 77 imaginary surfaces and protecting them through land ownership or other means of land use controls (such as zoning, easements, etc.).

Prior to any construction on the airport and in the area immediately around an airport, the responsible party must file a **Form 7460** with the FAA and ODA, which describes the project and its proximity to the airport. Both agencies will then conduct an airspace evaluation to determine the possible impact on airspace for the airport.

The FAA will evaluate the impact of the construction on a set of **civil airport imaginary surfaces** (**Figure 2T**). There is no specific authorization in any statute that permits the FAA to limit structure heights or determine which structures should be lighted or marked. In fact, in every aeronautical study determination, the FAA acknowledges that state or local authorities have control over the appropriate use of property beneath an airport’s airspace. However, ODA works closely with the FAA to leverage its regulatory power to protect the Airport’s airspace

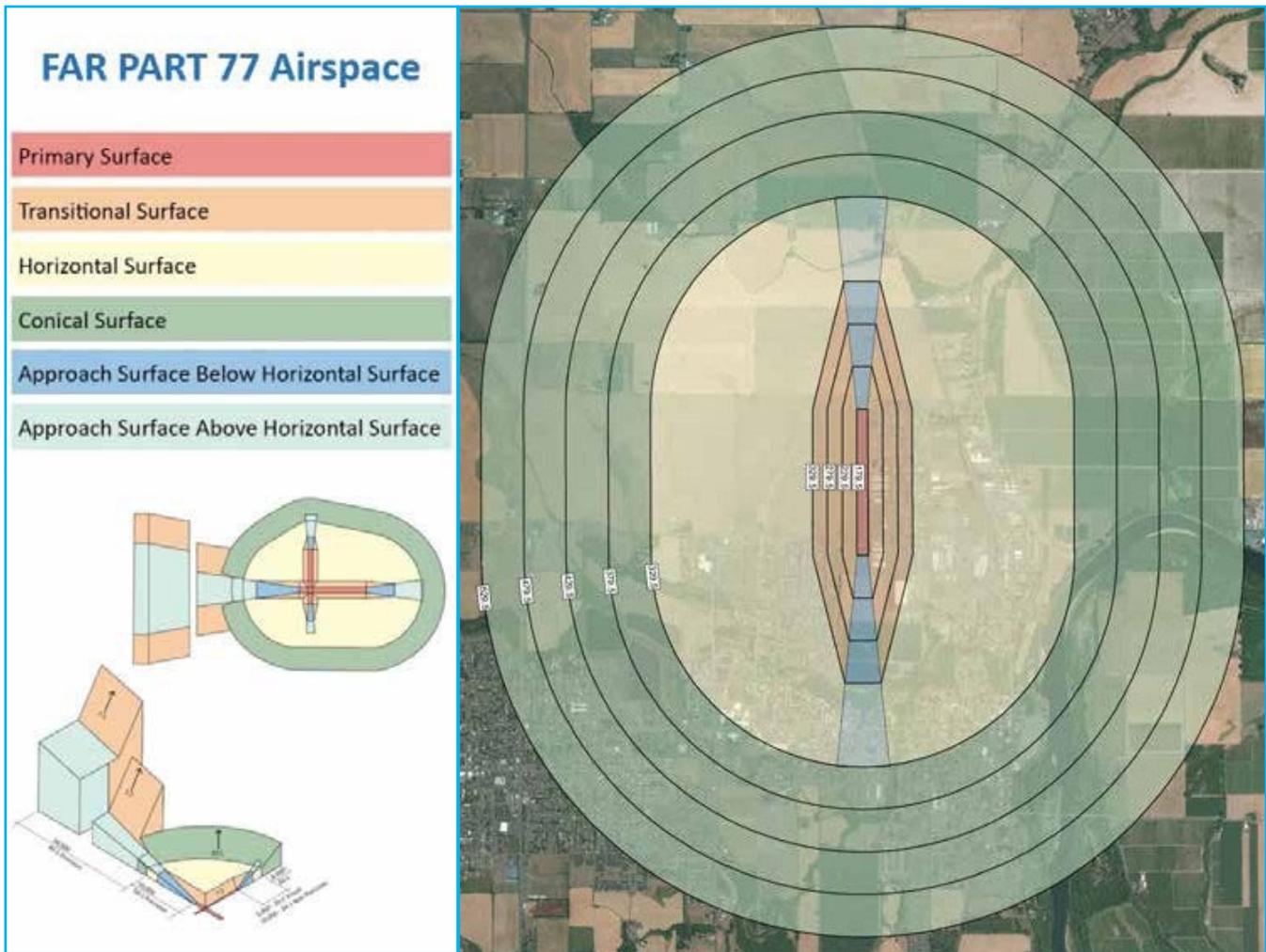


Figure 2T: FAR Part 77 Airspace

and works with local jurisdictions to protect the airspace through compatible use zoning.

The imaginary surfaces are geometric shapes that surround the runways of an airport and vary in size and slope depending on the category of the runway.

The five imaginary surfaces are the Primary, Approach, Horizontal, Conical, and Transitional. Any object that penetrates these surfaces is considered an obstruction and may affect navigable airspace. Unless these obstructions undergo additional aeronautical study to conclude they are not a hazard, obstructions are presumed to be a hazard. Hazards to air navigation may include terrain, trees, permanent or temporary construction equipment, or temporary man-made structures.

The five surfaces are depicted in the Figure 2T and more detailed definition follows:

**Primary Surface.** The primary surface is longitudinally centered on a runway that extends 200 feet beyond each end of the runway. The width of a primary surface ranges depending on the existing or planned approach and runway type.

**Horizontal Surface.** The horizontal surface is a horizontal plan located 150 feet above the established airport elevation, covering an area from the transitional surface to the conical surface. The perimeter is constructed by swinging arcs from the center end of the primary surface and connecting the adjacent arcs by lines tangent to those areas. For approaches to runways supporting aircraft smaller than 12,500 pounds, like Independence State Airport, the radius of each arc used to construct the horizontal surface is 5,000 feet.

### **Conical Surface**

The conical surface extends upward and outward from the periphery of the horizontal surface at a slope of one foot for every 20 feet (20:1) for a horizontal distance of 4,000 feet.

### **Transitional Surface**

Transitional surfaces extend outward and upward at right angles to the runway centerline, with the runway centerline extended at a slope of seven feet horizontally for each foot vertically (7:1) from

the sides of the primary and approach surfaces. The transitional surfaces extend to where they intercept the horizontal surface at a height of 150 feet above the runway elevation.

### **Approach Surface**

Longitudinally centered on the extended runway centerline, the approach surface extends outward and upward from the end of the primary surface. An approach surface is applied to each end of each runway based on the type of approach. FAA approach surfaces are 20:1 for visual and approaches and circling instrument procedures, 34:1 for non-precision approaches, and 50:1 for precision approaches. Independence has visual approaches at each runway end and therefore maintains 20:1 approach surfaces (Figure 2U).

In summary, the existing Part 77 airspace around the Independence State Airport is largely clear of obstacles according to a cursory review of publicly available LIDAR data from the Oregon Department of Geology and Mineral Industries (DOGAMI) that displays highest hit, bare earth, and bare earth slope imagery.

The DOGAMI data when compared to the modeled FAR Part 77 surfaces for the Airport identified several obstructions within the Transitional Surface only. Most importantly, the Approach Surfaces are clear of obstructions.

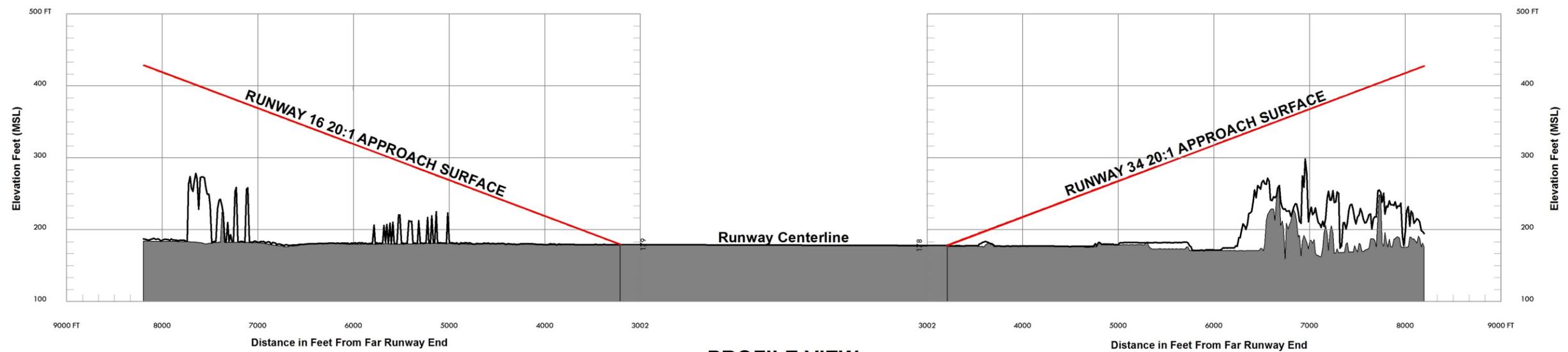
As a part of the master planning process, an Airport Geographic Information Survey (AGIS) was conducted to provide better and more accurate survey data that will allow the planning team to better analyze potential obstruction data. The updated data from the AGIS survey and the future FAR Part 77 surfaces will be illustrated as part of the Airport Layout Plan (ALP) drawing set once it is available. Future FAR Part 77 surfaces will be evaluated during the development of the ALP and any penetrations will be noted and recommended for removal or marking, as appropriate.

## **2.5 Administration**

The management of the Independence State Airport is administered by ODA. The ODA's mission is three-fold and includes focusing on advocating for the



PLAN VIEW  
NO SCALE



PROFILE VIEW  
NO SCALE

## Independence State Airport Master Plan Update

economic growth, infrastructure improvement, and safe operation of aviation in Oregon. As the owner, operator, and sponsor of 28 airports, including Independence State Airport, ODA is responsible for the operational management and maintenance of aviation facilities as well as managing the capital improvements required to satisfy demand and FAA requirements.

### 2.5.1 Airport Administration and Maintenance

ODA State Airports Division is responsible for the management of the Airport. The State Airports Division manages lease agreements for hangars, access/egress, financial records, and maintenance of facilities. The administration and maintenance of the Airport falls under the purview of both state and federal law. Oregon Revised Statutes (ORS) dictate much of what the

Airport can achieve through comprehensive planning (ORS Chapter 197), aviation fuel taxes (ORS Chapter 319), airports and landing field regulations (ORS Chapter 836), and aircraft operations (ORS Chapter 837). The Oregon Administrative Rules (OAR) provide guidance on the Airport Planning Rule (OAR 660-013) and ODA's Rule (OAR 738), which specifies certain standards required of airports throughout the state including a minimum standards policy, residential through the fence access, commercial and non-commercial leasing policies, and more.

Additionally, ODA is responsible for ensuring compliance with federal grant assurances and regulatory standards. This master plan is one element to help ensure ODA is planning for the long-term facility development needs safely and efficiently.

### Table 2A. Independence State Airport Financial Data

	Fiscal Year						Forecast Year					
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Revenues</b>	<b>\$ 101,068</b>	<b>\$ 106,304</b>	<b>\$ 105,881</b>	<b>\$ 114,921</b>	<b>\$ 114,560</b>	<b>\$ 115,785</b>	<b>\$ 513,291</b>	<b>\$ 611,096</b>	<b>\$ 363,065</b>	<b>\$ 113,563</b>	<b>\$ 132,522</b>	<b>\$ 361,869</b>
10% Admin Late Fees	\$ 72	\$ 126			\$ 934	\$ 503	\$ 312	\$ 349	\$ 419	\$ 503	\$ 417	\$ 400
Federal revenue		\$ 3,369	\$ 4,298	\$ 106	\$ 27		\$ 402,890	\$ 500,000	\$ 250,000		\$ 20,000	\$ 250,000
Fuels flowage fees	\$ 7,302	\$ 3,563	\$ 3,967	\$ 4,762	\$ 3,779	\$ 6,113	\$ 4,437	\$ 4,612	\$ 4,741	\$ 4,736	\$ 4,928	\$ 4,691
Hangar Fees	\$ 5,720	\$ 8,267	\$ 7,143	\$ 6,469	\$ 6,874	\$ 6,586	\$ 7,068	\$ 6,828	\$ 6,765	\$ 6,891	\$ 6,828	\$ 6,876
Ingress/Egress Fees	\$ 39,796	\$ 40,305	\$ 40,305	\$ 40,116	\$ 40,683	\$ 40,363	\$ 40,354	\$ 40,346	\$ 40,373	\$ 40,424	\$ 40,372	\$ 40,374
Land Lease Fees	\$ 44,278	\$ 48,008	\$ 46,971	\$ 52,751	\$ 50,983	\$ 52,778	\$ 50,298	\$ 50,756	\$ 51,513	\$ 51,266	\$ 51,322	\$ 51,031
Misc. receipts				\$ 7,005	\$ 8,048	\$ 7,405	\$ 4,492	\$ 5,390	\$ 6,468	\$ 6,361	\$ 6,023	\$ 5,747
Operations 5010 inspections	\$ 650			\$ 650			\$ 650			\$ 650		
Property taxes reimbursement	\$ 3,149	\$ 2,361	\$ 2,315	\$ 2,480	\$ 2,620	\$ 1,469	\$ 2,249	\$ 2,227	\$ 2,209	\$ 2,155	\$ 2,062	\$ 2,180
Sale of Utilities	\$ 101	\$ 96	\$ 183	\$ 197	\$ 155	\$ 147	\$ 155	\$ 167	\$ 164	\$ 158	\$ 158	\$ 160
Special use fees			\$ 240									
Tie Down Fees		\$ 210	\$ 459	\$ 385	\$ 455	\$ 420	\$ 386	\$ 421	\$ 413	\$ 419	\$ 412	\$ 410
<b>Expenditures</b>	<b>\$ 19,340</b>	<b>\$ 20,074</b>	<b>\$ 49,269</b>	<b>\$ 28,369</b>	<b>\$ 32,083</b>	<b>\$ 96,101</b>	<b>\$ 510,624</b>	<b>\$ 588,078</b>	<b>\$ 304,783</b>	<b>\$ 27,167</b>	<b>\$ 59,356</b>	<b>\$ 304,168</b>
Personal Services												
Airport Maintenance	\$ 2,835	\$ 1,258	\$ 1,765	\$ 1,077	\$ 2,535	\$ 2,893	\$ 3,141	\$ 3,329	\$ 3,529	\$ 3,740	\$ 3,963	\$ 4,201
Airport Services	\$ 2,948	\$ 1,939	\$ 962	\$ 682	\$ 503	\$ 1,422	\$ 1,135	\$ 969	\$ 970	\$ 1,030	\$ 1,073	\$ 1,067
Fuel Tax Increase - State Owned Airports						\$ 4,195						
Inspections				\$ 202			\$ 187			\$ 194		
Service & Supplies												
Airport Maintenance	\$ 6,498	\$ 1,035	\$ 1,483	\$ 3,996	\$ 2,002	\$ 1,384	\$ 1,980	\$ 2,169	\$ 2,306	\$ 1,968	\$ 1,961	\$ 2,077
Airport Services	\$ 5,882	\$ 7,233	\$ 13,317	\$ 20,025	\$ 21,179	\$ 23,658	\$ 17,083	\$ 19,053	\$ 20,200	\$ 20,235	\$ 20,046	\$ 19,323
Building Maintenance				\$ 1,051								
Fuel Tax Increase - State Owned Airports						\$ 61,185	\$ 37,000					
GA Entitlement (Capital Projects)		\$ 3,547					\$ 449,811	\$ 555,755	\$ 277,778			\$ 277,500
PMP GA Entitlement	\$ 33		\$ 4,775	\$ 148							\$ 22,200	
State Owned PMP	\$ 282		\$ 26,966	\$ 1,188							\$ 2,222	
Statewide Services	\$ 861					\$ 1,364	\$ 288					
System Plan		\$ 5,063			\$ 5,864			\$ 6,802			\$ 7,890	
<b>Profit/(Loss)</b>	<b>\$ 81,728</b>	<b>\$ 86,230</b>	<b>\$ 56,612</b>	<b>\$ 86,552</b>	<b>\$ 82,476</b>	<b>\$ 19,684</b>	<b>\$ 2,666</b>	<b>\$ 23,018</b>	<b>\$ 58,282</b>	<b>\$ 86,396</b>	<b>\$ 73,166</b>	<b>\$ 57,701</b>

## 2.5.2 Airport Financials

Part of the planning for an airport involves assessing its financial condition. To accomplish this, it is important to collect data related to the airport's operation, beyond physical and activity-related attributes. As part of the inventory collection effort, recent financial data for the Airport was collected. The data collected is summarized and presented below, and will be used later in the Master Plan as inputs to the Capital Improvement/Financial Plan. Overall, a cursory review of the historic and forecast financial data suggests that Independence State Airport is in good shape financially.

On average, from 2012-2017 the average annual revenue for the Airport was \$109,750 per year. It is worth noting that 92.31% of the average annual revenue is generated through fuel flowage fees (4.48%), hangar fees (6.24%), ingress/egress (36.68%), and land lease fees (44.91%). The remaining revenue (7.69%) comes from a combination of Federal revenue; property tax reimbursement; utility sales; miscellaneous receipts; and various fees charged by the Airport. Historic and forecasted revenues are summarized in **Table 2A** below.

Expenditures on average during the same period averaged approximately \$40,875. The majority of annual expenditures (89.72%) pay for airport services and supplies. The remaining expenditures (10.28%) finance personnel services at the Airport.

The Independence State Airport realizes an average annual profit of approximately \$68,880, which is expected to continue in to the forecast period.

## 2.6 Environmental Inventory

The purpose of this section is to summarize the environmental setting of the Airport and identify any potential environmental constraints that may exist.

The Airport property is located between residential areas, to the south and east, and agricultural fields, to the north and west. The Airport is connected to a RTTF community through a network of taxiways to the east of the main runway. The RTTF community is planned

around integrated aviation and residential use and contains homes which are custom built to include private hangars and direct taxiway access. Residential areas to the south of the airport are single-family residential homes with no connection to the airport for aviation use.

Environmental constraints for airports typically fall into two general categories: human environment and natural environment. Human factors that can constrain airports include existing settlements and incompatible land use, noise, social or socioeconomic conditions, light and glare, and the general controversial nature of airports. Natural environmental elements include various aspects of air quality, water resources, fish and wildlife, hazardous materials, energy and other resource issues.

### 2.6.1 Human Factors

Human factors that can constrain airports include existing settlements and incompatible land use, noise, social or socioeconomic conditions, light and glare, and the general controversial nature of airports.

#### Noise

The airport currently supports an average of 644 aircraft operations per week (<https://www.airnav.com/airport/7S5>), which are mostly (70%) transient general aviation aircraft. Aircraft based at the airport include 189 single-engine aircraft, 7 multi-engine aircraft, and 1 helicopter according to the most recent 5010 data.

The federal threshold of concern for noise is when the 65 DNL contour extends over noise-sensitive land uses. The State has established a threshold of 55DNL in noise-sensitive land uses. Noise contours typically mirror the shape of the runway, and extend beyond the runway ends in the dominant take-off direction.

Areas surrounding the airport include a wide variety of uses, including residential, commercial, industrial, and educational activities, some of which may be sensitive to noise. However, the Airport has no documented noise complaints.

Current operational data of the airport is approximately 37,500 annual operations (AirNav.com), which consists of primarily propeller driven aircraft. The operations count falls below the 90,000 annual adjusted propeller

operations threshold under which a noise study is recommended. Therefore, noise modeling has not been prepared for Independence and estimates for the 65 or 55 DNL threshold are not provided.

Most of the adjacent uses are residential and agricultural areas, though some industrial facilities are located 0.25 miles south and east of the runway, on the opposite side of residential areas. The nearest school is located

0.75 miles southwest of the runway. The school campus includes a middle school and a high school. The agricultural fields to the north and west of the runway contain no homes or structures within a half mile except one home and barn located along Hoffman Road approximately 0.30 miles to the west of the runway.

Aircraft landing and approach is over agricultural fields or a water treatment facility from both directions for a minimum of 0.75 miles. The nearest homes are located to the east and west of the runway approaches. Homes which are part of the RTTF community are as close at 250 feet west of the runway. However, these homes are not likely to be sensitive to airport noise due to their direct use of the airport and connection with aviation. The nearest homes to the runway which are not part of the RTTF community are 650 feet east of the southern approach. These homes are the most likely to be sensitive to airport-related noise. Maintenance staff reported that there have been no noise-related complaints registered in the last year.

### **Social Impact/Induced Socioeconomic Issues**

Proposed airport development actions must be evaluated to determine whether they would cause social impacts, including consequences to health, safety, and socioeconomic impacts.

Socioeconomic impacts are typically related to the relocation of businesses, residences or the alteration of established patterns of life (e.g. roadway changes, new facilities that divide a community, etc.). Access to the Airport is from Hoffman Road to Airport Road through a two-way stop intersection. Additional access through the integrated aviation community is available directly from Highway 51 and Stryker Road from the northeast.

The Airport contains the largest RTTF community in Oregon with approximately 200 homes connected to the runway via a network of taxiways. All community members pay a runway access fee and most own private aircraft housed in hangars connected to residences. The Airport also contains private hangars not associated with the residential community. The Airport includes private aviation companies (Nutsch Aviation and Independence Aviation) which provide aircraft rental, flight instruction, fueling, aviation supplies, and aviation consultation. A restaurant café is located at the Airport and is open to the public.

Children's environmental health and safety risks are attributed to products or substances that the child is likely to touch or ingest. Children are likely to be present in residential areas near the runway, but the nearest park, school, or similar public space to the airport is Pfaff Park, located 0.4 miles west of the runway. A high school and middle school campus is located 0.75 miles southwest of the runway. All of the areas discussed are offset from approach path centerlines for both runway directions and are not located in either approach surface.

Socioeconomic issues include the potential for the airport to continue providing economic attraction to the community, including integrated aviation and residential use, on-airport jobs, off-airport jobs that are supported by the airport, or some attraction that provides incentive to use the airport. The airport provides some positive economic benefit to the community through the provision of aircraft flights, aircraft repair, and the largest integrated aviation residential community in the state. According to the ODA [Oregon System Plan](#), Independence State Airport provides 90 jobs, and contributes \$3,213,000 in wages and \$11,282,000 in business sales to the state economy annually.

Environmental justice is a specific aspect of socioeconomic impact that addresses whether a proposed action places a disproportionate burden on a low-income or minority population. The closest census block group including and surrounding the airport is 4136150-203.03. Based on 2010 data, 38.3% of families are below the poverty line, in contrast to 11.51% in Oregon as a whole and 11.47 nationwide.

When projects are identified in the future, specific impacts from construction and implementation of those projects will be evaluated further through a formal process under the National Environmental Policy Act to determine what, if any potential impacts to residents, socioeconomic issues, or environmental justice concerns are present at that time.

### **Historic Properties and Cultural Resources (Section 106 Resources)**

The Airport was developed in 1964. The subject site has been disturbed during the construction of the initial Airport, which was constructed on previously tilled agricultural land, as well as construction of private hangars and other structures.

A formal review for Section 106 resources has not been prepared for the site. At the time of any development action a formal cultural resources determination will need to be prepared, with a Section 106 consultation with applicable Native American tribes, local governments and interested organizations and individuals to discuss areas or properties of religious or cultural significance and the potential adverse impacts or other effects that may ensue from a specific proposed activity.

### **Recreational Lands - Section 4(f) Resources**

Section 4(f) requires that transportation projects limit their impact on public recreation.

Recreational usage in the area is limited. Multiple small municipal parks are present in the City of Independence within a mile of the Airport. None are connected to or adjacent to the airport.

The Willamette River, 0.75 miles east of the airport, is the nearest body of water with possible recreational use. Minto-Brown Island Park, located 7 miles northeast of the Airport along the Willamette River, is the nearest large recreational area. The Airport operations currently do not affect usage of any of these areas and are unlikely to do so in the future.

### **Wild and Scenic Rivers**

The federally designated wild and scenic reaches of the Willamette River are over 80 miles from the Airport. The Willamette River, when it passes through the area, is not a wild and scenic river. No other wild and scenic rivers are located near the

Airport and thus is not expected to impact any designated wild and scenic rivers.

The Willamette River has been identified by the Oregon Department Land Conservation and Development as a greenway (OAR 660-015-0005, Goal 15). The Airport operations currently do not affect development of the Willamette River as a greenway, as outlined in the Goal 15 guidelines, and are unlikely to do so in the future.

### **Farmland Preservation**

Certain types of soils are considered prime farmland because of their drainage, mineral, and other characteristics. These soils, when in urbanized or developed areas, are not considered prime due to the compaction and other activities that degrade the potential for farm use. The Natural Resources Conservation Service on-line soil database map (Soil Survey of Polk County, Oregon) found three soil types in the Airport area. They are Amity, Concord, and Dayton silt loam.

Two of the soils mapped within the airport property are designated Prime Farmland if drained, per the USDA Prime Farmland List for Oregon dated March 2015. These two soils, Amity and Dayton, make up about 75% of the total study area. One of the soils, Concord, is designated Farmland of Statewide Importance. Concord soil makes up about 25% of the overall study area. Moreover, within the Airport property, compaction and alteration of the land for airport construction and operation may have altered the makeup and properties of the soil.

Stormwater drainage is present in the Airport but below ground drainage tiles needed to convert Amity and Dayton soils to prime farmland are not installed.

FAA Guidelines state that the Farmland Protection Policy Act (FPPA) is not applicable and no formal coordination with the Natural Resource Conservation Service (NRCS) is required if any of the following conditions apply:

The land was purchased prior to August 6, 1984, for purposes of being converted.

Acquisition does not directly or indirectly convert farmland (e.g., land acquired for clear zones or noise compatibility). Indirect conversion includes any use of land or operation of the facility which would prohibit the land from being farmed.

- The land is not prime farmland as defined in the FPPA.
- The land is not unique farmland.
- The soils are not considered prime farmland.
- The land has not been determined by state or local government agency, with concurrence of the Secretary of Agriculture, to be of statewide or local importance.
- The current property has been in Airport ownership since before the 1984 threshold (i.e. 1964), therefore the FPPA is not applicable.

### Light and Glare

Independence State Airport accommodates both day and nighttime operations. The runway is equipped with edge lighting, and runway end identifier lights (REIL). Lights are pilot-activated. Taxiways have edge reflectors. Overhead lighting is present in the hangar/apron area and other landside areas.

On-Airport lighting is focused for visibility to aviators, without creating a disturbance or distraction to neighboring businesses and communities. Current on-Airport lighting is pilot-activated. Any additional facilities will need to consider the impact of light or glare, including the use of windows or roofing material, on aviation. With the proximity of residential uses, additional lighting or structures will need to be focused such that light or glare is not projected into the community.

### 2.6.2 Natural Factors

Natural environmental elements include various aspects of air quality, water resources, fish and wildlife, hazardous materials, energy and other resource issues.

#### Air Quality

The EPA has developed National Ambient Air Quality Standards (NAAQS) for seven pollutants, including two sizes of particulate material. The pollutants include carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), sulfur dioxide (SO<sub>2</sub>), lead (Pb), and particulate matter (PM). Two size classes of particulate matter are monitored, PM<sub>10</sub> and PM<sub>2.5</sub>. Areas that have consistent violations of air quality standards are considered

“non-attainment.” Areas that have been in “non-attainment” but have improved conditions are considered “maintenance.” The Independence Airport is in an area that is currently in attainment (i.e. does not have any air quality monitoring violations) for air quality. Air quality monitoring is conducted on a continual basis by the Oregon Department of Environmental Quality using automated monitoring stations located throughout the state.

Any proposed projects will need to consider the impact of particulate material on the local environment, including water quality and other resources. The Airport does not currently generate a significant amount of surface traffic, and that is anticipated to continue in the future.

#### Water Quality

The Airport site is on an upland plain above the Willamette River. Runoff from impervious runway and taxiway surfaces is collected into two drainage basins. The main drainage system includes a network of surface ditches and subsurface pipes. This system drains the northern parts of the runway and taxiway east through the hangar area and into the RTTF community. The drainage system collects additional storm water from this residential area and empties to the southeast under Hoffman Road near the intersection with Stryker Road. A storm water pond is located at the northwest corner of this intersection and is designed to hold storm water before it empties under Hoffman Road. This drainage system has experienced flooding in the past and portions have been upgraded recently to improve water conveyance. Discussions with Airport staff indicate that flooding remains common within the residential area and along the transition area with the Airport. Flooding is not common on the runway, taxiway, or adjacent agricultural fields.

The second drainage system is a ditch which runs along the west side of the runway and drains south under Hoffman Road. This drainage area includes parts of the southern runway and adjacent agricultural fields to the west. Airport staff did not indicate that flooding occurs along this drainage but noted that the culvert under Hoffman Road is relatively small.

## Plants and Animals, Including Coastal Resources, Endangered and Threatened Species, and Essential Fish Habitat

The Airport is not in a Coastal Zone and does not include any Coastal Resources. A search by the [Oregon Biodiversity Information Center \(ORBIC\)](#) identified all species within a 2-mile radius of Independence State Airport. ORBIC is a state organization which maintains and distributes information about rare and protected species across Oregon. The ORBIC database incorporates data collected by private parties, and State/Federal agencies such as the U.S. Fish and Wildlife Service (USFWS). Two of the species identified have potential habitat on the site and are included on federal or state endangered or threatened species listings. Any development plans would require an updated review and site visit for presence and effect on these species.

**Streaked Horned Lark** (*Eremophila alpestris strigata*): Ground-nesting bird about 6-8 inches in length which prefers open prairies with no trees and few or no shrubs. Habitat for species is present around runway and taxiway areas. Species was present at the Airport in the most recent survey conducted 2013.

**Nelson's Checker-mallow** (*Sidalcea nelsoniana*): Erect perennial plant (40-100 cm) with pink/lavender flowers in tall spike. Found in open prairie remnants and fallow fields in a range of soils and generally low elevation. Possible habitat present on airport.

The Independence State Airport property includes site conditions typical of an airport facility, in regards to the maintenance of the grounds and vegetation. The Airport is located on a flat plain surrounded by residential and agricultural land uses. Surface water drainage channels through the Airport are not considered fish bearing streams and have been modified so that they no longer resemble natural features. Natural habitat present on the Airport is limited to the grassland areas around the runway and taxiway which are largely undisturbed except for periodic mowing. This area provides habitat for Streaked Horned Lark, which have been found in recent surveys on the Airport. An extensive mowing schedule maintains all vegetation for Airport safety and visibility as required by FAA regulations.



Figure V: Streaked Horned Lark



Figure W: Nelson's checker-mallow

There are no areas of ponding or regular inundation within the airport which might attract migratory waterfowl or other wildlife hazards to aviation. The FAA wildlife strike database does not have any entries for Independence Airport. There does not appear to be any issue with wildlife or bird strikes.

Any activity on the Airport would need to consider impacts to these species under the Endangered Species Act and Migratory Bird Treaty Act. Additional surveys to confirm ongoing presence of Streak Horned Lark at the Airport should be conducted.

### Wetlands and Floodplains

Based on the national and local wetland inventories, the airport does not appear to have any wetlands documented on-site. Site observations indicate that areas meeting wetland criteria are likely to be present in drainages around the runway and taxiways and in adjacent agricultural fields. Airport staff noted that occasional flooding occurs mostly east of the taxiway in drainages running into the residential

areas. No flooding of the runway or taxiway was reported. At the time of any development action a formal wetland determination will need to be prepared to identify any changes in condition or regulatory status.

The entirety of the Airport is shown on FIRM Map 41053C0402F (2006) as being within Flood Zone X (Area of Minimal Flood Hazard).

### **Energy Supply and Natural Resources**

This category focuses on the impact of Airport actions on energy and natural resources used in construction materials. In general, construction materials are not in short supply. Fuel for construction equipment is available

nearby. The site has adequate electrical supply to provide power to navigation aids and security lighting on the airport.

### **Solid Waste**

Typically, general aviation airports do not generate significant amounts of solid waste. Often materials include food and beverage containers, or packaging for aircraft maintenance products. There are no dump sites or areas of potential aggregation of solid waste in or around the Airport.

### **Hazardous Materials**

The Airport has one commercial fueling site and two FBOs that sell fuel and maintain fuel facilities. There is potential for additional contamination anywhere maintenance or fueling takes place, as a result of accidental spills.

In addition to fueling, aircraft maintenance activities may also have contributed to spills. No detailed exploration of spill or contamination history has occurred on the Airport. Any such areas where construction is proposed would need to undergo some level of due diligence, such as a Phase I Environmental Site Assessment to identify any history of possible contamination.

### **Construction Impacts**

Construction impacts typically include temporary noise, dust or traffic impacts, as well as the potential for erosion and water quality impacts associated with material spills, associated with construction. Once construction activities are

identified, construction timing, phasing and mitigation measures need to be considered.

### **Controversy**

Controversy is typically associated with off-airport impacts. In the case of Independence State Airport, there appears to be minimal, if any, controversy surrounding the airport.

### **Other Issues**

There do not appear to be any other environmental-related issues on or around the Airport.

## **2.4.3 Environmental Analysis Conclusion**

There may be significant environmental issues on the Airport or in the Airport vicinity related to species listed under the Federal and State Endangered Species List. Possible hazardous material issues may also occur in areas where fuel spills have occurred in the past, and the regulatory status of stormwater facilities and Flood Zone X areas may be subject to change in the future.

