Oregon Aviation Plan v6.0

Prepared for

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OREGON AVIATION PLAN

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OREGON AVIATION PLAN

1. INTRODUCTION

Oregon's system of airports consists of 97 airports ranging in size from large commercial service facilities to small rural airstrips. These airports are vital to Oregon's economic development by providing safe and efficient access to the state's communities, recreational areas, and abundant natural resources. Oregon's airports connect people and goods at local, national, and global levels. Airports move cargo and people on a wide range of aircraft types. In today's economy, this connectivity is critical to Oregon's economy. Airports also play an important role in the safety and welfare of residents, businesses, and visitors. Nearly every day aircraft operating at airports in Oregon are used in support of critical activities such as law enforcement, wildland fire suppression, commercial fishing, air ambulance, search and rescue, freight and mail transport, military and US Coast Guard activity, real estate tours, agriculture, wildlife management, and natural resource conservation.

From 2016 to 2018, the Oregon Department of Aviation (ODA) embarked on a three-phase study to update Oregon's Aviation Plan (OAP). The Oregon Aviation Plan (OAP or the Plan) provides guidance on preserving the state's system of airports and presents a framework for improving the system for continued support of communities and economic development. The Plan was last updated in 2007. Since the last plan, the state has experienced significant economic growth in some regions of the state and slow growth in others. Additionally, there have been changes in the aviation industry with the introduction of new aviation technologies, such as unmanned aerial vehicles (UAVs), and decreases in passenger air service for small markets due to increased fuel costs and airline pilot shortages. This update to OAP reflects changes in the state and the aviation industry that have taken place since the last plan was published.

1.1 Oregon Aviation Plan Title

The first OAP on record was completed in 1975. Since 1975 there have been six additional versions including this OAP. Previous versions of the OAP are as follows.

I. Oregon Aviation System Plan : Technical Report : Prepared for Oregon Department of Transportation and The Federal Aviation Administration, Publication Date, 1975
II. Oregon Aviation System Plan : Oregon. Aeronautics Division. United States. Federal Aviation Administration. Marjorie Hanley and Associates. Publication Date, 1981-1989
III. Oregon Continuous Aviation System Plan. Airport Technology and Planning Group. Oregon. Aeronautics Section. Publication Date, 1997
IV. Oregon Aviation Plan. Alternate Form of Title 2000 Oregon Aviation Plan Author Oregon. Aeronautics Division. Oregon Dept. of Transportation, Aeronautics Division, Publication Date 2000
V. Oregon Aviation Plan 2007 (OAP 2007), Author Mead and Hunt, Publication Date 2008
VI. Oregon Aviation Plan, (OAP) Author, Jviation, Inc., Publication Date 2019

Going forward titles of the Oregon Aviation Plan will be based on the version of the document rather than the publication year. This version of the Oregon Aviation Plan will recognize the five previous versions and is therefore titled Oregon Aviation Plan v6.0 (OAP v6.0). Should incremental changes be produced in coming years related to the OAP v6.0, one decimal point will be added to the report designation. For example, if the Forecast Chapter is modified, that document will be titled OAP v6.1. This will allow ODA flexibility in a continuous system planning process. When the OAP is updated in its entirety, it will be referred to as the Oregon Aviation Plan v7.0 (OAP v7.0).

1.2 Oregon Transportation Plan and Oregon Aviation Plan Goals

The Oregon Transportation Plan (OTP), a document required by Oregon and federal statutes, is a primary component of the State of Oregon's long-range transportation plan. The current OTP was last updated in 2006 and has a 25-year horizon. The OTP provides multimodal goals and policies, and a framework for prioritizing transportation programs, improvements and funding; but it does not identify specific projects for development.

Specifically, for the multimodal transportation system, the OTP establishes:

- A vision;
- Goals, policies and strategies to address core challenges and opportunities for transportation;
- A decision and implementation framework; and
- Investment scenarios and priorities.

In establishing these elements, the OTP provides guidance for modal and topic plans. Modal plans, such as this Oregon Aviation Plan v6.0 refine and provide more detail specific to their respective parts of system. In general, the OTP recommends that modal plans:

- Refine broad policy;
- Refine/define state role;
- Inventory the modal system; and
- Outline implementation/priorities.

The Oregon Transportation Plan (OTP) goals have been integrated into the OAP to provide a consistent foundation from which to evaluate and improve aviation infrastructure. The OTP outlines seven goals that will help guide the development of aviation infrastructure and all other transportation plans. Each goal is described below.

OTP Goal 1 – Mobility and Accessibility

To enhance Oregon's quality of life and economic vitality by providing a balanced, efficient, cost-effective and integrated multimodal transportation system that ensures appropriate access to all areas of the state, the nation and the world, with connectivity among modes and places.

OTP Goal 2 – Management of the System

To improve the efficiency of the transportation system by optimizing the existing transportation infrastructure capacity with improved operations and management.

OTP Goal 3 – Economic Vitality

To promote the expansion and diversification of Oregon's economy through the efficient and effective movement of people, goods, services and information in a safe, energy-efficient and environmentally sound manner.

OTP Goal 4 - Sustainability

To provide a transportation system that meets present needs without compromising the ability of future generations to meet their needs from the joint perspective of environmental, economic and community objectives. This system is consistent with, yet recognizes differences in, local and regional land use and economic development plans. It is efficient and offers choices among transportation modes. It distributes benefits and burdens fairly and is operated, maintained and improved to be sensitive to both the natural and built environment.

OTP Goal 5 – Safety and Security

To plan, build, operate and maintain the transportation system so that it is safe and secure.

OTP Goal 6 – Funding the Transportation System

To create a transportation funding structure that will support a viable transportation system to achieve state and local goals today and in the future.

OTP Goal 7 - Coordination, Communication, and Cooperation

To pursue coordination, communication and cooperation among transportation users, providers and those most affected by transportation activities to align interests, remove barriers and bring innovative solutions so that transportation system functions as one system.

The Oregon Aviation Plan v6.0 has been developed to address the elements of the OTP guidance and ensure that aviation system planning is in sync with the foundation provided by the OTP as well as follows guidance from FAA Advisory Circulars related to system planning and airport master planning.

There are two primary sets of goals for the OAP. An initial set looks at the goals related to aviation specific needs while the other set includes the goals of the Oregon Transportation Plan (OTP). The combination of these goals provides the framework for the OAP 2007.

Aviation Goals of the OAP

The primary goals of the OAP are:

OAP Goal 1 – To follow FAA Advisory Circular 150/5070-7 - The Airport System Planning Process as applicable to the 97 airports comprising the Oregon Aviation System.

OAP Goal 2 – To evaluate current system performance and identify airport facilities and service deficiencies and gaps

OAP Goal 3 – To determine the ability of each airport to meet its objectives to support its role in the system plan

OAP Goal 4 – To identify special considerations related to airports which support economic development and health and safety.

OAP Goal 5 – To provide guidance to support informed investment decisions on an airport by airport basis and by categories of airports

OAP Goal 6 – To establish a blueprint for Oregon's future airport system

1.3 Oregon Aviation Plan v6.0 Process

The update to OAP was accomplished through a series of separate but interrelated steps; these steps are described below.

Inventory: The 2016 update of the aviation inventory data is intended to reflect changes in conditions occurring since OAP 2007, and expand data where necessary. The inventory update was limited in scope and did not include site visits or individual facility evaluations, but instead relied on airport officials to update and verify their OAP 2007 facility data. A survey was distributed to airport managers at each airport in 2016, as well as a supplemental survey in 2018. Data from the Federal Aviation Administration (FAA) was also used to support development of the Plan. In addition to updating its state system plan, ODA also simultaneously updated the 2014 Statewide Economic Impact Study results for Oregon airports. The system plan's inventory chapter provides information on current facilities, services, and activity as well as changes to the airport facilities and services.

Forecasts: As part of the system plan update, 20-year projections (2015 to 2035) of aviation demand were developed for based general aviation aircraft, general aviation operations, commercial enplanements, commercial aircraft operations, and military aircraft operations. Airport master plan forecasts from 2008 to 2018 were included in the forecast analysis when applicable.

Airport Roles: ODA, as part of their prior statewide system plan, established five role categories for Oregon airports, shown in **Table 1-1**. Airport roles are based on factors such as facilities, activity, services, geographic location, and market area characteristics.

TABLE 1-1: OREGON AIRPORT ROLE CATEGORIES

Category I	**Commercial Service Airport:** These airports support some level of scheduled commercial airline service in addition to supporting a full range of general aviation aircraft activities. Commercial service includes both domestic and international destinations. Objectives call for a minimum runway length of 6,000 feet.
Category II	**Urban General Aviation Airport:** These airports support all general aviation aircraft and accommodate corporate aviation activity, including piston and turbine engine aircraft, business jets, helicopters, gliders, and other general aviation activity. The most demanding user requirements are business-related. These airports service a large/multi-state geographic region or experience high levels of general aviation activity. The minimum runway length objective for Category II airports is 5,000 feet.
Category III	**Regional General Aviation:** These airports support most twin and single-engine aircraft and may accommodate occasional business jet operations. These airports support regional transportation needs with a large and often sparsely populated service area. The minimum runway length objective for Category III airports is 4,000 feet.
Category IV	**Local General Aviation Airport:** These airports support primarily single-engine general aviation aircraft but are capable of accommodating smaller twin-engine general aviation aircraft. These airports support local air transportation needs and special-use aviation activities. The minimum runway length objective for Category IV airports is 3,000 feet.
Category V	**Remote Access/Emergency Services (RAES):** These airports support primarily single-engine general aviation aircraft, special-use aviation activities, access to remote areas, or provide emergency service access. These airports should have at least 2,500 feet of runway.

Since the last statewide system plan was published, airports and airport market areas have changed. This update examined each airport to consider changes that could signal the need for revising the airport's role assigned in the prior plan. All study airports were considered to identify recommended role changes, as appropriate.

System and Airports Evaluation: The OAP analyzes access to the system for residents of the state as well as evaluates facility improvement needs and airport service objectives. Some airports may meet nearly all the performance criteria for their assigned category while others may fall short on several facility and services performance criteria. The evaluation does not lessen the importance of airports based on improvement needs, but does list future improvements so that each airport can continue to serve their local community, businesses, and the state's pilot community. The analysis spells out improvements needed at Oregon's airports to guide the State decision makers and airport managers on where to improve the aviation system over the next ten years. Evaluating the Oregon airport system to identify its adequacies, deficiencies, and redundancies helps the state develop a plan that shapes a viable and balanced system of airports. Using a geographic information system (GIS) mapping tool, drive-time service areas for the airports were established to measure the population served by each airport. Performance criteria used to evaluate the system included accessibility to: airports with commercial airline service; airports with on-site weather reporting equipment; airports with a precision like approach; airports with a published approach, in addition to accessibility to any airport. As part of the prior OAP, various performance criteria were established to enable airports to best fulfill their assigned role in the state airport system. Facility and service objectives were developed for airports in each of the five role categories.

Special Considerations: The OAP addresses special considerations related to unique aspects of Oregon's system of airports. These considerations address new trends in Oregon aviation activity. Topics addressed in this chapter include:

- **Airport System Resilience:** The extensive aviation system in Oregon is a crucial asset to the state during times of emergency. Airports enable emergency rescue crews to quickly access remote or hard-hit areas, and supply resources to and evacuate areas that may otherwise be unreachable via roadway, boat, and rail. As such, this study included an inventory of airports that support emergency services. Further, this study inventoried airports located within the Cascadia subduction zone (CSZ) that may be impacted or destroyed during a zone event.
- **Airports with Scheduled Air Cargo Service:** There are 14 airports in Oregon that support regularly scheduled air cargo service that are critical links in connecting communities with the national and global economy. While passenger airlines do carry some cargo and mail, the clear majority of air cargo volume arrives and departs on dedicated air cargo aircraft. Portland International Airport is the only Oregon airport with dedicated cargo jet activities, which are operated by FedEx Express, DHL, Amazon Prime Air, and UPS. Thirteen other airports in the state support turboprop and piston engine cargo aircraft, many of which are contracted to "feed" air cargo to and from the cargo jets. This section identifies the airports and air cargo carriers operating within the state.
- **State-owned Airports:** Nearly 30 percent of the airports in the state's system are owned by ODA. These 28 airports range from Aurora State Airport, one of the busiest airports in Oregon with extensive corporate jet activity, to small rural airports and airports along the Oregon coast.
- **State Warning Airports:** Nine of the airports owned and operated by ODA have been designated as Warning Airports. These Warning Airports do not meet normal dimensional standards and have conditions that require specific pilot knowledge.
- **Gaps in Geographic Coverage:** Oregon has a land area consisting of 98,466 square miles that provides the aviation community with 95 system. This system provides alternate airports for landing during emergencies or poor weather conditions are critical to pilots when flying to a destination airport as

well as when traversing the state on long routes. Analysis of Oregon's system of airports indicates that there are two large geographic areas in the state that lack a system airport, Central Oregon and southeast/south-central Oregon. This section of the report provides an overview of gaps in airport coverage.

- **Aviation System Action Program (ASAP) and Rural Oregon Airport Relief Program (ROAR):** In 2015, the Oregon State Legislature passed House Bill 2075 to increase the fuel tax on Aviation Gas (AV Gas) and Jet Fuel by .02 cents per gallon to invest in aviation for specific purposes. This resulted in the Aviation System Action Program (ASAP) Fund. The ODA assists rural communities in commercial air service through the Rural Oregon Aviation Relief (ROAR) Program. ODA identifies rural airports as an imperative asset to the aviation system since they play a critical role in the economic development of the surrounding local communities.
- **Unmanned Aerial Vehicles (UAVs):** The Unmanned Aircraft Systems (UAS) is a rapidly growing sector within the aviation industry. As the name suggests, a UAS is an aircraft without a human on board; it is operated by a pilot on the ground or by a computer program. UAS are increasingly used by private businesses and recreational users. Businesses in Oregon are using UAS to survey forests and wildlife, monitor forest fires, photograph land, and mapping. Additionally, the US Coast Guard is also deploying UAVs in Oregon.

Costs and Funding: Costs to improve the system to meet all airport role related performance objectives are summarized in total and by type. Each airport also has its own capital improvement plan (SCIP); current SCIPs for each airport were compared to OAP deficiency costs to determine if any airports have planned projects that will enable them to resolve any noted deficiencies, as they relate to OAP objectives. ODA has recently completed a Statewide Pavement Management Plan; this plan identifies needed pavement maintenance and improvement projects for most system airports. The Costs and Funding analysis summarizes identified pavement related projects for the study airports. As part of the OAP , projects from the plan, SCIPs, and pavement management plan were reviewed in an attempt to identify and remove any duplicate projects to avoid double-counting financial requirements for the system. The recommended plan identifies estimated 10-year and average annual investment needs for Oregon airports.

Economic Impact: The economic contributions made by airports are generated from on-airport economic activities and off-airport spending by visiting air travelers. Visitor spending impacts benefit the hospitality industry. Economic impacts documented in the report also include business sectors reliant on airports for business travel and for shipping locally manufactured goods to domestic and international markets. Total impacts include the multiplier impact (direct and indirect/induced). When all impacts are considered, the analysis shows that the 97 Oregon system airports are responsible for significant annual economic impacts.

Compliance: The OAP considered Oregon and federal compliance regulations within three areas: Municipal and County Land Use and Zoning, FAA airport design standards, and Oregon Transportation Plan 2007 guidance.

- **Municipal and County Land Use and Zoning:** Regulating the development patterns surrounding airports is critical to preventing incompatible land uses, which are of concern to both airport operations and to the health, safety, and welfare of nearby communities. Oregon state law currently requires that airports be considered in locally-adopted comprehensive plans and be protected from incompatible uses through adopted zoning and land use development codes and ordinances. However, not all jurisdictions with land use authority over public use airports in the Oregon Department of Aviation (ODA) system sufficiently protect airport operations through their adopted ordinances.
- The 2007 OAP Update verified the status of airport-related land use planning and local regulations for each jurisdiction (both city and county) with land use authority over an ODA system airport. The OAP reviewed and analyzed local jurisdiction compliance with state regulations regarding land uses surrounding airports and make recommendations on how to better implement those regulations. This

Land Use Compatibility Compliance Report for the OAP details the steps taken to collect and analyze land use compatibility information for public use airports, explains how this data was analyzed, and identifies the extent to which jurisdictions comply with state laws. The report provides also guidance on prioritizing assistance for jurisdictions whose policies and land use regulations put airports and adjacent communities at risk. An Airport Land Use and Zoning database was also prepared for ODA staff to research land use and zoning ordinances impacting airports within the system.

- **FAA Airport Design Standard**: As part of the inventory, three additional investigative efforts were undertaken. These efforts included a runway protection zone (RPZ) analysis, an airport Object Free Area (OFA) analysis, and an analysis of Runway Safety Areas (RSA). Analysis of the primary runway for these three criteria were included, secondary runways were not analyzed.
- The first analysis examined the 190 RPZs for all study airports using aerial photographs. This effort reviewed all RPZs and identified incompatible land uses within the RPZ. RSAs and OFAs were also analyzed to identify nonstandard structures as well as impacts from land uses and terrain. All nonstandard issues in RPZs, OFAs, and RSAs were noted on an air photo of the airport. Parallel taxiway and runway separation distances were also analyzed. A list of airports and the number of issues found are provided in tabular form.
- **Oregon Transportation Plan 2006 Guidance:** The OAP has attempted to address each of the OTP goals to meet the intent of the OTP. Continual assessment of the goals and the OAP is recommended to provide a fresh evaluation of the ever-changing needs and demands placed on the system by the various aviation users. The foundation provided in the OAP is used to assess all state, regional, and local aviation facilities and services and creates a strategy that will guide transportation improvement decisions over the next 20 years.

Recommendations to the System: The OAP provides analysis and recommendations for changes to current State Airport Roles. Aviation is a dynamic industry and airports and the role airports play in meeting the state's transportation and economic needs and objectives can change over time. A review of current airport roles was undertaken to determine if changes appear to be appropriate. The need to change state airport roles identified in the OAP considered several factors which include:

- Outside influences on an airport
- Significant improvements in airport infrastructure
- Current aviation activity on the airport

An OAP Category Change Matrix was developed using a ranking by level of importance to determine whether an airport's OAP Category should be elevated. The three main factors had more than one component to address changes at an airport since the 2007 study. The OAP Category Change Matrix assigned points to each component. Results of the analysis recommends that La Grande/Union County Airport be assigned to the Category II – Urban General Aviation Airport. By assigning La Grande to Category II, the airport will be the only Category II airport in eastern Oregon on the Interstate 84 Corridor. La Grande has scheduled air cargo activity, an air ambulance based on the airport and the USFS has an Air Tanker Base located there. Capital improvements at the airport since the 2007 OAP include a runway extension and a GPS approach.

1.4 Oregon Aviation Plan v6.0 Deliverables

The primary output from the update to the OAP is a Technical Report that documents all study analysis, findings, and recommendations. An Executive Summary provides a high-level review of the detailed Technical Report.

An Individual Airport Report was prepared for each study airport. This report summarizes each airport's specific findings and recommendations from the OAP, and contains each airport's Report Card. The Report Cards provide a summary of projects and costs that the airport could anticipate in the next five to ten years. The Individual Airport Reports also provide detailed airport-specific information for the community-based land use compatibility analysis and the airport's economic impact. All Individual Airport Reports are available from ODA.

2. INVENTORY

In 2015, the Oregon Department of Aviation (ODA) and its planning consultant began data collection to update the information contained in the Oregon Aviation Plan 2007 (OAP 2007). An updated inventory of the existing conditions was necessary in order to support the ongoing evaluation of the Oregon system of airports. The Project Team was able to evaluate the existing condition of individual airports, and the state aviation system as a whole, from information collected through the inventory process. The data compiled through the original or updated inventory process includes:

- Physical airport characteristics
- Activity levels
- Environmental considerations
- Navigation aids
- Local socioeconomic data
- Airport financial data
- Surface transportation access
- Terminal, airspace, and airfield capacity

The inventory process is summarized in the following sections:

- 2.1 - Aviation Inventory
- 2.2 - Airport Survey Questionnaire
- 2.3 - Oregon System of Airports

2.1 Aviation Inventory

The OAP 2007 assessed 97 public-use airports, including 82 publicly-owned and 15 privately-owned airports. These airports are dispersed over 98,386 square miles within the state of Oregon, the ninth largest of the 50 states. The 2016 update of the aviation inventory data is intended to reflect changes in conditions occurring since OAP 2007, and expand data where necessary. The inventory update was limited in scope and did not include site visits or individual facility evaluations, but instead relied on airport officials to update and verify their OAP 2007 facility data.

Updating statewide aviation system data required coordination with ODA, airport managers, and airport sponsors. The Project Team developed a streamlined data collection strategy to engage these key stakeholders in the process of maintaining accurate system data.

The Project Team developed a survey questionnaire that was uploaded to Survey Monkey®, a web-based survey site. Emails were sent to all 97 airports within the ODA system with a link to the Survey Monkey website, requesting that they provide the requested information to support the OAP v6.0 and the ongoing ODA-managed state capital improvement program (SCIP) process. A total of 52 initial responses/questionnaires (54%) were received. In an effort to increase participation, the remaining non-responding airport sponsors were contacted by telephone and were mailed a printed copy of the questionnaire. Sponsors provided information for a total of 59 of the 97 surveyed airports (61%).

The survey responses provided the Project Team with local verification of facility and activity data for the airports. For those airports that did not respond to the requests for data, the Project Team reviewed available information from a variety of local, state, and federal sources to identify changes occurring since the 2007 OAP. The data were cataloged, compiled, and evaluated for the OAP v6.0.

2.2 Airport Survey Questionnaire (OAP v6.0)

The survey questionnaire covered a wide range of airport activity including:

- Number of based aircraft
- Aircraft operations (local, itinerant, and total)
- Number of airport employees
- Availability, type, and quantity of fuel storage
- Annual operating expenditures and capital improvements
- Aircraft storage facilities (availability versus demand)
- Airport lease rates and landing fees, if applicable
- NAVAIDS, lighting, etc.
- Types of airport activities such as law enforcement, emergency response, firefighting, etc.
- Any additional comments

The Project Team began the process of updating inventory data by reviewing the Federal Aviation Administration (FAA) Airport Master Record (Form 5010) for each of the study airports. The 5010 provides a record of existing airport facilities, services, based aircraft, and operations. A checklist was created based on the Airport Master Record and the information was cross-checked and updated during the inventory process. Additional data sources included the FAA Chart Supplements (formerly known as the FAA Airport/Facility Directory); the FAA "webdatasheet" site (http://webdatasheet.faa.gov/); www.AirNav.com, a secondary online source of airport specific information; available Airport Master Plans and Airport Layout Plans; and the FAA's Terminal Area Forecast (TAF). The TAF provides based aircraft and aircraft operations data (local, itinerant, and total operations), as well as a breakdown between commercial, air taxi, and military operations.

The physical characteristics of each airport were documented and updated as necessary during the inventory process via the Survey Monkey questionnaire, the 5010 checklist, airport master plans and airport layout plans, the TAF, http://webdatasheet.faa.gov, and through a review of the recent FAA grant histories for airports in Oregon. A sample of the Survey Monkey questionnaire is included in **Appendix A, Manager Survey**.

2.2.1 Survey Results

The OAP 2007 included the compilation of a spreadsheet tabulating the results of the completed airport surveys. An updated spreadsheet was compiled in the development of the OAP v6.0. Data within the two spreadsheets were compared to identify any significant changes within the OAP system between 2007 and 2016.

It is noted that some data inconsistencies were identified between the two spreadsheets. For example, there were instances where the 2007 data indicated the presence of facilities that were subsequently found to be non-existent at that time. In other instances, facilities of greater capability identified in OAP 2007 were reported having reduced (downsized or eliminated) capability in the 2016 update. These were investigated to the extent possible to verify/resolve any inconsistencies.

In total, 59 of the 97 airports responded in some form to the survey questionnaire, either online via Survey Monkey or via the printed survey questionnaire. Of the 97 airports reviewed, 66 had updated information that reflected a change from the OAP 2007 study. Additional data sources were queried for those airports that did not respond to the survey questionnaire in order to identify any required facility updates. A summary of significant facility changes is provided below:

- Nineteen airports had a change in runway length:
    - Eleven airports had an increase in runway length.
    - Eight airports had a decrease in runway length.
- Seven airports had a change in runway width:
    - Six airports had a runway width reduced.
    - One airport had an increase in runway width.
- Six airports had a change in runway surface:
    - Four airports upgraded runway composition (paved).
    - Two airports converted gravel runways to turf.
- One airport added runway edge lighting.
- Eleven airports had changes in their primary taxiway configuration, including the addition of full- or partial-length parallel taxiways, taxiway turnarounds and new access taxiways.
- Nine airports added or upgraded taxiway edge lighting or retroreflectors.

Table 2-1, **Table 2-2**, and **Table 2-3** provide a comprehensive overview of all the changes in airport facilities identified between OAP 2007 and data collected for the OAP v6.0 in 2016.

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TABLE 2-1: AIRSIDE FACILITY CHANGES, 2007-2016 – FACILITIES

FAA ID	Associated City	Airport Name	Primary Runway Orientation	Primary Runway Length	Primary Runway Width	Primary Runway Surface Type	Primary Runway Pavement Strength	Primary Runway Lighting	Primary Taxiway Configuration	Primary Taxiway Lighting	Apron
R03	Alkali Lake	Alkali Lake State									
1S8	Arlington	Arlington Municipal			100' to 50'	Gravel to Turf					
AST	Astoria	Port of Astoria Regional Airport		5,796' to 5,794'							N.A. to E
UAO	Aurora	Aurora State Airport					3,000 to 30,000			Reflectors to MITL	
BKE	Baker City	Baker City Municipal Airport								Reflectors to MITL	
S05	Bandon	Bandon State Airport					12,500 to 12,000				
BDN	Bend	Bend Municipal Airport									
M50	Boardman	Boardman Airport									
BOK	Brookings	Brookings Airport									
BNO	Burns	Burns Municipal Airport					40,000 to 30,000				
5S6	Sixes	Cape Blanco State Airport									
CZK	Cascade Locks	Cascade Locks State Airport									
2S7	Chiloquin	Chiloquin State Airport		3,735' to 3,749'			12,500 to 10,000			N.A. to Reflectors	N.A. to E
62S	Christmas Valley	Christmas Valley Airport					12,500 to 12,000		N.A. to Full Parallel	N.A. to MITL	E, C to E
DLS	The Dalles	Columbia Gorge Regional-The Dalles	Runway 12/30 to Runway 13/31				12,000 to 60,000	HIRL to MIRL			E, C to E
3S9	Condon	Condon State Airport - Pauling Field									
61S	Cottage Grove	Cottage Grove State Airport - Jim Wright Field		3,200' to 3,188'			12,500 to 15,000				
EUG	Eugene	Eugene Airport - Mahlon Sweet Field									
6S2	Florence	Florence Municipal Airport									
5S1	Roseburg	George Felt		2,325' to 2,300'							
4S1	Gold Beach	Gold Beach Municipal Airport		3,200' to 3,237'							
GCD	John Day	Grant County Regional Airport								N.A. to Reflectors	
3S8	Grants Pass	Grants Pass Airport	Runway 12/30 to Runway 13/31				New 19,000	LIRL to LIRL	Added Taxiway B		
HRI	Hermiston	Hermiston Municipal Airport									
3S4	Cave Junction	Illinois Valley Airport		5,001' to 4,807'	75' to 60'		19,000 to 20,000	LIRL to LIRL			N.A. to E
JSY	Joseph	Joseph State Airport									
4S2	Hood River	Ken Jernstedt Airfield									
LMT	Klamath Falls	Crater Lake-Klamath Regional				Bituminous to Bituminous / Concrete					
LGD	La Grande	La Grande / Union County Airport		5,600' to 6,260'			65,000 to 99,000				
5S5	Culver	Lake Billy Chinook			34' to 32'	Paved-Chip Seal to Bituminous			N.A. to Turnarounds		
LKV	Lakeview	Lake County Airport		5,306' to 5,318'						N.A. to Reflectors	N.A. to E
100	Florence	Lake Woahink SPB									
7S9	Hubbard	Lenhardt Airpark		3,200' to 2,956'					N.A. to Turnarounds		
9S9	Lexington	Lexington Airport		4,155' to 4,156'							
S33	Madras	Madras Municipal Airport					12,500 to 75,000				

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FAA ID	Associated City	Airport Name	Primary Runway Orientation	Primary Runway Length	Primary Runway Width	Primary Runway Surface Type	Primary Runway Pavement Strength	Primary Runway Lighting	Primary Taxiway Configuration	Primary Taxiway Lighting	Apron
4S7	Malin	Malin		2,950' to 2,800'	40' to 30'		12,500 to N.A.		Partial Parallel to N.A.		
00S	McKenzie Bridge	McKenzie Bridge State									
MMV	McMinnville	McMinnville Municipal Airport									
S49	Vale	Miller Memorial Airpark				Gravel to Bituminous					
12S	Monument	Monument Municipal			29' to 25'						
4S9	Mulino	Mulino State Airport									
3S7	Manzanita	Nehalem Bay State Airport							Partial Parallel to N.A.		
ONP	Newport	Newport Municipal Airport			150' to 100'						
5S0	Oakridge	Oakridge State		3,601' to 3,610'							
ONO	Ontario	Ontario Municipal Airport					30,000 to 30,000s, 60,000d				
28U	Owyhee Reservoir	Owyhee Reservoir State									
61J	Portland	Portland Downtown Heliport									
HIO	Portland	Portland-Hillsboro Airport	Runway 12/30 to Runway 13R/31L								
PDX	Portland	Portland International Airport				Bituminous to Concrete					N.A. to E.
TTD	Portland	Portland-Troutdale Airport									
S39	Prineville	Prineville Airport		5,750' to 5,751'					Partial Parallel to Full Parallel		
RDM	Redmond	Redmond Municipal Airport-Roberts Field		7,040' to 7,038'							N.A. to E
MFR	Medford	Rogue Valley International-Medford Airport					200,000 to 75,000				
RBG	Roseburg	Roseburg Regional Airport		4,602' to 5,001'			89,000 to 42,000				
SLE	Salem	Salem McNary Field									
03S	Sandy	Sandy River									
6K5	Sisters	Sisters Eagle Air Airport		3,556' to 3,560'	30' to 60'			N.A. to MIRL	Turnarounds to Full Parallel		N.A. to E
4S4	Cornelius	Skyport				Gravel to Turf					
OTH	North Bend	Southwest Oregon Regional Airport							Partial Parallel to Full Parallel		
2S6	Newberg	Sportsman Airpark		2,745' to 2,755'							
7S3	Hillsboro	Stark's Twin Oaks							Turnarounds to Full Parallel		
S21	Sunriver	Sunriver Airport		5,455' to 5,461'							
TMK	Tillamook	Tillamook Airport									

Source: Century West, airport records, and FAA 5010 data
Notes: NA = Not Applicable or None; C = ; D = Desired from 2007 OAP; E = Existing

TABLE 2-2: FACILITY CHANGES, 2007-2016 – NAVAIDS

FAA ID	Associated City	Airport Name	Beacon	ASOS	AWOS	Wind Cone	Lighted Wind Cone	PAPI	VASI	REIL	MLS	ILS	Localizer	MALSR	ODALS	DME	VOR'	GPS	NDB
R03	Alkali Lake	Alkali Lake State																	
1S8	Arlington	Arlington Municipal				N.A. to E											N.A. to E		

FAA ID	Associated City	Airport Name	Beacon	ASOS	AWOS	Wind Cone	Lighted Wind Cone	PAPI	VASI	REIL	MLS	ILS	Localizer	MALSR	ODALS	DME	VOR*	GPS	NDB
AST	Astoria	Port of Astoria Regional Airport		N.A. to E			N.A. to E	N.A. to E	N.A. to E	N.A. to E		N.A. to E	N.A. to E	N.A. to E		N.A. to E	N.A. to E	N.A. to E	N.A. to E
UAO	Aurora	Aurora State Airport								E		N.A. to E				N.A. to E	N.A. to E		N.A. to E
BKE	Baker City	Baker City Municipal Airport																	
S05	Bandon	Bandon State Airport															N.A. to E		
BDN	Bend	Bend Municipal Airport					E, D, C to E	E, C to E								N.A. to E	N.A. to E		N.A. to E
M50	Boardman	Boardman Airport								E							N.A. to E		
BOK	Brookings	Brookings Airport				N.A. to E											N.A. to E		
BNO	Burns	Burns Municipal Airport																	
5S6	Sixes	Cape Blanco State Airport															N.A. to E		
CZK	Cascade Locks	Cascade Locks State Airport					E to N.A.										N.A. to E		
2S7	Chiloquin	Chiloquin State Airport				N.A. to E	E to N.A.										N.A. to E		
62S	Christmas Valley	Christmas Valley Airport						E											
DLS	The Dalles	Columbia Gorge Regional-The Dalles			N.A. to E													E	
3S9	Condon	Condon State Airport - Pauling Field																	
61S	Cottage Grove	Cottage Grove State Airport-Jim Wright Field															N.A. to E		
EUG	Eugene	Eugene Airport-Mahlon Sweet Field							E to N.A.										
6S2	Florence	Florence Municipal Airport								E to N.A.							N.A. to E		
5S1	Roseburg	George Felt				N.A. to E													
4S1	Gold Beach	Gold Beach Municipal Airport															N.A. to E		
GCD	John Day	Grant County Regional Airport					N.A. to E		E to N.A.	N.A. to E							N.A. to E		
3S8	Grants Pass	Grants Pass Airport	E		E		E	E	E to N.A.	E	E to N.A.						N.A. to E	E	
HRI	Hermiston	Hermiston Municipal Airport		N.A. to E	E to N.A.					N.A. to E									
3S4	Cave Junction	Illinois Valley Airport	E		E		E	E	E		E						N.A. to E		
JSY	Joseph	Joseph State Airport						E		E							N.A. to E		
4S2	Hood River	Ken Jernstedt Airfield				N.A. to E				E, C to E							N.A. to E		
LMT	Klamath Falls	Crater Lake-Klamath Regional	E, C to E					E	E, C to E	E to N.A.								E	
LGD	La Grande	La Grande / Union County Airport															N.A. to E		
5S5	Culver	Lake Billy Chinook															N.A. to E		
LKV	Lakeview	Lake County Airport	N.A. to E		N.A. to E		N.A. to E		N.A. to E	N.A. to E							N.A. to E	N.A. to E	
100	Florence	Lake Woahink SPB															N.A. to E		
7S9	Hubbard	Lenhardt Airpark					N.A. to E		N.A. to E								N.A. to E		
9S9	Lexington	Lexington Airport															N.A. to E		
S33	Madras	Madras Municipal Airport								E							N.A. to E		
4S7	Malin	Malin															N.A. to E		
00S	McKenzie Bridge	McKenzie Bridge State															N.A. to E		
MMV	McMinnville	McMinnville Municipal Airport										E to N.A.				N.A. to E	N.A. to E	N.A. to E	
S49	Vale	Miller Memorial Airpark				N.A. to E											N.A. to E		
12S	Monument	Monument Municipal															N.A. to E		

FAA ID	Associated City	Airport Name	Beacon	ASOS	AWOS	Wind Cone	Lighted Wind Cone	PAPI	VASI	REIL	MLS	ILS	Localizer	MALSR	ODALS	DME	VOR*	GPS	NDB
4S9	Mulino	Mulino State Airport						E to N.A									N.A. to E		
3S7	Manzanita	Nehalem Bay State Airport															N.A. to E		
ONP	Newport	Newport Municipal Airport							E to N.A		E to N.A								
5S0	Oakridge	Oakridge State																	
ONO	Ontario	Ontario Municipal Airport						E, C to E, C		E, C to E							N.A. to E		
28U	Owyhee Reservoir	Owyhee Reservoir State																	
61J	Portland	Portland Downtown Heliport							E to N.A								N.A. to E		
HIO	Portland	Portland-Hillsboro Airport							E to N.A										
PDX	Portland	Portland International Airport	N.A. to E	N.A. to E		N.A. to E	N.A. to E	N.A. to E		N.A. to E		N.A. to E	N.A. to E	N.A. to E		N.A. to E	N.A. to E	N.A. to E	N.A. to E
TTD	Portland	Portland-Troutdale Airport																	
S39	Prineville	Prineville Airport		N.A. to E	N.A. to E	N.A. to E											N.A. to E		E to N.A
RDM	Redmond	Redmond Municipal Airport-Roberts Field																	E to N.A
MFR	Medford	Rogue Valley International-Medford Airport							E to N.A										
RBG	Roseburg	Roseburg Regional Airport														E to N.A			
SLE	Salem	Salem McNary Field		N.A. to E		N.A. to E						E, D to E				N.A. to E	N.A. to E		
03S	Sandy	Sandy River															N.A. to E		
6K5	Sisters	Sisters Eagle Air Airport	N.A. to E		N.A. to E			N.A. to E									N.A. to E		
4S4	Cornelius	Skyport															N.A. to E		
OTH	North Bend	Southwest Oregon Regional Airport						E, C to N.A										N.A. to E	
2S6	Newberg	Sportsman Airpark															N.A. to E		
7S3	Hillsboro	Stark's Twin Oaks															N.A. to E		
S21	Sunriver	Sunriver Airport														N.A. to E	N.A. to E		
TMK	Tillamook	Tillamook Airport									E to N.A	N.A. to E					N.A. to E		
5S4	Toledo	Toledo State Airport						E to N.A									N.A. to E		
05S	Vernonia	Vernonia Municipal				N.A. to E											N.A. to E		
R33	Waldport	Wakonda Beach State															N.A. to E		

Source: Century West, airport records, and FAA 5010 data
Notes: NA = Not Applicable or None; E = Existing

TABLE 2-3: FACILITY CHANGES, 2007-2016 – SERVICES

FAA ID	Associated City	Airport Name	Deicing	100 LL	Jet A	Full Service FBO	Ground Transportation	Control Tower	Food Services	Restrooms	Pilot Lounge	Telephone	Snow Removal	NPIAS
R03	Alkali Lake	Alkali Lake State												
1S8	Arlington	Arlington Municipal												
AST	Astoria	Port of Astoria Regional Airport	N.A. to E	N.A. to E	N.A. to E	N.A. to E	N.A. to E		N.A. to E	N.A. to E	N.A. to E	N.A. to E		
UAO	Aurora	Aurora State Airport						N.A. to E				N.A. to E		
BKE	Baker City	Baker City Municipal Airport												
S05	Bandon	Bandon State Airport									N.A. to E	N.A. to E		
BDN	Bend	Bend Municipal Airport												
M50	Boardman	Boardman Airport												

FAA ID	Associated City	Airport Name	Deicing	100 LL	Jet A	Full Service FBO	Ground Transportation	Control Tower	Food Services	Restrooms	Pilot Lounge	Telephone	Snow Removal	NPIAS
BOK	Brookings	Brookings Airport		E, D, C to E	E, D, C to E	N.A. to E	E to N.A.							
BNO	Burns	Burns Municipal Airport				N.A. to E	N.A. to E							
5S6	Sixes	Cape Blanco State Airport												
CZK	Cascade Locks	Cascade Locks State Airport												
2S7	Chiloquin	Chiloquin State Airport												
62S	Christmas Valley	Christmas Valley Airport												
DLS	The Dalles	Columbia Gorge Regional-The Dalles							N.A. to E					
3S9	Condon	Condon State Airport - Pauling Field												
61S	Cottage Grove	Cottage Grove State Airport-Jim Wright Field												
EUG	Eugene	Eugene Airport -Mahlon Sweet Field	N.A. to E											
6S2	Florence	Florence Municipal Airport												
5S1	Roseburg	George Felt												
4S1	Gold Beach	Gold Beach Municipal Airport				N.A. to E	N.A. to E							
GCD	John Day	Grant County Regional Airport												
3S8	Grants Pass	Grants Pass Airport		E	E	E				E	E	E	E	E
HRI	Hermiston	Hermiston Municipal Airport				N.A. to E								
3S4	Cave Junction	Illinois Valley Airport		E		E				E			E	E
JSY	Joseph	Joseph State Airport			N.A. to E									
4S2	Hood River	Ken Jernstedt Airfield					N.A. to E							
LMT	Klamath Falls	Crater Lake-Klamath Regional				N.A. to E								
LGD	La Grande	La Grande / Union County Airport												
5S5	Culver	Lake Billy Chinook												
LKV	Lakeview	Lake County Airport		N.A. to E	N.A. to E	N.A. to E	N.A. to E			N.A. to E	N.A. to E	N.A. to E	N.A. to E	
1O0	Florence	Lake Woahink SPB												
7S9	Hubbard	Lenhardt Airpark												
9S9	Lexington	Lexington Airport												
S33	Madras	Madras Municipal Airport												
4S7	Malin	Malin		N.A. to E										
00S	McKenzie Bridge	McKenzie Bridge State								E to N.A.				
MMV	McMinnville	McMinnville Municipal Airport												
S49	Vale	Miller Memorial Airpark												
12S	Monument	Monument Municipal												
4S9	Mulino	Mulino State Airport										N.A. to E		
3S7	Manzanita	Nehalem Bay State Airport												
ONP	Newport	Newport Municipal Airport				N.A. to E								
5S0	Oakridge	Oakridge State								E to N.A.				
ONO	Ontario	Ontario Municipal Airport												
28U	Owyhee Reservoir	Owyhee Reservoir State												

OREGON AVIATION PLAN

FAA ID	Associated City	Airport Name	Deicing	100 LL	Jet A	Full Service FBO	Ground Transportation	Control Tower	Food Services	Restrooms	Pilot Lounge	Telephone	Snow Removal	NPIAS
61J	Portland	Portland Downtown Heliport												
HIO	Portland	Portland-Hillsboro Airport												
PDX	Portland	Portland International Airport	NA to E	NA to E	NA to E	NA to E	NA to E	NA to E	NA to E	NA to E	NA to E	NA to E	NA to E	NA to Y
TTD	Portland	Portland-Troutdale Airport												
S39	Prineville	Prineville Airport												
RDM	Redmond	Redmond Municipal Airport-Roberts Field	NA to E											
MFR	Medford	Rogue Valley International-Medford Airport	NA to E											
RBG	Roseburg	Roseburg Regional Airport												
SLE	Salem	Salem McNary Field												
03S	Sandy	Sandy River		E to NA										
6K5	Sisters	Sisters Eagle Air Airport		NA to E			NA to E							
4S4	Cornelius	Skyport												
OTH	North Bend	Southwest Oregon Regional Airport												
2S6	Newberg	Sportsman Airpark												
7S3	Hillsboro	Stark's Twin Oaks				NA to E	NA to E							
S21	Sunriver	Sunriver Airport												N to Y
TMK	Tillamook	Tillamook Airport					NA to E							
5S4	Toledo	Toledo State Airport												
05S	Vernonia	Vernonia Municipal												
R33	Waldport	Wakonda Beach State												

Source: Century West, airport records, and FAA 5010 data
Notes: NA = Not Applicable or None; E = Existing; C = in CIP, D = Desired Category (2007 Study) = Yes, N = No

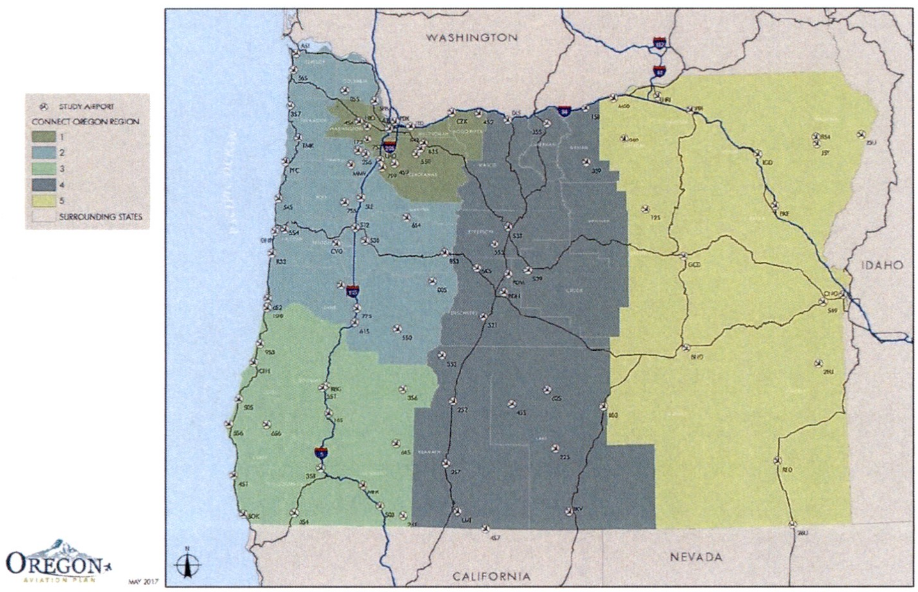
2.3 Oregon System of Airports

Oregon has a number of public and private use airports that play a significant role in both the transportation system and state and local economies. Each airport, regardless of size or ownership, serves a purpose and has a significant impact on the aviation system.

The OAP v6.0 includes 97 public-use airports that comprise the system of Oregon airports. The following provides a summary of these facilities, which are delineated by Connect Oregon regions within the state. Connect Oregon is a lottery-bond-based initiative approved by the 2005-2007 Oregon Legislative Assembly to invest in air, rail, marine, and transit infrastructure to ensure Oregon's transportation system is strong, diverse, and efficient. Connect Oregon is focused on improving the connections between the highway system and other modes of transportation to better integrate the components of the overall system, improve the flow of commerce, and remove delays. Projects throughout the state are evaluated on criteria outlined within the law.

Figure 2-1 depicts the OAP v6.0 study airports and their relationship to Connect Oregon regions. The roles of the airports within the Oregon system must also be evaluated by FAA classification and ownership.

FIGURE 2-1: OAP V6.0 STUDY AIRPORTS IN CONNECT OREGON REGIONS



Source: Jviation

2.3.1 National Plan of Integrated Airport Systems

The National Plan of Integrated Airport Systems (NPIAS) is an inventory of the United States' aviation infrastructure. The NPIAS is developed and maintained by the FAA. Existing and proposed airports within the NPIAS are of national significance and eligible to receive federal grants through the Airport Improvement Program (AIP). Congress mandates that every two years FAA develop an updated five-year estimate of AIP eligible development projects. An airport sponsor (the owner of the airport) must maintain their airport in a safe and effective manner for the flying public if the airport is included in the NPIAS, and the airport sponsor accepts FAA funding.

The OAP v6.0 includes 57 NPIAS airports[1] and 40 non-NPIAS airports. **Figure 2-2** illustrates the study airports within each Connect Oregon region by NPIAS classification. **Table 2-4** summarizes the breakdown of NPIAS classification throughout the state.

TABLE 2-4: OAP V6.0 AND CONNECT OREGON PUBLIC-USE AIRPORTS

Study Airports	NPIAS	Non-NPIAS	Number of Public-Use Airports
OAP Totals	**57**	**40**	**97**
Region 1	7	8	15
Region 2	17	10	27
Region 3	10	7	17
Region 4	12	9	21
Region 5	11	6	17

Source: Century West Engineering

2.3.2 Ownership

Public-use airports can be owned and operated through a broad range of public entities including airport authorities, cities, counties, and port districts. Airports can also be jointly owned, such as county and city. There are six categories of airport owners in Oregon:

- Airport authorities (government entity)
- County and/or city governments
- Federal entity
- Port authorities (government entity)
- Private entity
- State entity

Figure 2-3 graphically illustrates the OAP v6.0 and Connect Oregon study airports ownership type and **Table 2-5** provides a numerical breakdown of ownership type within each Connect Oregon region.

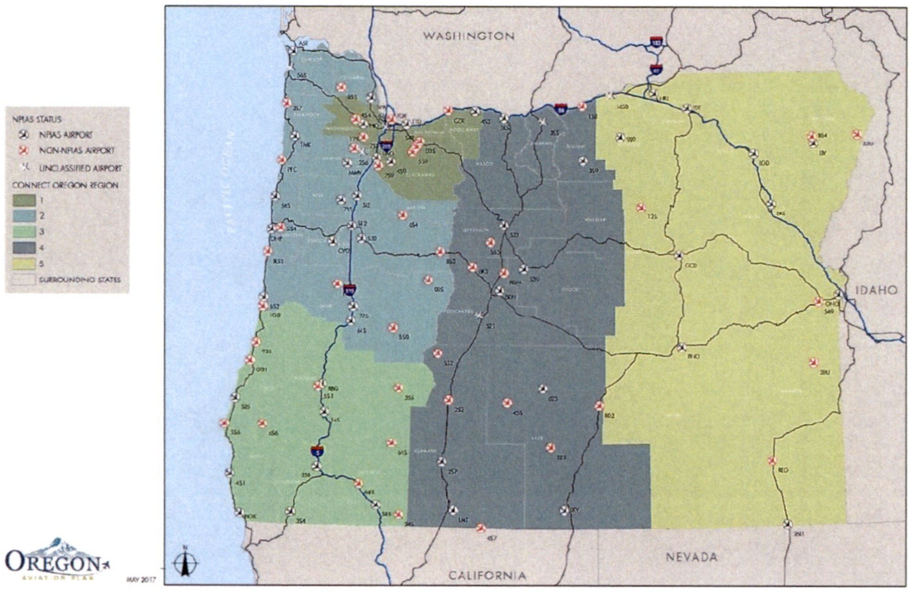
TABLE 2-5: OAP V6.0 AND CONNECT OREGON PUBLIC-USE AIRPORTS BY OWNERSHIP TYPE

Ownership	OAP	Region 1	Region 2	Region 3	Region 4	Region 5
Joint City-County	1	0	0	0	1	0
Federally Owned	3	0	0	1	1	1
Port Authority Owned	9	5	2	1	0	1
County	11	0	0	5	3	3
Privately Owned	15	6	4	1	4	0
State Owned	28	2	12	5	5	4
City Owned	30	2	9	4	7	8
Total Airports	**97**	**15**	**27**	**17**	**21**	**17**

Source: Century West Engineering

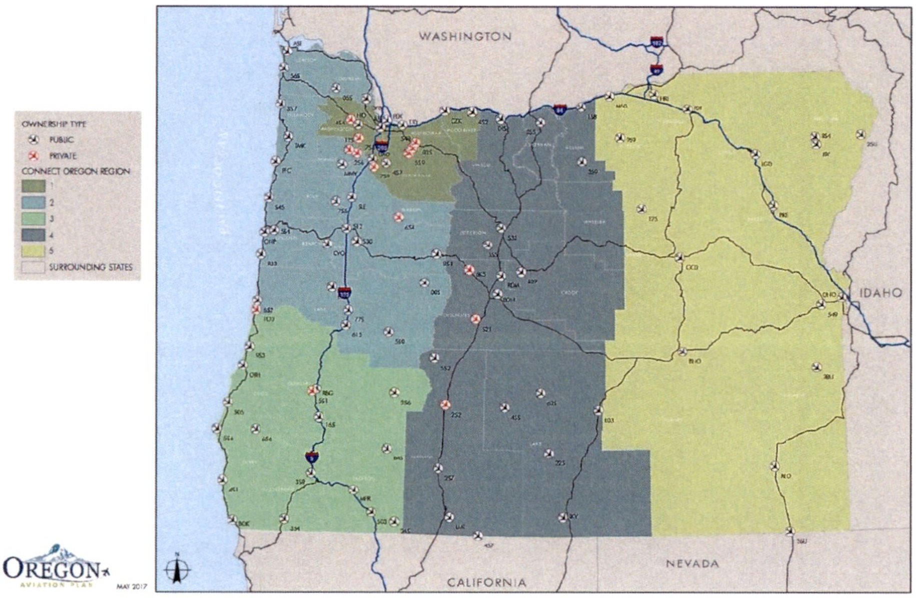
[1] Fifty-four of 57 NPIAS airports accept federal funds. Three facilities, two which are privately owned, do not accept FAA Funds. These include: Portland Downtown Heliport, Sunriver Airport and Sportsman Airpark.

FIGURE 2-2: STUDY AIRPORTS AND CONNECT OREGON REGION BY NPIAS CLASSIFICATION



Source: FAA NPIAS Report 2017-2021

FIGURE 2-3 CONNECT OREGON REGIONS/STUDY AIRPORTS BY OWNERSHIP TYPE



Source: FAA 5010

2.3.3 Airside Facilities

The airside facilities of an airport consist of many components that are required to accommodate safe aircraft operations. Airside facilities include:

- Runways

- Taxiways
- Apron network
- Visual and electronic navigation aids associated with the airport and runways
- Other general aviation facilities

Table 2-6, Table 2-7, Table 2-8, Table 2-9, and **Table 2-10** provide a comprehensive inventory of airside facilities for the OAP v6.0 study airports.

2.3.4 Landside Facilities

Landside facilities are considered to be all facilities that do not fall into the airside facilities category. Landside facilities typically include:

- Airport terminal buildings
- Aircraft storage facilities
- Automobile parking[2]
- Other general facilities

Table 2-6, Table 2-7, Table 2-8, Table 2-9, and **Table 2-10** also indicate the landside facilities provided throughout the system of airports in Oregon.

[2] The OAP does not collect data on specific transit service or facilities on airports or near airports. Some airports in the Portland Metro area may have public transit within walking distance of the airport and a MAX station is located on PDX. It is noteworthy to point out that jobs on an airport include second and third shift jobs as aircraft mechanics, cargo handlers and flight line workers work late into the night to prepare for next day flights. These workers typically rely on automobiles to get to and from the airport.

TABLE 2-6: AIRSIDE FACILITIES - PRIMARY RUNWAY

FAA ID	Associated City	Airport Name	Primary Runway							Primary Taxiway		Runway Protection Zone			Pavement Condition Index			Helipad
			Orientation	Length	Width	Surface Type	Pavement Strength (single)	Lighting	Markings (Basic, NPI, PIR)	Configuration	Lighting	Ownership (Full, Partial)	Avigation Easement (Full, Partial, NA)	Free of Incompatible Land Uses	Current (Primary RWY)	Current Year	5-YR	
S12	Albany	Albany Municipal Airport	16/34	3,004	75	Bituminous	30,000	MIRL	Basic	Full Parallel	Reflectors				100	2012	94	
R03	Alkali Lake	Alkali Lake State	18/36	6,100	150	Gravel	N/A		N/A						N/A	N/A	N/A	
1S8	Arlington	Arlington Municipal	06/24	5,000	50	Turf	N/A		N/A	Turnarounds					N/A	N/A	N/A	
S03	Ashland	Ashland Municipal Airport -Sumner Parker Field	12/30	3,603	75	Bituminous	15,000	MIRL	Basic	Full Parallel	Reflectors				99	2013	89.5	●
AST	Astoria	Port of Astoria Regional Airport	08/26	5,794	100	Bituminous	60,000	MIRL	PIR	Partial Parallel	MITL				82.75	2012	74.5	●
UAO	Aurora	Aurora State Airport	17/35	5,004	100	Bituminous	30,000	MIRL	PIR	Full Parallel	MITL				81.5	2012	70	
BKE	Baker City	Baker City Municipal Airport	13/31	5,085	100	Bituminous	50,000	MIRL	NPI	Full Parallel	MITL				99.3	2011	87	●
S05	Bandon	Bandon State Airport	16/34	3,601	60	Bituminous	12,000	MIRL	NPI	Full Parallel	Reflectors				98	2013	95	
2S2	Beaver Marsh	Beaver Marsh	18/36	4,500	60	Dirt	N/A		N/A						N/A	N/A	N/A	●
BDN	Bend	Bend Municipal Airport	16/34	5,200	75	Bituminous	30,000	MIRL	NPI	Full Parallel	Reflectors				90	2011	76	●
M50	Boardman	Boardman Airport	04/22	4,200	100	Bituminous	30,000	MIRL	Basic	Partial Parallel	Reflectors				74	2011	67	
BOK	Brookings	Brookings Airport	12/30	2,900	60	Bituminous	11,000	MIRL	Basic	Full Parallel	Reflectors				97	2013	93	
BNO	Burns	Burns Municipal Airport	12/30	5,100	75	Concrete	30,000	MIRL	NPI	Turnarounds					100	2011	88	●
5S6	Sixes	Cape Blanco State Airport	14/32	5,100	150	Bituminous	115,000		Basic	Partial Parallel					57.3	2013	51.6	
CZK	Cascade Locks	Cascade Locks State Airport	06/24	1,800	30	Bituminous	4,000		Basic	Turnarounds					94	2011	79	
17S	Newberg	Chehalem Airpark	07/25	2,285	40	Bituminous		Non-standard	Basic	Partial Parallel								
2S7	Chiloquin	Chiloquin State Airport	17/35	3,749	60	Bituminous	10,000	MIRL	Basic	Turnarounds	Reflectors				100	2013	83	
62S	Christmas Valley	Christmas Valley Airport	07/25	5,200	60	Bituminous	12,000	MIRL	Basic	Full Parallel	MITL				64	2013	59	
DLS	The Dalles	Columbia Gorge Regional -The Dalles	13/31	5,097	100	Bituminous	60,000	MIRL	Basic	Full Parallel		Partial	Partial		55.25	2011	46.75	
3S9	Condon	Condon State Airport -Pauling Field	07/25	3,500	60	Concrete	12,000	MIRL	Basic	Non-Standard	Reflectors				71	2011	64	
CVO	Corvallis	Corvallis Municipal Airport	17/35	5,900	150	Bituminous	35,000	MIRL	PIR	Full Parallel	MITL				80.83	2012	70.16	●
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field	15/33	3,188	60	Bituminous	15,000	MIRL	Basic	Full Parallel	Reflectors							
S48	Sandy	Country Squire Airpark	07/25	3,095	32	Bituminous	7,000		Basic	Full Parallel					25	2012	16	
5S2	Crescent Lake	Crescent Lake State Airport	13/31	3,900	30	Bituminous			Basic									
77S	Creswell	Creswell Hobby Field Airport	15/33	3,101	60	Bituminous	12,000	MIRL	NPI	Full Parallel					82	2013	76	
6S4	Gates	Davis Field	07/25	1,940	50	Turf	N/A		N/A						N/A	N/A	N/A	
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	07/25	6,301	150	Bituminous	115,000	HIRL	PIR	Partial Parallel	MITL	Partial	Partial		53.83	2014	51	●
8S4	Enterprise	Enterprise Municipal	12/30	2,850	60	Bituminous	7,000	LIRL	Basic	Full Parallel					64	2011	64	●
EUG	Eugene	Eugene Airport -Mahlon Sweet Field	16R/34L	8,009	150	Bituminous	75,000	HIRL	PIR	Full Parallel	MITL							
6S2	Florence	Florence Municipal Airport	15/33	3,000	60	Bituminous	12,500	MIRL	Basic	Full Parallel		Full/Partial		33 (residential)	84.5	2013	81	●
5S1	Roseburg	George Felt	10/28	2,300	100	Turf	N/A		N/A						N/A	N/A	N/A	
4S1	Gold Beach	Gold Beach Municipal Airport	16/34	3,237	75	Bituminous	12,500	MIRL	Basic	Full Parallel					96	2013	90	
GCD	John Day	Grant County Regional Airport	17/35	5,220	60	Bituminous	12,500	MIRL	Basic	Full Parallel	Reflectors	Partial			76	2015	69	●

OREGON AVIATION PLAN

FAA ID	Associated City	Airport Name	Primary Runway							Primary Taxiway		Runway Protection Zone			Pavement Condition Index			Helipad
			Orientation	Length	Width	Surface Type	Pavement Strength (single)	Lighting	Markings (Basic, NPI, PIR)	Configuration	Lighting	Ownership (Full, Partial)	Avigation Easement (Full, Partial, NA)	Free of Incompatible Land Uses	Current (Primary RWY)	Current Year	5-YR	
3S8	Grants Pass	Grants Pass Airport	13/31	4,001	75	Bituminous	19,000	MIRL	NPI	Full Parallel+1/2		Full	Full		100	2018	91	●
HRI	Hermiston	Hermiston Municipal Airport	04/22	4,500	75	Bituminous	22,000	MIRL	Basic	Full Parallel	Reflectors				97	2011	84.3	
3S4	Cave Junction	Illinois Valley Airport	18/36	4,807	60	Bituminous	20,000	MIRL	Basic			Partial	Full		66	2013	57.3	●
7S5	Independence	Independence State Airport	16/34	3,142	60	Bituminous	12,500	MIRL	Basic	Full Parallel					95	2012	88	●
JSY	Joseph	Joseph State Airport	15/33	5,200	60	Bituminous	12,500	MIRL	Basic	Full Parallel	Reflectors				100	2014	87	
4S2	Hood River	Ken Jernstedt Airfield	07/25	3,040	75	Bituminous	23,000	MIRL	Basic	Full Parallel	Reflectors				57.5	2011	48.75	
LMT	Klamath Falls	Crater Lake-Klamath Regional	14/32	10,301	150	Bituminous / Concrete	110,000	HIRL	PIR	Partial Parallel	MITL				92	2016	80	
LGD	La Grande	La Grande / Union County Airport	12/30	6,260	100	Bituminous	65,000 S 90,000 D	MIRL	NPI	Partial Parallel	Reflectors	Partial			100	2014	90	
5S5	Culver	Lake Billy Chinook	16/34	2,500	32	Bituminous		Reflectors		Turnarounds								
LKV	Lakeview	Lake County Airport	16/34	5,318	100	Bituminous	74,000	MIRL	NPI	Non-Standard	Reflectors				60	2013	57	●
1O0	Florence	Lake Woahink SPB	North/South	9,000	1,000	Water	N/A	N/A	N/A						N/A	N/A	N/A	
9S3	Lakeside	Lakeside Municipal Airport	15/33	2150	100	Turf	N/A		N/A						N/A	N/A	N/A	
S30	Lebanon	Lebanon State Airport	16/34	2877	60	Bituminous	12,500	MIRL	Basic	Partial Parallel	Reflectors				100	2012	94	
7S9	Hubbard	Lenhardt Airpark	02/20	2,956	45	Bituminous		LIRL	Basic	Turnarounds					92.5	2012	85.5	
9S9	Lexington	Lexington Airport	08/26	4,156	75	Bituminous	12,500	MIRL	Basic	Partial Parallel	Reflectors				51	2011	40	
S33	Madras	Madras Municipal Airport	16/34	5,090	75	Bituminous	12,500	MIRL	NPI	Full Parallel	MITL				57	2011	48	
4S7	Malin	Malin	14/32	2,800	30	Bituminous			Basic									
26U	McDermitt	McDermitt State Airport	16/34	5,900	60	Bituminous	12,500	LIRL	Basic	Turnarounds					61	2014	47	
00S	McKenzie Bridge	McKenzie Bridge State	06/24	2,600	30	Turf	N/A		N/A						N/A	N/A	N/A	
MMV	McMinnville	McMinnville Municipal Airport	04/22	5,420	150	Bituminous	40,000	HIRL	PIR	Full Parallel	Reflectors	Partial	Partial		59.6	2012	48.3	
25U	Imnaha	Memaloose USFS	17/35	3,300	120	Dirt	N/A		N/A						N/A	N/A	N/A	
S49	Vale	Miller Memorial Airpark	18/36	3,872	65	Bituminous		LIRL	Basic									
12S	Monument	Monument Municipal	14/32	2,140	25	Bituminous									83	2011	64	
4S9	Mulino	Mulino State Airport	14/32	3,425	100	Bituminous	12,500	MIRL	Basic	Full Parallel	LITL				83	2012	75	
16S	Myrtle Creek	Myrtle Creek Municipal Airport	03/21	2,600	60	Bituminous	12,000	MIRL	Basic	Full Parallel					99	2013	93	
3S7	Manzanita	Nehalem Bay State Airport	15/33	2,350	50	Bituminous			Basic						90	2012	76	
ONP	Newport	Newport Municipal Airport	16/34	5,398	100	Bituminous	75,000	HIRL	PIR	Partial Parallel	Reflectors				79.4	2012	76.8	
5S0	Oakridge	Oakridge State	09/27	3,610	47	Bituminous			Basic						49	2013	39	
ONO	Ontario	Ontario Municipal Airport	14/32	5,011	100	Bituminous	30,000s, 60,000d	MIRL	NPI	Full Parallel	Reflectors	Partial			100	2011	89	●
28U	Owyhee Reservoir	Owyhee Reservoir State	13/31	1,840	30	Dirt	N/A		N/A						N/A	N/A	N/A	
PFC	Pacific City	Pacific City State Airport	14/32	1,875	30	Bituminous	7,000		Basic	Turnarounds					82.5	2012	77	
22S	Paisley	Paisley	13/31	4,300	60	Bituminous		LIRL	Basic						83	2013	78	●
24S	Pinehurst	Pinehurst State Airport	04/22	2,800	30	Bituminous			Basic	Turnarounds					85.5	2013	75	
61J	Portland	Portland Downtown Heliport	N/A	80	80	Concrete	25,000	PERI		N/A	N/A							

FAA ID	Associated City	Airport Name	Primary Runway: Orientation	Length	Width	Surface Type	Pavement Strength (single)	Lighting	Markings (Basic, NPI, PIR)	Primary Taxiway: Configuration	Lighting	Runway Protection Zone: Ownership (Full, Partial)	Avigation Easement (Full, Partial, NA)	Free of Incompatible Land Uses	Pavement Condition Index: Current (Primary RWY)	Current Year	5-YR	Helipad
HIO	Portland	Portland -Hillsboro Airport	13R/31L	6,600	150	Bituminous	50,000	HIRL	PIR	Full Parallel	MITL				84	2012	73.6	●
PDX	Portland	Portland International Airport	10R/28L	11,000	150	Concrete	200,000	HIRL	PIR	Dual Full Parallel	MITL							
TTD	Portland	Portland -Troutdale Airport	07/25	5,399	150	Bituminous	19,000	MIRL	NPI	Dual Full Parallel	MITL				83.1	2012	76.6	●
6S6	Powers	Powers Hayes Field	13/31	2,500	60	Turf	N/A		N/A						N/A	N/A	N/A	
S39	Prineville	Prineville Airport	10/28	5,751	75	Bituminous	30,000	MIRL	NPI	Full Parallel	Reflectors	Full			100	2011	86	●
64S	Prospect	Prospect State Airport	02/20	4,000	50	Bituminous	N/A	LIRL	Basic	Turnarounds					59	2013	31	
RDM	Redmond	Redmond Municipal Airport -Roberts Field	04/22	7,038	150	Bituminous	68,000	HIRL	PIR	Full Parallel	MITL				59	2010	56	●
MFR	Medford	Rogue Valley International -Medford	14/32	8,800	150	Bituminous	75,000	HIRL	PIR	Full Parallel	MITL				100	2014	87	●
REO	Rome	Rome State	03/21	6,000	150	Gravel	N/A		N/A						N/A	N/A	N/A	
RBG	Roseburg	Roseburg Regional Airport	16/34	5,003	100	Bituminous	42,000	MIRL	Basic	Full Parallel	MITL				8.25	2013	78	●
SLE	Salem	Salem McNary Field	13/31	5,811	150	Bituminous	100,000	HIRL	NPI	Partial Parallel	LITL	Partial	Partial	Partial	80.7	2012	71.5	●
03S	Sandy	Sandy River-	08/26	2,115	100	Turf	N/A		N/A						N/A	N/A	N/A	
8S3	Santiam Junction	Santiam Junction State	06/24	2,800	150	Gravel	N/A		N/A						N/A	N/A	N/A	
SPB	Scappoose	Scappoose Industrial Airpark	15/33	5,100	100	Bituminous	30,000	MIRL	NPI	Dual Full Parallel	MITL				72.5	2012	65.5	
56S	Seaside	Seaside Municipal Airport	16/34	2,211	50	Bituminous	12,000	LIRL	Basic	Full Parallel					84.3	2012	80.6	●
S45	Gleneden Beach	Siletz Bay State Airport	17/35	3,297	60	Bituminous	11,000	MIRL	Basic	Full Parallel	Reflectors				82	2012	78	
45S	Silver Lake	Silver Lake USFS	03/21	3,000	55	Gravel	N/A		N/A									
6K5	Sisters	Sisters Eagle Air Airport	02/20	3,560	60	Bituminous	4,000	MIRL	Basic	Full Parallel			Full		45	2011	31	●
4S4	Cornelius	Skyport	16/34	2,000	45	Turf	N/A		N/A						N/A	N/A	N/A	
OTH	North Bend	Southwest Oregon Regional Airport	04/22	5,980	150	Bituminous	106,000	HIRL	PIR	Full Parallel	MITL							
2S6	Newberg	Sportsman Airpark	17/35	2,755	50	Bituminous	30,000	LIRL	Basic	Partial Parallel					28.3	2012	3.6	
7S3	Hillsboro	Stark's Twin Oaks	02/20	2,465	48	Bituminous		LIRL	Basic	Full Parallel					88.5	2012	71.5	
S21	Sunriver	Sunriver Airport	18/36	5,461	75	Bituminous	30,000	LIRL	NPI	Full Parallel					97	2011	84	
TMK	Tillamook	Tillamook Airport	13/31	5,001	75	Bituminous	60,000	MIRL	NPI	Full Parallel	Reflectors				100	2012	92	
3S6	Clearwater	Toketee State	11/29	5,350	60	Turf	N/A		N/A						N/A	N/A	N/A	
5S4	Toledo	Toledo State Airport	13/31	1,750	40	Bituminous	N/A		Basic	Turnarounds					63.25	2012	54.5	
5S9	Estacada	Valley View	16/34	3,780	32	Bituminous		Non-standard		Partial Parallel					70.6	2012	60.8	
05S	Vernonia	Vernonia Municipal	09/27	2,940	45	Turf	N/A		N/A						N/A	N/A	N/A	
R33	Waldport	Wakonda Beach State	16/34	2,000	30	Turf	N/A		N/A	Turnarounds					N/A	N/A	N/A	
35S	Wasco	Wasco State Airport	07/25	3,450	60	Bituminous	12,500	MIRL	Basic	Partial Parallel					85	2011	78	

Notes: ● = Existing as reported by airport sponsor
Blank = No facilities available at this airport or information unavailable
N/A = Not applicable at this airport

OREGON AVIATION PLAN

TABLE 2-7: NAVAIDS

Associated City	Airport Name	Approach Aids													
		PAPI	VASI	REIL	MLS	ILS	Localizer	MALSR	ODALS	DME	VOR (Nearby)	GPS	NDB	ALSF	TDZL
Albany	Albany Municipal Airport		●	●						●	●	●			
Alkali Lake	Alkali Lake State														
Arlington	Arlington Municipal										●				
Ashland	Ashland Municipal Airport -Sumner Parker Field	●		●							●		●		
Astoria	Port of Astoria Regional Airport	●	●	●		●	●	●		●	●	●	●	●	
Aurora	Aurora State Airport		●			●	●		●	●	●	●	●		
Baker City	Baker City Municipal Airport	●	●	●						●	●	●			
Bandon	Bandon State Airport	●		●							●				
Beaver Marsh	Beaver Marsh										●				
Bend	Bend Municipal Airport	●		●						●	●	●	●		
Boardman	Boardman Airport										●				
Brookings	Brookings Airport	●									●				
Burns	Burns Municipal Airport	●	●	●							●	●			
Sixes	Cape Blanco State Airport										●				
Cascade Locks	Cascade Locks State Airport										●				
Newberg	Chehalem Airpark										●				
Chiloquin	Chiloquin State Airport										●				
Christmas Valley	Christmas Valley Airport	●													
The Dalles	Columbia Gorge Regional -The Dalles			●		●	●			●	●	●			●
Condon	Condon State Airport -Pauling Field	●		●											
Corvallis	Corvallis Municipal Airport	●	●	●		●	●	●		●	●	●	●		
Cottage Grove	Cottage Grove State Airport -Jim Wright Field	●									●				
Sandy	Country Squire Airpark										●				
Crescent Lake	Crescent Lake State Airport														
Creswell	Creswell Hobby Field Airport	●									●				
Gates	Davis Field														
Pendleton	Eastern Oregon Regional Airport at Pendleton	●	●	●		●	●	●	●	●	●	●			
Enterprise	Enterprise Municipal										●				
Eugene	Eugene Airport -Mahlon Sweet Field	●		●		●	●	●	●	●	●	●		●	●
Florence	Florence Municipal Airport	●									●				
Roseburg	George Felt														
Gold Beach	Gold Beach Municipal Airport			●							●				
John Day	Grant County Regional Airport	●		●							●	●			
Grants Pass	Grants Pass Airport	●		●	●						●	●			
Hermiston	Hermiston Municipal Airport	●		●						●	●	●			
Cave Junction	Illinois Valley Airport	●		●							●				

Associated City	Airport Name	Approach Aids PAPI	VASI	REIL	MLS	ILS	Localizer	MALSR	ODALS	DME	VOR (Nearby)	GPS	NDB	ALSF	TDZL
Independence	Independence State Airport	•									•				
Joseph	Joseph State Airport	•		•							•				
Hood River	Ken Jernstedt Airfield			•							•				
Klamath Falls	Crater Lake-Klamath Regional	•	•			•	•	•		•	•	•		•	
La Grande	La Grande / Union County Airport	•		•							•	•	•		
Culver	Lake Billy Chinook										•				
Lakeview	Lake County Airport		•	•							•	•			
Florence	Lake Woahink SPB										•				
Lakeside	Lakeside Municipal Airport										•				
Lebanon	Lebanon State Airport	•									•				
Hubbard	Lenhardt Airpark		•								•				
Lexington	Lexington Airport	•									•	•			
Madras	Madras Municipal Airport		•	•							•	•			
Malin	Malin										•				
McDermitt	McDermitt State Airport										•		•		
McKenzie Bridge	McKenzie Bridge State										•				
McMinnville	McMinnville Municipal Airport	•		•		•	•	•		•	•	•			
Imnaha	Memaloose USFS														
Vale	Miller Memorial Airpark										•				
Monument	Monument Municipal										•				
Mulino	Mulino State Airport										•				
Myrtle Creek	Myrtle Creek Municipal Airport	•		•							•				
Manzanita	Nehalem Bay State Airport										•				
Newport	Newport Municipal Airport	•		•		•	•	•		•	•	•			
Oakridge	Oakridge State														
Ontario	Ontario Municipal Airport	•		•							•	•	•		
Owyhee Reservoir	Owyhee Reservoir State														
Pacific City	Pacific City State Airport										•				
Paisley	Paisley														
Pinehurst	Pinehurst State Airport										•				
Portland	Portland Downtown Heliport										•				
Portland	Portland -Hillsboro Airport	•		•		•	•	•		•	•	•	•	•	
Portland	Portland International Airport	•		•		•	•	•		•	•	•	•	•	•
Portland	Portland -Troutdale Airport	•	•	•							•	•	•		
Powers	Powers Hayes Field										•				
Prineville	Prineville Airport	•									•	•			
Prospect	Prospect State Airport										•				

OREGON AVIATION PLAN

Associated City	Airport Name	Approach Aids													
		PAPI	VASI	REIL	MLS	ILS	Localizer	MALSR	ODALS	DME	VOR (Nearby)	GPS	NDB	ALSF	TDZL
Redmond	Redmond Municipal Airport -Roberts Field	●	●	●	●	●	●	●		●	●	●			
Medford	Rogue Valley International -Medford Airport	●		●		●	●	●		●	●	●			●
Rome	Rome State										●				
Roseburg	Roseburg Regional Airport		●	●							●	●			
Salem	Salem McNary Field	●	●	●		●	●	●	●	●	●	●			
Sandy	Sandy River										●				
Santiam Junction	Santiam Junction State										●				
Scappoose	Scappoose Industrial Airpark	●		●			●			●	●	●			
Seaside	Seaside Municipal Airport										●				
Glenoden Beach	Siletz Bay State Airport										●				
Silver Lake	Silver Lake USFS														
Sisters	Sisters Eagle Air Airport	●									●				
Cornelius	Skyport										●				
North Bend	Southwest Oregon Regional Airport		●	●		●	●	●		●	●	●	●		
Newberg	Sportsman Airpark										●				
Hillsboro	Stark's Twin Oaks										●				
Sunriver	Sunriver Airport		●							●	●	●			
Tillamook	Tillamook Airport	●		●							●	●			
Clearwater	Toketee State														
Toledo	Toledo State Airport										●				
Estacada	Valley View										●		●		
Vernonia	Vernonia Municipal										●				
Waldport	Wakonda Beach State										●				
Wasco	Wasco State Airport										●				

Notes: ● = Existing as reported by airport sponsor
Blank = No facilities available at this airport or information unavailable

TABLE 2-8: LANDSIDE FACILITIES

Associated City	Airport Name	Beacon	ASOS	AWOS	Wind Cone	Lighted Wind Cone	Hangar Facilities	Apron	Terminal Building	Deicing
Albany	Albany Municipal Airport	●			●	●	●	●		
Alkali Lake	Alkali Lake State				●					
Arlington	Arlington Municipal				●					
Ashland	Ashland Municipal Airport -Sumner Parker Field	●		●	●	●	●	●	●	
Astoria	Port of Astoria Regional Airport	●	●			●	●	●	●	●
Aurora	Aurora State Airport	●	●		●	●	●	●	●	
Baker City	Baker City Municipal Airport	●	●		●	●	●	●	●	
Bandon	Bandon State Airport	●				●	●	●		
Beaver Marsh	Beaver Marsh									

JVIATION

Associated City	Airport Name	Beacon	ASOS	AWOS	Wind Cone	Lighted Wind Cone	Hangar Facilities	Apron	Terminal Building	Deicing
Bend	Bend Municipal Airport	●		●	●	●	●	●	●	
Boardman	Boardman Airport	●			●	●	●	●		
Brookings	Brookings Airport	●	●		●	●	●	●	●	
Burns	Burns Municipal Airport	●	●		●		●	●	●	
Sixes	Cape Blanco State Airport				●		●	●		
Cascade Locks	Cascade Locks State Airport				●					
Newberg	Chehalem Airpark	●			●	●	●	●	●	
Chiloquin	Chiloquin State Airport	●			●		●	●		
Christmas Valley	Christmas Valley Airport	●			●		●	●		
The Dalles	Columbia Gorge Regional -The Dalles	●	●	●	●	●	●	●	●	
Condon	Condon State Airport -Pauling Field	●			●	●	●	●		
Corvallis	Corvallis Municipal Airport	●		●	●	●	●	●	●	
Cottage Grove	Cottage Grove State Airport -Jim Wright Field	●				●	●	●		
Sandy	Country Squire Airpark				●		●	●		
Crescent Lake	Crescent Lake State Airport				●			●		
Creswell	Creswell Hobby Field Airport	●				●	●	●		
Gates	Davis Field				●					
Pendleton	Eastern Oregon Regional Airport at Pendleton	●	●		●	●	●	●	●	
Enterprise	Enterprise Municipal	●				●	●	●	●	
Eugene	Eugene Airport -Mahlon Sweet Field	●	●		●	●	●	●	●	●
Florence	Florence Municipal Airport	●		●	●	●	●	●	●	
Roseburg	George Felt				●		●		●	
Gold Beach	Gold Beach Municipal Airport	●		●	●	●	●	●	●	
John Day	Grant County Regional Airport	●		●	●	●	●	●	●	
Grants Pass	Grants Pass Airport	●		●		●	●	●	●	
Hermiston	Hermiston Municipal Airport	●	●			●	●	●	●	
Cave Junction	Illinois Valley Airport	●		●		●	●	●		
Independence	Independence State Airport	●			●	●	●	●		
Joseph	Joseph State Airport	●		●	●	●	●	●		
Hood River	Ken Jernstedt Airfield	●		●	●	●	●	●	●	
Klamath Falls	Crater Lake-Klamath Regional	●	●		●	●	●	●	●	
La Grande	La Grande / Union County Airport	●		●	●	●	●	●	●	
Culver	Lake Billy Chinook				●		●			
Lakeview	Lake County Airport	●		●		●	●	●	●	
Florence	Lake Woahink SPB									
Lakeside	Lakeside Municipal Airport				●		●			
Lebanon	Lebanon State Airport	●				●	●	●	●	
Hubbard	Lenhardt Airpark				●	●	●			

Associated City	Airport Name	Beacon	ASOS	AWOS	Wind Cone	Lighted Wind Cone	Hangar Facilities	Apron	Terminal Building	Deicing
Lexington	Lexington Airport	•		•	•	•	•	•	•	
Madras	Madras Municipal Airport	•		•		•	•	•	•	
Malin	Malin				•		•	•		
McDermitt	McDermitt State Airport	•				•				
McKenzie Bridge	McKenzie Bridge State				•					
McMinnville	McMinnville Municipal Airport	•	•		•	•	•	•	•	
Imnaha	Memaloose USFS				•					
Vale	Miller Memorial Airpark	•			•		•			
Monument	Monument Municipal				•					
Mulino	Mulino State Airport	•			•	•	•	•		
Myrtle Creek	Myrtle Creek Municipal Airport	•			•	•	•	•		
Manzanita	Nehalem Bay State Airport				•					
Newport	Newport Municipal Airport	•		•	•	•	•	•	•	•
Oakridge	Oakridge State				•		•	•		
Ontario	Ontario Municipal Airport	•	•			•	•	•	•	
Owyhee Reservoir	Owyhee Reservoir State				•					
Pacific City	Pacific City State Airport				•		•	•		
Paisley	Paisley	•			•			•		
Pinehurst	Pinehurst State Airport				•			•		
Portland	Portland Downtown Heliport	•			•	•			•	
Portland	Portland -Hillsboro Airport	•	•		•	•	•	•	•	
Portland	Portland International Airport	•	•		•	•	•	•	•	•
Portland	Portland -Troutdale Airport	•	•		•	•	•	•	•	
Powers	Powers Hayes Field				•					
Prineville	Prineville Airport	•	•	•	•	•	•	•	•	
Prospect	Prospect State Airport	•			•			•		
Redmond	Redmond Municipal Airport -Roberts Field	•	•		•	•	•	•	•	•
Medford	Rogue Valley International -Medford Airport	•	•		•	•	•	•	•	•
Rome	Rome State				•			•		
Roseburg	Roseburg Regional Airport	•	•			•	•	•		
Salem	Salem McNary Field	•	•	•	•	•	•	•	•	
Sandy	Sandy River				•		•			
Santiam Junction	Santiam Junction State				•					
Scappoose	Scappoose Industrial Airpark	•	•		•	•	•	•		
Seaside	Seaside Municipal Airport	•				•	•	•		
Gleneden Beach	Siletz Bay State Airport	•			•	•	•	•		
Silver Lake	Silver Lake USFS									
Sisters	Sisters Eagle Air Airport	•		•	•		•	•		

Associated City	Airport Name	Beacon	ASOS	AWOS	Wind Cone	Lighted Wind Cone	Hangar Facilities	Apron	Terminal Building	Deicing
Cornelius	Skyport				●					
North Bend	Southwest Oregon Regional Airport	●		●	●	●	●	●	●	
Newberg	Sportsman Airpark				●		●	●		
Hillsboro	Stark's Twin Oaks				●		●	●	●	
Sunriver	Sunriver Airport	●			●	●	●	●	●	
Tillamook	Tillamook Airport	●		●	●	●	●	●	●	
Clearwater	Toketee State				●					
Toledo	Toledo State Airport				●		●	●		
Estacada	Valley View				●		●	●		
Vernonia	Vernonia Municipal				●		●			
Waldport	Wakonda Beach State				●					
Wasco	Wasco State Airport	●			●	●	●	●		

Notes: ● = Existing as reported by airport sponsor
Blank = No facilities available at this airport or information unavailable

TABLE 2-9: AIRPORT SERVICES

Associated City	Airport Name	Fuel						Full Service FBO	Ground Transportation	Control Tower	Food Services	Restrooms	Pilot Lounge	Telephone	Snow Removal	NPIAS
		100 LL	24hr Self Fueling (100LL)	Jet A	24hr Self Fueling (Jet-A)	MoGas	24hr Self Fueling (MoGas)									
Albany	Albany Municipal Airport	●	●					●	●			●	●	●		Y
Alkali Lake	Alkali Lake State															N
Arlington	Arlington Municipal															N
Ashland	Ashland Municipal Airport -Sumner Parker Field	●	●	●	●			●	●		●	●	●	●	●	Y
Astoria	Port of Astoria Regional Airport	●	●	●				●	●		●	●	●	●		Y
Aurora	Aurora State Airport	●	●	●				●	●	●		●	●	●	●	Y
Baker City	Baker City Municipal Airport	●	●	●	●			●	●			●	●	●	●	Y
Bandon	Bandon State Airport	●	●					●				●	●	●		Y
Beaver Marsh	Beaver Marsh															N
Bend	Bend Municipal Airport	●	●	●	●			●	●		●	●	●	●	●	Y
Boardman	Boardman Airport															Y
Brookings	Brookings Airport	●	●	●	●			●				●	●	●		Y
Burns	Burns Municipal Airport	●	●	●	●			●	●			●	●	●	●	Y
Sixes	Cape Blanco State Airport											●				N
Cascade Locks	Cascade Locks State Airport															N
Newberg	Chehalem Airpark	●		●				●				●	●	●		N
Chiloquin	Chiloquin State Airport															Y
Christmas Valley	Christmas Valley Airport											●			●	Y
The Dalles	Columbia Gorge Regional -The Dalles	●	●	●	●			●	●		●	●	●	●	●	Y
Condon	Condon State Airport -Pauling Field															Y

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Associated City	Airport Name	Fuel: 100 LL	Fuel: 24hr Self Fueling (100LL)	Fuel: Jet A	Fuel: 24hr Self Fueling (Jet-A)	Fuel: MoGas	Fuel: 24hr Self Fueling (MoGas)	Full Service FBO	Ground Transportation	Control Tower	Food Services	Restrooms	Pilot Lounge	Telephone	Snow Removal	NPIAS
Corvallis	Corvallis Municipal Airport	•	•	•				•				•	•	•	•	Y
Cottage Grove	Cottage Grove State Airport -Jim Wright Field	•	•									•				Y
Sandy	Country Squire Airpark															N
Crescent Lake	Crescent Lake State Airport															N
Creswell	Creswell Hobby Field Airport	•	•	•	•			•	•			•	•	•		Y
Gates	Davis Field															N
Pendleton	Eastern Oregon Regional Airport at Pendleton	•	•	•	•			•	•	•	•	•	•	•	•	Y
Enterprise	Enterprise Municipal	•										•		•		N
Eugene	Eugene Airport -Mahlon Sweet Field	•	•	•				•	•	•	•	•	•	•	•	Y
Florence	Florence Municipal Airport	•	•	•	•				•			•	•	•	•	Y
Roseburg	George Felt											•				N
Gold Beach	Gold Beach Municipal Airport	•	•	•	•			•	•			•	•	•		Y
John Day	Grant County Regional Airport	•	•	•	•			•	•		•	•	•	•	•	Y
Grants Pass	Grants Pass Airport	•	•	•	•			•				•	•	•	•	Y
Hermiston	Hermiston Municipal Airport	•		•				•	•			•	•	•	•	Y
Cave Junction	Illinois Valley Airport	•										•			•	Y
Independence	Independence State Airport	•	•					•			•	•	•	•		Y
Joseph	Joseph State Airport	•	•	•								•	•		•	Y
Hood River	Ken Jernstedt Airfield	•	•					•	•			•	•	•	•	Y
Klamath Falls	Crater Lake-Klamath Regional	•		•				•	•	•	•	•	•	•	•	Y
La Grande	La Grande / Union County Airport	•		•				•	•		•	•	•	•	•	Y
Culver	Lake Billy Chinook															N
Lakeview	Lake County Airport	•	•	•	•			•	•			•	•	•	•	Y
Florence	Lake Woahink SPB															N
Lakeside	Lakeside Municipal Airport															N
Lebanon	Lebanon State Airport	•	•			•	•	•	•		•	•	•	•		Y
Hubbard	Lenhardt Airpark	•														N
Lexington	Lexington Airport	•	•									•	•	•	•	Y
Madras	Madras Municipal Airport	•	•	•	•			•	•			•	•	•	•	Y
Malin	Malin	•	•												•	N
McDermitt	McDermitt State Airport															Y
McKenzie Bridge	McKenzie Bridge State															N
McMinnville	McMinnville Municipal Airport	•	•	•				•				•	•	•		Y
Imnaha	Memaloose USFS															N
Vale	Miller Memorial Airpark															N
Monument	Monument Municipal															N

Associated City	Airport Name	Fuel: 100 LL	Fuel: 24hr Self Fueling (100LL)	Fuel: Jet A	Fuel: 24hr Self Fueling (Jet-A)	Fuel: MoGas	Fuel: 24hr Self Fueling (MoGas)	Full Service FBO	Ground Transportation	Control Tower	Food Services	Restrooms	Pilot Lounge	Telephone	Snow Removal	NPIAS
Mulino	Mulino State Airport	●	●									●	●	●		Y
Myrtle Creek	Myrtle Creek Municipal Airport	●	●									●	●	●		Y
Manzanita	Nehalem Bay State Airport											●				N
Newport	Newport Municipal Airport	●	●	●				●	●			●	●	●		Y
Oakridge	Oakridge State															N
Ontario	Ontario Municipal Airport	●	●	●	●			●	●			●	●	●	●	Y
Owyhee Reservoir	Owyhee Reservoir State															N
Pacific City	Pacific City State Airport											●				N
Paisley	Paisley															N
Pinehurst	Pinehurst State Airport															N
Portland	Portland Downtown Heliport											●				Y
Portland	Portland -Hillsboro Airport	●		●				●	●	●		●	●	●	●	Y
Portland	Portland International Airport	●		●				●	●	●	●	●	●	●	●	Y
Portland	Portland -Troutdale Airport	●		●				●		●		●	●	●		Y
Powers	Powers Hayes Field															N
Prineville	Prineville Airport	●	●	●	●			●	●			●	●	●	●	Y
Prospect	Prospect State Airport											●				N
Redmond	Redmond Municipal Airport -Roberts Field	●	●	●				●	●	●	●	●	●	●		Y
Medford	Rogue Valley International -Medford Airport	●	●	●				●	●	●	●	●	●	●	●	Y
Rome	Rome State															N
Roseburg	Roseburg Regional Airport	●	●	●	●			●				●	●			Y
Salem	Salem McNary Field	●	●	●				●	●	●	●	●	●	●	●	Y
Sandy	Sandy River											●		●		N
Santiam Junction	Santiam Junction State															N
Scappoose	Scappoose Industrial Airpark	●		●				●	●			●	●	●	●	Y
Seaside	Seaside Municipal Airport															Y
Gleneden Beach	Siletz Bay State Airport															Y
Silver Lake	Silver Lake USFS															N
Sisters	Sisters Eagle Air Airport	●	●						●						●	N
Cornelius	Skyport															N
North Bend	Southwest Oregon Regional Airport	●		●				●	●	●	●	●	●	●		Y
Newberg	Sportsman Airpark	●		●				●	●			●	●	●	●	Y
Hillsboro	Stark's Twin Oaks	●	●					●	●			●	●	●		N
Sunriver	Sunriver Airport	●	●	●	●			●	●		●	●	●	●	●	Y
Tillamook	Tillamook Airport	●	●	●	●				●			●	●	●		Y
Clearwater	Toketee State															N

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Associated City	Airport Name	Fuel: 100 LL	Fuel: 24hr Self Fueling (100LL)	Fuel: Jet A	Fuel: 24hr Self Fueling (Jet-A)	Fuel: MoGas	Fuel: 24hr Self Fueling (MoGas)	Full Service FBO	Ground Transportation	Control Tower	Food Services	Restrooms	Pilot Lounge	Telephone	Snow Removal	NPIAS
Toledo	Toledo State Airport															N
Estacada	Valley View															N
Vernonia	Vernonia Municipal															N
Waldport	Wakonda Beach State										●					N
Wasco	Wasco State Airport															Y

Notes: ● = Existing as reported by airport sponsor
Blank = No facilities available at this airport or information unavailable
Y = Yes, N = No

TABLE 2-10: AIRPORT OPERATIONS - BASED AIRCRAFT - ROLE - OWNERSHIP

FAA ID	Associated City	Airport Name	2015 Airport Operations	Based Aircraft	OAP v6.0 Functional Role	Ownership	Connect Oregon Region
S12	Albany	Albany Municipal Airport	23,400	51	IV	City	2
R03	Alkali Lake	Alkali Lake State	50	0	V	State	4
1S8	Arlington	Arlington Municipal	900	1	V	City	4
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	25,900	59	III	City	3
AST	Astoria	Port of Astoria Regional Airport	38,700	52	II	Port	2
UAO	Aurora	Aurora State Airport	94,900	441	II	State	2
BKE	Baker City	Baker City Municipal Airport	16,100	30	III	City	5
S05	Bandon	Bandon State Airport	7,100	37	III	State	3
2S2	Beaver Marsh	Beaver Marsh	150	0	V	Private	4
BDN	Bend	Bend Municipal Airport	141,300	237	II	City	4
M50	Boardman	Boardman Airport	1,500	0	IV	Port	5
BOK	Brookings	Brookings Airport	22,600	31	IV	County	3
BNO	Burns	Burns Municipal Airport	8,000	17	III	City	5
5S6	Sixes	Cape Blanco State Airport	900	7	V	State	3
CZK	Cascade Locks	Cascade Locks State Airport	1,500	0	V	State	1
17S	Newberg	Chehalem Airpark	12,400	31	IV	Private	2
2S7	Chiloquin	Chiloquin State Airport	3,500	8	V	State	4
62S	Christmas Valley	Christmas Valley Airport	3,600	0	IV	City	4
DLS	The Dalles	Columbia Gorge Regional - The Dalles	16,400	59	III	City/County	4
3S9	Condon	Condon State Airport - Pauling Field	4,000	0	IV	State	4
CVO	Corvallis	Corvallis Municipal Airport	52,200	163	II	City	2
61S	Cottage Grove	Cottage Grove State Airport - Jim Wright Field	16,800	49	IV	State	2
S48	Sandy	Country Squire Airpark	2,000	27	V	Private	1
5S2	Crescent Lake	Crescent Lake State Airport	300	0	V	State	4
77S	Creswell	Creswell Hobby Field Airport	38,300	119	IV	City	2
6S4	Gates	Davis Field	1,000	5	V	Private	2

FAA ID	Associated City	Airport Name	2015 Airport Operations	Based Aircraft	OAP v6.0 Functional Role	Ownership	Connect Oregon Region
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	11,700	77	I	City	5
8S4	Enterprise	Enterprise Municipal	4,800	31	V	City	5
EUG	Eugene	Eugene Airport - Mahlon Sweet Field	62,400	185	I	City	2
6S2	Florence	Florence Municipal Airport	7,000	12	IV	City	2
5S1	Roseburg	George Felt	1,500	17	V	Private	3
4S1	Gold Beach	Gold Beach Municipal Airport	5,500	13	IV	Port	3
GCD	John Day	Grant County Regional Airport	8,800	18	III	County	5
3S8	Grants Pass	Grants Pass Airport	24,800	190	III	County	3
HRI	Hermiston	Hermiston Municipal Airport	24,800	45	III	City	5
3S4	Cave Junction	Illinois Valley Airport	6,000	30	IV	County	3
7S5	Independence	Independence State Airport	33,600	170	IV	State	2
JSY	Joseph	Joseph State Airport	3,800	10	IV	State	5
4S2	Hood River	Ken Jernstedt Airfield	14,200	36	IV	Port	1
LMT	Klamath Falls	Crater Lake-Klamath Regional	46,000	136	I	City	4
LGD	La Grande	La Grande / Union County Airport	16,000	70	III	County	5
5S5	Culver	Lake Billy Chinook	600	10	V	State	4
LKV	Lakeview	Lake County Airport	6,000	15	III	County	4
1O0	Florence	Lake Woahink SPB	3,000	0	V	Private	5
9S3	Lakeside	Lakeside Municipal Airport	1,800	6	V	City	3
S30	Lebanon	Lebanon State Airport	9,900	54	IV	State	2
7S9	Hubbard	Lenhardt Airpark	6,000	113	IV	Private	1
9S9	Lexington	Lexington Airport	4,400	12	IV	County	5
S33	Madras	Madras Municipal Airport	10,600	44	IV	City	4
4S7	Malin	Malin	700	4	V	City	4
26U	McDermitt	McDermitt State Airport	2,200	0	V	State	5
00S	McKenzie Bridge	McKenzie Bridge State	400	0	V	State	2
MMV	McMinnville	McMinnville Municipal Airport	63,500	112	II	City	2
25U	Imnaha	Memaloose USFS	600	0	V	USFS	5
S49	Vale	Miller Memorial Airpark	2,000	4	V	City	5
12S	Monument	Monument Municipal	130	0	V	City	5
4S9	Mulino	Mulino State Airport	21,200	60	IV	State	1
16S	Myrtle Creek	Myrtle Creek Municipal Airport	2,300	9	IV	City	3
3S7	Manzanita	Nehalem Bay State Airport	2,300	0	V	State	2
ONP	Newport	Newport Municipal Airport	19,700	30	II	City	2
5S0	Oakridge	Oakridge State	1,700	5	V	State	2
ONO	Ontario	Ontario Municipal Airport	12,800	66	III	City	5
28U	Owyhee Reservoir	Owyhee Reservoir State	600	0	V	State	5

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FAA ID	Associated City	Airport Name	2015 Airport Operations	Based Aircraft	OAP v6.0 Functional Role	Ownership	Connect Oregon Region
PFC	Pacific City	Pacific City State Airport	2,000	5	V	State	2
22S	Paisley	Paisley	400	0	V	County	4
24S	Pinehurst	Pinehurst State Airport	600	7	V	State	3
61J	Portland	Portland Downtown Heliport	307	0	II	City	1
HIO	Portland	Portland -Hillsboro Airport	253,700	253	II	Port	1
PDX	Portland	Portland International Airport	209,500	78	I	Port	1
TTD	Portland	Portland -Troutdale Airport	105,100	122	II	Port	1
6S6	Powers	Powers Hayes Field	400	1	V	Port	3
S39	Prineville	Prineville Airport	10,200	121	IV	County	4
64S	Prospect	Prospect State Airport	1,200	1	V	State	3
RDM	Redmond	Redmond Municipal Airport -Roberts Field	43,100	83	I	City	4
MFR	Medford	Rogue Valley International -Medford Airport	39,400	207	I	County	3
REO	Rome	Rome State	100	0	V	State	5
RBG	Roseburg	Roseburg Regional Airport	31,800	92	III	City	3
SLE	Salem	Salem McNary Field	34,300	170	II	City	2
03S	Sandy	Sandy River	11,300	28	V	Private	1
8S3	Santiam Junction	Santiam Junction State	106	0	V	State	2
SPB	Scappoose	Scappoose Industrial Airpark	59,900	125	II	Port	1
56S	Seaside	Seaside Municipal Airport	2,600	4	IV	City	2
S45	Gleneden Beach	Siletz Bay State Airport	3,800	12	IV	State	2
45S	Silver Lake	Silver Lake USFS	25	0	V	USFS	4
6K5	Sisters	Sisters Eagle Air Airport	1,400	17	IV	Private	4
4S4	Cornelius	Skyport	2,000	0	V	Private	1
OTH	North Bend	Southwest Oregon Regional Airport	18,300	56	I	County	3
2S6	Newberg	Sportsman Airpark	11,700	55	IV	Private	2
7S3	Hillsboro	Stark's Twin Oaks	22,300	113	V	Private	1
S21	Sunriver	Sunriver Airport	6,100	2	IV	Private	4
TMK	Tillamook	Tillamook Airport	25,600	39	III	Port	2
3S6	Clearwater	Toketee State	350	0	V	USFS	3
5S4	Toledo	Toledo State Airport	1,100	9	V	State	2
5S9	Estacada	Valley View	3,000	33	V	Private	1
05S	Vernonia	Vernonia Municipal	3,000	5	V	City	1
R33	Waldport	Wakonda Beach State	800	3	V	State	2
35S	Wasco	Wasco State Airport	2,400	6	IV	State	4

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3. FORECAST OF AVIATION DEMAND

Forecasts of aviation activity are used to identify expected activity levels and based aircraft at individual airports in the system.

A statewide perspective on aviation activity also affords the opportunity to examine the context for changes at Oregon airports. Where individual master plans or Airport Layout Plans (ALPs) look in detail at the local situation, the system plan offers the view from 30,000 feet. This makes it possible to look at regional and statewide trends that are resulting not only in absolute gains or declines at particular airports, but also changes that come from redistribution of activity.

The last system plan forecasts had a base year of 2005. This forecast starts with the base year of 2015[1] and estimates changes in the next 20 years from 2015 through 2035. The following components of aviation activity are considered in the forecasts:

- Commercial airline enplanements
- General aviation based aircraft
- Total commercial, general aviation, and military operations

This chapter also includes a discussion of national and regional factors that are impacting aviation activity in Oregon as well as changes in the drivers of aviation demand at the State level that could impact forecasts.

3.1 Scope of Aviation Activity in Oregon – Overview

Seven commercial service airports and 90 general aviation airports comprise the Oregon system. Oregon's economy reflects a rich diversity of economic activity in the state that includes both high tech and natural and agricultural resource industries. During the past three decades, Oregon made the transition from a resource-based economy to a more mixed manufacturing and marketing economy, with an emphasis on high technology. Oregon's hard times of the early 1980s signaled basic changes had occurred in traditional resource sectors—timber, fishing, and agriculture—and the state and industry worked to develop new economic sectors to replace older ones. Most important, perhaps, was the state's growing high-tech sector, which centered in the three counties around Portland. However, rural Oregon counties were generally left out of the shift to a new economy.

Population in Oregon is concentrated in a growing metropolitan area that spans from Portland and the Willamette Valley along Interstate 5 as far south as Eugene. It is on this corridor that the largest concentration of commercial air service activity and general aviation operations take place. Not surprisingly, since population correlates directly with aviation activity, Oregon's population is also concentrated in Oregon Department of Transportation's (ODOT) Connect Oregon Regions 1 and 2 where 75 percent of the state's population reside. See **Table 3-1**.

TABLE 3-1: CONNECT OREGON REGIONS POPULATION OVERVIEW

Connect Oregon Region	Population	Share
Region 1	1,803,980	44%
Region 2	1,260,920	31%
Region 3	494,625	12%

[1] Based aircraft forecasts were updated to 2017 due to revised FAA based aircraft figures

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Connect Oregon Region	Population	Share
Region 4	328,370	8%
Region 5	188,455	5%
Total	**4,076,350**	**100%**

Source: Population Research Center (PRC), Jviation analysis

The Population Research Center (PRC) at Portland State University estimated that just over four million people reside in Oregon in 2016. **Table 3-2** shows PRC's 2006 and 2016 as well as Oregon's 2010 U.S. Census population for each county. Since 2006, population in Oregon has grown nearly one percent annually. The state's largest county, Multnomah, reached nearly 790,700 in 2016 and grew at an average rate of 1.5 percent annually. Deschutes County is the seventh largest county in Oregon and is the fastest growing county in the state, 1.7 percent annually, between 2006 and 2016. The rest of the state's population growth is mixed with other areas growing more slowly. Only three counties—Coos, Crook, and Morrow—have declined in population.

TABLE 3-2: OREGON POPULATION, 2006, 2010, AND 2016

Rank	County	July 2006	April 2010	July 2016	AAGR 2006-2016
28	Baker	16,243	16,134	16,510	0.16%
11	Benton	79,061	85,579	91,320	1.45%
3	Clackamas	374,230	375,992	404,980	0.79%
19	Clatsop	37,315	37,039	38,225	0.24%
17	Columbia	49,163	49,351	50,795	0.33%
16	Coos	64,820	63,043	63,190	-0.25%
27	Crook	22,941	20,978	21,580	-0.61%
26	Curry	22,358	22,364	22,600	0.11%
7	Deschutes	149,140	157,733	176,635	1.71%
9	Douglas	105,117	107,667	110,395	0.49%
34	Gilliam	1,775	1,871	1,980	1.10%
31	Grant	7,250	7,445	7,410	0.22%
32	Harney	6,888	7,422	7,320	0.61%
24	Hood River	21,533	22,346	24,735	1.40%
6	Jackson	197,071	203,206	213,765	0.82%
25	Jefferson	20,352	21,720	22,790	1.14%
12	Josephine	81,688	82,713	84,675	0.36%
15	Klamath Falls	66,438	66,380	67,410	0.15%
30	Lake	7,473	7,895	8,015	0.70%
4	Lane	337,870	351,715	365,940	0.80%
18	Lincoln	46,199	46,034	47,735	0.33%
8	Linn	111,489	116,672	122,315	0.93%
20	Malheur	31,247	31,313	31,705	0.15%
5	Marion	311,304	315,335	333,950	0.70%
29	Morrow	11,753	11,173	11,745	-0.01%

Rank	County	July 2006	April 2010	July 2016	AAGR 2006-2016
1	Multnomah	681,454	735,334	790,670	1.50%
14	Polk	73,296	75,403	79,730	0.84%
35	Sherman	1,699	1,765	1,795	0.55%
23	Tillamook	25,380	25,250	25,920	0.21%
13	Umatilla	72,928	75,889	79,880	0.91%
21	Union	24,345	25,748	26,745	0.94%
33	Wallowa	6,875	7,008	7,140	0.38%
22	Wasco	23,712	25,213	26,700	1.19%
2	Washington	514,269	529,710	583,595	1.27%
36	Wheeler	1,404	1,441	1,465	0.43%
10	Yamhill	94,678	99,193	104,990	1.04%
Total Oregon Population		**3,700,758**	**3,831,074**	**4,076,350**	**0.97%**

Source: Portland State University, Population Research Center (PRC), US Census 2010, Jviation analysis

Oregon has an exceptionally active system of airports given its population base, which is the 27th largest among U.S. states. Portland International (PDX) is the 30th busiest airport in the United States in terms of passengers and 24th in air cargo traffic[2]. PDX serves as a secondary connecting hub for Alaska Airlines.

3.2 Commercial Service Activity and Forecasts

Commercial service activity forecasts were developed for passenger enplanements and annual operations. Calendar year 2015 was used as the base year for these forecasts, with the most recent FAA TAF average annual growth rate used as both a reference and a forecast tool for individual airports. Population and economic growth rates were additionally applied to forecasts to provide a multi-sourced forecast estimate.

Oregon's commercial airports, as defined in Chapter 2, are divided in this chapter into the following two categories: commercial service and Essential Air Service (EAS).

TABLE 3-3: COMMERCIAL AND ESSENTIAL AIR SERVICE AIRPORTS IN OREGON

Commercial Service Airports (6)	Essential Air Service (1)
Eugene Airport-Mahlon Sweet Field (EUG)	Eastern Oregon Regional Airport at Pendleton (PDT)
Crater Lake-Klamath Regional (LMT)	
Portland International Airport (PDX)	
Redmond Municipal Airport-Roberts Field (RDM)	
Rogue Valley International-Medford Airport (MFR)	
Southwest Oregon Regional Airport (OTH)	

Source: Jviation

[2] Airports Council International, 2015 Traffic Report

3.2.1 Annual Passenger Enplanements

Passenger enplanement forecasts were developed by using three forecast methodologies. The passenger enplanements forecasts for Oregon's six commercial and one EAS airports are discussed in the following section.

As shown in **Table 3-4,** total statewide commercial service and EAS passenger enplanements based on FAA TAF data increased from 7,601,966 in 2005 to 9,282,648 in 2015, representing an average annual growth rate of 2.03 percent. Although this represents an overall increase, statewide passenger enplanements experienced a significant decline in 2009 as a result of the Great Recession which had negative impact on enplanement levels at all Oregon's airports.

Portland International Airport comprises over 85 percent of enplanements in Oregon. **Table 3-5** presents statewide enplanements for the all total statewide commercial service airports other than PDX. FAA TAF enplanement data indicates historical increases from 888,797 in 2005 to 1,136,992 in 2015, representing an average annual growth rate of 2.49 percent for all commercial airports excluding Portland International. Statewide passenger enplanements for the six airports outside of Portland also experienced a significant decline of 11 percent in 2009, as a result of the Great Recession.

For comparison, according to TAF data, total U.S. passenger enplanements grew by a lower average annual growth rate of 0.7 percent over the same period. Historical commercial service airport growth in Oregon is shown in **Figure 3-1.** Enplanements have increased overall from 2000 to 2015 but faced periods of decline as a result the Great Recession of 2008/2009. **Figure 3-2** identifies passenger enplanements for the same period but separates PDX enplanements from the six commercial service airports serving the state. **Figure 3-3** presents the market share of airports with scheduled commercial airline service.

TABLE 3-4: COMMERCIAL SERVICE AIRPORT PASSENGER ENPLANEMENTS, 2005-2015

Historic	Enplanements	% Growth
2005	7,601,966	
2006	7,835,050	3.07%
2007	8,167,296	4.24%
2008	8,315,061	1.81%
2009	7,314,553	-12.03%
2010	7,433,322	1.62%
2011	7,738,956	4.11%
2012	8,028,743	3.74%
2013	8,339,265	3.87%
2014	8,879,479	6.48%
2015	9,290,866	0.41%
AAGR 2005-2015		**2.03%**

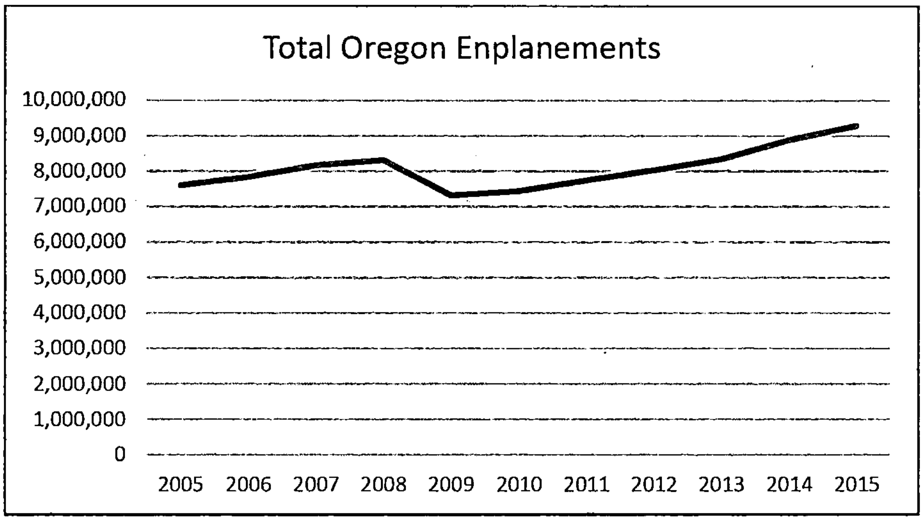
Source: FAA Terminal Area Forecast 2016, Jviation Analysis

TABLE 3-5: COMMERCIAL SERVICE AIRPORT PASSENGER ENPLANEMENTS (NOT INCLUDING PDX), 2005-2015

Historic	Enplanements	% Growth
2005	888,797	
2006	910,517	2.44%
2007	981,033	7.74%
2008	986,356	0.54%
2009	873,558	-11.44%
2010	942,018	7.84%
2011	975,112	3.51%
2012	978,420	0.34%
2013	997,677	1.97%
2014	1,036,946	3.94%
2015	1,136,992	9.65%
AAGR 2005-		**2.49%**

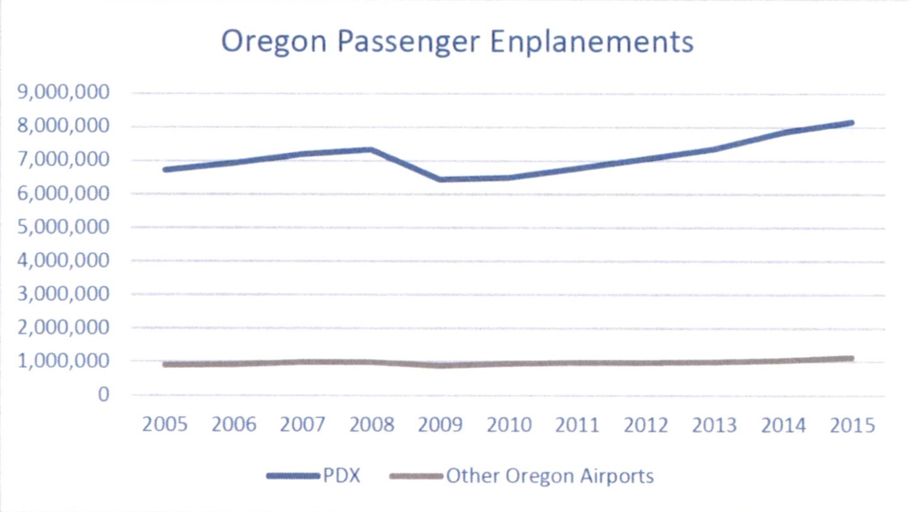
Source: FAA Terminal Area Forecast 2016, Jviation Analysis

FIGURE 3-1: TOTAL COMMERCIAL SERVICE AIRPORT PASSENGER ENPLANEMENTS, 2005-2015



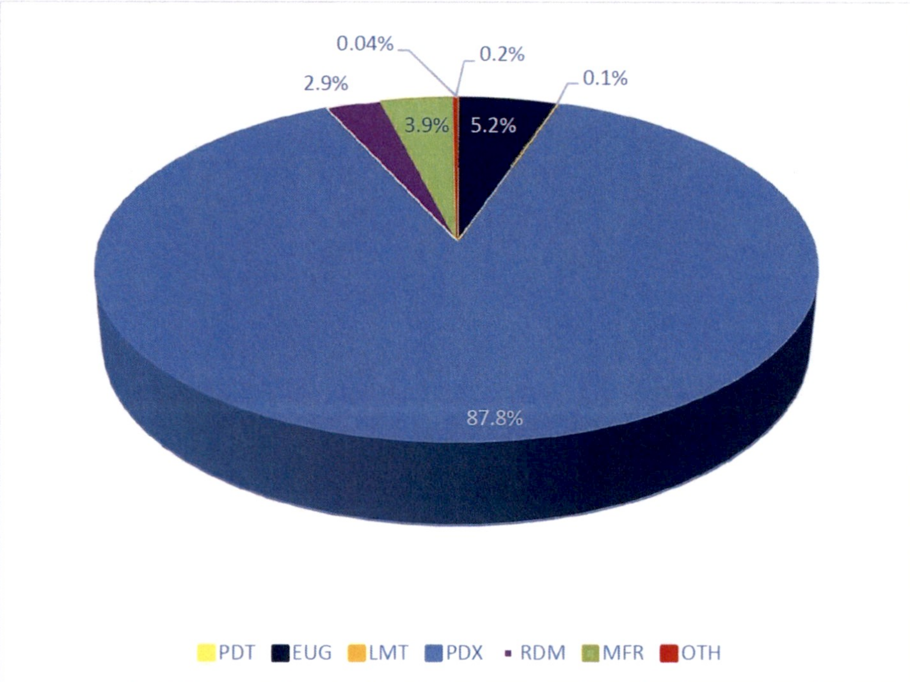
Source: FAA Terminal Area Forecast 2016, Jviation Analysis

FIGURE 3-2: COMMERCIAL SERVICE AIRPORT PASSENGER ENPLANEMENTS, PDX VS OTHER OREGON COMMERCIAL SERVICE AIRPORTS, 2005-2015



Source: FAA Terminal Area Forecast 2016, Jviation Analysis

FIGURE 3-3: 2015 AIRPORT ENPLANEMENT MARKET SHARE



Source: FAA Terminal Area Forecast 2016, Jviation Analysis

PDX by far has the majority of the Oregon passenger enplanements with nearly 88 percent of all passengers in the state boarding aircraft annually. Eugene Regional Airport is the second busiest in terms of passengers with 5.2 percent of the Oregon air service market, followed by Rogue Valley International Airport in Medford with 3.9 percent. In descending order, airport market shares include Redmond Municipal with 2.9 percent, Southwest Oregon Regional in North Bend with .2 percent, and Klamath with .1 percent. Eastern Oregon

Regional Airport at Pendleton (PDT) is Oregon's only Essential Air Service airport that receives federal subsidies for airline service. PDT has the smallest market share (0.1 Percent) in Oregon for scheduled passenger service.

A summary of each airport's historic passenger enplanements is shown in **Table 3-6**. The historic totals and average annual growth rates depicted in **Table 3-6** represent FAA TAF passenger enplanement data from 2005 to 2015. To develop enplanements forecasts for the commercial service airports in Oregon, TAF airport-specific projected enplanements for 2016 to 2035 were used.

Total Statewide Passenger Enplanement Forecasts

According to FAA TAF and average annual growth rate analysis by Jviation, Oregon enplanements are projected to increase from nearly 9.3 million in 2015 to 15.7 million in 2035 (**Table 3-7**). This growth in enplanements represents an overall statewide average annual growth rate of 2.64 percent. This rate is higher than national forecasts of domestic enplanement activity, which project total U.S. passenger enplanements to increase at a lower average annual growth rate of 1.96 percent from 2015 to 2045.[3] It is noteworthy to point out that Crater Lake-Klamath Regional experienced the absence of an air carrier at the airport in 2015 and as a result 2014 enplanement data was used as a proxy base year entry. In October 2016 PenAir initiated passenger service at Crater Lake-Klamath Regional but discontinued service in August 2017.

TABLE 3-6: HISTORIC PASSENGER ENPLANEMENTS BY AIRPORT AND AVERAGE ANNUAL GROWTH RATES

	Eastern Oregon Reg'l at Pendleton	Eugene Airport-Mahlon Sweet Field	Crater Lake-Klamath Reg'l	Portland Int'l	Redmond Municipal - Roberts Field	Rogue Valley Int'l - Medford	Southwest Oregon Reg'l	Total
City	Pendleton	Eugene	Klamath Falls	Portland	Redmond	Medford	North Bend	
FAA ID	PDT	EUG	LMT	PDX	RDM	MFR	OTH	
AAGR	-3.1%	1.8%	-7.6%	1.2%	2.8%	1.5%	-4.9%	1.3%
2005	6,851	362,335	28,912	6,713,169	173,864	281,600	35,235	7,601,966
2006	7,494	357,267	28,348	6,924,533	197,223	283,866	36,319	7,835,050
2007	7,194	371,089	27,491	7,186,263	230,033	308,530	36,696	8,167,296
2008	8,073	365,893	30,060	7,328,705	243,197	300,565	38,568	8,315,061
2009	3,947	330,382	19,811	6,440,995	217,826	277,817	23,775	7,314,553
2010	4,900	361,696	21,670	6,491,304	225,561	305,602	22,589	7,433,322
2011	4,955	390,964	16,810	6,763,844	231,978	307,656	22,749	7,738,956
2012	4,986	400,239	15,415	7,050,323	230,833	307,699	19,248	8,028,743
2013	4,284	425,198	13,677	7,341,588	227,410	310,833	16,275	8,339,265
2014	4,268	440,373	8,218	7,842,533	255,865	312,235	15,987	8,879,479
2015	4,163	480,501	8,218	8,153,874	269,132	359,129	15,849	9,290,866

Source: FAA Terminal Area Forecast 2016, Jviation Analysis

Two alternative methodologies were compiled to forecast statewide enplanements. **Table 3-8** outlines a top-down approach by applying the U.S. BEA Regional Data Per Capita Real GDP[4] compound annual growth rate for Oregon. BEA data indicates that between 2005-2015, Per Capita Real GDP growth was 1.6 percent. This

[3] Jviation: Based on data on FAA TAF Forecast, Fiscal Years 2016 – 2045, pg. 19.

[4] Real GDP by state is an inflation-adjusted measure of each state's gross product that is based on national prices for the goods and services produced within the state. Total GDP is divided by the total population and compared between years to identify the average annual growth rate.

historical growth rate was applied to each airport's base year enplanement to facilitate its forecast with the assumption that this growth rate will continue for the next 20 years and that airline passenger traffic is tied to this measure of economic growth.

Table 3-9 utilizes a bottom-up approach by applying the average annual population growth rate for each Connect Oregon Region and its corresponding airport with scheduled airline service. Population growth for Connect Oregon Regions is based on a weighted average of population growth for Oregon counties comprising each region. For example, Eastern Oregon Regional Airport at Pendleton is located in Connect Oregon Region 5 which has an historical population average annual growth rate of 0.71 percent from 2010 to 2016.

Table 3-10 and **Figure 3-4** compare these three enplanement forecast results. The preferred growth rate is presented in a subsequent section of this chapter.

TABLE 3-7: FORECASTED PASSENGER ENPLANEMENTS IN OREGON - FAA TAF GROWTH RATES

Airport	2015	2020	2025	2035	TAF AAGR 2015-2035
Eastern Oregon Reg'l at Pendleton	4,163	3,780	3,911	4,203	0.05%
Eugene Airport - Mahlon Sweet Field	480,501	665,583	721,436	839,721	2.83%
Crater Lake-Klamath Reg'l*	8,218	7,375	13,620	15,260	3.00%
Portland Int'l	8,153,874	10,411,420	11,446,817	13,692,852	2.63%
Redmond Municipal-Roberts Field	269,132	386,380	425,841	513,245	3.28%
Rogue Valley Int'l-Medford Airport	359,129	438,797	479,408	568,069	2.32%
Southwest Oregon Reg'l	15,849	15,970	16,781	18,530	0.78%
Statewide Total	**9,290,866**	**11,929,305**	**13,107,814**	**15,651,880**	**2.64%**

Source: 2015 Base year FAA Terminal Area Forecast.
* In 2015 air carriers did not operate at Klamath but resumed in 2016. 2014 enplanement data is used for 2015.

TABLE 3-8: ENPLANEMENT FORECAST BASED ON FORECASTED STATE PER CAPITA REAL GDP GROWTH RATE, TOP-DOWN METHODOLOGY

Airport	AAGR	2015	2020	2025	2035
Eastern Oregon Reg'l at Pendleton	1.60%	4,163	4,507	4,879	5,718
Eugene Airport - Mahlon Sweet Field	1.60%	480,501	520,191	563,159	660,037
Crater Lake-Klamath Reg'l*	1.60%	8,218	8,897	9,632	11,289
Portland Int'l	1.60%	8,153,874	8,827,395	9,556,549	11,200,519
Redmond Municipal-Roberts Field	1.60%	269,132	291,363	315,430	369,692
Rogue Valley Int'l-Medford Airport	1.60%	359,129	388,794	420,908	493,315
Southwest Oregon Reg'l	1.60%	15,849	17,158	18,575	21,771
Total	**1.60%**	**9,290,866**	**10,058,304**	**10,889,132**	**12,762,341**

Source: 2015 Base year FAA Terminal Area Forecast.
* In 2015 air carriers did not operate at Klamath but resumed in 2016. 2014 enplanement data is used for 2015.

TABLE 3-9: ENPLANEMENT FORECAST BASED ON HISTORIC REGIONAL POPULATION GROWTH RATE, BOTTOM-UP METHODOLOGY

Airport	AAGR	2015	2020	2025	2035
Eastern Oregon Reg'l at Pendleton	0.71%	4,163	4,312	4,467	4,794

Airport	AAGR	2015	2020	2025	2035
Eugene Airport - Mahlon Sweet Field	0.81%	480,501	500,248	520,807	564,495
Crater Lake-Klamath Reg'l*	1.59%	8,218	8,891	9,619	11,259
Portland Int'l	1.32%	8,153,874	8,707,964	9,299,706	10,606,558
Redmond Municipal-Roberts Field	1.59%	269,132	291,170	315,013	368,716
Rogue Valley Int'l-Medford Airport	0.67%	359,129	371,273	383,827	410,223
Southwest Oregon Reg'l	0.67%	15,849	16,385	16,939	18,104
Total	**1.28%**	**9,290,866**	**9,900,243**	**10,550,379**	**11,984,149**

Source: 2015 Base year FAA Terminal Area Forecast.
* In 2015 air carriers did not operate at Klamath but resumed in 2016. 2014 enplanement data is used for 2015.

TABLE 3-10: COMPARISON SUMMARY OF PASSENGER ENPLANEMENT FORECAST METHODOLOGIES

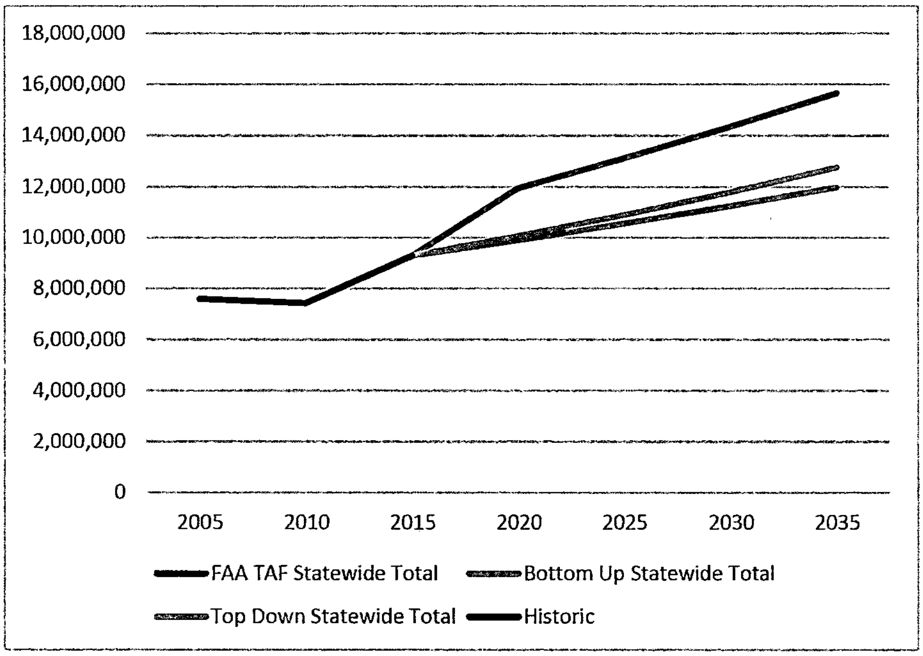
	2015	2020	2025	2035	AAGR 2015-2035
FAA TAF Statewide Total	9,290,866	11,939,084	13,112,683	15,658,097	2.64%
Top-Down Statewide Total	9,290,866	10,058,304	10,889,132	12,762,341	1.60%
Bottom-Up Statewide Total	9,290,866	9,900,243	10,550,379	11,984,149	1.28%

Source: 2015 Base year FAA Terminal Area Forecast, Jviation analysis

Preferred Passenger Enplanement Forecast

Figure 3-4 displays each forecasted method for passenger enplanements through 2035. A forecast based on the FAA's TAF shows an increase in enplanements to 15,651,880, an annual average of 2.64 percent growth each year and is heavily weighted on enplanement forecasts for PDX. The top-down forecasting approach, based on real GDP growth rate, produces an average growth rate of 1.6 percent each year to a forecast of 12,762,341 enplanements in 2035. The final method of forecasting passenger enplanements used a growth rate based on population growth. An average annual growth rate of 1.28 percent results in a forecast of 11,984,149 passenger enplanements. The preferred forecast for passenger enplanements is the FAA TAF Methodology, a 2.64 percent annual growth rate. This rate was selected since PDX market share is 88 percent of the Oregon enplanement market and is the fastest growing metropolitan area in the state.

FIGURE 3-4: COMPARISON SUMMARY OF PASSENGER ENPLANEMENT FORECAST

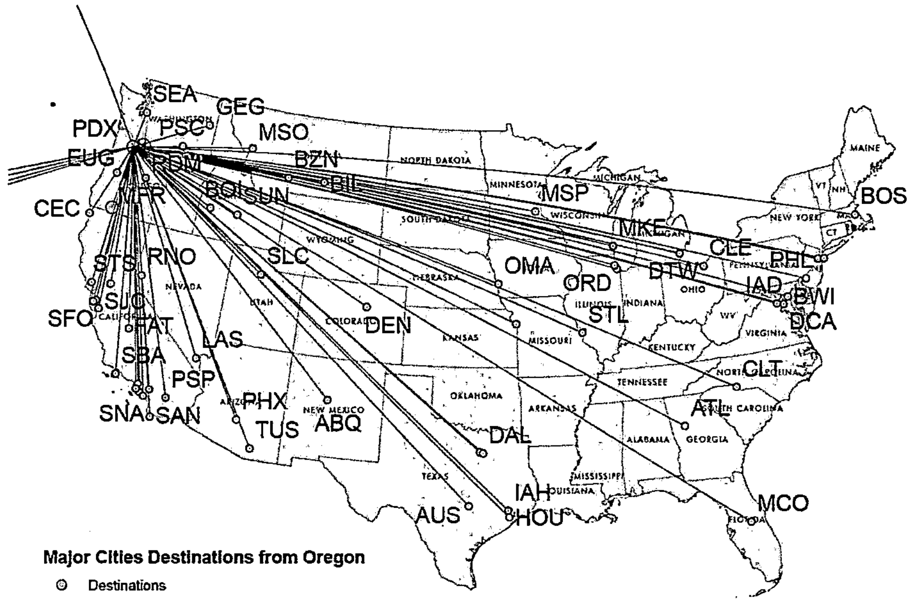


Source: FAA Terminal Area Forecast 2016, Jviation Analysis

3.3 Annual Air Carrier Operations Forecast

Commercial airline operations refer to those aircraft takeoffs and landings performed by scheduled airlines, including major, national, regional, and commuter carriers. Portland International is served by 17 air carriers with nonstop routes to over 75 North America destinations. There are several air carriers that serve Oregon's commercial airports. Eastern Oregon Regional Airport at Pendleton has one air carrier and is the only airport in Oregon associated with the federal Essential Air Service program. **Figure 3-5** identifies scheduled air carrier North America routes related to PDX while **Figure 3-6** shows routes related to six commercial service airports in Oregon. Scheduled passenger service generates a significant number of take offs and landings (aircraft operations) at Oregon airports. This section of the report forecasts air carrier aircraft operations for a 20-year planning period.

FIGURE 3-5: AIR CARRIER NORTH AMERICA ROUTES RELATED TO PDX



Source: Port of Portland routes data, Jviation

Table 3-11 identifies the seven commercial airports in Oregon and their historic annual airline operations based on U.S. DOT Bureau of Transportation Statistics (BTS) data. Eastern Oregon Regional Airport at Pendleton and Southwest Oregon Regional Airport were the only airports that experienced gains in airline aircraft operations. Each of the remaining Oregon airports experienced a decline in air carrier operations from 2005 to 2015 ranging from an average annual decline of -3.4 percent at Medford to -0.6 percent at Portland International. It is important to point out that fewer annual operations do not necessarily translate into less annual passenger capacity. For example, an airline may change from operating a 50-seat regional jet aircraft on a route four times a day to a 90-seat aircraft operating the same route three times per day, thereby gaining 70 seats per day with one less operation.

FIGURE 3-6: AIR CARRIER DOMESTIC ROUTES RELATED TO OREGON AIRPORTS (MINUS PDX OUT-OF-STATE ROUTES)

Source: Flightaware.com

TABLE 3-11: COMMERCIAL AIR OPERATIONS RELATED TO OREGON AIRPORTS

	Eastern Oregon Reg'l at Pendleton	Eugene Airport - Mahlon Sweet Field	Crater Lake-Klamath Reg'l	Portland Int'l	Redmond Municipal - Roberts Field	Rogue Valley Int'l - Medford	Southwest Oregon Reg'l
City	Pendleton	Eugene	Klamath Falls	Portland	Redmond	Medford	North Bend
FAA ID	PDT	EUG	LMT	PDX	RDM	MFR	OTH
AAGR	1.4%	-1.9%	-2.9%	-0.6%	-1.5%	-3.4%	0.1%
2005	3,090	22,298	3,468	188,936	14,818	24,982	3,806
2006	3,128	21,614	3,292	192,060	16,458	24,956	3,730
2007	3,162	21,990	3,594	198,042	17,240	24,650	3,978
2008	3,068	19,502	4,290	192,094	16,160	21,352	4,218
2009	3,928	17,734	4,474	174,888	13,954	17,794	3,986
2010	3,808	17,364	4,284	173,190	13,466	17,856	3,910
2011	4,086	17,362	3,712	165,258	12,156	14,406	3,660

	Eastern Oregon Reg'l at Pendleton	Eugene Airport - Mahlon Sweet Field	Crater Lake-Klamath Reg'l	Portland Int'l	Redmond Municipal - Roberts Field	Rogue Valley Int'l - Medford	Southwest Oregon Reg'l
2012	3,848	17,636	3,348	167,510	11,894	14,766	4,580
2013	3,874	17,958	3,370	169,402	12,124	14,156	4,044
2014	3,940	18,094	2,692	174,382	12,208	14,402	3,848
2015	3,884	16,510	2,156	172,578	11,554	14,442	3,880

Source: US DOT Bureau of Transportation Statistics, Jviation analysis

Table 3-12 presents total air carrier operations in Oregon from 2005 to 2015 and includes Portland International Airport. Overall, the average annual growth in operations show a decline of approximately 1.5 percent annually. This decline is a result of the airline industry trend of operating more efficiently in passenger transport, carrying more passengers on fewer flights. **Table 3-13** presents the same information minus annual air carrier operations data for Portland International Airport, an airport with over 76 percent operations market share in Oregon. Overall, the average annual growth in air carrier operations show a decline of approximately 3.2 percent annually.

TABLE 3-12: 2005 TO 2015 TOTAL OREGON CS AIRCRAFT OPERATIONS

Historic	Annual Operations	% Growth
2005	261,398	
2006	265,238	1.5%
2007	272,656	2.8%
2008	260,684	-4.4%
2009	236,758	-9.2%
2010	233,878	-1.2%
2011	220,640	-5.7%
2012	223,582	1.3%
2013	224,928	0.6%
2014	229,566	2.1%
2015	225,004	-0.2%
AAGR 2005-2015		-1.5%

Source: US DOT Bureau of Transportation Statistics, Jviation analysis

TABLE 3-13: 2005 TO 2015 COMMERCIAL OPERATIONS FOR ALL OREGON AIRPORTS EXCEPT PDX

Historic	Annual Operations	% Growth
2005	72,462	
2006	73,178	1.0%
2007	74,614	2.0%
2008	68,590	-8.1%
2009	61,870	-9.8%
2010	60,688	-1.9%
2011	55,382	-8.7%
2012	56,072	1.2%

Historic	Annual Operations	% Growth
2013	55,526	-1.0%
2014	55,184	-0.6%
2015	52,426	-5.0%
AAGR 2005-2015		**-3.2%**

Source: US DOT Bureau of Transportation Statistics, Jviation analysis

Table 3-14 identifies projected annual commercial airline aircraft operations based on FAA TAF forecast growth rates. Statewide airline aircraft operations have decreased historically from 260,400 operations in 2005 to 225,000 operations in 2015, representing an average annual growth rate of -1.5 percent during the time period. The FAA forecast growth at Portland International at 2.28 percent annual growth for the 20-year planning period, increasing from 172,000 air carrier operations to over 270,000 by 2035. The FAA also forecast a decline in air carrier activity at Southwest Oregon Regional between 2015 and 2020 followed by a gradual rebound. Aircraft operations at Eastern Oregon Regional Airport at Pendleton, the only EAS airport in the state, to remain relatively steady. The same TAF forecasts for all commercial and EAS airports for 2015 to 2035 projects an overall statewide average annual growth rate of nearly 2.1 percent for airline operations.

TABLE 3-14: 2015 TO 2035 PROJECTED ANNUAL AIR CARRIER AIRCRAFT OPERATIONS BASED ON FAA TAF GROWTH RATES

FAA ID	Airport	FAA TAF Forecast AAGR	2015	2020	2025	2035
PDT	Eastern Oregon Reg'l at Pendleton	0.16%	3,720	3,819	3,883	4,010
EUG	Eugene Airport - Mahlon Sweet Field	1.73%	16,510	18,628	20,640	23,259
LMT	Crater Lake-Klamath Reg'l	2.01%	2,156	2,940	3,028	3,211
PDX	Portland Int'l	2.28%	172,578	215,874	233,389	270,657
RDM	Redmond Municipal-Roberts Field	2.35%	11,554	14,956	15,938	18,397
MFR	Rogue Valley Int'l-Medford Airport	1.69%	14,442	16,666	17,883	20,201
OTH	Southwest Oregon Reg'l	-2.16%	3,880	2,361	2,410	2,509
	Total	**2.12%**	**225,004**	**275,245**	**297,170**	**342,244**

Source: 2015 Base year US DOT BTS airline operations data, growth rate based on FAA Terminal Area Forecast 2016

Along with TAF projections, two alternative methodologies were compiled to forecast statewide air carrier operations. **Table 3-15** implements a top-down approach by applying the FAA national growth rate for commercial activity at airports with FAA and Contract towers. Commercial operations at FAA and Contract towers, on a nationwide basis, is forecast to increase at an average rate of 1.5 percent a year between 2017 and 2037. This growth rate was applied to each Oregon airport's base year air carrier operations to facilitate its forecast.

TABLE 3-15: 2015 TO 2035 AIR CARRIER OPERATIONS FORECAST BASED ON FORECASTED STATE PER CAPITA REAL GDP GROWTH RATE, TOP-DOWN METHODOLOGY

FAA ID	Airport	Commercial Operations AAGR	2015	2020	2025	2035
PDT	Eastern Oregon Reg'l at Pendleton	1.50%	3,884	4,184	4,508	5,231
EUG	Eugene Airport - Mahlon Sweet Field	1.50%	16,510	17,786	19,161	22,237

FAA ID	Airport	Commercial Operations AAGR	2015	2020	2025	2035
LMT	Crater Lake-Klamath Reg'l	1.50%	2,156	2,323	2,502	2,904
PDX	Portland Int'l	1.50%	172,578	185,916	200,284	232,438
RDM	Redmond Municipal-Roberts Field	1.50%	11,554	12,447	13,409	15,562
MFR	Rogue Valley Int'l-Medford Airport	1.50%	14,442	15,558	16,761	19,451
OTH	Southwest Oregon Reg'l	1.50%	3,880	4,180	4,503	5,226
	Total	**1.50%**	**225,004**	**242,393**	**261,126**	**303,048**

Source: FAA Aerospace Forecast Fiscal Years 2017 to 2037 Page 26, Jviation Analysis

Table 3-16 uses a bottom-up approach by applying the average annual growth rate based on Connect Oregon regional population growth rates that correspond with individual airports. This methodology was also applied to passenger enplanement forecasts. Population growth for Connect Oregon Regions is based on a weighted average of population growth for Oregon counties comprising each region. Overall annual statewide growth in air carrier operations for the planning period is 1.24 percent.

TABLE 3-16: 2015 TO 2035 PROJECTED ANNUAL AIR CARRIER AIRCRAFT OPERATIONS BASED ON HISTORIC POPULATION GROWTH RATES BY CONNECT OREGON REGION, BOTTOM-UP METHODOLOGY

FAA ID	Airport	Connect Oregon Region	Population Growth Rate	2015	2020	2025	2035
PDT	Eastern Oregon Reg'l at Pendleton	5	0.71%	3,884	4,023	4,168	4,472
EUG	Eugene Airport - Mahlon Sweet Field	2	0.81%	16,510	17,189	17,895	19,396
LMT	Crater Lake-Klamath Reg'l	4	1.59%	2,156	2,333	2,524	2,954
PDX	Portland Int'l	1	1.32%	172,578	184,305	196,830	224,489
RDM	Redmond Municipal-Roberts Field	4	1.59%	11,554	12,500	13,524	15,829
MFR	Rogue Valley Int'l-Medford Airport	3	0.67%	14,442	14,930	15,435	16,497
OTH	Southwest Oregon Reg'l	3	0.67%	3,880	4,011	4,147	4,432
	Total		**1.24%**	**225,004**	**239,292**	**254,522**	**288,070**

Source: 2015 Base year US DOT BTS data, Jviation Analysis

Table 3-17 compares these three methodologies and depicts a wide range of growth rate possibilities and outcomes. Out of the three methodologies, the bottom-up and top-down forecasts provide moderate growth rates ranging from 1.24 percent to 1.5 percent, respectively. Air carrier annual forecasts based on FAA TAF growth provide a more robust forecast of 2.12 percent in air carrier operations over the planning period.

Figure 3-7 illustrates the growth projections based on the three methodologies. The preferred growth rate is presented in a subsequent section of this chapter.

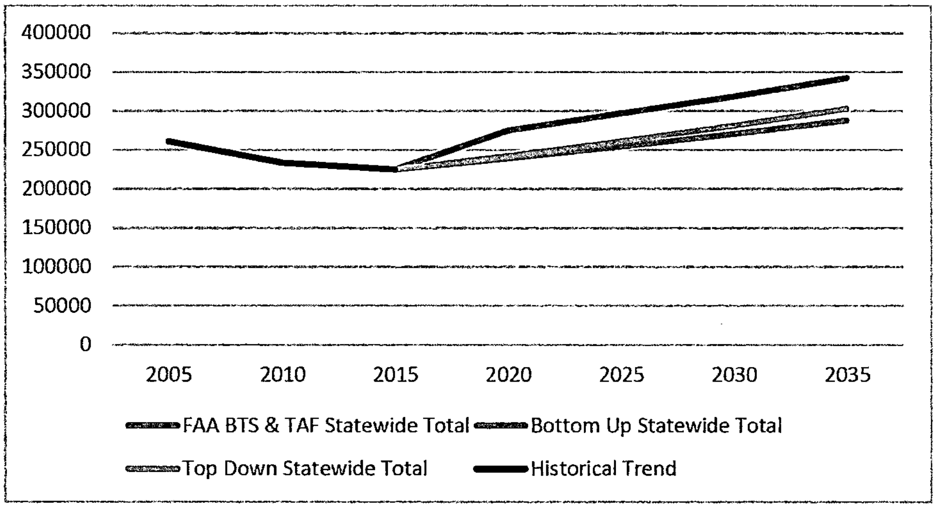
TABLE 3-17: COMPARISON SUMMARY OF AIR CARRIER OPERATIONS FORECAST METHODOLOGIES

Forecast Method	2015	2020	2025	2030	2035	AAGR 2015-2035
FAA BTS & TAF Statewide Total	225,004	275,245	297,170	318,940	342,244	2.12%

Forecast Method	2015	2020	2025	2030	2035	AAGR 2015-2035
Top-Down Statewide Total	225,004	242,393	261,126	281,307	303,048	1.50%
Bottom-Up Statewide Total	225,004	239,292	254,522	270,758	288,070	1.24%

Source: 2015 Base year US DOT BTS data, growth rate based on FAA Terminal Area Forecast 2016, Jviation analysis

FIGURE 3-7: COMPARISON SUMMARY OF AIR CARRIER OPERATIONS FORECAST METHODOLOGIES



Source: US DOT BTS historical air carrier scheduled operations data, FAA Terminal Area Forecast 2016, Jviation analysis

Preferred Air Carrier Operations Forecast

Table 3-17 and **Figure 3-7** display each of the three methods used to forecast air carrier operations in Oregon over the 20-year planning period. The preferred forecast is based on a top-down methodology and has an average annual growth rate of 1.5 percent. This rate applies the FAA national growth rate for commercial activity at airports with FAA and Contract towers. This rate is lower than the preferred enplanement growth rate and is reflective of anticipated increases in average number of seats per departure over the planning period.

3.4 General Aviation Operations

In terms of aircraft operations, general aviation is the largest aviation segment in the state and takes place at all 97 system airports. General aviation includes private recreational flying, business and corporate flights, air taxi, and helicopter operations. In 2010, an estimated 1.68 million operations (takeoffs and landings) took place in the state for a wide variety of reasons including business and personal travel, recreational flying, flight instruction, emergency airlift, and agricultural spraying. **Table 3-18** shows the 20 airports in Oregon with the largest number of general aviation operations. These top 20 airports support 72 percent of total general aviation operations in the state. Portland-Hillsboro is by far the largest general aviation airport in the state, supporting approximately 12 percent of all general aviation operations.

TABLE 3-18: TOTAL ANNUAL GENERAL AVIATION OPERATIONS PROJECTION, 2015

Airport	Connect Oregon Region	2015 Total GA Operations*	Share of Operations
Portland -Hillsboro Airport	1	199,155	12%

Airport	Connect Oregon Region	2015 Total GA Operations*	Share of Operations
Bend Municipal Airport	4	141,175	9%
Portland -Troutdale Airport	1	121,977	8%
Aurora State Airport	2	94,935	6%
McMinnville Municipal Airport	2	63,500	4%
Scappoose Industrial Airpark	1	60,000	4%
Crater Lake-Klamath Regional	4	55,071	3%
Corvallis Municipal Airport	2	52,300	3%
Eugene Airport -Mahlon Sweet Field	2	51,866	3%
Portland International Airport	1	51,445	3%
Redmond Municipal Airport -Roberts Field	4	41,438	3%
Port of Astoria Regional Airport	2	38,721	2%
Creswell Hobby Field Airport	2	38,500	2%
Salem McNary Field	2	35,657	2%
Independence State Airport	2	33,658	2%
Roseburg Regional Airport	3	31,750	2%
Rogue Valley International -Medford Airport	3	31,589	2%
Ashland Municipal Airport - Sumner Parker Field	3	26,050	2%
Tillamook Airport	2	25,600	2%
Grants Pass Airport	3	25,000	2%
Top 20 Airports for General Aviation Operations		1,219,387	75%
Remaining Airports		397,759	25%
Total General Aviation Operations		**1,684,803**	

Source: FAA 5010 and FAA TAF. *does not includes military operations

The estimated number of general aviation operations for 2015 is slightly larger than the 1.62 million general aviation operations estimated for 2005 and presented in the 2007 OAP. Higher fuel prices and the economic recession that began in 2007 had a large impact on general aviation activity. Because most general aviation airports estimate operations, it is difficult to discern trends. However, nationally there was a significant decline in operations following the spike of fuel prices in 2008 which impacted overall growth in general aviation operations.

General Aviation Operations Projections

Total annual aircraft operational demand consists of several types of activity including air carrier, air taxi, military, and general aviation. For those airports with scheduled commercial air service, air carrier (including major/national and regional/commuter operations) activity was projected separately in a previous section. Additionally, air taxi operations are considered general aviation operations at general aviation airports. For those airports with military operations, the military operations were included in the total aircraft operations estimate, to arrive at a total annual general aviation operation for each system airport. Only those airports that have air traffic control towers have records of actual activity these airports include: Portland International, Eugene Airport, Aurora State, Crater Lake-Klamath Regional, Rogue Valley International-Medford Airport, Eastern Oregon Regional Airport at Pendleton, Redmond Municipal Airport-Roberts Field, Salem-McNary, Southwest Oregon Regional, Portland-Troutdale, and Portland-Hillsboro. Airports without a tower provide estimates of annual operations when completing their FAA Form 5010. Therefore, annual operational estimates for this study were developed through a number of sources such as FAA 5010, FAA TAF, ODA, and airport data.

Bottom-Up: General Aviation Operations per Regional Population Growth Methodology

In the bottom-up growth rate methodology, applies the average annual historical growth rate based on Connect Oregon regional population growth rates that correspond with individual airports. This methodology was also applied to passenger enplanement forecasts. Population growth for Connect Oregon Regions is based on a weighted average of population growth for Oregon counties comprising each region.

The proportional increase was determined by the projected population growth of each airport's associated ODOT Connect Oregon region. This type of projection is referred to as a bottom-up methodology as it looks at activity from the airport-specific level and then totals the individual projections to develop a statewide total. As shown in

Table 3-19, using the bottom-up methodology, total statewide general aviation operations[5] are projected to increase from 1.64 million in 2015 to 2.0 million in 2035, a statewide average annual growth rate of 1.1 percent over the 20-year planning period.

TABLE 3-19: TOTAL ANNUAL GENERAL AVIATION OPERATIONS PROJECTION,

BOTTOM-UP METHODOLOGY

Airport	Connect Oregon Region	AAGR	2015	2020	2025	2035
Albany Municipal Airport	2	0.81%	23,300	24,258	25,255	27,373
Alkali Lake State	4	1.59%	50	54	59	69
Arlington Municipal	4	1.59%	910	985	1,065	1,247
Ashland Municipal Airport - Sumner Parker Field	3	0.81%	26,000	27,069	28,181	30,545
Port of Astoria Regional Airport	2	0.81%	38,721	40,693	42,772	47,277
Aurora State Airport	2	0.81%	94,655	98,545	102,595	111,201
Baker City Municipal Airport	5	0.71%	16,100	16,678	17,277	18,539
Bandon State Airport	3	0.67%	7,000	7,237	7,481	7,996
Beaver Marsh	4	1.59%	150	162	176	206
Bend Municipal Airport	4	1.59%	141,075	152,627	165,125	193,276
Boardman Airport	5	0.71%	1,500	1,554	1,610	1,727
Brookings Airport	3	0.67%	22,500	23,261	24,047	25,701
Burns Municipal Airport	5	0.71%	7,900	8,184	8,477	9,097
Cape Blanco State Airport	3	0.67%	750	775	802	857
Cascade Locks State Airport	1	1.32%	1,500	1,602	1,711	1,951

[5] Includes air taxi operations.

Airport	Connect Oregon Region	AAGR	2015	2020	2025	2035
Chehalem Airpark	2	0.81%	12,500	13,014	13,549	14,685
Chiloquin State Airport	4	1.59%	3,500	3,787	4,097	4,795
Christmas Valley Airport	4	1.59%	3,600	3,895	4,214	4,932
Columbia Gorge Regional - The Dalles	4	1.59%	15,482	16,750	18,121	21,211
Condon State Airport - Pauling Field	4	1.59%	3,940	4,263	4,612	5,398
Corvallis Municipal Airport	2	0.81%	51,500	53,617	55,820	60,502
Cottage Grove State Airport - Jim Wright Field	2	0.81%	16,685	17,371	18,085	19,602
Country Squire Airpark	1	1.32%	2,000	2,136	2,281	2,602
Crescent Lake State Airport	4	1.59%	300	325	351	411
Creswell Hobby Field Airport	2	0.81%	38,500	40,082	41,730	45,230
Davis Field	2	0.81%	1,000	1,041	1,084	1,175
Eastern Oregon Regional Airport at Pendleton	5	0.71%	9,717	10,066	10,427	11,189
Enterprise Municipal	5	0.71%	4,850	5,024	5,204	5,585
Eugene Airport-Mahlon Sweet Field	2	0.81%	48,416	50,406	52,477	56,879
Florence Municipal Airport	2	0.81%	5,500	5,726	5,961	6,461
George Felt	3	0.67%	1,500	1,551	1,603	1,713
Gold Beach Municipal Airport	3	0.67%	5,400	5,583	5,771	6,168
Grant County Regional Airport	5	0.71%	8,900	9,219	9,550	10,248
Grants Pass Airport	3	0.67%	24,900	25,742	26,612	28,443
Hermiston Municipal Airport	5	0.71%	24,800	25,690	26,613	28,557
Illinois Valley Airport	3	0.67%	6,000	6,203	6,413	6,854
Independence State Airport	2	0.81%	33,658	35,041	36,481	39,542
Joseph State Airport	5	0.71%	3,850	3,988	4,131	4,433
Ken Jernstedt Airfield	1	1.32%	14,150	15,112	16,138	18,406
Crater Lake-Klamath Regional	4	1.59%	34,305	37,114	40,153	46,999
La Grande / Union County Airport	5	0.71%	15,500	16,056	16,633	17,848
Lake Billy Chinook	4	1.59%	560	606	655	767
Lake County Airport	4	1.59%	6,000	6,491	7,023	8,220
Lake Woahink SPB	5	0.71%	3,000	3,108	3,219	3,455
Lakeside Municipal Airport	3	0.67%	1,600	1,654	1,710	1,828
Lebanon State Airport	2	0.81%	9,855	10,260	10,682	11,578
Lenhardt Airpark	1	1.32%	6,000	6,408	6,843	7,805
Lexington Airport	5	0.71%	4,420	4,579	4,743	5,090
Madras Municipal Airport	4	1.59%	10,635	11,506	12,448	14,570

Airport	Connect Oregon Region	AAGR	2015	2020	2025	2035
Malin	4	1.59%	700	757	819	959
McDermitt State Airport	5	0.71%	2,200	2,279	2,361	2,533
McKenzie Bridge State	2	0.81%	400	416	434	470
McMinnville Municipal Airport	2	0.81%	62,000	64,548	67,201	72,838
Memaloose USFS	5	0.71%	600	622	644	691
Miller Memorial Airpark	5	0.71%	2,000	2,072	2,146	2,303
Monument Municipal	5	0.71%	130	135	140	150
Mulino State Airport	1	1.32%	21,300	22,747	24,293	27,707
Myrtle Creek Municipal Airport	3	0.67%	2,280	2,357	2,437	2,604
Nehalem Bay State Airport	2	0.81%	2,260	2,353	2,450	2,655
Newport Municipal Airport	2	0.81%	16,000	16,658	17,342	18,797
Oakridge State	2	0.81%	1,800	1,874	1,951	2,115
Ontario Municipal Airport	5	0.71%	12,930	13,394	13,875	14,889
Owyhee Reservoir State	5	0.71%	550	570	590	633
Pacific City State Airport	2	0.81%	2,000	2,082	2,168	2,350
Paisley	4	1.59%	400	433	468	548
Pinehurst State Airport	3	0.67%	620	641	663	708
Portland Downtown Heliport	1	1.32%	5,040	5,382	5,748	6,556
Portland-Hillsboro Airport	1	1.32%	198,780	212,288	226,714	258,573
Portland International Airport	1	1.32%	47,928	51,185	54,663	62,345
Portland-Troutdale Airport	1	1.32%	121,744	130,017	138,852	158,365
Powers Hayes Field	3	0.67%	400	414	428	457
Prineville Airport	4	1.59%	10,300	11,143	12,056	14,111
Prospect State Airport	3	0.67%	1,225	1,266	1,309	1,399
Redmond Municipal Airport-Roberts Field	4	1.59%	40,983	44,339	47,970	56,148
Rogue Valley International-Medford Airport	3	0.67%	31,108	32,160	33,247	35,534
Rome State	5	0.71%	100	104	107	115
Roseburg Regional Airport	3	0.67%	31,700	32,772	33,880	36,210
Salem McNary Field	2	0.81%	37,126	38,652	40,240	43,616
Sandy River	1	1.32%	11,500	12,281	13,116	14,959
Santiam Junction State	2	0.81%	100	104	108	117
Scappoose Industrial Airpark	1	1.32%	59,400	63,436	67,747	77,268
Seaside Municipal Airport	2	0.81%	2,200	2,290	2,385	2,585
Siletz Bay State Airport	2	0.81%	3,830	3,987	4,151	4,500
Silver Lake USFS	4	1.59%	25	27	29	34
Sisters Eagle Air Airport	4	1.59%	1,400	1,515	1,639	1,918

Airport	Connect Oregon Region	AAGR	2015	2020	2025	2035
Skyport	1	1.32%	2,000	2,136	2,281	2,602
Southwest Oregon Regional Airport	3	0.67%	10,831	11,197	11,576	12,372
Sportsman Airpark	2	0.81%	11,650	12,129	12,627	13,686
Stark's Twin Oaks	1	1.32%	22,195	23,703	25,314	28,871
Sunriver Airport	4	1.59%	6,100	6,600	7,140	8,357
Tillamook Airport	2	0.81%	25,500	26,548	27,639	29,958
Toketee State	3	0.67%	350	362	374	400
Toledo State Airport	2	0.81%	1,150	1,197	1,246	1,351
Valley View	1	1.32%	2,965	3,166	3,382	3,857
Vernonia Municipal	1	1.32%	3,000	3,204	3,422	3,902
Wakonda Beach State	2	0.81%	830	864	900	975
Wasco State Airport	4	1.59%	2,435	2,634	2,850	3,336
Total		**1.10%**	**1,636,699**	**1,728,135**	**1,825,189**	**2,037,667**

Source: Jviation

Top-Down Methodology: FAA General Aviation Hours Flown

This methodology uses the FAA's projected average annual growth rate of national general aviation hours flown, 0.9 percent, (as found in FAA Aerospace Forecast 2017) and applies that growth rate to each airport's total air taxi, local and itinerant general aviation operations. In this methodology, forecasted general aviation operations are based on the assumption that general aviation operations at Oregon system airports increase at the same rate as the number of hours flown nationally. The FAA's projected average annual growth rate of national general aviation hours flown from 2015 to 2035 is 0.9 percent. When this growth rate is applied to each of Oregon's system airports, total statewide general aviation operations at system airports increase from 1.64 million in 2015 to 1.96 million in 2035. **Table 3-20** identifies the projected general aviation operations for each of Oregon's system airports using this methodology.

TABLE 3-20: GENERAL AVIATION OPERATIONS PROJECTION, TOP-DOWN METHODOLOGY, FAA GENERAL AVIATION HOURS FLOWN

Airport	FAA Hours Flown AAGR	2015	2020	2025	2035
Albany Municipal Airport	0.90%	23,300	24,368	25,484	27,873
Alkali Lake State	0.90%	50	52	55	60
Arlington Municipal	0.90%	910	952	995	1,089
Ashland Municipal Airport - Sumner Parker Field	0.90%	26,000	27,191	28,437	31,103
Port of Astoria Regional Airport	0.90%	38,721	40,810	43,016	47,807
Aurora State Airport	0.90%	94,655	98,992	103,527	113,231
Baker City Municipal Airport	0.90%	16,100	16,838	17,609	19,260
Bandon State Airport	0.90%	7,000	7,321	7,656	8,374
Beaver Marsh	0.90%	150	157	164	179
Bend Municipal Airport	0.90%	141,075	147,539	154,299	168,762

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Airport	FAA Hours Flown AAGR	2015	2020	2025	2035
Boardman Airport	0.90%	1,500	1,569	1,641	1,794
Brookings Airport	0.90%	22,500	23,531	24,609	26,916
Burns Municipal Airport	0.90%	7,900	8,262	8,640	9,450
Cape Blanco State Airport	0.90%	750	784	820	897
Cascade Locks State Airport	0.90%	1,500	1,569	1,641	1,794
Chehalem Airpark	0.90%	12,500	13,073	13,672	14,953
Chiloquin State Airport	0.90%	3,500	3,660	3,828	4,187
Christmas Valley Airport	0.90%	3,600	3,765	3,937	4,307
Columbia Gorge Regional - The Dalles	0.90%	15,482	16,191	16,933	18,520
Condon State Airport - Pauling Field	0.90%	3,940	4,121	4,309	4,713
Corvallis Municipal Airport	0.90%	51,500	53,860	56,327	61,607
Cottage Grove State Airport - Jim Wright Field	0.90%	16,685	17,449	18,249	19,959
Country Squire Airpark	0.90%	2,000	2,092	2,187	2,393
Crescent Lake State Airport	0.90%	300	314	328	359
Creswell Hobby Field Airport	0.90%	38,500	40,264	42,109	46,056
Davis Field	0.90%	1,000	1,046	1,094	1,196
Eastern Oregon Regional Airport at Pendleton	0.90%	9,717	10,162	10,628	11,624
Enterprise Municipal	0.90%	4,850	5,072	5,305	5,802
Eugene Airport-Mahlon Sweet Field	0.90%	48,416	50,634	52,954	57,918
Florence Municipal Airport	0.90%	5,500	5,752	6,016	6,579
George Felt	0.90%	1,500	1,569	1,641	1,794
Gold Beach Municipal Airport	0.90%	5,400	5,647	5,906	6,460
Grant County Regional Airport	0.90%	8,900	9,308	9,734	10,647
Grants Pass Airport	0.90%	24,900	26,041	27,234	29,787
Hermiston Municipal Airport	0.90%	24,800	25,936	27,125	29,667
Illinois Valley Airport	0.90%	6,000	6,275	6,562	7,178
Independence State Airport	0.90%	33,658	35,200	36,813	40,264
Joseph State Airport	0.90%	3,850	4,026	4,211	4,606
Ken Jernstedt Airfield	0.90%	14,150	14,798	15,476	16,927
Crater Lake-Klamath Regional	0.90%	34,305	35,877	37,521	41,037
La Grande / Union County Airport	0.90%	15,500	16,210	16,953	18,542
Lake Billy Chinook	0.90%	560	586	612	670
Lake County Airport	0.90%	6,000	6,275	6,562	7,178
Lake Woahink SPB	0.90%	3,000	3,137	3,281	3,589
Lakeside Municipal Airport	0.90%	1,600	1,673	1,750	1,914
Lebanon State Airport	0.90%	9,855	10,307	10,779	11,789
Lenhardt Airpark	0.90%	6,000	6,275	6,562	7,178
Lexington Airport	0.90%	4,420	4,623	4,834	5,287

Airport	FAA Hours Flown AAGR	2015	2020	2025	2035
Madras Municipal Airport	0.90%	10,635	11,122	11,632	12,722
Malin	0.90%	700	732	766	837
McDermitt State Airport	0.90%	2,200	2,301	2,406	2,632
McKenzie Bridge State	0.90%	400	418	437	479
McMinnville Municipal Airport	0.90%	62,000	64,841	67,812	74,168
Memaloose USFS	0.90%	600	627	656	718
Miller Memorial Airpark	0.90%	2,000	2,092	2,187	2,393
Monument Municipal	0.90%	130	136	142	156
Mulino State Airport	0.90%	21,300	22,276	23,297	25,480
Myrtle Creek Municipal Airport	0.90%	2,280	2,384	2,494	2,727
Nehalem Bay State Airport	0.90%	2,260	2,364	2,472	2,704
Newport Municipal Airport	0.90%	16,000	16,733	17,500	19,140
Oakridge State	0.90%	1,800	1,882	1,969	2,153
Ontario Municipal Airport	0.90%	12,930	13,522	14,142	15,468
Owyhee Reservoir State	0.90%	550	575	602	658
Pacific City State Airport	0.90%	2,000	2,092	2,187	2,393
Paisley	0.90%	400	418	437	479
Pinehurst State Airport	0.90%	620	648	678	742
Portland Downtown Heliport	0.90%	5,040	5,271	5,512	6,029
Portland-Hillsboro Airport	0.90%	198,780	207,888	217,412	237,791
Portland International Airport	0.90%	47,928	50,124	52,420	57,334
Portland-Troutdale Airport	0.90%	121,744	127,322	133,156	145,637
Powers Hayes Field	0.90%	400	418	437	479
Prineville Airport	0.90%	10,300	10,772	11,265	12,321
Prospect State Airport	0.90%	1,225	1,281	1,340	1,465
Redmond Municipal Airport-Roberts Field	0.90%	40,983	42,861	44,824	49,026
Rogue Valley International-Medford Airport	0.90%	31,108	32,533	34,024	37,213
Rome State	0.90%	100	105	109	120
Roseburg Regional Airport	0.90%	31,700	33,152	34,671	37,921
Salem McNary Field	0.90%	37,126	38,827	40,606	44,412
Sandy River	0.90%	11,500	12,027	12,578	13,757
Santiam Junction State	0.90%	100	105	109	120
Scappoose Industrial Airpark	0.90%	59,400	62,122	64,968	71,057
Seaside Municipal Airport	0.90%	2,200	2,301	2,406	2,632
Siletz Bay State Airport	0.90%	3,830	4,005	4,189	4,582
Silver Lake USFS	0.90%	25	26	27	30
Sisters Eagle Air Airport	0.90%	1,400	1,464	1,531	1,675
Skyport	0.90%	2,000	2,092	2,187	2,393

Airport	FAA Hours Flown AAGR	2015	2020	2025	2035
Southwest Oregon Regional Airport	0.90%	10,831	11,327	11,846	12,957
Sportsman Airpark	0.90%	11,650	12,184	12,742	13,936
Stark's Twin Oaks	0.90%	22,195	23,212	24,275	26,551
Sunriver Airport	0.90%	6,100	6,379	6,672	7,297
Tillamook Airport	0.90%	25,500	26,668	27,890	30,504
Toketee State	0.90%	350	366	383	419
Toledo State Airport	0.90%	1,150	1,203	1,258	1,376
Valley View	0.90%	2,965	3,101	3,243	3,547
Vernonia Municipal	0.90%	3,000	3,137	3,281	3,589
Wakonda Beach State	0.90%	830	868	908	993
Wasco State Airport	0.90%	2,435	2,547	2,663	2,913
Total		**1,636,699**	**1,712,003**	**1,790,778**	**1,959,394**

Table 3-21 presents projected statewide general aviation operations for Oregon also using the top-down methodology. The U.S. Bureau Economic Analysis Per Capita Real GDP for Oregon 2005-2015 data indicates per capita GDP increased 1.6 percent annually between 2005 and 2015. This top-down projection assumes this average annual growth rate continues at this rate from 2015 to 2035. Individual airport general aviation aircraft operations projections were derived by applying this growth rate to each airport's current operations total through the end of the planning period. As shown in **Table 3-21**, using the top-down methodology, total statewide general aviation aircraft operations are projected to increase from 1.64 million in 2015 to 2.25 million in 2035.

TABLE 3-21: GENERAL AVIATION OPERATIONS PROJECTION, TOP-DOWN METHODOLOGY, HISTORICAL PER CAPITA REAL GDP

Airport	AAGR	2015	2020	2025	2035
Albany Municipal Airport	1.60%	23,300	25,225	27,308	32,006
Alkali Lake State	1.60%	50	54	59	69
Arlington Municipal	1.60%	910	985	1,067	1,250
Ashland Municipal Airport - Sumner Parker Field	1.60%	26,000	28,148	30,473	35,715
Port of Astoria Regional Airport	1.60%	38,721	41,719	44,951	52,192
Aurora State Airport	1.60%	94,655	102,474	110,938	130,022
Baker City Municipal Airport	1.60%	16,100	17,430	18,870	22,116
Bandon State Airport	1.60%	7,000	7,578	8,204	9,616
Beaver Marsh	1.60%	150	162	176	206
Bend Municipal Airport	1.60%	141,075	152,728	165,344	193,787
Boardman Airport	1.60%	1,500	1,624	1,758	2,060
Brookings Airport	1.60%	22,500	24,359	26,371	30,907
Burns Municipal Airport	1.60%	7,900	8,553	9,259	10,852
Cape Blanco State Airport	1.60%	750	812	879	1,030

Airport	AAGR	2015	2020	2025	2035
Cascade Locks State Airport	1.60%	1,500	1,624	1,758	2,060
Chehalem Airpark	1.60%	12,500	13,533	14,650	17,171
Chiloquin State Airport	1.60%	3,500	3,789	4,102	4,808
Christmas Valley Airport	1.60%	3,600	3,897	4,219	4,945
Columbia Gorge Regional - The Dalles	1.60%	15,482	16,761	18,145	21,267
Condon State Airport - Pauling Field	1.60%	3,940	4,265	4,618	5,412
Corvallis Municipal Airport	1.60%	51,500	55,754	60,359	70,743
Cottage Grove State Airport - Jim Wright Field	1.60%	16,685	18,063	19,555	22,919
Country Squire Airpark	1.60%	2,000	2,165	2,344	2,747
Crescent Lake State Airport	1.60%	300	325	352	412
Creswell Hobby Field Airport	1.60%	38,500	41,680	45,123	52,885
Davis Field	1.60%	1,000	1,083	1,172	1,374
Eastern Oregon Regional Airport at Pendleton	1.60%	9,717	10,520	11,389	13,348
Enterprise Municipal	1.60%	4,850	5,251	5,684	6,662
Eugene Airport-Mahlon Sweet Field	1.60%	48,416	52,415	56,745	66,506
Florence Municipal Airport	1.60%	5,500	5,954	6,446	7,555
George Felt	1.60%	1,500	1,624	1,758	2,060
Gold Beach Municipal Airport	1.60%	5,400	5,846	6,329	7,418
Grant County Regional Airport	1.60%	8,900	9,635	10,431	12,225
Grants Pass Airport	1.60%	24,900	26,957	29,183	34,204
Hermiston Municipal Airport	1.60%	24,800	26,849	29,066	34,066
Illinois Valley Airport	1.60%	6,000	6,496	7,032	8,242
Independence State Airport	1.60%	33,658	36,438	39,448	46,234
Joseph State Airport	1.60%	3,850	4,168	4,512	5,289
Ken Jernstedt Airfield	1.60%	14,150	15,319	16,584	19,437
Crater Lake-Klamath Regional	1.60%	34,305	37,139	40,206	47,123
La Grande / Union County Airport	1.60%	15,500	16,780	18,166	21,291
Lake Billy Chinook	1.60%	560	606	656	769
Lake County Airport	1.60%	6,000	6,496	7,032	8,242
Lake Woahink SPB	1.60%	3,000	3,248	3,516	4,121
Lakeside Municipal Airport	1.60%	1,600	1,732	1,875	2,198
Lebanon State Airport	1.60%	9,855	10,669	11,550	13,537
Lenhardt Airpark	1.60%	6,000	6,496	7,032	8,242
Lexington Airport	1.60%	4,420	4,785	5,180	6,072
Madras Municipal Airport	1.60%	10,635	11,513	12,464	14,609
Malin	1.60%	700	758	820	962
McDermitt State Airport	1.60%	2,200	2,382	2,578	3,022

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Airport	AAGR	2015	2020	2025	2035
McKenzie Bridge State	1.60%	400	433	469	549
McMinnville Municipal Airport	1.60%	62,000	67,121	72,666	85,166
Memaloose USFS	1.60%	600	650	703	824
Miller Memorial Airpark	1.60%	2,000	2,165	2,344	2,747
Monument Municipal	1.60%	130	141	152	179
Mulino State Airport	1.60%	21,300	23,059	24,964	29,259
Myrtle Creek Municipal Airport	1.60%	2,280	2,468	2,672	3,132
Nehalem Bay State Airport	1.60%	2,260	2,447	2,649	3,104
Newport Municipal Airport	1.60%	16,000	17,322	18,752	21,978
Oakridge State	1.60%	1,800	1,949	2,110	2,473
Ontario Municipal Airport	1.60%	12,930	13,998	15,154	17,761
Owyhee Reservoir State	1.60%	550	595	645	756
Pacific City State Airport	1.60%	2,000	2,165	2,344	2,747
Paisley	1.60%	400	433	469	549
Pinehurst State Airport	1.60%	620	671	727	852
Portland Downtown Heliport	1.60%	5,040	5,456	5,907	6,923
Portland-Hillsboro Airport	1.60%	198,780	215,199	232,975	273,053
Portland International Airport	1.60%	47,928	51,887	56,173	65,836
Portland-Troutdale Airport	1.60%	121,744	131,800	142,687	167,233
Powers Hayes Field	1.60%	400	433	469	549
Prineville Airport	1.60%	10,300	11,151	12,072	14,149
Prospect State Airport	1.60%	1,225	1,326	1,436	1,683
Redmond Municipal Airport-Roberts Field	1.60%	40,983	44,368	48,033	56,296
Rogue Valley International-Medford Airport	1.60%	31,108	33,678	36,459	42,731
Rome State	1.60%	100	108	117	137
Roseburg Regional Airport	1.60%	31,700	34,318	37,153	43,545
Salem McNary Field	1.60%	37,126	40,193	43,513	50,998
Sandy River	1.60%	11,500	12,450	13,478	15,797
Santiam Junction State	1.60%	100	108	117	137
Scappoose Industrial Airpark	1.60%	59,400	64,307	69,618	81,594
Seaside Municipal Airport	1.60%	2,200	2,382	2,578	3,022
Siletz Bay State Airport	1.60%	3,830	4,146	4,489	5,261
Silver Lake USFS	1.60%	25	27	29	34
Sisters Eagle Air Airport	1.60%	1,400	1,516	1,641	1,923
Skyport	1.60%	2,000	2,165	2,344	2,747
Southwest Oregon Regional Airport	1.60%	10,831	11,726	12,694	14,878
Sportsman Airpark	1.60%	11,650	12,612	13,654	16,003
Stark's Twin Oaks	1.60%	22,195	24,028	26,013	30,488

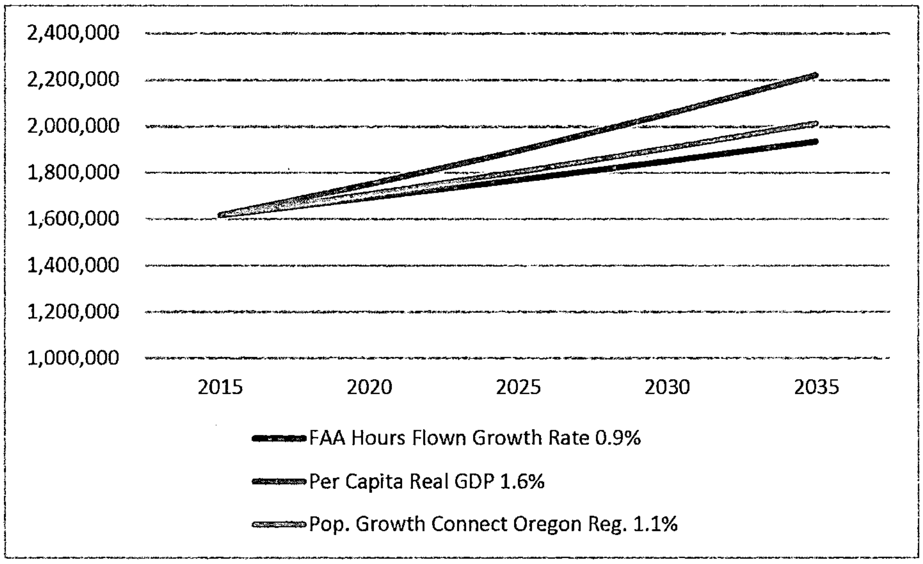
Airport	AAGR	2015	2020	2025	2035
Sunriver Airport	1.60%	6,100	6,604	7,149	8,379
Tillamook Airport	1.60%	25,500	27,606	29,887	35,028
Toketee State	1.60%	350	379	410	481
Toledo State Airport	1.60%	1,150	1,245	1,348	1,580
Valley View	1.60%	2,965	3,210	3,475	4,073
Vernonia Municipal	1.60%	3,000	3,248	3,516	4,121
Wakonda Beach State	1.60%	830	899	973	1,140
Wasco State Airport	1.60%	2,435	2,636	2,854	3,345
Total		**1,636,699**	**1,771,692**	**1,917,822**	**2,247,245**

Source: Jviation

Preferred General Aviation Operations Forecast

The results from the three general aviation operations projection methodologies developed in this forecast are compared in **Figure 3-8**. In 2015, the Oregon system airports examined in this analysis accommodated 1.6 million general aviation operations. The bottom-up methodology produced a 2035 statewide projection of 2.0 million general aviation operations, an average annual growth rate of 1.1 percent. The top-down methodology based on FAA Hours Flown projections produced a 2035 statewide projection of 1.93 million general aviation operations, an average annual growth rate of 0.9 percent. The alternative top-down methodology based on historical GDP growth produced a 2035 statewide projection of 2.22 million general aviation operations, an average annual growth rate of 1.6 percent. After comparing the results and the average annual growth rates of each methodology, the bottom-up growth rate of 0.9 percent was chosen as the preferred growth rate since it is based on FAA national average growth forecasted for hours flown. Although the preferred growth rate for general aviation based aircraft in Oregon is slightly higher, 1.1 percent, it is likely that operations per aircraft will decrease over the planning period.

FIGURE 3-8: GENERAL AVIATION OPERATIONS PROJECTIONS COMPARISON



Source: Jviation

3.5 Military Operations Forecast

FAA 5010 data indicates military operations occur at 43 Oregon system airports and reflect a wide range of activity levels. Crater Lake-Klamath Regional is the busiest airport in the state in terms of military followed by Port of Astoria Regional Airport. Astoria Regional is home of Coast Guard Air Station Astoria which support C130 aircraft and MH65 helicopters. Crater Lake-Klamath Regional is home to Kingsley Field Air National Guard Base site of the Oregon Air National Guard's 173rd Fighter Wing. Total military operations have increased from 39,345 in 2005 to 51,240 in 2015, reflecting an average annual growth rate of 1.33 percent. Future military operations in Oregon will be subject to a wide range of variables such as military budgets, national security issues, military participation in forest fire fighting and U.S. Coast Guard activity making it challenging to forecast. **Table 3-22** forecasts military operations for airports with known military operations for the 20-year planning period by utilizing this historical growth rate of 1.33 percent. Total annual military operations in Oregon are projected to increase from an estimated 67,700 to over 88,000 annual operations by 2035.

TABLE 3-22: MILITARY AIRCRAFT OPERATIONS PROJECTION, TOP-DOWN METHODOLOGY, HISTORICAL MILITARY OPERATIONS

Airport	AAGR	2015	2020	2025	2035
Albany Municipal Airport	1.33%	-	-	-	-
Alkali Lake State	1.33%	-	-	-	-
Arlington Municipal	1.33%	-	-	-	-
Ashland Municipal Airport - Sumner Parker Field	1.33%	50	53	57	65
Port of Astoria Regional Airport	1.33%	14,000	14,956	15,977	18,234
Aurora State Airport	1.33%	280	299	320	365
Baker City Municipal Airport	1.33%	100	107	114	130
Bandon State Airport	1.33%	100	107	114	130
Beaver Marsh	1.33%	-	-	-	-
Bend Municipal Airport	1.33%	100	107	114	130
Boardman Airport	1.33%	-	-	-	-
Brookings Airport	1.33%	100	107	114	130
Burns Municipal Airport	1.33%	100	107	114	130
Cape Blanco State Airport	1.33%	150	160	171	195
Cascade Locks State Airport	1.33%	-	-	-	-
Chehalem Airpark	1.33%	-	-	-	-
Chiloquin State Airport	1.33%	-	-	-	-
Christmas Valley Airport	1.33%	-	-	-	-
Columbia Gorge Regional - The Dalles	1.33%	971	1,037	1,108	1,265
Condon State Airport - Pauling Field	1.33%	-	-	-	-
Corvallis Municipal Airport	1.33%	800	855	913	1,042
Cottage Grove State Airport - Jim Wright Field	1.33%	-	-	-	-
Country Squire Airpark	1.33%	-	-	-	-
Crescent Lake State Airport	1.33%	-	-	-	-
Creswell Hobby Field Airport	1.33%	-	-	-	-

Airport	AAGR	2015	2020	2025	2035
Davis Field	1.33%	-	-	-	-
Eastern Oregon Regional Airport at Pendleton	1.33%	2,129	2,274	2,430	2,773
Enterprise Municipal	1.33%	-	-	-	-
Eugene Airport-Mahlon Sweet Field	1.33%	3,450	3,686	3,937	4,493
Florence Municipal Airport	1.33%	1,500	1,602	1,712	1,954
George Felt	1.33%	-	-	-	-
Gold Beach Municipal Airport	1.33%	150	160	171	195
Grant County Regional Airport	1.33%	25	27	29	33
Grants Pass Airport	1.33%	100	107	114	130
Hermiston Municipal Airport	1.33%	50	53	57	65
Illinois Valley Airport	1.33%	-	-	-	-
Independence State Airport	1.33%	-	-	-	-
Joseph State Airport	1.33%	-	-	-	-
Ken Jernstedt Airfield	1.33%	60	64	68	78
Crater Lake-Klamath Regional	1.33%	20,766	22,184	23,699	27,047
La Grande / Union County Airport	1.33%	500	534	571	651
Lake Billy Chinook	1.33%	-	-	-	-
Lake County Airport	1.33%	-	-	-	-
Lake Woahink SPB	1.33%	-	-	-	-
Lakeside Municipal Airport	1.33%	200	214	228	260
Lebanon State Airport	1.33%	-	-	-	-
Lenhardt Airpark	1.33%	-	-	-	-
Lexington Airport	1.33%	12	13	14	16
Madras Municipal Airport	1.33%	100	107	114	130
Malin	1.33%	-	-	-	-
McDermitt State Airport	1.33%	-	-	-	-
McKenzie Bridge State	1.33%	-	-	-	-
McMinnville Municipal Airport	1.33%	1,500	1,602	1,712	1,954
Memaloose USFS	1.33%	-	-	-	-
Miller Memorial Airpark	1.33%	-	-	-	-
Monument Municipal	1.33%	-	-	-	-
Mulino State Airport	1.33%	-	-	-	-
Myrtle Creek Municipal Airport	1.33%	-	-	-	-
Nehalem Bay State Airport	1.33%	50	53	57	65
Newport Municipal Airport	1.33%	3,600	3,846	4,108	4,689
Oakridge State	1.33%	-	-	-	-
Ontario Municipal Airport	1.33%	-	-	-	-
Owyhee Reservoir State	1.33%	-	-	-	-

Airport	AAGR	2015	2020	2025	2035
Pacific City State Airport	1.33%	-	-	-	-
Paisley	1.33%	-	-	-	-
Pinehurst State Airport	1.33%	-	-	-	-
Portland Downtown Heliport	1.33%	100	107	114	130
Portland-Hillsboro Airport	1.33%	375	401	428	488
Portland International Airport	1.33%	3,517	3,757	4,014	4,581
Portland-Troutdale Airport	1.33%	233	249	266	303
Powers Hayes Field	1.33%	-	-	-	-
Prineville Airport	1.33%	100	107	114	130
Prospect State Airport	1.33%	-	-	-	-
Redmond Municipal Airport-Roberts Field	1.33%	455	486	519	593
Rogue Valley International-Medford Airport	1.33%	481	514	549	626
Rome State	1.33%	-	-	-	-
Roseburg Regional Airport	1.33%	50	53	57	65
Salem McNary Field	1.33%	4,084	4,363	4,661	5,319
Sandy River	1.33%	-	-	-	-
Santiam Junction State	1.33%	6	6	7	8
Scappoose Industrial Airpark	1.33%	600	641	685	781
Seaside Municipal Airport	1.33%	400	427	456	521
Siletz Bay State Airport	1.33%	50	53	57	65
Silver Lake USFS	1.33%	-	-	-	-
Sisters Eagle Air Airport	1.33%	-	-	-	-
Skyport	1.33%	-	-	-	-
Southwest Oregon Regional Airport	1.33%	6,113	6,530	6,976	7,962
Sportsman Airpark	1.33%	-	-	-	-
Stark's Twin Oaks	1.33%	-	-	-	-
Sunriver Airport	1.33%	50	53	57	65
Tillamook Airport	1.33%	100	107	114	130
Toketee State	1.33%	-	-	-	-
Toledo State Airport	1.33%	-	-	-	-
Valley View	1.33%	-	-	-	-
Vernonia Municipal	1.33%	-	-	-	-
Wakonda Beach State	1.33%	-	-	-	-
Wasco State Airport	1.33%	-	-	-	-
Total		**67,657**	**72,277**	**77,213**	**88,120**

Source: Jviation

3.6 Based Aircraft Forecast

In 2017, there were 4,521 based aircraft at Oregon system airports. Of these, 755 are located at commercial airports and 3,766 are located at general aviation airports. **Table 3-23** lists the airports in Oregon with the largest number of based aircraft. Aurora State Airport out-distances all the other airports by a large margin with 7.7 percent of all based aircraft in the state.

TABLE 3-23: TOP 20 AIRPORTS WITH THE LARGEST NUMBER OF BASED AIRCRAFT, 2015

Airport	Connect Oregon Region	OAP Functional Role	Based Aircraft Count	Percentage of Share
Aurora State Airport	2	II	346	7.7%
Portland-Hillsboro Airport	1	II	296	6.5%
Bend Municipal Airport	4	II	241	5.3%
Rogue Valley International-Medford Airport	3	I	207	4.6%
Ken Jemstedt Airfield	1	IV	197	4.4%
Independence State Airport	2	IV	191	4.2%
Grants Pass Airport	3	III	189	4.2%
Eugene Airport-Mahlon Sweet Field	2	I	185	4.1%
Salem McNary Field	2	II	136	3.0%
Corvallis Municipal Airport	2	II	134	3.0%
Scappoose Industrial Airpark	1	II	119	2.6%
Prineville Airport	4	IV	117	2.6%
Lenhardt Airpark	1	IV	113	2.5%
Stark's Twin Oaks	1	V	113	2.5%
McMinnville Municipal Airport	2	II	109	2.4%
Roseburg Regional Airport	3	III	105	2.3%
Creswell Hobby Field Airport	2	IV	102	2.3%
Albany Municipal Airport	2	IV	92	2.0%
Crater Lake-Klamath Regional	4	I	84	1.9%
Redmond Municipal Airport-Roberts Field	4	I	83	1.8%
Top 20 Airports			**3,159**	69.9%
Other Airports			**1,362**	30.1%
Total			**4,521**	100.0%

Source: FAA 5010, Basedaircraft.com, FAA Terminal Area Forecast, Jviation Analysis

3.6.1 Based Aircraft Projections

Bottom-Up: General Aviation Operations per Based Aircraft Methodology

The bottom-up growth rate methodology, applies the average annual historical growth rate based on Connect Oregon regional population growth rates that correspond with individual airports in each region. This methodology was also applied to passenger enplanement forecasts and general aviation operations forecasts. Population growth for Connect Oregon Regions is based on a weighted average of population growth for

Oregon counties comprising each region. Overall annual statewide growth in air carrier operations for the planning period is 1.25 percent.

The proportional increase was determined by the projected population growth of each airport's associated region. This type of projection is referred to as a bottom-up methodology as it looks at activity from the airport-specific level and then totals the individual projections to develop a statewide total. As shown in **Table 3-24,** using the bottom-up methodology, total statewide based aircraft are projected to increase from 4,530 in 2017 to 5,463 in 2035, a statewide average annual growth rate of 1.0 percent over the planning period.

TABLE 3-24: GENERAL AVIATION BASED AIRCRAFT PROJECTION, BOTTOM-UP METHODOLOGY

Airport	Connect Oregon Region	AAGR *	2017	2020	2025	2035
Albany Municipal Airport	2	0.81%	92	94	98	106
Alkali Lake State	4	1.59%	0	0	0	0
Arlington Municipal	4	1.59%	1	1	1	1
Ashland Municipal Airport-Sumner Parker Field	3	0.81%	58	59	62	67
Port of Astoria Regional Airport	2	0.81%	45	46	48	52
Aurora State Airport	2	0.81%	346	354	369	400
Baker City Municipal Airport	5	0.71%	24	25	25	27
Bandon State Airport	3	0.67%	25	26	26	28
Beaver Marsh	4	1.59%	0	0	0	0
Bend Municipal Airport	4	1.59%	241	253	273	320
Boardman Airport	5	0.71%	0	0	0	0
Brookings Airport	3	0.67%	18	18	19	20
Burns Municipal Airport	5	0.71%	14	14	15	16
Cape Blanco State Airport	3	0.67%	7	7	7	8
Cascade Locks State Airport	1	1.32%	0	0	0	0
Chehalem Airpark	2	0.81%	31	32	33	36
Chiloquin State Airport	4	1.59%	6	6	7	8
Christmas Valley Airport	4	1.59%	0	0	0	0
Columbia Gorge Regional - The Dalles	4	1.59%	62	65	70	82
Condon State Airport - Pauling Field	4	1.59%	11	12	12	15
Corvallis Municipal Airport	2	0.81%	134	137	143	155
Cottage Grove State Airport - Jim Wright Field	2	0.81%	26	27	28	30
Country Squire Airpark	1	1.32%	27	28	30	34
Crescent Lake State Airport	4	1.59%	0	0	0	0
Creswell Hobby Field Airport	2	0.81%	102	104	109	118
Davis Field	2	0.81%	5	5	5	6
Eastern Oregon Regional Airport at Pendleton	5	0.71%	77	80	83	70

Airport	Connect Oregon Region	AAGR *	2017	2020	2025	2035
Enterprise Municipal	5	0.71%	31	32	33	35
Eugene Airport - Mahlon Sweet Field	2	0.81%	185	193	201	214
Florence Municipal Airport	2	0.81%	12	12	13	25
George Felt	3	0.67%	17	18	18	19
Gold Beach Municipal Airport	3	0.67%	10	10	11	11
Grant County Regional Airport	5	0.71%	13	13	14	14
Grants Pass Airport	3	0.67%	189	193	199	206
Hermiston Municipal Airport	5	0.71%	39	40	41	43
Illinois Valley Airport	3	0.67%	35	36	37	38
Independence State Airport	2	0.81%	191	196	204	212
Joseph State Airport	5	0.71%	14	14	15	15
Ken Jernstedt Airfield	1	1.32%	197	205	219	234
Crater Lake-Klamath Reg'l	4	1.59%	84	88	95	103
La Grande / Union County Airport	5	0.71%	65	66	69	71
Lake Billy Chinook	4	1.59%	10	10	11	12
Lake County Airport	4	1.59%	16	17	18	20
Lake Woahink SPB	5	0.71%	0	0	0	0
Lakeside Municipal Airport	3	0.67%	6	6	6	7
Lebanon State Airport	2	0.81%	49	50	52	54
Lenhardt Airpark	1	1.32%	113	118	126	134
Lexington Airport	5	0.71%	12	12	13	13
Madras Municipal Airport	4	1.59%	67	70	76	82
Malin	4	1.59%	4	4	5	5
McDermitt State Airport	5	0.71%	1	1	1	1
McKenzie Bridge State	2	0.81%	0	0	0	0
McMinnville Municipal Airport	2	0.81%	109	112	116	121
Memaloose USFS	5	0.71%	0	0	0	0
Miller Memorial Airpark	5	0.71%	4	4	4	4
Monument Municipal	5	0.71%	0	0	0	0
Mulino State Airport	1	1.32%	63	66	70	75
Myrtle Creek Municipal Airport	3	0.67%	12	12	13	13
Nehalem Bay State Airport	2	0.81%	0	0	0	0
Newport Municipal Airport	2	0.81%	24	25	26	27
Oakridge State	2	0.81%	5	5	5	6
Ontario Municipal Airport	5	0.71%	38	39	40	42
Owyhee Reservoir State	5	0.71%	0	0	0	0
Pacific City State Airport	2	0.81%	5	5	5	6

Airport	Connect Oregon Region	AAGR *	2017	2020	2025	2035
Paisley	4	1.59%	0	0	0	0
Pinehurst State Airport	3	0.67%	7	7	7	8
Portland Downtown Heliport	1	1.32%	0	0	0	0
Portland-Hillsboro Airport	1	1.32%	296	308	329	375
Portland International Airport	1	1.32%	78	81	87	99
Portland-Troutdale Airport	1	1.32%	41	43	46	52
Powers Hayes Field	3	0.67%	1	1	1	1
Prineville Airport	4	1.59%	117	123	133	155
Prospect State Airport	3	0.67%	1	1	1	1
Redmond Municipal Airport-	4	1.59%	113	118	128	150
Rogue Valley International-	3	0.67%	207	211	218	233
Rome State	5	0.71%	0	0	0	0
Roseburg Regional Airport	3	0.67%	105	107	111	118
Salem McNary Field	2	0.81%	136	139	145	157
Sandy River	1	1.32%	28	29	31	35
Santiam Junction State	2	0.81%	0	0	0	0
Scappoose Industrial Airpark	1	1.32%	119	124	132	151
Seaside Municipal Airport	2	0.81%	3	3	3	3
Siletz Bay State Airport	2	0.81%	13	13	14	15
Silver Lake USFS	4	1.59%	0	0	0	0
Sisters Eagle Air Airport	4	1.59%	17	18	19	23
Skyport	1	1.32%	0	0	0	0
Southwest Oregon Regional	3	0.67%	56	57	59	63
Sportsman Airpark	2	0.81%	44	45	47	51
Stark's Twin Oaks	1	1.32%	113	118	126	143
Sunriver Airport	4	1.59%	28	29	32	37
Tillamook Airport	2	0.81%	19	19	20	22
Toketee State	3	0.67%	0	0	0	0
Toledo State Airport	2	0.81%	9	9	10	10
Valley View	1	1.32%	33	34	37	42
Vernonia Municipal	1	1.32%	5	5	6	6
Wakonda Beach State	2	0.81%	3	3	3	3
Wasco State Airport	4	1.59%	4	4	5	5
Total			**4,489**	**4,631**	**4,879**	**5,420**

Source: Oregon Population Center, Source: FAA 5010, FAA Terminal Area Forecast, Jviation Analysis
* Based on Connect Oregon region population growth

Top-Down Methodology

Table 3-25 presents projected statewide based general aviation aircraft for Oregon using the top-down methodology. The US Bureau Economic Analysis Regional Data Per Capita Real GDP Oregon 2005-2015 increased 1.6 percent annually between 2005 and 2015. This top down projection assumes this average annual growth rate continues at this rate from 2017 to 2035. Individual airport based aircraft projections were derived by applying these growth rates to each airport's current based aircraft total through the end of the planning period. As shown in **Table 3-25**, using the Top Down methodology, total statewide based aircraft are projected to increase from 4,530 in 2017 to 6,028 in 2035.

TABLE 3-25: GENERAL AVIATION BASED AIRCRAFT PROJECTION, TOP-DOWN METHODOLOGY, HISTORICAL PER CAPITA REAL GDP

Airport	AAGR	2017	2020	2025	2035
Albany Municipal Airport	1.60%	92	96	104	122
Alkali Lake State	1.60%	0	0	0	0
Arlington Municipal	1.60%	1	1	1	1
Ashland Municipal Airport - Sumner Parker Field	1.60%	58	61	66	77
Port of Astoria Regional Airport	1.60%	45	47	51	60
Aurora State Airport	1.60%	346	363	393	460
Baker City Municipal Airport	1.60%	24	25	27	32
Bandon State Airport	1.60%	25	26	28	33
Beaver Marsh	1.60%	0	0	0	0
Bend Municipal Airport	1.60%	241	253	274	321
Boardman Airport	1.60%	0	0	0	0
Brookings Airport	1.60%	18	19	20	24
Burns Municipal Airport	1.60%	14	15	16	19
Cape Blanco State Airport	1.60%	7	7	8	9
Cascade Locks State Airport	1.60%	0	0	0	0
Chehalem Airpark	1.60%	31	33	35	41
Chiloquin State Airport	1.60%	6	6	7	8
Christmas Valley Airport	1.60%	0	0	0	0
Columbia Gorge Regional - The Dalles	1.60%	62	65	70	83
Condon State Airport - Pauling Field	1.60%	11	12	12	15
Corvallis Municipal Airport	1.60%	134	141	152	178
Cottage Grove State Airport - Jim Wright Field	1.60%	26	27	30	35
Country Squire Airpark	1.60%	27	28	31	36
Crescent Lake State Airport	1.60%	0	0	0	0
Creswell Hobby Field Airport	1.60%	102	107	116	136
Davis Field	1.60%	5	5	6	7
Eastern Oregon Regional Airport at Pendleton	1.60%	62	65	70	83
Enterprise Municipal	1.60%	31	33	35	41
Eugene Airport-Mahlon Sweet Field	1.60%	185	194	210	246
Florence Municipal Airport	1.60%	22	23	25	29
George Felt	1.60%	17	18	19	23
Gold Beach Municipal Airport	1.60%	10	10	11	13
Grant County Regional Airport	1.60%	13	14	15	17
Grants Pass Airport	1.60%	189	198	215	252

OREGON AVIATION PLAN

Airport	AAGR	2017	2020	2025	2035
Hermiston Municipal Airport	1.60%	39	41	44	52
Illinois Valley Airport	1.60%	35	37	40	47
Independence State Airport	1.60%	191	200	217	254
Joseph State Airport	1.60%	14	15	16	19
Ken Jernstedt Airfield	1.60%	197	207	224	262
Crater Lake-Klamath Regional	1.60%	84	88	95	112
La Grande / Union County Airport	1.60%	65	68	74	86
Lake Billy Chinook	1.60%	10	10	11	13
Lake County Airport	1.60%	16	17	18	21
Lake Woahink SPB	1.60%	0	0	0	0
Lakeside Municipal Airport	1.60%	6	6	7	8
Lebanon State Airport	1.60%	49	51	56	65
Lenhardt Airpark	1.60%	113	119	128	150
Lexington Airport	1.60%	12	13	14	16
Madras Municipal Airport	1.60%	67	70	76	89
Malin	1.60%	4	4	5	5
McDermitt State Airport	1.60%	1	1	1	1
McKenzie Bridge State	1.60%	0	0	0	0
McMinnville Municipal Airport	1.60%	109	114	124	145
Memaloose USFS	1.60%	0	0	0	0
Miller Memorial Airpark	1.60%	4	4	5	5
Monument Municipal	1.60%	0	0	0	0
Mulino State Airport	1.60%	63	66	72	84
Myrtle Creek Municipal Airport	1.60%	12	13	14	16
Nehalem Bay State Airport	1.60%	0	0	0	0
Newport Municipal Airport	1.60%	24	25	27	32
Oakridge State	1.60%	5	5	6	7
Ontario Municipal Airport	1.60%	38	40	43	51
Owyhee Reservoir State	1.60%	0	0	0	0
Pacific City State Airport	1.60%	5	5	6	7
Paisley	1.60%	0	0	0	0
Pinehurst State Airport	1.60%	7	7	8	9
Portland Downtown Heliport	1.60%	0	0	0	0
Portland-Hillsboro Airport	1.60%	296	310	336	394
Portland International Airport	1.60%	78	82	89	104
Portland-Troutdale Airport	1.60%	41	43	47	55
Powers Hayes Field	1.60%	1	1	1	1
Prineville Airport	1.60%	117	123	133	156

Airport	AAGR	2017	2020	2025	2035
Prospect State Airport	1.60%	1	1	1	1
Redmond Municipal Airport-Roberts Field	1.60%	113	119	128	150
Rogue Valley International-Medford Airport	1.60%	207	217	235	275
Rome State	1.60%	0	0	0	0
Roseburg Regional Airport	1.60%	105	110	119	140
Salem McNary Field	1.60%	136	143	154	181
Sandy River	1.60%	28	29	32	37
Santiam Junction State	1.60%	0	0	0	0
Scappoose Industrial Airpark	1.60%	119	125	135	158
Seaside Municipal Airport	1.60%	3	3	3	4
Siletz Bay State Airport	1.60%	13	14	15	17
Silver Lake USFS	1.60%	0	0	0	0
Sisters Eagle Air Airport	1.60%	17	18	19	23
Skyport	1.60%	0	0	0	0
Southwest Oregon Regional Airport	1.60%	56	59	64	75
Sportsman Airpark	1.60%	44	46	50	59
Stark's Twin Oaks	1.60%	113	119	128	150
Sunriver Airport	1.60%	28	29	32	37
Tillamook Airport	1.60%	19	20	22	25
Toketee State	1.60%	0	0	0	0
Toledo State Airport	1.60%	9	9	10	12
Valley View	1.60%	33	35	37	44
Vernonia Municipal	1.60%	5	5	6	7
Wakonda Beach State	1.60%	3	3	3	4
Wasco State Airport	1.60%	4	4	5	5
Total		**4,489**	**4,708**	**5,097**	**5,974**

Source: US Bureau Economic Analysis Regional Data Per Capita Real GDP, Jviation Analysis

Top-Down Methodology

Table 3-26 presents projected statewide based general aviation aircraft for Oregon using an additional top-down methodology. The FAA Terminal Area Forecast indicates based aircraft for NPIAS airports in Oregon will increase 1.1 percent annually between 2017 and 2035. Individual airport based aircraft projections were derived by applying these growth rates to each airport's current based aircraft total through the end of the planning period. Although 41 of the 97 airports in Oregon are not in the NPIAS this forecast assumes this based aircraft growth rate applies to all ODA system airports. However, 89 percent of based aircraft in 2017 on Oregon system airports were located on NPIAS airports. As shown in **Table 3-26**, using the Top Down methodology, total statewide based aircraft are projected to increase from 4,530 in 2017 to 5,505 in 2035.

TABLE 3-26: GENERAL AVIATION BASED AIRCRAFT PROJECTION, TOP-DOWN METHODOLOGY, FAA TERMINAL AREA FORECAST FOR OREGON

Airport	AAGR 2015-2035	2017	2020	2025	2035
Albany Municipal Airport	1.10%	92	95	100	112
Alkali Lake State	1.10%	0	0	0	0
Arlington Municipal	1.10%	1	1	1	1
Ashland Municipal Airport - Sumner Parker Field	1.10%	58	60	63	71
Port of Astoria Regional Airport	1.10%	45	47	49	55
Aurora State Airport	1.10%	346	358	378	421
Baker City Municipal Airport	1.10%	24	25	26	29
Bandon State Airport	1.10%	25	26	27	30
Beaver Marsh	1.10%	0	0	0	0
Bend Municipal Airport	1.10%	241	249	263	293
Boardman Airport	1.10%	0	0	0	0
Brookings Airport	1.10%	18	19	20	22
Burns Municipal Airport	1.10%	14	14	15	17
Cape Blanco State Airport	1.10%	7	7	8	9
Cascade Locks State Airport	1.10%	0	0	0	0
Chehalem Airpark	1.10%	31	32	34	38
Chiloquin State Airport	1.10%	6	6	7	7
Christmas Valley Airport	1.10%	0	0	0	0
Columbia Gorge Regional - The Dalles	1.10%	62	64	68	75
Condon State Airport - Pauling Field	1.10%	11	11	12	13
Corvallis Municipal Airport	1.10%	134	138	146	163
Cottage Grove State Airport - Jim Wright Field	1.10%	26	27	28	32
Country Squire Airpark	1.10%	27	28	29	33
Crescent Lake State Airport	1.10%	0	0	0	0
Creswell Hobby Field Airport	1.10%	102	105	111	124
Davis Field	1.10%	5	5	5	6
Eastern Oregon Regional Airport at Pendleton	1.10%	62	64	68	75
Enterprise Municipal	1.10%	31	32	34	38
Eugene Airport-Mahlon Sweet Field	1.10%	185	191	202	225
Florence Municipal Airport	1.10%	22	23	24	27
George Felt	1.10%	17	18	19	21
Gold Beach Municipal Airport	1.10%	10	10	11	12
Grant County Regional Airport	1.10%	13	13	14	16
Grants Pass Airport	1.10%	189	195	206	230
Hermiston Municipal Airport	1.10%	39	40	43	47
Illinois Valley Airport	1.10%	35	36	38	43

Airport	AAGR 2015-2035	2017	2020	2025	2035
Independence State Airport	1.10%	191	197	208	233
Joseph State Airport	1.10%	14	14	15	17
Ken Jernstedt Airfield	1.10%	197	204	215	240
Crater Lake-Klamath Regional	1.10%	84	87	92	102
La Grande / Union County Airport	1.10%	65	67	71	79
Lake Billy Chinook	1.10%	10	10	11	12
Lake County Airport	1.10%	16	17	17	19
Lake Woahink SPB	1.10%	0	0	0	0
Lakeside Municipal Airport	1.10%	6	6	7	7
Lebanon State Airport	1.10%	49	51	53	60
Lenhardt Airpark	1.10%	113	117	123	138
Lexington Airport	1.10%	12	12	13	15
Madras Municipal Airport	1.10%	67	69	73	82
Malin	1.10%	4	4	4	5
McDermitt State Airport	1.10%	1	1	1	1
McKenzie Bridge State	1.10%	0	0	0	0
McMinnville Municipal Airport	1.10%	109	113	119	133
Memaloose USFS	1.10%	0	0	0	0
Miller Memorial Airpark	1.10%	4	4	4	5
Monument Municipal	1.10%	0	0	0	0
Mulino State Airport	1.10%	63	65	69	77
Myrtle Creek Municipal Airport	1.10%	12	12	13	15
Nehalem Bay State Airport	1.10%	0	0	0	0
Newport Municipal Airport	1.10%	24	25	26	29
Oakridge State	1.10%	5	5	5	6
Ontario Municipal Airport	1.10%	38	39	41	46
Owyhee Reservoir State	1.10%	0	0	0	0
Pacific City State Airport	1.10%	5	5	5	6
Paisley	1.10%	0	0	0	0
Pinehurst State Airport	1.10%	7	7	8	9
Portland Downtown Heliport	1.10%	0	0	0	0
Portland-Hillsboro Airport	1.10%	296	306	323	360
Portland International Airport	1.10%	78	81	85	95
Portland-Troutdale Airport	1.10%	41	42	45	50
Powers Hayes Field	1.10%	1	1	1	1
Prineville Airport	1.10%	117	121	128	142
Prospect State Airport	1.10%	1	1	1	1
Redmond Municipal Airport-Roberts Field	1.10%	113	117	123	138

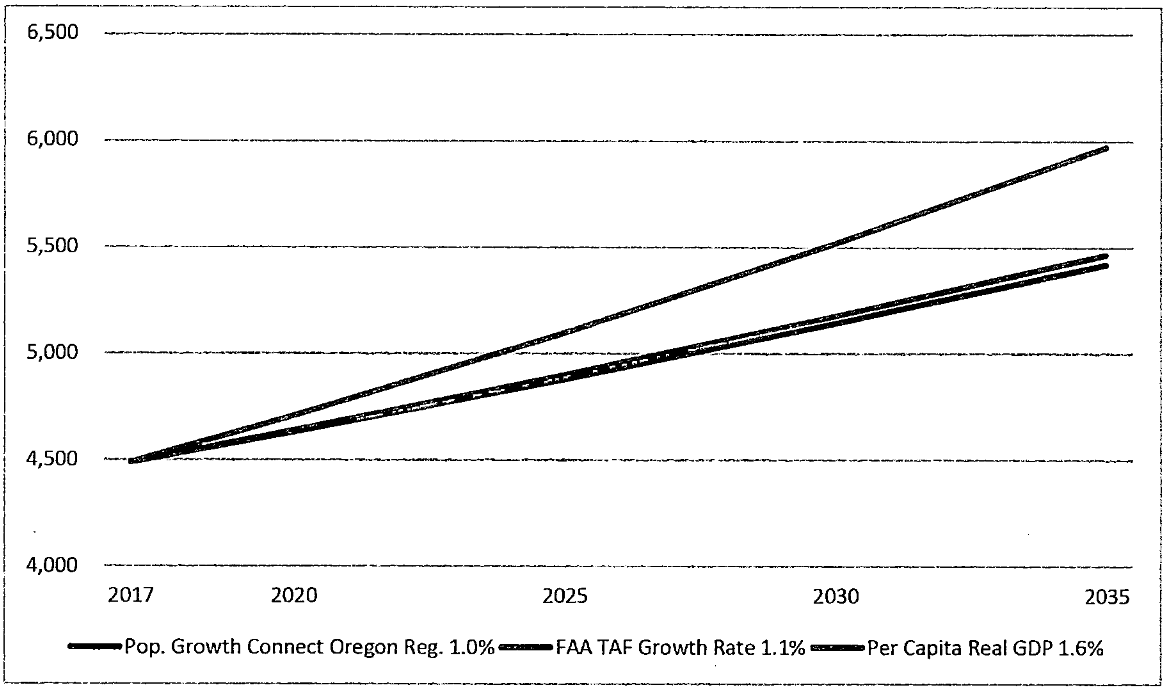
Airport	AAGR 2015-2035	2017	2020	2025	2035
Rogue Valley International-Medford Airport	1.10%	207	214	226	252
Rome State	1.10%	0	0	0	0
Roseburg Regional Airport	1.10%	105	109	115	128
Salem McNary Field	1.10%	136	141	148	166
Sandy River	1.10%	28	29	31	34
Santiam Junction State	1.10%	0	0	0	0
Scappoose Industrial Airpark	1.10%	119	123	130	145
Seaside Municipal Airport	1.10%	3	3	3	4
Siletz Bay State Airport	1.10%	13	13	14	16
Silver Lake USFS	1.10%	0	0	0	0
Sisters Eagle Air Airport	1.10%	17	18	19	21
Skyport	1.10%	0	0	0	0
Southwest Oregon Regional Airport	1.10%	56	58	61	68
Sportsman Airpark	1.10%	44	45	48	54
Stark's Twin Oaks	1.10%	113	117	123	138
Sunriver Airport	1.10%	28	29	31	34
Tillamook Airport	1.10%	19	20	21	23
Toketee State	1.10%	0	0	0	0
Toledo State Airport	1.10%	9	9	10	11
Valley View	1.10%	33	34	36	40
Vernonia Municipal	1.10%	5	5	5	6
Wakonda Beach State	1.10%	3	3	3	4
Wasco State Airport	1.10%	4	4	4	5
Total		**4,489**	**4,639**	**4,900**	**5,466**

Source: FAA Terminal Area Forecast Based Aircraft Projection Growth Rate for Oregon, Jviation Analysis

Preferred Based Aircraft Forecast

The results from the three based aircraft projection methodologies developed in this forecast are compared in **Figure 3-9**. In 2017, the Oregon airports examined as part of this analysis were home to 4,489 based aircraft. The bottom-up methodology produced a 2035 statewide projection of 5,420 based aircraft and an average annual growth rate of 1.0 percent. The top-down methodology based on historical Per Capita Real GDP produced a 2035 statewide projection of 5,974 based aircraft with the highest average annual growth rate, of the three projections, at 1.6 percent. The alternative top-down methodology utilizing FAA Terminal Area Forecast projections for NPIAS airports in Oregon produced more moderate 5,466 based aircraft total at the end of the planning period. After comparing the results and the average annual growth rates of each methodology, and although the historical Per Capita Real GDP projection had the strongest growth, it was decided to be highly optimistic since sustaining a 1.6 percent GDP growth rate over the planning period is unlikely. As a result, the more conservative bottom-up growth rate of 1.1 percent was chosen as the preferred forecast which is based on FAA TAF growth rates for based aircraft.

FIGURE 3-9: BASED AIRCRAFT FORECAST COMPARISON

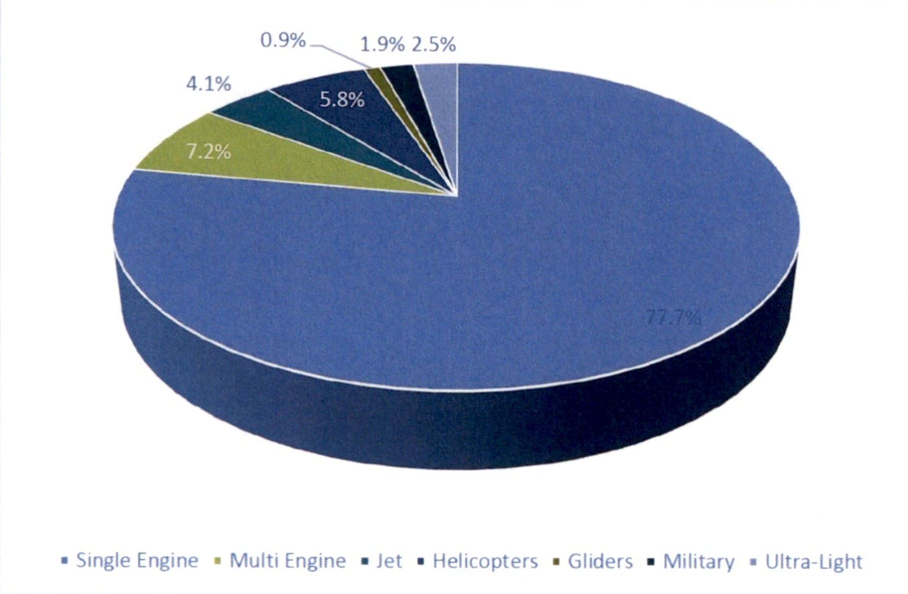


Source: Jviation

3.7 Oregon Aircraft Fleet Mix Forecast

Forecasts of the types of based aircraft within Oregon were based on 2015 fleet mix from each airport's FAA 5010 Airport Master Record. Multiple growth rates were utilized in developing based aircraft fleet mix forecasts over the 20-year planning period. These rates came from Oregon population forecasts, historical per capita real GDP (2010 to 2016) and the 2017 FAA Aerospace Forecast publication. Forecasting based aircraft fleet mix assists in understanding Oregon's future airport activity and system growth. **Figure 3-10** identifies total aircraft type by market share. Nearly 78 percent of all general aviation based aircraft are single-engine aircraft with seven percent being twin engine. Jet aircraft comprise over four percent of the fleet with helicopters making up nearly six percent.

FIGURE 3-10: 2015 OREGON AIRCRAFT FLEET MIX



Source: Jviation

Table 3-27, **Table 3-28**, and **Table 3-29** show the results of each growth rate applied to the based aircraft base year by aircraft type. An historical statewide average annual population growth rate of 0.97% was applied as this forecasting method. The result of the analysis indicates total single-engine aircraft increase from 3,608 to 4,337 by the end of the planning period while multi-engine and jet aircraft increase from 332 to 403 and 189 to 229 respectively. Helicopters increase from 269 to 3026, gliders from 43 to 52 and military increase from 87 to 105. Ultralights increase from 114 to 139 over the planning horizon.

TABLE 3-27: BASED AIRCRAFT FLEET MIX FORECAST PER POPULATION GROWTH

	Single-Engine	Multi-Engine	Jet	Helicopters	Gliders	Military	Ultra-Light	Total
AAGR	0.97%	0.97%	0.97%	0.97%	0.97%	0.97%	0.97%	
2015	3,608	332	189	269	43	87	114	**4,642**
2020	3,787	349	198	282	45	91	120	**4,872**
2025	3,974	366	208	296	47	96	126	**5,112**
2035	4,377	403	229	326	52	105	139	**5,631**

Source: Jviation

A second forecasting method used was applying the US BEA Regional Data Per Capita Real GDP[6] compound annual growth rate for Oregon, (**Table 3-28**). BEA data indicates that between 2005-2015, Per Capita Real GDP growth was 1.6 percent for Oregon. This historical growth rate was applied to each airport's 2015 based aircraft count to facilitate its forecast with the assumption that this growth rate will continue for the next 20 years and that based aircraft ownership is tied to this measure of economic growth. A 1.6 percent growth rate and is the most robust growth rate of the fleet mix projections presented in this analysis. The result indicates total single-

[6] Real GDP by state is an inflation-adjusted measure of each state's gross product that is based on national prices for the goods and services produced within the state. Total GDP is divided by the total population and compared between years to identify the average annual growth rate.

engine aircraft increase from 3,608 to 4,956 by the end of the planning period while multi-engine and jet aircraft increase from 332 to 456 and 189 to 259 respectively. Helicopters increase from 269 to 369, gliders from 43 to 59, and military increase from 87 to 119. Ultralights increase from 114 to 157 over the planning horizon.

TABLE 3-28: BASED AIRCRAFT FLEET MIX FORECAST PER CAPITA GDP GROWTH

	Single-Engine	Multi-Engine	Jet	Helicopters	Gliders	Military	Ultra-Light	Total
AAGR	1.60%	1.60%	1.60%		1.60%	1.60%	1.60%	
2015	3,608	332	189	269	43	87	114	**4,642**
2020	3,906	360	204	291	47	94	124	**5,025**
2025	4,229	389	221	315	50	102	134	**5,441**
2035	4,956	456	259	369	59	119	157	**6,376**

Source: Jviation

The FAA Aerospace Forecast prepares forecasts for the years 2015-2035 and looks at segments of the industry including: Airline Traffic, General Aviation activity, other FAA work and Unmanned Aircraft System trends. This report is respected throughout the industry and is utilized in other forecasting capacities. This forecast utilizes the FAA Aerospace Forecast of Active General Aviation Aircraft growth rate of 0.2 percent over the 20-year planning period. The exception to this rate is jet aircraft and helicopters which are forecast to grow at the national forecasted manufacturing rate of 2.5 and 2.1 percent respectively. **Table 3-29** shows the results of this forecasting method.

The result of the analysis indicates total single-engine aircraft decrease from 3608 to 3755 by the end of the planning period while multi-engine and jet aircraft increase from 342 to 515 and 183 to 257 respectively. Helicopters increase from 257 to 367, gliders from 44 to 91, and military increase from 89 to 113. Ultralights increase from 116 to 239 over the planning horizon. Total based aircraft increase slightly overall from 4642 to 5094 which is the slowest total based aircraft forecast of the three presented.

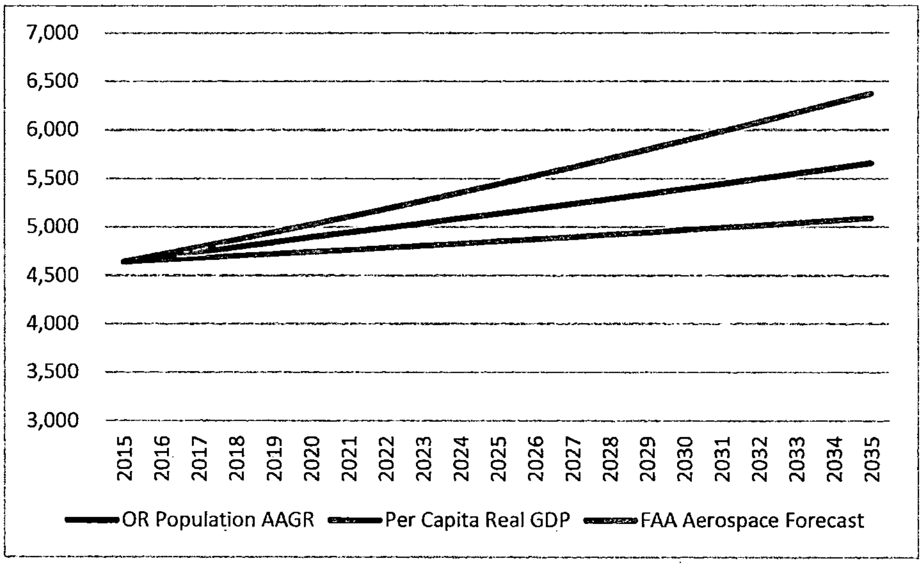
TABLE 3-29: BASED AIRCRAFT FLEET MIX FORECAST PER 2016 FAA AEROSPACE FORECAST GROWTH RATES

	Single-Engine	Multi-Engine	Jet	Helicopters	Gliders	Military	Ultra-Light	Total
AAGR	0.20%	0.20%	2.50%	2.10%	0.20%	1.33%	0.20%	
2015	3,608	332	189	269	43	87	114	**4,642**
2020	3,645	336	213	298	43	93	115	**4,743**
2025	3,681	339	241	331	44	99	117	**4,852**
2035	3,755	346	309	407	45	113	119	**5,094**

Source: Jviation

Figure 3-11 displays the difference between each forecast. As seen, the FAA Aerospace fleet mix forecast has the lowest total growth rate, with based aircraft totaling just 5094 in 2035. A forecast based on per capita GDP results in the highest forecast at 6,376 based aircraft in 2035.

FIGURE 3-11: FLEET MIX FORECASTS OF TOTAL BASED AIRCRAFT IN OREGON THROUGH 2035

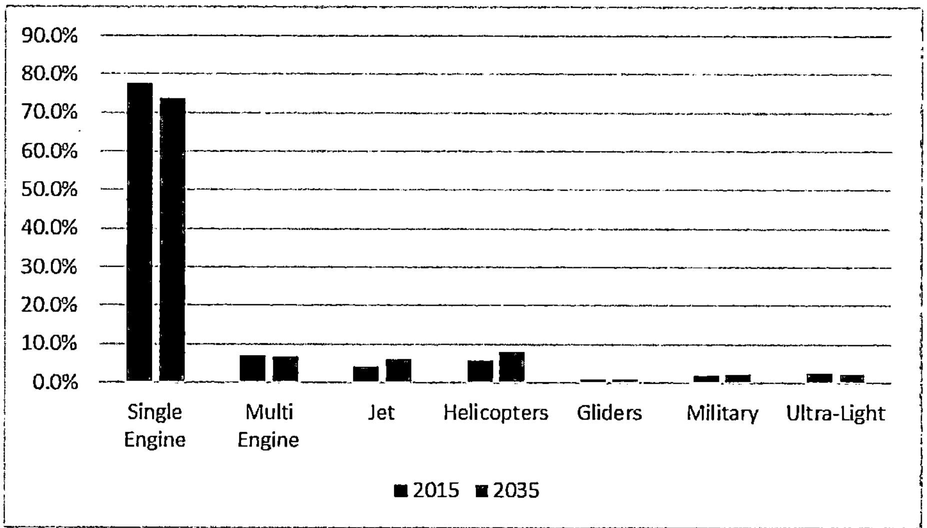


Source: Jviation

Preferred Forecast of Based Aircraft Fleet Mix

As seen in **Figure 3-11**, the three methodologies vary widely. The preferred forecast for based aircraft in Oregon is based on the FAA Aerospace forecast and a comparison of 2015 fleet mix to 2035 forecasted fleet mix is illustrated in **Figure 3-12**.

FIGURE 3-12: FLEET MIX FORECAST BY PERCENT SHARE COMPARISON 2015 VS. 2035 BASED ON FAA FORECAST GROWTH RATES



4. AIRPORT FUNCTIONAL ROLES

This chapter presents the airport classification system, developed to determine the facility and service standards used to evaluate the adequacy of Oregon's system of airports. Every airport within the Oregon Aviation Plan (OAP V6.0) plays an important role in the functionality and capacity of the Oregon system of airports.

The first step in updating the OAP V6.0 airport classification system was to evaluate the existing airport classification system outlined during the 2007 Oregon Aviation Plan (OAP 2007). OAP 2007 established five categories of airports based on the definitions outlined within the National Plan of Integrated Airport Systems (NPIAS), the design criteria outlined by the Airport Reference Code (ARC), and a facilities inventory.

4.1 Functional Airport Roles - Oregon Aviation Plan (OAP v6.0)

Each airport in Oregon impacts the overall operational capacity and efficiency of the state aviation system by supporting different types of aviation activity. OAP 2007 developed a new classification system of functional airport roles to clearly demonstrate the types of facilities and services that should be provided within each airport category. The Federal Aviation Administration (FAA) airport design criteria known as the Airport Reference Code (ARC) was used to create performance measures to develop the airport functional roles. The OAP v6.0 maintains the OAP 2007 classification system.

4.1.1 Performance Measures

OAP 2007 also developed performance criteria that illustrate the facility requirements for each airport category. Performance criteria can be defined as a series of objectives an airport should satisfy to qualify for a particular functional role. The objectives were developed through a cooperative process with Oregon Department of Aviation (ODA) and aviation stakeholders. Similarly, OAP v6.0 maintains the performance criteria from OAP 2007 with a number of adjustments.

OAP v6.0 performance measures compare existing airport facilities to the basic facility levels for each functional role. The performance measures should not be considered a requirement for development standards. Any development would require additional support and justification through the airport master planning process, as well as environmental documentation. Local circumstances and needs may necessitate development that exceeds the basic objectives based on criteria that surpass the performance measures. Determination of these changes would be the responsibility of ODA, local sponsors, and in some cases the FAA.

Many airports have multiple runways; therefore, the primary runway for each airport was used to evaluate the facility against the performance measures. The performance measures for each functional role are defined as follows:

- **User Accessibility Criteria:** Used to qualify the airport facility, driving distance to a commercial facility, and the proximity to another airport facility.

  Facility Objectives

  - Airports with precision approaches
  - Airports with weather reporting
  - Airports with airfield lighting

  Community Access Objectives

  - Population within 120 minutes of an airport with two or more scheduled commercial airlines
  - Population within 30 minutes of any system airport
  - Population within 30 minutes of a commercial or urban general aviation airport
  - Population within 30 minutes of a regional general aviation airport
  - Population within 30 minutes of an airport with a non-precision or precision approach
  - Population within 30 minutes of an airport with onsite weather reporting equipment
- **Development Criteria:** Used to qualify development criteria on the airport grounds.
  - Airports meeting aircraft storage objectives (hangars and tie-downs)
  - Airports meeting aircraft parking objectives (apron area)
  - Airports meeting auto parking objectives
  - Airports with rotating beacons
  - Airports with lighted wind indicators
  - Airports with pilot's lounge
  - Airports with weather reporting station
  - Airports with 100LL fuel
- **Economic Support Criteria:** Used to qualify how the airport supports economic growth and development on and around the airport facility.
  - Airports with a runway length of 5,000 feet or greater
  - Airports with FBO facilities
  - Airports with jet fuel
  - Airports with rental car services
  - Airports supporting air cargo
- **Safety Criteria:** Used to qualify the safety of the airport facility
  - Airports with clear approaches to primary runway
  - Airports with compliant runway safety areas

4.1.2 Airport Reference Code (ARC)

The OAP v6.0 must also consider the FAA methodology of classifying airports, in addition to the performance criteria. The FAA defines operational and physical characteristics of the aircraft expected to operate at an airport. In examining appropriate runway and taxiway dimensional criteria, the performance and size of the most demanding aircraft or groups of aircraft expected to use the airport must be considered. This aircraft, referred to as the critical aircraft, must use the airport on a regular basis and have at least a combined total of 500 takeoffs and landings.

The ARC has two components related to the critical aircraft. The first component is the aircraft approach category. The approach category is based on the aircraft approach speed. An aircraft's approach category is based on 1.3 times its stall speed in landing configuration at the aircraft's maximum certified landing weight—the higher the approach speed, the greater the separation distances for the respective aircraft. The second component relates to the aircraft wingspan and/or tail height (tail height is a new component of the ARC added since the OAP 2007 was published), and is known as the design group. Again, the greater the wingspan or tail height the greater the required separation distance. **Table 4-1** lists the approach categories and design groups as outlined by the FAA in Advisory Circular 150/5300-13A (Change 11) *Airport Design*.

TABLE 4-1: AIRPORT REFERENCE CODE (ARC) SYSTEM

FAA Aircraft Approach Categories		FAA Tail Height/Wingspan Design Groups		
Approach Category	Approach Speed (knots)	Design Group	Tail Height (feet)	Wingspan (feet)
A	Less than 91	I	<20'	Less than 49
B	91 but less than 121	II	20' - <30'	49 but less than 79
C	121 but less than 141	III	30' - <45'	79 but less than 118
		IV	45' - <60'	118 but less than 171
D	141 but less than 166	V	60' - <66'	171 but less than 197
		VI	66' - <80'	197 but less than 262

Source: FAA, AC 150/5300-13, Change 11

4.1.3 OAP v6.0 Airport Classification System

The current OAP v6.0 airport classification system was developed in the 2000 and 2007 OAP updates based on defined airport functional roles, performance criteria, and the FAA's ARC coding system. The airport classification system is intended to reflect the demand for aviation within the associated city or region served by each airport.

In addition to the study airports identified by the FAA and ODA, there are approximately 400 other privately-owned, private-use airports located throughout Oregon. These airports have not been included in the study due to their private ownership. The FAA and ODA acknowledge that these airports exist and contribute to the state's system of airports; however, they are not eligible for funding or specific considerations.

4.1.4 Airport Functional Roles

The following pages outline the basic facility standards for each of the five airport functional roles. The performance criteria for each category were evaluated by analyzing the primary runway at each airport. An airport's inability to meet the basic facility standards for its category does not preclude that airport from performing the identified role or function with the system of airports.

The five airport functional roles and corresponding airport categories are defined below:

Category I: Commercial Service Airports

These airports support some level of scheduled commercial airline service in addition to supporting a full range of general aviation aircraft activities. Commercial service includes both domestic and international destinations.

Performance criteria were evaluated by analyzing each airport's primary runway (**Table 4-2**).

TABLE 4-2: CATEGORY I PERFORMANCE CRITERIA

Facilities	Basic Criteria
Airside Facilities	
FAA – ARC	C-II
NPIAS	Yes
Based Aircraft	Not an Objective
Runway Orientation	95% wind coverage (combined primary/secondary rwy)
Runway Length	6,000 feet
Runway Width	100 feet
Runway Pavement Type	Bituminous, Concrete
Runway Pavement Strength	Varies by Airport*/Design Aircraft
Runway Pavement PCI	65
Taxiways	Full Parallel
Approach Type	Precision w/ vertical guidance
Visual Approach Aids	Both Runway Ends
Instrument Approach Aids	One Runway End
Runway Lighting	MIRL/HIRL/ALS
Taxiway Lighting	MITL/HITL
General Facilities	
Rotating Beacon	Yes
Lighted Wind Indicator	Yes
Weather Reporting	AWOS/ASOS
Hangared Aircraft Storage	75% of Based Aircraft
Apron Parking/Storage	75% of Daily Transient
Terminal Building	Yes
Auto Parking	Moderate
Fencing	Perimeter; controlled access
Cargo	Small Handling Facility w/ Apron
Deicing Facility	Yes
Services	
Fuel	100 LL (24-hour self-service) & Jet A
FBO	Full Service (normal business hours)
Ground Transportation	Rental Car, Taxi, or Other
Food Service	Coffee Shop/Deli & Cold Foods
Restrooms	Yes

TABLE 4-2: CATEGORY I PERFORMANCE CRITERIA

Facilities	Basic Criteria
Pilot Lounge	Yes w/ Weather Reporting Station
Snow Removal	Yes
Telephone	Yes

* Varies by Airport: indicates airport-specific requirements defined by airport master plan/ALP and design aircraft

Category II: Urban General Aviation

These airports support all general aviation aircraft and accommodate corporate aviation activity, including piston and turbine engine aircraft, business jets, helicopters, gliders, and other general aviation activity. The most demanding user requirements are business-related. These airports service a large/multi-state geographic region, or experience high levels of general aviation activity.

Performance criteria were evaluated by analyzing each airport's primary runway (**Table 4-3**).

TABLE 4-3: CATEGORY II PERFORMANCE CRITERIA

Facilities	Basic Criteria
Airside Facilities	
FAA – ARC	C-II
NPIAS	Yes
Based Aircraft	≥10 (NPIAS Standard)
Runway Orientation	95% wind coverage (combined primary/secondary rwy)
Runway Length	5,000 feet
Runway Width	75 or 100 feet
Runway Pavement Type	Bituminous, Concrete
Runway Pavement Strength	Varies by Airport* (≥30,000 lbs.)
Runway Pavement PCI	60
Taxiways	Full Parallel
Approach Type	Precision
Visual Approach Aids	One Runway End
Instrument Approach Aids	Not an Objective
Runway Lighting	MIRL/HIRL/ALS
Taxiway Lighting	MITL/HITL
General Facilities	
Rotating Beacon	Yes
Lighted Wind Indicator	Yes
Weather Reporting	AWOS/ASOS

TABLE 4-3: CATEGORY II PERFORMANCE CRITERIA

Facilities	Basic Criteria
Hangared Aircraft Storage	75% of Based Aircraft
Apron Parking/Storage	75% of Daily Transient
Terminal Building	Yes
Auto Parking	Moderate
Fencing	Perimeter; controlled access
Cargo	Designated Apron Area
Deicing Facility	Not an Objective
Services	
Fuel	100 LL & Jet A (24-hour self-service)
FBO	Full Service (normal business hours)
Ground Transportation	Offsite Rental Car, Taxi, or Other
Food Service	Vending
Restrooms	Yes
Pilot Lounge	Yes w/ Weather Reporting Station
Snow Removal	Yes (Coastal airports exempt)
Telephone	Yes

* Varies by Airport: indicates airport-specific requirements defined by airport master plan/ALP and design aircraft

Category III: Regional General Aviation

These airports support most twin and single-engine aircraft and may accommodate occasional business jets. These airports support regional transportation needs with a large and often sparsely populated service area.

Performance criteria were evaluated by analyzing each airport's primary runway (**Table 4-4**).

TABLE 4-4: CATEGORY III PERFORMANCE CRITERIA

Facilities	Basic Criteria
Airside Facilities	
FAA – ARC	B-II
NPIAS	Yes
Based Aircraft	≥10 (NPIAS Standard)
Runway Orientation	≥95% wind coverage (combined primary/secondary rwy)
Runway Length	4,000 feet
Runway Width	75 feet
Runway Pavement Type	Bituminous, Concrete

TABLE 4-4: CATEGORY III PERFORMANCE CRITERIA

Facilities	Basic Criteria
Runway Pavement Strength	Varies by Airport* (≥12,500 lbs.)
Runway Pavement PCI	60
Taxiways	Partial or Turnarounds
Approach Type	Non-Precision
Visual Approach Aids	One Runway End
Instrument Approach Aids	Not an Objective
Runway Lighting	MIRL
Taxiway Lighting	MITL
General Facilities	
Rotating Beacon	Yes
Lighted Wind Indicator	Yes
Weather Reporting	AWOS/ASOS
Hangared Aircraft Storage	75% of Based Aircraft
Apron Parking/Storage	30% of Daily Transient
Terminal Building	Small Meeting Area
Auto Parking	Minimal (tenant/public)
Fencing	Terminal Area; controlled access
Cargo	Space on Existing Apron
Deicing Facility	Not an Objective
Services	
Fuel	100 LL (24-hour self-service) & Jet A
FBO	Full Service (normal business hours)
Ground Transportation	Courtesy Car / Offsite Rental Car
Food Service	Vending
Restrooms	Yes
Pilot Lounge	Yes w/ Weather Reporting Station
Snow Removal	Yes (Coastal airports exempt)
Telephone	Yes

* Varies by Airport: indicates airport-specific requirements defined by airport master plan/ALP and design aircraft

Category IV: Local General Aviation Airport

These airports support primarily single-engine general aviation aircraft but are capable of accommodating smaller twin-engine general aviation aircraft. These airports support local air transportation needs and special-use aviation activities.

Performance criteria were evaluated by analyzing each airport's primary runway (**Table 4-5**).

TABLE 4-5: CATEGORY IV PERFORMANCE CRITERIA

Facilities	Basic Criteria
Airside Facilities	
FAA – ARC	B-I
NPIAS	Not an Objective
Based Aircraft	≥10 (NPIAS Only); Not an Objective (Non-NPIAS)
Runway Orientation	95% wind coverage
Runway Length	3,000 feet Paved; 2,500 feet Turf
Runway Width	60 feet Paved; 120 feet Turf
Runway Pavement Type	Bituminous, Concrete, Turf
Runway Pavement Strength	≥12,500 lbs. (Hard Surface Only)
Runway Pavement PCI	60
Taxiways	Exit Taxiway(s)
Approach Type	Visual
Visual Approach Aids	One Runway End
Instrument Approach Aids	Not an Objective
Runway Lighting	LIRL
Taxiway Lighting	LITL/Reflectors
General Facilities	
Rotating Beacon	Yes
Lighted Wind Indicator	Yes
Weather Reporting	Not an Objective
Hangared Aircraft Storage	75% of Based Aircraft
Apron Parking/Storage	30% of Daily Transient
Terminal Building	Not an Objective
Auto Parking	Minimal (tenant/public)
Fencing	Not an Objective
Cargo	Not an Objective
Deicing Facility	Not an Objective
Services	
Fuel	100 LL
FBO	Not an Objective
Ground Transportation	Not an Objective
Food Service	Not an Objective

TABLE 4-5: CATEGORY IV PERFORMANCE CRITERIA

Facilities	Basic Criteria
Restrooms	Yes
Pilot Lounge	Not an Objective
Snow Removal	Yes (Coastal airports exempt)
Telephone	Not an Objective

Category V: Remote Access/Emergency Services (RAES)

These airports support primarily single-engine general aviation aircraft, special-use aviation activities, access to remote areas, or provide emergency service access.

Performance criteria were evaluated by analyzing each airport's primary runway (**Table 4-6**).

TABLE 4-6: CATEGORY V PERFORMANCE CRITERIA

Facilities	Basic Criteria
Airside Facilities	
FAA – ARC	A-I
NPIAS	Not an Objective
Based Aircraft	Not an Objective
Runway Orientation	Varies by Airport
Runway Length	2,500 feet Turf
Runway Width	60 feet Turf
Runway Pavement Type	Turf, Dirt, Gravel
Runway Pavement Strength	Varies by Airport
Runway Pavement PCI	55
Taxiways	Not an Objective
Approach Type	Visual
Visual Approach Aids	Not an Objective
Instrument Approach Aids	Not an Objective
Runway Lighting	Not an Objective
Taxiway Lighting	Not an Objective
General Facilities	
Rotating Beacon	Not an Objective
Lighted Wind Indicator	Not an Objective
Weather Reporting	Not an Objective

TABLE 4-6: CATEGORY V PERFORMANCE CRITERIA

Facilities	**Basic Criteria**
Hangared Aircraft Storage	Not an Objective
Apron Parking/Storage	Not an Objective
Terminal Building	Not an Objective
Auto Parking	Not an Objective
Fencing	Not an Objective
Cargo	Not an Objective
Deicing Facility	Not an Objective
Services	
Fuel	Not an Objective
FBO	Not an Objective
Ground Transportation	Not an Objective
Food Service	Not an Objective
Restrooms	Not an Objective
Pilot Lounge	Not an Objective
Snow Removal	Not an Objective
Telephone	Not an Objective

4.1.5 2016 Airport Classifications

Airports are classified by functional role based on their ability to satisfy the basic performance criteria and the type of activity occurring at the airport. The current system of airports, organized by airport functional category, is presented in **Table 4-7**. Only airport has experienced changes in activity since the 2007 OAP that justify a change in its category; no other changes in airport functional classification are identified. Salem-McNary Field was classified as Category I - Commercial Service Airports in the 2007 OAP. As of this update (May 2017), the airport currently lacks scheduled commercial air service. Since Salem-McNary Field has been unable to attract commercial air service, a change to Category II is appropriate. **Table 4-9** lists the OAP v6.0 airports with their 2016 and 2007 designations. **Figure 4-1** illustrates the recommended functional roles for each airport.

The airport classifications influence the type of aircraft an airport can accommodate, and in the case of commercial service airports, the routes and markets they can serve. The airport classification assignment recommends the corresponding facility requirements be provided. Airports can be reclassified by the Oregon Aviation Board (OAB) on a case-by-case basis. Airport sponsors should present justification for a classification change to the OAB for review.

TABLE 4-7: OAP V6.0 AIRPORT CLASSIFICATION BY CATEGORY

Categories/Airports	
Category I: Commercial Service Airports	
Eastern Oregon Regional Airport at Pendleton	Redmond Municipal Airport - Roberts Field
Eugene Airport - Mahlon Sweet Field	Rogue Valley International - Medford Airport
Crater Lake-Klamath Regional	Southwest Oregon Regional Airport
Portland International Airport	
Category II: Urban General Aviation Airports	
Port of Astoria Regional Airport	Portland Downtown Heliport
Aurora State Airport	Portland - Hillsboro Airport
Bend Municipal Airport	Portland - Troutdale Airport
Corvallis Municipal Airport	Salem McNary Field
McMinnville Municipal Airport	Scappoose Industrial Airpark
Newport Municipal Airport	
Category III: Regional General Aviation Airports	
Ashland Municipal Airport- Sumner Parker Field	Hermiston Municipal Airport
Baker City Municipal Airport	La Grande / Union County Airport
Bandon State Airport	Lake County Airport
Burns Municipal Airport	Ontario Municipal Airport
Columbia Gorge Regional - The Dalles	Roseburg Regional Airport
Grant County Regional Airport	Tillamook Airport
Grants Pass Airport	
Category IV: Local General Aviation Airports	
Albany Municipal Airport	Lebanon State Airport
Boardman Airport	Lenhardt Airpark
Brookings Airport	Lexington Airport
Chehalem Airpark	Madras/City-County Airport
Christmas Valley Airport	Myrtle Creek Municipal Airport
Condon State Airport - Pauling Field	Mulino State Airport
Cottage Grove State Airport - Jim Wright Field	Prineville Airport
Creswell Hobby Field Airport	Seaside Municipal Airport
Florence Municipal Airport	Siletz Bay State Airport
Gold Beach Municipal Airport	Sisters Eagle Air Airport
Illinois Valley Airport	Sportsman Airpark
Independence State Airport	Sunriver Airport

TABLE 4-7: OAP V6.0 AIRPORT CLASSIFICATION BY CATEGORY

Categories/Airports	
Joseph State Airport	Wasco State Airport
Ken Jemstedt Airfield	
Category V: Remote Access/Emergency Service Airports	
Alkali Lake State	Nehalem Bay State Airport
Arlington Municipal	Oakridge State
Beaver Marsh	Owyhee Reservoir State
Cape Blanco State Airport	Pacific City State Airport
Cascade Locks State Airport	Paisley
Chiloquin State Airport	Pinehurst State Airport
Country Squire Airpark	Powers Hayes Field
Crescent Lake State Airport	Prospect State Airport
Davis Field	Rome State
Enterprise Municipal	Sandy River
George Felt	Santiam Junction State
Lake Billy Chinook	Silver Lake USFS Airport
Lakeside Municipal Airport	Skyport
Malin	Stark's Twin Oaks
McDermitt State Airport	Toketee State
McKenzie Bridge State	Toledo State Airport
Memaloose USFS Airport	Valley View
Miller Memorial Airpark	Vernonia Municipal
Monument Municipal	Wakonda Beach State

Source: ODA & Century West Engineering

4.2 FAA Airport Classifications

The FAA categorizes airports into two types of categories based on the NPIAS and the FAA General Aviation Asset Study. This section addresses both and compares it with the OAP v6.0 Categories of Airports.

4.2.1 NPIAS Classifications

The FAA National Plan of Integrated Airport Systems classifies commercial airports into several categories and general aviation airports (that are part of the NPIAS) into two categories—either as a reliever airport or general aviation airport. The NPIAS nationwide airports are categorized into one of three categories:

- **Commercial Service:** Public airports receiving scheduled passenger service and having 2,500 or more enplaned passengers per year. Commercial service airports in the United States are divided into Primary and Non-primary.

- **Primary airports**
  - have more than 10,000 annual passenger enplanements
  - receive an annual apportionment of at least $1 million in AIP funds with the amount determined by the number of enplaned passengers
  - are grouped into four categories defined as: large hub, medium hub, small hub, and non-hub airports.
- **Non-primary airports**
  - have less than 10,000 annual passenger enplanements
- **Reliever Airports:** Publicly or privately-owned airports designated by the FAA to relieve congestion at Commercial Service Airports and to provide improved general aviation access to the overall community.
- **General Aviation:** Public-use airports that do not have scheduled service or have less than 2,500 annual passenger enplanements.

4.2.2 FAA NPIAS Classifications Based on 2014 FAA Asset Study

At the time of the previous OAP 2007 Study the FAA NPIAS offered only two categories for general aviation airports Reliever and General Aviation. With only two categories for general aviation airports, the NPIAS did not offer much differentiation in terms of airport roles. The FAA addressed this shortcoming with its Asset Study which examined general aviation airports across the United States. The first version of the study was released in May 2012 and the second updated version, which identified issues related to airports in the "Unclassified" category, was released in March 2014. The Asset Study describes the critical roles of the general aviation airports and groups general aviation airports into more descriptive categories. The FAA NPIAS categories are based on the 2014 FAA Asset Study as follows:

- **National Airports:** Airports have very high levels of activity with many jets and multi-engine propeller aircraft. They average about 200 total based aircraft, of which 30, on average, are jets.
- **Regional Airports:** Airports have high levels of activity with some jets and multi-engine propeller aircraft. They average about 90 total based aircraft, of which three, on average, are jets.
- **Local Airports:** Airports have moderate levels of activity with some multi-engine propeller aircraft. They average about 33 based propeller-driven aircraft and no jets.
- **Basic Airports:** Airports have moderate to low levels of activity, and average about 10 propeller-driven based aircraft.
- **Unclassified:** Airports do not maintain categories established by NPIAS or no longer meet criteria for prior established category.

Oregon's airport system includes a total of 97 airports; 57 of these airports are in the NPIAS. Six of the 57 OAP v6.0 airports were classified as Unclassified in the 2018 NPIAS Asset Study.

When reviewing the FAA Asset Study Categories, 12 Oregon airports are assigned the Basic study category, 23 within the Local category, nine within the Regional category and two in the National Category. Six airports fall are considered Unclassified with one being a heliport, Portland-Downtown Heliport.

The total number of Oregon airports in each FAA Asset category is shown in **Table 4-8**.

TABLE 4-8: TOTAL NUMBER OF OREGON SYSTEM AIRPORTS IN EACH FAA ASSET STUDY CATEGORY

Category	Number of Airports
National	2
Regional	9
Local	23
Basic	12
Unclassified	6

Source: 2014 FAA Asset Study

- Five of the seven commercial service airports in Oregon were not included in the Asset Study analysis.
- Aurora State Airport and Portland-Hillsboro are the only two Oregon airports assigned the National category.
- Eastern Oregon Regional Airport and Crater Lake-Klamath Regional Airport both have commercial service airline activity but were included in the FAA Asset Study as Regional airports.
- Portland-Downtown Heliport is included in the Unclassified category.
- Every two years the FAA updates the NPIAS and may consider changing the category of an airport based on aviation activity.

Table 4-9 compares OAP v6.0 Airport Classifications with the FAA NPIAS and FAA Asset Study Categories. The FAA Asset Study categories have no bearing on OAP v6.0 Classifications.

TABLE 4-9: OAP V6.0 AIRPORT CLASSIFICATION COMPARISON - FAA NPIAS AND ASSET STUDY CATEGORIES

Associated City	Airport Name	NPIAS 2019	NPIAS Category	OAP v6.0	OAP v6.0 2007	FAA ARC
Albany	Albany Municipal Airport	Yes	Local	IV	IV	B-I (Small)
Alkali Lake	Alkali Lake State Airport			V	V	A-I (Small)
Arlington	Arlington Municipal Airport			V	V	A-I
Ashland	Ashland Municipal-Sumner Parker Field	Yes	Local	III	III	B-I (Small)
Astoria	Port of Astoria Regional Airport	Yes	Local	II	II	B-II
Aurora	Aurora State Airport	Yes	National	II	II	C-II
Baker City	Baker City Municipal Airport	Yes	Local	III	III	B-II
Bandon	Bandon State Airport	Yes	Local	III	III	B-I
Beaver Marsh	Beaver Marsh Airport			V	V	B-I
Bend	Bend Municipal Airport	Yes	Regional	II	II	B-II
Boardman	Boardman Airport	Yes	Unclassified	IV	IV	B-I
Brookings	Brookings Airport	Yes	Local	IV	IV	B-I (Small)
Burns	Burns Municipal Airport	Yes	Local	III	III	A-II
Cascade Locks	Cascade Locks State Airport			V	V	B-I (Small)
Cave Junction	Illinois Valley Airport	Yes	Local	IV	IV	B-I (Small)

Associated City	Airport Name	NPIAS 2019	NPIAS Category	OAP v6.0	OAP v6.0 2007	FAA ARC
Chiloquin	Chiloquin State Airport	Yes	Basic	V	V	A-I
Christmas Valley	Christmas Valley Airport	Yes	Basic	IV	IV	B-I (Small)
Clearwater	Toketee State Airport			V	V	A-I (Small)
Condon	Condon State – Pauling Field	Yes	Basic	IV	IV	B-I
Cornelius	Skyport Airport			V	V	B-I
Corvallis	Corvallis Municipal Airport	Yes	Regional	II	II	C-II
Cottage Grove	Cottage Grove State Airport	Yes	Basic	IV	IV	B-I (Small)
Crescent Lake	Crescent Lake State Airport			V	V	A-I (Small)
Creswell	Creswell - Hobby Field	Yes	Local	IV	IV	B-I (Small)
Culver Lake	Billy Chinook Airport			V	V	B-I
The Dalles	Columbia Gorge Regional Airport/The Dalles Municipal Airport	Yes	Local	III	III	B-II
Denmark	Cape Blanco State Airport			V	V	B-II
Enterprise	Enterprise Municipal Airport			V	V	B-I
Estacada	Valley View Airport			V	V	A-I
Eugene	Mahlon Sweet Field	Yes		I	I	C-III
Florence	Florence Municipal Airport	Yes	Local	IV	IV	B-I (Small)
Gates	Davis Field			V	V	A-I
Gleneden Beach	Siletz Bay State Airport	Yes	Basic	IV	IV	B-I (Small)
Gold Beach	Gold Beach Municipal Airport	Yes	Basic	IV	IV	B-I
Grants Pass	Grants Pass Airport	Yes	Local	III	III	B-II
Hermiston	Hermiston Municipal Airport	Yes	Regional	III	III	B-II
Hillsboro	Stark's Twin Oaks Airport			V	V	A-I
Hood River	Ken Jernstedt Airfield	Yes	Local	IV	IV	A-II (Small)
Hubbard	Lenhardt Airpark			IV	IV	B-I
Imnaha	Memaloose Airport (USFS)			V	V	B-I
Independence	Independence State Airport	Yes	Local	IV	IV	B-I (Small)
John Day	Grant County Regional / Ogilvie Field	Yes	Basic	III	III	B-I
Joseph	Joseph State Airport	Yes	Basic	IV	IV	B-I
Klamath Falls	Crater Lake-Klamath Regional	Yes	Regional	I	I	D-IV
La Grande	La Grande / Union County Airport	Yes	Local	III	III	C-IV
Lakeside	Lakeside Municipal Airport			V	V	B-I
Lakeview	Lake County Airport	Yes	Basic	III	III	B-II
Lebanon	Lebanon State Airport	Yes	Local	IV	IV	B-I

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Associated City	Airport Name	NPIAS 2019	NPIAS Category	OAP v6.0	OAP v6.0 2007	FAA ARC
Lexington	Lexington Airport	Yes	Basic	IV	IV	B-II
Madras	Madras City-County Airport	Yes	Local	IV	IV	B-II
Malin	Malin Airport			V	V	A-I
Manzanita	Nehalem Bay State Airport			V	V	A-I
McDermitt	McDermitt State Airport	Yes	Basic	V	V	B-I
McKenzie Bridge	McKenzie Bridge State Airport			V	V	A-I
McMinnville	McMinnville Municipal Airport	Yes	Regional	II	II	D-II
Medford	Rogue Valley International – Medford Airport	Yes		I	I	D-IV
Monument	Monument Municipal Airport			V	V	A-I
Myrtle Creek	Myrtle Creek Municipal Airport	Yes	Basic	IV	IV	A-I (Small)
Newberg	Chehalem Airpark			IV	IV	A-I
Newberg	Sportsman Airpark	Yes	Unclassified	IV	IV	A-I
Newport	Newport Municipal Airport	Yes	Regional	II	II	B-II
North Bend	Southwest Oregon Regional Airport	Yes		I	I	C-III
Oakridge	Oakridge State Airport			V	V	A-I
Ontario	Ontario Municipal Airport	Yes	Local	III	III	B-II
Owyhee	Owyhee Reservoir State Airport			V	V	A-I
Pacific City	Pacific City State Airport			V	V	A-I
Paisley	Paisley Airport			V	V	A-I
Pendleton	Eastern Oregon Regional Airport	Yes	Regional	I	I	C-III
Pinehurst	Pinehurst State Airport			V	V	A-I
Portland	Portland International Airport	Yes		I	I	D-V
Portland	Portland Downtown Heliport	Yes	Unclassified	II	II	
Portland	Portland Hillsboro Airport	Yes	National	II	II	C-III
Portland	Mulino State Airport	Yes	Local	IV	IV	B-II
Portland	Portland Troutdale Airport	Yes	Local	II	II	B-II
Powers	Powers Hayes Field			V	V	A-I
Prineville	Prineville Airport	Yes	Local	IV	IV	B-II
Prospect	Prospect State Airport			V	V	A-I
Redmond	Redmond Municipal - Roberts Field	Yes		I	I	C-III
Rome	Rome State Airport			V	V	B-II
Roseburg	Roseburg Regional Airport	Yes	Regional	III	III	B-II
Roseburg	George Felt Airport			V	V	B-I
Salem	McNary Field	Yes	Regional	II	I	C-II

Associated City	Airport Name	NPIAS 2019	NPIAS Category	OAP v6.0	OAP v6.0 2007	FAA ARC
Sandy	Country Squire Airpark			V	V	A-I
Sandy	Sandy River Airport			V	V	B-I
Santiam Junction	Santiam Junction State Airport			V	V	A-I (Small)
Scappoose	Scappoose Industrial Airpark	Yes	Local	II	II	B-II
Seaside	Seaside Municipal Airport	Yes	Unclassified	IV	IV	B-I (Small)
Silver Lake	Silver Lake USFS Strip			V	V	A-I
Sisters	Sisters Eagle Air Airport			IV	IV	B-I
Sunriver	Sunriver Airport	Yes	Unclassified	IV	IV	B-II
Tillamook	Tillamook Airport	Yes	Local	III	III	B-II
Toledo	Toledo State Airport			V	V	A-I
Vale	Miller Memorial Airpark			V	V	B-I
Vernonia	Vernonia Airfield			V	V	A-I
Waldport	Wakonda Beach State Airport			V	V	A-I
Wasco	Wasco State Airport	Yes	Unclassified	IV	IV	B-I (Small)

Source: FAA NPIAS 2019 (published Sept. 2018), FAA Asset Study 2012 and 2014, OAP v6.0, Century West Engineering, Jviation

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OREGON
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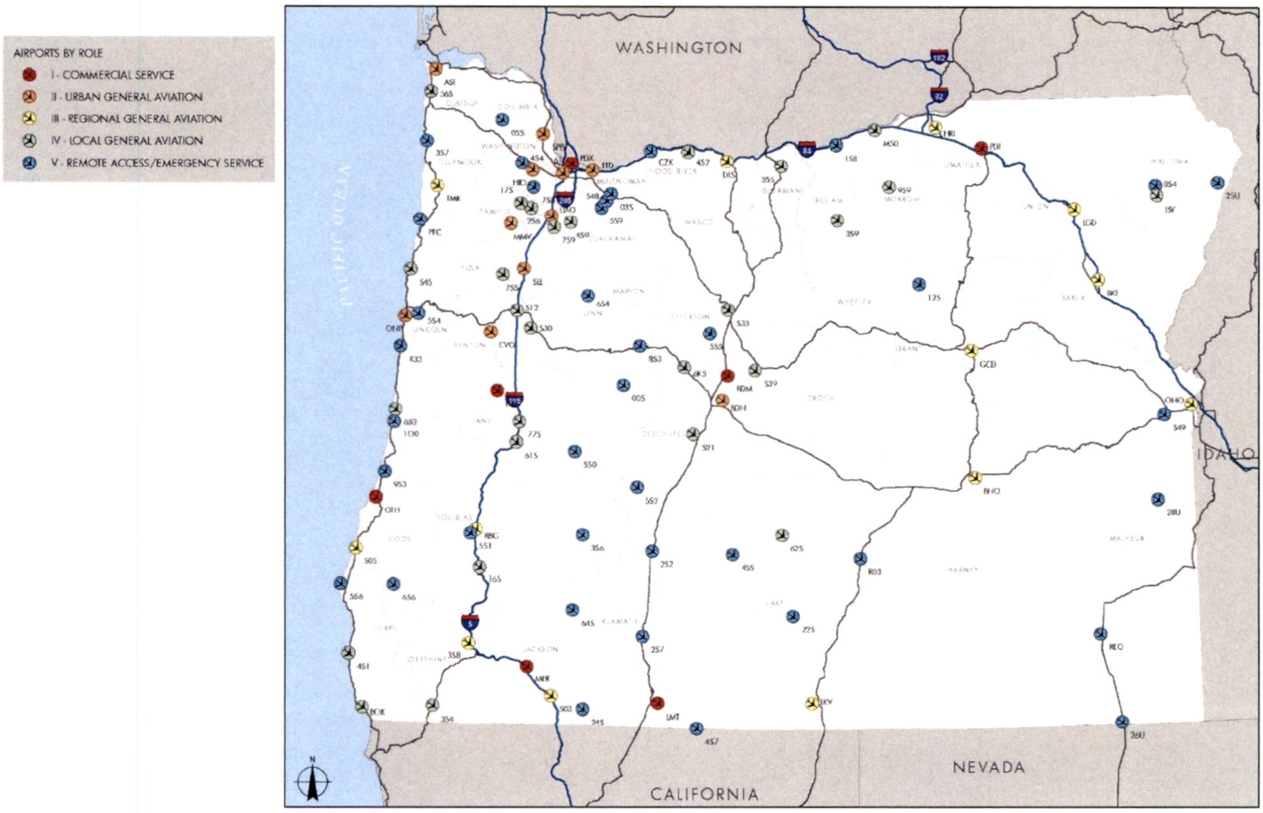
FIGURE 4-1: OAP V6.0 AIRPORT FUNCTIONAL ROLES



Source: Jviation, OAP 2007 and OAP v6.0

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5. SYSTEM AND AIRPORT EVALUATION

This chapter of the Oregon Aviation Plan v6.0 analyzes access to the system for residents of the state as well as evaluates facility improvement needs and airport service objectives. Some airports may meet nearly all the performance criteria for their assigned category while others may fall short on several facility and services performance criteria. The evaluation does not lessen the importance of airports based on improvement needs but does list future improvements so that each airport can continue to serve their local community, businesses, and the state's pilot community. This chapter spells out improvements needed on Oregon's airports to guide the State decision makers and airport managers on where to improve the aviation system over the next ten years.

5.1 User Accessibility Analysis

An important part to updating the Oregon Aviation System Plan is evaluating the state's airport system to determine its current performance. The evaluation is supported using a series of performance criteria and associated benchmarks that were established at the onset of this update. The performance criteria and associated benchmarks are generally reflective of characteristics that define an airport system that functions at a high level, meeting the state's transportation and economic needs and objectives.

For the User Accessibility Analysis, performance is measured through two lenses: accessibility by air and accessibility by ground. For ground access the FAA National Plan of Integrated Airports System (NPIAS) considers an automobile drive time of 30 minutes as the primary form of access to an airport, hence the use of this metric. Ideally airports in the NPIAS are separated by a 30-minute drive time however some NPIAS airports are closer than 30-minutes. The benchmarks associated with each performance measure are presented as follows:

System Performance Criteria: Air Accessibility

- Benchmarks:
  - 30-Minute Accessibility to an Airport with an Approach Supported by Vertical Guidance
  - 30-Minute Accessibility to an Airport with a Published Approach
  - 30-Minute Accessibility to an Airport with Weather Reporting

System Performance Criteria: Community/Ground Accessibility

- Benchmarks:
  - 120-Minute Accessibility to an Airport with Scheduled Airline Service
  - 120-Minute Accessibility to an Airport within Scheduled Airline Service (Out-of-State)
  - 120-Minute Accessibility to Out-of-State Commercial Service Airports on Borders AND Category 1 Airports
  - 30-Minute Accessibility to Any System Airport
  - 30-Minute Accessibility to Out-of-State General Aviation Airports on Borders
  - 30-Minute Accessibility to a Commercial Service Airport
  - 30-Minute Accessibility to an Urban General Aviation Airport
  - 30-Minute Accessibility to a Regional General Aviation Airport
  - 30-Minute Accessibility to a Local General Aviation Airport
  - 30-Minute Accessibility to a Remote Access/Emergency Services (RAES) General Aviation Airport

- 30-Minute Accessibility to a State-Owned Airport
- 30-Minute Accessibility to Airports Supporting Economic Development and Business Utilization of General Aviation

Using these performance criteria and benchmarks, geographic information system (GIS) analysis was used to determine current accessibility for each of the benchmarks. System performance was evaluated in a multi-step process. First, drive time service areas were developed for Oregon system airports; then, population accessibility for just Oregon airports was determined.

Next, if there were airports in adjacent states that exhibited the characteristic being measured, accessibility to both Oregon airports and airports in neighboring states was determined. For some measures, an additional step was taken to determine how accessibility could change in the future.

The results of the GIS accessibility analysis are discussed in the following sections.

5.1.1 Population and Pilot Population Density

Over the past decade, Oregon has been one of the fastest growing states in the country by percentage growth. Since 2006, Oregon's population has grown at an average rate of 1.1 percent annually, reaching a total of over 4.1 million as of 2017. From 2016 to 2017 the state saw a population spike, growing by 1.6 percent to mark the largest population growth in Oregon in two decades. Approximately 88 percent of the growth is due to migration to Oregon. The state's three most populous counties in the Portland metro area (Multnomah, Washington, and Clackamas) experienced the largest numerical gains, while the largest percentage growth occurred in the Central Oregon counties of Deschutes and Crook Counties. The slowest growing counties were Grant and Sherman Counties in Eastern Oregon. Portland and Bend were the fastest growing cities.[1][2]

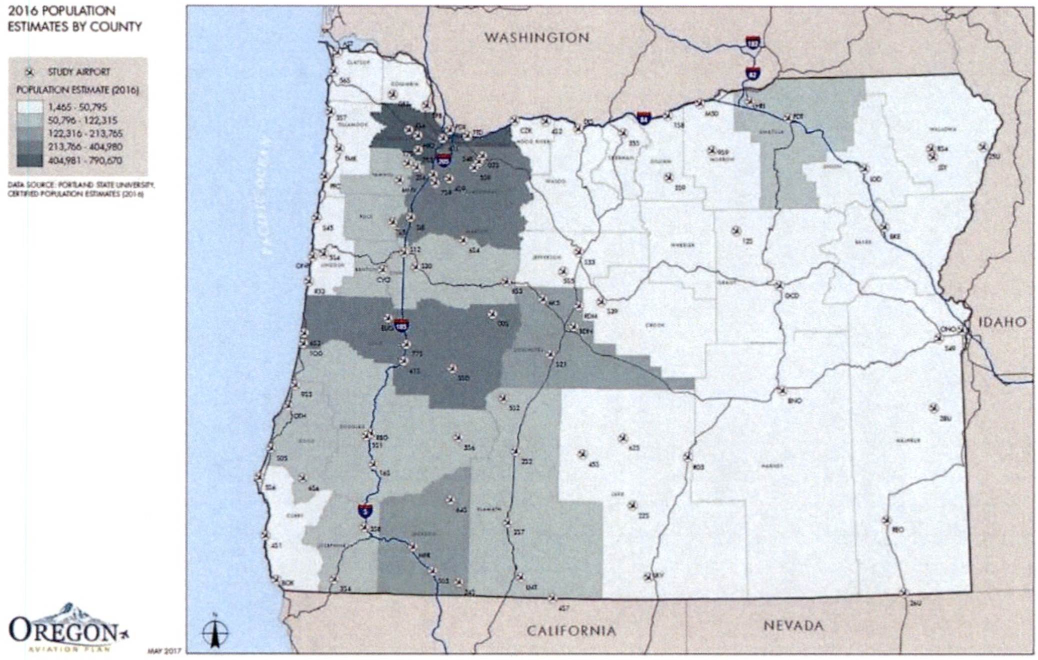
As illustrated in **Figure 5-1**, Oregon's population density is centered around the Portland metro area, the Interstate 5 corridor, and the Bend metro area in Deschutes County.

As shown in **Figure 5-2**, Oregon's pilot population density mirrors the general population density of the state, with the heaviest concentration of pilots being in Washington, Multnomah, Deschutes, Clackamas, Lane, and Jackson Counties.

[1] https://www.statesmanjournal.com/story/news/2017/11/16/oregons-population-grows-fastest-rate-20-years-fueled-new-residents/872884001/

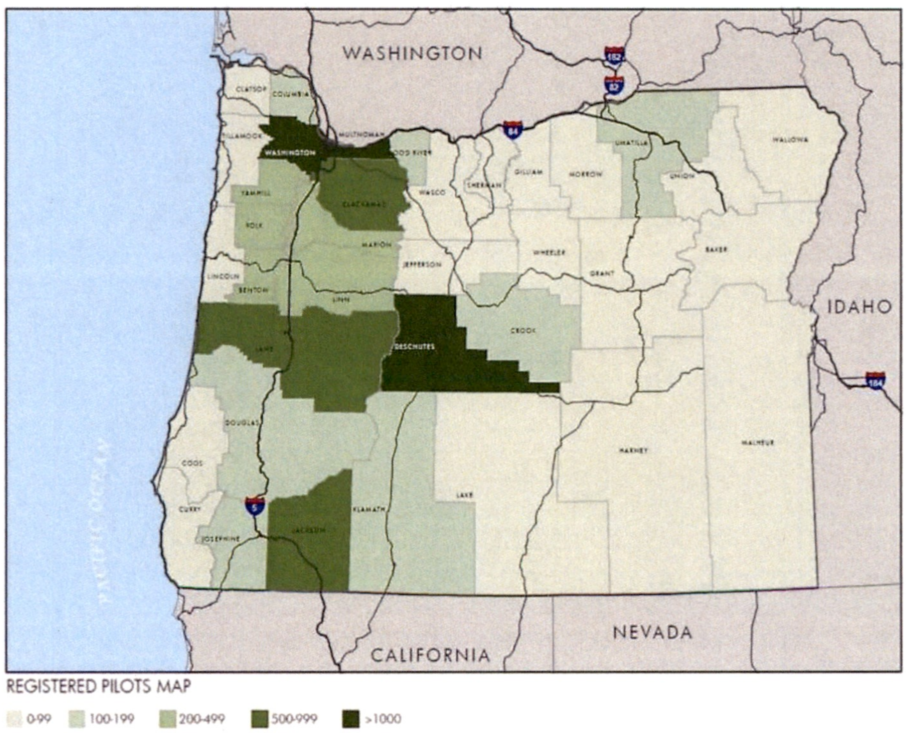
[2] Portland State University's Population Research Center

FIGURE 5-1: OREGON POPULATION DENSITY



Source: Portland State University-Population Research Center, Jviation

FIGURE 5-2: OREGON PILOT POPULATION DENSITY



Source: FAA Records, Jviation Analysis

5.1.2 System Performance Measure: Air Accessibility

30-Minute Accessibility to an Airport with an Approach Supported by Vertical Guidance

Current global positioning satellite-based technology (GPS) and ground-based equipment (Instrument Landing System (ILS)) enable airports to have a precision type approach (both lateral and vertical guidance). GPS based approaches are more economical since they do not require expensive ground-based equipment that previously supported a precision type approach (often an ILS). Such approaches are commonly referred to as an LPV approach. As illustrated in **Table 5-1,** there are 23 airports in Oregon with an approach supported by vertical guidance, either an ILS or GPS-based LPV approach.

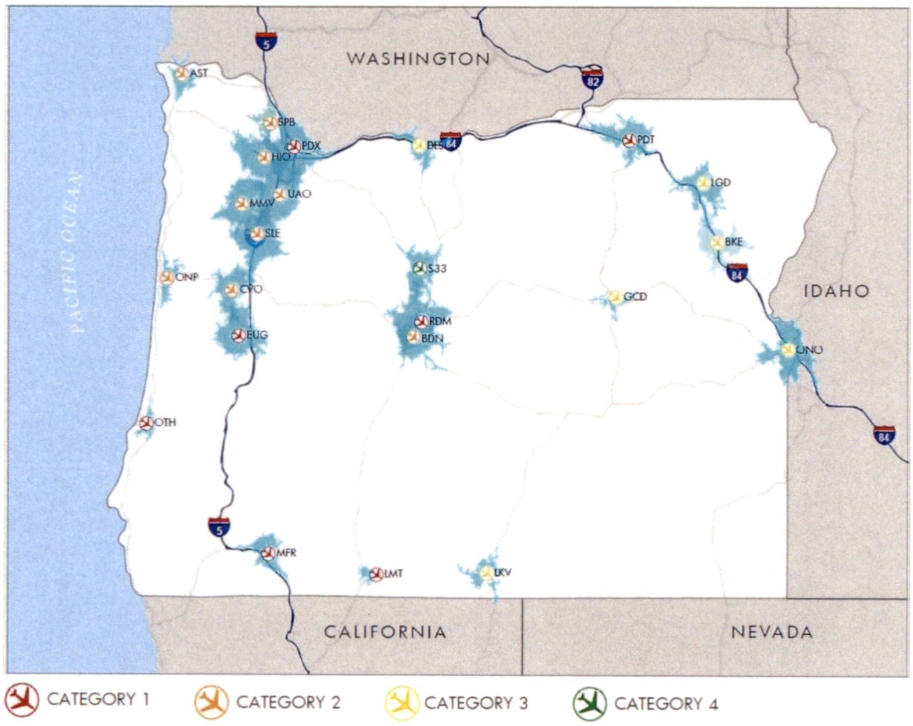
TABLE 5-1: AIRPORTS WITH AN APPROACH SUPPORTED BY VERTICAL GUIDANCE

Associated City	Airport	ILS/LPV	FAA ID
Astoria	Port of Astoria Regional Airport	ILS	AST
Aurora	Aurora State Airport	LPV	UAO
Baker City	Baker City Municipal Airport	LPV	BKE
Bend	Bend Municipal Airport	LPV	BDN
The Dalles	Columbia Gorge Regional -The Dalles	ILS	DLS
Corvallis	Corvallis Municipal Airport	ILS	CVO
Pendleton	Eastern Oregon Regional Airport at Pendleton	ILS	PDT
Eugene	Eugene Airport -Mahlon Sweet Field	ILS	EUG
Klamath Falls	Crater Lake-Klamath Regional Airport	ILS	LMT
La Grande	La Grande / Union County Airport	LPV	LGD
Lakeview	Lake County Airport	LPV	LKV
McMinnville	McMinnville Municipal Airport	ILS	MMV
Newport	Newport Municipal Airport	ILS	ONP
Ontario	Ontario Municipal Airport	LPV	ONO
Portland	Portland -Hillsboro Airport	ILS	HIO
Portland	Portland International Airport	ILS	PDX
Redmond	Redmond Municipal Airport -Roberts Field	ILS	RDM
Medford	Rogue Valley International -Medford	ILS	MFR
Salem	Salem McNary Field	ILS	SLE
North Bend	Southwest Oregon Regional Airport	ILS	OTH
John Day	Grant County Regional Airport	LPV	GCD
Scappoose	Scappoose Industrial Airpark	LPV	SPB
Madras	Madras Municipal Airport	LPV	S33

Source: FAA Terminal Approach Plates, Jviation

Using a 30-minute drive time service area, **Figure 5-3** illustrates current accessibility to an airport with an ILS or LPV approach in Oregon. GIS analysis indicates approximately 2,833,700 Oregon residents (70 percent) have accessibility to one or more airports with an approach supported by vertical guidance. This population is within a 30-minute drive time service area of one or more of the 23 airports with these approach capabilities. Additionally, the 30-minute drive time service areas associated with airports with an approach supported by vertical guidance represent approximately nine percent of Oregon's total land area. **Appendix B** provides detailed drive time maps which identifies drive times and locations for all system airports.

FIGURE 5-3: AIRPORTS WITH AN APPROACH SUPPORTED BY VERTICAL GUIDANCE, 30-MINUTE DRIVE TIMES



Source: Jviation

30-Minute Accessibility to an Airport with a Published Approach

During periods of reduced visibility and during nighttime operating conditions, airports that have a published approach have increased operational flexibility. Satellite-based GPS approaches have become prevalent, providing many airports in Oregon with a published approach. When accounting for all approach types, a total of 32 airports in Oregon can be considered as having a published approach. These airports are presented in **Table 5-2**.

TABLE 5-2: AIRPORTS WITH A PUBLISHED APPROACH

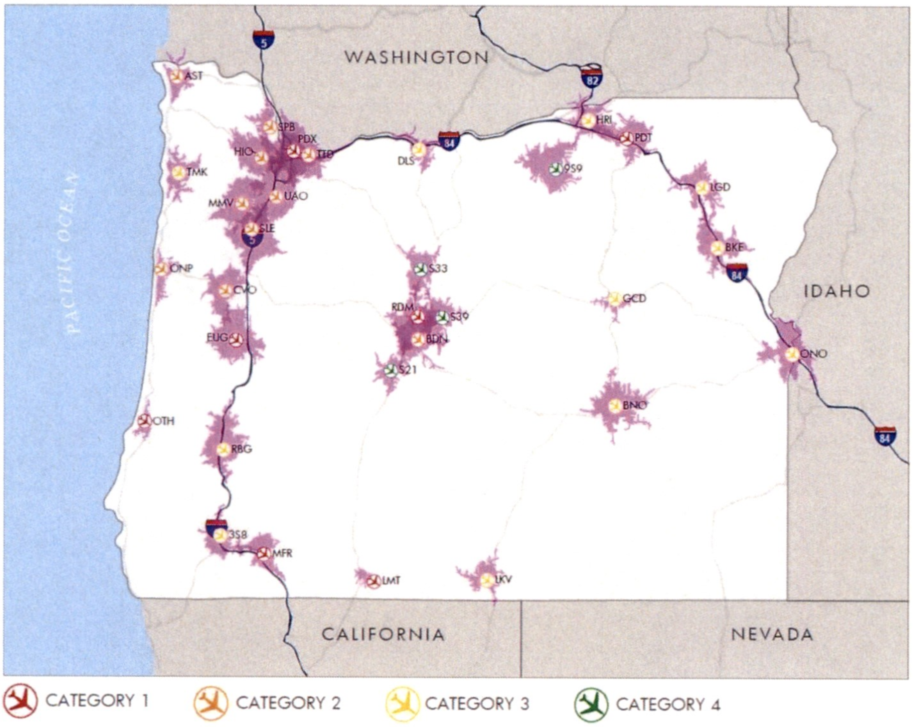
Associated City	Airport	FAA ID
Astoria	Port of Astoria Regional	AST
Aurora	Aurora State	UAO
Baker City	Baker City Municipal	BKE
Bend	Bend Municipal	BDN
Burns	Burns Municipal	BNO

Associated City	Airport	FAA ID
The Dalles	Columbia Gorge Rgnl/The Dalles Muni	DLS
Corvallis	Corvallis Municipal	CVO
Klamath Falls	Crater Lake-Klamath Regional	LMT
Pendleton	Eastern Oregon Regional at Pendleton	PDT
John Day	Grant Co Regional/Ogilvie Field	GCD
Grants Pass	Grants Pass	3S8
Hermiston	Hermiston Municipal	HRI
La Grande	La Grande/Union County	LGD
Lakeview	Lake County	LKV
Lexington	Lexington	9S9
Madras	Madras Municipal	S33
Eugene	Mahlon Sweet Field	EUG
McMinnville	McMinnville Municipal	MMV
Salem	McNary Field	SLE
Newport	Newport Municipal	ONP
Ontario	Ontario Municipal	ONO
Portland	Portland Intl	PDX
Portland	Portland-Hillsboro	HIO
Portland	Portland-Troutdale	TTD
Prineville	Prineville	S39
Redmond	Roberts Field	RDM
Medford	Rogue Valley Intl-Medford	MFR
Roseburg	Roseburg Regional	RBG
Scappoose	Scappoose Industrial Airpark	SPB
North Bend	Southwest Oregon Regional	OTH
Sunriver	Sunriver	S21
Tillamook	Tillamook	TMK

Source: Jviation

Figure 5-4 depicts current accessibility for the 32 airports with a published approach, considering a 30-minute drive time. GIS analysis indicates approximately 3,410,600 Oregon residents (84 percent of the state's population) is within a service area of one or more Oregon airports that have a published approach to at least one runway end. In terms of land area coverage, the 30-minute drive times associated with these 32 airports covers roughly 16 percent of Oregon's total land area.

FIGURE 5-4: AIRPORTS WITH A PUBLISHED APPROACH, 30-MINUTE DRIVE TIMES



Source: Jviation

30-Minute Accessibility to an Airport with Weather Reporting

Automated airport weather reporting equipment is essential for the safe and efficient operation of aviation activity. Oregon's diverse geography and weather patterns increases the importance of reliable and accurate weather reporting. The two primary types of equipment are Automated Weather Observing System (AWOS) and Automated Surface Observing System (ASOS). Within Oregon's aviation system, there are 38 airports with weather reporting equipment. These 38 airports are listed in **Table 5-3**.

TABLE 5-3: AIRPORTS WITH WEATHER REPORTING EQUIPMENT

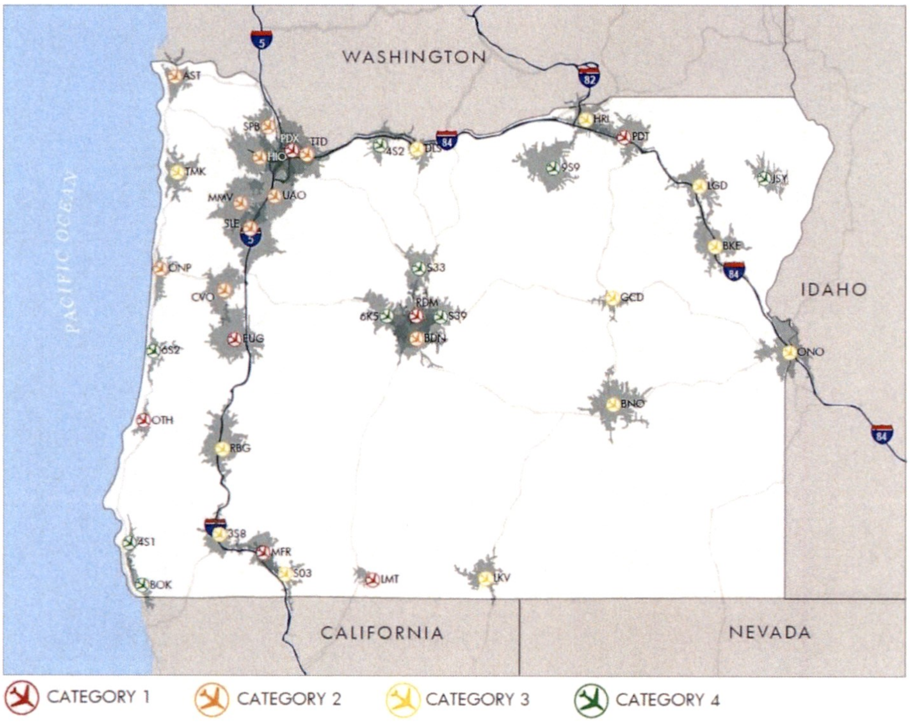
Associated City	Airport	FAA ID
Ashland	Ashland Municipal Airport - Sumner Parker Field	S03
Astoria	Port of Astoria Regional Airport	AST
Aurora	Aurora State Airport	UAO
Baker City	Baker City Municipal Airport	BKE
Bend	Bend Municipal Airport	BDN
Brookings	Brookings Airport	BOK
Burns	Burns Municipal Airport	BNO
The Dalles	Columbia Gorge Regional - The Dalles	DLS
Corvallis	Corvallis Municipal Airport	CVO
Pendleton	Eastern Oregon Regional Airport at Pendleton	PDT

Associated City	Airport	FAA ID
Eugene	Eugene Airport -Mahlon Sweet Field	EUG
Florence	Florence Municipal Airport	6S2
Gold Beach	Gold Beach Municipal Airport	4S1
John Day	Grant County Regional Airport	GCD
Grants Pass	Grants Pass Airport	3S8
Hermiston	Hermiston Municipal Airport	HRI
Joseph	Joseph State Airport	JSY
Hood River	Ken Jernstedt Airfield	4S2
Klamath Falls	Crater Lake-Klamath Regional Airport	LMT
La Grande	La Grande / Union County Airport	LGD
Lakeview	Lake County Airport	LKV
Lexington	Lexington Airport	9S9
Madras	Madras Municipal Airport	S33
McMinnville	McMinnville Municipal Airport	MMV
Newport	Newport Municipal Airport	ONP
Ontario	Ontario Municipal Airport	ONO
Portland	Portland -Hillsboro Airport	HIO
Portland	Portland International Airport	PDX
Portland	Portland -Troutdale Airport	TTD
Prineville	Prineville Airport	S39
Redmond	Redmond Municipal Airport -Roberts Field	RDM
Medford	Rogue Valley International -Medford Airport	MFR
Roseburg	Roseburg Regional Airport	RBG
Salem	Salem McNary Field	SLE
Scappoose	Scappoose Industrial Airpark	SPB
Sisters	Sisters Eagle Air Airport	6K5
North Bend	Southwest Oregon Regional Airport	OTH
Tillamook	Tillamook Airport	TMK

Source: Jviation

Figure 5-5 illustrates current accessibility for the 38 airports with a weather reporting, considering a 30-minute drive time. GIS analysis indicates approximately 3,487,700 Oregon residents (86 percent of the state's population) is within a service area of one or more Oregon airports that has weather reporting. By land area, the 30-minute drive time boundaries associated with these 38 airports covers roughly 18 percent of Oregon's total land area.

FIGURE 5-5: AIRPORTS WITH WEATHER REPORTING, 30-MINUTE DRIVE TIMES



Source: Jviation

5.1.3 System Performance Measure: Community/Ground Accessibility

120-Minute Accessibility to an Airport within Scheduled Airline Service

Accessibility to an airport that has scheduled commercial airline service is essential to Oregon's transportation and economic needs. Residents, visitors, and businesses all depend on commercial airline travel. Oregon has significant international and domestic tourism, and airline service is an essential underpinning to successful leisure markets. Seven of the 97 system airports have been assigned to the Category I Commercial Service functional role. Six airports have airline service provided by at least one carrier. Crater Lake-Klamath Regional Airport lost service in 2017 and is making efforts to attract a new carrier.

For this system performance measure, a 120-minute drive time was used for all commercial airports. It is worth noting that depending on the level of service and comparative fares, travelers may be willing to drive more than 120 minutes to reach a commercial service airport. The system airports assigned the Commercial Service category are presented in **Table 5-4**.

TABLE 5-4: OREGON AIRPORTS WITH SCHEDULED AIRLINE SERVICE

FAA ID	Associated City	Airport	Connect Oregon Region
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	5
EUG	Eugene	Eugene Airport-Mahlon Sweet Field	2
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport	4
PDX	Portland	Portland International Airport	1

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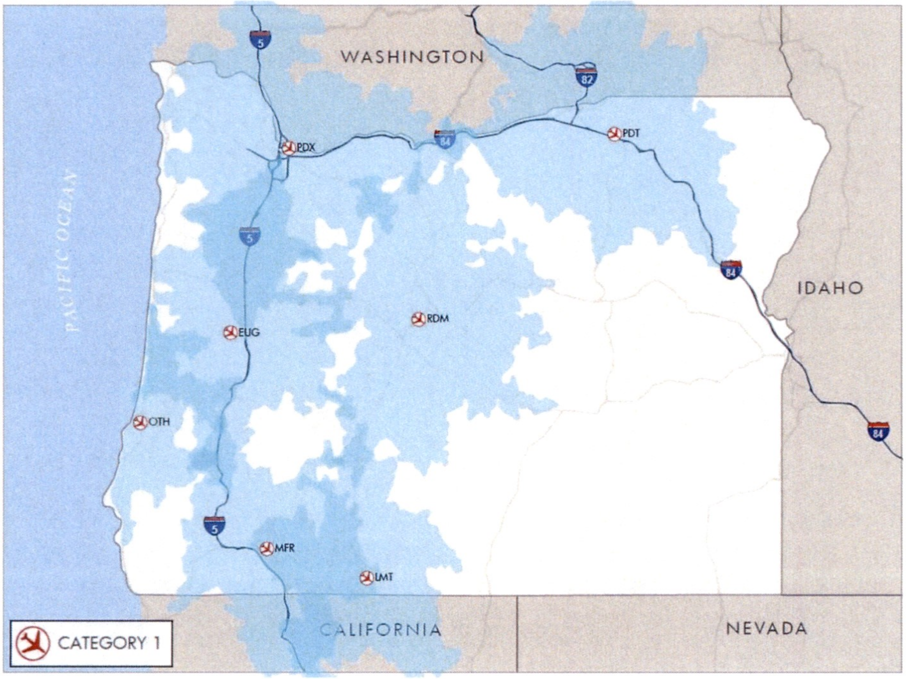
FAA ID	Associated City	Airport	Connect Oregon Region
RDM	Redmond	Redmond Municipal Airport-Roberts Field	4
MFR	Medford	Rogue Valley International-Medford Airport	3
OTH	North Bend	Southwest Oregon Regional Airport	3

Source: Jviation

Current system accessibility to Oregon's commercial airports, at a 120-minute drive time, is illustrated on **Figure 5-6**. GIS analysis indicates that when 120-minute drive time service areas are considered, approximately 3,915,400 Oregon residents (96 percent) are within 120 minutes or less of an Oregon airport with scheduled commercial service. As **Figure 5-6** depicts, at a 120-minute drive time, there is some but not a significant overlap for the service areas of commercial airports in Oregon. By land area, the 120-minute drive time boundaries associated with these seven airports covers roughly 55 percent of Oregon's total land area.

FIGURE 5-6: OREGON AIRPORTS WITH SCHEDULED AIRLINE SERVICE, 120-MINUTE DRIVE TIMES



Source: Jviation

120-Minute Accessibility to an Out-of-State Airport within Scheduled Airline Service

Commercial service airports in neighboring states also compete for Oregon's commercial airline travelers when factors such as proximity, fares, and levels of service are considered. As shown in **Table 5-5**, there are five neighboring-state commercial airports whose 120-minute drive time service area extends into Oregon.

TABLE 5-5: OUT-OF-STATE AIRPORTS ON BORDERS WITH SCHEDULED AIRLINE SERVICE

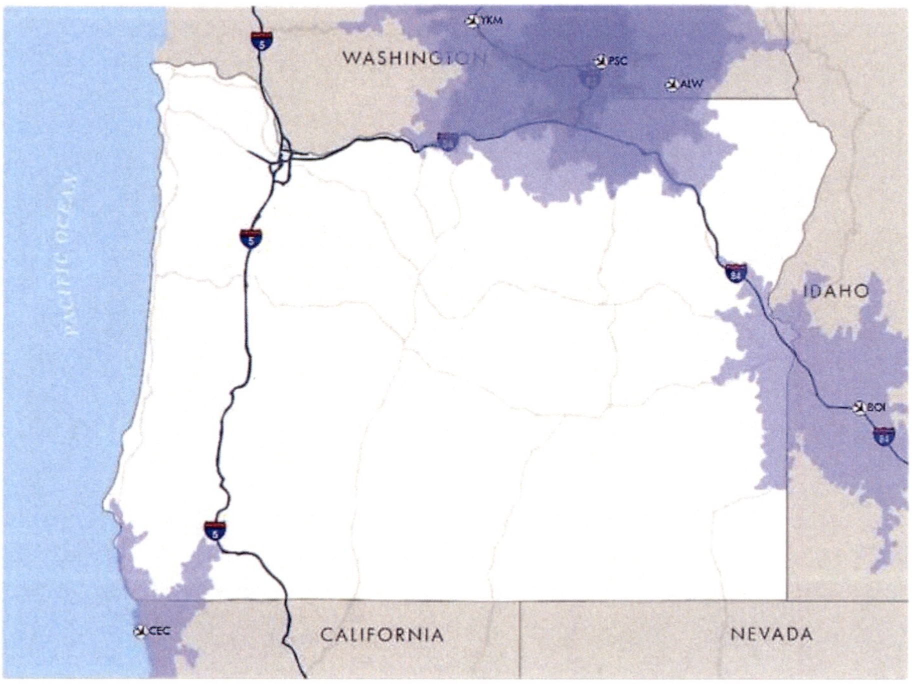
State	Associated City	Airport	FAA ID
ID	Boise	Boise Airport	BOI

State	Associated City	Airport	FAA ID
WA	Yakima	Yakima Air Terminal	YKM
WA	Pasco/Tri-Cities	Tri-Cities Airport	PSC
WA	Walla Walla	Walla Walla County Airport	ALW
CA	Crescent City	Del Norte County Airport	CEC

Source: Jviation

Current system accessibility to out-of-state commercial airports, at a 120-minute drive time, is shown on **Figure 5-7**. Only about 244,581 Oregon residents (six percent) are within 120 minutes or less of an out-of-state airport with scheduled commercial service. By land area, the 120-minute drive time boundaries associated with these five airports covers roughly 13 percent of Oregon's total land area.

FIGURE 5-7: OUT-OF-STATE AIRPORTS ON BORDERS WITH SCHEDULED AIRLINE SERVICE, 120-MINUTE DRIVE TIMES



Source: Jviation

120-Minute Accessibility to Out-of-State Commercial Service Airports on Borders AND Category 1 Airports

When considering both out-of-state commercial service airports along the Oregon border and Category I Oregon airports, 120-minute drive time accessibility for Oregonians increases dramatically. As illustrated in **Table 5-6**, there are 12 airports—seven Category I Oregon airports and five neighboring-state commercial airports in proximity of the borders—that provide scheduled airline service to Oregon residents at a 120-minute drive time.

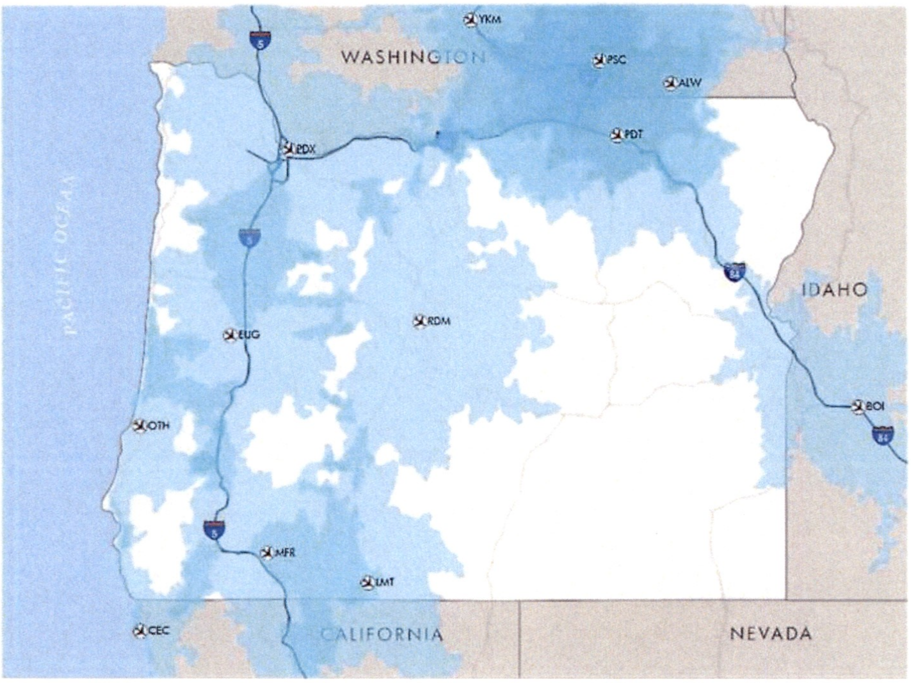
TABLE 5-6: OUT-OF-STATE AIRPORTS ON BORDERS WITH SCHEDULED AIRLINE SERVICE AND OREGON CATEGORY I AIRPORTS

FAA ID	Associated City	Airport	OAP V6.0 Functional Role	Connect Oregon Region
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	I	5
EUG	Eugene	Eugene Airport-Mahlon Sweet Field	I	2
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport	I	4
PDX	Portland	Portland International Airport	I	1
RDM	Redmond	Redmond Municipal Airport-Roberts Field	I	4
MFR	Medford	Rogue Valley International-Medford Airport	I	3
OTH	North Bend	Southwest Oregon Regional Airport	I	3
CEC	Crescent City, CA	Del Norte County Regional Airport	N/A	N/A
BOI	Boise	Boise Airport	N/A	N/A
ALW	Walla Walla	Walla Walla Regional Airport	N/A	N/A
YKM	Yakima	Yakima Air Terminal	N/A	N/A
PSC	Pasco/Tri-Cities	Tri-Cities Airport	N/A	N/A

Source: Jviation analysis, Connect Oregon

Current system accessibility to the combined list of out-of-state commercial airports on the border and Category I Oregon airports, at a 120-minute drive time, is shown on **Figure 5-8**. Approximately 3,994,800 Oregon residents (98 percent) are within 120 minutes or less of a Category I Oregon airport or an out-of-state airport with scheduled commercial service. By land area, the 120-minute drive time boundaries associated with these 12 airports covers roughly 58 percent of Oregon's total land area.

FIGURE 5-8: OUT-OF-STATE COMMERCIAL AIRPORTS ON BORDERS AND CATEGORY I OREGON AIRPORTS, 120-MINUTE DRIVE TIMES

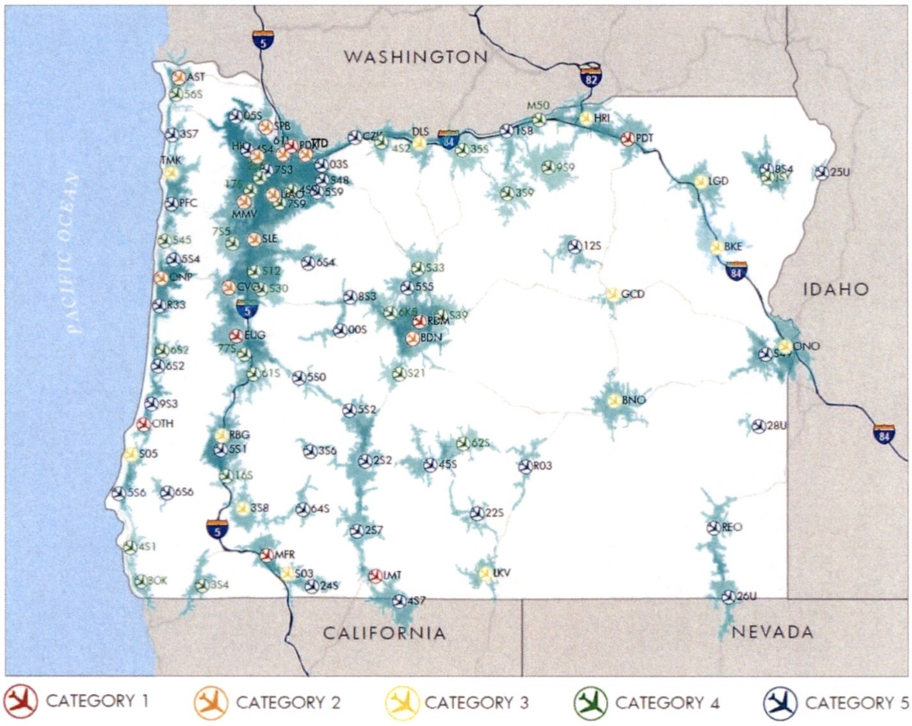


Source: Jviation

30-Minute Accessibility to Any System Airport

This performance measure considers accessibility to any Oregon airport given a 30-minute drive time; this measure is intended to demonstrate the robust nature of the Oregon Airport System. The system consists of 97 public-use airports, falling under a wide variety of ownership types, including: City, County, Port, Private, State, and U.S. Forest Service (USFS). **Figure 5-9** illustrates accessibility at a 30-minute drive time to any of the Oregon system airports. As illustrated, accessibility at a 30-minute drive time to any Oregon airport is measured at 89 percent of all Oregonians (3,627,900 residents). By land area, the 30-minute drive time boundaries associated with these 97 airports covers roughly 22 percent of Oregon's total land area.

FIGURE 5-9: ALL OREGON SYSTEM AIRPORTS, 30-MINUTE DRIVE TIMES



Source: Jviation

30-Minute Accessibility to Out-of-State General Aviation Airports on Borders

Accessibility to nearby general aviation airports in neighboring states, given a 30-minute drive time, provides notable benefit to Oregon residents living near state boundaries. As illustrated in **Table 5-7**, there are 15 out-of-state airports within 20 miles or 30 minutes of the Oregon border that are accessible to Oregon residents.

TABLE 5-7: OUT-OF-STATE GENERAL AVIATION AIRPORTS ON BORDERS

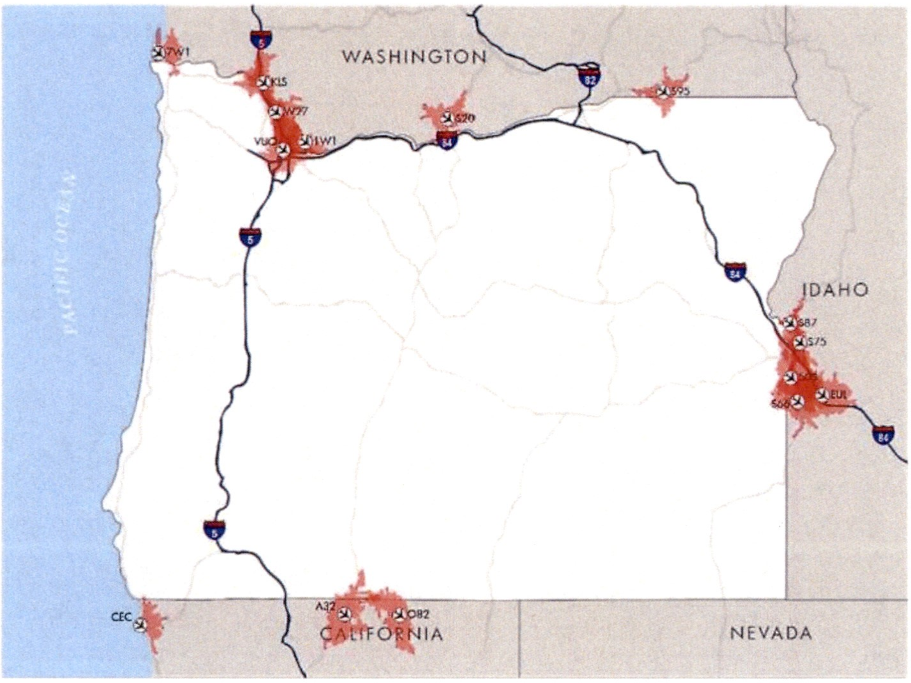
State	Airports within 20 miles of Oregon	FAA ID
WA	Port of Ilwaco	7W1
WA	Kelso-Longview	KLS
WA	Woodland	W27
WA	Pearson Field	VUO
WA	Grove Field	1W1
WA	Goldendale	S20
WA	Martin Field	S95
ID	Homedale	S66
ID	Parma	50S
ID	Payette	S75
ID	Weiser	S87

State	Airports within 20 miles of Oregon	FAA ID
ID	Caldwell Industrial Airport	EUL
CA	Jack McNamara Field Airport	CEC
CA	Tulelake Municipal Airport	O82
CA	Butte Valley Airport	A32

Source: Jviation

Current system accessibility to nearby out-of-state general aviation airports on the Oregon border, at a 30-minute drive time, is shown on **Figure 5-10**. Approximately 978,300 Oregon residents (24 percent) are within 30 minutes or less of a nearby neighboring-state general aviation airport. The majority of this population coverage is centered on the downtown Portland area, Oregon's most populous city. By land area, the 30-minute drive time service areas associated with these 15 airports covers roughly four percent of Oregon's total land area.

FIGURE 5-10: OUT-OF-STATE GENERAL AVIATION AIRPORTS, 30-MINUTE DRIVE TIMES



Source: Jviation

30-Minute Accessibility to a Category I: Commercial Service Airport

As previously noted, commercial service airports are vital to the transportation needs of the state's economy. Accessibility to commercial service airports—both in-state and out-of-state—is quite robust across Oregon as most of the state's population is within two hours (120-minute drive time) of scheduled airline service. Despite the fact that travelers are often willing to drive this far for commercial airline service, for a significant number of Oregonians it is not necessary. Given a more reasonable 30-minute drive time, scheduled airline service is still accessible to a significant portion of Oregon's population. Oregon's Category I airports also support significant general aviation operations and many aircraft owners with aircraft based at these airports prefer to be within 30 minutes of their airport.

For this system performance measure, a 30-minute drive time was used for all commercial airports. The seven commercial service airports in the Oregon Airport System, six of which currently have scheduled airline service, are presented in **Table 5-8**.

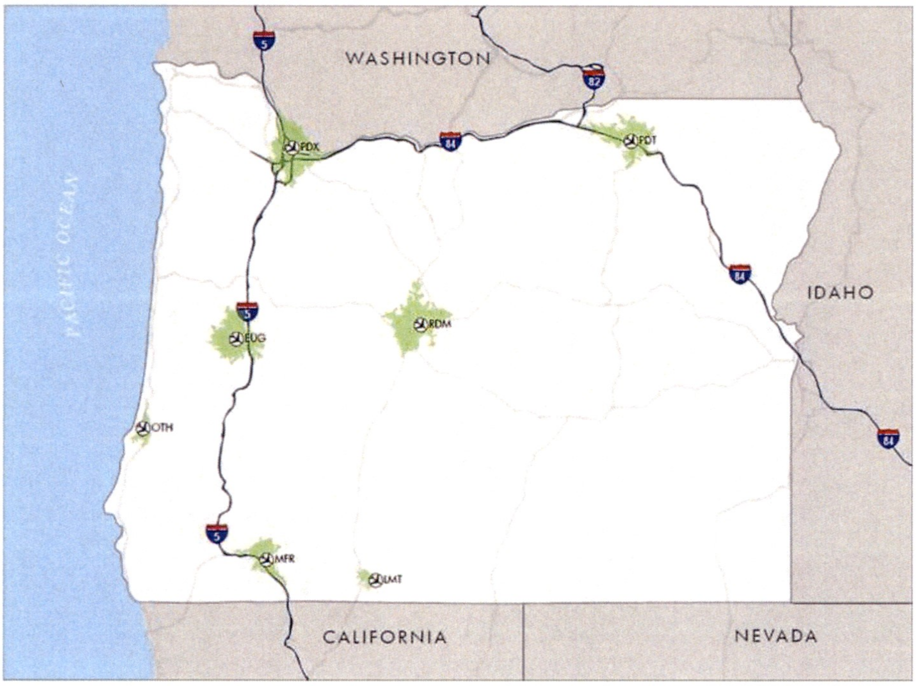
TABLE 5-8: OREGON AIRPORTS WITH SCHEDULED AIRLINE SERVICE

FAA ID	Associated City	Airport	OAP V6.0 Functional Role
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	I
EUG	Eugene	Eugene Airport -Mahlon Sweet Field	I
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport	I
PDX	Portland	Portland International Airport	I
RDM	Redmond	Redmond Municipal Airport -Roberts Field	I
MFR	Medford	Rogue Valley International -Medford Airport	I
OTH	North Bend	Southwest Oregon Regional Airport	I

Source: Jviation

Current system accessibility to Oregon's commercial airports, at a 30-minute drive time, is shown on **Figure 5-11**. GIS analysis indicates approximately 1,671,300 (41 percent) Oregonians reside within 30 minutes or less of a commercial service airport in the state. By land area, the 30-minute drive time boundaries associated with these seven airports covers roughly 2.2 percent of Oregon's total land area.

FIGURE 5-11: CATEGORY I: COMMERCIAL SERVICE AIRPORTS, 30-MINUTE DRIVE TIMES



Source: Jviation

30-Minute Accessibility to a Category II: Urban General Aviation Airport

Category II: Urban General Aviation Airports support all general aviation aircraft and accommodate corporate aviation activity, including piston and turbine engine aircraft, business jets, helicopters, gliders, and other general aviation activity. The most demanding aircraft user requirements are business-related. These airports provide facilities that enable users to reach destinations in a large/multi-state geographic region or experience high levels of general aviation activity. There are 11 Urban General Aviation Airports in Oregon, which are presented in **Table 5-9**.

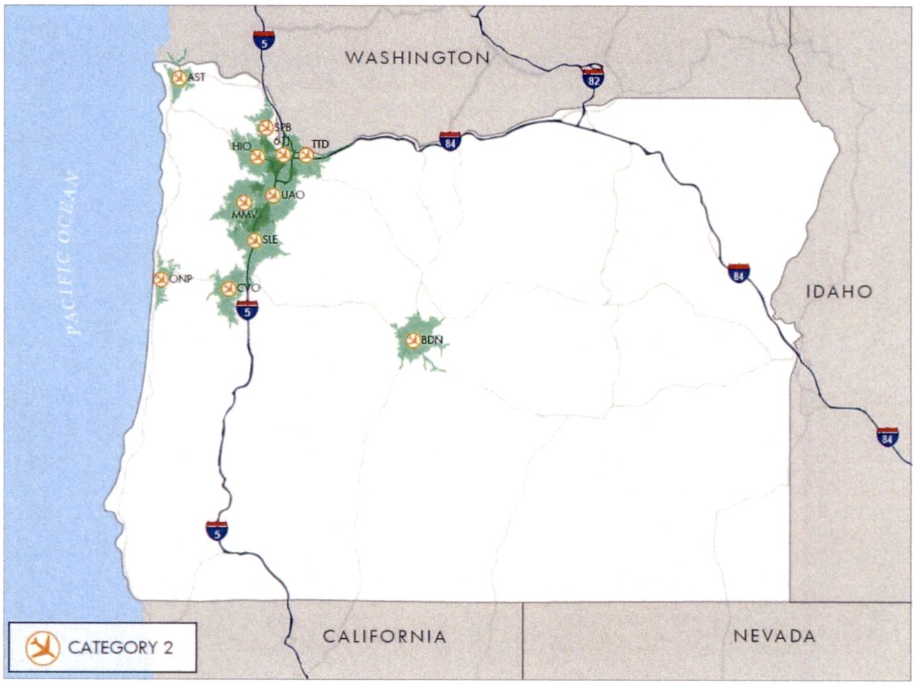
TABLE 5-9: CATEGORY II: URBAN GENERAL AVIATION AIRPORTS

FAA ID	Associated City	Airport	Ownership	Connect Oregon Region
AST	Astoria	Port of Astoria Regional Airport	Port	2
UAO	Aurora	Aurora State Airport	State	2
BDN	Bend	Bend Municipal Airport	City	4
CVO	Corvallis	Corvallis Municipal Airport	City	2
MMV	McMinnville	McMinnville Municipal Airport	City	2
ONP	Newport	Newport Municipal Airport	City	2
61J	Portland	Portland Downtown Heliport	City	1
HIO	Portland	Portland -Hillsboro Airport	Port	1
TTD	Portland	Portland -Troutdale Airport	Port	1
SLE	Salem	Salem McNary Field	City	2
SPB	Scappoose	Scappoose Industrial Airpark	Port	1

Source: Jviation

Current system accessibility to Category II: Urban General Aviation Airports, at a 30-minute drive time, is shown on **Figure 5-12**. Approximately 2,459,600 Oregon residents (61 percent) are within 30 minutes or less of an Urban General Aviation Airport. By land area, the 30-minute drive time boundaries associated with these 11 airports cover roughly six percent of Oregon's total land area. By definition, Urban General Aviation Airports are located in the most populous parts of the state, providing a high-level of accessibility to a large percentage of Oregon residents, despite covering minimal land area.

FIGURE 5-12: CATEGORY II: URBAN GENERAL AVIATION AIRPORTS, 30-MINUTE DRIVE TIMES



Source: Jviation

30-Minute Accessibility to a Category III: Regional General Aviation Airport

Category III: Regional General Aviation Airports support most twin and single-engine aircraft and may accommodate occasional business jets. These airports support regional transportation needs for often sparsely populated service areas. The 13 Regional General Aviation Airports in Oregon are presented in **Table 5-10**.

TABLE 5-10: CATEGORY III: REGIONAL GENERAL AVIATION AIRPORTS

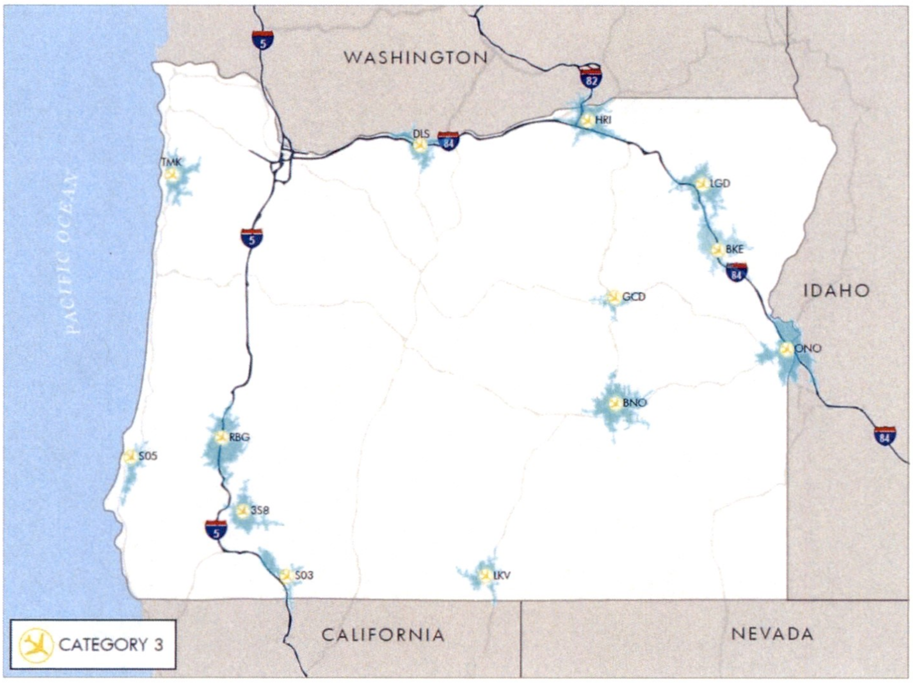
FAA ID	Associated City	Airport	2015 Airport Operations	Based Aircraft	Ownership	Connect Oregon Region
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	25,900	59	City	3
BKE	Baker City	Baker City Municipal Airport	16,100	30	City	5
S05	Bandon	Bandon State Airport	7,100	37	State	3
BNO	Burns	Burns Municipal Airport	8,000	17	City	5
DLS	The Dalles	Columbia Gorge Regional - The Dalles	16,400	59	City/County	4
GCD	John Day	Grant County Regional Airport	8,800	18	County	5
3S8	Grants Pass	Grants Pass Airport	24,800	207	County	3
HRI	Hermiston	Hermiston Municipal Airport	24,800	45	City	5
LGD	La Grande	La Grande / Union County Airport	16,000	70	County	5
LKV	Lakeview	Lake County Airport	6,000	15	County	4
ONO	Ontario	Ontario Municipal Airport	12,800	66	City	5
RBG	Roseburg	Roseburg Regional Airport	31,800	92	City	3

FAA ID	Associated City	Airport	2015 Airport Operations	Based Aircraft	Ownership	Connect Oregon Region
TMK	Tillamook	Tillamook Airport	25,600	39	Port	2

Source: Jviation

Current system accessibility to Regional General Aviation Airports, at a 30-minute drive time, is shown on **Figure 5-13**. Analysis indicates that 470,357 Oregon residents (12 percent) are within 30 minutes or less of a Regional General Aviation Airport. The 30-minute drive time boundaries associated with these 13 airports also cover roughly 12 percent of Oregon's total land area.

FIGURE 5-13: CATEGORY III: REGIONAL GENERAL AVIATION AIRPORTS, 30-MINUTE DRIVE TIMES



Source: Jviation

30-Minute Accessibility to a Category IV: Local General Aviation Airport

Category IV: Local General Aviation Airports support primarily single-engine general aviation aircraft, but they are capable of accommodating smaller twin-engine general aviation aircraft. These airports support local air transportation needs and special-use aviation activities. As shown in **Table 5-11**, there are 27 Local General Aviation Airports throughout Oregon.

TABLE 5-11: CATEGORY IV: LOCAL GENERAL AVIATION AIRPORTS

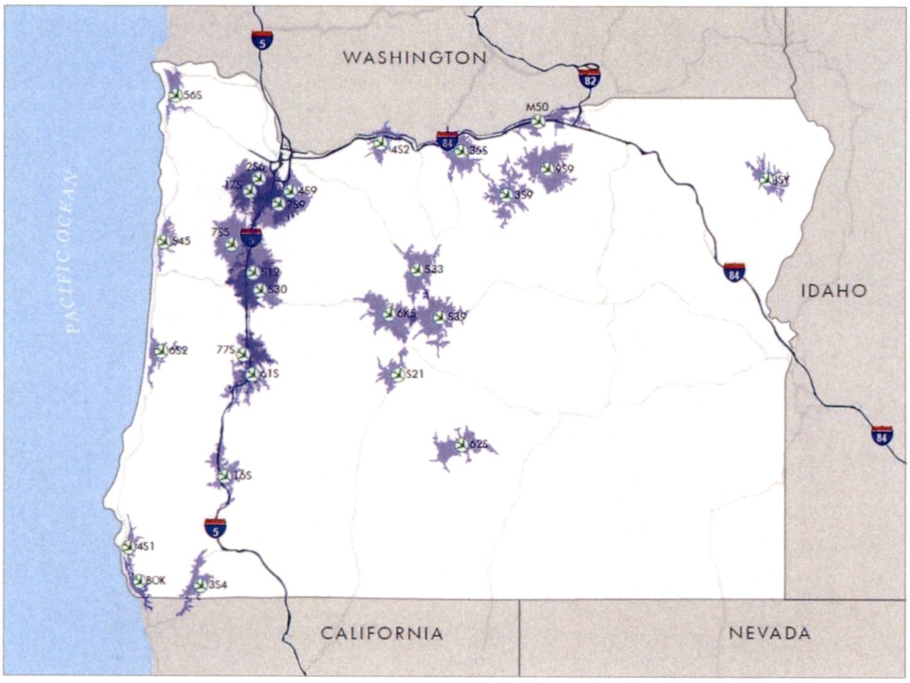
FAA ID	Associated City	Airport	Ownership	Connect Oregon Region
S12	Albany	Albany Municipal Airport	City	2
M50	Boardman	Boardman Airport	Port	5
BOK	Brookings	Brookings Airport	County	3
17S	Newberg	Chehalem Airpark	Private	2

FAA ID	Associated City	Airport	Ownership	Connect Oregon Region
62S	Christmas Valley	Christmas Valley Airport	City	4
3S9	Condon	Condon State Airport - Pauling Field	State	4
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field	State	2
77S	Creswell	Creswell Hobby Field Airport	City	2
6S2	Florence	Florence Municipal Airport	City	2
4S1	Gold Beach	Gold Beach Municipal Airport	Port	3
3S4	Cave Junction	Illinois Valley Airport	County	3
7S5	Independence	Independence State Airport	State	2
JSY	Joseph	Joseph State Airport	State	5
4S2	Hood River	Ken Jernstedt Airfield	Port	1
S30	Lebanon	Lebanon State Airport	State	2
7S9	Hubbard	Lenhardt Airpark	Private	1
9S9	Lexington	Lexington Airport	County	5
S33	Madras	Madras Municipal Airport	City	4
4S9	Mulino	Mulino State Airport	State	1
16S	Myrtle Creek	Myrtle Creek Municipal Airport	City	3
S39	Prineville	Prineville Airport	County	4
56S	Seaside	Seaside Municipal Airport	City	2
S45	Gleneden Beach	Siletz Bay State Airport	State	2
6K5	Sisters	Sisters Eagle Air Airport	Private	4
2S6	Newberg	Sportsman Airpark	Private	2
S21	Sunriver	Sunriver Airport	Private	4
35S	Wasco	Wasco State Airport	State	4

Source: Jviation

Current system accessibility to Category IV: Local General Aviation Airports, at a 30-minute drive time, is shown on **Figure 5-14**. Analysis indicates that 1,595,700 Oregon's residents (39 percent) are within 30 minutes or less of a Local General Aviation Airport. By land area, the 30-minute drive time boundaries associated with these 27 airports also cover roughly 16 percent of Oregon's total land area.

FIGURE 5-14: CATEGORY IV: LOCAL GENERAL AVIATION AIRPORTS, 30-MINUTE DRIVE TIMES



Source: Jviation

30-Minute Accessibility to a Category V: Remote Access/Emergency Services (RAES) General Aviation Airport

Category V: Remote Access/Emergency Services (RAES) General Aviation Airports support primarily single-engine general aviation aircraft, special-use aviation activities, access to remote areas, or provide emergency service access. As shown in **Table 5-12**, there are 39 RAES General Aviation Airports throughout Oregon.

TABLE 5-12: CATEGORY V: REMOTE ACCESS/EMERGENCY SERVICES (RAES) GENERAL AVIATION AIRPORTS

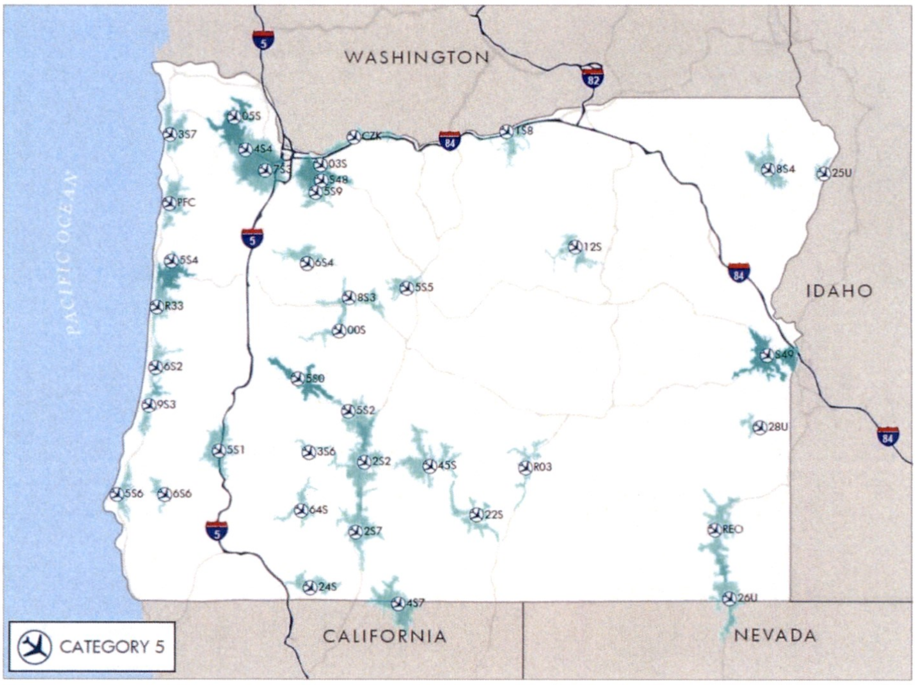
FAA ID	Associated City	Airport	Ownership	Connect Oregon Region
R03	Alkali Lake	Alkali Lake State	State	4
1S8	Arlington	Arlington Municipal	City	4
2S2	Beaver Marsh	Beaver Marsh	Private	4
5S6	Sixes	Cape Blanco State Airport	State	3
CZK	Cascade Locks	Cascade Locks State Airport	State	1
2S7	Chiloquin	Chiloquin State Airport	State	4
S48	Sandy	Country Squire Airpark	Private	1
5S2	Crescent Lake	Crescent Lake State Airport	State	4
6S4	Gates	Davis Field	Private	2
8S4	Enterprise	Enterprise Municipal	City	5
5S1	Roseburg	George Felt	Private	3

FAA ID	Associated City	Airport	Ownership	Connect Oregon Region
5S5	Culver	Lake Billy Chinook	State	4
1O0	Florence	Lake Woahink SPB	Private	5
9S3	Lakeside	Lakeside Municipal Airport	City	3
4S7	Malin	Malin	City	4
26U	McDermitt	McDermitt State Airport	State	5
00S	McKenzie Bridge	McKenzie Bridge State	State	2
25U	Imnaha	Memaloose USFS	USFS	5
S49	Vale	Miller Memorial Airpark	City	5
12S	Monument	Monument Municipal	City	5
3S7	Manzanita	Nehalem Bay State Airport	State	2
5S0	Oakridge	Oakridge State	State	2
28U	Owyhee Reservoir	Owyhee Reservoir State	State	5
PFC	Pacific City	Pacific City State Airport	State	2
22S	Paisley	Paisley	County	4
24S	Pinehurst	Pinehurst State Airport	State	3
6S6	Powers	Powers Hayes Field	Port	3
64S	Prospect	Prospect State Airport	State	3
REO	Rome	Rome State	State	5
03S	Sandy	Sandy River	Private	1
8S3	Santiam Junction	Santiam Junction State	State	2
45S	Silver Lake	Silver Lake USFS	USFS	4
4S4	Cornelius	Skyport	Private	1
7S3	Hillsboro	Stark's Twin Oaks	Private	1
3S6	Clearwater	Toketee State	USFS	3
5S4	Toledo	Toledo State Airport	State	2
5S9	Estacada	Valley View	Private	1
05S	Vernonia	Vernonia Municipal	City	1
R33	Waldport	Wakonda Beach State	State	2

Source: Jviation

Current system accessibility to Category V: General Aviation Airports, at a 30-minute drive time, is shown on **Figure 5-15**. GIS analysis indicates that about 1,105,229 Oregon residents (27 percent) are within 30 minutes or less of a RAES General Aviation Airport. Although most of these airports are in rural parts of the state, six airports are in proximity to the Portland metro area. By land area, the 30-minute drive time service areas associated with these 39 airports also cover roughly 17 percent of Oregon's total land area.

FIGURE 5-15: REMOTE ACCESS/EMERGENCY SERVICES (RAES) GENERAL AVIATION AIRPORTS, 30-MINUTE DRIVE TIMES



Source: Jviation

30-Minute Accessibility to a State-Owned Airport

Oregon is unique in that there are numerous airports owned by the state. As shown in **Table 5-13**, there are 28 State-Owned Airports throughout Oregon.

TABLE 5-13: STATE-OWNED AIRPORTS, GENERAL AVIATION AIRPORTS

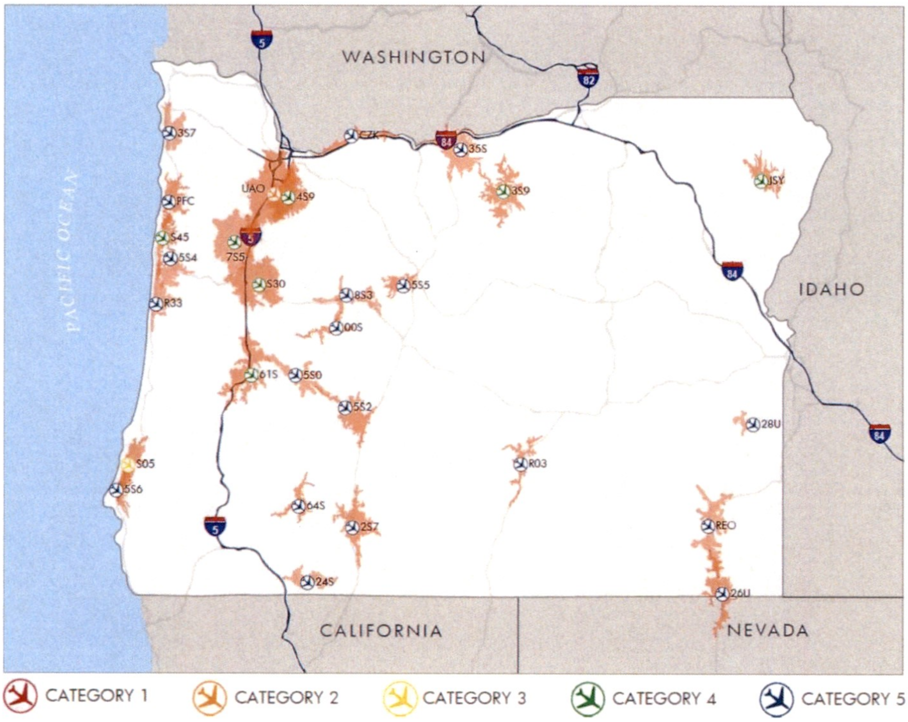
FAA ID	Associated City	Airport	Connect Oregon	OAP V6.0 Functional Role
UAO	Aurora	Aurora State Airport	2	II
S05	Bandon	Bandon State Airport	3	III
3S9	Condon	Condon State Airport - Pauling Field	4	IV
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field	2	IV
7S5	Independence	Independence State Airport	2	IV
JSY	Joseph	Joseph State Airport	5	IV
S30	Lebanon	Lebanon State Airport	2	IV
4S9	Mulino	Mulino State Airport	1	IV
S45	Gleneden Beach	Siletz Bay State Airport	2	IV
35S	Wasco	Wasco State Airport	4	IV
R03	Alkali Lake	Alkali Lake State	4	V
5S6	Sixes	Cape Blanco State Airport	3	V

FAA ID	Associated City	Airport	Connect Oregon	OAP V6.0 Functional Role
CZK	Cascade Locks	Cascade Locks State Airport	1	V
2S7	Chiloquin	Chiloquin State Airport	4	V
5S2	Crescent Lake	Crescent Lake State Airport	4	V
5S5	Culver	Lake Billy Chinook	4	V
26U	McDermitt	McDermitt State Airport	5	V
00S	McKenzie Bridge	McKenzie Bridge State	2	V
3S7	Manzanita	Nehalem Bay State Airport	2	V
5S0	Oakridge	Oakridge State	2	V
28U	Owyhee Reservoir	Owyhee Reservoir State	5	V
PFC	Pacific City	Pacific City State Airport	2	V
24S	Pinehurst	Pinehurst State Airport	3	V
64S	Prospect	Prospect State Airport	3	V
REO	Rome	Rome State	5	V
8S3	Santiam Junction	Santiam Junction State	2	V
5S4	Toledo	Toledo State Airport	2	V
R33	Waldport	Wakonda Beach State	2	V

Source: Jviation

Current system accessibility to State-Owned Airports, at a 30-minute drive time, is shown on **Figure 5-16**. Approximately 1,407,400 Oregon residents (34 percent) are within 30 minutes or less of a State-Owned General Aviation Airport. By land area, the 30-minute drive time boundaries associated with these 28 airports covers roughly seven percent of Oregon's total land area.

FIGURE 5-16: MAP OF STATE-OWNED AIRPORTS, 30-MINUTE DRIVE TIMES



Source: Jviation

30-Minute Accessibility to Airports Supporting Economic Development/Businesses Utilizing Aviation

Current system accessibility to airports supporting economic development and business aviation; this analysis includes airports with the following facility and services attributes:

1. Airports with a runway of at least 5,000 feet long
2. Airports with an approach supported by vertical guidance
3. Airports with FBO services
4. Airports with jet fuel sales
5. Airports with rental car service (on-site or pre-arranged)

Using a 30-minute drive time service area, **Figure 5-17** identifies accessibility to an airport with the five service and infrastructure attributes that support businesses using general aviation aircraft. Interestingly, these are the same airports identified in **Table 5-1** (Airports with an Approach Supported by Vertical Guidance) and **Figure 5-3**. There are six airports, presented in **Table 5-14**, that meet all the facilities and service attributes except for a vertical guidance approach. These six airports (identified in **Table 5-14**) all have published RNAV approaches, which provide pilots with guidance to align with the runway, but no ILS or LPV approach, which guide the pilot down to the runway. Airports listed in **Table 5-14** that lack the desired approach capabilities will be addressed in the recommendations element of this report.

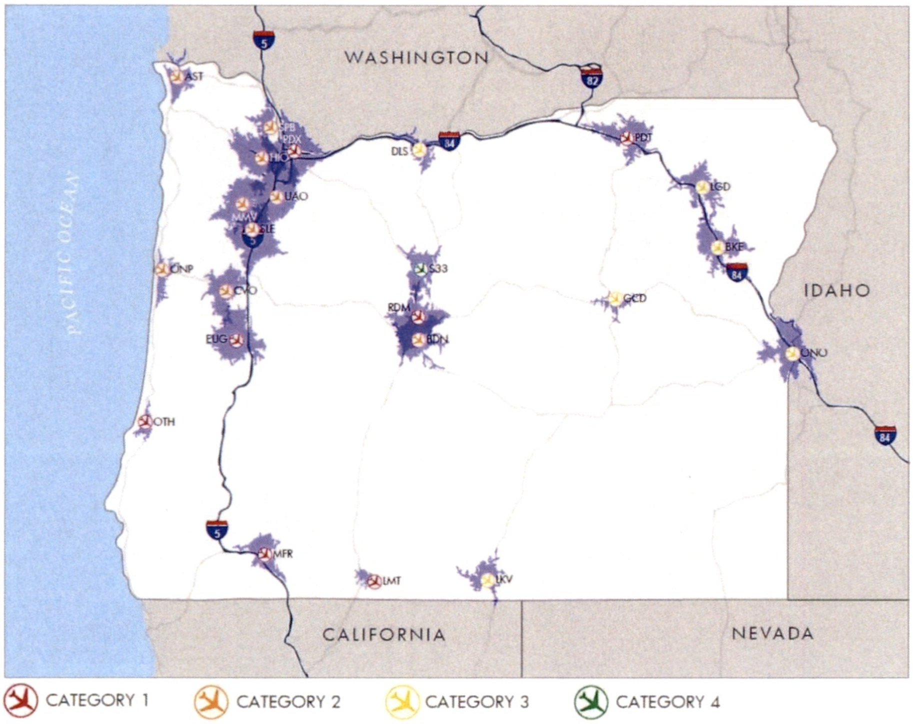
TABLE 5-14: GENERAL AVIATION AIRPORTS NOT MEETING ECONOMIC DEVELOPMENT/BUSINESSES UTILIZING AVIATION ATTRIBUTES DUE TO LACK OF VERTICAL GUIDANCE APPROACHES

FAA ID	OAP V6.0 Category	City	Airport
TTD	II	Portland	Portland - Troutdale Airport
S39	IV	Prineville	Prineville Airport
RBG	III	Roseburg	Roseburg Regional Airport
TMK	III	Tillamook	Tillamook Airport
S21	IV	Sunriver	Sunriver Airport
BNO	III	Burns	Burns Municipal Airport

Source: Jviation analysis

Approximately 2,833,700 Oregon residents (70 percent) have accessibility to one or more airports with on-airport services and infrastructure supporting economic development and business aviation, as shown on **Figure 5-17**. This also represents approximately nine percent of Oregon's total land area.

FIGURE 5-17: AIRPORTS SUPPORTING ECONOMIC DEVELOPMENT/BUSINESSES UTILIZING GENERAL AVIATION, 30-MINUTE DRIVE TIMES



Source: Jviation

Accessibility to Airports Summary

Analysis of airport service areas using geographic information systems provides a picture of how well Oregon's airport system is currently performing and of the accessibility it is providing. **Table 5-15** summarizes the findings of this analysis. Commercial Service airports serve the state well, with 96 percent of the state's population being within a two-hour drive of these airports, and 41 percent of the state's population being within a 30-minute drive of these airports. Overall, 98 percent of the state's population is within a two-hour drive of a commercial service airport, when taking into consideration the five out-of-state commercial service airports. Airports with an approach supported by vertical guidance serve 70 percent of Oregon's residents, while airports with FAA published approaches serve an additional 14 percent of the state's population. The entire system of 95 airports, one heliport, and one seaplane base (97 total system airport facilities) supports 89 percent of Oregon residents living within 30 minutes of these airports. **Appendix C** provides additional information on each population and labor force within the 30-minute service area for each airport.

TABLE 5-15: ACCESSIBILITY TO OREGON AIRPORTS SUMMARY

	Number of Airports	Oregon Population	Percentage of Population	Percentage of Oregon's Total Land Area
Accessibility by Air: 30-Minute Drive Time				
Airport with an Approach Supported by Vertical Guidance	23	2,833,700	70%	9%
Airport with a Published Approach	32	3,410,600	84%	16%
Airport with Weather Reporting	38	3,487,700	86%	18%
Accessibility by Ground: 120-Minute Drive Time				
Airport with Scheduled Airline Service	7	3,915,400	96%	55%
Airport with Scheduled Airline Service (Out-of-State)	5	244,581	6%	13%
Out-of-State Commercial Service Airports on Borders AND Category I Airports	12	3,994,800	98%	58%
Accessibility by Ground: 30-Minute Drive Time				
Any System Airport	97	3,600,123	88%	22%
Out-of-State General Aviation Airports on Borders	15	978,300	24%	4%
Category I: Commercial Service Airport	7	1,671,300	41%	2%
Category II: Urban General Aviation Airport	11	2,459,600	61%	6%
Category III: Regional General Aviation Airport	13	470,357	12%	12%
Category IV: Local General Aviation Airport	27	1,595,700	39%	16%
Category V: Remote Access/Emergency Services (RAES) General Aviation Airport	39	1,105,229	27%	17%
State-Owned Airport	28	1,407,400	34%	7%
Airports Supporting Economic Development/Businesses Utilizing General Aviation	23	2,833,700	70%	9%

Source: US Census data, Jviation Analysis

5.2 Airport Facility and Service Objectives

As part of the prior Oregon Aviation Plan (OAP), objectives (performance criteria) were established to enable airports to best fulfill their assigned role in the state airport system. Recommended roles for all system airports were identified in Chapter 4. Facility and service objectives were developed for airports in each of the five role categories: Category I-Commercial Service, Category II-Urban General Aviation, Category III-Regional General Aviation, Category IV-Local General Aviation, and Category V-Remote Access/Emergency Services (RAES). The facility and service adequacies and deficiencies identified in this chapter provide the foundation for final system plan recommendations for improving individual study airports.

It is possible that the recommendations from local airport planning efforts (airport master plans and ALPs) could result in additional and/or different improvements other than those identified through the Oregon Aviation Plan v6.0. The objectives established for Oregon airports, by role, are presented in **Table 5-16**, **Table 5-17**, and **Table 5-18**. Results for each airport's facilities and services objectives analysis are also presented in each airport's OAP V6.0 Individual Airport Summary. These documents are available from ODA.

TABLE 5-16: AIRSIDE FACILITY OBJECTIVES BY AIRPORT ROLE

Facility	Category I	Category II	Category III	Category IV	Category V
FAA – ARC	C-II	C-II	B-II	B-I	A-I
NPIAS	Yes	Yes	Yes	Not an objective	Not an objective
Based Aircraft	Not an objective	≥10 (NPIAS standard)	≥10 (NPIAS standard)	≥10 (NPIAS standard); not an objective (Non-NPIAS)	Not an objective
Runway Orientation	95% wind coverage (combined primary/secondary)	95% wind coverage (combined primary/secondary)	95% wind coverage (combined primary/secondary)	95% wind coverage	Varies by airport
Runway Length	6,000 feet	5,000 feet	4,000 feet	3,000 feet paved; 2,500 feet turf	2,500 feet turf
Runway Width	100 feet	100 feet	75 feet	60 feet paved; 120 feet turf	60 feet turf
Runway Pavement Type	Bituminous, concrete	Bituminous, concrete	Bituminous, concrete	Bituminous, concrete, turf	Turf, gravel, dirt
Runway Pavement Strength	Varies by airport*/ design aircraft	Varies by airport* (≥30,000 lbs.)	Varies by airport* (≥12,5,00 lbs.)	≥12,5,00 lbs. (hard surface only)	Varies by airport
Runway Pavement PCI	65	60	60	60	55
Taxiways	Full parallel	Full parallel	Partial parallel or turnarounds	Exit taxiway(s)	Not an objective
Approach Type	Precision	Precision	Non-precision	Visual	Visual
Visual Approach Aids	Both runway ends	One runway end	One runway end	One runway end	Not an objective
Instrument Approach Aids	One runway end	Not an objective	Not an objective	Not an objective	Not an objective
Runway Lighting	MIRL/HIRL	MIRL/HIRL	MIRL	LIRL	Not an objective
Taxiway Lighting	MITL/HITL	MITL/HITL	MITL	LITL/Reflectors	Not an objective

Note: Varies by airport* indicates airport-specific requirements defined by airport master plan/ALP and design aircraft.

TABLE 5-17: GENERAL FACILITY OBJECTIVES BY AIRPORT ROLE

Facility	Category I	Category II	Category III	Category IV	Category V
Rotating Beacon	Yes	Yes	Yes	Yes	Not an objective
Lighted Wind Indicator	Yes	Yes	Yes	Yes	Not an objective
Weather Reporting	AWOS/ASOS	AWOS/ASOS	AWOS/ASOS	Not an objective	Not an objective
Hangared Aircraft Storage	75% of based aircraft	75% of based aircraft	75% of based aircraft	75% of based aircraft	Not an objective
Apron Parking/Storage	75% of daily transient	75% of daily transient	30% of daily transient	30% of based aircraft	Not an objective

Facility	Category I	Category II	Category III	Category IV	Category V
Terminal Building	Yes	Yes	Small meeting area	Not an objective	Not an objective
Auto Parking	Moderate	Moderate	Minimal (tenant/public)	Minimal (tenant/public)	Not an objective
Fencing	Perimeter; controlled access	Perimeter; controlled access	Terminal area; controlled access	Not an objective	Not an objective
Cargo	Small handling facility w/apron	Designated apron area	Space on existing apron	Not an objective	Not an objective
Deicing Facility	Yes	Not an objective	Not an objective	Not an objective	Not an objective

TABLE 5-18: SERVICE OBJECTIVES BY AIRPORT ROLE

Facility	Category I	Category II	Category III	Category IV	Category V
Fuel	100 LL & Jet A	100 LL & Jet A	100 LL & Jet A	100 LL	Not an objective
FBO	Full service (normal business hours)	Full service (normal business hours)	Full service (normal business hours)	Not an objective	Not an objective
Ground Transportation	Rental car, taxi, or other	Offsite rental car, taxi, or other	Courtesy car or offsite rental car	Not an objective	Not an objective
Food Service	Coffee shop/deli & cold foods	Vending	Vending	Not an objective	Not an objective
Restrooms	Yes	Yes	Yes	Yes	Not an objective
Pilot Lounge	Yes w/weather reporting station	Yes w/weather reporting station	Yes w/weather reporting station	Not an objective	Not an objective
Snow Removal	Yes	Yes	Yes	Yes	Not an objective
Telephone	Yes	Yes	Yes	Not an objective	Not an objective

5.2.1 Airside Facilities

Airside facility planning is largely driven by criteria and standards developed by the Federal Aviation Administration (FAA) that emphasize safety and efficiency, while protecting federal investment in airport transportation infrastructure. The following airside facilities play a significant role in determining the ability of Oregon airports to support system needs.

- Airport Reference Code (ARC)
- NPIAS Role
- Based Aircraft
- Runway Orientation
- Runway Length
- Runway Width
- Runway Pavement Type
- Runway Pavement Strength
- Runway Pavement PCI
- Taxiways
- Approach Type
- Visual Approach Aids
- Instrument Approach Aids
- Runway Lighting
- Taxiway Lighting

FAA Airport Reference Code (ARC) Standards for the OAP V6.0

Airports included in the FAA's National Plan of Integrated Airports System (NPIAS) are encouraged by the FAA to meet all applicable federal design and development standards. In its advisory circulars, the FAA provides specific guidance on which safety-related standards and dimensional requirements are applicable to airports in the federal system. Each airport's individual design standards are based on the most demanding aircraft that operates at the airport on a regular basis (500 operations per year). This aircraft is known as the airport's critical aircraft.

Once an airport's critical aircraft is established, during the development of an airport master plan or airport layout plan (ALP), applicable design standards related to runways and taxiways are identified. Each airport's design standards are related to the approach speed (aircraft approach category or AAC), wingspan, and tail height (airplane design group or ADG) of its critical aircraft. Within FAA's planning guidelines, these parameters are used to determine each airport's reference code (ARC), which signifies the airport's highest runway design code (RDC). The following ARC objectives apply to Oregon airports:

- Category I: Commercial Service Airports: ARC of C-II
- Category II: Urban General Aviation Airports: ARC of C-II
- Category III: Regional General Aviation Airports: ARC of B-II
- Category IV: Local General Aviation Airports: ARC of B-I
- Category V: Remote Access/Emergency Service Airports: ARC of A-I

There are many factors to consider related to an airport's ARC. High on this list is activity by a critical aircraft that dictates the need for the particular ARC. In other instances, an airport may not be able to achieve a particular ARC because of development/site constraints. Airport master plans are the appropriate forum for determining an airport's ARC and then investigating if the airport is able to achieve the dimensional and design setback requirements needed for that ARC.

A review of the current ARC at each study airport is presented in **Table 4-9**. Airports which do not meet the OAP ARC objective for their category are presented in **Table 5-19**. For example, in the Category II airports, five of the ten airports in this category have ARC design objectives less than the C-II ARC. Future master plans for these five airports should consider increasing the airport's ARC, if demand warrants. As noted, some airports now exceed their ARC objective.

As shown in **Figure 5-18**, 68 percent of Oregon system airports meet their FAA ARC objective while 30 percent do not. This objective is not applicable to one Category II airport (Portland Downtown Heliport) and one Category V airport (Lake Woahink Seaplane Base); these airports account for the remaining percentage of all system airports

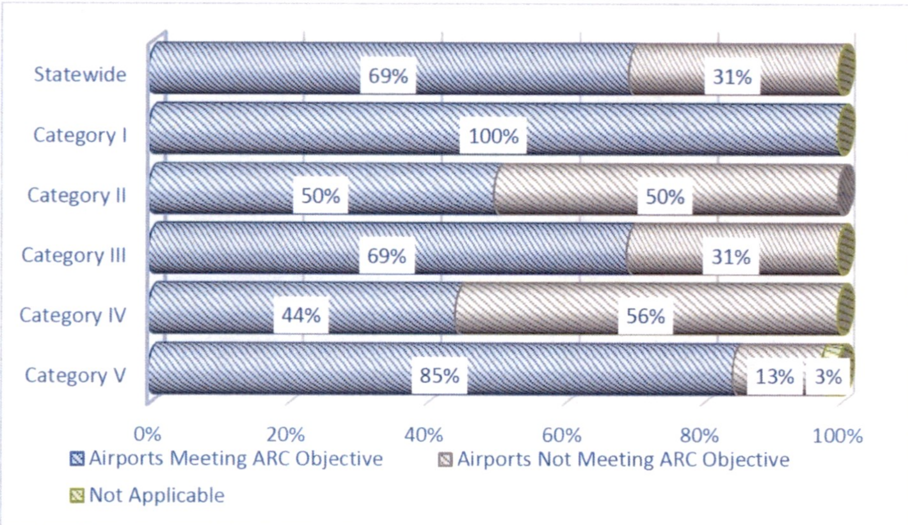
TABLE 5-19: AIRPORTS BY ROLE THAT DO NOT MEET OAP V6.0 FAA ARC OBJECTIVE

FAA ID	City	Airport	OAP v6.0 Category	Current ARC	OAP ARC Objective
AST	Astoria	Port of Astoria Regional Airport	II	B-II	C-II
BDN	Bend	Bend Municipal Airport	II	B-II	C-II
ONP	Newport	Newport Municipal Airport	II	B-II	C-II
TTD	Portland	Portland -Troutdale Airport	II	B-II	C-II
SPB	Scappoose	Scappoose Industrial Airpark	II	B-II	C-II
S03	Ashland	Ashland Municipal Airport-Sumner Parker Field	III	B-I (Small)	B-II
S05	Bandon	Bandon State Airport	III	B-I	B-II

FAA ID	City	Airport	OAP v6.0 Category	Current ARC	OAP ARC Objective
BNO	Burns	Burns Municipal Airport	III	A-II	B-II
GCD	John Day	Grant County Regional Airport	III	B-I	B-II
S12	Albany	Albany Municipal Airport	IV	B-I (Small)	B-I
BOK	Brookings	Brookings Airport	IV	B-I (Small)	B-I
17S	Newberg	Chehalem Airpark	IV	A-I	B-I
62S	Christmas Valley	Christmas Valley Airport	IV	B-I (Small)	B-I
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field	IV	B-I (Small)	B-I
77S	Creswell	Creswell Hobby Field Airport	IV	B-I (Small)	B-I
6S2	Florence	Florence Municipal Airport	IV	B-I (Small)	B-I
3S4	Cave Junction	Illinois Valley Airport	IV	B-I (Small)	B-I
7S5	Independence	Independence State Airport	IV	B-I (Small)	B-I
4S2	Hood River	Ken Jernstedt Airfield	IV	A-II (Small)	B-I
16S	Myrtle Creek	Myrtle Creek Municipal Airport	IV	A-I (Small)	B-I
56S	Seaside	Seaside Municipal Airport	IV	B-I (Small)	B-I
S45	Gleneden Beach	Siletz Bay State Airport	IV	B-I (Small)	B-I
2S6	Newberg	Sportsman Airpark	IV	A-I	B-I
35S	Wasco	Wasco State Airport	IV	B-I (Small)	B-I
R03	Alkali Lake	Alkali Lake State	V	A-I (Small)	A-I
CZK	Cascade Locks	Cascade Locks State Airport	V	B-I (Small)	A-I
5S2	Crescent Lake	Crescent Lake State Airport	V	A-I (Small)	A-I
8S3	Santiam Junction	Santiam Junction State	V	A-I (Small)	A-I
3S6	Clearwater	Toketee State	V	A-I (Small)	A-I

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017

FIGURE 5-18: PERCENTAGE OF AIRPORTS BY ROLE THAT MEET OR EXCEED FAA ARC OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

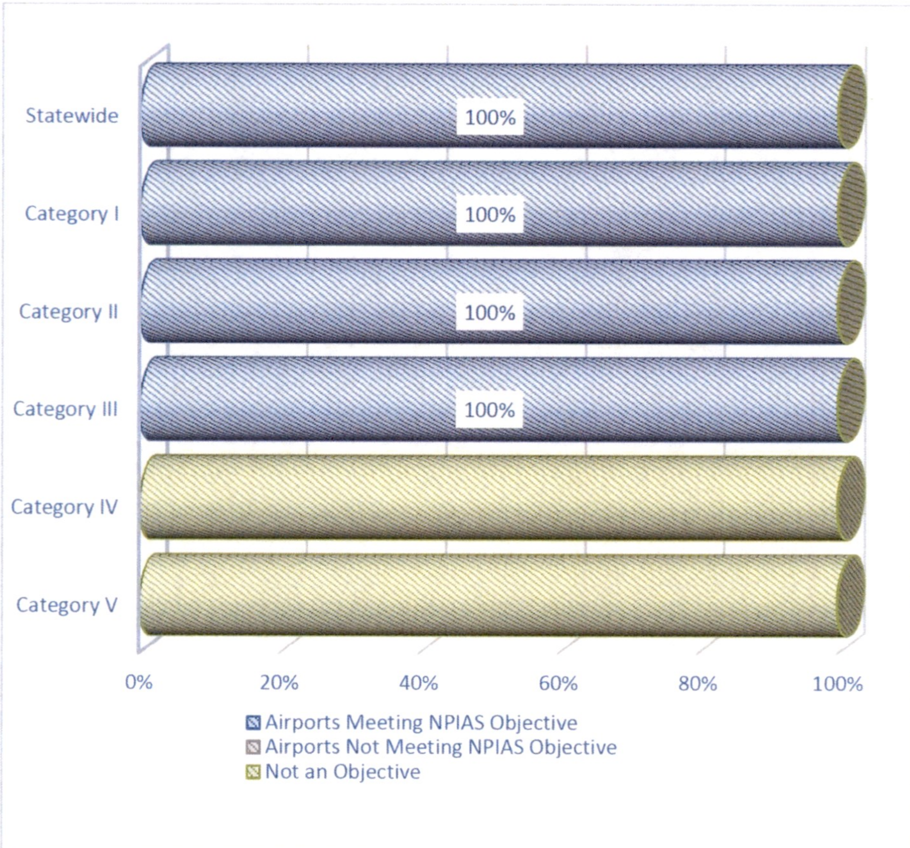
FAA National Plan of Integrated Airport System (NPIAS)

Airports that are included in the NPIAS have been identified by the FAA as being "significant" to the national air transportation system, and these airports are eligible to receive federal grants for facility improvements. There are 57 Oregon airports currently in the NPIAS. The following NPIAS inclusion objectives apply to Oregon airports:

- Category I: Include in the NPIAS
- Category II: Include in the NPIAS
- Category III: Include in the NPIAS
- Category IV: Not an objective
- Category V: Not an objective

A review of the current NPIAS status for airports for all categories, except Category IV and Category V, is presented in **Table 5-35**. As shown in **Figure 5-19**, all Category I, Category II, and Category III airports meet their NPIAS inclusion objective; this means that all applicable airports in the OAP v6.0 meet the NPIAS inclusion objective. It is not an objective for Category IV or Category V airports to be included in the NPIAS. It is noteworthy to point out that of the 27 airports in Category IV, 24 are NPIAS airports. In Category V, two airports are the in NPIAS and 37 are not included in the NPIAS.

FIGURE 5-19: PERCENTAGE OF APPLICABLE AIRPORTS BY ROLE MEETING THE NPIAS INCLUSION OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

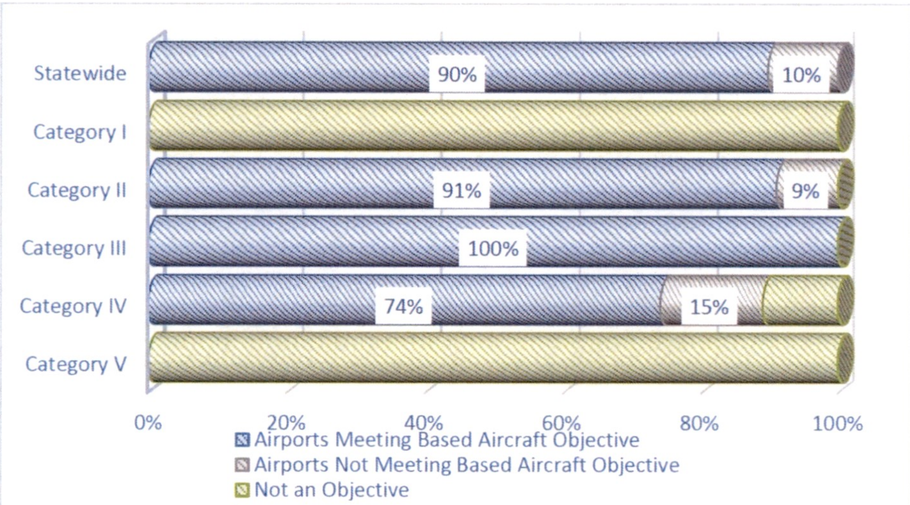
Based Aircraft

The number of aircraft based at an airport is one of the criteria used evaluate activity occurring at the airport. The number of aircraft based at an airport also provides insight into the function of the airport as it pertains to serving its community and region. Airports may control rates for aircraft storage which might attract aircraft owners to base at their facility; but in general, based aircraft at an airport reflect local market conditions which include population density, employment, and aircraft owners within an airport's market area. The following based aircraft objectives apply to Oregon airports, and these objectives are predicated on FAA NPIAS requirements for 10 based aircraft:

- Category I: Not an objective
- Category II: 10 or more based aircraft
- Category III: 10 or more based aircraft
- Category IV: 10 or more based aircraft NPIAS only airports; sot an objective for non-NPIAS airports
- Category V: Not an objective

A review of the based aircraft at study airports in Category II, Category III, and Category IV is presented in **Table 5-35**. As shown in **Figure 5-20**, 91 percent of Category II airports, 100 percent of Category III airports, and 74 percent of Category IV airports meet their based aircraft objective. There is not a based aircraft objective for Category I, Category V, or non-NPIAS airports in Category IV. Statewide, 90 percent of the applicable airports meet the based aircraft objective. NPIAS Airports with less than 10 based aircraft are presented in **Table 5-20**.

FIGURE 5-20: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE BASED AIRCRAFT OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-20: AIRPORTS BY ROLE NOT MEETING OAP V6.0 BASED AIRCRAFT OBJECTIVE

FAA ID	City	Airport	Total Based Aircraft
Category II: 10 or more based aircraft			
61J	Portland	Portland Downtown Heliport	0
Category IV: 10 or more based aircraft NPIAS airports; not an objective for Non-NPIAS airports			
M50	Boardman	Boardman Airport	0

FAA ID	City	Airport	Total Based Aircraft
62S	Christmas Valley	Christmas Valley Airport	0
56S	Seaside	Seaside Municipal Airport	3
35S	Wasco	Wasco State Airport	4

Source: Basedaircraft.com, Jviation and Marr Arnold Planning Analysis

Runway Wind Coverage

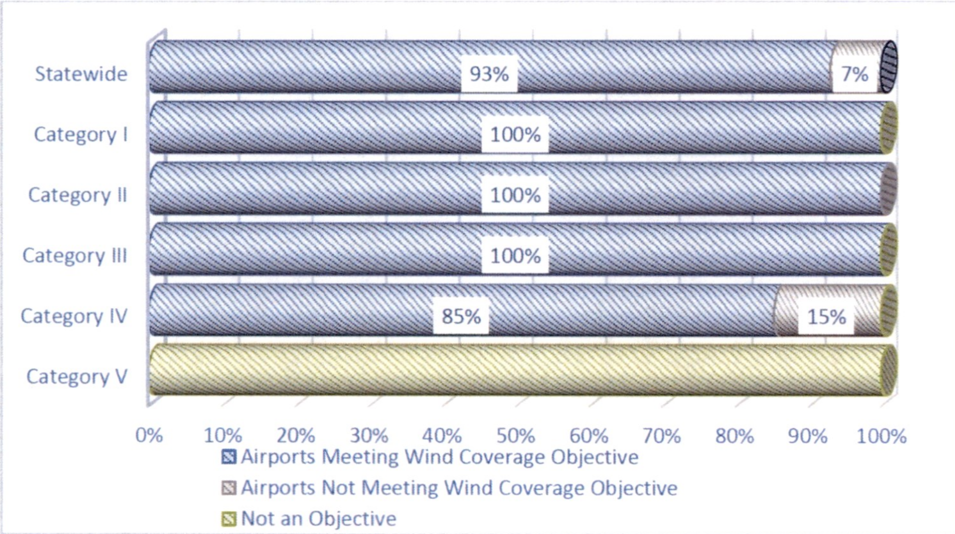
The orientation of runways for aircraft operations is primarily a function of wind velocity and prevailing direction, coupled with the ability of aircraft to operate under adverse weather conditions. Generally, the primary runway is aligned as closely as practical in the direction of the prevailing winds. The optimum runway orientation is one which provides the airport at least 95 percent wind coverage at a crosswind component value not exceeding 12 mph (10.5 knots) for ARC A-I and B-I aircraft and 15 mph (13.0 knots) for ARC A-II and B-II.

The following wind coverage objectives apply to Oregon airports:

- Category I: 95% wind coverage (combined primary/secondary runway)
- Category II: 95% wind coverage (combined primary/secondary runway)
- Category III: 95% wind coverage (combined primary/secondary runway)
- Category IV: 95% wind coverage
- Category V: Varies by airport

A review of the wind coverage data collected during the inventory for Category I, Category II, Category III, and Category IV study airports is presented in **Table 5-35**. Reliable wind data is not available for Category V airports; therefore, they were not evaluated in this analysis. As shown in **Figure 5-21**, only 7 percent of all study airports do not meet their wind coverage objective. **Table 5-21** lists airports in the statewide OAP v6.0 that do not meet the wind coverage objective, based on current analysis. Wind studies are recommended for these four airports for further evaluation. This objective is not applicable to one Category II airport, Portland Downtown Heliport nor is it applicable to the Lake Woahink seaplane base.

FIGURE 5-21: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE WIND COVERAGE OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-21: SUMMARY OF AIRPORTS NOT MEETING WIND COVERAGE OBJECTIVES

FAA ID	City	Airport
Category IV: 95% wind coverage		
3S9	Condon	Condon State Airport - Pauling Field
S30	Lebanon	Lebanon State Airport
56S	Seaside	Seaside Municipal Airport
35S	Wasco	Wasco State Airport

Source: Airport ALPs, Century West, Jviation, Marr Arnold Planning

Runway Length

Adequate runways are key components of the facility objectives established in the OAP v6.0. Study objectives for runway length and width were established in the *2007 Oregon Aviation Plan*. Runway objectives are based loosely on Federal Aviation Administration (FAA) runway length requirements for various types of planes in the general aviation fleet. Actual runway length requirements are best identified through the master planning process, as lengths are determined by the critical aircraft operating at each airport. Runway length objectives, set by the Oregon Aviation Plan v6.0, provide general guidance to all airports as it relates to accommodating the types of planes and users they most frequently serve. It is possible that some airports, based on local need and justification, will actually exceed their runway length objective. System plan runway length objectives are considered the minimum desirable length at each airport, based on the airport's assigned system role.

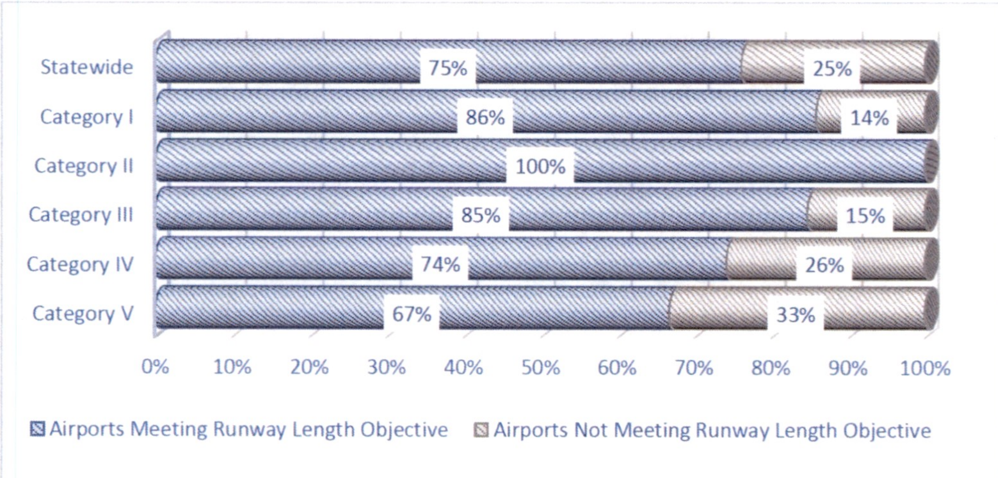
The following runway length objectives apply to Oregon airports:

- Category I: 6,000 feet
- Category II: 5,000 feet
- Category III: 4,000 feet
- Category IV: 3,000 feet Paved; 2,500 feet Turf
- Category V: 2,500 feet

A review of the current primary runway length at each study airport is presented in **Table 5-35**. As noted, some airports now exceed their runway length objective. As shown in **Figure 5-22**, 75 percent of all Oregon airports meet the length objective for their primary runway. This objective is not applicable to one Category II facility (Portland Downtown Heliport), while the remainder of the airports in Category II meet their runway length objective.

Category V RAES airports, as a group, have the greatest deficiency for runway length objectives with approximately one third of the airports not meeting their objective. **Table 5-22** identifies airports not meeting the runway length objective for their system role. It is noteworthy to point out the Southwest Oregon Regional Airport nearly meets the objective of 6,000 feet, but is 20 feet short of meeting the objective.

FIGURE 5-22: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE RUNWAY LENGTH OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-22: AIRPORTS BY ROLE NOT MEETING RUNWAY LENGTH OBJECTIVE

FAA ID	City	Airport	Runway Length	Improvement Needed to Meet Objective
Category I: 6,000 feet				
OTH	North Bend	Southwest Oregon Regional Airport	5,980	Extend 20 feet
Category III: 4,000 feet				
S03	Ashland	Ashland Municipal Airport-Sumner Parker Field	3,603	Extend 397 feet
S05	Bandon	Bandon State Airport	3,601	Extend 399 feet
Category IV: 3,000 feet paved; 2,500 feet turf				
BOK	Brookings	Brookings Airport	2,900	Extend 100 feet
17S	Newberg	Chehalem Airpark	2,285	Extend 715 feet
S30	Lebanon	Lebanon State Airport	2,877	Extend 123 feet
7S9	Hubbard	Lenhardt Airpark	2,956	Extend 44 feet
16S	Myrtle Creek	Myrtle Creek Municipal Airport	2,600	Extend 400 feet
56S	Seaside	Seaside Municipal Airport	2,211	Extend 789 feet
2S6	Newberg	Sportsman Airpark	2,755	Extend 245 feet

FAA ID	City	Airport	Runway Length	Improvement Needed to Meet Objective
Category V: 2,500 feet turf				
CZK	Cascade Locks	Cascade Locks State Airport	1,800	Extend 700 feet
6S4	Gates	Davis Field	1,940	Extend 560 feet
5S1	Roseburg	George Felt	2,300	Extend 200 feet
9S3	Lakeside	Lakeside Municipal Airport	2,150	Extend 350 feet
12S	Monument	Monument Municipal	2,140	Extend 360 feet
3S7	Manzanita	Nehalem Bay State Airport	2,350	Extend 150 feet
28U	Owyhee Reservoir	Owyhee Reservoir State	1,840	Extend 660 feet
PFC	Pacific City	Pacific City State Airport	1,875	Extend 625 feet
03S	Sandy	Sandy River	2,115	Extend 385 feet
4S4	Cornelius	Skyport	2,000	Extend 500 feet
7S3	Hillsboro	Stark's Twin Oaks	2,465	Extend 35 feet
5S4	Toledo	Toledo State Airport	1,750	Extend 750 feet
R33	Waldport	Wakonda Beach State	2,000	Extend 500 feet

Source: FAA 5010, Jviation and Marr Arnold Planning Analysis 2017

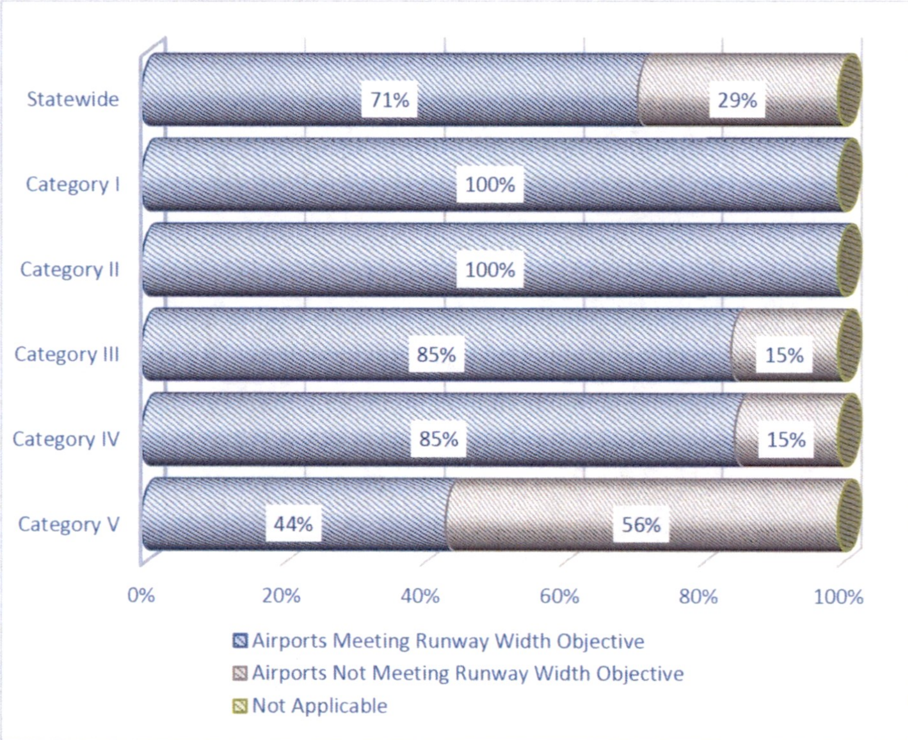
Runway Width

Runway width is another important component of each airport's airfield facilities. Objectives for runway width are determined based on FAA design standards. Minimum runway width objectives as established for airports in Oregon are as follows:

- Category I: 100 feet
- Category II: 75 feet
- Category III: 75 feet
- Category IV: 60 feet paved runway; 120 feet turf runway
- Category V: 60 feet turf runway

Table 5-36 presents each airport's ability to meet its primary runway width objective. As shown in **Figure 5-23**, 71 percent of airports meet the runway width objectives for their respective role. This objective is not applicable to one Category II facility (Portland Downtown Heliport). **Table 5-23** identifies current airport widths and improvements needed to meet this objective.

FIGURE 5-23: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE RUNWAY WIDTH OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-23: AIRPORTS BY ROLE NOT MEETING RUNWAY WIDTH OBJECTIVE

FAA ID	City	Airport	Primary Runway Width (feet)	Improvement Needed to Meet Objective
Category III: 75 Feet				
S05	Bandon	Bandon State Airport	60	Widen 15 feet
GCD	John Day	Grant County Regional Airport	60	Widen 15 feet
Category IV: 60 feet paved; 120 feet turf				
17S	Newberg	Chehalem Airpark	40	Widen 20 feet
7S9	Hubbard	Lenhardt Airpark	45	Widen 15 feet
56S	Seaside	Seaside Municipal Airport	50	Widen 10 feet
2S6	Newberg	Sportsman Airpark	50	Widen 10 feet
Category V: 60 feet turf				
1S8	Arlington	Arlington Municipal	50	Widen 10 feet
CZK	Cascade Locks	Cascade Locks State Airport	30	Widen 30 feet
S48	Sandy	Country Squire Airpark	32	Widen 28 feet
5S2	Crescent Lake	Crescent Lake State Airport	30	Widen 30 feet
6S4	Gates	Davis Field	50	Widen 10 feet
8S4	Enterprise	Enterprise Municipal	50	Widen 10 feet

FAA ID	City	Airport	Primary Runway Width (feet)	Improvement Needed to Meet Objective
5S5	Culver	Lake Billy Chinook	32	Widen 28 feet
4S7	Malin	Malin	30	Widen 30 feet
12S	Monument	Monument Municipal	25	Widen 35 feet
3S7	Manzanita	Nehalem Bay State Airport	50	Widen 10 feet
5S0	Oakridge	Oakridge State	47	Widen 13 feet
28U	Owyhee Res.	Owyhee Reservoir State	30	Widen 30 feet
PFC	Pacific City	Pacific City State Airport	30	Widen 30 feet
24S	Pinehurst	Pinehurst State Airport	30	Widen 30 feet
64S	Prospect	Prospect State Airport	50	Widen 10 feet
45S	Silver Lake	Silver Lake USFS	55	Widen 5 feet
4S4	Cornelius	Skyport	45	Widen 15 feet
7S3	Hillsboro	Stark's Twin Oaks	48	Widen 12 feet
5S4	Toledo	Toledo State Airport	40	Widen 20 feet
5S9	Estacada	Valley View	32	Widen 28 feet
05S	Vernonia	Vernonia Municipal	45	Widen 15 feet
R33	Waldport	Wakonda Beach State	30	Widen 30 feet

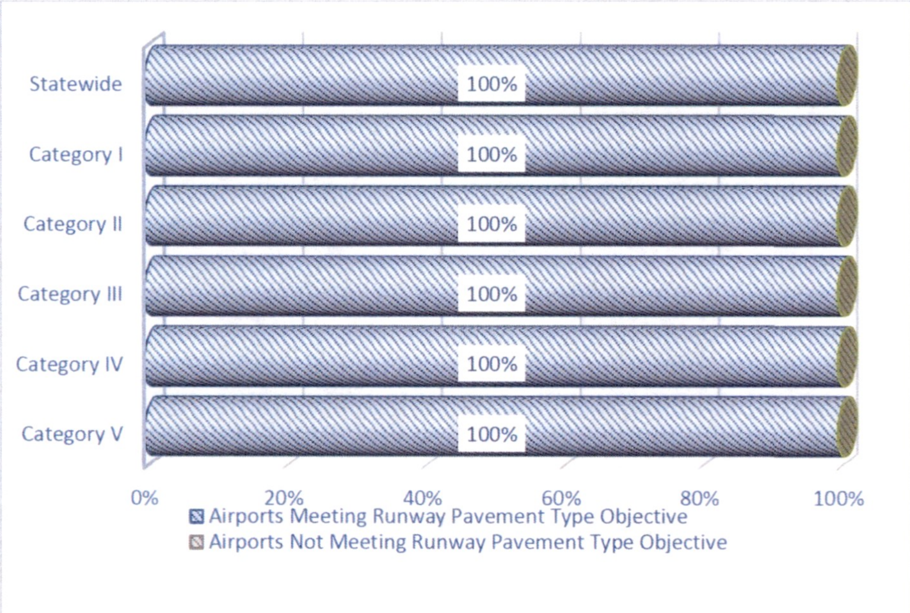
Source: FAA 5010, Jviation and Marr Arnold Planning Analysis 2017

Runway Pavement Type

As part of the Oregon Aviation Plan v6.0 inventory effort, airports were asked to identify the type of pavement for their primary runways. It is an objective for all Category I, Category II, Category III airports to have either bituminous or concrete runway pavement. The objective for Category IV airports is to have either paved (bituminous or concrete) or turf runway surfaces. Category V airports have an objective for turf, gravel, or dirt runway surfaces.

An analysis of each airport's primary runway pavement type is presented in **Table 5-36**. As shown in **Figure 5-24**, 100 percent of airports in the OAP v6.0 meet the runway pavement type objective for their respective role. This objective is not applicable to Lake Woahink SPB (Category V).

FIGURE 5-24: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE RUNWAY PAVEMENT TYPE OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

Runway Pavement Strength

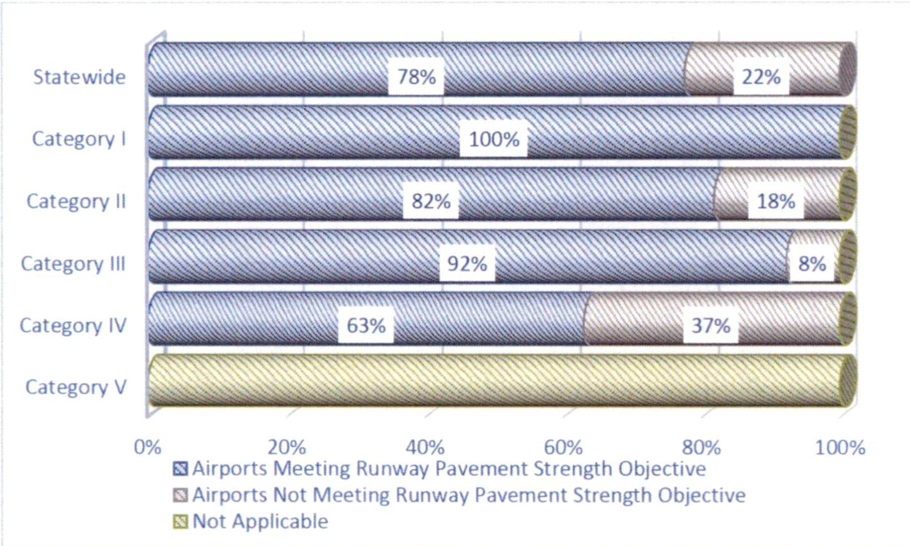
Pavement strength determines the weight of aircraft that may operate on a regular basis on a specific runway. Runway pavement is designed to sustain continuous aircraft operations up to the runway's published weight bearing capacity; however, runways can support infrequent aircraft operations in excess of their published pavement strength.

Runway strengthening, in most cases, depending upon the condition and structure of the existing runway, can be accomplished with a runway overlay. Runway pavement strength is typically classified according to aircraft landing gear configuration. The following pavement strength objectives have been established for allowable loads by single-wheel landing gear by airport category:

- Category I: Varies by airport/design aircraft
- Category II: Varies by airport (≥30,000 lbs.)
- Category III: Varies by airport (≥12,500 lbs.)
- Category IV: ≥12,500 lbs. (hard surface only)
- Category V: Varies by airport

The primary runway strength data collected during the inventory effort is presented in **Table 5-36**. As shown in **Figure 5-25**, 78 percent of system airports meet the pavement strength objective for their primary runway. Pavement strength data for two Category IV airports is not available and therefore were identified as not applicable. **Table 5-24** identifies airports that do not meet primary runway pavement strength objectives.

FIGURE 5-25: PERCENTAGE OF AIRPORTS BY ROLE MEETING RUNWAY PAVEMENT STRENGTH OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-24: AIRPORTS BY ROLE NOT MEETING RUNWAY PAVEMENT STRENGTH OBJECTIVE

FAA ID	City	Airport	Primary Runway Pavement Strength (Single Wheel)	Meets Primary Runway Pavement Strength Objective
Category II: Varies by airport* (30,000 lbs. or greater)				
TTD	Portland	Portland -Troutdale Airport	19,000	No
61J	Portland	Portland Downtown Heliport	25,000	No
Category III: Varies by airport* (12,500 lbs. or greater)				
S05	Bandon	Bandon State Airport	12,000	No
Category IV: 12,500 lbs. or greater (hard surface only)				
BOK	Brookings	Brookings Airport	11,000	No
17S	Newberg	Chehalem Airpark*	Not available	No
62S	Christmas Valley	Christmas Valley Airport	12,000	No
3S9	Condon	Condon State Airport - Pauling Field	12,000	No
77S	Creswell	Creswell Hobby Field Airport	12,000	No
7S9	Hubbard	Lenhardt Airpark*	Not available	No
16S	Myrtle Creek	Myrtle Creek Municipal Airport	12,000	No
56S	Seaside	Seaside Municipal Airport	12,000	No
S45	Gleneden Beach	Siletz Bay State Airport	11,000	No
6K5	Sisters	Sisters Eagle Air Airport	4,000	No

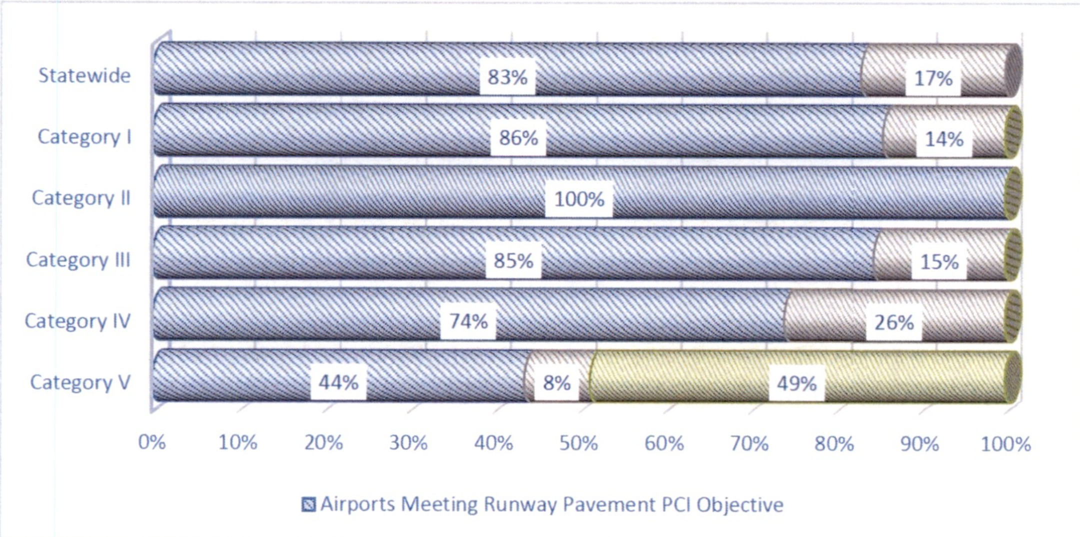
Source: Airport records, Jviation and Marr Arnold Analysis 2017
*When data not available for Category IV airports analysis assumes strength inadequate

Runway Pavement Conditions Index (PCI)

The development and maintenance of paved surfaces at system airports requires significant and continual investment. The objective for pavement condition is for Category I airports to maintain a pavement condition index (PCI) of 65 or greater; Category II, Category III and Category IV airports to maintain a PCI of 60 or greater; and for Category V airports to maintain a PCI of 55 or greater on their primary runways, as applicable

Current and available PCI data for each airport's primary runway is provided in **Table 5-37**. **Figure 5-26** shows that 82 percent of OAP v6.0 airports with hard surfaces meet their respective role's runway pavement PCI objective. This objective is not applicable to 21 percent, or 19 Oregon airports since these airports are unpaved and therefore do not have a PCI. **Table 5-25** identifies the remaining airports not meeting the PCI objective. One airport with commercial service airline activity are included in this group: Eastern Oregon Regional Airport at Pendleton. All Category II airports meet the objective, but seven Category IV airports do not. In Category V, Crescent Lake State Airport does not have a PCI rating, but the FAA 5010 form indicates the asphalt is in poor condition, and it is assumed this airport does not meet PCI standards. Chehalem Airpark and Cottage Grove State Airport-Jim Wright Field do not have PCI data, are shown as "unknown" and are assumed to not meet the PCI requirements.

FIGURE 5-26: PERCENTAGE OF AIRPORTS BY ROLE MEETING RUNWAY PAVEMENT PCI OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-25: AIRPORTS BY ROLE NOT MEETING RUNWAY PCI OBJECTIVE

FAA ID	City	Airport	Runway Pavement PCI
Category I: PCI 65			
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	54
Category III: PCI 60			
DLS	The Dalles	Columbia Gorge Regional - The Dalles	55
RBG	Roseburg	Roseburg Regional Airport	8
Category IV: PCI 60			

FAA ID	City	Airport	Runway Pavement PCI
17S	Newberg	Chehalem Airpark	Unknown*
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field	Unknown*
4S2	Hood River	Ken Jernstedt Airfield	58
9S9	Lexington	Lexington Airport	51
S33	Madras	Madras Municipal Airport	57
6K5	Sisters	Sisters Eagle Air Airport	45
2S6	Newberg	Sportsman Airpark	28
Category V: PCI 55			
S48	Sandy	Country Squire Airpark	25
5S2	Crescent Lake	Crescent Lake State Airport	ASPH-P
5S0	Oakridge	Oakridge State	49

Source: Airport and ODA PCI records, Jviation Analysis 2017.
* When data is not available for Category IV airports analysis assumes strength inadequate.

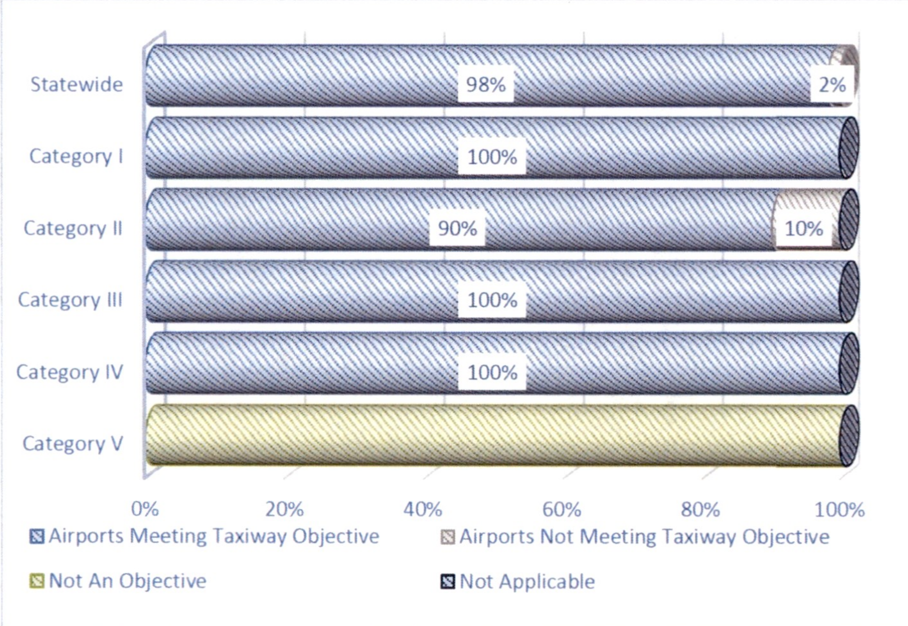
Taxiways

Taxiways facilitate aircraft movement to and from the runway system, allowing for safer operations and increased operational efficiency. Taxiways become extremely important as activity increases and more efficient use of the airfield is required. Taxiway exits permit aircraft to clear the runway quickly after landing and significantly increase runway capacity. Taxiways are also recommended to support certain types of instrument approaches. The objective for Category I and Category II airports is to have a full parallel taxiway[3]; the taxiway system objective for Category III is for either a partial parallel taxiway or turnarounds; and the taxiway objective for Category IV airports is to provide exit taxiways. There is not an objective for Category V airports to have a taxiway.

As presented in **Table 5-37** and summarized in **Figure 5-27**, 98 percent of the airports meet their taxiway type objective. This objective is not applicable to one Category II airport (Portland Downtown Heliport). All Category I, III, and IV airports meet the taxiway objective. Analysis indicates 90 percent of the Category II airports meet the parallel runway objective. One airport in Category II, Salem-McNary, has a partial parallel taxiway system but could meet the objective if the taxiway were extended approximately 300 feet to Runway End 13.

[3] Taxiway systems which include a partial parallel taxiway and a network of taxiways which are appropriately separated from the runway centerline and allow for aircraft movement from one runway end to the other without taxiing on the runway are acceptable and function similar to a full length parallel taxiway.

FIGURE 5-27: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE TAXIWAY OBJECTIVE



Source: Airport Management Survey, Century West, Jviation

Approach Type

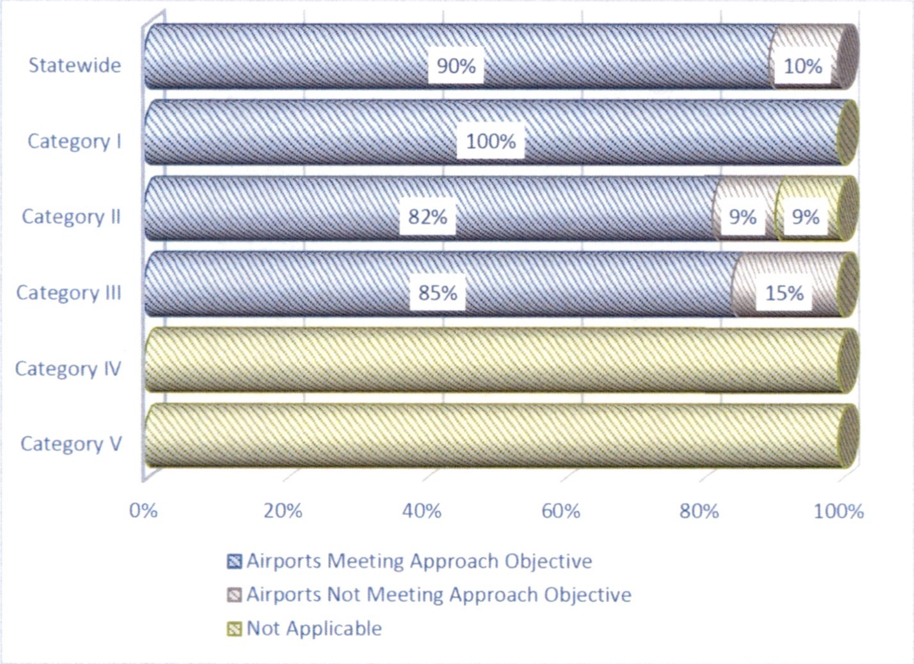
An instrument approach improves airport air access and operational efficiency and helps improve safety during a wide variety of meteorological conditions. Historically, most flight procedures have been based on land-based navigational aids requiring considerable investment for equipment and maintenance. Land-based approach equipment includes: Instrument Landing Systems (ILS), Very High Frequency Omni-Directional Range (VORs), and Non-Directional Beacons (NDBs).

In the last decade, many of the approaches using land-based equipment have been replaced with satellite-based approaches that utilize Global Positioning Systems (GPS). GPS procedures accommodate precision-like approaches without requiring additional land-based navigation equipment at the airport. Area Navigation (RNAV) GPS approaches offer improved accuracy and lower approach minimums without land-based equipment. Localizer Performance with Vertical Guidance (LPV) or Lateral Navigation (LNAV) are the most popular RNAV GPS approaches. LPV minimums offer improved accuracy with Wide Area Augmentation System (WAAS) and provide both lateral and vertical guidance.

The approach objective for Category I and Category II airports is for a precision approach (ILS or LPV). Category III airports should have a published non-precision approach. The objective for Category IV and Category V airports is to have a visual approach. As shown in **Table 5-37** and **Figure 5-28**, only 3 percent of system airports do not meet their applicable approach objectives.

Portland-Troutdale is a Category II airport without a precision approach. The airport currently supports a non-precision RNAV (GPS) A approach. The Objective for Category III airports in the OAP v6.0 is for all airports to have a non-precision approach, all airports meet this objective except for Ashland Municipal Airport - Sumner Parker Field and Bandon State Airport. These two airports are VFR only.

FIGURE 5-28: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE APPROACH TYPE OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

Visual Approach Aids

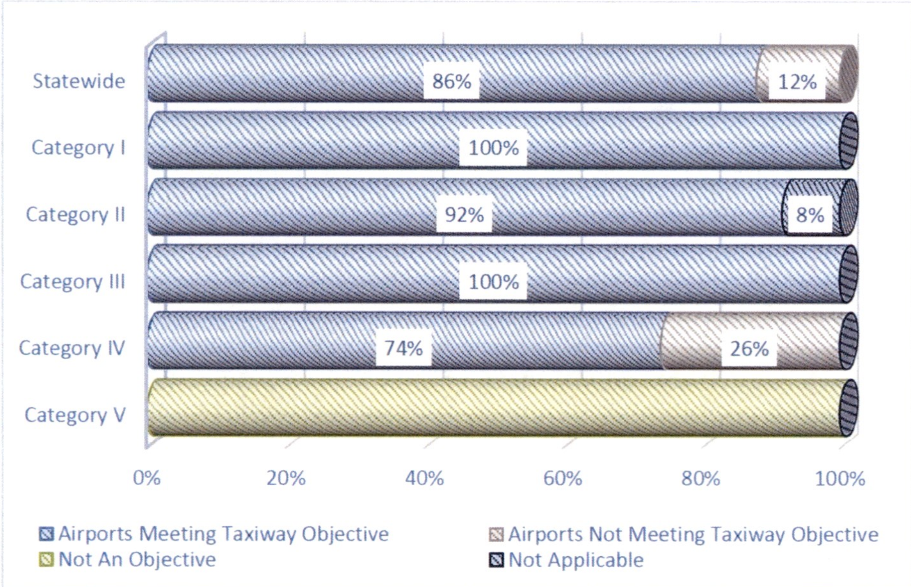
There are several visual aids that provide navigation assistance to aircraft arriving and departing Oregon's airports. Common visual aids that support instrument approaches are Visual Glide Slope Indicators (VGSIs); VGSI include Precision Approach Path Indicators (PAPIs) or a Visual Approach Slope Indicator (VASI). Runway end identifier lights (REILs) are installed to provide rapid and positive identification of the runway end.

Objectives by category have been established for each of these types of navigational aids: Category I airports are recommended to have visual approach aids on both ends of their primary runway; Category II, Category III and Category IV airports should include them on one runway end; and it is not an objective for Category V airports to have visual approach aids.

Table 5-37 shows which airports meet their system objectives for visual approach aids. **Figure 5-29** summarizes the compliance by airport role. This objective is not applicable to one Category II airport (Portland Downtown Heliport). Statewide 86 percent (50 of 57 airports with this objective) meet the visual approach objective.

Table 5-26 identifies seven Category IV airports that do not have any visual approach aids and do not meet the visual approach aids objective.

FIGURE 5-29: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE VISUAL APPROACH AIDS OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-26: CATEGORY IV AIRPORTS HAVING NO VISUAL APPROACH AIDS

FAA ID	City	Airport
M50	Boardman	Boardman Airport
17S	Newberg	Chehalem Airpark
4S9	Mulino	Mulino State Airport
56S	Seaside	Seaside Municipal Airport
S45	Gleneden Beach	Siletz Bay State Airport
2S6	Newberg	Sportsman Airpark
35S	Wasco	Wasco State Airport

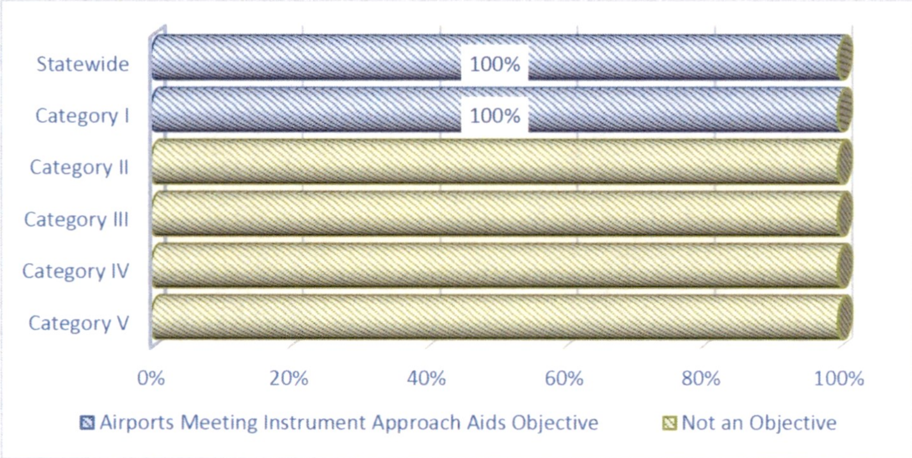
Source: FAA 5010 Data, Jviation and Marr Arnold Planning Analysis 2017

Instrument Approach Aids

Approach lighting systems are instrument approach aids that contains a series of light bars and strobe lights that extend outward from the runway end to enhance safe approaches to the airfield. There are several different ALSs an airport can have in place, depending on their approach type. Medium-Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR), Medium-Intensity Approach Lighting System with Sequenced Flashing lights (MALSF), and Approach Lighting System with Sequenced Flashing Lights (ALSF) support precision approaches. Omnidirectional Approach Lighting System (ODALS) can be installed to assist with non-precision approaches.

The Oregon Aviation Plan v6.0 has established an objective for Category I airports to have an instrument approach aid such as an ALS in place (see **Table 5-38**). As shown in **Figure 5-30**, 100 percent of Category I airports meet the objective to have an ALS in place.

FIGURE 5-30: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE INSTRUMENT APPROACH AIDS OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

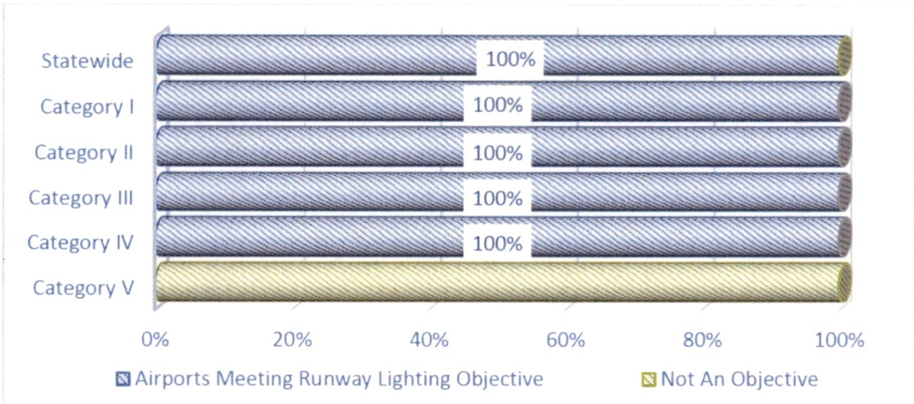
Runway Lighting

At night and during periods of reduced visibility, airfield lighting is used to outline the edges of the runway, providing an increased margin of safety. The three runway edge lighting systems, High Intensity Runway Lights (HIRL), Medium Intensity Runway Lights (MIRL), and Low Intensity Runway Lights (LIRL), are differentiated by their brightness. Objectives for runway lighting are as follows:

- Category I: MIRL/HIRL
- Category II: MIRL/HIRL
- Category III: MIRL
- Category IV: LIRL
- Category V: Not an objective

Table 5-38 indicates which airports, by role excluding Category V, are currently meeting their system objective for runway edge lighting. **Figure 5-31** shows that 100 percent of all system airports currently meet their objectives for runway lighting.

FIGURE 5-31: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE RUNWAY LIGHTING OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

Taxiway Lighting

Similar to runway edge lighting, taxiway lighting provides identification of the taxiways at night and during periods of reduced visibility. Objectives established for taxiway lighting are:

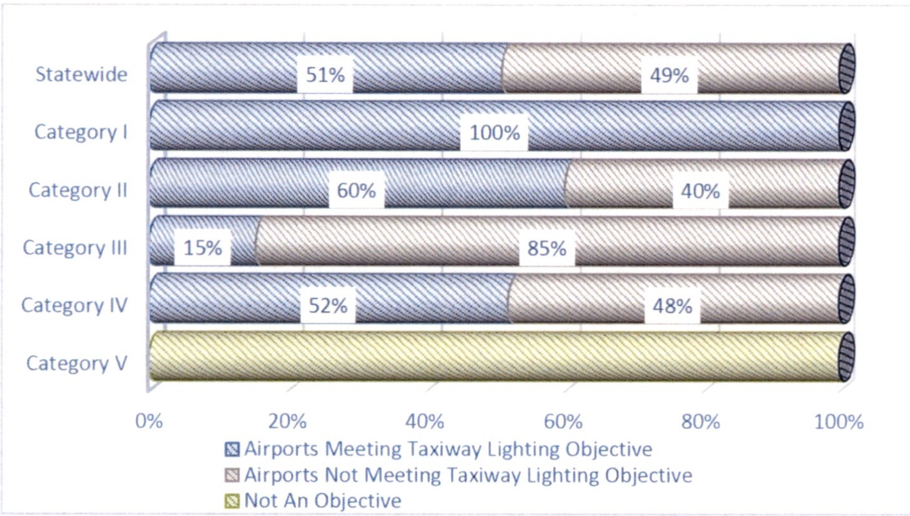
- Category I: Medium Intensity Taxiway Lighting or High Intensity Taxiway Lighting (MITL/HITL)
- Category II: Medium Intensity Taxiway Lighting or High Intensity Taxiway Lighting MITL/HITL
- Category III: Medium Intensity Taxiway Lighting (MITL)
- Category IV: Low Intensity Taxiway Lighting (LITL) or Taxiway Reflectors
- Category V: Not an objective

Table 5-38 indicates which airports, by role excluding Category V, are currently meeting their system objective for taxiway edge lighting. **Figure 5-32** shows that only 51 percent of all system airports currently meet their objectives for taxiway lighting.

Table 5-27 identifies 28 system airports needing improvements to meet the taxiway lighting objective.

Figure 5-32 identifies in further detail Category II and III airport taxiway lighting. Analysis indicates three Category II airports (30%) rely on taxiway reflectors, while Salem-McNary (Category II) has LITL lighting. Category III airports have the highest number of airports not meeting the objective. Thirteen airports comprise this category and eight of these have taxiway reflectors instead of MITL. Only two of the 13 airports in Category III have MITL systems. Reflector systems are typically installed by airport sponsors as a cost saving measure since electrical grids are needed to support taxiway lighting. While taxiway lights are preferred for Category II and III airport, reflectors provide taxiway edge visibility to pilots at night when taxiing with aircraft landing lights on. Its noteworthy to point out that when airport management improves an airport's taxiway system that lighting improvements should be upgraded to meet the OAP v6.0 objectives.

FIGURE 5-32: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE TAXIWAY LIGHTING OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

FIGURE 5-33: CATEGORY II AND III AIRPORTS TAXIWAY LIGHTING ANALYSIS

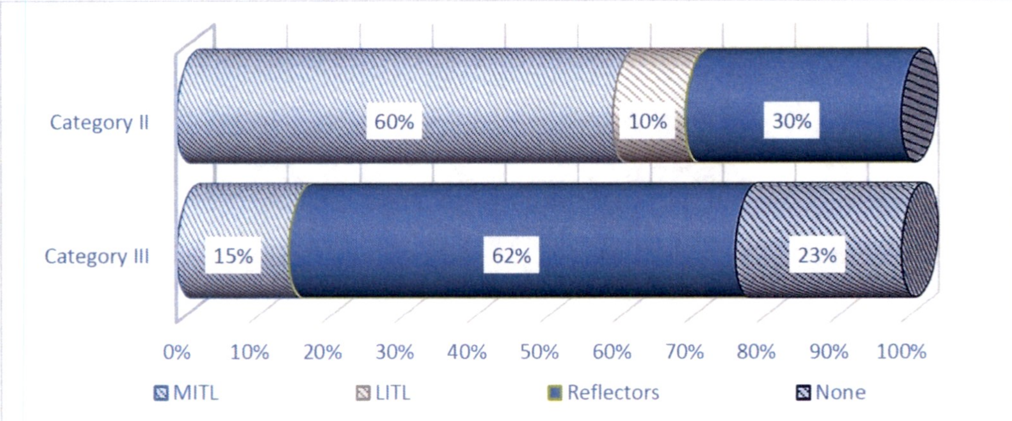


TABLE 5-27: AIRPORTS NOT MEETING TAXIWAY LIGHTING OBJECTIVES

FAA ID	City	Airport	Taxiway Lighting	Improvement Needed to Meet Objective
Category II: MITL/HITL				
BDN	Bend	Bend Municipal Airport	Reflectors	Install MITL/HITL
MMV	McMinnville	McMinnville Municipal Airport	Reflectors	Install MITL/HITL
ONP	Newport	Newport Municipal Airport	Reflectors	Install MITL/HITL
SLE	Salem	Salem McNary Field	LITL	Install MITL/HITL
Category III: MITL				
S03	Ashland	Ashland Municipal Airport-Sumner Parker Field	Reflectors	Install MITL
S05	Bandon	Bandon State Airport	Reflectors	Install MITL
BNO	Burns	Burns Municipal Airport	None	Install MITL
DLS	The Dalles	Columbia Gorge Regional - The Dalles	None	Install MITL
GCD	John Day	Grant County Regional Airport	Reflectors	Install MITL
3S8	Grants Pass	Grants Pass Airport	None	Install MITL
HRI	Hermiston	Hermiston Municipal Airport	Reflectors	Install MITL
LGD	La Grande	La Grande / Union County Airport	Reflectors	Install MITL
LKV	Lakeview	Lake County Airport	Reflectors	Install MITL
ONO	Ontario	Ontario Municipal Airport	Reflectors	Install MITL
TMK	Tillamook	Tillamook Airport	Reflectors	Install MITL
Category IV: LITL/Reflectors				
17S	Newberg	Chehalem Airpark	None	Install LITL/Reflectors
77S	Creswell	Creswell Hobby Field Airport	None	Install LITL/Reflectors
6S2	Florence	Florence Municipal Airport	None	Install LITL/Reflectors

FAA ID	City	Airport	Taxiway Lighting	Improvement Needed to Meet Objective
4S1	Gold Beach	Gold Beach Municipal Airport	None	Install LITL/Reflectors
3S4	Cave Junction	Illinois Valley Airport	None	Install LITL/Reflectors
7S5	Independence	Independence State Airport	None	Install LITL/Reflectors
7S9	Hubbard	Lenhardt Airpark	None	Install LITL/Reflectors
16S	Myrtle Creek	Myrtle Creek Municipal Airport	None	Install LITL/Reflectors
56S	Seaside	Seaside Municipal Airport	None	Install LITL/Reflectors
6K5	Sisters	Sisters Eagle Air Airport	None	Install LITL/Reflectors
2S6	Newberg	Sportsman Airpark	None	Install LITL/Reflectors
S21	Sunriver	Sunriver Airport	None	Install LITL/Reflectors
35S	Wasco	Wasco State Airport	None	Install LITL/Reflectors

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Analysis 2017

5.2.2 General Facilities

Various visual aids provide navigational assistance to aircraft arriving and departing from Oregon's airports. These aids assist pilots with locating an airport and provide important weather information. Additionally, there are terminal area facilities that are desirable to support airfield infrastructure and services that are offered at the airports. The following facilities are important to airports in Oregon meeting system objectives:

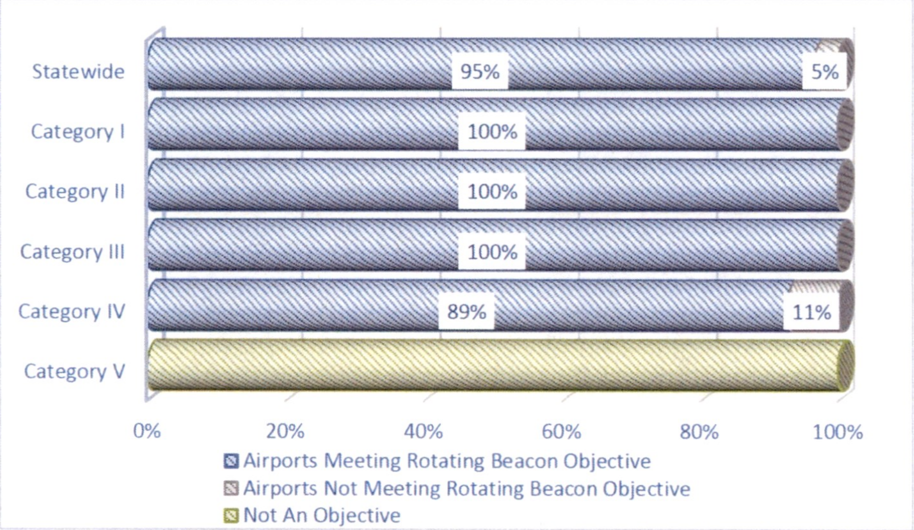
- Rotating Beacon
- Lighted Wind Indicator
- Weather Reporting
- Hangared Aircraft Storage
- Apron Parking/Storage
- Terminal Building
- Auto Parking
- Fencing
- Cargo
- Deicing Facility

Rotating Beacon

A rotating beacon assists pilot in locating an airport during periods of darkness or low visibility. This objective applies to all Category I, Category II, Category III and Category IV airports. **Table 5-39** indicates which airports, by role, (excluding Category V airports) are currently meeting their system objective for a rotating beacon. It is not an objective for Category V airports to have a rotating beacon. As shown in **Figure 5-34**, 95 percent of system airports meet the objective for having a rotating beacon. Only three airports do not meet the rotating beacon objective, and both are in Category IV. The following airports will need beacons installed to meet this objective:

- 7S9, Hubbard, Lenhardt Airpark
- 2S6, Newberg, Sportsman Airpark
- 17S, Chehalem Airpark

FIGURE 5-34: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE ROTATING BEACON OBJECTIVE



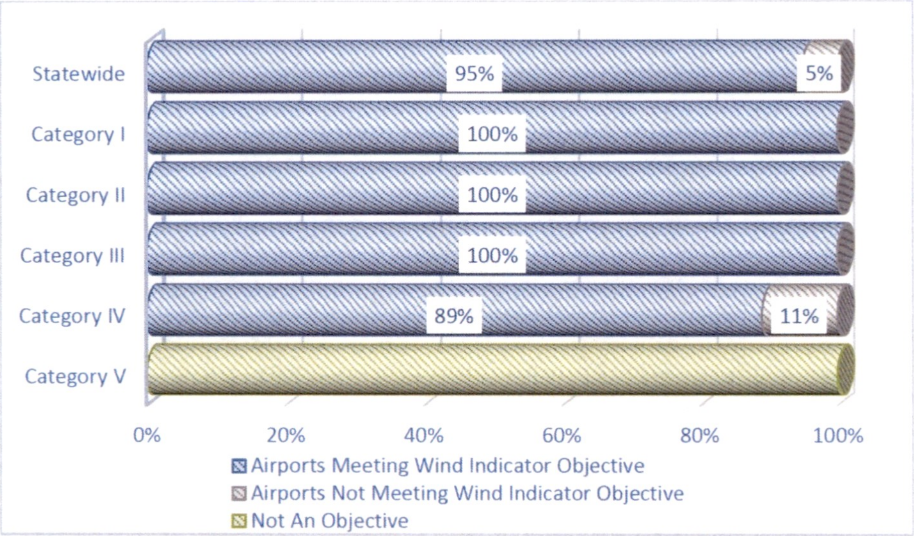
Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

Lighted Wind Indicator

A wind indicator is a visual aid which helps a pilot determine the speed and direction of the wind. When lighted, it provides pilot assistance at night for understanding wind direction during takeoffs and landings. The objective to have a lighted wind indicator applies to all Category I, Category II, Category III, and Category IV airports. A lighted wind indicator is not an objective for Category V airports. **Table 5-39** indicates which airports, by role, excluding Category V, are currently meeting their system objective for a lighted wind indicator. As shown in **Figure 5-35**, 95 percent of system airports meet the objective established for this visual landing aid. Three airports do not meet the lighted wind indicator objective, and all are Category IV airports. These airports may have wind indicators, but they lack lighting. The following airports will need lighted wind indicators installed to have all airports in compliance with this objective:

- 62S, Christmas Valley, Christmas Valley Airport
- 6K5, Sisters, Sisters Eagle Air Airport
- 2S6, Newberg, Sportsman Airpark

FIGURE 5-35: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE WIND INDICATOR OBJECTIVE



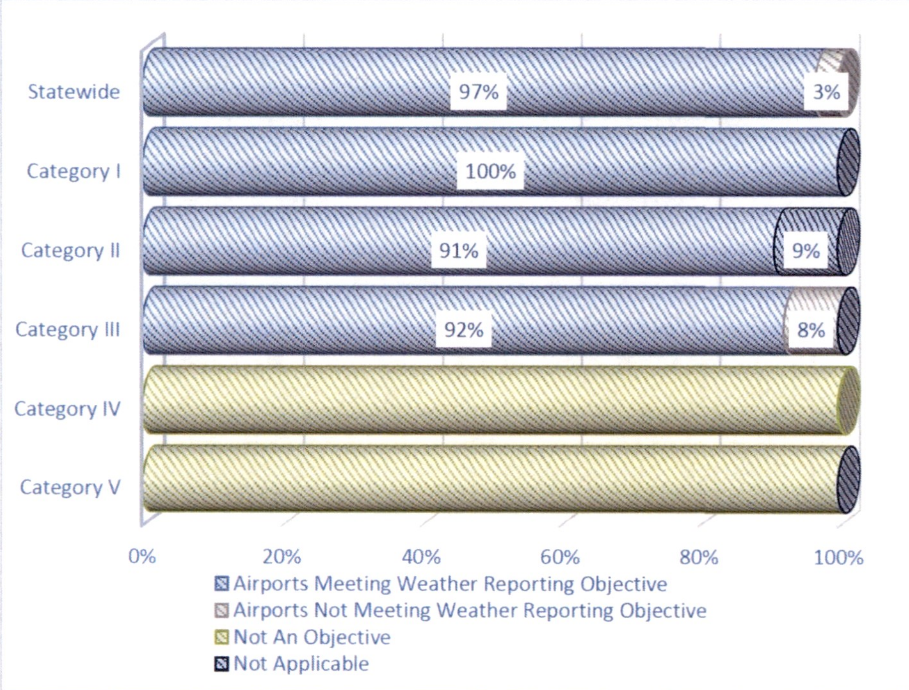
Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

Weather Reporting

On-site weather reporting equipment at an airport improves operational capabilities during periods of inclement or changing weather. By providing on-site weather reporting equipment (Automated Weather Observing System (AWOS), Automated Surface Observing System (ASOS), or an Observer), pilots have information related to weather conditions at their destination airport or alternate airports.

Table 5-39 indicates which airports, by role, currently meet their system objective for on-site weather reporting equipment and which airports do not. While Category IV and Category V airports do not have an objective for on-site weather reporting equipment, it is an objective for airports in Categories I, II, and III. This objective is not applicable to Portland Downtown Heliport. **Figure 5-36** shows that 97 percent of airports (29 of 30 airports) currently have on-site weather reporting capabilities and meet their objective. Bandon State Airport (Category III) is the only airport that does not meet its weather reporting objective.

FIGURE 5-36: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE WEATHER REPORTING OBJECTIVE



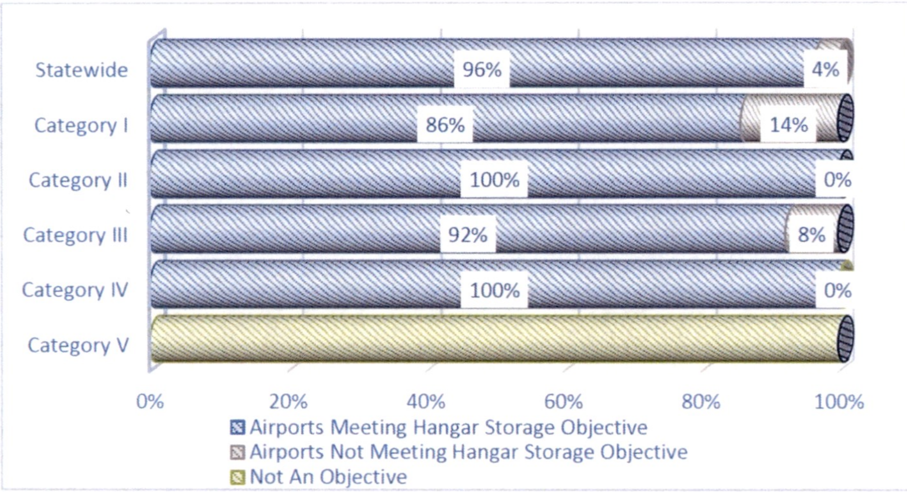
Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

Hangared Aircraft Storage

Demand for hangar space is directly related to local aircraft owner demand, weather conditions, and the type of based aircraft at each airport. Areas with a propensity for severe weather conditions or with coastal salt air climates may have a higher demand for hangar storage facilities. In addition, larger investments for jet and turboprop aircraft also increase the demand for hangar storage.

It is an objective to have all Category I, Category II, Category III, and Category IV airports to have 75 percent of their based aircraft stored in hangars. An analysis of the hangar storage is presented in **Table 5-40**. **Figure 5-37** shows that 96 percent of system airports meet their hangar storage objective. This objective is not applicable to Portland Downtown Heliport and was removed from the calculation. Only two airports fall short of the aircraft storage objective. Ashland Municipal Airport-Sumner Parker Field in Ashland, Oregon indicates they have storage space for 67 percent of based aircraft, while Eastern Oregon Regional Airport at Pendleton meets 50 percent of their demand for aircraft hangar storage.

FIGURE 5-37: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE HANGARED AIRCRAFT STORAGE OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

Apron Parking/Storage

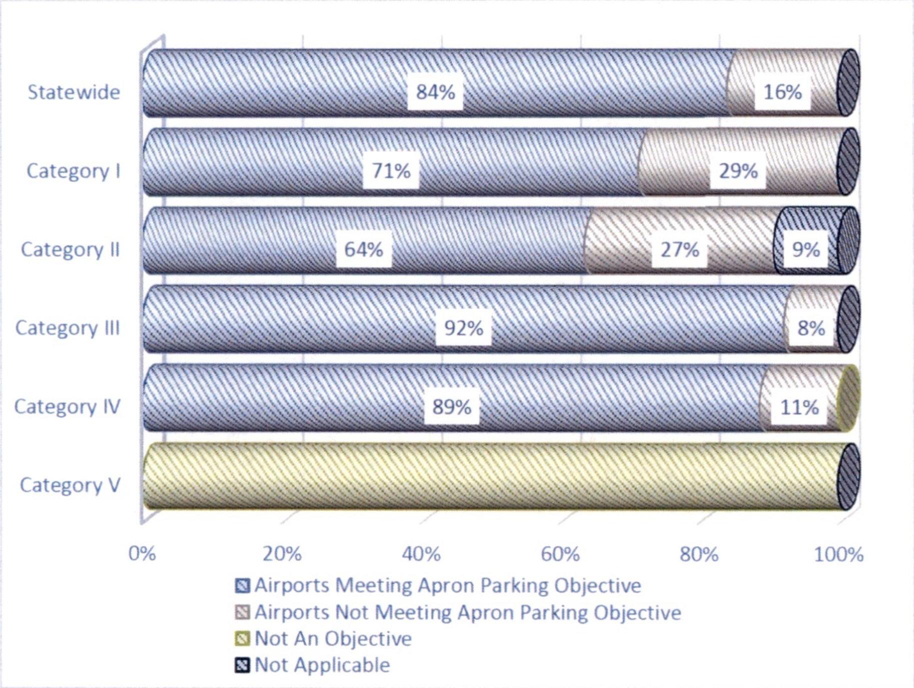
Aprons or aircraft ramps are designated surfaces typically adjacent to terminal buildings, maintenance hangars, air cargo facilities, and aircraft hangars that provide areas for parking aircraft, passenger and cargo loading and unloading, fueling, and servicing aircraft. Apron areas typically vary in size and location based on a variety of factors including: level and nature of demand, type and size of aircraft intended to use the parking area, FAA design standards, and aircraft maneuvering needs.

Paved tie-down/apron areas were calculated for transient aircraft. The following objectives, by category, were established for aircraft tie-down/apron requirements:

- Category I: 75% of daily transient
- Category II: 75% of daily transient
- Category III: 30% of daily transient
- Category IV: 30% of daily transient
- Category V: Not an objective

Airport managers were surveyed to ascertain apron capacity at airports for daily transient aircraft. The apron parking objective analysis is presented in **Table 5-40**. As shown in **Figure 5-38**, 84 percent of system airports meet their apron parking objective for daily transient aircraft. This objective does not apply to Portland Downtown Heliport. **Table 5-28** identifies airports requiring additional apron storage dedicated to transient activity. Airports with transient parking shortfalls may need to add apron space or evaluate current designated parking areas to increase parking efficiency.

FIGURE 5-38: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE DAILY TRANSIENT APRON PARKING OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-28: AIRPORTS NOT MEETING APRON STORAGE OBJECTIVES

FAA ID	City	Airport	Percentage of Daily Transient Apron Parking	Improvement Needed to Meet Objective
Category I: 75% of daily transient				
MFR	Medford	Rogue Valley International -Medford Airport	70%	Provide additional apron parking spaces
OTH	North Bend	Southwest Oregon Regional Airport	10%	Provide additional apron parking spaces
Category II: 75% of daily transient				
UAO	Aurora	Aurora State Airport	0%	Provide apron parking spaces
MMV	McMinnville	McMinnville Municipal Airport	30%	Provide additional apron parking spaces
HIO	Portland	Portland -Hillsboro Airport	5%	Provide additional apron parking spaces
Category III: 30% of daily transient				
TMK	Tillamook	Tillamook Airport	10%	Provide additional apron parking spaces
		Category IV: 30% of daily transient		
17S	Newberg	Chehalem Airpark	3%	Provide additional apron parking spaces
4S2	Hood River	Ken Jernstedt Airfield	0%	Provide apron parking spaces
4S9	Mulino	Mulino State Airport	25%	Provide additional apron parking spaces

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Analysis 2017

Terminal Building

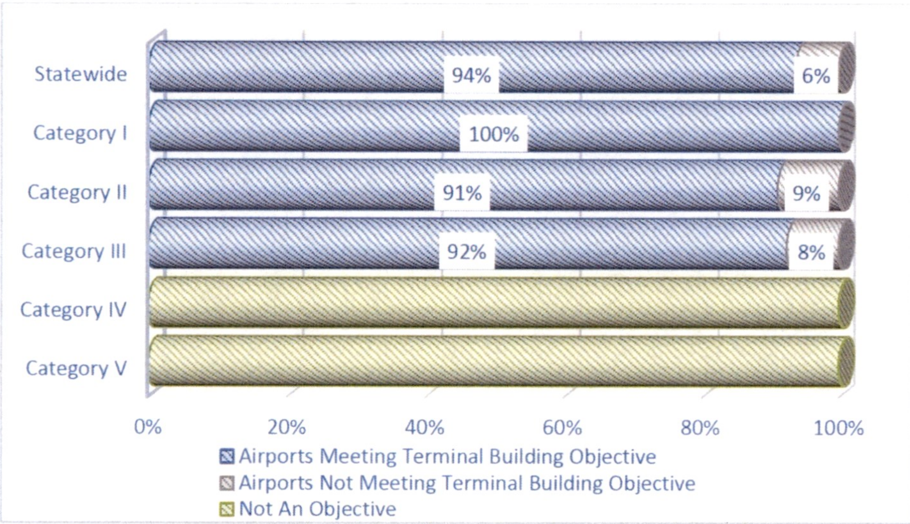
Terminal buildings provide essential services for passengers and pilots, as well as a facility for the transfer of passengers and flight crews to and from the aircraft. Terminal facilities can range in size based upon several factors, the most important being the type of users. Buildings can range from a small pilot room for flight planning and resting, to a large multi-room building that provides services for multiple uses. A terminal building provides the first impression of a community to visitors, so it is important for a terminal building to be welcoming and provide a positive experience for the visitor. Specific areas or uses in a terminal building can include: waiting areas, restrooms, pilots lounge, flight planning area, conference rooms or public meeting rooms, vending, and airport manager offices. The system objectives for a general aviation terminal building by category are as follows:

- Category I: Terminal building
- Category II: Terminal building
- Category III: Small meeting area
- Category IV: Not an objective
- Category V: Not an objective

An analysis of terminal building objectives for each airport Category I, Category II, and Category III is presented in **Table 5-40**. As shown in **Figure 5-39**, 94 percent of system airports meet their applicable objective. Two system airports lack designated general aviation terminal buildings. They are:

- SPB, Scappoose, Scappoose Industrial Airpark
- RBG, Roseburg, Roseburg Regional Airport

FIGURE 5-39: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE TERMINAL BUILDING OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

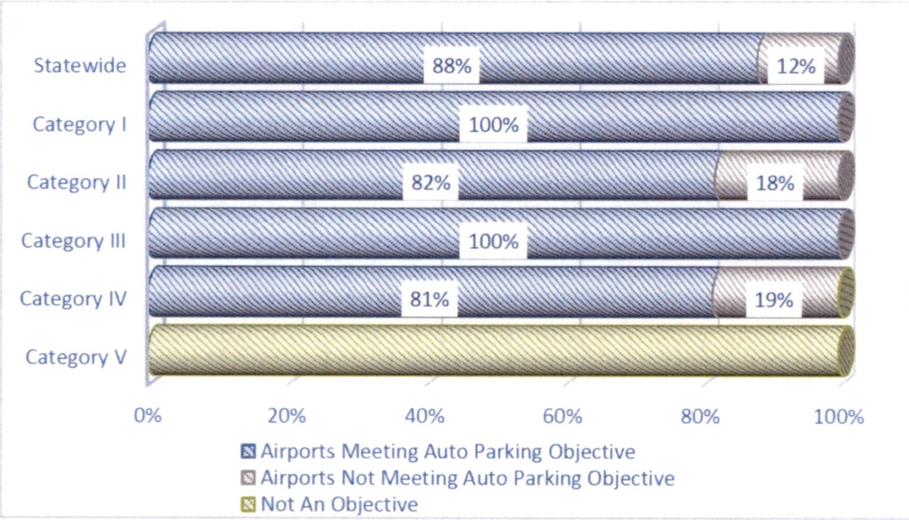
Automobile Parking

It is important to provide adequate auto parking for general aviation employees, airport employees and users, and visitors. The number of auto parking spaces at an airport varies based on demand and airport services. The system objectives for general aviation auto parking objectives are as follows:

- Category I: Moderate
- Category II: Moderate
- Category III: Minimal (tenant/public)
- Category IV: Minimal (tenant/public)
- Category V: Not an objective

An analysis of general aviation auto parking is presented in **Table 5-41**. As shown in **Figure 5-40**, when Category I, II, III, and IV airports are analyzed, 51 of 58 airports (88 percent) meet their respective auto parking objective. Category I and Category III airports currently meet their assigned automobile parking objectives. **Table 5-29** identifies seven airports where automobile parking needs to be increased at Category II and IV airports.

FIGURE 5-40: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE AUTO PARKING OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-29: AIRPORTS NOT MEETING AUTOMOBILE PARKING OBJECTIVES

FAA ID	City	Airport	Tenant Auto Parking Available	Meets Auto Parking Objective	Improvement Needed to Meet Objectives
Category II: Moderate					
MMV	McMinnville	McMinnville Municipal Airport	No	No	Lacks sufficient tenant parking
SPB	Scappoose	Scappoose Industrial Airpark	Yes	No	Lacks sufficient GA terminal parking
Category IV: Minimal (tenant/public)					
M50	Boardman	Boardman Airport	No	No	Provide tenant/public auto parking spaces
62S	Christmas Valley	Christmas Valley Airport	No	No	Provide tenant/public auto parking spaces
3S9	Condon	Condon State Airport - Pauling Field	No	No	Provide tenant/public auto parking spaces
9S9	Lexington	Lexington Airport	No	No	Provide tenant/public auto parking spaces

FAA ID	City	Airport	Tenant Auto Parking Available	Meets Auto Parking Objective	Improvement Needed to Meet Objectives
35S	Wasco	Wasco State Airport	No	No	Provide tenant/public auto parking spaces

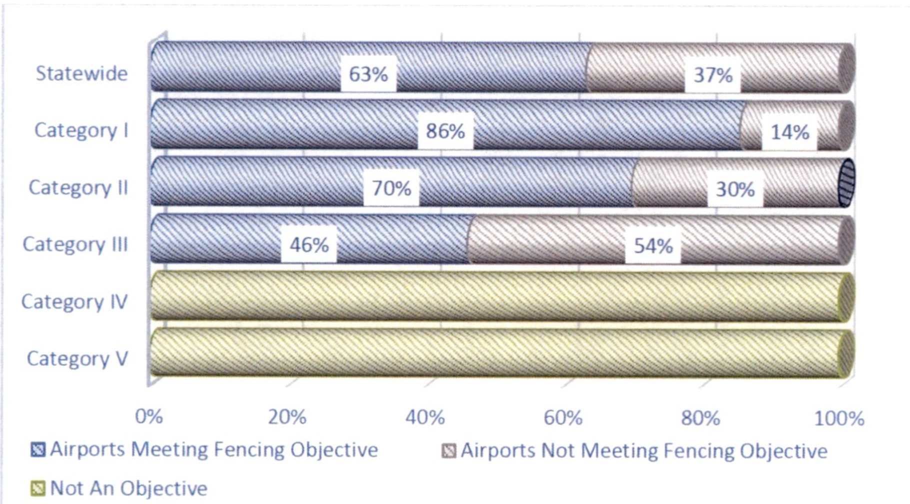
Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

Fencing

Perimeter fencing serves dual roles. It increases safety around the airport by deterring wildlife from gaining access to the airfield causing possible runway incursions. Perimeter chain-linked fencing also provides security to the airfield by deterring the public and unauthorized people from accessing the airfield. The system objectives for fencing are for all Category I and Category II airports is to have full perimeter fencing and controlled access. Agricultural fencing, while helpful in keeping livestock and some wildlife off airport property, does not meet the standards for this objective. The objective for Category III airports is to have their terminal area fenced with controlled access. There is not a fencing objective for Category IV or Category V airports.

Table 5-41 presents information regarding fencing at airports in Category I, Category II, and Category III. As shown in **Figure 5-41**, 63 percent of the applicable airports statewide meet the fencing objective. This objective is not applicable to Portland Downtown Heliport. Categories I, II, and III have airports that do not meet their fencing objective. **Table 5-30** identifies specific airports needing fencing and/or secured access and the extent of improvements.

FIGURE 5-41: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE FENCING OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-30: AIRPORTS NOT MEETING FENCING AND SECURED ACCESS OBJECTIVES

FAA ID	City	Airport	Meets Fencing Objective	Improvement Needed to Meet Objectives
Category I: Perimeter; controlled access				
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	No	Provide full perimeter fencing and controlled access
Category II: Perimeter; controlled access				

FAA ID	City	Airport	Meets Fencing Objective	Improvement Needed to Meet Objectives
BDN	Bend	Bend Municipal Airport	No	Provide full perimeter fencing and controlled access
CVO	Corvallis	Corvallis Municipal Airport	No	Provide full perimeter fencing and controlled access
MMV	McMinnville	McMinnville Municipal Airport	No	Provide full perimeter fencing and controlled access
Category III: Terminal area; controlled access				
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	No	Provide controlled access
BKE	Baker City	Baker City Municipal Airport	No	Provide terminal area fencing and controlled access
S05	Bandon	Bandon State Airport	No	Provide controlled access
DLS	The Dalles	Columbia Gorge Regional - The Dalles	No	Provide controlled access
LGD	La Grande	La Grande / Union County Airport	No	Provide terminal area fencing and controlled access
LKV	Lakeview	Lake County Airport	No	Provide controlled access
ONO	Ontario	Ontario Municipal Airport	No	Provide controlled access

Source: Airport Management Survey, Century West, Jviation

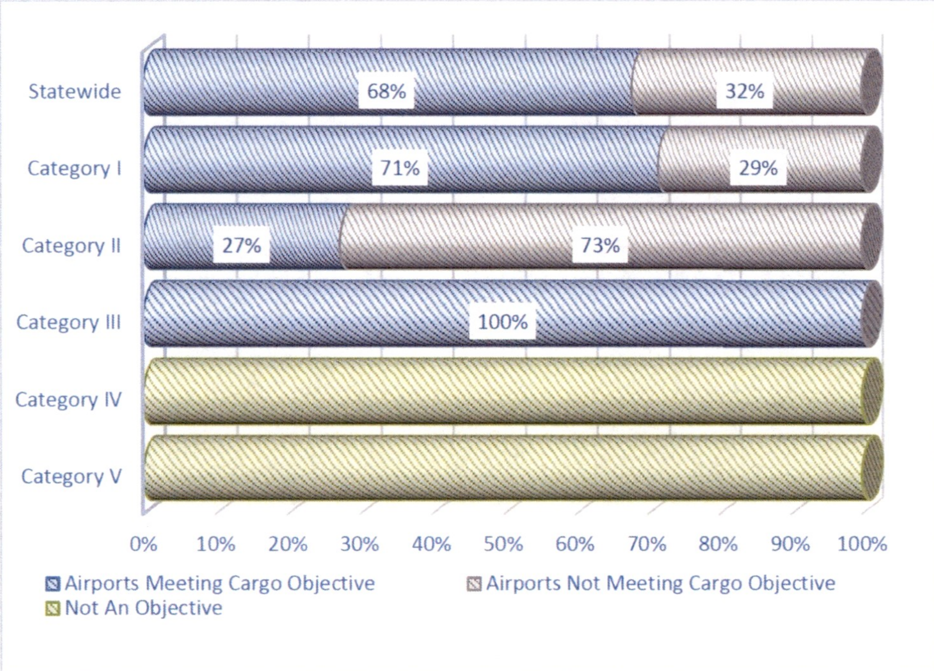
Air Cargo

Air cargo consists of property or freight that is transported in either passenger or cargo aircraft. The facilities needed to support air cargo activity vary significantly but typically include dedicated buildings and aprons to accommodate the movement of cargo between air and ground transportation. The system objectives for air cargo facilities are as follows:

- Category I: Small handling facility with apron
- Category II: Designated apron area
- Category III: Space on existing apron
- Category IV: Not an objective
- Category V: Not an objective

The cargo objective for airports in Category I, Category II, and Category III is presented in **Table 5-41**. As shown in **Figure 5-42**, 68 percent of system airports meet their cargo objectives. **Table 5-31** identifies airports needing improvement to meet their system plan objective for cargo facilities. Two airports in Category I do not have designated cargo facilities which include a building for handling cargo and dedicated ramp area for cargo aircraft. Eight (8) airports in Category II do not have designated cargo apron area; this can be remedied by determining which portion of existing apron area is best suited for cargo aircraft and marking off an area of pavement with a yellow painted boundary as well as noted on the airport layout plan. If apron space is limited it may be worthwhile for the airport to determine the feasibility of paving additional cargo apron space.

FIGURE 5-42: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE CARGO OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-31: AIRPORTS NOT MEETING CARGO FACILITY OBJECTIVES

FAA ID	City	Airport	Meets Cargo Objective	Improvement Needed to Meet Objective
Category I: Small handling facility with apron				
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	No	Provide small handling facility
RDM	Redmond	Redmond Municipal Airport-Roberts Field	No	Provide small handling facility
Category II: Designated apron area				
AST	Astoria	Port of Astoria Regional Airport	No	Provide dedicated apron area
UAO	Aurora	Aurora State Airport	No	Provide dedicated apron area
BDN	Bend	Bend Municipal Airport	No	Provide dedicated apron area
MMV	McMinnville	McMinnville Municipal Airport	No	Provide dedicated apron area
HIO	Portland	Portland-Hillsboro Airport	No	Provide dedicated apron area
TTD	Portland	Portland-Troutdale Airport	No	Provide dedicated apron area
61J	Portland	Portland Downtown Heliport	No	Provide dedicated apron area
SPB	Scappoose	Scappoose Industrial Airpark	No	Provide dedicated apron area

Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

Aircraft Deicing Facility

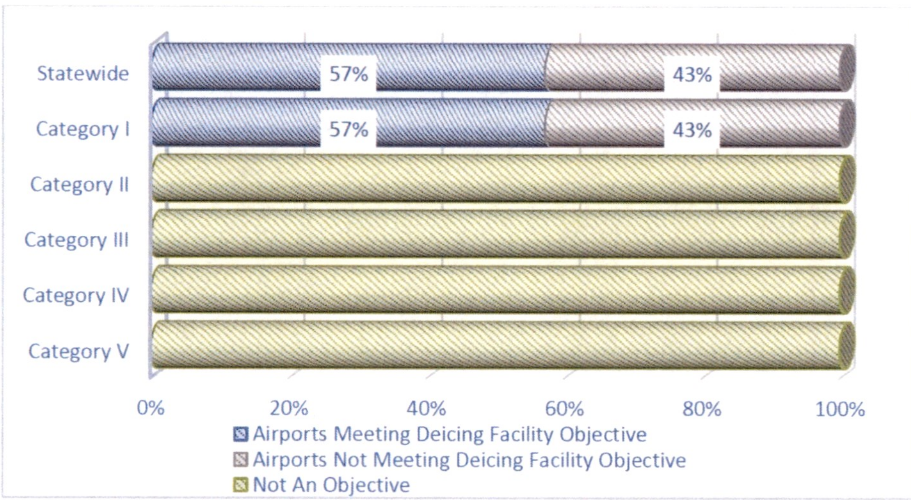
The safe and efficient operation of aircraft during winter months are of primary importance. Therefore, deicing an aircraft when there is freezing precipitation is crucial to airline operations. FAA Advisory Circular 150/530-14C, *Design of Aircraft Deicing Facilities* provides recommendations and standards for the design of aircraft deicing facilities. It is only recommended that Category I airports have a dedicated deicing facility which is designed to apply deicing fluids to aircraft and recover them to meet environmental standards. The remaining categories of OAP v6.0 airports (II, III, IV and V) do not have an objective for providing deicing facilities.

The deicing objective analysis for Category I airports is presented in **Table 5-41**. It is not an objective for the airports in other roles to provide a deicing facility. As shown in **Figure 5-43**, 57 percent of Category I airports meet their deicing facility objectives. The three Category I airports that do not meet their deicing pad objective include:

- PDT, Pendleton, Eastern Oregon Regional Airport at Pendleton
- LMT, Klamath Falls, Crater Lake-Klamath Regional Airport
- OTH, North Bend, Southwest Oregon Regional Airport

While three Category I airports lack dedicated deicing pads, aircraft deicing activity does take place at these facilities near the terminal building or on the aircraft apron. An airport lacking a deicing pad does not limit an air carrier's ability to provide deicing fluid to aircraft.

FIGURE 5-43: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE DEICING FACILITY OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

5.2.3 Fuel

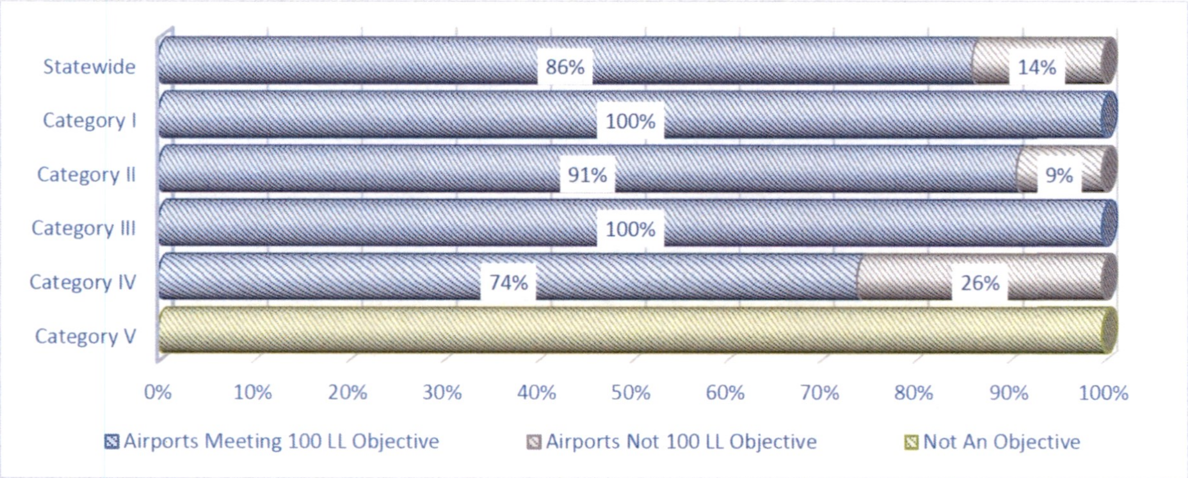
Fuel and fueling services are important for airports in Oregon. Piston-engine aircraft use 100LL high-octane fuel (AvGas), while jet aircraft and turboprops use kerosene-based Jet A fuel. **Table 5-42** summarizes the type of fuel available Category I, Category II, Category III, and Category IV airports. Objectives established for fuel are:

- Category I – 100LL (24-hour self-service) and Jet A
- Category II – 100LL (24-hour self-service) and Jet A
- Category III – 100LL (24-hour self-service) and Jet A

- Category IV – 100LL
- Category V – Not an objective

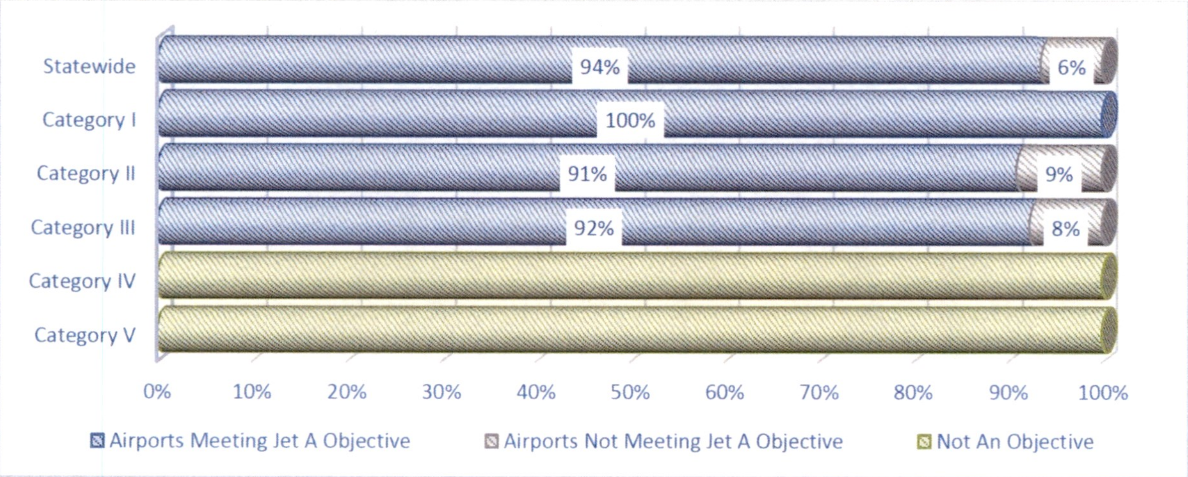
As shown in **Figure 5-44** and **Figure 5-45**, 86 percent of system airports meet their objectives for 100 LL fuel services and 94 percent of system airports meet their objectives for Jet A fuel services. Table 5-32 identifies airports not meeting their respective fuel service objectives and the improvements needed to meet the applicable objectives.

FIGURE 5-44: PERCENTAGE OF AIRPORTS BY ROLE THAT MEET THE 100 LL AVGAS FUEL OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, and Marr Arnold Planning

FIGURE 5-45: PERCENTAGE OF AIRPORTS BY ROLE THAT MEET THE JET A FUEL OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, and Marr Arnold Planning

TABLE 5-32: AIRPORTS NOT MEETING FUEL OBJECTIVES

FAA ID	City	Airport	Meets Jet A Fuel Objective	Meets 100 LL Fuel Objective	Improvement Needed to Meet Objectives
Category II: 100 LL (24-hour self-service) and Jet A					
61J	Portland	Portland Downtown Heliport	No	NA	Provide Jet A
Category III: 100 LL (24-hour self-service) and Jet A					
S05	Bandon	Bandon State Airport	No	Yes	Provide Jet A
HRI	Hermiston	Hermiston Municipal Airport	Yes	No	Provide 24-hour self-service for 100 LL
LGD	La Grande	La Grande / Union County Airport	Yes	No	Provide 24-hour self-service for 100 LL
Category IV: 100 LL					
M50	Boardman	Boardman Airport	NA	No	Provide 100 LL
62S	Christmas Valley	Christmas Valley Airport	NA	No	Provide 100 LL
3S9	Condon	Condon State Airport - Pauling Field	NA	No	Provide 100 LL
3S4	Cave Junction	Illinois Valley Airport	NA	No	Provide 100 LL
56S	Seaside	Seaside Municipal Airport	NA	No	Provide 100 LL
S45	Gleneden Beach	Siletz Bay State Airport	NA	No	Provide 100 LL
35S	Wasco	Wasco State Airport	NA	No	Provide 100 LL

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017.

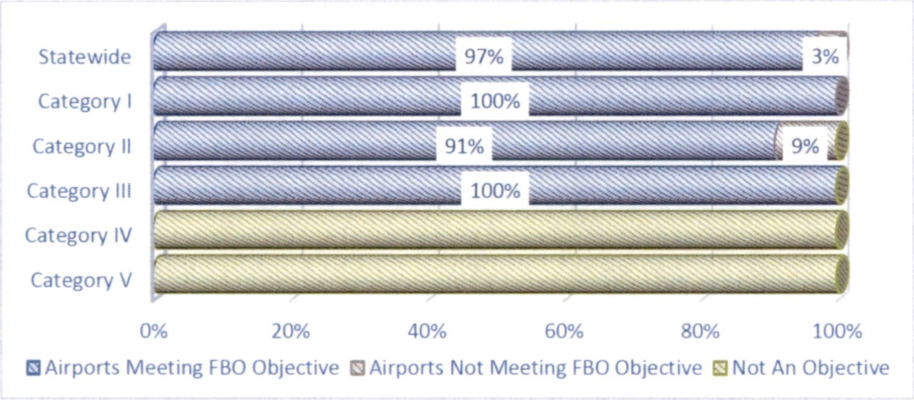
5.2.4 Fixed Base Operator (FBO)

Fixed base operators (FBOs) provide a variety of aviation services to both based and transient users. There are various types of FBOs, with some providing full-service and others providing more basic/limited services. Services provided by FBOs typically vary based on the volume of activity that the airport accommodates. Services offered by FBOs can include fuel, tie down or hangar storage, flight instruction, aircraft maintenance, charter service, ground transportation, aircraft towing, pilot's lounge, and/or conference rooms.

It is an objective for all Category I, Category II, and Category III airports to have a full-service FBO operating during normal business hours. There is not an objective for Category IV or Category V airports to have an FBO. FBO services are market driven and demand for these services is finite and may not be great enough to sustain FBO services at all airports assigned an FBO objective.

The FBO objective analysis is presented in **Table 5-42**. As shown in **Figure 5-46**, 97 percent of system airports meet their FBO objective. Only one facility, Portland Downtown Heliport (61J), lacks an FBO.

FIGURE 5-46: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE FBO OBJECTIVE

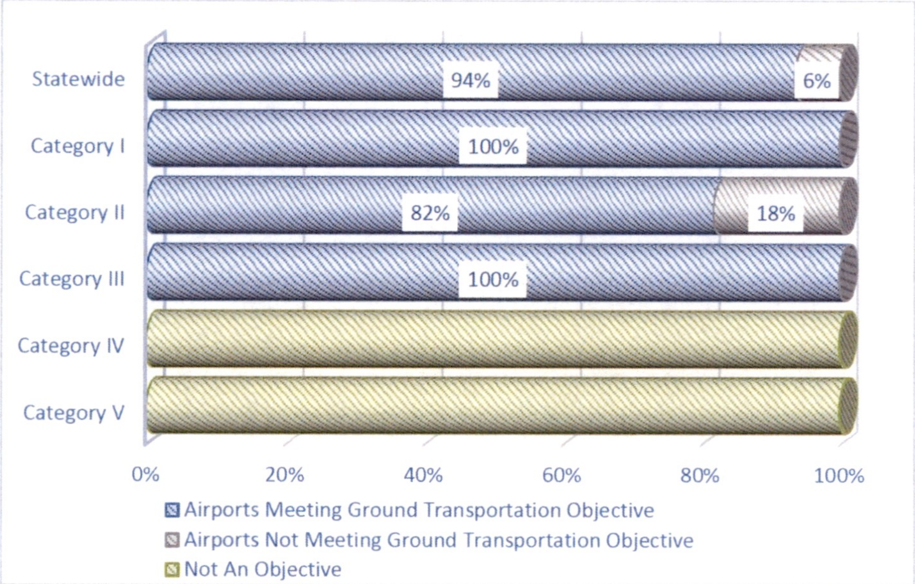


Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

5.2.5 Ground Transportation

Having ground transportation services allows visitors to reach their final destination, once they arrive at the airport. An objective was established for Category I airports to have on-site rental cars, taxi service, or another mode of ground transportation available. An objective was developed for Category II and Category III airports to have off-site rental car access, taxi service, a courtesy car, or another mode of ground transportation. There are no objectives for ground transportation for Category IV or Category V airports. **Table 5-42** presents the ground transportation services analysis for Category I, Category II, and Category III airports. As shown in **Figure 5-47**, 30 percent of airports meet their ground transportation objective. When only Category I, II, and III airports are considered, 29 of 31 or 94 percent of airports meet the ground transportation objectives.

FIGURE 5-47: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE GROUND TRANSPORTATION OBJECTIVE

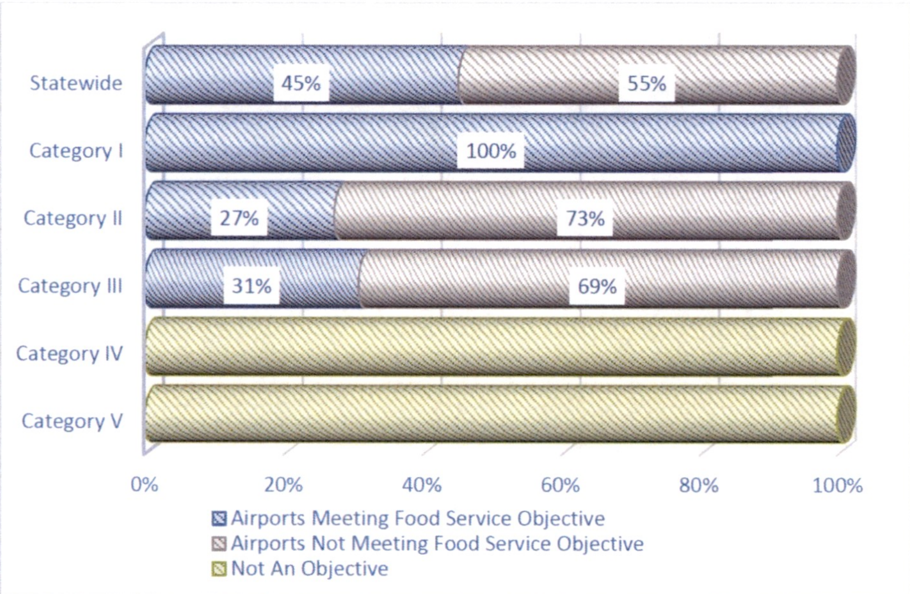


Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

5.2.6 Food Service

An objective has been established for all Category I airports to provide a coffee shop/deli and cold foods available for sale at their airport. The objective for Category II and Category III airports is to provide food vending options. An objective was not established for Category IV or Category V airports to provide food services. **Table 5-42** presents which Category I, Category II, and Category III airports have food service available. As shown in **Figure 5-48**, 45 percent of airports meet their food service objective. Food service objectives for vending are market driven, and airport sponsors may have little control over introducing vending services to an airport terminal without there being sufficient demand.

FIGURE 5-48: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE FOOD SERVICE OBJECTIVE

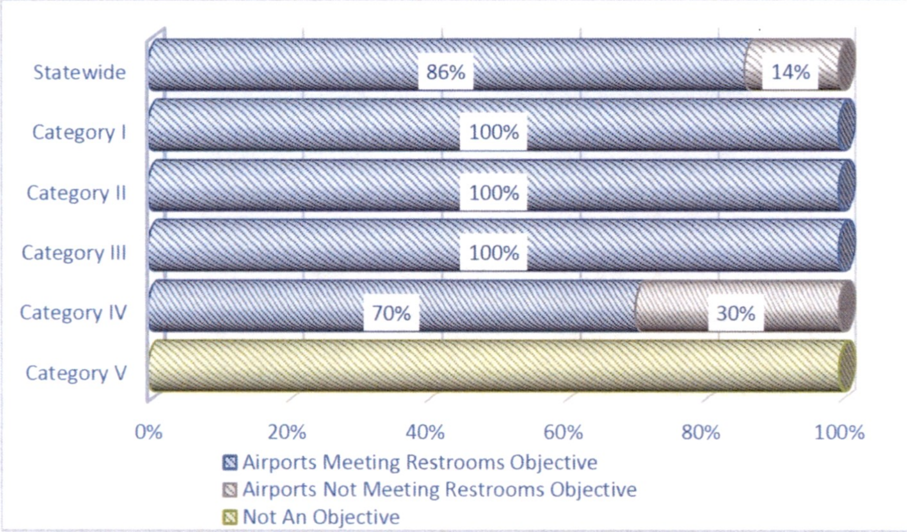


Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

5.2.7 Restrooms

As part of the Oregon Aviation Plan v6.0 inventory effort, airports were asked whether public-use restrooms are available. It is an objective for all Category I, Category II, Category III, and Category IV airports to have a restroom available. There is not a restroom objective for Category V airports. Inventory results indicate that 86 percent (**Figure 5-49**) of all applicable system airports have restrooms available. **Table 5-42** presents which airports reported having restrooms available for airports in all roles, excluding Category V. Only Category IV has airports lacking in restroom facilities; these airports are reflected in **Table 5-33**.

FIGURE 5-49: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE RESTROOM OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-33: AIRPORTS NOT MEETING RESTROOM OBJECTIVES

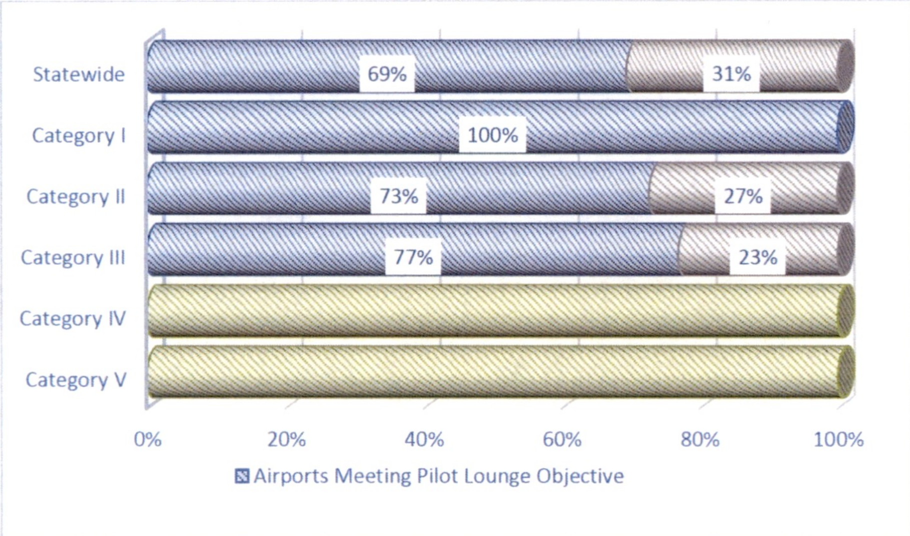
FAA ID	City	OAP v6.0 Category	Airport
M50	Boardman	IV	Boardman Airport
3S9	Condon	IV	Condon State Airport - Pauling Field
3S4	Cave Junction	IV	Illinois Valley Airport
7S9	Hubbard	IV	Lenhardt Airpark
56S	Seaside	IV	Seaside Municipal Airport
S45	Gleneden Beach	IV	Siletz Bay State Airport
6K5	Sisters	IV	Sisters Eagle Air Airport
35S	Wasco	IV	Wasco State Airport

Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

5.2.8 Pilot's Lounge

Pilot's lounges are often located in the terminal building, administrative building, or an FBO's facility. It is an area for pilots to complete flight plans, check weather, and rest while waiting for passengers. It is an objective for all Category I, Category II, and Category III airports to have a designated pilot's lounge with a weather reporting station. There is not an objective for Category IV or Category V airports. Inventory results indicate that 69 percent (**Figure 5-50**) of all system airports have pilots lounges available. **Table 5-42** presents which Category I, Category II, and Category III airports reported having a pilot's lounge. Eighty-one percent of the applicable OAP v6.0 airports (25 of 31) meet the pilot's lounge objective.

FIGURE 5-50: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE PILOT'S LOUNGE OBJECTIVE

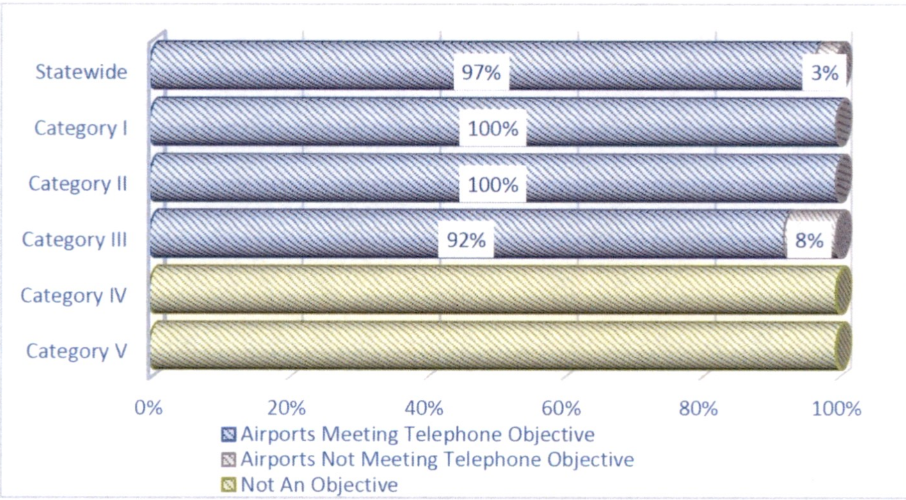


Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

5.2.9 Telephone

As part of the Oregon Aviation Plan v6.0 inventory effort, airports were asked whether a public telephone was available. It is an objective for all Category I, Category II, Category III, and Category IV airports to have a telephone available. There is not an objective for Category IV or V airports to provide telephone availability. Inventory results indicate that 97 percent (**Figure 5-51**) of all system airports meet their telephone objective (Roseburg Regional Airport lacks a public telephone). **Table 5-42** presents which Category I, Category II, and Category III airports reported having a telephone available.

FIGURE 5-51: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE TELEPHONE OBJECTIVE



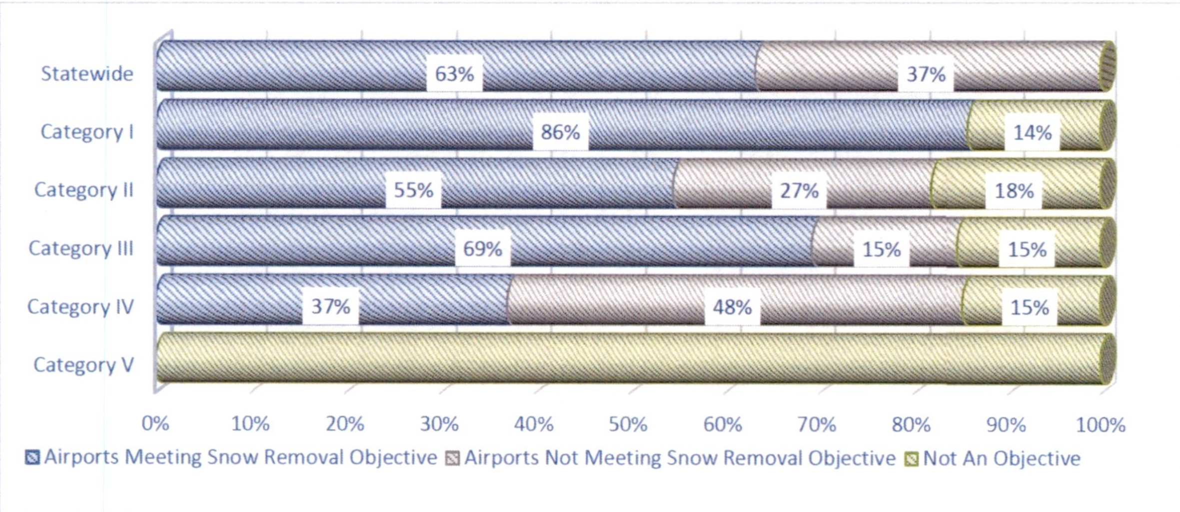
Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

5.2.10 Snow Removal

The ability to provide snow removal at some airports in Oregon is a critical component to being operational during periods of inclement weather in the winter. It is an objective for all Category I, Category II, Category III, and Category IV airports to provide snow removal. There is not an objective for Category V airports as well as nine Category I to IV airports along the Oregon Coast to have snow removal capabilities. Most airports along the Oregon Coast seldom experience snow accumulation.

Inventory results indicate that 63 percent (**Figure 5-52**) of all system airports meet their objective. **Table 5-42** presents which Category I, Category II, Category III, and Category IV airports reported providing snow removal. When Category V and airports along the Oregon Coast are excluded, 30 of 49 of the airports meet their applicable objective to provide snow removal. **Table 5-34** identifies airports lacking snow removal equipment. Some airports may choose not to purchase snow removal equipment since they have access to municipal- or county-owned snow removal vehicles.

FIGURE 5-52: PERCENTAGE OF AIRPORTS BY ROLE MEETING THE SNOW REMOVAL EQUIPMENT OBJECTIVE



Source: Airport Management Survey, Century West, Jviation, Marr Arnold Planning

TABLE 5-34: AIRPORTS NOT MEETING THE SNOW REMOVAL EQUIPMENT OBJECTIVE

FAA ID	City	Airport
Category II: Snow removal equipment		
MMV	McMinnville	McMinnville Municipal Airport
TTD	Portland	Portland -Troutdale Airport
61J	Portland	Portland Downtown Heliport
Category III: Snow removal equipment		
S05	Bandon	Bandon State Airport
3S8	Grants Pass	Grants Pass Airport
RBG	Roseburg	Roseburg Regional Airport
Category IV: Snow removal equipment		

FAA ID	City	Airport
S12	Albany	Albany Municipal Airport
M50	Boardman	Boardman Airport
17S	Newberg	Chehalem Airpark
3S9	Condon	Condon State Airport - Pauling Field
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field
77S	Creswell	Creswell Hobby Field Airport
3S4	Cave Junction	Illinois Valley Airport
7S5	Independence	Independence State Airport
S30	Lebanon	Lebanon State Airport
7S9	Hubbard	Lenhardt Airpark
4S9	Mulino	Mulino State Airport
16S	Myrtle Creek	Myrtle Creek Municipal Airport
35S	Wasco	Wasco State Airport

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017

5.3 Summary

This section examined the current ability of Oregon's airports to meet facility and service objectives established as part of the Oregon Aviation Plan v6.0. **Figure 5-53**, **Figure 5-54**, **Figure 5-55**, **Figure 5-56**, and **Figure 5-57** provide a summary of compliance with the objectives by airport role. It is possible that, based on local need, airports in Oregon may exceed their objectives. Similarly, it is also possible that based on specific airport constraints, that some airports may not be able to meet all the objectives associated with their particular airport role.

Airport-specific projects identified in this analysis must still be confirmed/supported by bottom-up planning as part of an airport master plan. As airports in Oregon update their individual airport master plans, projects identified in this analysis should be incorporated into those plans. Some projects identified in the Oregon Aviation Plan v6.0, especially those that involve airfield improvement, will require detailed environmental review and additional feasibility analysis prior to their implementation. Facility and service objectives are established to help airports in Oregon better plan to fulfill their designated role in the state airport system.

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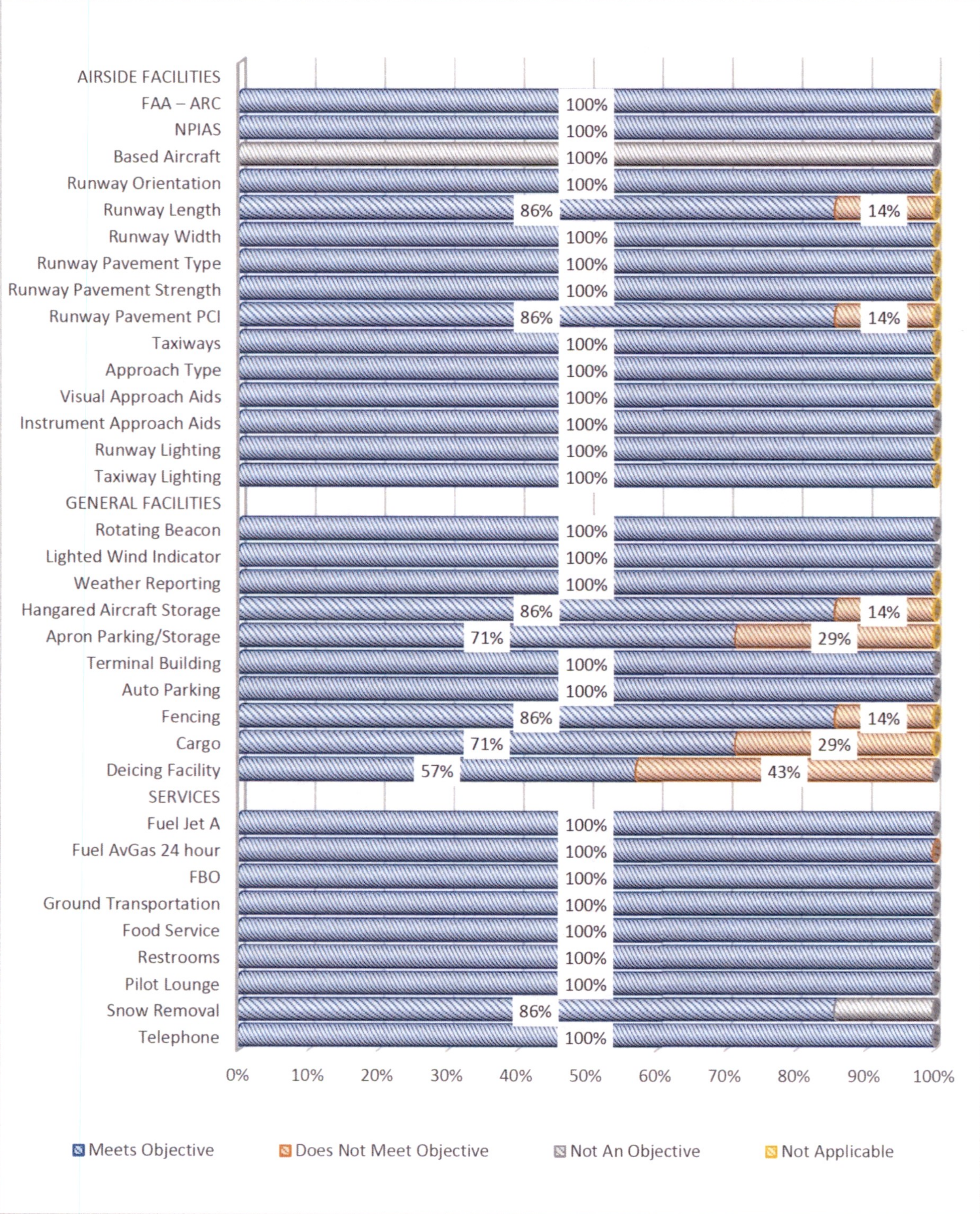
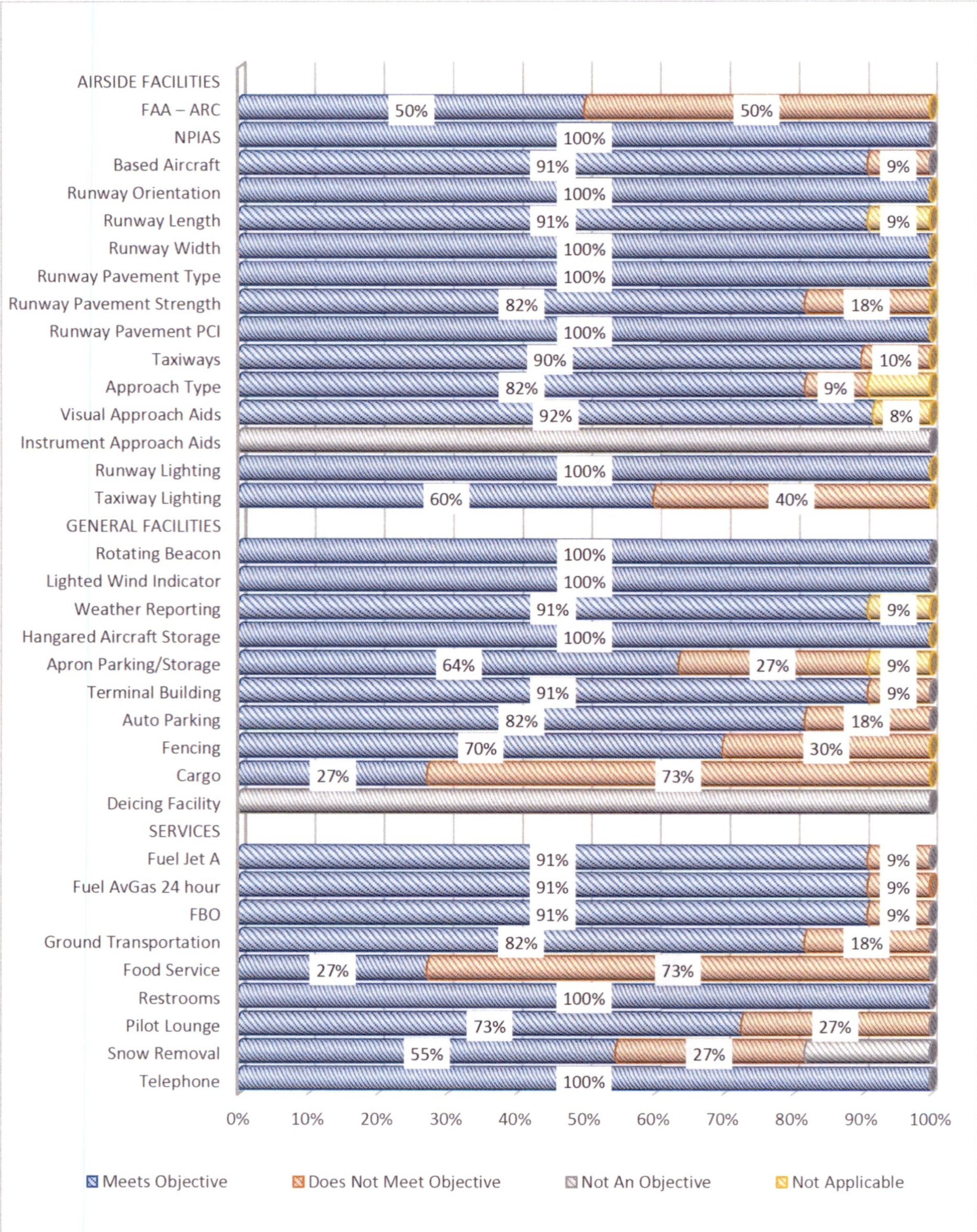
FIGURE 5-53: CATEGORY I AIRPORTS COMPLIANCE SUMMARY



Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017

FIGURE 5-54: CATEGORY II AIRPORTS COMPLIANCE SUMMARY



Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017

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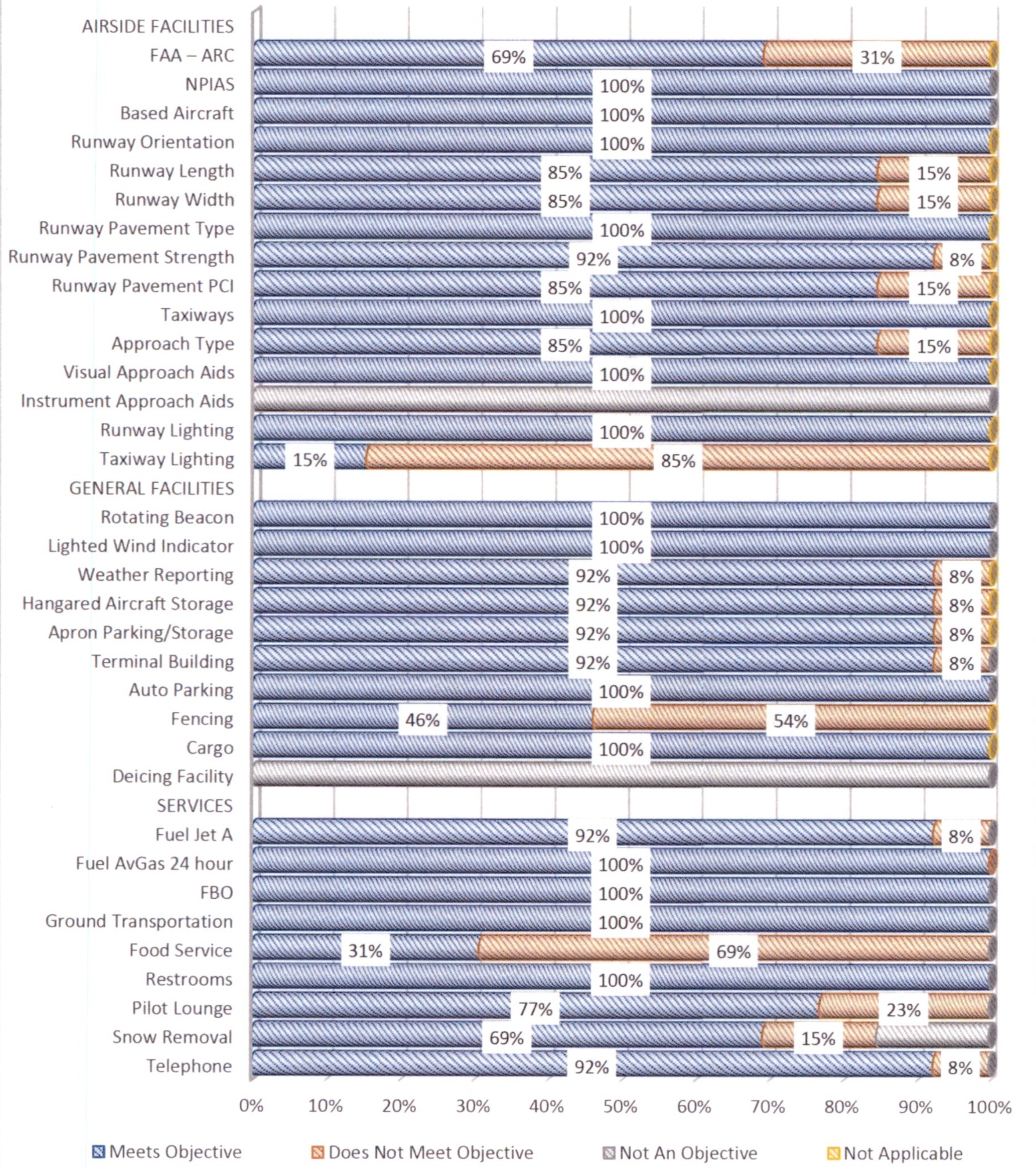
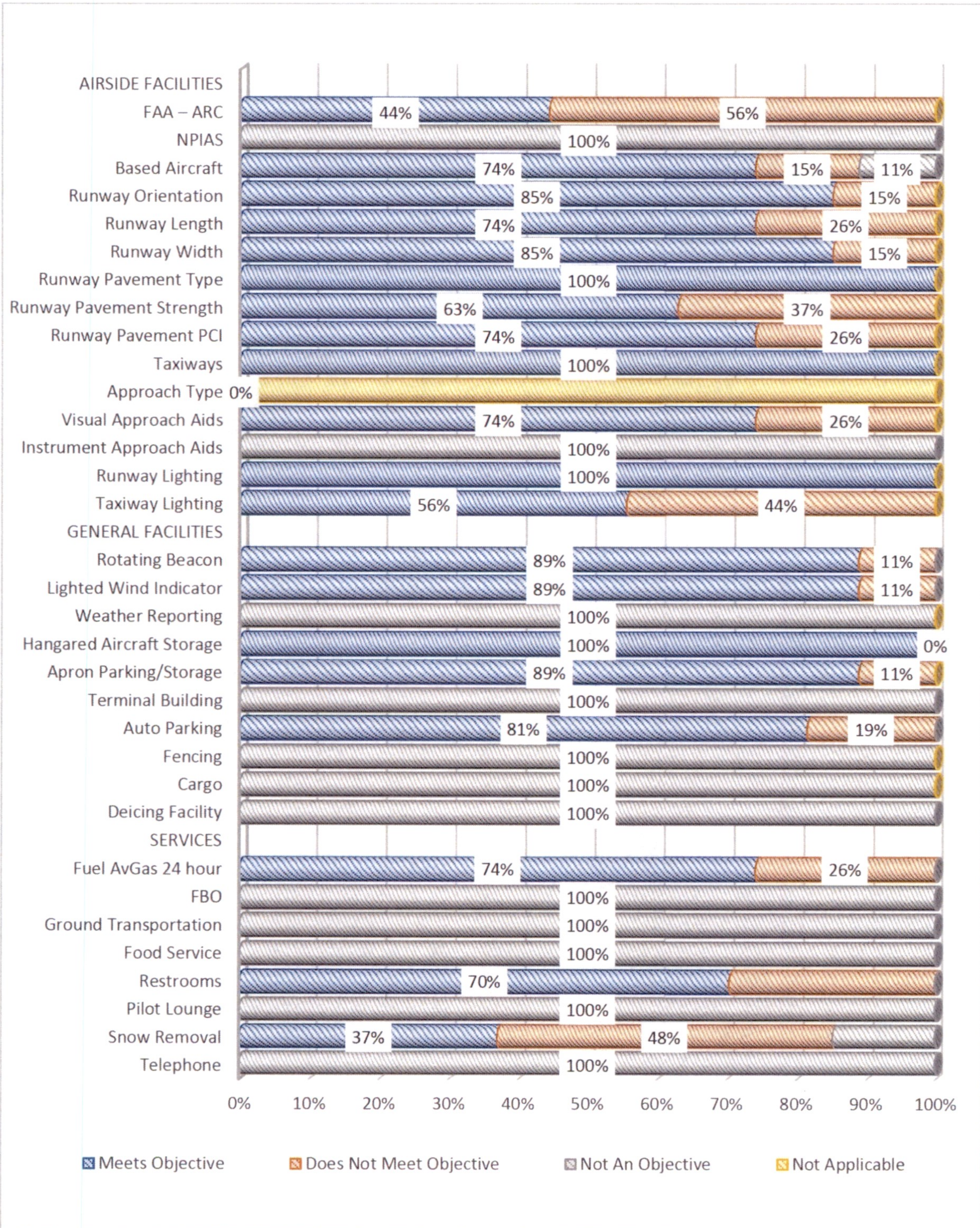
FIGURE 5-55: CATEGORY III AIRPORTS COMPLIANCE SUMMARY



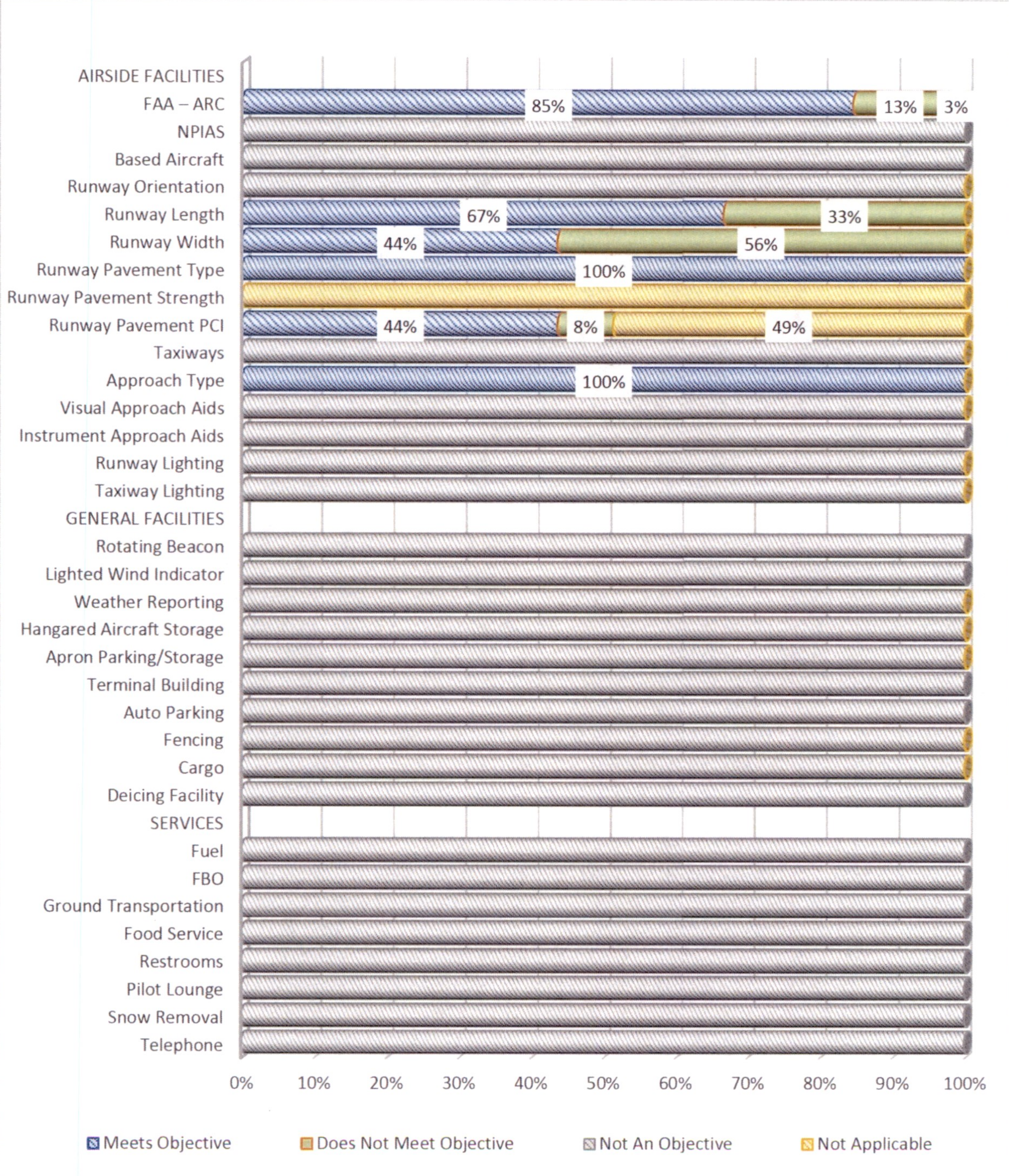
Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017

FIGURE 5-56: CATEGORY IV AIRPORTS COMPLIANCE SUMMARY



Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017

FIGURE 5-57: CATEGORY V AIRPORTS COMPLIANCE SUMMARY



Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017

TABLE 5-35: FACILITIES 1

FAA ID	City	Airport	Included in the NPIAS	Meets NPIAS Objective	Total Based Aircraft	Meets Based Aircraft Objective	Has 95% Wind Coverage	Meets Wind Coverage Objective	Primary Runway Length	Meets Primary Runway Length Objective
Category I: ARC C-II										
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	Yes	Yes	62	N/A	Yes	Yes	6,301	Yes
EUG	Eugene	Eugene Airport -Mahlon Sweet Field	Yes	Yes	185	N/A	Yes	Yes	8,009	Yes
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport	Yes	Yes	84	N/A	Yes	Yes	10,301	Yes
PDX	Portland	Portland International Airport	Yes	Yes	78	N/A	Yes	Yes	11,000	Yes
RDM	Redmond	Redmond Municipal Airport -Roberts Field	Yes	Yes	121	N/A	Yes	Yes	7,038	Yes
MFR	Medford	Rogue Valley International -Medford Airport	Yes	Yes	275	N/A	Yes	Yes	8,800	Yes
OTH	North Bend	Southwest Oregon Regional Airport	Yes	Yes	56	N/A	Yes	Yes	5,980	No
Category II: ARC C-II										
AST	Astoria	Port of Astoria Regional Airport	Yes	Yes	36	Yes	Yes	Yes	5,794	Yes
UAO	Aurora	Aurora State Airport	Yes	Yes	346	Yes	Yes	Yes	5,004	Yes
BDN	Bend	Bend Municipal Airport	Yes	Yes	241	Yes	Yes	Yes	5,200	Yes
CVO	Corvallis	Corvallis Municipal Airport	Yes	Yes	134	Yes	Yes	Yes	5,900	Yes
MMV	McMinnville	McMinnville Municipal Airport	Yes	Yes	109	Yes	Yes	Yes	5,420	Yes
ONP	Newport	Newport Municipal Airport	Yes	Yes	24	Yes	Yes	Yes	5,398	Yes
HIO	Portland	Portland -Hillsboro Airport	Yes	Yes	296	Yes	Yes	Yes	6,600	Yes
TTD	Portland	Portland -Troutdale Airport	Yes	Yes	41	Yes	Yes	Yes	5,399	Yes
61J	Portland	Portland Downtown Heliport	Yes	Yes	0	No	N/A	N/A	N/A	N/A
SLE	Salem	Salem McNary Field	Yes	Yes	136	Yes	Yes	Yes	5,811	Yes
SPB	Scappoose	Scappoose Industrial Airpark	Yes	Yes	119	Yes	Yes	Yes	5,100	Yes
Category III: ARC B-II										
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	Yes	Yes	58	Yes	Yes	Yes	3,603	No

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FAA ID	City	Airport	Included in the NPIAS	Meets NPIAS Objective	Total Based Aircraft	Meets Based Aircraft Objective	Has 95% Wind Coverage	Meets Wind Coverage Objective	Primary Runway Length	Meets Primary Runway Length Objective
BKE	Baker City	Baker City Municipal Airport	Yes	Yes	24	Yes	Yes	Yes	5,085	Yes
S05	Bandon	Bandon State Airport	Yes	Yes	25	Yes	Yes	Yes	3,601	No
BNO	Burns	Burns Municipal Airport	Yes	Yes	14	Yes	Yes	Yes	5,100	Yes
DLS	The Dalles	Columbia Gorge Regional - The Dalles	Yes	Yes	62	Yes	Yes	Yes	5,097	Yes
GCD	John Day	Grant County Regional Airport	Yes	Yes	13	Yes	Yes	Yes	5,220	Yes
3S8	Grants Pass	Grants Pass Airport	Yes	Yes	189	Yes	Yes	Yes	4,001	Yes
HRI	Hermiston	Hermiston Municipal Airport	Yes	Yes	39	Yes	Yes	Yes	4,500	Yes
LGD	La Grande	La Grande / Union County Airport	Yes	Yes	65	Yes	Yes	Yes	6,260	Yes
LKV	Lakeview	Lake County Airport	Yes	Yes	16	Yes	Yes	Yes	5,318	Yes
ONO	Ontario	Ontario Municipal Airport	Yes	Yes	38	Yes	Yes	Yes	5,011	Yes
RBG	Roseburg	Roseburg Regional Airport	Yes	Yes	105	Yes	Yes	Yes	5,003	Yes
TMK	Tillamook	Tillamook Airport	Yes	Yes	16	Yes	Yes	Yes	5,001	Yes
Category IV: ARC B-I										
S12	Albany	Albany Municipal Airport	Yes	N/A	92	Yes	Yes	Yes	3,004	Yes
M50	Boardman	Boardman Airport	Yes	N/A	0	No	Yes	Yes	4,200	Yes
BOK	Brookings	Brookings Airport	Yes	N/A	18	Yes	Yes	Yes	2,900	No
17S	Newberg	Chehalem Airpark	No	N/A	31	N/A	Yes	Yes	2,285	No
62S	Christmas Valley	Christmas Valley Airport	Yes	N/A	0	No	Yes	Yes	5,200	Yes
3S9	Condon	Condon State Airport - Pauling Field	Yes	N/A	11	Yes	No	No	3,500	Yes
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field	Yes	N/A	26	Yes	Yes	Yes	3,188	Yes
77S	Creswell	Creswell Hobby Field Airport	Yes	N/A	102	Yes	Yes	Yes	3,101	Yes
6S2	Florence	Florence Municipal Airport	Yes	N/A	22	Yes	Yes	Yes	3,000	Yes

FAA ID	City	Airport	Included in the NPIAS	Meets NPIAS Objective	Total Based Aircraft	Meets Based Aircraft Objective	Has 95% Wind Coverage	Meets Wind Coverage Objective	Primary Runway Length	Meets Primary Runway Length Objective
4S1	Gold Beach	Gold Beach Municipal Airport	Yes	N/A	10	Yes	Yes	Yes	3,237	Yes
3S4	Cave Junction	Illinois Valley Airport	Yes	N/A	35	Yes	Yes	Yes	4,807	Yes
7S5	Independence	Independence State Airport	Yes	N/A	191	Yes	Yes	Yes	3,142	Yes
JSY	Joseph	Joseph State Airport	Yes	N/A	14	Yes	Yes	Yes	5,200	Yes
4S2	Hood River	Ken Jernstedt Airfield	Yes	N/A	197	Yes	Yes	Yes	3,040	Yes
S30	Lebanon	Lebanon State Airport	Yes	N/A	49	Yes	No	No	2,877	No
7S9	Hubbard	Lenhardt Airpark	No	N/A	113	N/A	Yes	Yes	2,956	No
9S9	Lexington	Lexington Airport	Yes	N/A	12	Yes	Yes	Yes	4,156	Yes
S33	Madras	Madras Municipal Airport	Yes	N/A	67	Yes	Yes	Yes	5,090	Yes
4S9	Mulino	Mulino State Airport	Yes	N/A	63	Yes	Yes	Yes	3,425	Yes
16S	Myrtle Creek	Myrtle Creek Municipal Airport	Yes	N/A	12	Yes	Yes	Yes	2,600	No
S39	Prineville	Prineville Airport	Yes	N/A	117	Yes	Yes	Yes	5,751	Yes
56S	Seaside	Seaside Municipal Airport	Yes	N/A	3	No	No	No	2,211	No
S45	Gleneden Beach	Siletz Bay State Airport	Yes	N/A	13	Yes	Yes	Yes	3,297	Yes
6K5	Sisters	Sisters Eagle Air Airport	No	N/A	17	N/A	Yes	Yes	3,560	Yes
2S6	Newberg	Sportsman Airpark	Yes	N/A	44	Yes	Yes	Yes	2,755	No
S21	Sunriver	Sunriver Airport	Yes	N/A	28	Yes	Yes	Yes	5,461	Yes
35S	Wasco	Wasco State Airport	Yes	N/A	4	No	No	No	3,450	Yes
Category V: ARC A-I										
R03	Alkali Lake	Alkali Lake State	No	N/A	0	N/A	N/A	N/A	6,100	Yes
1S8	Arlington	Arlington Municipal	No	N/A	1	N/A	N/A	N/A	5,000	Yes
2S2	Beaver Marsh	Beaver Marsh	No	N/A	0	N/A	N/A	N/A	4,500	Yes

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FAA ID	City	Airport	Included in the NPIAS	Meets NPIAS Objective	Total Based Aircraft	Meets Based Aircraft Objective	Has 95% Wind Coverage	Meets Wind Coverage Objective	Primary Runway Length	Meets Primary Runway Length Objective
5S6	Sixes	Cape Blanco State Airport	No	N/A	7	N/A	N/A	N/A	5,100	Yes
CZK	Cascade Locks	Cascade Locks State Airport	No	N/A	0	N/A	N/A	N/A	1,800	No
2S7	Chiloquin	Chiloquin State Airport	Yes	N/A	6	N/A	N/A	N/A	3,749	Yes
S48	Sandy	Country Squire Airpark	No	N/A	27	N/A	N/A	N/A	3,095	Yes
5S2	Crescent Lake	Crescent Lake State Airport	No	N/A	0	N/A	N/A	N/A	3,900	Yes
6S4	Gates	Davis Field	No	N/A	5	N/A	N/A	N/A	1,940	No
8S4	Enterprise	Enterprise Municipal	No	N/A	31	N/A	N/A	N/A	2,850	Yes
5S1	Roseburg	George Felt	No	N/A	17	N/A	N/A	N/A	2,300	No
5S5	Culver	Lake Billy Chinook	No	N/A	10	N/A	N/A	N/A	2,500	Yes
1O0	Florence	Lake Woahink SPB	No	N/A	0	N/A	N/A	N/A	9,000	Yes
9S3	Lakeside	Lakeside Municipal Airport	No	N/A	6	N/A	N/A	N/A	2,150	No
4S7	Malin	Malin	No	N/A	4	N/A	N/A	N/A	2,800	Yes
26U	McDermitt	McDermitt State Airport	Yes	N/A	1	N/A	N/A	N/A	5,900	Yes
00S	McKenzie Bridge	McKenzie Bridge State	No	N/A	0	N/A	N/A	N/A	2,600	Yes
25U	Imnaha	Memaloose USFS	No	N/A	0	N/A	N/A	N/A	3,300	Yes
S49	Vale	Miller Memorial Airpark	No	N/A	4	N/A	N/A	N/A	3,872	Yes
12S	Monument	Monument Municipal	No	N/A	0	N/A	N/A	N/A	2,140	No
3S7	Manzanita	Nehalem Bay State Airport	No	N/A	0	N/A	N/A	N/A	2,350	No
5S0	Oakridge	Oakridge State	No	N/A	5	N/A	N/A	N/A	3,610	Yes
28U	Owyhee Reservoir	Owyhee Reservoir State	No	N/A	0	N/A	N/A	N/A	1,840	No
PFC	Pacific City	Pacific City State Airport	No	N/A	5	N/A	N/A	N/A	1,875	No
22S	Paisley	Paisley	No	N/A	0	N/A	N/A	N/A	4,300	Yes

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FAA ID	City	Airport	Included in the NPIAS	Meets NPIAS Objective	Total Based Aircraft	Meets Based Aircraft Objective	Has 95% Wind Coverage	Meets Wind Coverage Objective	Primary Runway Length	Meets Primary Runway Length Objective
24S	Pinehurst	Pinehurst State Airport	No	N/A	7	N/A	N/A	N/A	2,800	Yes
6S6	Powers	Powers Hayes Field	No	N/A	1	N/A	N/A	N/A	2,500	Yes
64S	Prospect	Prospect State Airport	No	N/A	1	N/A	N/A	N/A	4,000	Yes
REO	Rome	Rome State	No	N/A	0	N/A	N/A	N/A	6,000	Yes
03S	Sandy	Sandy River	No	N/A	20	N/A	N/A	N/A	2,115	No
8S3	Santiam Junction	Santiam Junction State	No	N/A	0	N/A	N/A	N/A	2,800	Yes
45S	Silver Lake	Silver Lake USFS	No	N/A	0	N/A	N/A	N/A	3,000	Yes
4S4	Cornelius	Skyport	No	N/A	3	N/A	N/A	N/A	2,000	No
7S3	Hillsboro	Stark's Twin Oaks	No	N/A	113	N/A	N/A	N/A	2,465	No
3S6	Clearwater	Toketee State	No	N/A	0	N/A	N/A	N/A	5,350	Yes
5S4	Toledo	Toledo State Airport	No	N/A	9	N/A	N/A	N/A	1,750	No
5S9	Estacada	Valley View	No	N/A	33	N/A	N/A	N/A	3,780	Yes
05S	Vernonia	Vernonia Municipal	No	N/A	5	N/A	N/A	N/A	2,940	Yes
R33	Waldport	Wakonda Beach State	No	N/A	3	N/A	N/A	N/A	2,000	No

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017, N/A = not an objective

TABLE 5-36: FACILITIES 2

FAA ID	City	Airport	Primary Runway Width	Meets Primary Runway Width Objective	Primary Runway Pavement Type	Meets Primary Runway Pavement Type Objective	Primary Runway Pavement Strength (Single Wheel)	Meets Primary Runway Pavement Strength Objective
Category I: ARC C-II								
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	150	Yes	Bituminous	Yes	115,000	Yes

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FAA ID	City	Airport	Primary Runway Width	Meets Primary Runway Width Objective	Primary Runway Pavement Type	Meets Primary Runway Pavement Type Objective	Primary Runway Pavement Strength (Single Wheel)	Meets Primary Runway Pavement Strength Objective
EUG	Eugene	Eugene Airport -Mahlon Sweet Field	150	Yes	Bituminous	Yes	75,000	Yes
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport	150	Yes	Bituminous / Concrete	Yes	110,000	Yes
PDX	Portland	Portland International Airport	150	Yes	Concrete	Yes	200,000	Yes
RDM	Redmond	Redmond Municipal Airport - Roberts Field	150	Yes	Bituminous	Yes	68,000	Yes
MFR	Medford	Rogue Valley International - Medford Airport	150	Yes	Bituminous	Yes	75,000	Yes
OTH	North Bend	Southwest Oregon Regional Airport	150	Yes	Bituminous	Yes	106,000	Yes
Category II: ARC C-II								
AST	Astoria	Port of Astoria Regional Airport	100	Yes	Bituminous	Yes	60,000	Yes
UAO	Aurora	Aurora State Airport	100	Yes	Bituminous	Yes	30,000	Yes
BDN	Bend	Bend Municipal Airport	75	Yes	Bituminous	Yes	30,000	Yes
CVO	Corvallis	Corvallis Municipal Airport	150	Yes	Bituminous	Yes	35,000	Yes
MMV	McMinnville	McMinnville Municipal Airport	150	Yes	Bituminous	Yes	40,000	Yes
ONP	Newport	Newport Municipal Airport	100	Yes	Bituminous	Yes	75,000	Yes
HIO	Portland	Portland -Hillsboro Airport	150	Yes	Bituminous	Yes	50,000	Yes
TTD	Portland	Portland -Troutdale Airport	150	Yes	Bituminous	Yes	19,000	No
61J	Portland	Portland Downtown Heliport	N/A	Yes	Concrete	Yes	25,000	No
SLE	Salem	Salem McNary Field	150	Yes	Bituminous	Yes	100,000	Yes
SPB	Scappoose	Scappoose Industrial Airpark	100	Yes	Bituminous	Yes	30,000	Yes
Category III: ARC B-II								
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	75	Yes	Bituminous	Yes	15,000	Yes
BKE	Baker City	Baker City Municipal Airport	100	Yes	Bituminous	Yes	50,000	Yes

FAA ID	City	Airport	Primary Runway Width	Meets Primary Runway Width Objective	Primary Runway Pavement Type	Meets Primary Runway Pavement Type Objective	Primary Runway Pavement Strength (Single Wheel)	Meets Primary Runway Pavement Strength Objective
S05	Bandon	Bandon State Airport	60	No	Bituminous	Yes	12,000	No
BNO	Burns	Burns Municipal Airport	75	Yes	Concrete	Yes	30,000	Yes
DLS	The Dalles	Columbia Gorge Regional - The Dalles	100	Yes	Bituminous	Yes	60,000	Yes
GCD	John Day	Grant County Regional Airport	60	No	Bituminous	Yes	12,500	Yes
3S8	Grants Pass	Grants Pass Airport	75	Yes	Bituminous	Yes	19,000	Yes
HRI	Hermiston	Hermiston Municipal Airport	75	Yes	Bituminous	Yes	22,000	Yes
LGD	La Grande	La Grande / Union County Airport	100	Yes	Bituminous	Yes	65,000	Yes
LKV	Lakeview	Lake County Airport	100	Yes	Bituminous	Yes	74,000	Yes
ONO	Ontario	Ontario Municipal Airport	100	Yes	Bituminous	Yes	30,000	Yes
RBG	Roseburg	Roseburg Regional Airport	100	Yes	Bituminous	Yes	42,000	Yes
TMK	Tillamook	Tillamook Airport	75	Yes	Bituminous	Yes	60,000	Yes
Category IV: ARC B-I								
S12	Albany	Albany Municipal Airport	75	Yes	Bituminous	Yes	30,000	Yes
M50	Boardman	Boardman Airport	100	Yes	Bituminous	Yes	30,000	Yes
BOK	Brookings	Brookings Airport	60	Yes	Bituminous	Yes	11,000	No
17S	Newberg	Chehalem Airpark	40	No	Bituminous	Yes	Not available	No
62S	Christmas Valley	Christmas Valley Airport	60	Yes	Bituminous	Yes	12,000	No
3S9	Condon	Condon State Airport - Pauling Field	60	Yes	Concrete	Yes	12,000	No
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field	60	Yes	Bituminous	Yes	15,000	Yes
77S	Creswell	Creswell Hobby Field Airport	60	Yes	Bituminous	Yes	12,000	No
6S2	Florence	Florence Municipal Airport	60	Yes	Bituminous	Yes	12,500	Yes
4S1	Gold Beach	Gold Beach Municipal Airport	75	Yes	Bituminous	Yes	12,500	Yes

OREGON AVIATION PLAN

FAA ID	City	Airport	Primary Runway Width	Meets Primary Runway Width Objective	Primary Runway Pavement Type	Meets Primary Runway Pavement Type Objective	Primary Runway Pavement Strength (Single Wheel)	Meets Primary Runway Pavement Strength Objective
3S4	Cave Junction	Illinois Valley Airport	75	Yes	Bituminous	Yes	20,000	Yes
7S5	Independence	Independence State Airport	60	Yes	Bituminous	Yes	12,500	Yes
JSY	Joseph	Joseph State Airport	60	Yes	Bituminous	Yes	12,500	Yes
4S2	Hood River	Ken Jernstedt Airfield	75	Yes	Bituminous	Yes	23,000	Yes
S30	Lebanon	Lebanon State Airport	60	Yes	Bituminous	Yes	12,500	Yes
7S9	Hubbard	Lenhardt Airpark	45	No	Bituminous	Yes	Not available	No
9S9	Lexington	Lexington Airport	75	Yes	Bituminous	Yes	12,500	Yes
S33	Madras	Madras Municipal Airport	75	Yes	Bituminous	Yes	12,500	Yes
4S9	Mulino	Mulino State Airport	100	Yes	Bituminous	Yes	12,500	Yes
16S	Myrtle Creek	Myrtle Creek Municipal Airport	60	Yes	Bituminous	Yes	12,000	No
S39	Prineville	Prineville Airport	75	Yes	Bituminous	Yes	30,000	Yes
56S	Seaside	Seaside Municipal Airport	50	No	Bituminous	Yes	12,000	No
S45	Gleneden Beach	Siletz Bay State Airport	60	Yes	Bituminous	Yes	11,000	No
6K5	Sisters	Sisters Eagle Air Airport	60	Yes	Bituminous	Yes	4,000	No
2S6	Newberg	Sportsman Airpark	50	No	Bituminous	Yes	30,000	Yes
S21	Sunriver	Sunriver Airport	75	Yes	Bituminous	Yes	30,000	Yes
35S	Wasco	Wasco State Airport	60	Yes	Bituminous	Yes	12,500	Yes
Category V: ARC A-I								
R03	Alkali Lake	Alkali Lake State	150	Yes	Gravel	Yes	N/A	N/A
1S8	Arlington	Arlington Municipal	50	No	Turf	Yes	N/A	N/A
2S2	Beaver Marsh	Beaver Marsh	60	Yes	Dirt	Yes	N/A	N/A
5S6	Sixes	Cape Blanco State Airport	150	Yes	Bituminous	Yes	115,000	N/A
CZK	Cascade Locks	Cascade Locks State Airport	30	No	Bituminous	Yes	4,000	N/A

FAA ID	City	Airport	Primary Runway Width	Meets Primary Runway Width Objective	Primary Runway Pavement Type	Meets Primary Runway Pavement Type Objective	Primary Runway Pavement Strength (Single Wheel)	Meets Primary Runway Pavement Strength Objective
2S7	Chiloquin	Chiloquin State Airport	60	Yes	Bituminous	Yes	10,000	N/A
S48	Sandy	Country Squire Airpark	32	No	Bituminous	Yes	7,000	N/A
5S2	Crescent Lake	Crescent Lake State Airport	30	No	Bituminous	Yes	Not available	N/A
6S4	Gates	Davis Field	50	No	Turf	Yes	N/A	N/A
8S4	Enterprise	Enterprise Municipal	50	No	Bituminous	Yes	7,000	N/A
5S1	Roseburg	George Felt	100	Yes	Turf	Yes	N/A	N/A
5S5	Culver	Lake Billy Chinook	32	No	Bituminous	Yes	Not available	N/A
1O0	Florence	Lake Woahink SPB	1000	Yes	Water	0	N/A	N/A
9S3	Lakeside	Lakeside Municipal Airport	100	Yes	Turf	Yes	N/A	N/A
4S7	Malin	Malin	30	No	Bituminous	Yes	Not available	N/A
26U	McDermitt	McDermitt State Airport	60	Yes	Bituminous	Yes	12,500	N/A
00S	McKenzie Bridge	McKenzie Bridge State	90	Yes	Turf	Yes	N/A	N/A
25U	Imnaha	Memaloose USFS	120	Yes	Dirt	Yes	N/A	N/A
S49	Vale	Miller Memorial Airpark	65	Yes	Bituminous	Yes	Not available	N/A
12S	Monument	Monument Municipal	25	No	Bituminous	Yes	Not available	N/A
3S7	Manzanita	Nehalem Bay State Airport	50	No	Bituminous	Yes	Not available	N/A
5S0	Oakridge	Oakridge State	47	No	Bituminous	Yes	Not available	N/A
28U	Owyhee Reservoir	Owyhee Reservoir State	30	No	Dirt	Yes	N/A	N/A
PFC	Pacific City	Pacific City State Airport	30	No	Bituminous	Yes	7,000	N/A
22S	Paisley	Paisley	60	Yes	Bituminous	Yes	Not available	N/A
24S	Pinehurst	Pinehurst State Airport	30	No	Bituminous	Yes	Not available	N/A
6S6	Powers	Powers Hayes Field	60	Yes	Turf	Yes	N/A	N/A

FAA ID	City	Airport	Primary Runway Width	Meets Primary Runway Width Objective	Primary Runway Pavement Type	Meets Primary Runway Pavement Type Objective	Primary Runway Pavement Strength (Single Wheel)	Meets Primary Runway Pavement Strength Objective
64S	Prospect	Prospect State Airport	50	No	Bituminous	Yes	Not available	N/A
REO	Rome	Rome State	150	Yes	Gravel	Yes	N/A	N/A
03S	Sandy	Sandy River	100	Yes	Turf	Yes	N/A	N/A
8S3	Santiam Junction	Santiam Junction State	150	Yes	Gravel	Yes	N/A	N/A
45S	Silver Lake	Silver Lake USFS	55	No	Gravel	Yes	N/A	N/A
4S4	Cornelius	Skyport	45	No	Turf	Yes	N/A	N/A
7S3	Hillsboro	Stark's Twin Oaks	48	No	Bituminous	Yes	Not available	N/A
3S6	Clearwater	Toketee State	60	Yes	Turf	Yes	N/A	N/A
5S4	Toledo	Toledo State Airport	40	No	Bituminous	Yes	Not available	N/A
5S9	Estacada	Valley View	32	No	Bituminous	Yes	Not available	N/A
05S	Vernonia	Vernonia Municipal	45	No	Turf	Yes	N/A	N/A
R33	Waldport	Wakonda Beach State	30	No	Turf	Yes	N/A	N/A

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017, N/A = not an objective

TABLE 5-37: FACILITIES 3

FAA ID	City	Airport	Runway Pavement PCI	Meets Primary Runway Pavement PCI Objective	Taxiway Type	Meets Taxiway Objective	Approach Type	Meets Approach Objective	Visual Approach Aids	Meets Visual Approach Aids Objective
Category I: ARC C-II										
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	53.83	No	Partial Parallel*[44]	Yes	Precision	Yes	PAPI, VASI, REIL	Yes
EUG	Eugene	Eugene Airport -Mahlon Sweet Field		Yes	Full Parallel	Yes	Precision	Yes	PAPI, REIL	Yes

[44] * Taxiway systems which include a partial parallel taxiway and a network of taxiways which are appropriately separated from the runway centerline and allow for aircraft movement from one runway end to the other without taxiing on the runway are acceptable and function similar to a full length parallel taxiway.

FAA ID	City	Airport	Runway Pavement PCI	Meets Primary Runway Pavement PCI Objective	Taxiway Type	Meets Taxiway Objective	Approach Type	Meets Approach Objective	Visual Approach Aids	Meets Visual Approach Aids Objective
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport	92	Yes	Partial Parallel*	Yes	Precision	Yes	PAPI, VASI	Yes
PDX	Portland	Portland International Airport		Yes	Full Parallel	Yes	Precision	Yes	PAPI, REIL	Yes
RDM	Redmond	Redmond Municipal Airport - Roberts Field	59	No	Full Parallel	Yes	Precision	Yes	PAPI, VASI, REIL	Yes
MFR	Medford	Rogue Valley International - Medford Airport	100	Yes	Full Parallel	Yes	Precision	Yes	PAPI, REIL	Yes
OTH	North Bend	Southwest Oregon Regional Airport		Yes	Full Parallel	Yes	Precision	Yes	VASI, REIL	Yes
Category II: ARC C-II										
AST	Astoria	Port of Astoria Regional Airport^[5]	82.75	Yes	Partial Parallel*	Yes	Precision	Yes	PAPI, VASI, REIL	Yes
UAO	Aurora	Aurora State Airport	81.5	Yes	Full Parallel	Yes	Precision	Yes	VASI	Yes
BDN	Bend	Bend Municipal Airport	90	Yes	Full Parallel	Yes	Precision	Yes	PAPI, REIL	Yes
CVO	Corvallis	Corvallis Municipal Airport	80.83	Yes	Full Parallel	Yes	Precision	Yes	PAPI, VASI, REIL	Yes
MMV	McMinnville	McMinnville Municipal Airport	59.6	Yes	Full Parallel	Yes	Precision	Yes	PAPI, REIL	Yes
ONP	Newport	Newport Municipal Airport	79.4	Yes	Partial Parallel*	Yes	Precision	Yes	PAPI, REIL	Yes
HIO	Portland	Portland -Hillsboro Airport	84	Yes	Full Parallel	Yes	Precision	Yes	PAPI, REIL	Yes
TTD	Portland	Portland -Troutdale Airport	83.1	Yes	Full Parallel	Yes	Non-precision	No	PAPI, VASI, REIL	Yes
61J	Portland	Portland Downtown Heliport	N/A	N/A	N/A	NA	Visual	N/A	N/A	N/A
SLE	Salem	Salem McNary Field	80.7	Yes	Partial Parallel	No	Precision	Yes	PAPI, VASI, REIL	Yes
SPB	Scappoose	Scappoose Industrial Airpark	72.5	Yes	Dual Full Parallel	Yes	Precision	Yes	PAPI, REIL	Yes

[5] AIP 2024 scheduled for 2019 indicates Port of Astoria Regional will construct a new parallel taxiway

OREGON AVIATION PLAN

FAA ID	City	Airport	Runway Pavement PCI	Meets Primary Runway Pavement PCI Objective	Taxiway Type	Meets Taxiway Objective	Approach Type	Meets Approach Objective	Visual Approach Aids	Meets Visual Approach Aids Objective
Category III: ARC B-II										
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	99	Yes	Full Parallel	Yes	Visual	No	PAPI, REIL	Yes
BKE	Baker City	Baker City Municipal Airport	99.3	Yes	Full Parallel	Yes	Precision	Yes	PAPI, VASI, REIL	Yes
S05	Bandon	Bandon State Airport	98	Yes	Full Parallel	Yes	Visual	No	PAPI, REIL	Yes
BNO	Burns	Burns Municipal Airport	100	Yes	Turnarounds	Yes	Non-precision	Yes	PAPI, VASI, REIL	Yes
DLS	The Dalles	Columbia Gorge Regional - The Dalles	55.25	No	Full Parallel	Yes	Non-precision	Yes	REIL	Yes
GCD	John Day	Grant County Regional Airport	76	Yes	Full Parallel	Yes	Precision	Yes	PAPI, REIL	Yes
3S8	Grants Pass	Grants Pass Airport	100	Yes	Full Parallel	Yes	Non-precision	Yes	VASI, REIL	Yes
HRI	Hermiston	Hermiston Municipal Airport	97	Yes	Full Parallel	Yes	Non-precision	Yes	PAPI, REIL	Yes
LGD	La Grande	La Grande / Union County Airport	100	Yes	Partial Parallel*	Yes	Precision	Yes	PAPI, REIL	Yes
LKV	Lakeview	Lake County Airport	60	Yes	Non-Standard	Yes	Precision	Yes	VASI, REIL	Yes
ONO	Ontario	Ontario Municipal Airport	100	Yes	Full Parallel	Yes	Precision	Yes	PAPI, REIL	Yes
RBG	Roseburg	Roseburg Regional Airport	8.25	No	Full Parallel	Yes	Non-precision	Yes	VASI, REIL	Yes
TMK	Tillamook	Tillamook Airport	100	Yes	Full Parallel	Yes	Non-precision	Yes	PAPI, REIL	Yes
Category IV: ARC B-I										
S12	Albany	Albany Municipal Airport	100	Yes	Full Parallel	Yes	Non-precision	Yes	VASI, REIL	Yes
M50	Boardman	Boardman Airport	74	Yes	Partial Parallel	Yes	Visual	Yes	None	No
BOK	Brookings	Brookings Airport	97	Yes	Full Parallel	Yes	Visual	Yes	PAPI	Yes
17S	Newberg	Chehalem Airpark	Unknown	No	Partial Parallel	Yes	Visual	Yes	None	No

FAA ID	City	Airport	Runway Pavement PCI	Meets Primary Runway Pavement PCI Objective	Taxiway Type	Meets Taxiway Objective	Approach Type	Meets Approach Objective	Visual Approach Aids	Meets Visual Approach Aids Objective
62S	Christmas Valley	Christmas Valley Airport	64	Yes	Full Parallel	Yes	Visual	Yes	PAPI	Yes
3S9	Condon	Condon State Airport - Pauling Field	71	Yes	Non-Standard	Yes	Visual	Yes	PAPI, REIL	Yes
61S	Cottage Grove	Cottage Grove State Airport - Jim Wright Field	Unknown	No	Full Parallel	Yes	Visual	Yes	PAPI	Yes
77S	Creswell	Creswell Hobby Field Airport	82	Yes	Full Parallel	Yes	Visual	Yes	PAPI	Yes
6S2	Florence	Florence Municipal Airport	84.5	Yes	Full Parallel	Yes	Visual	Yes	PAPI	Yes
4S1	Gold Beach	Gold Beach Municipal Airport	96	Yes	Full Parallel	Yes	Visual	Yes	REIL	Yes
3S4	Cave Junction	Illinois Valley Airport	66	Yes	Stub	Yes	Visual	Yes	VASI	Yes
7S5	Independence	Independence State Airport	95	Yes	Full Parallel	Yes	Visual	Yes	PAPI	Yes
JSY	Joseph	Joseph State Airport	100	Yes	Full Parallel	Yes	Visual	Yes	PAPI, REIL	Yes
4S2	Hood River	Ken Jernstedt Airfield	57.5	No	Full Parallel	Yes	Visual	Yes	REIL	Yes
S30	Lebanon	Lebanon State Airport	100	Yes	Partial Parallel*	Yes	Visual	Yes	PAPI	Yes
7S9	Hubbard	Lenhardt Airpark	92.5	Yes	Turnarounds	Yes	Visual	Yes	VASI	Yes
9S9	Lexington	Lexington Airport	51	No	Partial Parallel	Yes	Non-precision	Yes	PAPI	Yes
S33	Madras	Madras Municipal Airport	57	No	Full Parallel	Yes	Precision	Yes	VASI, REIL	Yes
4S9	Mulino	Mulino State Airport	83	Yes	Full Parallel	Yes	Visual	Yes	None	No
16S	Myrtle Creek	Myrtle Creek Municipal Airport	99	Yes	Full Parallel	Yes	Visual	Yes	PAPI, REIL	Yes
S39	Prineville	Prineville Airport	100	Yes	Full Parallel	Yes	Non-precision	Yes	PAPI	Yes
56S	Seaside	Seaside Municipal Airport	84.3	Yes	Full Parallel	Yes	Visual	Yes	None	No
S45	Gleneden Beach	Siletz Bay State Airport	82	Yes	Full Parallel	Yes	Visual	Yes	None	No
6K5	Sisters	Sisters Eagle Air Airport	45	No	Full Parallel	Yes	Visual	Yes	PAPI	Yes
2S6	Newberg	Sportsman Airpark	28.3	No	Partial Parallel	Yes	Visual	Yes	None	No

OREGON AVIATION PLAN

FAA ID	City	Airport	Runway Pavement PCI	Meets Primary Runway Pavement PCI Objective	Taxiway Type	Meets Taxiway Objective	Approach Type	Meets Approach Objective	Visual Approach Aids	Meets Visual Approach Aids Objective
S21	Sunriver	Sunriver Airport	97	Yes	Full Parallel	Yes	Non-precision	Yes	VASI	Yes
35S	Wasco	Wasco State Airport	85	Yes	Partial Parallel	Yes	Visual	Yes	None	No
Category V: ARC A-I										
R03	Alkali Lake	Alkali Lake State	N/A	N/A	None	N/A	Visual	Yes	None	N/A
1S8	Arlington	Arlington Municipal	N/A	N/A	Turnarounds	N/A	Visual	Yes	None	N/A
2S2	Beaver Marsh	Beaver Marsh	N/A	N/A	None	N/A	Visual	Yes	None	N/A
5S6	Sixes	Cape Blanco State Airport	57.3	Yes	Partial Parallel	N/A	Visual	Yes	None	N/A
CZK	Cascade Locks	Cascade Locks State Airport	94	Yes	Turnarounds	N/A	Visual	Yes	None	N/A
2S7	Chiloquin	Chiloquin State Airport	100	Yes	Turnarounds	N/A	Visual	Yes	None	N/A
S48	Sandy	Country Squire Airpark	25	No	Full Parallel	N/A	Visual	Yes	None	N/A
5S2	Crescent Lake	Crescent Lake State Airport	ASPH-P	No	Pull-off	N/A	Visual	Yes	None	N/A
6S4	Gates	Davis Field	N/A	N/A	Pull-off	N/A	Visual	Yes	None	N/A
8S4	Enterprise	Enterprise Municipal	64	Yes	Full Parallel	N/A	Visual	Yes	None	N/A
5S1	Roseburg	George Felt	N/A	N/A	Pull-off	N/A	Visual	Yes	None	N/A
5S5	Culver	Lake Billy Chinook	ASPH-G	Yes	Turnarounds	N/A	Visual	Yes	None	N/A
1O0	Florence	Lake Woahink SPB	N/A	N/A	N/A	N/A	Visual	Yes	None	N/A
9S3	Lakeside	Lakeside Municipal Airport	N/A	N/A	None	N/A	Visual	Yes	None	N/A
4S7	Malin	Malin	ASPH-E	Yes	Stub	N/A	Visual	Yes	None	N/A
26U	McDermitt	McDermitt State Airport	61	Yes	Turnarounds	N/A	Visual	Yes	None	N/A
00S	McKenzie Bridge	McKenzie Bridge State	N/A	N/A	None	N/A	Visual	Yes	None	N/A
25U	Imnaha	Memaloose USFS	N/A	N/A	None	N/A	Visual	Yes	None	N/A
S49	Vale	Miller Memorial Airpark	ASPH-E	Yes	Stub	N/A	Visual	Yes	None	N/A
12S	Monument	Monument Municipal	83	Yes	Pull-off	N/A	Visual	Yes	None	N/A

FAA ID	City	Airport	Runway Pavement PCI	Meets Primary Runway Pavement PCI Objective	Taxiway Type	Meets Taxiway Objective	Approach Type	Meets Approach Objective	Visual Approach Aids	Meets Visual Approach Aids Objective
3S7	Manzanita	Nehalem Bay State Airport	90	Yes	Pull-off	N/A	Visual	Yes	None	N/A
5S0	Oakridge	Oakridge State	49	No	Pull-off	N/A	Visual	Yes	None	N/A
28U	Owyhee Reservoir	Owyhee Reservoir State	N/A	N/A	None	N/A	Visual	Yes	None	N/A
PFC	Pacific City	Pacific City State Airport	82.5	Yes	Turnarounds	N/A	Visual	Yes	None	N/A
22S	Paisley	Paisley	83	Yes	Stub	N/A	Visual	Yes	None	N/A
24S	Pinehurst	Pinehurst State Airport	85.5	Yes	Turnarounds	N/A	Visual	Yes	None	N/A
6S6	Powers	Powers Hayes Field	N/A	N/A	Pull-off	N/A	Visual	Yes	None	N/A
64S	Prospect	Prospect State Airport	59	Yes	Turnarounds	N/A	Visual	Yes	None	N/A
REO	Rome	Rome State	N/A	N/A	None	N/A	Visual	Yes	None	N/A
03S	Sandy	Sandy River	N/A	N/A	Pull-off	N/A	Visual	Yes	None	N/A
8S3	Santiam Junction	Santiam Junction State	N/A	N/A	None	N/A	Visual	Yes	None	N/A
45S	Silver Lake	Silver Lake USFS	N/A	N/A	None	N/A	Visual	Yes	None	N/A
4S4	Cornelius	Skyport	N/A	N/A	Pull-off	N/A	Visual	Yes	None	N/A
7S3	Hillsboro	Stark's Twin Oaks	88.5	Yes	Full Parallel	N/A	Visual	Yes	None	N/A
3S6	Clearwater	Toketee State	N/A	N/A	Pull-off	N/A	Visual	Yes	None	N/A
5S4	Toledo	Toledo State Airport	63.25	Yes	Turnarounds	N/A	Visual	Yes	None	N/A
5S9	Estacada	Valley View	70.6	Yes	Partial Parallel	N/A	Visual	Yes	None	N/A
05S	Vernonia	Vernonia Municipal	N/A	N/A	Pull-off	N/A	Visual	Yes	None	N/A
R33	Waldport	Wakonda Beach State	N/A	N/A	Turnarounds	N/A	Visual	Yes	None	N/A

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017, N/A = not an objective

OREGON AVIATION PLAN

TABLE 5-38: FACILITIES 4

FAA ID	City	Airport	Instrument Approach Aids	Meets Instrument Approach Aids Objective	Runway Lighting	Meets Runway Lighting Objective	Taxiway Lighting	Meets Taxiway Lighting Objective
Category I:								
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	MALSR, ODALS	Yes	HIRL	Yes	MITL	Yes
EUG	Eugene	Eugene Airport -Mahlon Sweet Field	MALSR, ODALS, ALSF, TDZL	Yes	HIRL	Yes	MITL	Yes
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport	MALSR, ALSF	Yes	HIRL	Yes	MITL	Yes
PDX	Portland	Portland International Airport	MALSR, ALSF, TDZL	Yes	HIRL	Yes	MITL	Yes
RDM	Redmond	Redmond Municipal Airport -Roberts Field	MALSR	Yes	HIRL	Yes	MITL	Yes
MFR	Medford	Rogue Valley International -Medford Airport	MALSR, TDZL	Yes	HIRL	Yes	MITL	Yes
OTH	North Bend	Southwest Oregon Regional Airport	MALSR	Yes	HIRL	Yes	MITL	Yes
Category II:								
AST	Astoria	Port of Astoria Regional Airport	MALSR, ALSF	N/A	MIRL	Yes	MITL	Yes
UAO	Aurora	Aurora State Airport	ODALS	N/A	MIRL	Yes	MITL	Yes
BDN	Bend	Bend Municipal Airport	None	N/A	MIRL	Yes	Reflectors	No
CVO	Corvallis	Corvallis Municipal Airport	MALSR	N/A	MIRL	Yes	MITL	Yes
MMV	McMinnville	McMinnville Municipal Airport	MALSR	N/A	HIRL	Yes	Reflectors	No
ONP	Newport	Newport Municipal Airport	MALSR	N/A	HIRL	Yes	Reflectors	No
HIO	Portland	Portland -Hillsboro Airport	MALSR, ALSF	N/A	HIRL	Yes	MITL	Yes
TTD	Portland	Portland -Troutdale Airport	None	N/A	MIRL	Yes	MITL	Yes
61J	Portland	Portland Downtown Heliport	None	N/A	N/A	N/A	N/A	N/A
SLE	Salem	Salem McNary Field	MALSR, ODALS	N/A	HIRL	Yes	LITL	No
SPB	Scappoose	Scappoose Industrial Airpark	None	N/A	MIRL	Yes	MITL	Yes
Category III:								

JVIATION

FAA ID	City	Airport	Instrument Approach Aids	Meets Instrument Approach Aids Objective	Runway Lighting	Meets Runway Lighting Objective	Taxiway Lighting	Meets Taxiway Lighting Objective
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	None	N/A	MIRL	Yes	Reflectors	No
BKE	Baker City	Baker City Municipal Airport	None	N/A	MIRL	Yes	MITL	Yes
S05	Bandon	Bandon State Airport	None	N/A	MIRL	Yes	Reflectors	No
BNO	Burns	Burns Municipal Airport	None	N/A	MIRL	Yes	None	No
DLS	The Dalles	Columbia Gorge Regional - The Dalles	TDZL	N/A	MIRL	Yes	None	No
GCD	John Day	Grant County Regional Airport	None	N/A	MIRL	Yes	Reflectors	No
3S8	Grants Pass	Grants Pass Airport	None	N/A	MIRL	Yes	None	No
HRI	Hermiston	Hermiston Municipal Airport	None	N/A	MIRL	Yes	Reflectors	No
LGD	La Grande	La Grande / Union County Airport	None	N/A	MIRL	Yes	Reflectors	No
LKV	Lakeview	Lake County Airport	None	N/A	MIRL	Yes	Reflectors	No
ONO	Ontario	Ontario Municipal Airport	None	N/A	MIRL	Yes	Reflectors	No
RBG	Roseburg	Roseburg Regional Airport	None	N/A	MIRL	Yes	MITL	Yes
TMK	Tillamook	Tillamook Airport	None	N/A	MIRL	Yes	Reflectors	No
Category IV:								
S12	Albany	Albany Municipal Airport	None	N/A	MIRL	Yes	Reflectors	Yes
M50	Boardman	Boardman Airport	None	N/A	MIRL	Yes	Reflectors	Yes
BOK	Brookings	Brookings Airport	None	N/A	MIRL	Yes	Reflectors	Yes
17S	Newberg	Chehalem Airpark	None	N/A	Non-standard	Yes	None	No
62S	Christmas Valley	Christmas Valley Airport	None	N/A	MIRL	Yes	MITL	Yes
3S9	Condon	Condon State Airport - Pauling Field	None	N/A	MIRL	Yes	Reflectors	Yes
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field	None	N/A	MIRL	Yes	Reflectors	Yes
77S	Creswell	Creswell Hobby Field Airport	None	N/A	MIRL	Yes	None	No
6S2	Florence	Florence Municipal Airport	None	N/A	MIRL	Yes	None	No

OREGON AVIATION PLAN

FAA ID	City	Airport	Instrument Approach Aids	Meets Instrument Approach Aids Objective	Runway Lighting	Meets Runway Lighting Objective	Taxiway Lighting	Meets Taxiway Lighting Objective
4S1	Gold Beach	Gold Beach Municipal Airport	None	N/A	MIRL	Yes	None	No
3S4	Cave Junction	Illinois Valley Airport	None	N/A	LIRL	Yes	None	No
7S5	Independence	Independence State Airport	None	N/A	MIRL	Yes	None	No
JSY	Joseph	Joseph State Airport	None	N/A	MIRL	Yes	Reflectors	Yes
4S2	Hood River	Ken Jernstedt Airfield	None	N/A	MIRL	Yes	Reflectors	Yes
S30	Lebanon	Lebanon State Airport	None	N/A	MIRL	Yes	Reflectors	Yes
7S9	Hubbard	Lenhardt Airpark	None	N/A	LIRL	Yes	None	No
9S9	Lexington	Lexington Airport	None	N/A	MIRL	Yes	Reflectors	Yes
S33	Madras	Madras Municipal Airport	None	N/A	MIRL	Yes	MITL	Yes
4S9	Mulino	Mulino State Airport	None	N/A	MIRL	Yes	LITL	Yes
16S	Myrtle Creek	Myrtle Creek Municipal Airport	None	N/A	MIRL	Yes	None	No
S39	Prineville	Prineville Airport	None	N/A	MIRL	Yes	Reflectors	Yes
56S	Seaside	Seaside Municipal Airport	None	N/A	LIRL	Yes	None	No
S45	Gleneden Beach	Siletz Bay State Airport	None	N/A	MIRL	Yes	Reflectors	Yes
6K5	Sisters	Sisters Eagle Air Airport	None	N/A	MIRL	Yes	None	No
2S6	Newberg	Sportsman Airpark	None	N/A	LIRL	Yes	None	No
S21	Sunriver	Sunriver Airport	None	N/A	LIRL	Yes	None	No
35S	Wasco	Wasco State Airport	None	N/A	MIRL	Yes	None	No
Category V:								
R03	Alkali Lake	Alkali Lake State	None	N/A	None	N/A	None	N/A
1S8	Arlington	Arlington Municipal	None	N/A	None	N/A	None	N/A
2S2	Beaver Marsh	Beaver Marsh	None	N/A	None	N/A	None	N/A
5S6	Sixes	Cape Blanco State Airport	None	N/A	None	N/A	None	N/A

FAA ID	City	Airport	Instrument Approach Aids	Meets Instrument Approach Aids Objective	Runway Lighting	Meets Runway Lighting Objective	Taxiway Lighting	Meets Taxiway Lighting Objective
CZK	Cascade Locks	Cascade Locks State Airport	None	N/A	None	N/A	None	N/A
2S7	Chiloquin	Chiloquin State Airport	None	N/A	MIRL	N/A	Reflectors	N/A
S48	Sandy	Country Squire Airpark	None	N/A	None	N/A	None	N/A
5S2	Crescent Lake	Crescent Lake State Airport	None	N/A	None	N/A	None	N/A
6S4	Gates	Davis Field	None	N/A	None	N/A	None	N/A
8S4	Enterprise	Enterprise Municipal	None	N/A	LIRL	N/A	None	N/A
5S1	Roseburg	George Felt	None	N/A	None	N/A	None	N/A
5S5	Culver	Lake Billy Chinook	None	N/A	Reflectors	N/A	None	N/A
1O0	Florence	Lake Woahink SPB	None	N/A	N/A	N/A	None	N/A
9S3	Lakeside	Lakeside Municipal Airport	None	N/A	None	N/A	None	N/A
4S7	Malin	Malin	None	N/A	None	N/A	None	N/A
26U	McDermitt	McDermitt State Airport	None	N/A	LIRL	N/A	None	N/A
00S	McKenzie Bridge	McKenzie Bridge State	None	N/A	None	N/A	None	N/A
25U	Imnaha	Memaloose USFS	None	N/A	None	N/A	None	N/A
S49	Vale	Miller Memorial Airpark	None	N/A	LIRL	N/A	None	N/A
12S	Monument	Monument Municipal	None	N/A	None	N/A	None	N/A
3S7	Manzanita	Nehalem Bay State Airport	None	N/A	None	N/A	None	N/A
5S0	Oakridge	Oakridge State	None	N/A	None	N/A	None	N/A
28U	Owyhee Reservoir	Owyhee Reservoir State	None	N/A	None	N/A	None	N/A
PFC	Pacific City	Pacific City State Airport	None	N/A	None	N/A	None	N/A
22S	Paisley	Paisley	None	N/A	LIRL	N/A	None	N/A
24S	Pinehurst	Pinehurst State Airport	None	N/A	None	N/A	None	N/A
6S6	Powers	Powers Hayes Field	None	N/A	None	N/A	None	N/A

OREGON AVIATION PLAN

FAA ID	City	Airport	Instrument Approach Aids	Meets Instrument Approach Aids Objective	Runway Lighting	Meets Runway Lighting Objective	Taxiway Lighting	Meets Taxiway Lighting Objective
64S	Prospect	Prospect State Airport	None	N/A	LIRL	N/A	None	N/A
REO	Rome	Rome State	None	N/A	None	N/A	None	N/A
03S	Sandy	Sandy River	None	N/A	None	N/A	None	N/A
8S3	Santiam Junction	Santiam Junction State	None	N/A	None	N/A	None	N/A
45S	Silver Lake	Silver Lake USFS	None	N/A	None	N/A	None	N/A
4S4	Cornelius	Skyport	None	N/A	None	N/A	None	N/A
7S3	Hillsboro	Stark's Twin Oaks	None	N/A	LIRL	N/A	None	N/A
3S6	Clearwater	Toketee State	None	N/A	None	N/A	None	N/A
5S4	Toledo	Toledo State Airport	None	N/A	None	N/A	None	N/A
5S9	Estacada	Valley View	None	N/A	Non-standard	N/A	None	N/A
05S	Vernonia	Vernonia Municipal	None	N/A	None	N/A	None	N/A
R33	Waldport	Wakonda Beach State	None	N/A	None	N/A	None	N/A

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017, N/A = not an objective

TABLE 5-39: FACILITIES 5

FAA ID	City	Airport	Rotating Beacon	Meets Rotating Beacon Objective	Wind Indicator	Meets Wind Indicator Objective	Type of Weather Reporting	Meets Weather Reporting Objective
Category I:								
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	Yes
EUG	Eugene	Eugene Airport -Mahlon Sweet Field	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	Yes
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	Yes
PDX	Portland	Portland International Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	Yes

FAA ID	City	Airport	Rotating Beacon	Meets Rotating Beacon Objective	Wind Indicator	Meets Wind Indicator Objective	Type of Weather Reporting	Meets Weather Reporting Objective
RDM	Redmond	Redmond Municipal Airport - Roberts Field	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	Yes
MFR	Medford	Rogue Valley International - Medford Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	Yes
OTH	North Bend	Southwest Oregon Regional Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	Yes
Category II:								
AST	Astoria	Port of Astoria Regional Airport	Yes	Yes	Lighted Wind Cone	Yes	ASOS	Yes
UAO	Aurora	Aurora State Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	Yes
BDN	Bend	Bend Municipal Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	Yes
CVO	Corvallis	Corvallis Municipal Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	Yes
MMV	McMinnville	McMinnville Municipal Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	Yes
ONP	Newport	Newport Municipal Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	Yes
HIO	Portland	Portland - Hillsboro Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	Yes
TTD	Portland	Portland - Troutdale Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	Yes
61J	Portland	Portland Downtown Heliport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	None	N/A
SLE	Salem	Salem McNary Field	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS/ASOS	Yes
SPB	Scappoose	Scappoose Industrial Airpark	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	Yes
Category III:								
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	Yes
BKE	Baker City	Baker City Municipal Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	Yes
S05	Bandon	Bandon State Airport	Yes	Yes	Lighted Wind Cone	Yes	None	No
BNO	Burns	Burns Municipal Airport	Yes	Yes	Lighted Wind Cone	Yes	ASOS	Yes
DLS	The Dalles	Columbia Gorge Regional - The Dalles	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS/ASOS	Yes
GCD	John Day	Grant County Regional Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	Yes

OREGON AVIATION PLAN

FAA ID	City	Airport	Rotating Beacon	Meets Rotating Beacon Objective	Wind Indicator	Meets Wind Indicator Objective	Type of Weather Reporting	Meets Weather Reporting Objective
3S8	Grants Pass	Grants Pass Airport	Yes	Yes	Lighted Wind Cone	Yes	AWOS	Yes
HRI	Hermiston	Hermiston Municipal Airport	Yes	Yes	Lighted Wind Cone	Yes	ASOS	Yes
LGD	La Grande	La Grande / Union County Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	Yes
LKV	Lakeview	Lake County Airport	Yes	Yes	Lighted Wind Cone	Yes	AWOS	Yes
ONO	Ontario	Ontario Municipal Airport	Yes	Yes	Lighted Wind Cone	Yes	ASOS	Yes
RBG	Roseburg	Roseburg Regional Airport	Yes	Yes	Lighted Wind Cone	Yes	ASOS	Yes
TMK	Tillamook	Tillamook Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	Yes
Category IV:								
S12	Albany	Albany Municipal Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	None	N/A
M50	Boardman	Boardman Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	None	N/A
BOK	Brookings	Brookings Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	ASOS	N/A
17S	Newberg	Chehalem Airpark	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	None	N/A
62S	Christmas Valley	Christmas Valley Airport	Yes	Yes	Wind Cone	No	None	N/A
3S9	Condon	Condon State Airport - Pauling Field	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	None	N/A
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field	Yes	Yes	Lighted Wind Cone	Yes	None	N/A
77S	Creswell	Creswell Hobby Field Airport	Yes	Yes	Lighted Wind Cone	Yes	None	N/A
6S2	Florence	Florence Municipal Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	N/A
4S1	Gold Beach	Gold Beach Municipal Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	N/A
3S4	Cave Junction	Illinois Valley Airport	Yes	Yes	Lighted Wind Cone	Yes	None	N/A
7S5	Independence	Independence State Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	None	N/A
JSY	Joseph	Joseph State Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	N/A
4S2	Hood River	Ken Jernstedt Airfield	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	N/A
S30	Lebanon	Lebanon State Airport	Yes	Yes	Lighted Wind Cone	Yes	None	N/A

FAA ID	City	Airport	Rotating Beacon	Meets Rotating Beacon Objective	Wind Indicator	Meets Wind Indicator Objective	Type of Weather Reporting	Meets Weather Reporting Objective
7S9	Hubbard	Lenhardt Airpark	No	No	Wind Cone, Lighted Wind Cone	Yes	None	N/A
9S9	Lexington	Lexington Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS	N/A
S33	Madras	Madras Municipal Airport	Yes	Yes	Lighted Wind Cone	Yes	AWOS	N/A
4S9	Mulino	Mulino State Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	None	N/A
16S	Myrtle Creek	Myrtle Creek Municipal Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	None	N/A
S39	Prineville	Prineville Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	AWOS/ASOS	N/A
56S	Seaside	Seaside Municipal Airport	Yes	Yes	Lighted Wind Cone	Yes	None	N/A
S45	Gleneden Beach	Siletz Bay State Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	None	N/A
6K5	Sisters	Sisters Eagle Air Airport	Yes	Yes	Wind Cone	No	AWOS	N/A
2S6	Newberg	Sportsman Airpark	No	No	Wind Cone	No	None	N/A
S21	Sunriver	Sunriver Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	None	N/A
35S	Wasco	Wasco State Airport	Yes	Yes	Wind Cone, Lighted Wind Cone	Yes	None	N/A
Category V:								
R03	Alkali Lake	Alkali Lake State	No	N/A	Wind Cone	N/A	None	N/A
1S8	Arlington	Arlington Municipal	No	N/A	Wind Cone	N/A	None	N/A
2S2	Beaver Marsh	Beaver Marsh	No	N/A	None	N/A	None	N/A
5S6	Sixes	Cape Blanco State Airport	No	N/A	Wind Cone	N/A	None	N/A
CZK	Cascade Locks	Cascade Locks State Airport	No	N/A	Wind Cone	N/A	None	N/A
2S7	Chiloquin	Chiloquin State Airport	Yes	N/A	Wind Cone	N/A	None	N/A
S48	Sandy	Country Squire Airpark	No	N/A	Wind Cone	N/A	None	N/A
5S2	Crescent Lake	Crescent Lake State Airport	No	N/A	Wind Cone	N/A	None	N/A
6S4	Gates	Davis Field	No	N/A	Wind Cone	N/A	None	N/A
8S4	Enterprise	Enterprise Municipal	Yes	N/A	Lighted Wind Cone	N/A	None	N/A
5S1	Roseburg	George Felt	No	N/A	Wind Cone	N/A	None	N/A

OREGON AVIATION PLAN

FAA ID	City	Airport	Rotating Beacon	Meets Rotating Beacon Objective	Wind Indicator	Meets Wind Indicator Objective	Type of Weather Reporting	Meets Weather Reporting Objective
5S5	Culver	Lake Billy Chinook	No	N/A	Wind Cone	N/A	None	N/A
1O0	Florence	Lake Woahink SPB	No	N/A	None	N/A	None	N/A
9S3	Lakeside	Lakeside Municipal Airport	No	N/A	Wind Cone	N/A	None	N/A
4S7	Malin	Malin	No	N/A	Wind Cone	N/A	None	N/A
26U	McDermitt	McDermitt State Airport	Yes	N/A	Lighted Wind Cone	N/A	None	N/A
00S	McKenzie Bridge	McKenzie Bridge State	No	N/A	Wind Cone	N/A	None	N/A
25U	Imnaha	Memaloose USFS	No	N/A	Wind Cone	N/A	None	N/A
S49	Vale	Miller Memorial Airpark	Yes	N/A	Wind Cone	N/A	None	N/A
12S	Monument	Monument Municipal	No	N/A	Wind Cone	N/A	None	N/A
3S7	Manzanita	Nehalem Bay State Airport	No	N/A	Wind Cone	N/A	None	N/A
5S0	Oakridge	Oakridge State	No	N/A	Wind Cone	N/A	None	N/A
28U	Owyhee Reservoir	Owyhee Reservoir State	No	N/A	Wind Cone	N/A	None	N/A
PFC	Pacific City	Pacific City State Airport	No	N/A	Wind Cone	N/A	None	N/A
22S	Paisley	Paisley	Yes	N/A	Wind Cone	N/A	None	N/A
24S	Pinehurst	Pinehurst State Airport	No	N/A	Wind Cone	N/A	None	N/A
6S6	Powers	Powers Hayes Field	No	N/A	Wind Cone	N/A	None	N/A
64S	Prospect	Prospect State Airport	Yes	N/A	Wind Cone	N/A	None	N/A
REO	Rome	Rome State	No	N/A	Wind Cone	N/A	None	N/A
03S	Sandy	Sandy River	No	N/A	Wind Cone	N/A	None	N/A
8S3	Santiam Junction	Santiam Junction State	No	N/A	Wind Cone	N/A	None	N/A
45S	Silver Lake	Silver Lake USFS	No	N/A	None	N/A	None	N/A
4S4	Cornelius	Skyport	No	N/A	Wind Cone	N/A	None	N/A
7S3	Hillsboro	Stark's Twin Oaks	No	N/A	Wind Cone	N/A	None	N/A
3S6	Clearwater	Toketee State	No	N/A	Wind Cone	N/A	None	N/A

FAA ID	City	Airport	Rotating Beacon	Meets Rotating Beacon Objective	Wind Indicator	Meets Wind Indicator Objective	Type of Weather Reporting	Meets Weather Reporting Objective
5S4	Toledo	Toledo State Airport	No	N/A	Wind Cone	N/A	None	N/A
5S9	Estacada	Valley View	No	N/A	Wind Cone	N/A	None	N/A
05S	Vernonia	Vernonia Municipal	No	N/A	Wind Cone	N/A	None	N/A
R33	Waldport	Wakonda Beach State	No	N/A	Wind Cone	N/A	None	N/A

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017, N/A = not an objective

TABLE 5-40: FACILITIES 6

FAA ID	City	Airport	Percentage of Based Aircraft in Hangars	Meets Hangar Storage Objective	Percentage of Daily Transient Apron Parking	Meets Apron Parking Objective	Terminal Building	Meeting Room	Meets Terminal Building Objective
Category I:									
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	50%	No	100%	Yes	Yes	Yes	Yes
EUG	Eugene	Eugene Airport -Mahlon Sweet Field	95%	Yes	95%	Yes	Yes	Yes	Yes
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport	98%	Yes	100%	Yes	Yes	Yes	Yes
PDX	Portland	Portland International Airport	90%	Yes	100%	Yes	Yes	Yes	Yes
RDM	Redmond	Redmond Municipal Airport -Roberts Field	80%	Yes	100%	Yes	Yes	Yes	Yes
MFR	Medford	Rogue Valley International -Medford Airport	98%	Yes	70%	No	Yes	Yes	Yes
OTH	North Bend	Southwest Oregon Regional Airport	90%	Yes	10%	No	Yes	Yes	Yes
Category II:									
AST	Astoria	Port of Astoria Regional Airport	90%	Yes	100%	Yes	Yes	Yes	Yes
UAO	Aurora	Aurora State Airport	98%	Yes	0%	No	Yes	Yes	Yes
BDN	Bend	Bend Municipal Airport	88%	Yes	100%	Yes	Yes	Yes	Yes
CVO	Corvallis	Corvallis Municipal Airport	100%	Yes	100%	Yes	Yes	Yes	Yes

OREGON AVIATION PLAN

FAA ID	City	Airport	Percentage of Based Aircraft in Hangars	Meets Hangar Storage Objective	Percentage of Daily Transient Apron Parking	Meets Apron Parking Objective	Terminal Building	Meeting Room	Meets Terminal Building Objective
MMV	McMinnville	McMinnville Municipal Airport	95%	Yes	30%	No	Yes	Yes	Yes
ONP	Newport	Newport Municipal Airport	100%	Yes	75%	Yes	Yes	Yes	Yes
HIO	Portland	Portland -Hillsboro Airport	95%	Yes	5%	No	Yes	Yes	Yes
TTD	Portland	Portland -Troutdale Airport	80%	Yes	100%	Yes	Yes	No	Yes
61J	Portland	Portland Downtown Heliport	0%	N/A	0%	N/A	Yes	Yes	Yes
SLE	Salem	Salem McNary Field	95%	Yes	100%	Yes	Yes	Yes	Yes
SPB	Scappoose	Scappoose Industrial Airpark	92%	Yes	100%	Yes	No	No	No
Category III:									
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	67%	No	100%	Yes	Yes	Yes	Yes
BKE	Baker City	Baker City Municipal Airport	95%	Yes	95%	Yes	Yes	No	Yes
S05	Bandon	Bandon State Airport	100%	Yes	100%	Yes	No	Yes	Yes
BNO	Burns	Burns Municipal Airport	80%	Yes	100%	Yes	Yes	No	Yes
DLS	The Dalles	Columbia Gorge Regional - The Dalles	99%	Yes	100%	Yes	Yes	Yes	Yes
GCD	John Day	Grant County Regional Airport	100%	Yes	100%	Yes	Yes	Yes	Yes
3S8	Grants Pass	Grants Pass Airport	100%	Yes	100%	Yes	Yes	Yes	Yes
HRI	Hermiston	Hermiston Municipal Airport	97%	Yes	100%	Yes	Yes	Yes	Yes
LGD	La Grande	La Grande / Union County Airport	100%	Yes	100%	Yes	Yes	Yes	Yes
LKV	Lakeview	Lake County Airport	100%	Yes	100%	Yes	Yes	Yes	Yes
ONO	Ontario	Ontario Municipal Airport	98%	Yes	70%	Yes	Yes	Yes	Yes
RBG	Roseburg	Roseburg Regional Airport	80%	Yes	100%	Yes	No	No	No
TMK	Tillamook	Tillamook Airport	100%	Yes	10%	No	Yes	Yes	Yes
Category IV:									
S12	Albany	Albany Municipal Airport	95%	Yes	100%	Yes	No	Yes	N/A

OREGON AVIATION PLAN

FAA ID	City	Airport	Percentage of Based Aircraft in Hangars	Meets Hangar Storage Objective	Percentage of Daily Transient Apron Parking	Meets Apron Parking Objective	Terminal Building	Meeting Room	Meets Terminal Building Objective
MMV	McMinnville	McMinnville Municipal Airport	95%	Yes	30%	No	Yes	Yes	Yes
ONP	Newport	Newport Municipal Airport	100%	Yes	75%	Yes	Yes	Yes	Yes
HIO	Portland	Portland -Hillsboro Airport	95%	Yes	5%	No	Yes	Yes	Yes
TTD	Portland	Portland -Troutdale Airport	80%	Yes	100%	Yes	Yes	No	Yes
61J	Portland	Portland Downtown Heliport	0%	N/A	0%	N/A	Yes	Yes	Yes
SLE	Salem	Salem McNary Field	95%	Yes	100%	Yes	Yes	Yes	Yes
SPB	Scappoose	Scappoose Industrial Airpark	92%	Yes	100%	Yes	No	No	No
Category III:									
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	67%	No	100%	Yes	Yes	Yes	Yes
BKE	Baker City	Baker City Municipal Airport	95%	Yes	95%	Yes	Yes	No	Yes
S05	Bandon	Bandon State Airport	100%	Yes	100%	Yes	No	Yes	Yes
BNO	Burns	Burns Municipal Airport	80%	Yes	100%	Yes	Yes	No	Yes
DLS	The Dalles	Columbia Gorge Regional - The Dalles	99%	Yes	100%	Yes	Yes	Yes	Yes
GCD	John Day	Grant County Regional Airport	100%	Yes	100%	Yes	Yes	Yes	Yes
3S8	Grants Pass	Grants Pass Airport	100%	Yes	100%	Yes	Yes	Yes	Yes
HRI	Hermiston	Hermiston Municipal Airport	97%	Yes	100%	Yes	Yes	Yes	Yes
LGD	La Grande	La Grande / Union County Airport	100%	Yes	100%	Yes	Yes	Yes	Yes
LKV	Lakeview	Lake County Airport	100%	Yes	100%	Yes	Yes	Yes	Yes
ONO	Ontario	Ontario Municipal Airport	98%	Yes	70%	Yes	Yes	Yes	Yes
RBG	Roseburg	Roseburg Regional Airport	80%	Yes	100%	Yes	No	No	No
TMK	Tillamook	Tillamook Airport	100%	Yes	10%	No	Yes	Yes	Yes
Category IV:									
S12	Albany	Albany Municipal Airport	95%	Yes	100%	Yes	No	Yes	N/A

FAA ID	City	Airport	Percentage of Based Aircraft in Hangars	Meets Hangar Storage Objective	Percentage of Daily Transient Apron Parking	Meets Apron Parking Objective	Terminal Building	Meeting Room	Meets Terminal Building Objective
M50	Boardman	Boardman Airport	0%	Yes	100%	Yes	No	No	N/A
BOK	Brookings	Brookings Airport	95%	Yes	100%	Yes	Yes	Yes	N/A
17S	Newberg	Chehalem Airpark	100%	Yes	3%	No	Yes	Yes	N/A
62S	Christmas Valley	Christmas Valley Airport	0%	Yes	100%	Yes	No	No	N/A
3S9	Condon	Condon State Airport - Pauling Field	100%	Yes	100%	Yes	No	No	N/A
61S	Cottage Grove	Cottage Grove State Airport - Jim Wright Field	98%	Yes	100%	Yes	No	No	N/A
77S	Creswell	Creswell Hobby Field Airport	90%	Yes	75%	Yes	No	No	N/A
6S2	Florence	Florence Municipal Airport	100%	Yes	100%	Yes	Yes	No	N/A
4S1	Gold Beach	Gold Beach Municipal Airport	100%	Yes	100%	Yes	Yes	Yes	N/A
3S4	Cave Junction	Illinois Valley Airport	100%	Yes	100%	Yes	No	Yes	N/A
7S5	Independence	Independence State Airport	95%	Yes	100%	Yes	No	Yes	N/A
JSY	Joseph	Joseph State Airport	100%	Yes	100%	Yes	No	Yes	N/A
4S2	Hood River	Ken Jernstedt Airfield	75%	Yes	0%	No	Yes	Yes	N/A
S30	Lebanon	Lebanon State Airport	95%	Yes	100%	Yes	Yes	Yes	N/A
7S9	Hubbard	Lenhardt Airpark	100%	Yes	100%	Yes	No	No	N/A
9S9	Lexington	Lexington Airport	100%	Yes	100%	Yes	Yes	No	N/A
S33	Madras	Madras Municipal Airport	95%	Yes	100%	Yes	Yes	Yes	N/A
4S9	Mulino	Mulino State Airport	85%	Yes	25%	No	No	Yes	N/A
16S	Myrtle Creek	Myrtle Creek Municipal Airport	100%	Yes	100%	Yes	No	No	N/A
S39	Prineville	Prineville Airport	90%	Yes	95%	Yes	Yes	Yes	N/A
56S	Seaside	Seaside Municipal Airport	100%	Yes	100%	Yes	No	No	N/A
S45	Gleneden Beach	Siletz Bay State Airport	100%	Yes	100%	Yes	No	No	N/A
6K5	Sisters	Sisters Eagle Air Airport	100%	Yes	100%	Yes	No	Yes	N/A

FAA ID	City	Airport	Percentage of Based Aircraft in Hangars	Meets Hangar Storage Objective	Percentage of Daily Transient Apron Parking	Meets Apron Parking Objective	Terminal Building	Meeting Room	Meets Terminal Building Objective
2S6	Newberg	Sportsman Airpark	98%	Yes	95%	Yes	No	Yes	N/A
S21	Sunriver	Sunriver Airport	95%	Yes	100%	Yes	Yes	No	N/A
35S	Wasco	Wasco State Airport	100%	Yes	100%	Yes	No	No	N/A
Category V:									
R03	Alkali Lake	Alkali Lake State	0%	N/A	100%	N/A	No	No	N/A
1S8	Arlington	Arlington Municipal	N/A	N/A	N/A	N/A	No	N/A	N/A
2S2	Beaver Marsh	Beaver Marsh	N/A	N/A	N/A	N/A	No	N/A	N/A
5S6	Sixes	Cape Blanco State Airport	100%	N/A	100%	N/A	No	No	N/A
CZK	Cascade Locks	Cascade Locks State Airport	0%	N/A	100%	N/A	No	No	N/A
2S7	Chiloquin	Chiloquin State Airport	100%	N/A	100%	N/A	No	Yes	N/A
S48	Sandy	Country Squire Airpark	N/A	N/A	N/A	N/A	No	N/A	N/A
5S2	Crescent Lake	Crescent Lake State Airport	0%	N/A	100%	N/A	No	No	N/A
6S4	Gates	Davis Field	N/A	N/A	N/A	N/A	No	N/A	N/A
8S4	Enterprise	Enterprise Municipal	N/A	N/A	N/A	N/A	Yes	N/A	N/A
5S1	Roseburg	George Felt	N/A	N/A	N/A	N/A	Yes	N/A	N/A
5S5	Culver	Lake Billy Chinook	N/A	N/A	N/A	N/A	No	N/A	N/A
1O0	Florence	Lake Woahink SPB	N/A	N/A	N/A	N/A	No	N/A	N/A
9S3	Lakeside	Lakeside Municipal Airport	N/A	N/A	N/A	N/A	No	N/A	N/A
4S7	Malin	Malin	N/A	N/A	N/A	N/A	No	N/A	N/A
26U	McDermitt	McDermitt State Airport	100%	N/A	100%	N/A	No	No	N/A
00S	McKenzie Bridge	McKenzie Bridge State	0%	N/A	100%	N/A	No	No	N/A
25U	Imnaha	Memaloose USFS	N/A	N/A	N/A	N/A	No	N/A	N/A
S49	Vale	Miller Memorial Airpark	N/A	N/A	N/A	N/A	No	N/A	N/A

FAA ID	City	Airport	Percentage of Based Aircraft in Hangars	Meets Hangar Storage Objective	Percentage of Daily Transient Apron Parking	Meets Apron Parking Objective	Terminal Building	Meeting Room	Meets Terminal Building Objective
12S	Monument	Monument Municipal	N/A	N/A	N/A	N/A	No	N/A	N/A
3S7	Manzanita	Nehalem Bay State Airport	0%	N/A	100%	N/A	No	No	N/A
5S0	Oakridge	Oakridge State	100%	N/A	100%	N/A	No	No	N/A
28U	Owyhee Reservoir	Owyhee Reservoir State	0%	N/A	100%	N/A	No	No	N/A
PFC	Pacific City	Pacific City State Airport	0%	N/A	80%	N/A	No	No	N/A
22S	Paisley	Paisley	N/A	N/A	N/A	N/A	No	N/A	N/A
24S	Pinehurst	Pinehurst State Airport	0%	N/A	100%	N/A	No	No	N/A
6S6	Powers	Powers Hayes Field	N/A	N/A	N/A	N/A	No	N/A	N/A
64S	Prospect	Prospect State Airport	0%	N/A	100%	N/A	No	No	N/A
REO	Rome	Rome State	0%	N/A	100%	N/A	No	No	N/A
03S	Sandy	Sandy River	N/A	N/A	N/A	N/A	No	N/A	N/A
8S3	Santiam Junction	Santiam Junction State	0%	N/A	100%	N/A	No	No	N/A
45S	Silver Lake	Silver Lake USFS	N/A	N/A	N/A	N/A	No	N/A	N/A
4S4	Cornelius	Skyport	N/A	N/A	N/A	N/A	No	N/A	N/A
7S3	Hillsboro	Stark's Twin Oaks	N/A	N/A	N/A	N/A	Yes	N/A	N/A
3S6	Clearwater	Toketee State	0%	N/A	100%	N/A	No	No	N/A
5S4	Toledo	Toledo State Airport	100%	N/A	100%	N/A	No	No	N/A
5S9	Estacada	Valley View	N/A	N/A	N/A	N/A	No	N/A	N/A
05S	Vernonia	Vernonia Municipal	N/A	N/A	N/A	N/A	No	N/A	N/A
R33	Waldport	Wakonda Beach State	100%	N/A	100%	N/A	No	No	N/A

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017, N/A = not an objective

OREGON AVIATION PLAN

TABLE 5-41: FACILITIES 7

FAA ID	City	Airport	General Aviation Terminal Auto Parking Spaces	Tenant Auto Parking Available	Meets Auto Parking Objective	Meets Fencing Objective	Meets Cargo Objective	Deicing Facility Available	Meets Deicing Facility Objective
Category I:									
PDT	Pendleton	Eastern Oregon Regional Airport	15	Yes	Yes	No	No	None	No
EUG	Eugene	Eugene Airport -Mahlon Sweet Field	45	Yes	Yes	Yes	Yes	Yes	Yes
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport	600	Yes	Yes	Yes	Yes	None	No
PDX	Portland	Portland International Airport	260	Yes	Yes	Yes	Yes	Yes	Yes
RDM	Redmond	Redmond Municipal Airport -Roberts Field	26	Yes	Yes	Yes	No	Yes	Yes
MFR	Medford	Rogue Valley International -Medford Airport	220	Yes	Yes	Yes	Yes	Yes	Yes
OTH	North Bend	Southwest Oregon Regional Airport	70	Yes	Yes	Yes	Yes	None	No
Category II:									
AST	Astoria	Port of Astoria Regional Airport	20	Yes	Yes	Yes	No	N/A	N/A
UAO	Aurora	Aurora State Airport	99	Yes	Yes	Yes	No	N/A	N/A
BDN	Bend	Bend Municipal Airport	36	Yes	Yes	No	No	N/A	N/A
CVO	Corvallis	Corvallis Municipal Airport	50	Yes	Yes	No	Yes	N/A	N/A
MMV	McMinnville	McMinnville Municipal Airport	25	No	No	No	No	N/A	N/A
ONP	Newport	Newport Municipal Airport	20	Yes	Yes	Yes	Yes	N/A	N/A
HIO	Portland	Portland -Hillsboro Airport	200	Yes	Yes	Yes	No	N/A	N/A
TTD	Portland	Portland -Troutdale Airport	100	Yes	Yes	Yes	No	N/A	N/A
61J	Portland	Portland Downtown Heliport	400	Yes	Yes	N/A	No	N/A	N/A
SLE	Salem	Salem McNary Field	50	Yes	Yes	Yes	Yes	N/A	N/A
SPB	Scappoose	Scappoose Industrial Airpark	0	Yes	No	Yes	No	N/A	N/A
Category III:									
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	18	No	Yes	No	Yes	N/A	N/A

JVIATION

FAA ID	City	Airport	General Aviation Terminal Auto Parking Spaces	Tenant Auto Parking Available	Meets Auto Parking Objective	Meets Fencing Objective	Meets Cargo Objective	Deicing Facility Available	Meets Deicing Facility Objective
BKE	Baker City	Baker City Municipal Airport	10	Yes	Yes	No	Yes	N/A	N/A
S05	Bandon	Bandon State Airport	9	Yes	Yes	No	Yes	N/A	N/A
BNO	Burns	Burns Municipal Airport	12	Yes	Yes	Yes	Yes	N/A	N/A
DLS	The Dalles	Columbia Gorge Regional - The Dalles	30	Yes	Yes	No	Yes	N/A	N/A
GCD	John Day	Grant County Regional Airport	50	Yes	Yes	Yes	Yes	N/A	N/A
3S8	Grants Pass	Grants Pass Airport	50	Yes	Yes	Yes	Yes	N/A	N/A
HRI	Hermiston	Hermiston Municipal Airport	20	Yes	Yes	Yes	Yes	N/A	N/A
LGD	La Grande	La Grande / Union County Airport	30	Yes	Yes	No	Yes	N/A	N/A
LKV	Lakeview	Lake County Airport	10	No	Yes	No	Yes	N/A	N/A
ONO	Ontario	Ontario Municipal Airport	25	Yes	Yes	No	Yes	N/A	N/A
RBG	Roseburg	Roseburg Regional Airport	60	No	Yes	Yes	Yes	N/A	N/A
TMK	Tillamook	Tillamook Airport	20	Yes	Yes	Yes	Yes	N/A	N/A
Category IV:									
S12	Albany	Albany Municipal Airport	28	Yes	Yes	N/A	N/A	N/A	N/A
M50	Boardman	Boardman Airport	0	No	No	N/A	N/A	N/A	N/A
BOK	Brookings	Brookings Airport	12	Yes	Yes	N/A	N/A	N/A	N/A
17S	Newberg	Chehalem Airpark	20	Yes	Yes	N/A	N/A	N/A	N/A
62S	Christmas Valley	Christmas Valley Airport	0	No	No	N/A	N/A	N/A	N/A
3S9	Condon	Condon State Airport - Pauling Field	0	No	No	N/A	N/A	N/A	N/A
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright	8	No	Yes	N/A	N/A	N/A	N/A
77S	Creswell	Creswell Hobby Field Airport	10	Yes	Yes	N/A	N/A	N/A	N/A
6S2	Florence	Florence Municipal Airport	10	Yes	Yes	N/A	N/A	N/A	N/A
4S1	Gold Beach	Gold Beach Municipal Airport	10	Yes	Yes	N/A	N/A	N/A	N/A

FAA ID	City	Airport	General Aviation Terminal Auto Parking Spaces	Tenant Auto Parking Available	Meets Auto Parking Objective	Meets Fencing Objective	Meets Cargo Objective	Deicing Facility Available	Meets Deicing Facility Objective
3S4	Cave Junction	Illinois Valley Airport	12	Yes	Yes	N/A	N/A	N/A	N/A
7S5	Independence	Independence State Airport	16	No	Yes	N/A	N/A	N/A	N/A
JSY	Joseph	Joseph State Airport	5	No	Yes	N/A	N/A	N/A	N/A
4S2	Hood River	Ken Jernstedt Airfield	30	Yes	Yes	N/A	N/A	N/A	N/A
S30	Lebanon	Lebanon State Airport	10	No	Yes	N/A	N/A	N/A	N/A
7S9	Hubbard	Lenhardt Airpark	10	Yes	Yes	N/A	N/A	N/A	N/A
9S9	Lexington	Lexington Airport	0	No	No	N/A	N/A	N/A	N/A
S33	Madras	Madras Municipal Airport	30	Yes	Yes	N/A	N/A	N/A	N/A
4S9	Mulino	Mulino State Airport	6	No	Yes	N/A	N/A	N/A	N/A
16S	Myrtle Creek	Myrtle Creek Municipal Airport	16	Yes	Yes	N/A	N/A	N/A	N/A
S39	Prineville	Prineville Airport	40	No	Yes	N/A	N/A	N/A	N/A
56S	Seaside	Seaside Municipal Airport	20	Yes	Yes	N/A	N/A	N/A	N/A
S45	Gleneden	Siletz Bay State Airport	10	Yes	Yes	N/A	N/A	N/A	N/A
6K5	Sisters	Sisters Eagle Air Airport	20	Yes	Yes	N/A	N/A	N/A	N/A
2S6	Newberg	Sportsman Airpark	20	Yes	Yes	N/A	N/A	N/A	N/A
S21	Sunriver	Sunriver Airport	75	Yes	Yes	N/A	N/A	N/A	N/A
35S	Wasco	Wasco State Airport	0	No	No	N/A	N/A	N/A	N/A
Category V:									
R03	Alkali Lake	Alkali Lake State	0	No	N/A	N/A	N/A	N/A	N/A
1S8	Arlington	Arlington Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2S2	Beaver Marsh	Beaver Marsh	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5S6	Sixes	Cape Blanco State Airport	0	0	N/A	N/A	N/A	N/A	N/A
CZK	Cascade Locks	Cascade Locks State Airport	0	0	N/A	N/A	N/A	N/A	N/A
2S7	Chiloquin	Chiloquin State Airport	0	0	N/A	N/A	N/A	N/A	N/A

FAA ID	City	Airport	General Aviation Terminal Auto Parking Spaces	Tenant Auto Parking Available	Meets Auto Parking Objective	Meets Fencing Objective	Meets Cargo Objective	Deicing Facility Available	Meets Deicing Facility Objective
S48	Sandy	Country Squire Airpark	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5S2	Crescent Lake	Crescent Lake State Airport	0	No	N/A	N/A	N/A	N/A	N/A
6S4	Gates	Davis Field	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8S4	Enterprise	Enterprise Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5S1	Roseburg	George Felt	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5S5	Culver	Lake Billy Chinook	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1O0	Florence	Lake Woahink SPB	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9S3	Lakeside	Lakeside Municipal Airport	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4S7	Malin	Malin	N/A	N/A	N/A	N/A	N/A	N/A	N/A
26U	McDermitt	McDermitt State Airport	10	No	N/A	N/A	N/A	N/A	N/A
00S	McKenzie	McKenzie Bridge State	0	No	N/A	N/A	N/A	N/A	N/A
25U	Imnaha	Memaloose USFS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
S49	Vale	Miller Memorial Airpark	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12S	Monument	Monument Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3S7	Manzanita	Nehalem Bay State Airport	0	No	N/A	N/A	N/A	N/A	N/A
5S0	Oakridge	Oakridge State	0	No	N/A	N/A	N/A	N/A	N/A
28U	Owyhee	Owyhee Reservoir State	0	No	N/A	N/A	N/A	N/A	N/A
PFC	Pacific City	Pacific City State Airport	0	0	N/A	N/A	N/A	N/A	N/A
22S	Paisley	Paisley	N/A	N/A	N/A	N/A	N/A	N/A	N/A
24S	Pinehurst	Pinehurst State Airport	0	0	N/A	N/A	N/A	N/A	N/A
6S6	Powers	Powers Hayes Field	N/A	N/A	N/A	N/A	N/A	N/A	N/A
64S	Prospect	Prospect State Airport	0	0	N/A	N/A	N/A	N/A	N/A
REO	Rome	Rome State	0	0	N/A	N/A	N/A	N/A	N/A
03S	Sandy	Sandy River	N/A	N/A	N/A	N/A	N/A	N/A	N/A

FAA ID	City	Airport	General Aviation Terminal Auto Parking Spaces	Tenant Auto Parking Available	Meets Auto Parking Objective	Meets Fencing Objective	Meets Cargo Objective	Deicing Facility Available	Meets Deicing Facility Objective
8S3	Santiam Jct	Santiam Junction State	0	0	N/A	N/A	N/A	N/A	N/A
45S	Silver Lake	Silver Lake USFS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4S4	Cornelius	Skyport	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7S3	Hillsboro	Stark's Twin Oaks	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3S6	Clearwater	Toketee State	0	0	N/A	N/A	N/A	N/A	N/A
5S4	Toledo	Toledo State Airport	0	No	N/A	N/A	N/A	N/A	N/A
5S9	Estacada	Valley View	N/A	N/A	N/A	N/A	N/A	N/A	N/A
05S	Vernonia	Vernonia Municipal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
R33	Waldport	Wakonda Beach State	0	Yes	N/A	N/A	N/A	N/A	N/A

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017, N/A = not an objective

TABLE 5-42: FACILITIES 8

FAA ID	City	Airport	100 LL Fuel Available	Jet A Fuel Available	Meets Fuel Objective	Full Service FBO Available	Snow Removal Available	Meets Snow Removal Objective
Category I:								
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	Yes	Yes
EUG	Eugene	Eugene Airport -Mahlon Sweet Field	100 LL	Jet A	No	Yes	Yes	Yes
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport	100 LL	Jet A	No	Yes	Yes	Yes
PDX	Portland	Portland International Airport	100 LL	Jet A	No	Yes	Yes	Yes
RDM	Redmond	Redmond Municipal Airport -Roberts Field	100 LL (24-hour self-service)	Jet A	Yes	Yes	Yes	Yes
MFR	Medford	Rogue Valley International -Medford Airport	100 LL (24-hour self-service)	Jet A	Yes	Yes	Yes	Yes
OTH	North Bend	Southwest Oregon Regional Airport	100 LL	Jet A	No	Yes	No	NA
Category II:								

FAA ID	City	Airport	100 LL Fuel Available	Jet A Fuel Available	Meets Fuel Objective	Full Service FBO Available	Snow Removal Available	Meets Snow Removal Objective
AST	Astoria	Port of Astoria Regional Airport	100 LL (24-hour self-service)	Jet A	Yes	Yes	No	NA
UAO	Aurora	Aurora State Airport	100 LL (24-hour self-service)	Jet A	Yes	Yes	Yes	Yes
BDN	Bend	Bend Municipal Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	Yes	Yes
CVO	Corvallis	Corvallis Municipal Airport	100 LL (24-hour self-service)	Jet A	Yes	Yes	Yes	Yes
MMV	McMinnville	McMinnville Municipal Airport	100 LL (24-hour self-service)	Jet A	Yes	Yes	No	No
ONP	Newport	Newport Municipal Airport	100 LL (24-hour self-service)	Jet A	Yes	Yes	No	NA
HIO	Portland	Portland -Hillsboro Airport	100 LL	Jet A	No	Yes	Yes	Yes
TTD	Portland	Portland -Troutdale Airport	100 LL	Jet A	No	Yes	No	No
61J	Portland	Portland Downtown Heliport	None	None	No	No	No	No
SLE	Salem	Salem McNary Field	100 LL (24-hour self-service)	Jet A	Yes	Yes	Yes	Yes
SPB	Scappoose	Scappoose Industrial Airpark	100 LL	Jet A	No	Yes	Yes	Yes
Category III:								
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	Yes	Yes
BKE	Baker City	Baker City Municipal Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	Yes	Yes
S05	Bandon	Bandon State Airport	100 LL (24-hour self-service)	None	No	Yes	No	NA
BNO	Burns	Burns Municipal Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	Yes	Yes
DLS	The Dalles	Columbia Gorge Regional - The Dalles	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	Yes	Yes
GCD	John Day	Grant County Regional Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	Yes	Yes
3S8	Grants Pass	Grants Pass Airport	100 LL (24-hour self-service)	Jet A	Yes	Yes	No	No

OREGON AVIATION PLAN

FAA ID	City	Airport	100 LL Fuel Available	Jet A Fuel Available	Meets Fuel Objective	Full Service FBO Available	Snow Removal Available	Meets Snow Removal Objective
HRI	Hermiston	Hermiston Municipal Airport	100 LL	Jet A	No	Yes	Yes	Yes
LGD	La Grande	La Grande / Union County Airport	100 LL	Jet A	No	Yes	Yes	Yes
LKV	Lakeview	Lake County Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	Yes	Yes
ONO	Ontario	Ontario Municipal Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	Yes	Yes
RBG	Roseburg	Roseburg Regional Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	No	No
TMK	Tillamook	Tillamook Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	No	NA
Category IV:								
S12	Albany	Albany Municipal Airport	100 LL (24-hour self-service)	None	Yes	Yes	No	No
M50	Boardman	Boardman Airport	None	None	No	No	No	No
BOK	Brookings	Brookings Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	No	NA
17S	Newberg	Chehalem Airpark	100 LL	Jet A	Yes	Yes	No	No
62S	Christmas Valley	Christmas Valley Airport	None	None	No	No	Yes	Yes
3S9	Condon	Condon State Airport - Pauling Field	None	None	No	No	No	No
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field	100 LL (24-hour self-service)	None	Yes	No	No	No
77S	Creswell	Creswell Hobby Field Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	No	No
6S2	Florence	Florence Municipal Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	No	Yes	Yes
4S1	Gold Beach	Gold Beach Municipal Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	No	NA
3S4	Cave Junction	Illinois Valley Airport	None	None	No	No	No	No
7S5	Independence	Independence State Airport	100 LL (24-hour self-service)	None	Yes	Yes	No	No
JSY	Joseph	Joseph State Airport	100 LL (24-hour self-service)	Jet A	Yes	No	Yes	Yes

FAA ID	City	Airport	100 LL Fuel Available	Jet A Fuel Available	Meets Fuel Objective	Full Service FBO Available	Snow Removal Available	Meets Snow Removal Objective
4S2	Hood River	Ken Jernstedt Airfield	100 LL (24-hour self-service)	None	Yes	Yes	Yes	Yes
S30	Lebanon	Lebanon State Airport	100 LL (24-hour self-service)	None	Yes	Yes	No	No
7S9	Hubbard	Lenhardt Airpark	100 LL	None	Yes	No	No	No
9S9	Lexington	Lexington Airport	100 LL (24-hour self-service)	None	Yes	No	Yes	Yes
S33	Madras	Madras Municipal Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	Yes	Yes
4S9	Mulino	Mulino State Airport	100 LL (24-hour self-service)	None	Yes	No	No	No
16S	Myrtle Creek	Myrtle Creek Municipal Airport	100 LL (24-hour self-service)	None	Yes	No	No	No
S39	Prineville	Prineville Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	Yes	Yes
56S	Seaside	Seaside Municipal Airport	None	None	No	No	No	NA
S45	Gleneden Beach	Siletz Bay State Airport	None	None	No	No	No	NA
6K5	Sisters	Sisters Eagle Air Airport	100 LL (24-hour self-service)	None	Yes	No	Yes	Yes
2S6	Newberg	Sportsman Airpark	100 LL	Jet A	Yes	Yes	Yes	Yes
S21	Sunriver	Sunriver Airport	100 LL (24-hour self-service)	Jet A (24-hour self-service)	Yes	Yes	Yes	Yes
35S	Wasco	Wasco State Airport	None	None	No	No	No	No
Category V:								
R03	Alkali Lake	Alkali Lake State	None	None	N/A	No	No	N/A
1S8	Arlington	Arlington Municipal	None	None	N/A	No	No	N/A
2S2	Beaver Marsh	Beaver Marsh	None	None	N/A	No	No	N/A
5S6	Sixes	Cape Blanco State Airport	None	None	N/A	No	No	N/A
CZK	Cascade Locks	Cascade Locks State Airport	None	None	N/A	No	No	N/A
2S7	Chiloquin	Chiloquin State Airport	None	None	N/A	No	No	N/A

FAA ID	City	Airport	100 LL Fuel Available	Jet A Fuel Available	Meets Fuel Objective	Full Service FBO Available	Snow Removal Available	Meets Snow Removal Objective
S48	Sandy	Country Squire Airpark	None	None	N/A	No	No	N/A
5S2	Crescent Lake	Crescent Lake State Airport	None	None	N/A	No	No	N/A
6S4	Gates	Davis Field	None	None	N/A	No	No	N/A
8S4	Enterprise	Enterprise Municipal	100 LL	None	N/A	No	No	N/A
5S1	Roseburg	George Felt	None	None	N/A	No	No	N/A
5S5	Culver	Lake Billy Chinook	None	None	N/A	No	No	N/A
1O0	Florence	Lake Woahink SPB	None	None	N/A	No	No	N/A
9S3	Lakeside	Lakeside Municipal Airport	None	None	N/A	No	No	N/A
4S7	Malin	Malin	100 LL (24-hour self-service)	None	N/A	No	Yes	N/A
26U	McDermitt	McDermitt State Airport	None	None	N/A	No	No	N/A
00S	McKenzie Bridge	McKenzie Bridge State	None	None	N/A	No	No	N/A
25U	Imnaha	Memaloose USFS	None	None	N/A	No	No	N/A
S49	Vale	Miller Memorial Airpark	None	None	N/A	No	No	N/A
12S	Monument	Monument Municipal	None	None	N/A	No	No	N/A
3S7	Manzanita	Nehalem Bay State Airport	None	None	N/A	No	No	N/A
5S0	Oakridge	Oakridge State	None	None	N/A	No	No	N/A
28U	Owyhee Reservoir	Owyhee Reservoir State	None	None	N/A	No	No	N/A
PFC	Pacific City	Pacific City State Airport	None	None	N/A	No	No	N/A
22S	Paisley	Paisley	None	None	N/A	No	No	N/A
24S	Pinehurst	Pinehurst State Airport	None	None	N/A	No	No	N/A
6S6	Powers	Powers Hayes Field	None	None	N/A	No	No	N/A
64S	Prospect	Prospect State Airport	None	None	N/A	No	No	N/A
REO	Rome	Rome State	None	None	N/A	No	No	N/A

FAA ID	City	Airport	100 LL Fuel Available	Jet A Fuel Available	Meets Fuel Objective	Full Service FBO Available	Snow Removal Available	Meets Snow Removal Objective
03S	Sandy	Sandy River	None	None	N/A	No	No	N/A
8S3	Santiam Junction	Santiam Junction State	None	None	N/A	No	No	N/A
45S	Silver Lake	Silver Lake USFS	None	None	N/A	No	No	N/A
4S4	Cornelius	Skyport	None	None	N/A	No	No	N/A
7S3	Hillsboro	Stark's Twin Oaks	100 LL (24-hour self-service)	None	N/A	Yes	No	N/A
3S6	Clearwater	Toketee State	None	None	N/A	No	No	N/A
5S4	Toledo	Toledo State Airport	None	None	N/A	No	No	N/A
5S9	Estacada	Valley View	None	None	N/A	No	No	N/A
05S	Vernonia	Vernonia Municipal	None	None	N/A	No	No	N/A
R33	Waldport	Wakonda Beach State	None	None	N/A	No	No	N/A

Source: Airport Management Survey, Century West, Jviation and Marr Arnold Planning Analysis 2017, N/A = not an objective

OREGON
AVIATION PLAN

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6. SPECIAL CONSIDERATIONS

6.1 Introduction

This chapter addresses special considerations related to unique aspects of Oregon's system of airports. These considerations address new trends in Oregon aviation activity and each topic is considered to various extents in **Chapter 5, System and Airport Evaluation**. Topics addressed in this chapter include:

- Airport System Resilience
- Airports with scheduled air cargo service
- State-owned airports
- State Warning Airports
- Gaps in geographic coverage
- Aviation System Action Program (ASAP) and Rural Oregon Airport Relief Program (ROAR)
- Unmanned Aerial Vehicles (UAVs)

6.2 Airport System Resilience

The extensive aviation system in Oregon is a crucial asset to the state during times of emergency. Airports enable emergency rescue crews to quickly access remote or hard-hit areas, and supply resources to and evacuate areas that may otherwise be unreachable via roadway, boat, and rail. As such, this study included an inventory of airports that support emergency services. Further, this study inventoried airports located within the Cascadia subduction zone (CSZ) that may be impacted or destroyed during a zone event. This study did not include an in-depth resiliency study but rather a high-level overview of airports that currently provide emergency services and those that may likely be unable to provide such service following a Cascadia subduction zone event[1].

6.2.1 Airport Roles in the 2013 Oregon Resilience Plan

Oregon emergency management officials and lawmakers recognize the vulnerability of airports and the communities they serve to potential earthquake events. Oregon has established the Oregon Seismic Safety Policy Advisory Commission (OSSPAC) which provided the Oregon Resilience Plan to the 77th Legislative Assembly[2]. The authors of the 2013 Oregon Resilience Plan set out to help Oregonians know what to expect from the state's infrastructure should that disaster strike currently, and to propose the level of infrastructure reliability that a resilient state should provide. The Plan's recommendations highlight ways to close the gap that separates expected and desired performance. The Transportation Task Group assessed the seismic integrity of Oregon's multi-modal transportation system, including bridges and highways, rail, airports, ports, seaports, and public transit systems. The Plan identified 30 airports in Oregon that can support recovery efforts related to a CSZ event. As discussed in previous chapters of the Oregon Aviation Plan (OAP v6.0), 97 facilities grouped into five categories of airports comprise the Oregon airport system.

[1] Oregon has the potential for a 9.0+ magnitude earthquake caused by the Cascadia Subduction Zone and a resulting tsunami of up to 100 feet in height that will impact the coastal area. http://www.oregon.gov/oem/hazardsprep/Pages/Cascadia-Subduction-Zone.aspx

[2] https://www.oregon.gov/oem/Documents/Oregon_Resilience_Plan_Final.pdf

In 2017 an Airport Resiliency Workgroup was formed to further identify system airports within each category that have the potential to maintain or quickly restore operational functions after a major earthquake. The Workgroup was formed by the House of Representatives and the membership consisted of individuals from the Department of Aviation, the Office of Emergency Management, the State Resilience Office, and the Oregon Pilots Association. The Airport Resiliency Workgroup arranged the 30 airports into a tier system to indicate the priorities for making future investments.

It is also important to point out that the FAA re-authorization bill allows for additional studies related to airport master plans to include emergency and disaster preparedness.[3] This will allow NPIAS airport in Oregon to have additional analysis in their airport master plans related to evacuations and airport role in emergencies. In April 2018 the following was added to Section 47106 of title 49, United States Code, (amended by adding at the end the following):

- "(h) EVALUATION OF AIRPORT MASTER PLANS. —When evaluating the master plan of an airport for purposes of this subchapter, the Secretary shall take into account—
    - "(1) the role the airport plays with respect to medical emergencies and evacuations; and
    - "(2) the role the airport plays in emergency or disaster preparedness in the community served by the airport."

Tier Type and Base Concept

Tier 1 (ISB, BSI, or Type 1 FSA)

Based on existing airports, Tier 1 (T1) are also referred to as Incident Staging Bases (ISB)(Federal Emergency Management Agency (FEMA)), Base Support Installation (BSI)(DOD), Type 1 Federal Staging Area (FSA)(FEMA), or National Guard Logistics Staging Base (NGLSB)(State). These are functioning as Aerial Port of Embarkation / Departure (APOE/D) for the response and simultaneously Tier 3 resupply points. They are capable of the full spectrum of response operations.

- Airfield Max Runway Strength 125,000 to 500,000 pounds
- Identified now
- Preplan usage now
- Pre-coordinate design now
- Acts as all Tiers
- Provides distribution to local communities
- Responder Base Camp (RBC)
- Joint reception, staging, onward movement, and integration (JRSOI)/ Relief in Place (RIP) Location

Tier 2 (Type 2 FSA)

Based on existing airports, Tier 2 (T2) are larger networks of airports that provide access to most rural areas and will be needed to restore major commercial operations. May also be referred to as Type 2 Federal Staging Areas (FSA). These function as forward APOE/D for the response and are simultaneously used as Tier 2 resupply points, and immediate area Tier 3s. They should be capable of the full spectrum of response operations.

- Airfield Max Runway Strength 25,000 to 125,000 pounds

[3] [Congressional Record Volume 164, Number 68 (Thursday, April 26, 2018)] [House] [Pages H3643-H3688] amendment no. 61 offered by Mr. Kilmer of Washington, At the end of title V, insert the following: SEC. 543. EVALUATION OF AIRPORT MASTER PLANS.

- Identified now
- Preplan usage
- Pre-coordinate design
- Serves as logistics base and RBC
- Provides distribution to local communities
- JRSOI / RIP Location

Tier 3 (Type 3 FSA w/Airport)

Tier 3 (T3) bases come in two varieties: with or without airports. Both are located based on the forecast needs of their surrounding population and provide economic and commercial restoration to the entire region after a disaster event. Tier / Type 3 Base with Airport is a pre-identified location and is pre-coordinated with the airport manager.

- Airfield Max Runway Strength <20,000
- Identified now
- Preplan usage
- Pre-coordinate design
- Serves as log base and RBC
- Provides distribution to local communities
- Responder Base Camp
- JRSOI / RIP (-) Location

The Airport Resiliency Workgroup's recommended organization of the 30 airports is depicted in **Table 6-1**.

TABLE 6-1: RECOMMENDED ORGANIZATION OF OREGON AIRPORTS

Tier 1 (ISB, BSI, or Type 1 FSA)	Tier 2 (Type 2 FSA)	Tier 3 (Type 3 FSA w/Airport)
Redmond (RDM) FEMA	Tillamook (TMK) 4	Bandon (S05)
Klamath Regional(KLM) 6	Corvallis (CVO)	Siletz Bay (S45)
Portland International Airport (PDX)	Scappoose (SPB)	Independence (7S5) 11
Salem McNary (SLE)	Roseburg (5S1)	Grants Pass (3S8)
Newport (ONP)	McMinnville (MMV)	Myrtle Creek (16S)
Eugene (EUG)	Albany (S12) 10	Cottage Grove (61S)
Medford (MFR)	Aurora (UAO) 9	Creswell (77S)
Hillsboro (HIO)	Troutdale (TTD)	Brooking (BOK)
Cape Blanco State (5S6)		Florence (6S2)
Pendleton (PDT)		Portland Heliport (61J)
		Mulino (4S9)
		Lebanon State (S30)

Source: Airport Resiliency Workgroup

FEMA requested that the State of Oregon prioritize 11 airports to have a federal assessment done[4]. As of March 2018, FEMA has assessed Redmond Municipal Airport (RDM). In 2019 Portland International Airport (PDX) and Salem Municipal Airport (SLE) are scheduled for FEMA assessment. The other airports that Oregon has prioritized include:

- Cape Blanco State Airport (5S6)
- Tillamook Airport (TMK)
- Eugene (EUG)
- Klamath (KLM)
- Hillsboro Airport (HIO)
- Aurora State Airport (UAO)
- Albany Airport (S12)
- Independence State Airport (7S5)

As shown in **Figure 6-1**, most airports in the Resilience Plan are along the Interstate 5 corridor and along the Oregon Coast, excepting Crater Lake-Klamath Regional, Eastern Oregon Regional Airport at Pendleton, and Redmond Regional Airports. Redmond is currently the designated FEMA base of operations, while Crater Lake-Klamath Regional has an Air National Guard base.

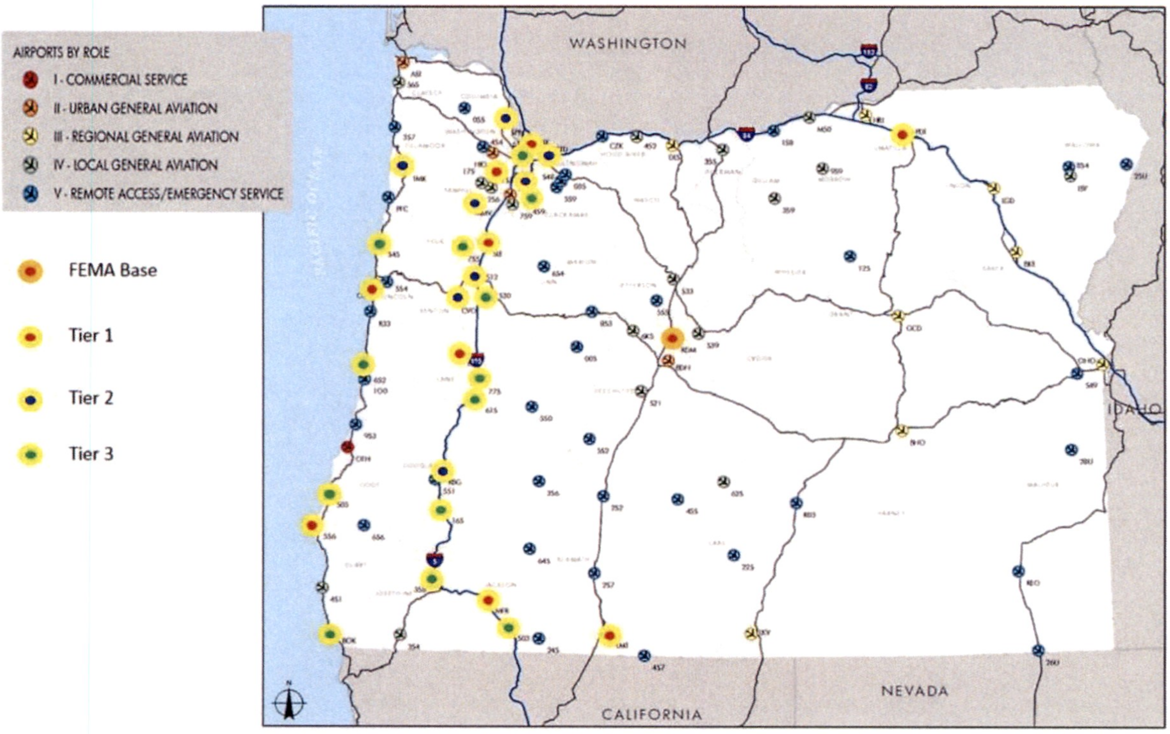
Additional research related to Oregon airports and a CSZ event has been recently conducted by the Airport Resiliency Workgroup. The Group was tasked with developing three white papers on airport resiliency: 1) Identify Airports: Identify airports as forward operating bases and tier them based on capability; 2) Prioritize Equipment: Outline and prioritize the categories of equipment that could be used in a CSZ event; 3) Identify Funding: Identify the major avenues of funding.

Analysis of Oregon Department of Geology and Mineral Industries (DOGAMI) data identifies airports within the study and their risk of earthquake damage, either through liquefaction[5] or Cascadia/Tsunami. It was determined that there are seven airports within a known coastal hazard area, all with both a liquefaction and Cascadia/Tsunami event hazard risk (see **Table 6-2**). None of these airports are listed as essential in the Oregon Resilience Plan and as such are not part of the Tier system.

[4] Source for the FEMA list is from Legislative sub-committee of the Oregon Resiliency Work Group.

[5] Soil liquefaction describes a phenomenon whereby a saturated or partially saturated soil substantially loses strength and stiffness in response to an applied stress, usually earthquake shaking or other sudden change in stress condition, causing it to behave like a liquid.

FIGURE 6-1: AIRPORT RESILIENCY WORKGROUP – TIERED SYSTEM



Source: Airport Resiliency Workgroup, Jviation

TABLE 6-2: AIRPORTS WITHIN A KNOWN COASTAL HAZARD AREA

Airport Name	Liquefaction Hazard	Cascadia Event Hazard[6]
Port of Astoria Regional Airport	High	Severe
Gold Beach Municipal Airport	Moderate	Violent
Nehalem Bay State Airport	High	Severe
Pacific City State Airport	High	Severe
Seaside Municipal Airport	High	Severe
Southwest Oregon Regional Airport	High	Violent
Wakonda Beach State	Moderate	Severe

Source: http://www.oregongeology.org/tsuclearinghouse/pubs-inumaps.htm, Jviation analysis

6.2.2 Coastal Airports Supporting Cascadia/Tsunami Event

In addition to the airports located within a known coastal hazard area, it was determined that ten more airports are at risk of impacts resulting from an earthquake; due to the airports' inland locations or higher elevations, they are located outside a known coastal hazard area related to tsunami (see **Table 6-3**). **Appendix D** profiles these airports' attributes and locations. These airports have a higher probability of less damage by tsunami and can be utilized in the event of a natural disaster along the Oregon coast. Additionally, seven of the ten airports

[6] Violent shaking is greater than Severe shaking. In general, airports located closest to coast will likely experience greater shaking than airports higher in elevation and further from coast.

profiled are listed in the Oregon Resilience Plan (ORP) and have the potential to maintain or quickly restore operational functions after a major earthquake. It is important to note that an earthquake-generated tsunami may not be felt locally.[7]

TABLE 6-3: AIRPORTS OUTSIDE A KNOWN COASTAL HAZARD AREA

Airport Name	ORP Tier	Liquefaction Hazard[8]	Cascadia Event Hazard[9]
Bandon State Airport	T3	Moderate	Violent
Brookings Airport	T3	N/A	Severe
Cape Blanco State Airport	T1	Moderate	Violent
Florence Municipal Airport	T3	High	Severe
Lakeside Municipal Airport	NA	Moderate	Severe
Newport Municipal Airport	T1	Low	Severe
Powers Hayes Field	NA	Moderate	Severe
Siletz Bay State Airport	T3	Moderate	Severe
Tillamook Airport	T2	Moderate	Severe
Toledo State Airport	NA	Moderate	Severe

Source: http://www.oregongeology.org/tsuclearinghouse/pubs-inumaps.htm

Several of the airports listed in **Table 6-4** serve areas with significant population numbers. If an earthquake were to damage or leave any of these airports inoperable, the region and its residents may experience delayed emergency response. **Table 6-4** depicts these airports along with the population within a 30-minute drive, 20 miles, and within the city limits. It is important to note these airports are not included in a known coastal hazard area and may not be commonly associated with earthquake risks. **Figure 6-2** depicts the location of these airports.

TABLE 6-4: POPULATION NEAR AIRPORTS OUTSIDE A COASTAL HAZARD AREA

Airport Name[10]	Population within 30-minute Drive of Airport	Population within 20-mile Radius	Population within City Limits
Bandon State Airport	7,554	29,567	3,147
Brookings Airport	13,883	25,779	6,497
Cape Blanco State Airport	3,382	4,998	1,146
Florence Municipal Airport	15,006	17,530	8,703
Lakeside Municipal Airport	29,167	48,208	1,748
Newport Municipal Airport	24,298	34,539	10,344
Powers Hayes Field	891	7,638	660

[7] The last earthquake that occurred in this CSZ fault was on January 26, 1700, with an estimated 9.0 magnitude. This earthquake caused the coastline to drop several feet and a tsunami to form and crash into the land. What is most surprising is that evidence for this great earthquake also came from Japan. Japanese historic records indicate that a destructive distantly produced tsunami struck their coast on January 26, 1700. By studying the geological records, the flow of the Pacific Ocean, scientists have linked the tsunami in Japan with the great Pacific Northwest earthquake. Native American legends support the timing of this last event.

[8] Jviation analysis of Earthquake Hazard maps at http://www.oregongeology.org/hazvu/ liquefaction data is based on soft soils analysis by DOGAMI.

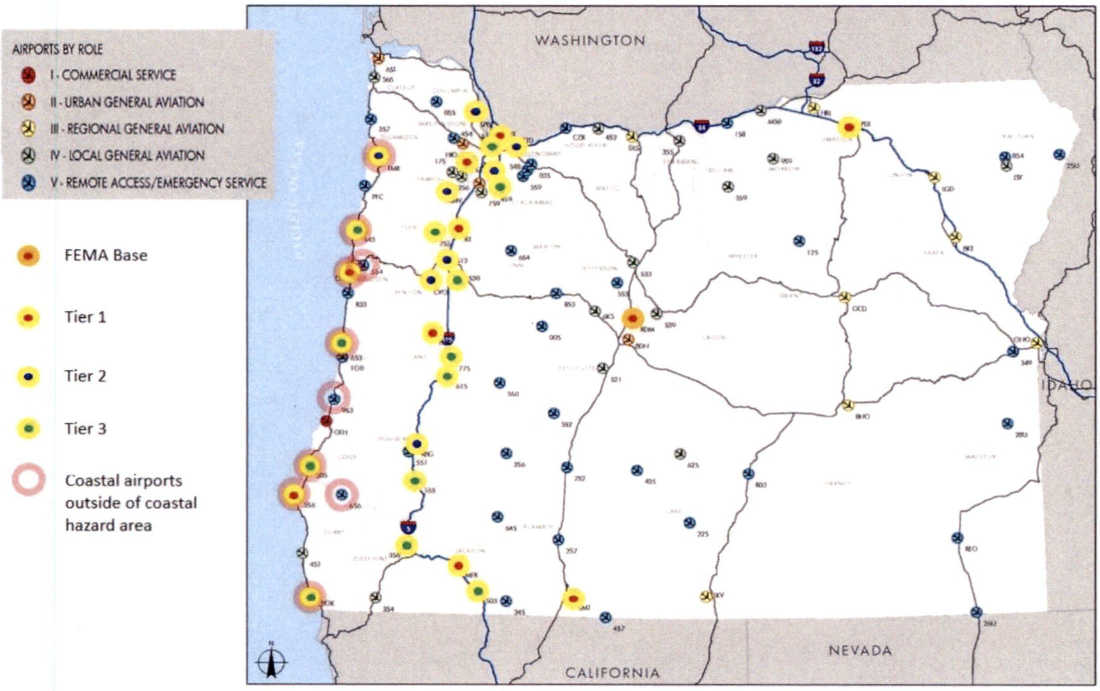
[9] Jviation analysis of Cascadia Event Hazard maps at http://www.oregongeology.org/hazvu/

[10] All airports listed have paved runways except Lakeside Municipal and Powers Hayes Field, which have turf runways.

Airport Name[10]	Population within 30-minute Drive of Airport	Population within 20-mile Radius	Population within City Limits
Siletz Bay State Airport	20,385	37,804	2,110
Tillamook Airport	17,630	25,025	4,976
Toledo State Airport	19,578	32,436	3,515

Source: http://oregon.zoomprospector.com, accessed by Jviation in 2017

FIGURE 6-2: AIRPORT RESILIENCY WORKGROUP – TIERED SYSTEM AND COASTAL AIRPORTS OUTSIDE THE COASTAL HAZARD AREA



Source: Airport Resiliency Workgroup, Jviation

6.2.3 Coastal Airports Supporting Cascadia Event Recovery

Appendix D identifies Oregon airports that are less likely to be inundated by a tsunami due to airport elevation and distance from coast, and that can be utilized to support communities on the coast in the event of a major earthquake and or tsunami. There are ten airports listed that are located outside of the hazardous zones identified by DOGAMI. Each airport's attributes are identified in an individual two-page summary table in **Appendix D**. Each table includes:

- Airport name and FAA three-letter identification code
- Airport contact person and telephone number
- Airport Communication Radio Frequency
- Airport elevation in feet and location in miles to coast
- Cascadia Event Hazard: Violent, Severe, Very Strong, Strong, Moderate, Light
- Liquefaction Hazard: High, Moderate, Low, N/A
- Airport inside DOGAMI Hazard Area

- Airport in 100-Year Floodplain
- Oregon Resiliency Plan Tier[11]
- Airport Location Map related to Tsunami Regions (Green equals outside Known Hazard Area)
- Airport Infrastructure: Runway length and width, NAVAIDS, Weather Reporting
- Airport services: FBO Name, Fuel, and whether air ambulance aircraft are based on airport
- Airport Location: Distance to Central Business District and Local Hospital as well as distance to nearest airport on coast
- Airports nearby with instrument approaches and distance
- Community profile: Population within 30-minutes of airport, population within 20-mile radius (by air) and population within associated city
- Population Age distribution profile graph
- 30-minute drive time map

6.3 Airports Supporting Emergency Services

Through the collection of data during the inventory process of this study, Oregon airports were asked if they supported emergency services. **Table 6-5** depicts the airports that support emergency services and the types of services. Airports that did not self-report supporting emergency services are not included, nor are airports which research found no emergency service activity.

TABLE 6-5: AIRPORTS SUPPORTING EMERGENCY SERVICES

FAA ID	Associated City	Airport Name	Coast Guard	Air Ambulance	Based Firefighting	Support Firefighting
AST	Astoria	Port of Astoria Regional Airport	X	X		
UAO	Aurora	Aurora State Airport		X		
BDN	Bend	Bend Municipal Airport		X		
BOK	Brookings	Brookings Airport		X		
BNO	Burns	Burns Municipal Airport			X	X
CZK	Cascade Locks	Cascade Locks Airport				X
2S7	Chiloquin	Chiloquin State Airport				X
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field		X		
EUG	Eugene	Eugene Airport -Mahlon Sweet Field				X
3S8	Grants Pass	Grants Pass Airport				X
GCD	John Day	Grant County Regional Airport			X	X
JSY	Joseph	Joseph State Airport				X
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport		X	X	X
LGD	La Grande	La Grande / Union County Airport		X	X	X
LKV	Lakeview	Lake County Airport			X	X

[11] The Oregon Resilience Plan identifies airports within each State OAP v6.0 Category that have the potential to maintain or quickly restore operational functions after a major earthquake. The Transportation Task Group arranged 30 airports into a tier system to indicate the priorities for making future investments. Seven of the ten airports identified in this analysis are included in the Tier System. Tier 1 are the essential airports that will allow access to major population centers and areas considered vital for both rescue operations and economic restoration. Tier 2 is a larger network of airports that provide access to most rural areas and will be needed to restore major commercial operations. Tier 3 airports will provide economic and commercial restoration to the entire region after a Cascadia subduction zone event.

FAA ID	Associated City	Airport Name	Coast Guard	Air Ambulance	Based Firefighting	Support Firefighting
S33	Madras	Madras Municipal Airport				X
00S	McKenzie Bridge	McKenzie Bridge State Airport				X
MFR	Medford	Rogue Valley International -Medford Airport		X	X	X
16S	Myrtle Creek	Myrtle Creek Municipal Airport				X
ONP	Newport	Newport Municipal Airport	X			
OTH	North Bend	Southwest Oregon Regional Airport	X	X		
5S0	Oakridge	Oakridge State				X
ONO	Ontario	Ontario Municipal Airport		X	X	X
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton		X	X	X
HIO	Portland	Portland -Hillsboro Airport		X		
TTD	Portland	Portland -Troutdale Airport		X		
S39	Prineville	Prineville Airport			X	X
64S	Prospect	Prospect State				X
RDM	Redmond	Redmond Municipal Airport -Roberts Field		X	X	X
5S1	Roseburg	George Felt				X
8S3	Santiam Junction	Santiam Junction State				X
SLE	Salem	Salem McNary Field				X
S21	Sunriver	Sunriver				X
TMK	Tillamook	Tillamook Airport		X		
3S6	Clearwater	Toketee State				X
S49	Vale	Miller Memorial Airpark			X	X

Source: ODA Inventory, Oregon Department of Forestry-Fire Protection Division, ADAM Air Ambulance Atlas, Jviation analysis

Coast Guard: Of the 36 airports identified as supporting emergency services throughout Oregon, only three support US Coast Guard (USCG) aviation infrastructure. Two of the three are USCG Air Stations: Port of Astoria Regional and Southwest Oregon Regional. At Newport Municipal, the USCG operates an Air Facility[12]. These USCG stations and facilities support search and rescue and emergency medivac efforts throughout the state and neighboring regions.

Air Ambulance: The 15 airports that support emergency services do so through a local air ambulance service provider; these airports and service providers include:

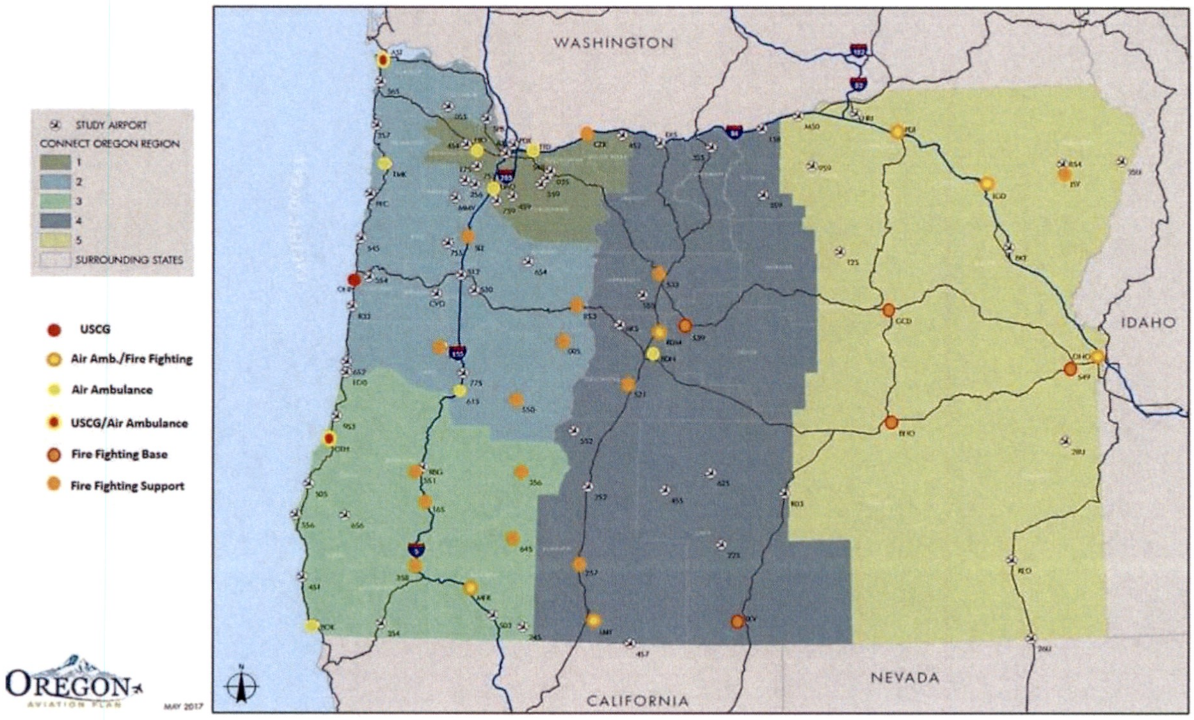
- Port of Astoria Regional Airport - Life Flight Network
- Aurora State Airport - Life Flight Network
- Bend Municipal Airport - AirLink Critical Care Transport
- Brookings Airport - REACH Air Medical Services
- Corvallis Municipal Airport - REACH Air Medical Services
- Cottage Grove State Airport-Jim Wright Field - Life Flight Network
- Eastern Oregon Regional Airport at Pendleton - Life Flight Network

[12] USCG Air Facilities are staffed by crews that rotate in temporarily from a Coast Guard Air Station.

- Crater Lake-Klamath Regional Airport - AirLink Critical Care Transport and REACH Air Medical Services
- La Grande / Union County Airport - Life Flight Network
- Ontario Municipal Airport - Life Flight Network
- Portland - Hillsboro Airport - Premier Jets/Lifeguard Air Ambulance
- Redmond Municipal Airport - Roberts Field - Life Flight Network
- Rogue Valley International - Medford Airport - Mercy Flights, Inc. (Oregon)
- Southwest Oregon Regional Airport - REACH Air Medical Services
- Tillamook Airport - Classic Air Medical

Wildland Firefighting: **Table 6-5** shows airports that support wildland firefighting services in two ways: either through a full-time based firefighting operation or through operations that are temporarily based at an airport on an as-needed basis. **Figure 6-3** shows the airports in Oregon that support wildland firefighting and other emergency services.

FIGURE 6-3: AIRPORTS SUPPORTING EMERGENCY SERVICES



Source: Jviation

Airports that support full-time firefighting operations with based aircraft and infrastructure include:

- Burns Municipal Airport - SEAT[13] Base
- Eastern Oregon Regional Airport at Pendleton - SEAT Base
- Grant County Regional Airport - SEAT Base
- Crater Lake-Klamath Regional Airport - Heavy Base

[13] Single-Engine Attack Aircraft

- La Grande / Union County Airport - Heavy Base
- Lake County Airport - SEAT Base
- Miller Memorial Airpark - SEAT Base
- Ontario Municipal Airport - SEAT Base
- Portland -Troutdale Airport - Heavy Base
- Prineville Airport - SEAT Base
- Redmond Municipal Airport - Roberts Field - Redmond Air Center is the hub of aerial firefighting and training activities in the PNW. Includes smokejumper unit, regional aviation group, a regional fire case, an air tanker base, and an interagency Type I training crew (the Redmond Hotshots)
- Rogue Valley International - Medford Airport - Heavy Base

The following airports have supported firefighting operations in recent years on a temporary or short-term basis:

- Eugene Airport - Mahlon Sweet Field
- George Felt
- Grants Pass Airport
- Madras Municipal Airport
- Myrtle Creek Municipal Airport
- Salem McNary Field
- Sisters Eagle
- Joseph State Airport
- Oakridge State Airport
- Crescent Lake State Airport
- Cascade Locks State Airport
- McDermitt State Airport

6.4 Airports at Risk to Natural Hazards

A second aspect of this study was to inventory airports at risk to flooding.

6.4.1 Flooding

Study airports were evaluated and to determine which airports are located within a Flood Zone A, which has a 1 percent annual chance of flooding according to FEMA. It was found that ten airports are located within a Flood Zone A and nine airports are partially located within a Flood Zone A. These airports, shown in **Table 6-6**, are considered "at risk" due to flooding hazards.

TABLE 6-6: AIRPORTS WITHIN FLOOD ZONE A

Airport	Within 1% Annual Chance Flood Area
Ashland Municipal Airport -Sumner Parker Field	Partially
Port of Astoria Regional Airport	Completely
Burns Municipal Airport	Completely
Cottage Grove State Airport -Jim Wright Field	Completely

Airport	Within 1% Annual Chance Flood Area
George Felt	Partially
Lake County Airport	Completely
Myrtle Creek Municipal Airport	Completely
Pacific City State Airport	Completely
Portland -Troutdale Airport	Partially
Prospect State Airport	Partially
Rogue Valley International -Medford Airport	Partially
Salem McNary Field	Completely
Seaside Municipal Airport	Completely
Siletz Bay State Airport	Completely
Southwest Oregon Regional Airport	Partially
Stark's Twin Oaks	Partially
Sunriver Airport	Partially
Tillamook Airport	Partially
Toledo State Airport	Completely

Source: https://msc.fema.gov/portal/search, Accessed 2017, Jviation analysis

6.5 Air Cargo

There are 14 airports in Oregon that support regularly scheduled air cargo service. While passenger airlines do carry some cargo and mail in the belly of the aircraft, the clear majority of air cargo volume arrives and departs on dedicated air cargo aircraft. Portland International Airport is the only Oregon airport with dedicated cargo jet activities, which are operated by FedEx Express, DHL, Amazon Prime Air, and UPS. Thirteen other airports in the state support turboprop and piston engine cargo aircraft, many of which are contracted to "feed" air cargo to and from the cargo jets. This section identifies the airports and air cargo carriers operating within the state.

6.5.1 Air Cargo Industry Overview

The movement of air cargo takes place via one of three types of carriers: all-cargo, integrated express, or on passenger airlines as belly compartment cargo. Integrated express operators rely on a hub-and-spoke system and are contracted to move the customer's goods door-to-door, providing shipment, collection, transport via air/truck, and delivery. Integrated express operators include FedEx Express, UPS, and DHL (which discontinued its domestic delivery service in 2009 to focus on international traffic). All-cargo carriers operate airport-to-airport freight services for their customers but do not offer passenger service. Air cargo services, or "belly cargo," provided by passenger airlines vary in scope and size from airline to airline depending on differences in aircraft operating fleet. A regional airline with a fleet of turboprop and regional jets cannot accommodate bulky cargo due to capacity limitations in the baggage compartment. However, widebody passenger aircraft have containerized lower decks and are designed to carry large shipments.

Air cargo typically consists of lightweight, time-sensitive, and/or high-value commodities. Common examples of air freight include perishables (flowers, fish, meat, produce), cell phones, computers and tablets, telecommunications equipment, motor vehicle parts, aircraft and aerospace parts, oil and gas drilling equipment, pharmaceuticals, clothing/apparel/shoes, medical devices and supplies, as well as many other items.

The quantity of air cargo moving between origin and destination points, and the amount of cargo transferring via an airport, is closely related to the market area size and airport infrastructure. Oregon's busiest cargo airports are located near its largest cities, which produce consistent passenger and air cargo traffic demand. Consequently, these facilities must be able to support large commercial aircraft capable of accommodating market demand. Smaller markets in the state produce demand for air cargo service but not at levels sufficient to warrant cargo jet aircraft. These markets are typically served by contracted piston and turboprop aircraft which transport cargo to and from cargo jet aircraft located at PDX or other out of state airports. These smaller airports are typically commercial service airports although general aviation airports were also found to be utilized by contracted cargo feeder airlines.

6.5.2 Oregon's Air Cargo Carrier Networks

Integrated express operators are the dominant air cargo carriers in Oregon as they provide their customers with a national and, in most cases, worldwide door-to-door delivery network. As stated previously, the integrated express operators in Oregon with scheduled air cargo jet aircraft are:

- FedEx Express (49.9% PDX market share)
- UPS (36.8% PDX market share)
- DHL (2.5% PDX market share)

Of the passenger airlines that provide air cargo service, Delta Airlines has the largest market share of belly cargo carried at PDX with 2.4 percent, followed by Southwest Airlines with 1.1 percent, and Alaska Airlines with 1.0 percent market share.

All three integrated express carriers use PDX as a center of cargo jet operations. UPS and FedEx Express contract with feeder airlines that also operate out of PDX to locations throughout the state and region. Northeastern Oregon is the exception to this practice as FedEx Express operates feeder aircraft from Spokane International (GEG) to Pendleton (PDT) and La Grande (LGD).

FedEx Express jets bring cargo from their national sorting hub in Memphis (MEM), as well as hubs in Indianapolis (IND), Fort Worth (AFW), and Oakland (OAK). UPS operates cargo jets to their World Hub in Louisville (SDF), in addition to Ontario (ONT), and Spokane (GEG). PDX is the only airport in Oregon with scheduled cargo jet service. DHL carries only international cargo between the United States and overseas markets. Their Cincinnati (CVG) hub provides Boeing 767 service to PDX. DHL also shares this aircraft route with Seattle making it a one-stop cargo flight (CVG-SEA-PDX). Amazon Prime Air is a new entrant into express package delivery with cargo jets. This new carrier operates Boeing 767 cargo jets from PDX to Lehigh Valley Airport (ABE) in Allentown, Pennsylvania, which is located approximately two-hours truck drive time from the New York City metro area.

Cathay Pacific operates the only international freighter service at PDX, offering twice weekly service from Hong Kong to PDX by way of Los Angeles (LAX). The Cathay Pacific freighter continues to Hong Kong with a refueling stop in Anchorage (ANC).

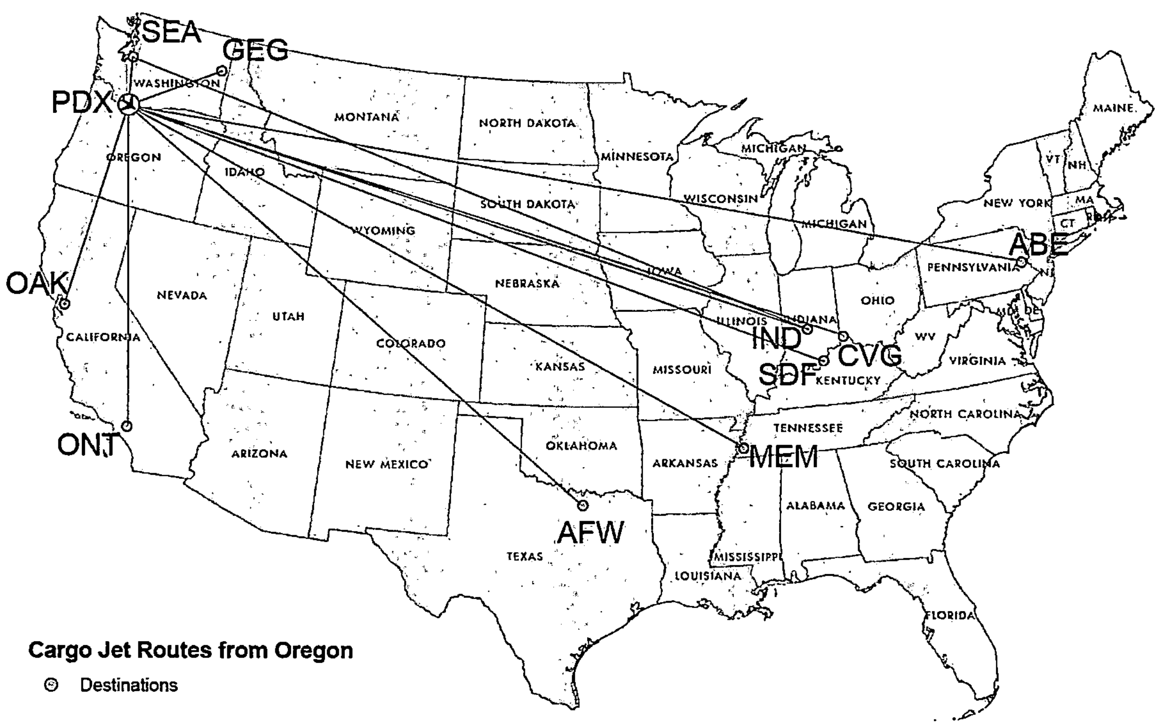
Air cargo jet routes are identified in **Table 6-7** and **Figure 6-4**, which reflects the carriers' network of operations during the busy weekday period. Weekend networks vary considerably as there is typically less air cargo demand and more reliance on trucks due to the two-day transport window.

TABLE 6-7: AIR CARGO CARRIER PRIMARY JET OPERATIONS AT PDX

Carrier	Destination FAA ID	Aircraft
FedEx Express	MEM	MD11, DC10
	OAK	MD11, DC10
	IND	MD11, DC10
	AFW	B757
UPS	SDF	A306, B763, B752, B747
	ONT	A306, B752
	GEG	A306, B752
DHL	SEA-CVG	B763
Amazon Prime Air	ABE	B763
International Freighter Routes	ANC-HKG	B747-8

Source: 2017 FAA records, Jviation analysis

FIGURE 6-4: OREGON AIR CARGO CARRIER JET OPERATIONS



Source: 2017 FAA flight records, Jviation analysis

Other factors impacting Oregon's air cargo network include the limited volume of air cargo in smaller communities as well as proximity to PDX. Many of the feeder cargo aircraft in Oregon operate what is known as "long-thin" routes in air cargo industry vernacular. Long-thin routes cover long distances with a low volume of cargo and are usually operated using aircraft with low operating costs, albeit at slower speeds. Many of the intrastate cargo routes to and from PDX, for example, are operated using single-engine aircraft such as the

Cessna 208 Caravan. These aircraft offer relatively fast transport and have adequate cargo capacity for the markets they serve.

Other factors impacting feeder flights in Oregon include the state's time zone. Due to the location of integrator hubs in the Midwest, West Coast airports have early departure times for eastbound cargo aircraft destined for the Midwest hubs. As a result, FedEx cargo jets bound for Memphis must depart PDX around 6:45PM Pacific Standard Time (PST). Whereas Memphis-bound cargo jets bound from New York City depart as late as 10:45PM Eastern Standard Time (EST). The 6:45 PM PST departure time is considerably early compared to the New York departure time and is a disadvantage for businesses needing to ship packages to the east coast since the cut-off time is early in the afternoon. However, West Coast markets are at an advantage for arriving packages as cargo jets departing Memphis arrive as early as 5:30AM PST. The nuances of time zone differences and long-thin feeder routes have an impact on the routes and schedules of small markets served throughout Oregon.

There are 13 airports in Oregon with contracted air cargo feeder aircraft activity. These contractors utilize turboprop or piston engine aircraft. Ameriflight is commonly contracted with UPS and operates five types of air cargo feeder aircraft in Oregon, which are listed by type and capacity in **Table 6-8**. Empire Airlines is the predominant contract carrier for FedEx Express in Oregon. The Hayden, Idaho based carrier operates two aircraft types in Oregon. Other carriers operate in Oregon on an as-needed basis to supplement FedEx and UPS demand during peak periods or when aircraft have mechanical issues. These carriers include Martin Air and Seattle based AIRPAC Airlines. Martin Air operates Cessna 208s while AIRPAC's fleet is comprised of Piper Navajo PA-31s and Cessna 208s. Historic FAA flight data for 2017 was utilized in this analysis. All routes analyzed for the 13 airports indicate that flights originate in the remote markets and are bound for PDX, where they remain overnight. The aircraft then return early the following morning to their assigned airport. Air cargo originating in the market area of two airports in eastern Oregon is routed to Spokane International Airport on a single carrier.

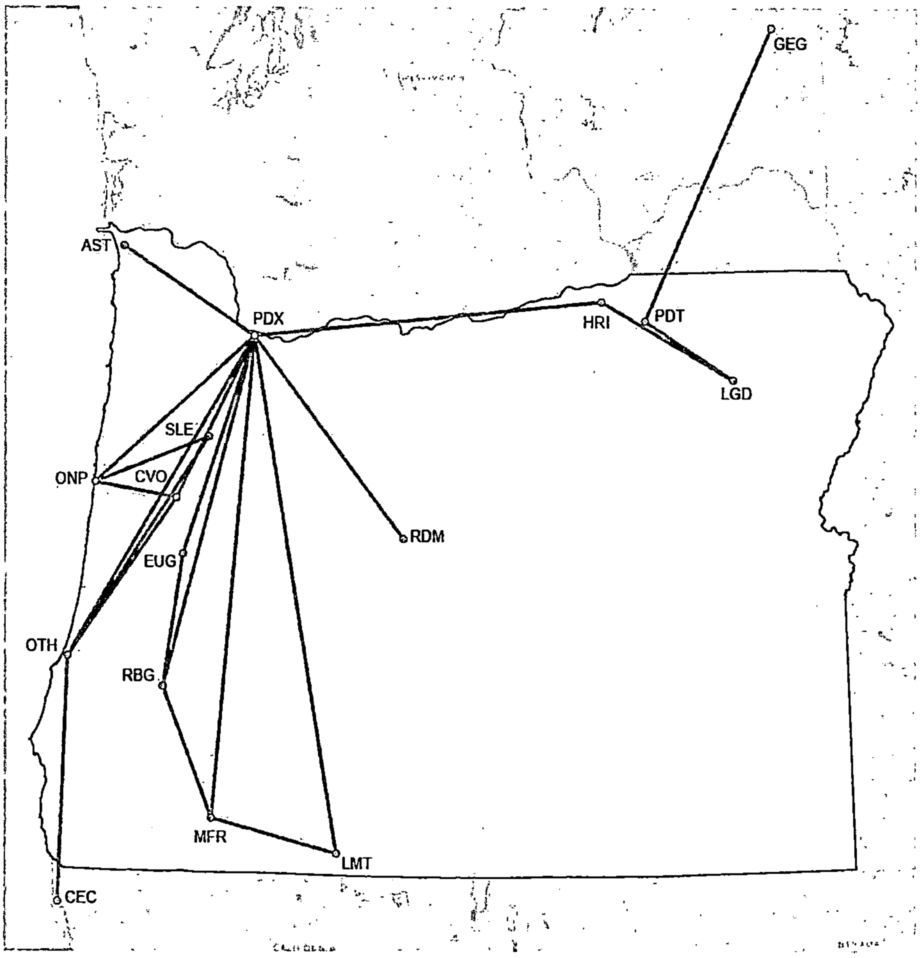
TABLE 6-8: AIR CARGO CARRIER FEEDER TO PRIMARY JET OPERATIONS

Aircraft	Maximum Payload	Cargo Capacity	Cruise Speed
Ameriflight Aircraft			
– Piper PA-31-350 Chieftain	1,750 pounds	245 cubic feet	205 mph
– Beechcraft 1900	5,800 pounds	819 cubic feet	275 mph
– Embraer EMB-120 Brasilia	8,000 pounds	1162 cubic feet	320 mph
– Fairchild SA-227 Metroliner SW4	4,400 - 4,900 pounds	628 cubic feet	310 mph
– Beechcraft 99	3,400 - 3,500 pounds	450 cubic feet	240 mph
Empire Aircraft			
– Cessna Caravan 208B	3,305 pounds	341 cubic feet	214 mph
– ATR 42	14,579 pounds	1,660 cubic feet	337 mph

Source: Carrier web sites

Figure 6-5 identifies all scheduled feeder routes operating on weekdays in Oregon while **Figure 6-6** shows the drive-time service areas for all Oregon airports with air cargo Service. A 120-minute drive time was used for PDX since this market has the best air cargo service in the state in terms of cargo aircraft schedules. The remaining markets have 30-minute drive time presented. In total, approximately 3.35 million residents, or 83 percent of the state's population, are provided sufficient air cargo delivery and pickup times.

FIGURE 6-5: AIR CARGO FEEDER ROUTES IN OREGON



Source: 2017 FAA flight records, Jviation analysis

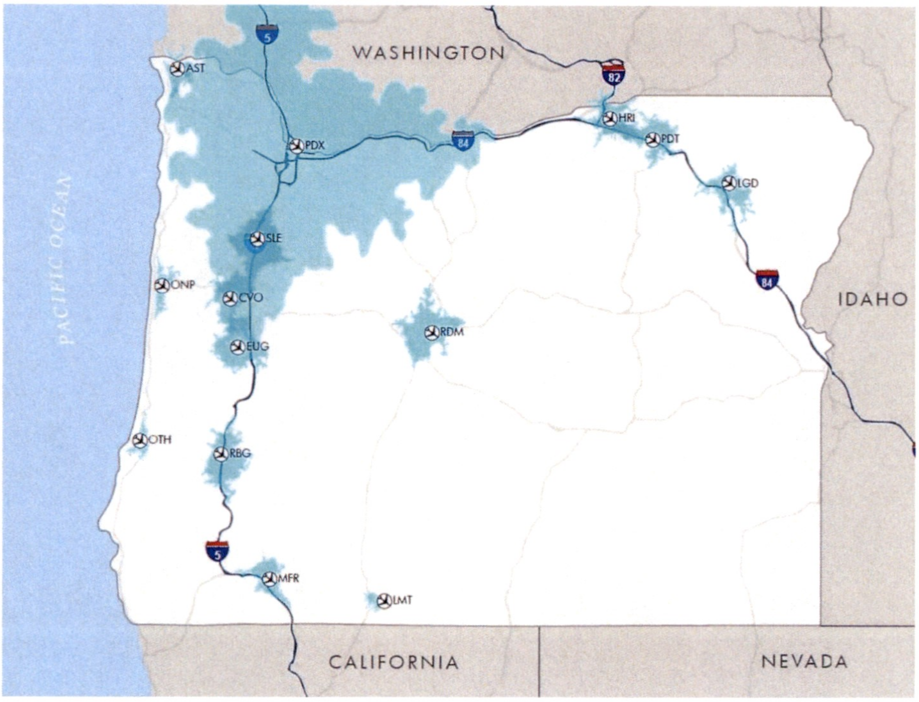
Oregon's network of highways and roadways are used by integrated express carriers and other cargo carriers to transport air cargo to and from aircraft and trucks. These roadways are essential in the delivering air cargo (freight, parcels and mail) to customers throughout the state. In 1995, the US Congress passed into law the National Highway System Designation Act of 1995. The inventory of the NHS was completed in 1998 and approved by Congress as part of the Transportation Equity Act for the 21st Century. Intermodal connectors are one of four subsystems that comprise the NHS. The other three subsystems are: 1) Interstates, 2) Other Principal Arterials, and 3) the Strategic Highway Network. Intermodal connectors can be either freight or passenger roadways. Freight intermodal connectors are roads that provide the "last-mile" connection between major rail, port, airport, and intermodal freight facilities on the NHS. The officially designated network of NHS freight intermodal connectors accounts for less than one percent of the total NHS mileage, but these roads are critical for the timely and reliable movement of freight.

In 2017, Oregon Department of Transportation developed a study on intermodal connectors in the state entitled the Oregon Freight Intermodal Connector (OFICS) Study which was part of the implementation of the 2011 Oregon Freight Plan. The 2011 Oregon Freight Plan (OFP) incorporated strategic implementation initiatives 3.1 and 3.2, that direct the state to "identify additional freight intermodal connectors...and monitor the mobility, infrastructure conditions and performance of the NHS intermodal connectors and other last-mile connections to important freight generation sites".

The Oregon Freight Intermodal Connector System (OFICS) study identified intermodal terminals, additional intermodal connectors, validated the existing NHS intermodal connectors, identified connector needs and developed a tiered list and map of connectors.

The next section provides an overview of air cargo carrier activity at 13 airports in Oregon. All but three of these airports are Part 139 facilities and it is noteworthy to point out that contract regional cargo carriers prefer to operate at Part 139 airports. This section also identifies roadways and highways functioning as a last-mile connection between the airport and roadway networks. The OFICS Intermodal Connectors web application provides more detail on the last-mile networks and is available at the ODOT ArcGIS Online gallery: https://geo.maps.arcgis.com/apps/webappviewer/index.html?id=0b35d56e2cfa4ffd8c308c09722f1da5 .

FIGURE 6-6: OREGON MARKETS WITH SUFFICIENT AIR CARGO SERVICE



Source: 2017 FAA flight records, Jviation analysis

6.5.3 Air Cargo Carrier Activity at Oregon Airports

Integrated express air cargo service providers (FedEx, UPS) operate five days per week in 14 Oregon markets, including Portland. Some markets receive both FedEx and UPS aircraft service while others are served by just one carrier. Although air cargo tonnage statistics are not readily available for all 14 airports, daily lift capacity, which is used as a metric to identify air cargo traffic, can be estimated for all carriers operating at an airport since air cargo aircraft schedules are known[14]. Except for Portland, all Oregon markets rely on contracted air cargo feeder aircraft for express shipments. The estimated daily lift capacity for these feeder carriers is presented in **Table 6-9**. Air cargo lift capacity ranges from 1,487 pounds per day at Pendleton to over 16,200

[14] If a flight serves two markets, such as the PDX-HRI-LGD route, it is assumed HRI and LGD each have 50% of the route air cargo capacity.

pounds for Medford. Statewide, total daily air cargo lift capacity for feeder carriers is approximately 72,150 pounds and serves approximately 1.3 million residents outside of Portland. For example, Port of Astoria Regional Airport is served by UPS with a Beech 99 cargo feeder aircraft to and from PDX. This particular feeder aircraft has a cargo capacity of approximately 3,450 pounds; however, assuming a 90-percent load factor, the useful capacity is realistically closer to 3,100 pounds per day.

Analyzing the ratio of resident population per pound of lift capacity provides insight into how well a market is served. In the case of Astoria, one pound of daily lift is available for every nine persons in the market. For Newport Oregon, one pound of lift is available for every five persons. In general, many of the remote communities in Oregon such as Klamath Falls, North Bend, Medford, Roseburg, La Grande have above-average air cargo service in terms of their lift capacity to population ratio. It is important to note that the air cargo needs of several markets such as Salem, Corvallis, and Eugene are served by a combination of aircraft and trucks to and from Portland: they are not solely reliant on aircraft for air cargo service.

TABLE 6-9: ESTIMATED AVERAGE DAILY LIFT PER AIRPORT WITH SCHEDULED CARGO SERVICE

FAA ID	Airport Name	Population within 30-Minute Drive of Airport	Estimated Daily Lift Capacity in Pounds	2018 Annual Cargo in Pounds*	Number of Persons Served/Pound of Lift
AST	Port of Astoria Regional	28,648	3,105	NA	9
PDT	Eastern Oregon Regional Airport at Pendleton	27,473	1,487	1,405,000	18
CVO	Corvallis Municipal	98,199	4,592	838,000	21
EUG	Eugene Airport - Mahlon Sweet Field	290,954	7,567	1,659,000	38
HRI	Hermiston Municipal	34,031	2,093	NA	16
LMT	Crater Lake-Klamath Regional	23,236	4,527	1,922,000	5
LGD	La Grande/Union County	22,248	2,093	629,000	11
ONP	Newport Municipal Airport	24,189	4,592	1,050,000	5
RDM	Roberts Field (Redmond Municipal Airport)	142,623	6,080	3,052,000	23
MFR	Rogue Valley International-Medford	178,047	16,226	7,429,000	11
RBG	Roseburg Regional	83,389	7,567	841,000	11
SLE	Salem-McNary Field	349,357	6,080	1,136,000	57
OTH	Southwest Oregon Regional Airport	38,154	6,145	1,434,000	6
Total		1,340,548	72,152	21,395,000	19

Source: 2017 FAA flight records, Jviation analysis, *US Bureau of Transportation Statistics – 2018 Airport Snapshots (inbound/outbound)

The remaining portion of this section provides detail for each cargo market served by air cargo feeder service in Oregon.

Salem-McNary Field - Salem, Oregon (SLE)

The Salem, Oregon market is unique in that it is near PDX yet has air cargo service from SLE to PDX. Both FedEx Express and UPS truck cargo from PDX to Salem in the morning after the aircraft arrive from their Midwest sortation hubs. However, early cut-off times in the late afternoon warrant the use of aircraft operations from SLE to PDX by both carriers. Prior to arriving in SLE, UPS aircraft operated by Ameriflight depart from Newport (ONP), while FedEx aircraft operated by Empire Airlines depart from North Bend (OTH). Highway traffic congestion between Salem and Portland may also be a factor in these carriers scheduling a stop in Salem. Each airport with scheduled air cargo activity was analyzed utilizing a geographic information system to determine population within a 30-minute drive of the airport. Analysis indicates that Salem has the largest population within a 30-minute drive time, nearly 349,400 residents, of all the 13 Oregon airports supporting scheduled air cargo feeder aircraft operations. Interstate 5 is approximately 2.1 miles from the airport, and its intermodal connectors are 25th Street and Mission Street.

TABLE 6-10: SALEM-MCNARY FIELD

Airport: **Population within 30 Minutes:**	SLE 349,357	**Part 139:**	Yes
Air Cargo Carrier Routes	**Aircraft**	**Regional Carrier**	**Prime Carrier**
ONP-SLE-PDX	BE99, PA31	AMERIFLIGHT	UPS
OTH-SLE-PDX	C208	EMPIRE	FedEx

Corvallis Municipal Airport (CVO)

Corvallis is in a similar position to Salem in that both FedEx Express and UPS truck cargo from PDX to Corvallis. Early cut-off times in the late afternoon, as well as likely highway congestion, warrant the use of aircraft by both carriers from CVO to PDX. FedEx's aircraft start in Newport (ONP) utilizing an Empire Airlines C208B. UPS has a two-prong routing approach using two separate Ameriflight aircraft to serve CVO, with a BE99 departing from Southwest Oregon Regional Airport in North Bend (OTH) and a BE99 or PA31 departing from Newport (ONP). Corvallis is roughly 14 miles from Interstate 5, though it is only about 4.2 miles from the Corvallis-Lebanon Highway 210 (Oregon Route 34). This highway provides direct access to Interstate 5.

TABLE 6-11: CORVALLIS MUNICIPAL AIRPORT

Airport: **Population within 30 Minutes:**	CVO 98,199	**Part 139:**	No
Air Cargo Carrier Routes	**Aircraft**	**Regional Carrier**	**Prime Carrier**
ONP-CVO-PDX	BE99, PA31	AMERIFLIGHT	UPS
OTH-CVO-PDX	BE99	AMERIFLIGHT	UPS
ONP-CVO-PDX	C208	EMPIRE	FedEx

Source: FAA flight records, Jviation analysis

Newport Municipal Airport (ONP)

Both FedEx and UPS contract feeder aircraft operations at Newport Municipal. UPS services the market with two Ameriflight aircraft types, a BE99 and a PA31, both of which provide nonstop service each morning from PDX. The late afternoon route to PDX includes stops at SLE and CVO. UPS determines which gauge of aircraft stops at which market based on daily cargo demand estimates. FedEx's Cessna Caravan, operated by Empire Airlines, also operates nonstop from PDX to ONP, and stops at CVO on its return flight to PDX where cargo is transferred to cargo jets bound for their respective hubs. Newport Municipal Airport is located almost directly on the Oregon Coast Highway (U.S. Route 101), giving it direct access to any city along Oregon's coast.

TABLE 6-12: NEWPORT MUNICIPAL AIRPORT

Airport: **Population within 30 Minutes:**	ONP 24,189	**Part 139:**	Yes
Air Cargo Carrier Routes	**Aircraft**	**Regional Carrier**	**Prime Carrier**

ONP-CVO-PDX-ONP	BE99, PA31	AMERIFLIGHT	UPS
ONP-SLE-PDX-ONP	BE99, PA31	AMERIFLIGHT	UPS
ONP-CVO-PDX-ONP	C208	EMPIRE	FedEx

Source: FAA flight records, Jviation analysis

Southwest Oregon Regional Airport (OTH)

Both FedEx and UPS contract feeder aircraft operations at Southwest Oregon Regional. UPS serves the market with two BE99 aircraft operated by Ameriflight. One provides nonstop service each morning from PDX while the other provides nonstop service to/from Crescent City, California (CEC). This route is the only cargo feeder route serving Oregon originating in California. The UPS BE99 route to PDX stops in Corvallis (CVO), while the FedEx Express contracts with Empire Airlines, whose C208 stops in Salem (SLE) on its return to PDX from OTH. Southwest Oregon Regional Airport is less than a mile away from the Oregon Coast Highway (U.S. Route 101), and is connected by Virginia Ave. The proximity of the airport to this highway gives it access to any city along Oregon's coast.

TABLE 6-13: SOUTHWEST OREGON REGIONAL AIRPORT

Airport: **Population within 30 Minutes:**	OTH 38,154	**Part 139:**	Yes
Air Cargo Carrier Routes	**Aircraft**	**Regional Carrier**	**Prime Carrier**
OTH-CVO-PDX-OTH	BE99	AMERIFLIGHT	UPS
CEC-OTH-CEC	BE99	AMERIFLIGHT	UPS
OTH-SLE-PDX-OTH	C208	EMPIRE	FedEx

Source: FAA flight records, Jviation analysis

Eugene Airport - Mahlon Sweet Field (EUG)

UPS contracts with Ameriflight to operate cargo feeder aircraft at EUG. The carrier primarily utilizes BE99 aircraft in this market but at times uses a Piper Navajo PA31. The route is nonstop to and from PDX. FedEx Express contracts with Empire Airlines to operate two C208s at EUG. One aircraft is based at EUG during the day while the other originates in Roseburg then stops at EUG on its way to PDX. The airport is just under 9 miles away from Interstate 5. It is connected primarily via the Randy Pape Beltline (Oregon Route 569) , which accounts for just over 6 of those miles.

TABLE 6-14: EUGENE AIRPORT-MAHLON SWEET FIELD

Airport: **Population within 30 Minutes:**	EUG 290,954	**Part 139:**	Yes
Air Cargo Carrier Routes	**Aircraft**	**Regional Carrier**	**Prime Carrier**
EUG-PDX-EUG	BE99, PA31	AMERIFLIGHT	UPS
RBG-EUG-PDX-RBG	C208	EMPIRE	FedEx
EUG-PDX-EUG	C208	EMPIRE	FedEx

Source: FAA flight records, Jviation analysis

Rogue Valley International-Medford Airport (MFR)

UPS contracts with Ameriflight to operate cargo feeder aircraft at EUG, which primarily utilizes an EMB120 aircraft. The EMB120 is the fastest and largest cargo aircraft in Ameriflight's fleet. Ameriflight also uses Piper Navajo PA31 and BE99 aircraft in the market, particularly on routes shared with Roseburg (RBG) and Crater Lake-Klamath Regional (LMT). FedEx contracts with Empire Airlines on its PDX route, which uses an ATR42 aircraft. Similar to the EMB1320, the ATR42 is also the largest and fastest cargo aircraft in Empire's fleet, ideal for long-thin routes. At 223 miles, the nonstop MFR to PDX route is the second longest cargo feeder route in Oregon. The airport is approximately 1.3 miles from Interstate 5 and is primarily connected by Biddle Road. This road connects to the Crater Lake Highway which provides direct access to Interstate 5.

TABLE 6-15: ROGUE VALLEY INTERNATIONAL-MEDFORD AIRPORT

Airport:	MFR	Part 139:	Yes
Population within 30 Minutes:	178,047		
Air Cargo Carrier Routes	**Aircraft**	**Regional Carrier**	**Prime Carrier**
PDX-MFR-PDX	BE99, PA31, EMB120	AMERIFLIGHT	UPS
PDX-LMT-MFR-PDX	BE99	AMERIFLIGHT	UPS
PDX-MFR-RBG-PDX	BE99	AMERIFLIGHT	UPS
PDX-MFR-PDX	ATR43	EMPIRE	FEDEX

Source: FAA flight records, Jviation analysis

Crater Lake-Klamath Regional Airport (LMT)

UPS triangulates the Klamath (LMT) and Medford (MFR) markets, sharing an Ameriflight BE99 cargo feeder route to and from PDX. FedEx Express, however, serves LMT with a single Empire Airlines C208, which operates nonstop to and from PDX. Klamath to PDX is the longest air cargo route in Oregon at 243 miles one way. This airport does not have direct access to a national highway but has access to several state highways. These highways include Oregon Route 97, 66, 39, and 140. Route 130 is directedly north of the airport and connects several of these highways.

TABLE 6-16: CRATER LAKE-KLAMATH REGIONAL AIRPORT

Airport:	LMT	Part 139:	Yes
Population within 30 Minutes:	23,236		
Air Cargo Carrier Routes	**Aircraft**	**Regional Carrier**	**Prime Carrier**
PDX-LMT-MFR-PDX	BE99	AMERIFLIGHT	UPS
PDX-LMT-PDX	C208	EMPIRE	FedEx

Source: FAA flight records, Jviation analysis

Roseburg Regional Airport (RBG)

RBG is in Douglas County, Oregon, located about one-mile northwest of Roseburg. Approximately 82,000 people reside within a 30-minute drive of this general aviation airport. The airport is not a Part 139 facility yet is utilized by both FedEx Express and UPS. FedEx contracts with Empire Airlines to operate a route from Roseburg to PDX with a stop in Eugene. The morning route from PDX is nonstop and is indicative of the aircraft carrying more cargo inbound to Roseburg and less cargo outbound. UPS, contracting with Ameriflight, also originates a cargo route in Roseburg and is shared with several markets as demand dictates. This aircraft may be considered a "spare" aircraft as management may require the pilot to make a stop in Eugene, Redmond, or

Medford, depending on the cargo volume for those markets. The airport is adjacent to Interstate 5 and thus has nearly direct access to that interstate. Access to the interstate is less than a mile away in and is provided by Bowers St and Edenbower Blvd to the north, and via Mulholand Road and Garden Valley Blvd to the south.

TABLE 6-17: ROSEBURG REGIONAL AIRPORT

Airport: **Population within 30 Minutes:**	RBG 83,389	**Part 139:**	No
Air Cargo Carrier Routes	**Aircraft**	**Regional Carrier**	**Prime Carrier**
RBG-EUG-PDX-RBG	C208	EMPIRE	FedEx
PDX-EUG/RDM/MFR-RBG-PDX	BE99	AMERIFLIGHT	UPS

Source: FAA flight records, Jviation analysis

Roberts Field (Redmond Municipal Airport) (RDM)

Roberts Field has the most straightforward air cargo feeder routes of the 13 airports being analyzed. Both FedEx and UPS contract with their respective feeder carriers to operate nonstops to and from PDX. UPS occasionally supplements cargo lift in this market with a BE99 based in Roseburg. The airport is not close to any federal interstate highway, but it has access to several state and federal highways. These highways include U.S. Route 97, roughly half a mile from the airport, and Oregon Route 126 and U.S. Route 26, which connects Redmond with Route 26, and thus access to the eastern portions of the state.

TABLE 6-18: ROBERTS FIELD (REDMOND MUNICIPAL AIRPORT)

Airport: **Population within 30 Minutes:**	RDM 142,623	**Part 139:**	YES
Air Cargo Carrier Routes	**Aircraft**	**Regional Carrier**	**Prime Carrier**
PDX-RDM-PDX	C208	EMPIRE	FedEx
PDX-RDM-PDX	BE99	AMERIFLIGHT	UPS

Source: FAA flight records, Jviation analysis

Hermiston Municipal Airport (HRI)

UPS contracts with Ameriflight which operates a Fairchild Metroliner (SW4) aircraft from PDX to Hermiston (HRI) then on to La Grande (LGD) in eastern Oregon. The HRI to PDX leg is 163 miles. The SW4 route is the only route in Oregon utilizing this aircraft type. HRI is not a Part 139 airport. The Oregon population within a 30-minute drive time of HRI, estimated at 36,800, does not include residents in nearby Washington state. Interstate 84 is located approximately 5.5 miles from the airport. The primary connecting road is U.S. highway 395, which directly intersects with the airport road.

TABLE 6-19: HERMISTON MUNICIPAL AIRPORT

Airport: **Population within 30 Minutes:**	HRI 34,031	**Part 139:**	No
Air Cargo Carrier Routes	**Aircraft**	**Regional Carrier**	**Prime Carrier**
PDX-HRI-LGD-HRI-PDX	SW4	AMERIFLIGHT	UPS

Source: FAA flight records, Jviation analysis

La Grande/Union County Airport (LGD)

La Grande/Union County Airport is unique in that it accommodates two air cargo feeder carriers feeding cargo jets at two airports. FedEx contracts with Empire Airlines to carry cargo north to Spokane International, with a stop in Pendleton, using a C208B. UPS operates an LGD-to-HRI-to-PDX route using Fairchild Metroliner (SW4) aircraft. Given the distance covered on this route, the relatively fast SW4 is ideally suited for long-thin routes in eastern Oregon. La Grande has the smallest population within a 30-minute drive time of the 13 airports analyzed. The airport is roughly 1.5 miles from Interstate – 84. It is connected to the interstate by La Grande Baker Highway (Oregon Route 203).

TABLE 6-20: LA GRANDE/UNION COUNTY AIRPORT

Airport:	LGD	Part 139:	No
Population within 30 Minutes:	22,248		
Air Cargo Carrier Routes	**Aircraft**	**Regional Carrier**	**Prime Carrier**
GEG-PDT-LGD-PDT-GEG	C208	EMPIRE	FedEx
PDX-HRI-LGD-HRI-PDX	SW4	AMERIFLIGHT	UPS

Source: FAA flight records, Jviation analysis

Eastern Oregon Regional Airport at Pendleton (PDT)

Only one cargo carrier operates out of PDT: FedEx Express contracts with Empire Airlines to operate a C208B at the airfield. PDT is the only Essential Air Service Airport in Oregon, which is provided by Boutique Air. Ameriflight, a contract carrier for UPS, operated at PDT until 2013 using Fairchild Metroliner SW4 aircraft. Ameriflight discontinued regular Pendleton service and relocated its area operations to Hermiston in 2013. Ameriflight continues to use PDT for unscheduled/ad hoc operations and as a weather alternate to Hermiston. The airport has a direct connection to Interstate – 84 as it can be accessed from the Airport Road directly.

TABLE 6-21: EASTERN OREGON REGIONAL AIRPORT AT PENDLETON

Airport:	PDT	Part 139:	No
Population within 30 Minutes:	27,473		
Air Cargo Carrier Routes	**Aircraft**	**Regional Carrier**	**Prime Carrier**
GEG-PDT-LGD-PDT-GEG	C208	EMPIRE	FedEx

Source: FAA flight records, Jviation analysis

Port of Astoria Regional Airport (AST)

Port of Astoria Regional receives approximately three to four cargo flights per week operating between PDX and AST. These are primarily contract flights for UPS utilizing BE99 and PA31 aircraft but some C208 contract flights with AIRPAC are frequently observed. Port of Astoria Regional is not a Part 139 airport. It was also noted that some flights included a stop in Tillamook and that TMK received an increasing number of flights in the month of November, which is likely related to holiday retail traffic. Though it is not close to an interstate highway, the airport is just 2 miles from the Oregon Coast Highway (U.S. Highway 101). This provides easy access to any city along Oregon's coast.

TABLE 6-22: PORT OF ASTORIA REGIONAL AIRPORT

Airport:	AST	Part 139:	No
Population within 30 Minutes:	28,648		

Air Cargo Carrier Routes	Aircraft	Regional Carrier	Prime Carrier
AST-PDX-AST	BE99	AMERIFLIGHT	UPS

Source: FAA flight records, Jviation analysis

6.5.4 Trucking Air Cargo Instead of Flying Air Cargo

Several airport markets in Oregon do not have scheduled air cargo service provided by integrated express carriers. Instead, these markets are served by trucks that transport cargo between the market area and an aircraft at a nearby airport. For example, FedEx Express trucks cargo from Astoria to PDX and from Ontario, Oregon to Boise, Idaho where the cargo is then loaded onto waiting aircraft. Integrated express carriers may truck cargo 120 minutes or more. For example, UPS may truck the majority of air cargo from Astoria to PDX to load onto an aircraft bound for Louisville (SDF), but then supplement its market lift with the highest priority cargo on a contracted BE99 to and from PDX. It is also important to point out that FedEx Express supplements air cargo lift requirements in Oregon's larger markets with trucks since trucking is five to ten times less expensive than flying air cargo. For example, it is highly likely that FedEx trucks a 53-foot-long trailer loaded with five containers of deferred (second- and third-day delivery) packages between Portland and Oakland, California, one of the carrier's primary hubs.

6.5.5 Air Cargo Summary

Oregon's airport system supports an extensive network of integrated express air cargo routes which carry the majority of air cargo to air cargo jets at PDX. These carriers rely on airports to provide navigational and weather reporting equipment as well as adequate runway length and aircraft services. While there is no major cargo sortation hub in the state for air cargo carriers, PDX supports a number of regional cargo feeder routes providing market access to smaller communities in Oregon. Trucks are used to transport air cargo within Oregon, while second- and third-day delivery packages are likely trucked out of the state. All overnight packages depart and arrive on integrated express cargo jets. Passenger airlines carry a small share of Oregon's air freight and mail as belly cargo.

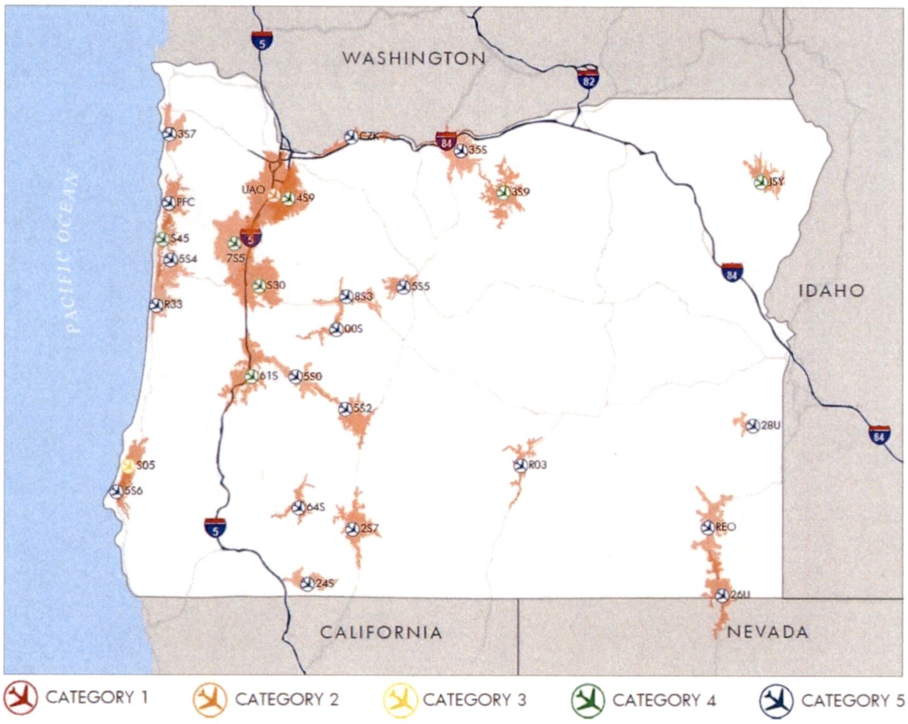
6.6 State-owned Airports

6.6.1 State-owned Airports

Oregon's airport system consists of 97 aviation facilities including 95 airports, one heliport, and one seaplane base. Nearly 30 percent of the airports in the state are owned by the Oregon Department of Aviation (ODA). These 28 airports range from Aurora State Airport, one of the busiest airports in Oregon with extensive corporate jet activity, to small rural airports and airports along the Oregon Coast. Analysis of other states on the West Coast and states adjacent to Oregon reflects a wide range of state-owned airport patterns. Idaho has 32 airports that are owned and operated by the State, most of which are rural backcountry airports operated by ITD, and several are owned by other state agencies. Washington DOT owns and operates 16 airports while California only has two state-owned airports. The State of Nevada owns no airports. Alaska owns and operates 237 general aviation and commercial service airports.

Table 6-23 identifies airports owned by ODA and their respective OAP v6.0 airport categories, and provides information on NPIAS airport status, number of based aircraft, whether the airport is a State Warning Airport, and whether it's identified in the state's Cascadia Event Resiliency Plan. Runway length and flood zone information are also provided.

FIGURE 6-7: MAP OF STATE-OWNED AIRPORTS, 30-MINUTE DRIVE TIMES



Source: Jviation

While Oregon owns no airports with scheduled airline service (Category I airports), it does own at least one airport in each of the four other categories. The ODA owns a wide variety of airports across the state, with the majority of them (64 percent) assigned to the Category V – Rural Airport/Emergency Service (RAES) airport. The average runway length for these airstrips is 3,529 feet, with the longest being 6,100 feet at Alkali Lake and the shortest at Toledo State with 1,750 feet of runway. Only two state-owned Category V airports are listed as NPIAS airports, which makes them eligible for FAA entitlement funds for airport facility improvements. There are 44 total aircraft based at Category V state-owned airports, with Toledo State having the most aircraft. Nine airports have no based aircraft. There are ten airports in Oregon that are considered State Warning Airports, and all are state-owned, Category V airports. State Warning Airports do not meet normal dimensional standards and have conditions that require specific pilot knowledge. They require special techniques and procedures to use safely and may not be usable by many aircraft under normal conditions. Analysis of each airport's 30-minute drive-time service area indicates that three of the state-owed category V airports are remotely located with little if any local population. These airports primarily serve as emergency landing strips for aircraft and pilots in distress, and as access points to remote outdoor recreation sites. It is noteworthy to point out that three of the state-owned Category V airports have runways located in a flood zone.

Eight airports (28 percent) are assigned to the Category IV – Local General Aviation Airport. The average runway length for these airstrips is 3,500 feet, with the longest being 5,100 feet at Joseph State Airport and the shortest at Lebanon State with 2,877 feet of runway. All Category IV airports that are state-owned are listed in the NPIAS. There are 479 total aircraft based at Category IV state owned airports with Independence State having the most aircraft. Analysis of each airport's 30-minute drive-time service area indicates a wide range of population counts. Wasco State serves only 1,057 residents while Independence State serves nearly 270,000. Two of the state-owned Category IV airports, Siletz Bay and Cottage Grove, have runways that are in a flood zone.

Bandon State Airport is in Coos County along the Oregon Coast. This state-owned airport is a Category III airport and has 25 based aircraft. The airport is eligible for federally funded facility improvements since it is in the NPIAS. Over 7,500 residents are within a 30-minute drive of the airport.

Aurora State Airport is a Category II - Urban General Aviation Airport. The airport is located in the Portland MSA and has over 1 million residents within a 30-minute drive of the airport. The airport is one of the busiest in the state with 346 based aircraft. The airport's runway is just over 5,000 feet long and a runway extension is being studied for this facility.

Table 6-23 depicts state-owned airports listed in the State Resiliency Plan. Most of these airports are Category IV airports and are designated to support community recovery and state economic recovery after a Cascadia event.

TABLE 6-23: STATE-OWNED OREGON AIRPORTS

Airport	ID	City	NPIAS	Based Aircraft	Warning Airport	Resiliency Plan	Runway Length	30-minute Drive Time Oregon Population	Within 1% Annual Chance Flood Area
Category II									
Aurora State Airport	UAO	Aurora	Yes	346	No		5,004	1,052,366	
Category III									
Bandon State Airport	S05	Bandon	Yes	25	No	Tier 3	3,601	7,564	
Category IV									
Condon State Airport - Pauling Field	3S9	Condon	Yes	11	No		3,500	1,057	
Cottage Grove State Airport -Jim Wright	61S	Cottage Grove	Yes	134	No	Tier 3	3,188	198,180	Completely
Independence State Airport	7S5	Independence	Yes	191	No	Tier 3	3,142	269,469	
Joseph State Airport	JSY	Joseph	Yes	14	No		5,200	4,029	
Lebanon State Airport	S30	Lebanon	Yes	49	No	Tier 3	2,877	140,520	
Mulino State Airport	4S9	Mulino	Yes	63	No	Tier 3	3,425	198,580	
Siletz Bay State Airport	S45	Gleneden Beach	Yes	13	No	Tier 3	3,297	20,728	Completely
Wasco State Airport	35S	Wasco	Yes	4	No		3,450	1,618	
Category V									
Alkali Lake State	R03	Alkali Lake	No	0	No		6,100	3	
Cape Blanco State Airport	5S6	Sixes	No	7	No	Tier 1	5,100	2,547	
Cascade Locks State Airport	CZK	Cascade Locks	No	0	Yes		1,800	11,917	
Chiloquin State Airport	2S7	Chiloquin	Yes	6	No		3,749	4,820	
Crescent Lake State Airport	5S2	Crescent Lake	No	0	Yes		3,900	1,096	
McDermitt State Airport	26U	McDermitt	Yes	1	No		5,900	64	
McKenzie Bridge State	00S	McKenzie Bridge	No	0	Yes		2,600	933	
Nehalem Bay State Airport	3S7	Manzanita	No	0	No		2,350	6,769	
Oakridge State	5S0	Oakridge	No	5	No		3,610	5,940	
Owyhee Reservoir State	28U	Owyhee Reservoir	No	0	Yes		1,840	-	
Pacific City State Airport	PFC	Pacific City	No	5	Yes		1,875	10,239	Completely
Pinehurst State Airport	24S	Pinehurst	No	7	Yes		2,800	235	
Prospect State Airport	64S	Prospect	No	1	Yes		4,000	1,396	Partially
Rome State	REO	Rome	No	0	No		6,000	12	
Santiam Junction State	8S3	Santiam Junction	No	0	Yes		2,800	999	
Toketee State	3S6	Clearwater	No	0	No		5,350	61	
Toledo State Airport	5S4	Toledo	No	9	Yes		1,750	17,510	Completely
Wakonda Beach State	R33	Waldport	No	3	Yes		2,000	9,616	

Source: Jviation, Century West, US Census, OGAMI

6.6.2 State Warning Airports

Nine of the airports owned and operated by ODA have been designated as Warning Airports, which are all Category V – RAES Airports. These Warning Airports do not meet normal dimensional standards and have conditions that require specific pilot knowledge. Aircraft operations at these airports require special techniques and procedures to use safely and may not be usable by many aircraft or pilots under normal conditions. **Table 6-24** identifies the Warning Airports and the key attributes. Specific information on each airport can be found at the ODA website: https://www.oregon.gov/aviation/pages/warning.aspx .

Runway Dimensions: Many Warning Airports have narrow runways, and most have unpaved surfaces. Six of the ten airports are 30 feet wide, which adds limited margin of error for pilots. Toledo State Airport has the shortest runway at just 1,750 feet, while Prospect State Airport has the longest at 4,000 feet by 50 feet wide.

Based Aircraft: While many of the airports are challenging to operate within, several have attracted aircraft owners to base their aircraft. Fifty percent of the airports in this special category have based aircraft. Toledo State has nine based aircraft while Pinehurst has seven.

Nearby Population: Owyhee Reservoir State Airport is remotely located in eastern Oregon and has no nearby population within its 30-minute drive time; it is one of the most remote airports in the Oregon system. The airport provides access to camping, hunting, and fishing in the area and is considered a backcountry airport by ODA. Santiam Junction State Airport is listed as a backcountry airport by BackCountryPilot.org[15]. Toledo State Airport serves the greatest population of the 10 airports on the Warning Airports list, with an associated city population of over 3,500 and a population of over 17,500 within 30 minutes of the airport.

TABLE 6-24: STATE WARNING AIRPORTS

FAA Code	Associated City	Airport Name	Based Aircraft	Runway Dimensions	30-minute Drive Time Oregon Population	Associated City Population
CZK	Cascade Locks	Cascade Locks State Airport	0	1800 x 30	11,917	1,154
5S2	Crescent Lake	Crescent Lake State Airport	0	3900 x 30	1,096	122
00S	McKenzie Bridge	McKenzie Bridge State	0	2600 x 90	933	915
28U	Owyhee Reservoir	Owyhee Reservoir State	0	1840 x 30	0	0
PFC	Pacific City	Pacific City State Airport	5	1860 x 30	10,239	1,126
24S	Pinehurst	Pinehurst State Airport	7	2800 x 30	235	214
64S	Prospect	Prospect State Airport	1	4000 x 50	1,396	468
8S3	Santiam Junction	Santiam Junction State	0	2800 x 150	999	0
5S4	Toledo	Toledo State Airport	9	1750 x 40	17,510	3,507
R33	Waldport	Wakonda Beach State	3	2000 x 30	9,616	2,147
			25		53,941	9,653

Source: Jviation analysis, US Census, basedaircraft.com

6.6.3 Gaps in Airport Coverage

Oregon is 98,466 square miles with 95 system airports to serve the aviation community. Alternate airports are critical to pilots when flying to a destination airport as well as when traversing the state on long routes. For background, several airports, such as Alkali Lake State and Rome State, were developed to provide pilots an alternate airport in the case of aircraft mechanical issues as well as weather-related issues.

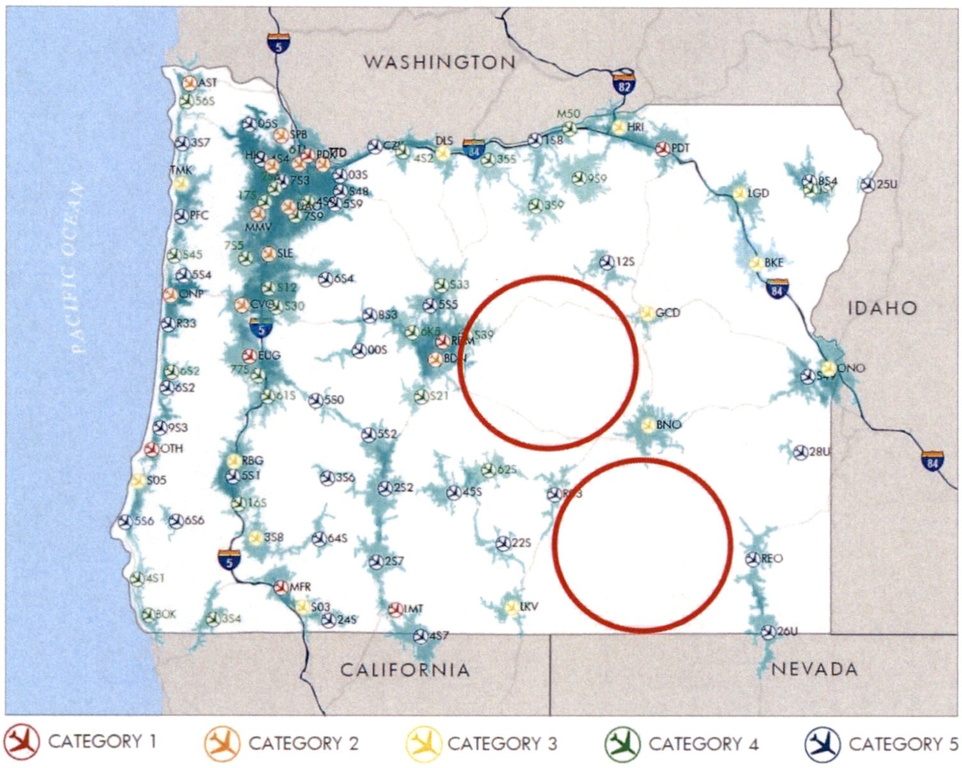
Analysis of Oregon's system of airports indicates that there are two large geographic areas in the state that lack a system airport, Central Oregon and southeast/south-central Oregon, shown in **Figure 6-7**.

[15] https://backcountrypilot.org/forum/destinations/backcountry-airport-database

Southeast/Southcentral Oregon Airport Coverage Gap

This is an area of approximately 11,500 square miles that lacks publicly owned public-use airports and system airports. By comparison, Idaho's system of airports has a gap of approximately 9,000 square miles in the southwest corner of the state, while Montana has a gap of approximately 6,500 square miles. Nevada has a gap in the central portion of the state of approximately 15,000 square miles, an area largely composed of Military Operations Areas and bases.

FIGURE 6-7: SOUTHEAST/SOUTHCENTRAL OREGON AIRPORT COVERAGE GAP



Source: Jviation

The gap area in Oregon airport coverage is primarily in Harney County, but also includes portions of Lake and Malheur Counties. All airports listed by the FAA in this area are privately owned and private-use—no state or federal money is invested in these facilities. There are eight landing facilities in Harney County south of Burns Municipal, which is in the northern part of the county. These eight airports are listed in **Table 6-25**.

TABLE 6-25: LANDING FACILITIES IN HARNEY COUNTY

FAA ID	City	Airport Name	Runway Attributes
OG53	Andrews	Wildhorse Valley	3000 x 50 Dirt
OR32	Burns	Hooks Strip	2000 x 30 Turf
81OR	Burns	Wagontire	2000 x 80 Turf Dirt
7OR1	Crane	Arnold Airstrip	1500 x 30 Dirt
OR08	Diamond	Barton Lake Ranch	2200 x 75 Turf
2OG4	Fields	El Rancho	2500 x 50 Turf

FAA ID	City	Airport Name	Runway Attributes
OR09	Fields	Whitehorse Ranch	3247 x 94 Dirt
OR10	Frenchglen	Roaring Springs Ranch	6000 x 75 Asphalt

Source: FAA Registered Airports List, AirNav.com

One of the longest aircraft flight routes in the state between system airports is between McDermitt and Alkali Lake. The route is approximately 140 miles in length and has no state system airports to act as an alternate. Two private airports are located along this route, Whitehorse Ranch and Roaring Springs Ranch. Roaring Springs Ranch is approximately 80 miles northwest of McDermitt and 60 miles southeast of Alkali Lake. Roaring Springs has a paved 6,000-foot-long-by-75-foot-wide runway and is identified as an alternate runway when pilots develop their flight plan in this area. All airports noted in **Table 6-25** are privately owned and require calling in advance for permission to operate at their airport.

Central Oregon Airport Coverage Gap

This is an area of approximately 7,500 square miles that lacks publicly owned public-use airports and system airports. The gap area in Oregon airport coverage is primarily in Crook County, north of US 20 and south of US 26. The area also includes portions of Lake and Harney Counties. There are five airports in Crook County that are private-use and privately owned, listed in **Table 6-26**. No state or federal money is invested in these facilities. Three of the airstrips are in proximity of Prineville, which is in the western part of the county. The most central airport in the county is Shotgun Ranch Airstrip. This airstrip is 1,650 feet long and paved. Crook County is heavily forested on mountain slopes and is consists of rangelands and irrigated agricultural fields. Identifying a location for a new airstrip may prove challenging due to terrain and limited paved road networks.

TABLE 6-26: PRIVATE AIRPORTS IN CROOK COUNTY

FAA ID	City	Airport Name	Runway Attributes
'42OR	Post	Shotgun Ranch Airstrip	1650 x 50 Asphalt
'OG21	Prineville	Dry Creek Airpark	3000 x 35 Asphalt
'29OR	Prineville	Sunrise Valley Ranch Lodge	1915 x 70 Turf
'6OR4	Prineville	Tailwheel	1700 x 100 Turf
'OR02	Redmond	River Run Ranch	2500 x 25 Dirt

Source: FAA Airport 5010 Form

The Recommendations section of this report discusses the airport coverage gaps in southeast and central Oregon.

6.7 Aviation System Action Program (ASAP) and Rural Oregon Airport Relief Program (ROAR)

In 2015, the Oregon State Legislature passed House Bill 2075 to increase the fuel tax on Aviation Gas (AV Gas) and Jet Fuel by .02 cents per gallon to invest in aviation for specific purposes. This resulted in the Aviation System Action Program (ASAP) Fund. The fuel tax increase became effective January 1, 2016 and currently has a sunset date of January 1, 2022. The ASAP Fund allocates and distributes the proceeds from the fuel tax increase among three new programs, in accordance with OL 2015 c.700 §7: COAR Grant Program, ROAR Program, and SOAR Program. The measure mandates ODA to distribute the revenue from the fuels tax increase for specific purposes. Per the legislation, five percent of the revenues will be appropriated to ODA for the costs to administer the program. The remaining ninety-five percent of the revenues shall be distributed as follows:

50 percent to COAR; 25 percent to ROAR and 25 percent to SOAR. More information on these programs are presented in **Chapter 7, Cost Estimating and Project Funding**.

Oregon Department of Aviation (ODA) assists rural communities in commercial air service through the Rural Oregon Aviation Relief (ROAR) Program. ODA identifies rural airports as an imperative asset to the aviation system since they play a critical role in the economic development of the surrounding local communities. The ROAR grants are an opportunity for ODA to learn from rural airports and work towards accomplishing their vision to better serve their communities needs and dynamic economies. The ROAR Grant Cycle is an open cycle that will run continuously. Applications will undergo a completeness review by ODA staff and be referred to the next most appropriate State Aviation Board for further review.

In 2018, ODA prepared a study *Assessing Demand for Rural Passenger Air Service in Oregon* — which assessed the potential demand for air passenger service throughout the state, focusing on rural areas[16]. The assessment described current trends in use of air service, identified the primary socioeconomic factors that correlate with demand for air travel and analyzed them spatially, to support Department decisions about where to make future investments in rural passenger air service.

6.8 Unmanned Aircraft Systems

Unmanned Aircraft Systems (UAS) is a quickly growing sector within the aviation industry. As the name suggests, a UAS is an aircraft without a human on board; it is operated by a pilot on the ground or by a computer program. UAS are increasingly used by private businesses and recreational users. The cost to operate a UAS is significantly lower than a piloted aircraft for several reasons:

- Pilot cost is lower
- Time in the air is shorter
- Power for a UAS is less expensive than fuel for conventional aircraft
- Maintenance can usually be done by the operator and at a lower cost than an aircraft

For these reasons, more businesses are opting to utilize UAS before hiring a manned aircraft. Businesses in Oregon are using UAS to survey forests and wildlife, monitor forest fires, photograph land, and mapping. The following section is summary of Federal rules and enacted Oregon State Legislation related to UAV operations within the state[17].

6.8.1 FAA Reauthorization Act of 2018: Changes to Unmanned Aerial Vehicle (UAV) Policy

The FAA Reauthorization Act of 2018[18] established many changes to UAV policy, including changes to test sites, waivers, airworthiness, and various certificates. There are several prominent takeaways regarding new federal UAV policy. First, it advances the commercial UAV industry, by ensuring that the legal and structural framework are in place for UAVs to be integrated into the airspace. Second, is that the legislation moderates some of the potential dangers of UAV use, by adding additional departmental oversight on UAV policy. The last takeaway is the legislation evaluates or reevaluates some UAV regulations, like studying its UAV registration system to

[16] https://www.oregon.gov/aviation/docs/EcoNW_Task_2_Current_Demand_2018-0108.pdf
https://www.oregon.gov/aviation/docs/EcoNW_Task_2_Demand_Indicators_Maps_2018-0108.pdf
https://www.oregon.gov/aviation/docs/EcoNW_Task_4_Case_Studies_2018-0108.pdf
[17] https://www.oregonlegislature.gov/citizen_engagement/Reports/BB2016UnmannedAircraftSystems.pdf
[18] https://www.commerce.senate.gov/public/_cache/files/7e6c1d57-cf33-4c29-98de-a001b4cbb124/CB8D422BD3527207F7A8C7274B2FE45D.faa-reauthorization-act-of-2018-section-by-section.pdf

determine compliance, and launching a pilot program which would use remote drone identification for its reporting system.[19] This law enables the UAVs and is likely to accelerate progress in the industry.

Beyond the Visual Line of Sight (BVLOS)

The FAA Reauthorization Act of 2018 calls for the FAA to establish regulations that would permit UAV flight Beyond the Visual Line of Sight (BVLOS) of its operator. The first permit was offered to Avitas Systems, which specializes in custom aerial inspection systems for oil, gas, electric power, and transportation. The permit would allow Avitas Systems to operate a large, 55lb+ heli-drone in Loving County, Texas. Instead of a second human observer on the ground (as previously required) the drone will rely on ground-based radar to detect and avoid other aircraft in its airspace.

The heli-drone will be operated in an isolated area of Texas and will perform inspection services for Shell Oil, by monitoring infrastructure and detecting leaks. Avitas Systems is the first of many U.S. companies waiting in line for the regulatory approvals to deploy drones in this manner, whether for parcel or food delivery, disaster response, and UAV flight instruction. This new regulation is expected to open the door for many existing and future technologies to replace the idea of the second person observer completely[20].

UAV Security Issues

As the FAA evaluates how the FAA Reauthorization Act of 2018 affects recreational flyers, those individuals are expected to follow current policies.[21]

The Preventing Emerging Threats Act, Division H of the FAA Reauthorization Act of 2018, allows both the Department of Justice and the Department of Homeland Security to "track, warn, disable, seize, damage, and destroy unmanned aerial vehicles"[22] that are determined to pose a credible threat to people, facilities, or assets. This gives this authority to agencies within these departments, regardless of whether a warrant has been obtained. This has given concern to those using drones for commercial or personal use, especially those who fly their drones near high profile events or facilities. It is possible that innocent UAVs could be identified as a credible threat and treated as such.

The FAA Reauthorization Act of 2018 also establishes drone flight restrictions near U.S. Navy and U.S. Coast Guard vessels operating near Naval Base Kitsap, Washington, and Naval Submarine Base, Kings Bay, Georgia. These restrictions state that drone operations must occur a distance of at least 3,000 feet laterally and 1,000 feet vertically from the ships and submarines. The FAA also advises that drone operators remain clear of DOD and DOE facilities and mobile assets. Those who ignore that caution and whose drone flights are perceived to be a safety or security threat may have their drones disrupted, seized, damaged, or destroyed.

UAV Recreational Flying

The Reauthorization Act repealed Section 336 of the 2012 FAA Modernization and Reform Act, repealing the special rule for model aircraft, thus closing what is known as the "hobbyist loophole." This loophole prevented the FAA from establishing hard limits on drone use for recreational UAV fliers. Recreational unmanned aircraft flight is now classified as "Recreational Operations of Unmanned Aircraft," whereas before it was considered model aircraft flight. Now, the recreational fliers must abide by more stringent rules, including a 400-foot flight limit. Operations in restricted areas, interference with manned aviation, the firing of a weapon, commercial

[19] http://uasmagazine.com/articles/1933/what-does-the-faa-reauthorization-act-mean-to-the-uas-industry
[20] https://www.manatt.com/Insights/Newsletters/Client-Alert/FAA-Approves-First-Radar-Assisted-BVLOS-Drone-Oper
[21] https://www.faa.gov/news/updates/?newsid=91844
[22] https://www.natlawreview.com/article/faa-reauthorization-act-2018-raises-concerns-among-unmanned-aerial-vehicle-community

operations that violate privacy policies, and interference with emergency responders are all now prohibited.[23] An aeronautical and safety test is in development for recreational fliers, and the FAA has up to 6 months from October 2018 to develop this test. They have stated that it will be developed in consultation with UAV manufacturers, industry stakeholders, and community-based organizations.[24]

Section 372 of the law requires the FAA to establish a program for remote detection and identification that law enforcement could use to track drones which violate regulations. Government entities now also have the authority to punish violators with fines of up to $25,000.

Commercial Delivery Drones and Fees

Under this new law, the FAA has one year to update its regulations to allow drones in U.S. airspace to carriage private property. This would allow drones to deliver products to consumers, which was previously prohibited, except in rare circumstances. The rulemaking process will shape the regulation over the next year, but it is likely that there will be performance-based requirements, aircraft worthiness certifications, and operation specifications based on the type of flight and who is operating the UAV.[25]

The FAA and Government Accountability Office (GAO) is also required to study how the federal government could raise money for a future unmanned aircraft system traffic management (UTM) that would be key to facilitating the use of UAVs for package delivery and other operations beyond visual line of sight. The revenue required for this system is likely to come from fees charged for air traffic services. The study regarding these fees is due from the GAO six months from October. Citing industry estimates, the FAA said the new rules could generate over $82 billion in economic activity across the United States, and potentially create more than 100,000 new jobs over the next 10 years.[26]

6.8.2 State Regulation and Registration

HOUSE BILL 2710 (2013)

In 2013, House Bill 2710 established that law enforcement may only use UAS with a warrant or with probable cause and exigent circumstances, search and rescue efforts, training, or crime scene reconstruction. The measure also prohibited public bodies from operating UAS that are capable of firing a bullet or other projectile.

HB 2710 gave individuals a private right of action to sue a drone operator in civil court for flight over the person's property. In order to go to court, an operator must have flown at an altitude of less than 400 feet over the individual's property and the individual must have notified the operator not to fly overhead. If successful, the plaintiff could be awarded attorney fees and treble damages, in addition to a court order prohibiting the operator from flying over the property.

Additionally, the measure required public bodies to register any UAS in its use with the Oregon Department of Aviation. This registration requirement is in addition to any federally required registration.

HOUSE BILL 2354 AND HOUSE BILL 2534 (2015)

[23] https://dronelife.com/2018/10/19/when-do-things-change-for-recreational-operators-the-faa-reauthorization-timeline/
[24] https://www.gpsworld.com/faa-restricts-drones-near-dod-and-uscg-ships-subs/
[25] https://www.hklaw.com/AviationLawBlog/Federal-Aviation-Administration-FAA-Reauthorization-Act-Paves-the-Way-for-Federal-Regulation-of-Delivery-Drones-10-23-2018/?utm_source=Mondaq&utm_medium=syndication&utm_campaign=View-Original
[26] https://www.oregonlive.com/window-shop/index.ssf/2016/09/drones_oregon_industry.html

In 2015, House Bill 2354 made small adjustments to the provisions of HB 2710. It removed the 400-foot flight restriction for bringing a private action. Additionally, the measure updated the terminology used in Oregon statutes to provide consistency with federal rules.

Meanwhile, House Bill 2534 prevented the use of UAS for hunting, angling, tracking, trapping or locating wildlife, while also prohibiting the use of UAS to interfere with hunters, anglers, or trappers.

HOUSE BILL 4066 (2016)

During the 2016 session, House Bill 4066 addressed numerous new and recurring UAS issues. The measure extended the prohibition on operating a UAS capable of firing a bullet or projectile to all users, not just public bodies, and made it a Class A misdemeanor to do so. It removed UAS from the felony crime of endangering an aircraft, thereby avoiding significant criminal prosecution against a person who might down a UAS with a towel, broom or other device or weapon. Concurrently, the measure created a new violation of reckless interference with an aircraft.

For public bodies using UAS, the measure required them to establish policies and procedures for the use, storage, access, sharing, and retention of data collected through use of UAS. The policies must be in place and made available to the public by January 1, 2017.

The measure acknowledged a conflict with federal law regarding FAA authority and the private right of action. The FAA has sole authority to restrict and regulate commercial flight. A properly authorized commercial operator has authority to fly according to FAA rules and regulations. The private right of action enjoining all flights over private property could create a conflict with that federal authority. As such, HB 4066 created an exception to the private right of action for UAS flown in compliance with FAA authorizations.

Finally, HB 4066 created a new violation, for when a person knowingly or intentionally operates a UAS within 400 feet over a critical facility or makes contact with a critical facility with the UAS. Critical facilities include correctional facilities, power stations, chemical manufacturing plants, petroleum refineries, ports or other freight terminals, dams and oil pipelines."

6.8.3 UAS Operations and Activity in Oregon

UAS are also being used for disaster relief. In 2017, a team from Oregon called Insitu used UAS in recovery operations in Texas, Oregon, and California. Information gathered by UAS allowed for faster, up-to-date information and allowed responders to act quickly.

A ScanEagle is one type of UAS owned and operated by Insitu that has been used to assist in wildland firefighting activity. The UAS has a flight route is programmed into the aircraft's computer allowing the aircraft to fly the route precisely without ground based remote control. The advantage of this type of UAS is that it can be flown in many conditions, such as heavy smoke, where manned aircraft cannot. In October of 2017 a ScanEagle was used to gather data on the wildfire at Eagle Creek. The Eagle Creek fire burned nearly 50,000 acres throughout the Columbia River Gorge region and forced many residents to evacuate their homes to escape the blaze.

According to Insitu, the ScanEagle was "operating during dense smoke conditions or at night, when manned aircraft typically are grounded due to hazardous flying conditions for pilots."[27] During ScanEagle operations and in hazardous conditions, air traffic controllers, nearby airports, and pilots worked together to keep the skies clear and safe for all involved. In this instance, a notification was sent out to warn aircraft in the area of

[27] https://insitu.com/press-releases/Insitu-Flies-ScanEagle-for-Disaster-Relief-and-Fire-Suppression

the flight activity and the FAA closed airspace to manned aircraft in the vicinity of the fire. In most disaster recovery programs, notifications are sent out to keep everyone involved safe.

As UAS are integrated into the National Airspace System, it will be imperative for airports to expand their efforts to allow for UAS operations. Oregon has been a vital part of this effort thus far and will continue to be a large part of this airspace change as UAS grow in size and number.

6.8.4 UAS Research in Oregon

In 2013, the FAA announced the University of Alaska, Fairbanks as one of six test sites for UAS flight research. Per the FAA, the test sites "will allow the agency (FAA) to develop research findings and operational experiences to help ensure the safe integration of UAS into the nation's airspace." UAS research also allows businesses to determine how to apply this technology to everyday situations.

The University established the Alaska Center for Unmanned Aircraft Systems Integration (ACUASI) for the specific purpose of UAS research and development. The Pan-Pacific UAS Test Range Complex (PPUTRC) is the specific area managed by ACUASI.

> "The PPUTRC spans seven climate zones, allowing UAS manufacturers and potential users to test their equipment in the Arctic, the tropics, and in arid environments...Oregon's team includes three fixed test ranges. The locations of these test ranges are as follows: Eastern Oregon Airport at Pendleton; The Tillamook uncontrolled public airport and managed by Near Space, Inc.; Warm Springs Reservation, managed by VDOS, Inc. on behalf of the Confederated Tribes of Warm Springs. The Oregon ranges offer a variety of terrains, weather conditions, and flight environments, expanding on Alaska's characteristics."[28]

Tillamook Airport UAS Test Range

FIGURE 6-8: TILLAMOOK UAS TEST RANGE

Source: Near Space Corporation

[28] http://acuasi.alaska.edu/pputrc

The Johnson Near Space Center, located at Tillamook Airport, first began operation in the spring of 2013. The center was custom designed to facilitate NSC's high altitude balloon flight testing that it conducted for both government and commercial entities. The state-of-the-art balloon facility houses NSC's engineering, production and flight operations, and includes a large integration hangar and dedicated control tower, as well as a 100-acre launch area.

The Tillamook UAS Test Range became operational in November of 2015. The upgrade will allow NSC to competitively address the emerging UAS test flight market and increase the number of flights at the Tillamook UAS Test Range along with supporting unique high altitude (up to 130,000 feet) flight tests of unmanned balloons, drones, and hybrid aircraft.

The combined operations of the Johnson Near Space Center and Tillamook UAS Test Range offers a truly unique state of the art flight test facility, instrumented range, access to a wide array of testing environments, professional range support, and the ability to provide expedited flight approvals for testing of unmanned technologies.

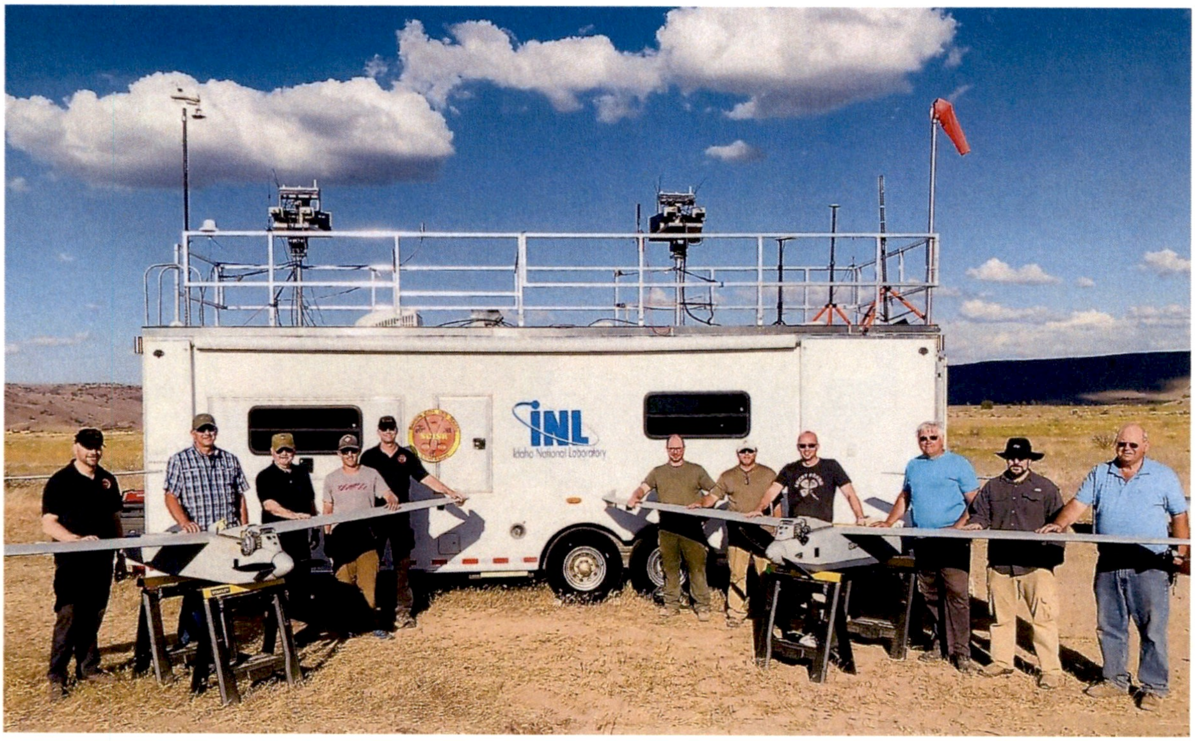
Warm Springs UAS Test Range

The Warm Springs UAS Test Range is a key testing facility for the Pan-Pacific UAS Test Range Complex, and is the only site owned and operated by a Native American tribe on tribal land. Located on the high desert of Central Oregon, the Warm Springs UAS Test Range provides both startups and established industry participants the easy access to the wide open spaces of central Oregon. Warm Springs is located on the dry side of the Cascades, averaging 325 Visual Flight Rules (VFR) days per year, making the range testable almost all year long. The Warm Springs Test Range is managed by VDOS, Inc. on behalf of the Confederated Tribes of Warm Springs.

VDOS secured the UAV test sites in Oregon as part of the University of Alaska bid for FAA test sites. VDOS specializes in using UAVs for inspection services and data collection. Until now the company has used manned aircraft to perform work or has worked with government clients and customers flying in restricted airspace.

In 2017, the Warm Springs FAA UAS Test Range expanded its operations to Prineville and Madras Airports to support UAS industry growth. The expansion project will allow Warm Springs to support UAS clients who require an airport for launch and recovery as well as having certified aircraft maintenance facilities available.

FIGURE 6-9: IDAHO NATIONAL LABS FLIGHT TESTING IN SUPPORT OF THE US MARINES



Source: Idaho National Laboratory

Pendleton UAS Test Range

Pendleton UAS Test Range (PUR) offers both conventional and unconventional takeoff and landing capability from Eastern Oregon Regional Airport (PDT). PUR is a leading partner in the Pan-Pacific UAS Test Range Complex. The airport enjoys 347 VFR days per year and can accommodate up to a Boeing 757.

In addition to two conventional runways (6,300 feet, 5,581 feet), the airport provides a 2,800-foot UAS dedicated strip and a full-service UAS operating area with available dark fiber connections. PDT offers a blend of different aircraft operations, cargo, charter, passenger, experimental, SAR, law enforcement, agricultural imaging and chemical application, geophysical research, commercial unmanned, and military manned and unmanned operations.

Beyond the airfield in Pendleton, the UAS Test Range extends over 14,000 square miles: north to the Columbia River; east over the Blue Mountains and Umatilla National Forest; south into the Elkhorn Mountains; and west to the borders of Restricted Area 5701 (R-5701) to allow easy access for specialty testing (Oregon's only restricted airspace). R-5701 is the only low-altitude electronic attack training airspace in the Pacific Northwest.

FIGURE 6-10: ARCTIC SHARK UAS FLIGHT TESTING IN PENDLETON

Source: SUAS News

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7. COST ESTIMATING AND PROJECT FUNDING

7.1 Introduction

Based on the analysis of the recommended airport system's performance, the Oregon Aviation Plan (OAP or the system plan) identifies specific projects for airports in the Oregon system. These projects relate to improving the airport system's performance, especially as it relates to facility and service objectives set as part of this study.

Estimated costs for each project were developed using broad assumptions appropriate for system level planning. Details of these assumptions are explained in **Appendix E.** Circumstances at individual airports vary considerably, often requiring additional expenditures not covered by these broad assumptions. With that in mind, these cost estimates are best viewed as a starting point for understanding overall project costs.

7.2 Cost Estimates Methodology

The methodology used to estimate costs for projects included in the recommended plan includes:

- Compare existing facilities at each individual airport to facility/service objectives identified for each airport's recommended OAP v6.0 role; OAP v6.0 roles are as follows:
  - Category I: Commercial Service
  - Category II: Urban General Aviation
  - Category III: Regional General Aviation
  - Category IV: Local General Aviation
  - Category V: Remote Access Emergency
- Identify specific airport projects or actions needed to reach the airport's applicable objectives.
- Estimate project quantities.
- Use estimated unit costs, applying these costs to specific airport needs/projects.

In this process, costs were first identified on an airport-by-airport basis, and then compiled at the system-level by project type. Costs presented in this chapter are based on unit costs for each type of facility. Unit costs used in the system plan's analysis were obtained from current airport construction costs in Oregon; unit costs were increased to allow for contingency expenses related to planning, engineering, and design. Importantly, the costs identified in this chapter will vary based on site-specific conditions that may require significant site preparation efforts or other mitigation to allow for construction.

Wherever possible, actual costs were used as a baseline in the development of unit costs. The range of airports and their specific settings in the state may cause actual costs to vary. Further, costs presented in this chapter are based on 2018 US dollars without increases to reflect future inflation. If a project identified by the system plan is already included in an airport's individual capital improvement plan (CIP), the cost for that project, as included in the CIP, was adopted for use in this analysis.

Costs associated with system plan recommendations are aggregated for the following project types (with detailed sub-components included in parenthesis):

- Runways (Runway Width, Runway Length)
- Runway Pavement Strength

- Runway Pavement Maintenance (Primary Runway Pavement Condition Index [PCI])
- Apron expansion
- Auto Parking (General Aviation Auto Parking)
- Fuel (Jet A fuel availability and 24-hour fuel pumps for AvGas)
- Hangars (Hangared Aircraft Storage)
- Lighting, Navigation Aids (NAVAIDs), and Visual Aids (Runway Lighting, Taxiway Lighting, Approach Lighting System, Approach Type, Weather Reporting, Rotating Beacon, Segmented Circle/Wind Cone)
- Safety (Runway to Taxiway Separation, Taxiway Geometry)
- Fencing (Wildlife/Security)
- Taxiways
- General Aviation Terminal Buildings

Pavement project costs associated with the information in Oregon's most current Statewide Pavement Maintenance Program are aggregated for the following project types:

- Runways
- Taxiways
- Apron

CIP project costs are aggregated by the following project types:

- Runway Length
- Runway Width
- Primary Runway Pavement Strength
- Primary Runway PCI
- Taxiways
- Visual Approach Aids
- Instrument Approach Aids
- Runway Lighting
- Taxiway Lighting
- Rotating Beacon
- Wind Cone (Lighted)
- Weather Reporting
- Hangared Aircraft Storage
- Apron Parking Storage
- General Aviation Terminal Building
- General Aviation Auto Parking
- Fencing
- Air Cargo
- Deicing pads
- Snow Removal Equipment
- Fuel AvGas
- Fuel Jet A
- FBO services
- Ground Transportation

In order to present all of the above categories in a single, concise table and/or chart for combined development costs across all plans and analyses, several project types were collapsed into the following simplified types:

- Taxiways
- Terminal Buildings
- Fence-Security/Wildlife
- Lighting, NAVAIDS, & Signage
- Hangars
- Fuel
- Runways
- Pavement Condition
- Auto Parking & Ground Access
- Aprons
- Deicing
- Air Cargo
- Snow Removal Equipment

For detailed cost information on a particular airport, see the Individual Airport Summaries. Each airport's report card lists all projects and their associated costs, as well as project source (system plan projects, CIP projects, and statewide pavement projects).

7.3 Costs Associated with System Plan Recommendations

The system plan cost estimates, by project type and airport role (OAP v6.0 Category I-V), are summarized in **Table 7-1** and **Table 7-2**. The totals by airport role are identical in **Table 7-1** and **Table 7-2**. However, **Table 7-1** presents a summary of system plan costs by detailed project type, whereas **Table 7-2** presents a summary of system plan costs by reduced/collapsed project type.

TABLE 7-1: SUMMARY OF SYSTEM PLAN COSTS BY DETAILED PROJECT TYPE AND OAP V6.0 ROLE/CATEGORY

Facility/Service Item	Category I	Category II	Category III	Category IV	Category V	Total	Percentage of Total
Runway Length	$10,700,000	$0	$12,100,000	$19,000,000	$6,400,000	$48,200,000	29.2%
Runway Width	$0	$0	$2,900,000	$4,000,000	$29,000,000	$35,900,000	21.7%
Primary Runway Pavement Strength	$0	$7,900,000	$0	$10,200,000	$2,200,000	$20,300,000	12.3%
Primary Runway PCI	$9,500,000	$0	$0	$0	$0	$9,500,000	5.7%
Taxiways	$0	$4,200,000	$0	$0	$0	$4,200,000	2.5%
Visual Approach Aids	$0	$0	$0	$700,000	$0	$700,000	0.4%
Instrument Approach Aids	$0	$0	$0	$0	$0	$0	0.0%
Runway Lighting	$0	$0	$0	$0	$0	$0	0.0%
Taxiway Lighting	$0	$4,964,000	$10,100,000	$800,000	$0	$15,864,000	9.6%
Rotating Beacon	$0	$0	$100,000	$400,000	$0	$500,000	0.3%
Wind Cone (Lighted)	$0	$0	$15,000	$45,000	$0	$60,000	0.0%
Weather Reporting	$0	$0	$400,000	$0	$0	$400,000	0.2%
Hangared Aircraft Storage	$1,743,750	$0	$522,000	$0	$0	$2,265,750	1.4%
Apron Parking Storage	$604,159	$1,678,038	$435,142	$415,058	$0	$3,132,397	1.9%
General Aviation Term. Building	$0	$500,000	$500,000	$0	$0	$1,000,000	0.6%
General Aviation Auto Parking	$0	$95,000	$0	$150,000	$0	$245,000	0.1%
Fencing	$998,000	$2,554,000	$1,132,000	$0	$0	$4,684,000	2.8%
Cargo	$3,000,000	$200,000	$0	$0	$0	$3,200,000	1.9%
Deicing	$11,250,000	$0	$0	$0	$0	$11,250,000	6.8%
Aviation Services						$0	0.0%
Fuel AvGas	$400,000	$800,000	$400,000	$1,400,000	$0	$3,000,000	1.9%
Fuel Jet A	$0	$0	$200,000	$0	$0	$200,000	0.1%
FBO*						$0	0.0%
Ground Transportation*						$0	0.0%
Snow Removal Equipment	$0	$0	$75,000	$375,000	$0	$450,000	0.0%
Total	$38,395,909	$22,891,038	$28,879,142	$37,485,058	$37,600,000	$165,251,147	100%
Percentage of Total	23%	14%	17%	23%	23%	23%	

Source: Jviation, Century West
Note: * FBO and Ground Transportation improvements are market driven so no public funds are applicable.

TABLE 7-2: SYSTEM PLAN COSTS SUMMARIZED BY PROJECT TYPE AND OAP V6.0 CATEGORY ROLE

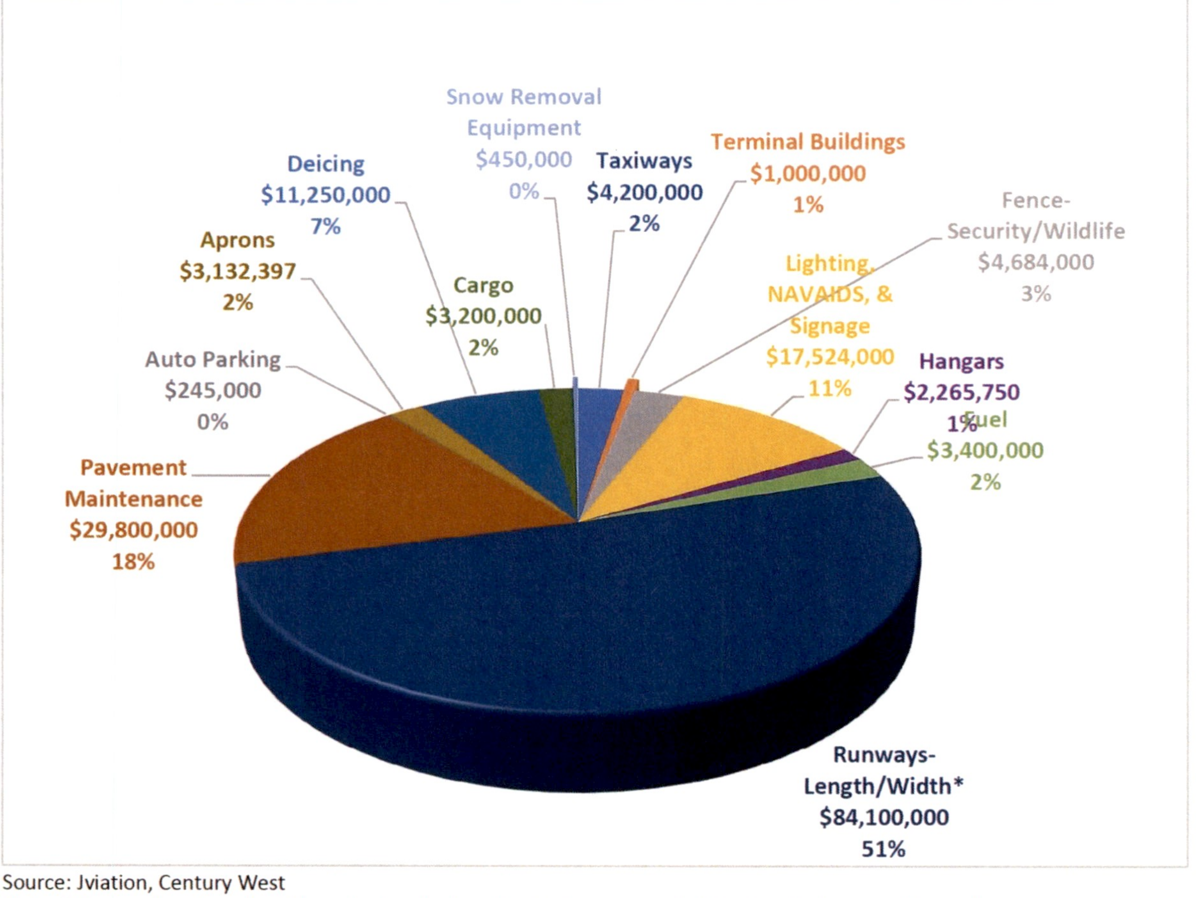
Costs by Project Type	Category I	Category II	Category III	Category IV	Category V	Total	Percentage of Total
Taxiways	$0	$4,200,000	$0	$0	$0	$4,200,000	2.5%
Terminal Buildings	$0	$500,000	$500,000	$0	$0	$1,000,000	0.6%
Fence-Security/Wildlife	$998,000	$2,554,000	$1,132,000	$0	$0	$4,684,000	2.8%
Lighting, NAVAIDs	$0	$4,964,000	$10,615,000	$1,945,000	$0	$17,524,000	10.6%
Hangars	$1,743,750	$0	$522,000	$0	$0	$2,265,750	1.4%
Fuel	$400,000	$800,000	$600,000	$1,400,000	$0	$3,200,000	2.1%
Runways-Length/Width*	$10,700,000	$0	$15,000,000	$23,000,000	$35,400,000	$84,100,000	50.9%
Runway Pavement Strength/PCI	$9,500,000	$7,900,000	$0	$10,200,000	$2,200,000	$29,800,000	18.0%
Auto Parking	$0	$95,000	$0	$150,000	$0	$245,000	0.1%
Aprons	$604,159	$1,678,038	$435,142	$415,058	$0	$3,132,397	1.9%
Deicing	$11,250,000	$0	$0	$0	$0	$11,250,000	6.8%
Cargo	$3,000,000	$200,000	$0	$0	$0	$3,200,000	1.9%
Snow Removal Equipment	$0	$0	$75,000	$375,000	$0	$450,000	0.3%
Total	**$38,395,909**	**$22,891,038**	**$28,879,142**	**$37,485,058**	**$37,600,000**	**$165,251,147**	**100.0%**
Percentage of Total	**23.2%**	**13.9%**	**17.5%**	**22.7%**	**22.8%**	**100.0%**	

Source: Jviation, Century West

Note: * Runway length and width projects include related taxiway costs, lighting installation, marking and signage costs.

Altogether, the costs associated with system plan recommendations for all project types total approximately $165.3 million. **Figure 7-1** illustrates the distribution of total estimated system plan costs by project type. As shown, the most significant costs for recommended system improvements relate to Runway Length and Width projects, followed by Runway Pavement Strength/PCI.

FIGURE 7-1: SYSTEM PLAN COSTS BY PROJECT TYPE

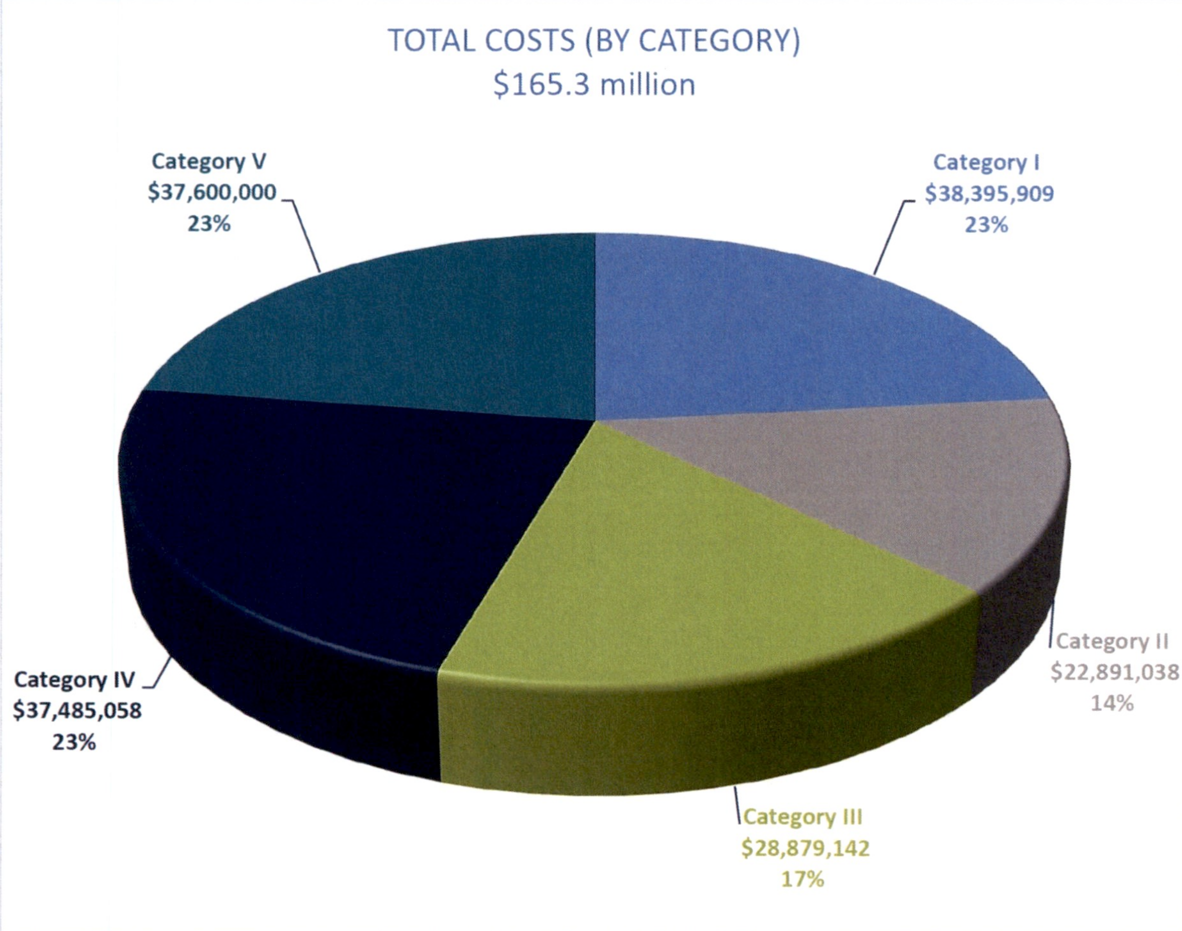


Source: Jviation, Century West

Note: * Runway length and width projects include related taxiway costs, lighting installation, marking and signage costs.

In addition to the estimated system development costs by project type, a summary of estimated costs by airport role (OAP v6.0 Category I to V) was developed and is shown in **Figure 7-2**. This graphic was developed with airport-specific projects from the OAP v6.0, with costs summarized by project type. As shown in **Figure 7-2**, Category I airports have the largest share of estimated costs associated with system plan deficiencies followed by airports in Category V, IV, III, and II. OAP v6.0 facility objectives are focused primarily on meeting the needs of general aviation airports. Analysis indicates that 77 percent of the deficiency-related projects are for general aviation airports (Category II to V).

FIGURE 7-2: OAP V6.0 PROJECT COSTS BY CATEGORY/ ROLE



Source: Jviation, Century West

7.4 Other Development Costs for System Airports

Projects identified in the deficiencies analysis from the system plan represent a portion of the total development and maintenance costs that Oregon airports could require in the near term. In order to have a better picture of total investment needs for Oregon's airport system, it is important to also consider projects identified in each airport's current Statewide Capital Improvement Program (SCIP) and in Oregon's most recent Statewide Pavement Evaluation Program (PEP).

The SCIP was developed and implemented by the Oregon Department of Aviation (ODA) in partnership with the Federal Aviation Administration's (FAA) Northwest Mountain Region and Seattle Airports District Office and airport sponsors. The development and implementation of the SCIP is consistent with and will support airport sponsors and FAA objectives of implementing a continuous aviation system planning program. The purpose of the OAP v6.0 is to implement and manage an integrated, sustainable statewide airport planning process, ensuring the Oregon state public-use airport system remains responsive to national and state public air transportation needs. Furthermore, the SCIP is consistent with the current Oregon Aviation Plan and the foundation of the OAP. The OAP will be revised and/or amended to include any SCIP needs that are visualized through the development of the SCIP. While SCIP costs have been included for consideration in this analysis, it is worth stating that SCIP requests are unvetted and often reflect an optimistic/unconstrained level of development for each airport.

Current SCIPs were reviewed to provide ODA with a general understanding of what projects are already being considered on the local level that would address deficiencies noted in the system plan. A review was performed to ensure project costs were not duplicated between the system plan and current SCIP projects for each airport. Projects identified in the state's PEP were also reviewed to determine if any of the recommendations from that study are already included in an airport's current CIP or in a system plan related recommendation. The combined costs from all three sources (facility deficiency analysis, PMP, and SCIP) provide a more holistic picture of anticipated financial needs.

7.4.1 Costs Associated with Pavement Evaluation Program Projects

ODA's systematically identifies maintenance, repair, and rehabilitation projects needed to sustain functional pavements at Oregon airports. The PEP 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 receiving federal monies, this work assists the airports in meeting their grant assurances. Projects identified by the PEP that have not been addressed and their associated costs were identified as additional costs to be considered as part of the system plan's recommendations. **Table 7-3** presents a summary of these pavement related costs for system airports by project type and by airport role. Projects range from surface sealants to complete pavement rehabilitation. It is worth noting that some airports could have additional pavement-related projects that are not captured in the statewide PEP. Therefore, actual costs related to improving and maintaining the condition of pavement at Oregon airports could be higher than the $67.7 million shown in **Table 7-3**. With weather and use, pavement conditions at Oregon airports continually change and ODA updates each of the three PEP regions on a three year rotation to capture these changing conditions. Pavement costs estimated in this plan do not reflect all pavement maintenance and replacement needs that have to be addressed in the next five years. Additionally, most Category I airports are not included in the PEP, with the exception of Eastern Oregon Regional Airport at Pendleton, a Non-Primary airport eligible only for Non-Primary Entitlement funds from the FAA, ($150,000 annually).

TABLE 7-3: SUMMARY OF PAVEMENT COSTS BY PROJECT TYPE AND OAP V6.0 CATEGORY/ROLE

2018 - 2022	Apron	Runway	Taxiway	Total	Percentage of Total
OAP Category I	$1,612,899	$2,944,863	$5,225,749	$9,783,511	14.5%
OAP Category II	$13,356,102	$8,080,123	$6,398,410	$27,834,635	41.1%
OAP Category III	$5,884,204	$4,932,760	$1,912,260	$12,729,224	18.8%
OAP Category IV	$4,707,404	$4,595,803	$4,235,837	$13,539,044	20.0%
OAP Category V	$345,465	$2,659,925	$764,793	$3,770,183	5.6%
Total	$25,906,074	$23,213,474	$18,537,049	$67,656,597	100%
Percentage of Total	38.3%	34.3%	27.4%	100%	

Source: ODA PEP 2018, Jviation analysis

As **Table 7-3** shows, pavement projects require significant investment, totaling approximately $67.7 million. By pavement project type, apron projects account for the largest share of the pavement-related costs, followed by runway projects and taxiway projects. Category II airports have the highest estimated PMP costs, followed by Category IV and Category III airports. Category I airports, with the exception of Eastern Oregon Regional Airport at Pendleton, are not included in this summary.

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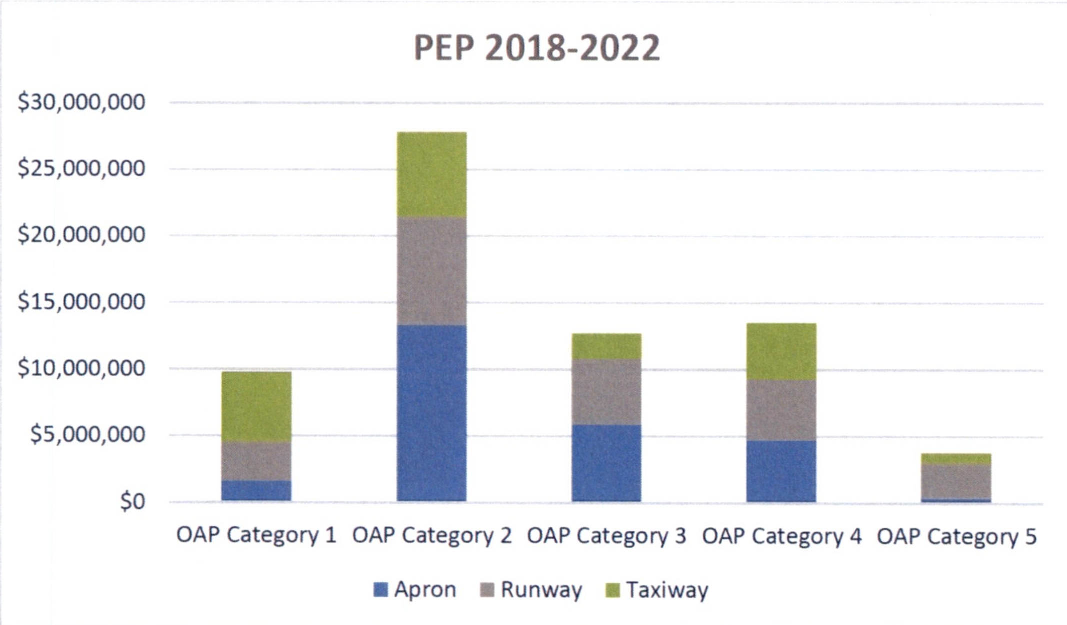
Figure 7-3 graphically depicts the share of pavement-related costs by project type and OAP v6.0 airport role. Apron projects at Category II airports are nearly $13.4 million and have the largest share of pavement related projects.

FIGURE 7-3: PAVEMENT COSTS BY OAP V6.0 AIRPORT CATEGORY/ROLE AND PROJECT TYPE



Source: ODA PMP 2018, Jviation analysis

7.4.2 Costs Associated with Airport SCIP Projects

A summary of SCIP project costs for all 97 system airports, including Category I – Commercial Service[1] (gathered for 2018) is presented in **Table 7-4**, by project type and by airport role.

TABLE 7-4: ODA SCIP COSTS BY AIRPORT CATEGORY/ROLE, 2018 TO 2030

CIP Project*	Category I	Category II	Category III	Category IV	Category V	Total	Percentage of Total
Runways	$39,063,131	$61,818,820	$19,161,113	$6,505,554	$3,003,343	$129,551,961	33.2%
Taxiways	$105,874,503	$31,241,927	$4,619,831	$17,142,480	$763,466	$159,642,207	40.9%
Land Acquisition	$4,595,948	$8,101,050	$0	$0	$0	$12,696,998	3.3%
Apron	$11,033,750	$5,999,754	$16,567,496	$11,905,494	$0	$45,506,494	11.6%
Fence	$0	$0	$513,778	$1,170,015	$305,556	$1,989,349	0.5%
NAVAIDS	$3,197,078	$188,889	$1,573,601	$422,223	$0	$5,381,791	1.4%
Stormwater	$1,073,561	$2,644,445	$0	$0	$0	$3,718,006	0.9%
Obstructions	$0	$1,078,889	$333,334	$463,319	$166,667	$2,042,209	0.5%
Fuel Farm	$0	$0	$0	$502,500	$0	$502,500	0.1%
Weather reporting	$0	$488,889	$0	$850,000	$0	$1,338,889	0.3%

[1] Category 1 airports do not receive ODA funding for nearly all projects as these Primary airports receive AIP entitlement funds.

CIP Project*	Category I	Category II	Category III	Category IV	Category V	Total	Percentage of Total
Snow Removal Equipment/Storage	$7,093,352	$0	$22,222	$0	$0	$7,115,574	1.8%
Aircraft Rescue and Firefighting (ARFF)	$5,500,000	$0	$0	$0	$0	$5,500,000	1.4%
Studies	$8,634,861	$1,293,289	$2,231,331	$2,418,364	$638,886	$15,216,731	3.9%
Total	$186,066,184	$112,855,952	$45,022,706	$41,379,949	$4,877,918	$390,202,709	100.0%
Percentage of Total	47.7%	28.9%	11.5%	10.6%	1.3%	100.0%	

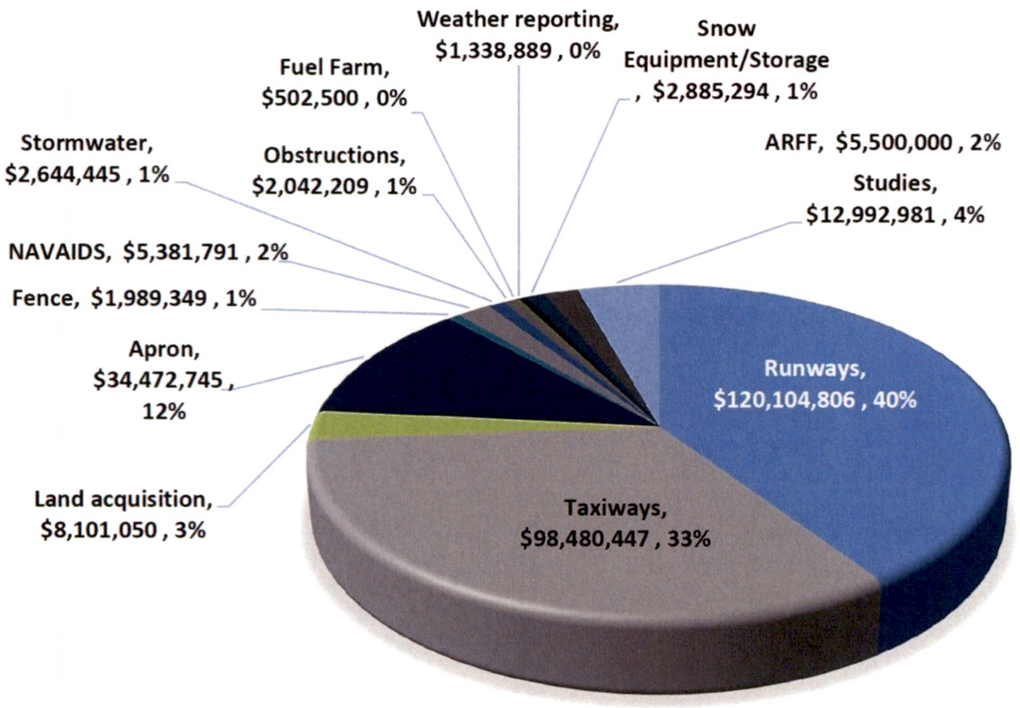
Source: ODA SCIP 2018, Jviation analysis
Note: *SCIP Projects for runways and taxiways range from extensions to lighting to rehabilitation. Projects costs often include environmental studies, geotechnical work as well as engineering design and construction.

As shown in **Table 7-4**, if fully implemented, SCIP projects for system airports also require a significant investment, totaling over $390 million[2] over the next 10 years; on average, $39 million per year will be required to fund all existing SCIPs. By SCIP project type, taxiway projects make up the largest share of costs, followed by runway projects, and apron projects. The remaining 10 project types each represent approximately 15 percent of the total cost. Category I, Commercial Service Airports represent the largest share of SCIP costs, followed by Category II, Urban General Aviation Airports and Category III, Regional General Aviation Airports.

Figure 7-4 and **Figure 7-5** graphically depict the share of SCIP-related costs by project type and OAP v6.0 role.

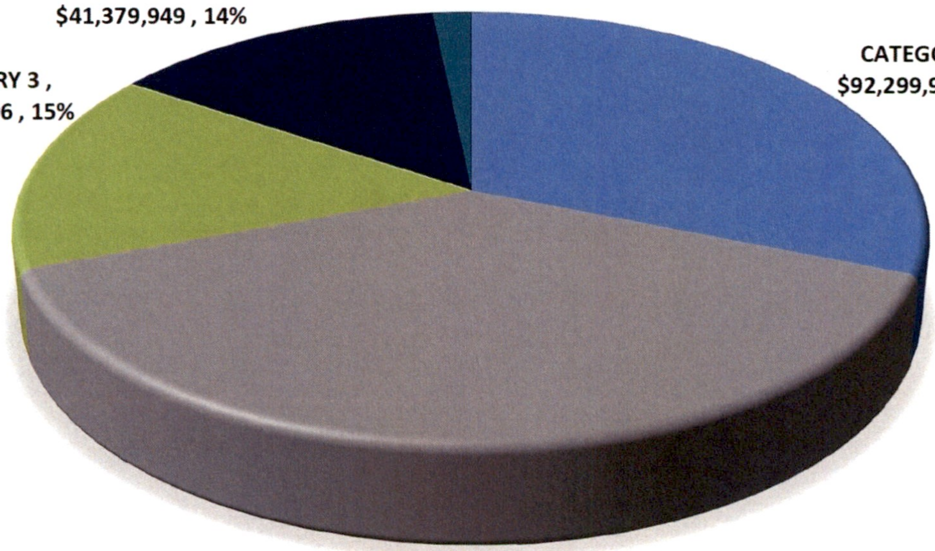
[2] Some projects on the CIP may be currently underway. The SCIP database includes PMP and fund transfers. These were removed for this analysis to avoid double counting.

FIGURE 7-4: SCIP COSTS BY PROJECT TYPE



Source: ODA SCIP 2018, Jviation analysis

FIGURE 7-5: SCIP COSTS BY ROLE



Source: : ODA SCIP 2018, Jviation analysis

7.5 Combined Estimated Development Costs

Combining all cost estimates (system plan facilities and services deficiencies, pavement projects identified by the PEP, and airport SCIPs) results in total development costs of nearly $623.1 million over the next 10 years. **Table 7-5** presents a summary of the combined development costs by project type and airport role.

TABLE 7-5: SUMMARY OF COMBINED DEVELOPMENT COSTS BY PROJECT TYPE AND ROLE

Project Type	Category I	Category II	Category III	Category IV	Category V	Total	Percentage of Total
Runways	$62,207,994	$77,798,943	$39,093,873	$44,301,357	$43,263,268	$266,665,435	42.8%
Taxiways	$111,100,252	$46,804,337	$16,632,091	$22,178,317	$1,528,259	$198,243,256	31.8%
Land Acquisition	$4,595,948	$8,101,050	$0	$0	$0	$12,696,998	2.0%
Apron	$13,250,808	$21,033,894	$22,886,842	$17,027,956	$345,465	$74,544,965	12.0%
Fence	$998,000	$2,554,000	$1,645,778	$1,170,015	$305,556	$6,673,349	1.1%
NAVAIDS	$3,197,078	$188,889	$1,688,601	$1,567,223	$0	$6,641,791	1.1%
Stormwater	$1,073,561	$2,644,445	$0	$0	$0	$3,718,006	0.6%
Obstructions	$0	$1,078,889	$333,334	$463,319	$166,667	$2,042,209	0.3%
Fuel Farm	$600,000	$800,000	$600,000	$1,902,500	$0	$3,902,500	0.6%
Weather Reporting	$0	$488,889	$400,000	$850,000	$0	$1,738,889	0.3%

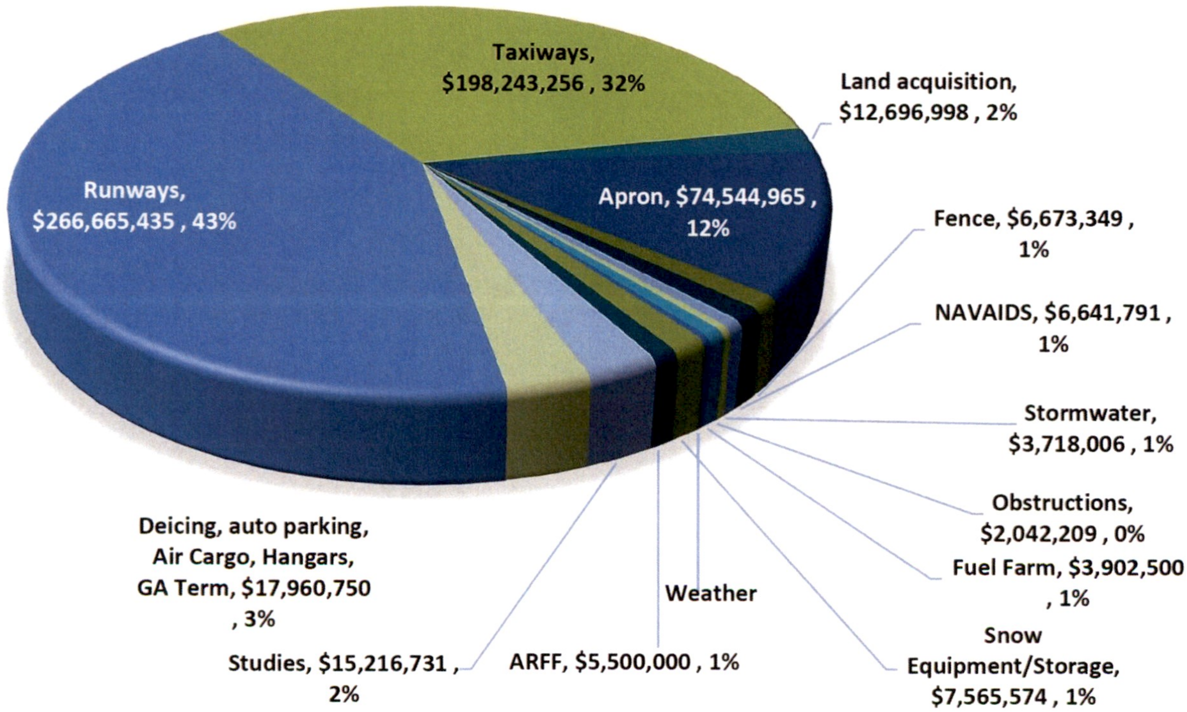
Project Type	Category I	Category II	Category III	Category IV	Category V	Total	Percentage of Total
Snow Removal Equipment/Storage	$7,093,352	$0	$97,222	$375,000	$0	$7,565,574	1.2%
ARFF	$5,500,000	$0	$0	$0	$0	$5,500,000	0.9%
Studies	$8,634,861	$1,293,289	$2,231,331	$2,418,364	$638,886	$15,216,731	2.4%
Deicing, Auto Parking, Air Cargo, Hangars, General Aviation Terminal	$15,993,750	$795,000	$1,022,000	$150,000	$0	$17,960,750	2.9%
Total	**$234,245,604**	**$163,581,625**	**$86,631,072**	**$92,404,051**	**$46,248,101**	**$623,110,453**	**100.0%**
Percentage of Total	**37.6%**	**26.3%**	**13.9%**	**14.8%**	**7.4%**	**100.0%**	

Source: Jviation, Century West, ODA 2018 SCIP and PEP

As shown in **Table 7-5**, by consolidated project type the largest share of costs is for Runways and Taxiways followed by Apron projects. The remaining project types each represent less than 15 percent of the total cost. by Category I, Commercial Service represent the largest share of combined development costs, followed Category II, Urban General Aviation Airports.

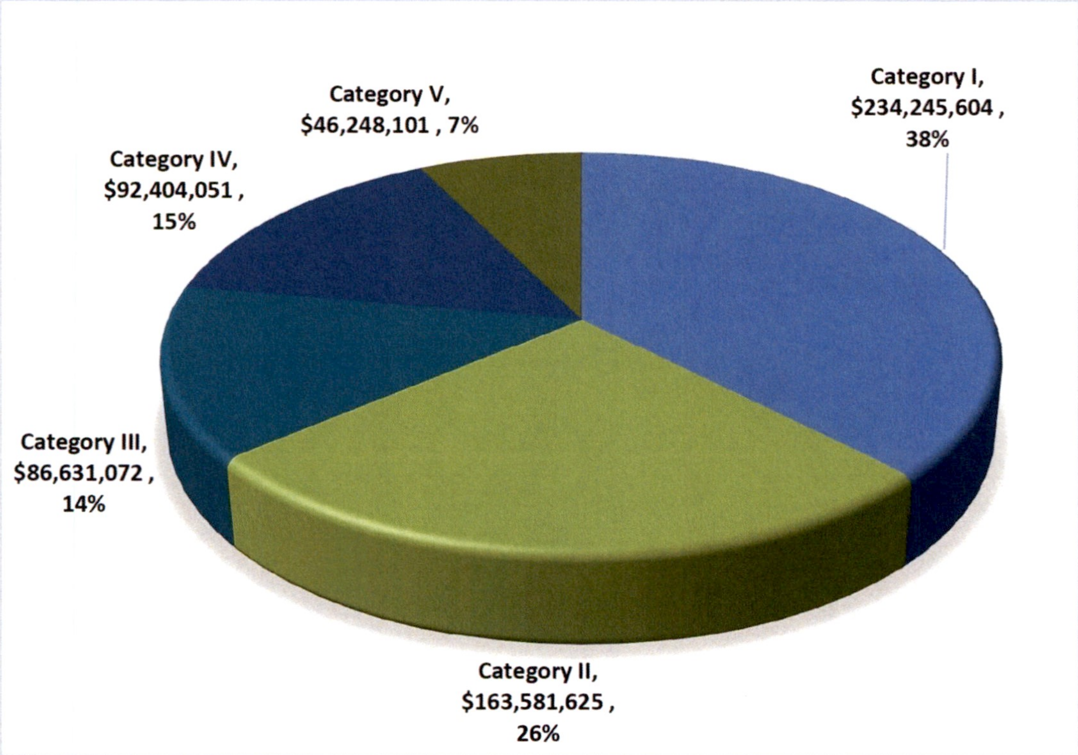
Figure 7-6 and **Figure 7-7** graphically depict the share of combined development costs by project type and OAP v6.0 role.

FIGURE 7-6: COMBINED DEVELOPMENT COSTS BY PROJECT TYPE



Source: Jviation, Century West, ODA SCIP and PEP

FIGURE 7-7: COMBINED DEVELOPMENT COSTS BY OAP V6.0 AIRPORT CATEGORY/ROLE



Source: Jviation, Century West, ODA SCIP and PEP

Table 7-6 presents a summary of the combined development costs identified by role and plan. As shown, costs associated with system plan recommendations make up the second largest share with 27 percent of the total. SCIP project costs represent the largest share with nearly 63 percent of the total estimated development costs over the next five to 10 years. It is worth noting that any duplication in projects between the source documents was removed. When just system planning related projects are considered, total estimated costs are $623.1 million.

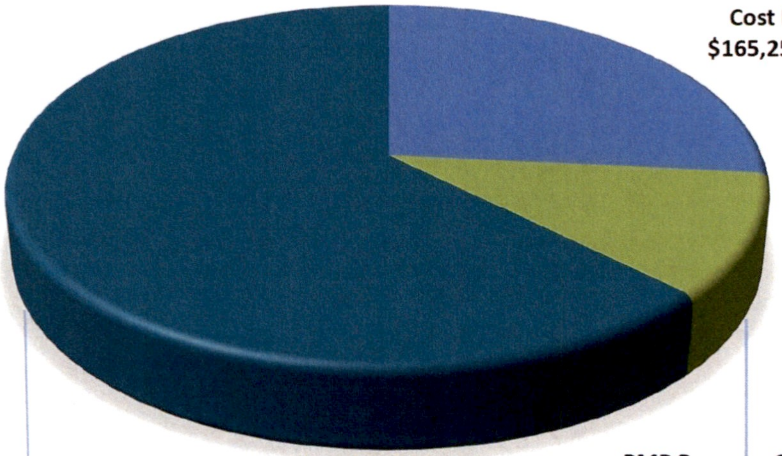
TABLE 7-6: SUMMARY OF COMBINED DEVELOPMENT COSTS BY ROLE AND PLAN

Plan	Category I	Category II	Category III	Category IV	Category V	Total	Percentage of Total
OAP Deficiencies Plan Cost Estimates	$38,395,909	$22,891,038	$28,879,142	$37,485,058	$37,600,000	$165,251,147	26.5%
PMP Costs 2018- 2023	$9,783,511	$27,834,635	$12,729,224	$13,539,044	$3,770,183	$67,656,597	10.9%
SCIP COSTS 2018 - 2030	$186,066,184	$112,855,952	$45,022,706	$41,379,949	$4,877,918	$390,202,709	62.6%
Total	$234,245,604	$163,581,625	$86,631,072	$92,404,051	$46,248,101	$623,110,453	100.0%
Percentage of Total	37.6%	26.3%	13.9%	14.8%	7.4%	100.0%	

Source: Jviation, Century West, ODA SCIP and PEP

Figure 7-8 depicts the share of development costs by plan.

FIGURE 7-8: COMBINED DEVELOPMENT COSTS BY PLAN



Source: Jviation, Century West, ODA SCIP and PMP

7.6 Funding Sources for Capital Improvement Projects

7.6.1 Federal Aviation Administration Airport Improvement Program Funding

The federal government started an airport grants-in-aid program to units of state and local government at the end of World War II to support the needs of the nation's public airports. After several early versions of federal funding programs, the Airport Improvement Program (AIP) was established through the Airport and Airway Improvement Act of 1982. The initial AIP provided funding legislation through fiscal year 1992; since then, it has been authorized and appropriated on a yearly or even quarterly basis. AIP funding is generated through taxes on airline tickets, freight way bills, international departure fees, general aviation fuel, and jet fuel.

AIP funds must be spent on FAA-eligible projects as defined in FAA Order 5100.38D, *Airport Improvement Program (AIP) Handbook*. In general, this reference document states that:

- An airport must be in the currently approved National Plan of Integrated Airport Systems (NPIAS).
- Most public-use general aviation airport improvements are eligible for 90 percent federal funding, with the remaining 10 percent coming from local or state matching funds.
- Non-primary entitlement funds of $150,000 per year can be accumulated for up to four years; It should be noted that Unclassified airports are not eligible for these funds.

In addition, revenue-producing items (such as hangars) are typically not eligible for federal funding unless certain conditions are met. All eligible projects must be depicted on an FAA-approved airport layout plan.

Entitlement Funding

AIP grants include entitlement grants, which are allocated among airports by a formula that is driven by passenger enplanements, and by discretionary grants that are awarded in accordance with specific guidelines. Generally, primary airports receive entitlements based on the number of enplaning passengers and landed cargo weights, while non-primary airports, which include general aviation airports, likewise may receive entitlement funding.

Discretionary Funds

General aviation and commercial service airports also compete for federal discretionary funds. These funds are awarded based on priority ratings given to each potential project by the FAA. The prioritization process makes certain that the most important and beneficial projects (as viewed by the FAA) are the first to be completed, given the availability of adequate discretionary funds. Federal funding is limited to development that is justified to meet aviation demand according to FAA guidelines. Each NPIAS airport development project is subject to eligibility and justification requirements as part of the normal AIP funding process.

State Apportionment Funding

FAA funds are made available to states under various conditions and are apportioned based on an area/population formula. The distribution of these grants is decided through a collaborative effort by the FAA and each state.

7.6.2 Oregon State Funding

Several programs are administered by the Oregon Department of Aviation (ODA) ODA for funding airport planning, construction, and maintenance projects. A brief description of each funding program is presented below.

Pavement Evaluation Program

State funding for pavement maintenance projects begins with the information gathered during the State's Pavement Evaluation Program (PEP). The PEP provides technical pavement condition index reports and an assessment of pavement maintenance needs for one third of the State's airports each year in the form of a MicroPAVER database and individual airport reports. The PEP consultant also generates a list of pavement maintenance priorities to be addressed with that year's PMP.

All airports recognized as General Aviation airports in the 2007 Oregon Aviation Plan qualify for the PEP program. Primary non-hub commercial service airports contract and pay for PEP inspections separate from the PEP program and provide the report to ODA. Primary airports that are considered small, medium or large hub do not qualify for the PEP programs.

Pavement Evaluation Program (PEP) Funding: The PEP Program is funded by ODA and FAA AIP System Planning Grant funds. Funding is inclusive of the final work product of the individual PCI reports and all associated consulting contract services. For non-NPIAS public-use airports, ODA funds pay 100 percent of PEP costs. NPIAS general aviation airports PEP costs are funded through a yearly FAA AIP system planning grant. This FAA grant is for statewide system needs facilitated by ODA. FAA AIP grants are funded at a 90 percent (FAA)/10 percent (sponsor) share. The ODA 10 percent sponsor share (match) for the PEP as identified in individual system plan grants is funded through the PMP.

Pavement Maintenance Program (PMP)

Oregon's PMP funds pavement maintenance and associated improvements such as crack filling, pavement repair, surface sealants, etc., that have not traditionally been eligible for FAA funding. Funding for the PMP is generated through a collection of aviation fuel taxes. ODA manages the PMP through an annual consultant services contract, and maintenance work is programmed on a three-year regional rotation by specialty contracting procured directly by the State. The PMP includes a regular schedule of inspection and subsequent field work with benefits such as economy of scale in bidding contracts for specialty work and creating federal/state/local partnerships that maximize airport improvement funds.

The PMP typically includes approximately 12-20 airports per year, depending on funding levels, and is limited in scope to patching pavements, crack sealing, fog sealing, slurry sealing, and striping. The PMP is responsible for execution of the work (engineering analysis, quantity verification, bidding & solicitation, construction contracting, safety training and construction management) associated with the required/recommended maintenance identified by the PEP and within the available budget.

All airports recognized as General Aviation airports in the 2007 Oregon Aviation Plan qualify for the PMP. Primary non-hub commercial service airports also may qualify for PMP. Primary airports that are considered small, medium or large hub do not qualify for the PMP programs. For non-hub primary airport qualifications contact the ODA PMP Program Manager[3].

Pavement Maintenance Program (PMP) Funding and Airport Sponsor Match: The majority of airport sponsors use either locally derived funds (budget) for the PMP match or federal Non-Primary Entitlement (NPE) funds. The amount of match required by the local airport sponsor is determined by the Oregon Aviation Plan airport classifications, and ranges from 5% to 50% of the individual airport's project cost. Overall PMP funding is based upon an assumption of $1 million per year plus match amounts and minus engineering and administration costs. The PMP program was originally funded by increasing the aviation gas tax by 3 cents in the first year (FY 1999) and 3 cents in the second year (FY 2000) and increasing the jet fuel tax by 1/2 cent in the first year. The PMP program has not received additional revenue since its inception.[4] Actual program funding will vary depending upon program revenue and projections of revenue anticipated.

Table 7-7 shows the local match required for PMP, by airport category.

TABLE 7-7: PMP LOCAL MATCH BY AIRPORT CATEGORY

Category	Description	Recommended Local Match
1a	Commercial Service (Primary)	50%
1b	Other Commercial Service	35%
2	Urban General Aviation	25%
3	Regional General Aviation	10%
4	Local General Aviation	10%
5	Remote Access Emergency	5%

Source: Pavement Maintenance Program PMP Policy Guidance – 2013

[3] Pavement Maintenance Program PMP Policy Guidance – 2013, page 8, Oregon Department of Aviation
[4] https://www.oregon.gov/aviation/docs/meetings/AVB_13_07_18_PMP_Policy_Update_2013.pdf

Aviation System Action Program

During the 2015 legislative session, House Bill 2075 was passed to increase aviation fuel taxes and to mandate ODA to distribute the revenues. The Aviation System Action Program (ASAP) fund allows for the distribution of a two cent per gallon fuel tax for the purpose of financing grants to fund aviation and airport projects that involve:

1. Providing assistance for federal grant match support, airport safety and emergency preparedness enhancements, services critical and essential to aviation, aviation-related business development, and airport development for local economic benefit.
2. Rural commercial air service development.
3. Safety improvements and infrastructure projects at State-owned airports.

The ASAP is scheduled to end in 2022.

There are three programs under the ASAP; general characteristics of each are listed below.

State-Owned Airports Reserve Program

Twenty-five percent of the ASAP fuel taxes are dedicated to the State-Owned Airports Reserve (SOAR) program. This program funds needed improvements at state-owned airports, including runway repairs, obstruction removal, drainage, facilities, and planning. The first SOAR cycle was conducted in 2016-2017 and funded 19 projects worth $1.9 million. Cycle 2 (2018-2019) is expected to total nearly $3 million. Cycle 3 (2020-2021) projects are currently being identified, scoped, and prioritized.

Critical Oregon Airport Relief Program (COAR)

Fifty percent of the ASAP fuel tax increase shall be distributed for the following purposes:

- To assist airports in Oregon with match requirements for FAA AIP grants.
- To make grants for emergency preparedness and infrastructure projects, in accordance with the Oregon Resilience Plan, including seismic studies, emergency generators, etc.
- To make grants for:
  - Services critical or essential to aviation including, but not limited to, fuel, sewer, water and weather equipment.
  - Aviation-related business development including, but not limited to, hangars, parking for business aircraft and related facilities.
  - Airport development for local economic benefit including, but not limited to, signs and marketing.

Rural Oregon Aviation Relief Program (ROAR)

Twenty-five percent of the ASAP fuel tax increase are distributed for the purpose of assisting commercial air service in rural Oregon. The application period for this program is open-ended; applications are subject to state board review and selection.

Connect Oregon

Connect Oregon is an initiative to invest in air, rail, marine, and bicycle/pedestrian infrastructure to ensure Oregon's transportation system is strong, diverse, and efficient. For the $427 million available through Connect Oregon I through VI (including CORA) there have been:

- 603 project applications received
- 282 projects funded
- $1.003 billion in grants and loans requested

Important changes to Connect Oregon resulted from the passage of HB 2017 by the 2017 Legislature:

- Public transit projects are no longer included in Connect Oregon.
- The Connect Oregon Fund now has a portion of the new vehicle dealer privilege fee and the new $15 bicycle excise tax in addition to lottery-backed bonds as funding sources. The bicycle excise tax will only go towards bicycle/pedestrian projects.
- The Oregon Transportation Commission is directed to distribute Connect Oregon funds to four specific projects:
    - Treasure Valley Intermodal Facility ($26 million)
    - Rail expansion in East Beach Industrial Park at the Port of Morrow ($6.55 million)
    - Brooks rail siding extension ($2.6 million)
    - Mid-Willamette Valley Intermodal Facility ($25 million)

Because available funds must first go to these projects, it is not anticipated that there will be funding available in the 2017-2019 biennium. After these four projects have been funded, and if funding is available, a competitive grant process in the 2019-2021 or 2021-2023 biennia may be announced

U.S. Department of Agriculture Wildlife Services Program

Wildlife strikes cause more than 590,000 hours of aircraft downtime and cost the nation's civil aviation industry approximately $937 million annually. American military aircraft sustain losses exceeding $10 million annually. The Department of Agriculture has assisted most of Oregon's major airports and associated Air National Guard Units by providing technical assistance, conducting wildlife hazard assessments, writing wildlife hazard management plans, dispersing or removing wildlife, and training airport staff. Wildlife hazard assessments are eligible for AIP funding.

7.7 Summary of Airport Cost Estimates and Funding

The combined development cost of ODA's three plans indicates that current aviation system needs far outweigh available funding. ODA's mission is to preserve and enhance aviation through safety, infrastructure maintenance and development, education, and keeping people and business moving by operating and improving Oregon's airport system. The SCIP and PMP support this mission by identifying and prioritizing aviation-related projects. To this end, the SCIP and PMP are intended to be a continuous, multi-year funding programs that will primarily assess short-term (0-5-year) airport improvement needs for the Oregon airport system. The OAP v6.0 Facilities and Services Deficiencies analysis indicates additional facility needs to improve the airport system based on each airport's assigned role (OAP v6.0 Category I to V). All three programs help agencies including ODA, FAA, and airport sponsors to anticipate future airport development capital needs and to target and make strategic investments with the goal of maximizing limited federal, state, and local financial resources.

OREGON AVIATION PLAN

8. ECONOMIC IMPACT OF OREGON AIRPORTS

This chapter provides a restructuring of the Oregon Aviation Plan (OAP V6.0) 2014 Economic Impact Statement for NPIAS[1] Airports. The 2014 analysis identified the economic contributions of 57 airports to the state of Oregon's economy. While most of the information presented in this chapter is based on the 2014 methodology and analysis, some study components were updated with 2016 activity levels. Additionally, 40 public-use non-NPIAS airports are included in this analysis, for a total of 97 study airports.

The economic contributions made by airports are generated from on-airport economic activities and off-airport spending by visiting air travelers. Visitor spending impacts benefit the hospitality industry. Economic impacts documented in this chapter also include business sectors reliant on airports for business travel and for shipping locally manufactured goods to domestic and international markets.

8.1 Statewide Economic Impacts from Airports

Annual economic impacts for 97 study airports were estimated as part of the Oregon Department of Aviation's (ODA) economic impact research. Each airport was investigated, as applicable, to identify economic impacts related to:

- Airport Tenants/Government Activity
- Spending from Visitors Arriving on Commercial Airlines
- Spending from Visitors Arriving on General Aviation Aircraft
- Investment in Capital Projects
- Economic Impact of Business Reliance on Aviation
- Economic Impact of Portland International Airport

The prior ODA 2014 study used three primary measures to express both statewide and airport specific annual economic impacts:

- Employment/Jobs
- Annual Payroll
- Total Annual Economic Activity (Sales/Output)

Economic impacts reported in the 2014 study reflected direct impacts, as well as indirect/induced impacts that result from a multiplier effect. Together, direct and indirect/induced impacts equaled total statewide and airport specific annual economic impacts. A state model specific to Oregon was used in the 2014 analysis to estimate total economic impacts.

When total impacts (direct and indirect/induced) are considered, this updated analysis shows that the 97 study airports are responsible for the following annual economic impacts:

- Total Statewide Jobs: 213,240
- Total Statewide Annual Payroll: $10.0 billion
- Total Statewide Economic Activity: $28.5 billion

[1] FAA National Plan of Integrated Airport System (NPIAS)

ODA's statewide economic impact study estimated total annual economic impacts for the study airports in each of the six categories of activity shown in **Table 8-1**. The impacts reported in this table include the indirect/induced impacts, also known as multiplier or spin-off impacts. Portland International Airport (PDX) impacts are identified in their own category.

TABLE 8-1: TOTAL ANNUAL IMPACTS FROM ALL SYSTEM AIRPORTS

Categories of Activity	Direct	Indirect/Induced	Total
Tenant/Business/Government*			
Jobs	7,482	10,738	18,220
Payroll	$447,713,996	$366,405,338	$814,119,334
Sales/Output	$1,490,462,771	$1,196,635,226	$2,687,097,996
Commercial Service Visitors			
Jobs	3,015	1,254	4,269
Payroll	$101,884,822	$80,012,692	$181,897,514
Sales/Output	$251,221,334	$184,025,091	$435,246,425
General Aviation Visitors*			
Jobs	820	380	1,200
Payroll	$25,373,971	$22,679,265	$48,053,236
Sales/Output	$68,031,425	$37,951,542	$105,982,967
Construction Projects			
Jobs	506	531	1,036
Payroll	$27,624,668	$20,633,456	$48,258,125
Sales/Output	$59,971,302	$47,521,685	$107,492,987
Business Reliance on Aviation			
Jobs	23,782	47,626	71,408
Payroll	$1,989,215,000	$2,413,332,000	$4,402,547,000
Sales/Output	$8,036,636,000	$6,325,669,000	$14,362,305,000
Portland International Airport*			
Jobs	73,855	43,252	117,107
Payroll	$2,088,000,000	$2,457,000,000	$4,545,000,000
Sales/Output			$10,799,000,000
Total Statewide Impacts			
Jobs	109,460	103,781	213,240
Payroll	$4,679,812,456	$5,360,062,751	$10,039,875,207
Sales/Output	$9,906,322,831	$7,791,802,543	$17,698,125,375
Sales/Output (PDX)*			$10,799,000,000
Sales/Output Total			**$28,497,125,375**

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package
* PDX, Hillsboro and Troutdale totals taken directly from Port of Portland studies. Direct and Multiplier impacts for Sales/Output not provided for PDX. Port of Astoria provided economic impacts for AST.

8.2 Background

Total economic impacts of airports are the sum of on-airport economic activities, off-airport spending by visitors who arrive by air, and economic multiplier/spin-off impacts. Aviation-dependent business impacts include the value of air cargo and air business travel to industries throughout the state, as well as related spin-off/multiplier effects associated with these two activities.

For this study the economic contributions of 57 NPIAS airports and 40 non-NPIAS airports were considered. In addition, the Port of Portland completed a separate economic impact study for PDX, and tables throughout this section separately display results from that analysis. The sum of economic impacts from the 2014 analysis and PDX accounts for the economic impacts generated by all public-use airports in Oregon. Levels of economic impact are estimated for individual airports, regions within the state, and the state as a whole.

This chapter is organized into the following sections:

1. Methodology and Sources
2. Centers of Aviation Activity
3. Connect Oregon Region Impacts

8.3 Methodology and Sources for Airport Specific Economic Impacts

Annual economic impacts of the 97 study airports were estimated for each of the following: aviation-related airport tenants, investment related to capital improvements, and visitors arriving on general aviation aircraft. Impacts related to business reliance on aviation in the state are also included. Economic impacts associated with visitors arriving on commercial airlines were estimated for Oregon's six commercial airports. Results from *The Local and Regional Economic Impacts of The Port of Portland, Fiscal Year 2015*, as they pertain to Portland International Airport, were incorporated into this analysis. The six centers of economic activity estimated in this study are described below:

- **Airport Tenants/Businesses/Government:** Economic impacts measure business activities in terms of jobs, payroll, business sales/output, and budget expenditures. With respect to airports, the study reports the economic impacts of on-airport activities; on-airport activities include those associated with airport administration and airport tenants. Some, but not all, of Oregon's 97 public airports also have businesses on-site that provide aviation-related services or support to airport customers. Examples of airport tenants include fixed base operators (FBOs), aerial applicators, aircraft maintenance providers, commercial airlines, Part 135 operators, flight schools, corporate flight departments, concessionaires, military units, avionics repair shops, and/or other similar aviation-related businesses.

  Some airports also have tenants on their property that are not aviation-related. For instance, if an airport has an on-site tenant that manufactures plastic bottles, even though the business is located at the airport, the tenant is not aviation-related. Economic impacts for any non-aviation businesses located on-airport are not considered in this analysis.

- **Visitors Arriving on Scheduled Commercial Airlines:** Commercial airports have economic impacts associated with spending from visitors who arrive on commercial airlines[2]. Data from the U.S. Department of Transportation (USDOT) supported estimates of commercial visitors for each airport. USDOT data provides estimates of residents versus visitors as a percent of each airport's total annual passenger enplanements. Commercial airline visitors have spending that helps support jobs and the payroll associated with these jobs. Surveys of visitors using Oregon's commercial airports, conducted

[2] Portland International Airport is not included in this analysis but is presented in a separate section of this report.

in conjunction with the 2014 study and with the help of the commercial airports, were used to determine average length of stay and visitor spending patterns. Using estimates of annual visitors, visitor spending, and stay patterns, this study estimated annual economic impacts for this activity center.

- **Visitors Arriving on General Aviation Aircraft:** Throughout the year, all Oregon airports accommodate visitors who fly to communities that the airports serve. Both commercial and general aviation airports serve visitors who arrive in general aviation planes. General aviation visitors may arrive one person at a time, or they may arrive in large groups on non-scheduled charter aircraft that are counted in the general aviation category. Some visitors to Oregon rely on general aviation travel because it enables them to shorten the duration of their trip, or to fly directly to a destination not served by scheduled commercial airline flights.

  Frequently, general aviation visitors arrive and depart on the same day, limiting the amount of spending they have in the community they visit. This is often the case for business travelers using general aviation aircraft who prefer to conduct travel and business in a single-day for efficiency. General aviation visitors that stay for multiple days have a greater economic impact on Oregon's economy. Overnight visitors often have spending for hotels, meals, retail, entertainment, and local transportation; typically, the longer the visitor stays, the more money they spend. Visitor spending helps support jobs and the payroll associated with the jobs in service, hospitality, recreational, entertainment, retail, and ground transportation categories.

- **Capital Improvements:** Airports in Oregon often undertake capital improvement projects for maintenance, expansion, and/or replacement. Projects are often funded with grants from ODA, Connect Oregon, and the Federal Aviation Administration (FAA). Larger airports sometimes generate enough revenue to fund development projects without federal or state assistance. Occasionally, third-party investment is also made, especially for hangar development. Unlike the other centers of economic impact discussed in this section, economic impacts in this category (jobs, payroll associated with the jobs, and annual economic output) occur only when spending associated with the project is taking place. Once project-related spending is over, economic impacts associated with capital investment are suspended until the next round of capital expenditures are made.

  Since economic impact studies reflect economic conditions that are a "snapshot in time," economic impacts for this economic activity center have the propensity to change, perhaps even dramatically, between reporting periods. Economic impacts in the Capital Improvement Plan (CIP) investment category are not on-going; and they change year-to-year, unless CIP investment is constant and at the same level each year. This is seldom the case, since the need for capital improvement projects changes annually. For this analysis, CIP expenditures for construction activity are based on a three-year average.

- **Airport-Dependent and -Reliant Impacts:** These impacts represent area businesses that are dependent on an airport for just-in-time shipping, a high degree of corporate travel, or specialized airport facilities and services such as free trade zones. These businesses would relocate or suffer substantial loss if the airport were not available. This impact is provided as an indicator of the importance of airports to area businesses.

- **Economic Impact of Portland International Airport:** The Port of Portland commissioned a separate economic impact study of Portland International Airport in 2015. This chapter displays results from PDX separately.

In this analysis, the economic impacts from commercial service and general aviation visitor spending are presented separately.

8.3.1 Measures of Economic Impact

Each of the four impact types is measured in three ways: jobs, wages, and economic output.

- Jobs represent the total number of individuals employed—not full-time equivalent positions.
- Wages are the full payroll expended for employees from the employers' perspective, including all taxes and benefits.
- Economic Activity, otherwise known as output, represents business sales. For government or non-profit entities, output represents their annual budget. For visitors, output represents visitor spending.

8.3.2 Method to Estimate Airport Specific Economic Impacts

For this study, all economic impacts were assigned to the following categories: direct impacts, indirect/induced impacts, and total annual economic impacts. These categories are described below:

- **Direct Impacts:** All impacts measured in this study start with direct economic impacts. All direct impacts were collected from airports or airport tenants, from ODA, the FAA, USDOT, the military, aviation/aerospace employers, and/or from Oregon's air visitors.
- **Indirect/Induced (Multiplier or Spin-off) Impacts:** When direct impacts enter state and local economies, they re-circulate or multiply, creating additional waves of economic impact. Impacts in this category are often referred to as multiplier impacts. For example, when a "direct" airport employee uses his or her payroll to buy groceries, pay for child care, or take their pet to a local veterinarian, the direct airport-related payroll is being infused into other sectors of the economy, creating "indirect/induced" economic impacts. "Indirect" impacts are most often associated with multipliers for industrial, distribution, professional services, or utility sectors of the economy. "Induced" impacts are related to employee expenditures and are most often associated with multiplier impacts in the retail and service sectors of the economy.
- **Total Economic Impacts:** For this study, total impacts are the sum of direct and indirect/induced impacts in each of the measurement categories.

8.3.3 Indirect/Induced (Multiplier) Impacts

Spin-off impacts (Indirect/induced impacts multiplier effect) are calculated considering multipliers, which are used to reflect the recycling of direct impacts through the economy. Each direct dollar spent in the economy does not disappear. Rather, it continues to move through the economy in successive rounds until it is incrementally exported from the geographic area being studied. As direct expenditures are released into the economy, they circulate among other industry sectors, creating successive waves of additional economic benefit in the form of jobs, payroll, and output/sales.

These successive rounds of spending are known as spin-off/multiplier impacts, and help to represent the full impact of each direct impact that enters the state's economy. An example would be an airport employee spending his or her salary for housing, food, and other services, or an airport business purchasing needed supplies. Spending outside the area is considered economic leakage and is not reflected in the multiplier.

Multipliers for estimating indirect/induced impacts were derived from the IMPLAN model. The multipliers used in this analysis were developed specifically to measure economic impacts related to Oregon airports. Individual multipliers for each sector of the economy being modeled were used. Individual IMPLAN multipliers were obtained for various Industry Classifications. The Industry Classifications used for modeling on-airport impacts and visitor impacts in this analysis are depicted in **Table 8-2**.

TABLE 8-2: OREGON SPECIFIC IMPLAN MULTIPLIERS BY CATEGORY

	Jobs	Wages	Sales/Output
Airport Tenants/Government/Sponsors	2.46	1.74	1.80
Hospitality Industry	1.42	1.79	1.73
Construction Industries	2.05	1.75	1.79

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package

8.4 Centers of Economic Activity: On-Airport

8.4.1 Airport Tenants/Businesses/Government: Employment

Table 8-3 identifies the total number of jobs supported by on-airport aviation-related tenants and businesses at Oregon airports. Direct jobs include those people who are engaged in the provision of on-airport aviation-related services as well as government agencies. In total, there are 7,482 direct jobs supported by the operation of Oregon's airports. This employment estimate does not include jobs associated with on-airport non-aviation businesses.

Induced and indirect impacts are jobs that are created by multiplier effects stemming from direct jobs associated with tenants and businesses at Oregon's airports. For example, an employee of a local fuel distributor may owe a portion of his job to an airport since the distributor sells fuel to the airport's FBO. As a result of on-airport tenant/management activity, additional induced and indirect employment is created.

The multiplier impacts associated with the day-to-day operation of Oregon's airports support over 10,738 jobs. When direct and indirect/induced employment is considered, Oregon's airport tenants/airport management contributed over 18,220 jobs to Oregon's employment base.

TABLE 8-3: OREGON ON-AIRPORT EMPLOYMENT

Airport	Employment		
	Direct	Indirect/Induced	Total
Albany Municipal	12	17	29
Alkali Lake State	0	0	0
Arlington Municipal	0	0	0
Ashland Municipal	63	92	155
Port of Astoria Regional	368	528	896
Aurora State	1,087	1,585	2,672
Baker City Municipal	13	19	32
Bandon State	5	7	12
Beaver Marsh	0	0	0
Bend Municipal Airport	350	510	860
Boardman	0	0	0
Brookings	0	0	0
Burns Municipal	13	19	32
Cape Blanco State Airport	0	0	0
Cascade Locks State Airport	0	0	0

TABLE 8-3: OREGON ON-AIRPORT EMPLOYMENT

Airport	Employment		
	Direct	Indirect/Induced	Total
Chehalem Airpark	10	15	25
Chiloquin State	0	0	0
Christmas Valley	0	0	0
Columbia Gorge/Dalles	43	63	106
Condon State	3	4	7
Corvallis Municipal	66	96	162
Cottage Grove State	6	9	15
Country Squire Airpark	1	1	1
Crescent Lake State Airport	0	0	0
Creswell Hobby Field	15	22	37
Davis Field	1	1	2
Eastern Oregon Regional Airport	16	23	39
Enterprise Municipal	4	6	10
Eugene Airport-Mahlon Sweet Field	346	504	850
Florence Municipal	0	0	0
George Felt	1	1	1
Gold Beach Municipal	2	3	5
Grant Co. Reg./Ogilvie Field	24	35	59
Grants Pass	70	102	172
Hermiston Municipal	34	50	84
Illinois Valley	1	1	2
Independence State	21	31	52
Joseph State	20	29	49
Ken Jernstedt Airfield	10	15	25
Crater Lake-Klamath Regional	987	1,439	2,426
La Grande/Union Co.	150	219	369
Lake Billy Chinook	1	1	2
Lake County	1	1	2
Lake Woahink SPB	0	0	0
Lakeside Municipal Airport	0	0	0
Lebanon State	7	10	17
Lenhardt Airpark	2	3	5
Lexington	0	0	0
Madras Municipal	15	22	37
Malin	1	1	2
McDermitt State	0	0	0
McKenzie Bridge State	0	0	0

TABLE 8-3: OREGON ON-AIRPORT EMPLOYMENT

Airport	Employment		
	Direct	Indirect/Induced	Total
McMinnville Municipal	659	961	1,620
Memaloose USFS	0	0	0
Miller Memorial Airpark	1	1	2
Monument Municipal	1	1	2
Mulino Airport	2	3	5
Myrtle Creek Municipal	0	0	0
Nehalem Bay State Airport	0	0	0
Newport Municipal	67	98	165
Oakridge State	0	0	0
Ontario Municipal	3	4	7
Owyhee Reservoir State	0	0	0
Pacific City State Airport	0	0	0
Paisley	0	0	0
Pinehurst State Airport	0	0	0
Portland Downtown Heliport	0	0	0
Portland-Hillsboro Airport	697	775	1,472
Portland-Troutdale	63	171	234
Powers Hayes Field	0	0	0
Prineville Airport	22	32	54
Prospect State	7	10	17
Redmond Municipal Airport-Roberts Field	82	120	202
Rogue Valley International	792	1,155	1,947
Rome State	0	0	0
Roseburg Regional	15	22	37
Salem McNary Field	580	846	1,426
Sandy River	3	4	7
Santiam Junction State	0	0	0
Scappoose Industrial Airpark	119	174	293
Seaside Municipal	3	4	7
Siletz Bay State	0	0	0
Silver Lake USFS	0	0	0
Sisters Eagle Air Airport	6	9	15
Skyport	1	1	1
Southwest Oregon Regional	455	663	1,118
Sportsman Airpark	46	67	113
Stark's Twin Oaks	7	10	17
Sunriver	0	0	0

TABLE 8-3: OREGON ON-AIRPORT EMPLOYMENT

Airport	Employment		
	Direct	Indirect/Induced	Total
Tillamook	79	115	194
Toketee State	0	0	0
Toledo State Airport	0	0	0
Valley View	1	1	1
Vernonia Municipal	0	0	0
Wakonda Beach State	0	0	0
Wasco State	4	6	10
Total	**7,482**	**10,738**	**18,220**

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package
Note: Portland International Airport is not included in this table as it was not part of this survey.

8.4.2 Airport Tenants/Businesses/Government: Payroll

Table 8-4 identifies annual payroll benefits associated with on-airport activity at each of the study airports. As previously noted, this payroll includes on-airport businesses, as well as payroll supported by airport management and on-airport payroll from military units.

This study shows direct annual payroll impacts are over $447.7 million. These direct payroll impacts ripple throughout the Oregon economy and create indirect/induced payroll impacts that are measured with the IMPLAN multipliers. The annual indirect/induced payroll impacts are almost $366.4 million. Total direct and indirect/induced payroll impacts supported by airports are over $814.1 million annually.

TABLE 8-4: OREGON ON-AIRPORT ACTIVITY PAYROLL

Airport	Payroll		
	Direct	Indirect/Induced	Total
Albany Municipal	$722,000	$533,552	$1,255,552
Alkali Lake State	$0	$0	$0
Arlington Municipal	$0	$0	$0
Ashland Municipal	$4,004,000	$2,958,925	$6,962,925
Port of Astoria Regional	$22,035,104	$18,061,793	$40,096,897
Aurora State	$72,268,000	$53,405,485	$125,673,485
Baker City Municipal	$398,000	$294,119	$692,119
Bandon State	$298,000	$220,220	$518,220
Beaver Marsh	$0	$0	$0
Bend Municipal Airport	$18,527,000	$13,691,308	$32,218,308
Boardman	$0	$0	$0
Brookings	$0	$0	$0
Burns Municipal	$727,000	$537,247	$1,264,247
Cape Blanco State Airport	$0	$0	$0

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TABLE 8-4: OREGON ON-AIRPORT ACTIVITY PAYROLL

Airport	Payroll		
	Direct	Indirect/Induced	Total
Cascade Locks State Airport	$0	$0	$0
Chehalem Airpark	$494,000	$365,062	$859,062
Chiloquin State	$0	$0	$0
Christmas Valley	$0	$0	$0
Columbia Gorge/Dalles	$2,806,000	$2,073,612	$4,879,612
Condon State	$82,000	$60,597	$142,597
Corvallis Municipal	$4,276,000	$3,159,930	$7,435,930
Cottage Grove State	$316,000	$233,522	$549,522
Country Squire Airpark	$24,700	$18,253	$42,953
Crescent Lake State Airport	$0	$0	$0
Creswell Hobby Field	$958,000	$707,954	$1,665,954
Davis Field	$49,400	$36,506	$85,906
Eastern Oregon Regional Airport	$803,000	$593,411	$1,396,411
Enterprise Municipal	$197,600	$146,025	$343,625
Eugene Airport-Mahlon Sweet Field	$17,855,000	$13,194,705	$31,049,705
Florence Municipal	$0	$0	$0
George Felt	$24,700	$18,253	$42,953
Gold Beach Municipal	$105,000	$77,594	$182,594
Grant Co. Reg./Ogilvie Field	$1,208,000	$892,703	$2,100,703
Grants Pass	$3,721,000	$2,749,790	$6,470,790
Hermiston Municipal	$833,000	$615,580	$1,448,580
Illinois Valley	$45,000	$33,225	$78,255
Independence State	$1,164,000	$860,187	$2,024,187
Joseph State	$488,000	$360,628	$848,628
Ken Jernstedt Airfield	$930,000	$687,263	$1,617,263
Crater Lake-Klamath Regional	$79,522,000	$58,766,135	$138,288,135
La Grande/Union Co.	$6,850,000	$5,062,096	$11,912,096
Lake Billy Chinook	$49,400	$36,506	$85,906
Lake County	$23,000	$16,997	$39,997
Lake Woahink SPB	$0	$0	$0
Lakeside Municipal Airport	$0	$0	$0
Lebanon State	$430,000	$317,767	$747,767
Lenhardt Airpark	$98,800	$73,012	$171,812
Lexington	$0	$0	$0
Madras Municipal	$647,000	$478,128	$1,125,128
Malin	$49,400	$36,506	$85,906
McDermitt State	$0	$0	$0

TABLE 8-4: OREGON ON-AIRPORT ACTIVITY PAYROLL

Airport	Payroll		
	Direct	Indirect/Induced	Total
McKenzie Bridge State	$0	$0	$0
McMinnville Municipal	$45,763,292	$33,818,714	$79,582,005
Memaloose USFS	$0	$0	$0
Miller Memorial Airpark	$49,400	$36,506	$85,906
Monument Municipal	$49,400	$36,506	$85,906
Mulino Airport	$145,000	$107,154	$252,154
Myrtle Creek Municipal	$0	$0	$0
Nehalem Bay State Airport	$0	$0	$0
Newport Municipal	$5,433,000	$4,014,944	$9,447,944
Oakridge State	$0	$0	$0
Ontario Municipal	$128000	$94,591	$222,591
Owyhee Reservoir State	$0	$0	$0
Pacific City State Airport	$0	$0	$0
Paisley	$0	$0	$0
Pinehurst State Airport	$0	$0	$0
Portland Downtown Heliport	$0	$0	$0
Portland-Hillsboro Airport	$33,000,000	$50,500,000	$83,500,000
Portland-Troutdale	$2,900,000	$9,800,000	$12,700,000
Powers Hayes Field	$0	$0	$0
Prineville Airport	$793,000	$586,021	$1,379,021
Prospect State	$260,000	$192,138	$452,138
Redmond Municipal Airport-Roberts Field	$3,009,000	$2,223,627	$5,232,627
Rogue Valley International	$30,748,000	$22,722,531	$53,470,531
Rome State	$0	$0	$0
Roseburg Regional	$539,000	$398,317	$937,317
Salem McNary Field	$31,803,000	$23,502,168	$55,305,168
Sandy River	$148,200	$109,519	$257,719
Santiam Junction State	$0	$0	$0
Scappoose Industrial Airpark	$13,007,000	$9,612,071	$22,619,071
Seaside Municipal	$158,000	$116,761	$274,761
Siletz Bay State	$0	$0	$0
Silver Lake USFS	$0	$0	$0
Sisters Eagle Air Airport	$296,400	$219,037	$515,437
Skyport	$24,700	$18,253	$42,953
Southwest Oregon Regional	$29,225,000	$21,597,046	$50,822,046
Sportsman Airpark	$3,067,000	$2,266,489	$5,333,489
Stark's Twin Oaks	$345,800	$255,543	$601,343

TABLE 8-4: OREGON ON-AIRPORT ACTIVITY PAYROLL

Airport	Payroll		
	Direct	Indirect/Induced	Total
Sunriver	$0	$0	$0
Tillamook	$3,659,000	$2,703,972	$6,362,972
Toketee State	$0	$0	$0
Toledo State Airport	$0	$0	$0
Valley View	$24,700	$18,253	$42,953
Vernonia Municipal	$0	$0	$0
Wakonda Beach State	$0	$0	$0
Wasco State	$109,000	$80,550	$189,550
Total	**$447,713,996**	**$366,405,338**	**$814,119,334**

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package
Note: Portland International Airport is not included in this table as it was not part of this survey.

8.4.3 Airport Tenants/Businesses/Government: Annual Sales/Output

Table 8-5 identifies direct, indirect/induced, and total annual sales/output for all on-airport activities. Oregon's economy is impacted when aviation-related businesses and government entities located on each study airport spend money. For example, if a tenant purchases supplies from an aircraft parts distributor, money would be spent by the supplier for materials, labor, utilities, and rent.

Total direct annual sales/output from on-airport businesses and activities is estimated at over $1.5 billion. Using IMPLAN multipliers, indirect/induced annual sales/output is estimated at over $1.2 billion. When direct and indirect/induced impacts are combined, the total annual sales/output for the study airports is over $2.7 billion.

TABLE 8-5: OREGON ON-AIRPORT ANNUAL SALES/OUTPUT

Airport	Sales/Output		
	Direct	Indirect/Induced	Total
Albany Municipal	$2,667,000	$2,145,913	$4,812,913
Alkali Lake State	$0	$0	$0
Arlington Municipal	$0	$0	$0
Ashland Municipal	$21,825,000	$17,560,763	$39,385,763
Port of Astoria Regional	$73,449,488	$66,429,289	$139,878,777
Aurora State	$282,537,000	$227,334,035	$509,871,035
Baker City Municipal	$2,349,000	$1,890,045	$4,239,045
Bandon State	$970,000	$780,478	$1,750,478
Beaver Marsh	$0	$0	$0
Bend Municipal Airport	$92,226,000	$74,206,595	$166,432,595
Boardman	$0	$0	$0
Brookings	$0	$0	$0

TABLE 8-5: OREGON ON-AIRPORT ANNUAL SALES/OUTPUT

Airport	Sales/Output		
	Direct	Indirect/Induced	Total
Burns Municipal	$3,878,000	$3,120,304	$6,998,304
Cape Blanco State Airport	$0	$0	$0
Cascade Locks State Airport	$0	$0	$0
Chehalem Airpark	$1,680,000	$1,351,756	$3,031,756
Chiloquin State	$0	$0	$0
Christmas Valley	$0	$0	$0
Columbia Gorge/Dalles	$10,519,000	$8,463,765	$18,982,765
Condon State	$656,000	$527,829	$1,183,829
Corvallis Municipal	$16,840,000	$13,549,748	$30,389,748
Cottage Grove State	$895,000	$720,132	$1,615,132
Country Squire Airpark	$84,000	$67,588	$151,588
Crescent Lake State Airport	$0	$0	$0
Creswell Hobby Field	$3,350,000	$2,695,466	$6,045,466
Davis Field	$168,000	$135,176	$303,176
Eastern Oregon Regional Airport	$1,758,000	$1,414,516	$3,172,516
Enterprise Municipal	$672,000	$540,703	$1,212,703
Eugene Airport-Mahlon Sweet Field	$58,586,000	$47,139,284	$105,725,284
Florence Municipal	$0	$0	$0
George Felt	$84,000	$67,588	$151,588
Gold Beach Municipal	$122,000	$98,163	$220,163
Grant Co. Reg./Ogilvie Field	$1,572,000	$1,264,858	$2,836,858
Grants Pass	$19,516,000	$15,702,903	$35,218,903
Hermiston Municipal	$6,290,000	$5,061,040	$11,351,040
Illinois Valley	$72,000	$57,932	$129,932
Independence State	$4,442,000	$3,574,108	$8,016,108
Joseph State	$4,341,000	$3,492,842	$7,833,842
Ken Jernstedt Airfield	$3,011,000	$2,422,701	$5,433,701
Crater Lake-Klamath Regional	$155,761,000	$125,327,927	$281,088,927
La Grande/Union Co.	$25,945,000	$20,875,785	$46,820,785
Lake Billy Chinook	$168,000	$135,176	$303,176
Lake County	$90,000	$72,416	$162,416
Lake Woahink SPB	$0	$0	$0
Lakeside Municipal Airport	$0	$0	$0
Lebanon State	$1,229,000	$988,874	$2,217,874
Lenhardt Airpark	$336,000	$270,351	$606,351
Lexington	$0	$0	$0
Madras Municipal	$1,870,000	$1,504,634	$3,374,634

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TABLE 8-5: OREGON ON-AIRPORT ANNUAL SALES/OUTPUT

Airport	Sales/Output		
	Direct	Indirect/Induced	Total
Malin	$168,000	$135,176	$303,176
McDermitt State	$0	$0	$0
McKenzie Bridge State	$0	$0	$0
McMinnville Municipal	$158,917,283	$127,867,526	$286,784,808
Memaloose USFS	$0	$0	$0
Miller Memorial Airpark	$168,000	$135,176	$303,176
Monument Municipal	$168,000	$135,176	$303,176
Mulino Airport	$532,000	$428,056	$960,056
Myrtle Creek Municipal	$0	$0	$0
Nehalem Bay State Airport	$0	$0	$0
Newport Municipal	$8,007,000	$6,442,567	$14,449,567
Oakridge State	$0	$0	$0
Ontario Municipal	$0	$0	$0
Owyhee Reservoir State	$0	$0	$0
Pacific City State Airport	$0	$0	$0
Paisley	$0	$0	$0
Pinehurst State Airport	$0	$0	$0
Portland Downtown Heliport	$0	$0	$0
Portland-Hillsboro Airport	$61,900,000	$45,500,000	$107,400,000
Portland-Troutdale	$6,600,000	$7,000,000	$13,600,000
Powers Hayes Field	$0	$0	$0
Prineville Airport	$3,481,000	$2,800,871	$6,281,871
Prospect State	$1,511,000	$1,215,776	$2,726,776
Redmond Municipal Airport-Roberts Field	$14,528,000	$11,689,474	$26,217,474
Rogue Valley International	$151,844,000	$122,176,243	$274,020,243
Rome State	$0	$0	$0
Roseburg Regional	$3,417,000	$2,749,376	$6,166,376
Salem McNary Field	$134,787,000	$108,451,893	$243,238,893
Sandy River	$504,000	$405,527	$909,527
Santiam Junction State	$0	$0	$0
Scappoose Industrial Airpark	$39,162,000	$31,510,406	$70,672,406
Seaside Municipal	$183,000	$147,245	$330,245
Siletz Bay State	$0	$0	$0
Silver Lake USFS	$0	$0	$0
Sisters Eagle Air Airport	$1,008,000	$811,054	$1,819,054
Skyport	$84,000	$67,588	$151,588
Southwest Oregon Regional	$74,164,000	$59,673,605	$133,837,605

TABLE 8-5: OREGON ON-AIRPORT ANNUAL SALES/OUTPUT

Airport	Sales/Output		
	Direct	Indirect/Induced	Total
Sportsman Airpark	$12,052,000	$9,697,242	$21,749,242
Stark's Twin Oaks	$1,176,000	$946,229	$2,122,229
Sunriver	$0	$0	$0
Tillamook	$15,058,000	$12,115,921	$27,173,921
Toketee State	$0	$0	$0
Toledo State Airport	$0	$0	$0
Valley View	$84,000	$67,588	$151,588
Vernonia Municipal	$0	$0	$0
Wakonda Beach State	$0	$0	$0
Wasco State	$874,000	$703,235	$1,577,235
Total	**$1,490,462,771**	**$1,203,965,818**	**$2,694,428,588**

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package
Note: Portland International Airport is not included in this table as it was not part of this survey.

8.5 Center of Economic Activity: Commercial Service Visitors

8.5.1 Commercial Service Visitors: Employment

Visitors arriving via commercial airlines spend money, thereby supporting additional employment in Oregon's hospitality and service sectors. **Table 8-6** identifies the number of employees in Oregon whose jobs are supported by the spending of visitors arriving on commercial airlines via Oregon's six commercial airports. Portland International Airport visitor impacts are presented separately in Section **8.9**.

TABLE 8-6: EMPLOYMENT FROM COMMERCIAL SERVICE VISITOR SPENDING

Airport	Employment		
	Direct	Indirect/Induced	Total
Eastern Oregon Regional	4	2	6
Eugene Airport-Mahlon Sweet Field	1,141	475	1,616
Crater Lake-Klamath Regional	33	14	47
Redmond Municipal Airport-Roberts Field	390	162	553
Rogue Valley International	1,184	492	1,676
Southwest Oregon Regional	262	109	371
Total	**3,015**	**1,254**	**4,269**

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package
Note: Portland International Airport is not included in this table as it was not part of this survey.

As previously discussed, it is possible to calculate visitor spending, and subsequently, the number of jobs supported by visitors. Direct jobs supported by visitor spending are attributed to a variety of sectors; however, most of the jobs are concentrated in the hospitality industry, which includes hotel/motel, restaurant, entertainment/recreation, and retail sectors.

There are 3,015 direct jobs supported by commercial service visitor spending[3]. Indirect/induced impacts include those jobs that exist due to the multiplier effect. Indirect/induced impacts result in 1,254 additional jobs supported by the spending of commercial service visitors. When direct and indirect/induced visitor-related employment impacts are combined, approximately 4,269 jobs are supported by spending from visitors to Oregon who arrive via commercial airlines.

8.5.2 Commercial Service Visitors: Payroll

Table 8-7 identifies the annual payroll impact attributed to employees whose jobs are supported by spending by commercial service visitors to Oregon's six commercial airports.

TABLE 8-7: ANNUAL PAYROLL FROM COMMERCIAL SERVICE VISITOR SPENDING

Airport	Payroll		
	Direct	Indirect/Induced	Total
Eastern Oregon Regional	$141,255	$110,931	$252,187
Eugene Airport - Mahlon Sweet Field	$38,573,347	$30,292,611	$68,865,958
Crater Lake-Klamath Regional	$1,110,498	$872,101	$1,982,599
Redmond Municipal Airport - Roberts Field	$13,189,238	$10,357,838	$23,547,076
Rogue Valley International	$40,014,376	$31,424,288	$71,438,664
Southwest Oregon Regional	$8,856,108	$6,954,922	$15,811,030
Total	**$101,884,822**	**$80,012,692**	**$181,897,514**

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package
Note: Portland International Airport is not included in this table as it was not part of this survey.

Direct payroll consists of wages and benefits paid to employees working at restaurants, hotels/motels, retail businesses, and other service industries that are used by commercial service visitors.

Direct annual payroll attributable to spending by commercial service visitors is estimated at nearly $101.9 million. As employees in the service industries spend their payroll, the money continues to circulate in Oregon, generating additional employment and subsequent payroll. Annual indirect/induced payroll impacts associated with commercial service visitor spending are estimated at more than $80.0 million. Direct and indirect/induced annual payroll impacts stemming from commercial service visitor spending in Oregon combine for a total annual payroll impact of $181.9 million.

8.5.3 Commercial Service Visitors: Sales/Output

Table 8-8 identifies the sales/output attributed to commercial visitor spending.

TABLE 8-8: SALES/OUTPUT FROM COMMERCIAL SERVICE VISITOR SPENDING

Airport	Sales/Output		
	Direct	Indirect/Induced	Total
Eastern Oregon Regional	$348,299	$255,136	$603,435
Eugene Airport-Mahlon Sweet Field	$95,111,789	$69,671,454	$164,783,243
Crater Lake-Klamath Regional	$2,738,197	$2,005,789	$4,743,985

[3] Portland International Airport is not included in this analysis.

Airport	Sales/Output		
	Direct	Indirect/Induced	Total
Redmond Municipal Airport-Roberts Field	$32,521,213	$23,822,496	$56,343,708
Rogue Valley International	$98,664,991	$72,274,252	$170,939,242
Southwest Oregon Regional	$21,836,846	$15,995,965	$37,832,811
Total	**$251,221,334**	**$184,025,091**	**$435,246,425**

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package
Note: Portland International Airport is not included in this table as it was not part of this survey.

Direct output is comparable to total annual commercial visitor spending in Oregon. Direct output from commercial service visitor spending is estimated at more than $251.2 million. As the service industries re-spend this output, the spending continues to circulate resulting in indirect/induced impacts estimated at more than $184.0 million. In total, the combined annual sales/output from commercial service visitor spending is more than $435.2 million.

8.6 Center of Economic Activity: General Aviation Visitors

8.6.1 General Aviation Visitors: Employment

Similar to visitors arriving to Oregon on a commercial airline flight, visitors arriving on general aviation aircraft typically spend money while visiting, thereby helping to support additional economic impacts. **Table 8-9** identifies the number of Oregon jobs supported by spending from visitors using general aviation aircraft to travel to the state.

TABLE 8-9: EMPLOYMENT FROM GENERAL AVIATION VISITOR SPENDING

Airport Name	Employment		
	Direct	Indirect/Induced	Total
Albany Municipal	7.5	3.1	10.6
Alkali Lake State	0.0	0.0	0.0
Arlington Municipal	0.0	0.0	0.1
Ashland Municipal	15.4	6.4	21.9
Port of Astoria Regional	7.3	3.0	10.3
Aurora State	156.9	65.3	222.2
Baker City Municipal	6.7	2.8	9.6
Bandon State	3.2	1.3	4.5
Beaver Marsh	0.0	0.0	0.0
Bend Municipal Airport	44.4	18.5	62.9
Boardman	0.3	0.1	0.4
Brookings	8.3	3.4	11.7
Burns Municipal	2.0	0.8	2.9
Cape Blanco State Airport	0.1	0.0	0.1
Cascade Locks State Airport	0.2	0.1	0.3
Chehalem Airpark	4.7	1.9	6.6

TABLE 8-9: EMPLOYMENT FROM GENERAL AVIATION VISITOR SPENDING

Airport Name	Employment		
	Direct	Indirect/Induced	Total
Chiloquin State	0.6	0.2	0.8
Christmas Valley	0.6	0.2	0.8
Columbia Gorge/Dalles	6.2	2.6	8.7
Condon State	0.4	0.2	0.6
Corvallis Municipal	1.3	0.5	1.8
Cottage Grove State	7.9	3.3	11.2
Country Squire Airpark	0.1	0.0	0.2
Crescent Lake State Airport	0.0	0.0	0.1
Creswell Hobby Field	18.1	7.5	25.7
Davis Field	0.0	0.0	0.0
Eastern Oregon Regional Airport	3.8	1.6	5.3
Enterprise Municipal	1.4	0.6	1.9
Eugene Airport-Mahlon Sweet Field	17.2	7.2	24.4
Florence Municipal	3.2	1.4	4.6
George Felt	0.1	0.1	0.2
Gold Beach Municipal	2.0	0.8	2.8
Grant Co. Reg./Ogilvie Field	2.5	1.0	3.6
Grants Pass	14.0	5.8	19.8
Hermiston Municipal	4.4	1.8	6.3
Illinois Valley	1.2	0.5	1.7
Independence State	11.4	4.7	16.2
Joseph State	1.1	0.4	1.5
Ken Jernstedt Airfield	5.8	2.4	8.2
Crater Lake-Klamath Regional	9.4	3.9	13.4
La Grande/Union Co.	6.1	2.5	8.6
Lake Billy Chinook	0.0	0.0	0.0
Lake County	1.7	0.7	2.4
Lake Woahink SPB	0.0	0.0	0.0
Lakeside Municipal Airport	0.1	0.1	0.2
Lebanon State	3.3	1.4	4.7
Lenhardt Airpark	0.4	0.2	0.6
Lexington	0.1	0.0	0.1
Madras Municipal	1.7	0.7	2.4
Malin	0.0	0.0	0.1
McDermitt State	0.2	0.1	0.3
McKenzie Bridge State	0.0	0.0	0.0
McMinnville Municipal	19.6	8.1	27.7

TABLE 8-9: EMPLOYMENT FROM GENERAL AVIATION VISITOR SPENDING

Airport Name	Employment		
	Direct	Indirect/Induced	Total
Memaloose USFS	0.1	0.0	0.1
Miller Memorial Airpark	0.0	0.0	0.0
Monument Municipal	0.0	0.0	0.0
Mulino Airport	0.8	0.3	1.1
Myrtle Creek Municipal	1.0	0.4	1.4
Nehalem Bay State Airport	0.2	0.1	0.3
Newport Municipal	10.1	4.2	14.3
Oakridge State	0.2	0.1	0.3
Ontario Municipal	2.9	1.2	4.2
Owyhee Reservoir State	0.0	0.0	0.0
Pacific City State Airport	0.7	0.3	1.0
Paisley	0.1	0.0	0.1
Pinehurst State Airport	0.0	0.0	0.1
Portland Downtown Heliport	7.7	3.2	10.9
Portland-Hillsboro Airport	175.0	99.0	274.0
Portland-Troutdale	81.0	46.0	127.0
Powers Hayes Field	0.0	0.0	0.0
Prineville Airport	2.5	1.0	3.5
Prospect State	0.2	0.1	0.3
Redmond Municipal Airport-Roberts Field	23.5	9.8	33.2
Rogue Valley International	32.5	13.5	46.1
Rome State	0.0	0.0	0.0
Roseburg Regional	13.3	5.5	18.8
Salem McNary Field	16.5	6.9	23.4
Sandy River	0.1	0.1	0.2
Santiam Junction State	0.0	0.0	0.0
Scappoose Industrial Airpark	15.9	6.6	22.5
Seaside Municipal	1.2	0.5	1.7
Siletz Bay State	0.8	0.3	1.2
Silver Lake USFS	0.0	0.0	0.0
Sisters Eagle Air Airport	0.7	0.3	1.0
Skyport	0.0	0.0	0.0
Southwest Oregon Regional	3.1	1.3	4.4
Sportsman Airpark	3.9	1.6	5.5
Stark's Twin Oaks	12.3	5.1	17.5
Sunriver	2.9	1.2	4.2
Tillamook	6.9	2.9	9.8

TABLE 8-9: EMPLOYMENT FROM GENERAL AVIATION VISITOR SPENDING

Airport Name	Employment		
	Direct	Indirect/Induced	Total
Toketee State	0.0	0.0	0.0
Toledo State Airport	0.1	0.0	0.1
Valley View	0.2	0.1	0.2
Vernonia Municipal	0.1	0.1	0.2
Wakonda Beach State	0.3	0.1	0.5
Wasco State	0.1	0.1	0.2
Total	**820**	**380**	**1,200**

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package
Note: Portland International Airport is not included in this table as it was not part of this survey.

As previously discussed, it is possible to calculate annual general aviation spending and subsequently, the number of jobs supported by this spending. Direct jobs associated with general aviation visitor spending are attributed to a variety of sectors; however, most of these hospitality industry jobs are concentrated in the hotel/motel, restaurant, recreational and entertainment, and retail sectors. As a result of general aviation visitor expenditures, there are over 800 direct jobs supported in Oregon. Another 373 jobs are supported as employees in the hospitality industry spend their earnings and businesses such as hotels, restaurants, and rental car companies buy goods and services. When direct and indirect/induced visitor-related employment impacts are combined, approximately 1,177 jobs are supported by spending from visitors to Oregon who arrive via general aviation aircraft.

8.6.2 General Aviation Visitor: Payroll

Table 8-10 identifies the payroll impacts attributed to spending by visitors using general aviation to reach Oregon.

TABLE 8-10: ANNUAL PAYROLL FROM GENERAL AVIATION VISITOR SPENDING

Airport	Payroll		
	Direct	Indirect/Induced	Total
Albany Municipal	$253,137	$198,795	$451,931
Alkali Lake State	$157	$124	$281
Arlington Municipal	$1,291	$1,014	$2,304
Ashland Municipal	$521,590	$409,617	$931,207
Port of Astoria Regional	$246,551	$193,622	$440,173
Aurora State	$5,303,326	$4,164,834	$9,468,160
Baker City Municipal	$228,090	$179,125	$407,215
Bandon State	$106,607	$83,722	$190,329
Beaver Marsh	$708	$556	$1,265
Bend Municipal Airport	$1,500,485	$1,178,368	$2,678,853
Boardman	$9,999	$7,852	$17,851
Brookings	$279,784	$219,721	$499,505

TABLE 8-10: ANNUAL PAYROLL FROM GENERAL AVIATION VISITOR SPENDING

Airport	Payroll		
	Direct	Indirect/Induced	Total
Burns Municipal	$68,926	$54,129	$123,055
Cape Blanco State Airport	$3,549	$2,787	$6,336
Cascade Locks State Airport	$7,083	$5,563	$12,646
Chehalem Airpark	$157,264	$123,503	$280,767
Chiloquin State	$19,905	$15,632	$35,537
Christmas Valley	$19,855	$15,592	$35,447
Columbia Gorge/Dalles	$208,159	$163,472	$371,631
Condon State	$15,049	$11,818	$26,867
Corvallis Municipal	$43,549	$34,200	$77,750
Cottage Grove State	$267,399	$209,995	$477,394
Country Squire Airpark	$3,778	$2,967	$6,745
Crescent Lake State Airport	$1,417	$1,113	$2,529
Creswell Hobby Field	$612,592	$481,084	$1,093,677
Davis Field	$0	$0	$0
Eastern Oregon Regional Airport	$127,341	$100,004	$227,346
Enterprise Municipal	$45,740	$35,920	$81,660
Eugene Airport-Mahlon Sweet Field	$582,971	$457,822	$1,040,793
Florence Municipal	$109,767	$86,203	$195,970
George Felt	$4,093	$3,214	$7,307
Gold Beach Municipal	$67,825	$53,265	$121,090
Grant Co. Reg./Ogilvie Field	$84,747	$66,554	$151,300
Grants Pass	$471,763	$370,487	$842,250
Hermiston Municipal	$149,862	$117,691	$267,553
Illinois Valley	$40,926	$32,140	$73,066
Independence State	$385,875	$303,037	$688,912
Joseph State	$36,080	$28,334	$64,414
Ken Jernstedt Airfield	$195,633	$153,635	$349,268
Crater Lake-Klamath Regional	$319,276	$250,735	$570,011
La Grande/Union Co.	$206,122	$161,873	$367,995
Lake Billy Chinook	$283	$223	$506
Lake County	$56,775	$44,587	$101,362
Lake Woahink SPB	$0	$0	$0
Lakeside Municipal Airport	$4,102	$3,222	$7,324
Lebanon State	$112,842	$88,618	$201,460
Lenhardt Airpark	$14,954	$11,743	$26,697
Lexington	$3,339	$2,622	$5,961
Madras Municipal	$57,123	$44,860	$101,982

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TABLE 8-10: ANNUAL PAYROLL FROM GENERAL AVIATION VISITOR SPENDING

Airport	Payroll		
	Direct	Indirect/Induced	Total
Malin	$1,574	$1,236	$2,810
McDermitt State	$7,889	$6,196	$14,085
McKenzie Bridge State	$0	$0	$0
McMinnville Municipal	$661,109	$519,186	$1,180,295
Memaloose USFS	$2,848	$2,236	$5,084
Miller Memorial Airpark	$0	$0	$0
Monument Municipal	$0	$0	$0
Mulino Airport	$26,130	$20,520	$46,650
Myrtle Creek Municipal	$33,440	$26,261	$59,700
Nehalem Bay State Airport	$7,212	$5,664	$12,876
Newport Municipal	$341,112	$267,884	$608,995
Oakridge State	$6,640	$5,214	$11,854
Ontario Municipal	$99,204	$77,908	$177,112
Owyhee Reservoir State	$0	$0	$0
Pacific City State Airport	$24,583	$19,306	$43,889
Paisley	$1,899	$1,491	$3,390
Pinehurst State Airport	$1,480	$1,162	$2,642
Portland Downtown Heliport	$260,715	$204,746	$465,461
Portland-Hillsboro Airport	$4,300,000	$5,200,000	$9,500,000
Portland-Troutdale	$2,000,000	$2,500,000	$4,500,000
Powers Hayes Field	$0	$0	$0
Prineville Airport	$83,411	$65,505	$148,916
Prospect State	$6,994	$5,492	$12,486
Redmond Municipal Airport-Roberts Field	$792,555	$622,413	$1,414,967
Rogue Valley International	$1,099,162	$863,199	$1,962,362
Rome State	$0	$0	$0
Roseburg Regional	$448,539	$352,249	$800,789
Salem McNary Field	$557,537	$437,848	$995,385
Sandy River	$4,722	$3,708	$8,431
Santiam Junction State	$0	$0	$0
Scappoose Industrial Airpark	$536,646	$421,441	$958,087
Seaside Municipal	$41,609	$32,676	$74,285
Siletz Bay State	$27,941	$21,943	$49,884
Silver Lake USFS	$79	$62	$141
Sisters Eagle Air Airport	$24,807	$19,481	$44,288
Skyport	$0	$0	$0
Southwest Oregon Regional	$104,824	$82,321	$187,144

TABLE 8-10: ANNUAL PAYROLL FROM GENERAL AVIATION VISITOR SPENDING

Airport	Payroll		
	Direct	Indirect/Induced	Total
Sportsman Airpark	$131,859	$103,552	$235,411
Stark's Twin Oaks	$416,758	$327,290	$744,048
Sunriver	$99,352	$78,024	$177,376
Tillamook	$233,277	$183,198	$416,476
Toketee State	$0	$0	$0
Toledo State Airport	$3,463	$2,720	$6,182
Valley View	$5,761	$4,524	$10,285
Vernonia Municipal	$4,722	$3,708	$8,431
Wakonda Beach State	$11,451	$8,993	$20,444
Wasco State	$4,980	$3,911	$8,891
Total	**$24,828,600**	**$26,020,972**	**$50,849,572**

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package
*Portland International Airport is not included in this table as it was not part of this survey.

Direct payroll includes salaries paid to employees working in visitor-related businesses and other service industries that are utilized by general aviation visitors. Direct annual payroll attributable to spending by general aviation visitors is estimated at over $24.8 million.

As employees in the visitor-related industries spend their payroll, this spending continues to circulate, generating additional employment and subsequent payroll. The indirect/induced annual payroll impact associated with general aviation visitor spending is estimated at approximately $26.0 million. Direct and indirect/induced payroll impacts stemming from general aviation visitor spending combine for a total payroll impact of $50.8 million.

8.6.3 General Aviation Visitor: Sales/Output

Table 8-11 identifies the output attributed to general aviation visitors using airports in Oregon. Direct annual output is comparable to all general aviation visitor expenditures at these airports. Total direct annual output from general aviation visitor spending is estimated at approximately $66.7 million.

TABLE 8-11: SALES/OUTPUT FROM GENERAL AVIATION VISITOR SPENDING

Airport	Annual Sales/Output		
	Direct	Indirect/Induced	Total
Albany Municipal	$624,169	$457,217	$1,081,386
Alkali Lake State	$388	$284	$672
Arlington Municipal	$3,183	$2,331	$5,514
Ashland Municipal	$1,286,104	$942,099	$2,228,202
Port of Astoria Regional	$607,929	$445,321	$1,053,250
Aurora State	$13,076,615	$9,578,905	$22,655,520
Baker City Municipal	$562,410	$411,978	$974,388

TABLE 8-11: SALES/OUTPUT FROM GENERAL AVIATION VISITOR SPENDING

Airport	Annual Sales/Output		
	Direct	Indirect/Induced	Total
Bandon State	$262,866	$192,555	$455,421
Beaver Marsh	$1,747	$1,279	$3,026
Bend Municipal Airport	$3,699,804	$2,710,187	$6,409,990
Boardman	$24,654	$18,060	$42,714
Brookings	$689,874	$505,348	$1,195,221
Burns Municipal	$169,953	$124,494	$294,447
Cape Blanco State Airport	$8,750	$6,410	$15,160
Cascade Locks State Airport	$17,466	$12,794	$30,260
Chehalem Airpark	$387,772	$284,051	$671,824
Chiloquin State	$49,080	$35,952	$85,032
Christmas Valley	$48,957	$35,862	$84,818
Columbia Gorge/Dalles	$513,265	$375,978	$889,243
Condon State	$37,106	$27,181	$64,288
Corvallis Municipal	$107,381	$78,659	$186,040
Cottage Grove State	$659,335	$482,978	$1,142,313
Country Squire Airpark	$9,315	$6,823	$16,138
Crescent Lake State Airport	$3,493	$2,559	$6,052
Creswell Hobby Field	$1,510,493	$1,106,469	$2,616,962
Davis Field	$0	$0	$0
Eastern Oregon Regional Airport	$313,991	$230,005	$543,996
Enterprise Municipal	$112,782	$82,615	$195,397
Eugene Airport-Mahlon Sweet Field	$1,437,454	$1,052,966	$2,490,421
Florence Municipal	$270,657	$198,262	$468,919
George Felt	$10,091	$7,392	$17,483
Gold Beach Municipal	$167,239	$122,506	$289,746
Grant Co. Reg./Ogilvie Field	$208,963	$153,070	$362,032
Grants Pass	$1,163,245	$852,102	$2,015,347
Hermiston Municipal	$369,522	$270,683	$640,204
Illinois Valley	$100,912	$73,921	$174,833
Independence State	$951,466	$696,970	$1,648,436
Joseph State	$88,963	$65,167	$154,130
Ken Jernstedt Airfield	$482,380	$353,354	$835,733
Crater Lake-Klamath Regional	$787,250	$576,678	$1,363,929
La Grande/Union Co.	$508,243	$372,299	$880,542
Lake Billy Chinook	$699	$512	$1,210
Lake County	$139,993	$102,548	$242,541
Lake Woahink SPB	$0	$0	$0

TABLE 8-11: SALES/OUTPUT FROM GENERAL AVIATION VISITOR SPENDING

Airport	Annual Sales/Output		
	Direct	Indirect/Induced	Total
Lakeside Municipal Airport	$10,115	$7,409	$17,524
Lebanon State	$278,240	$203,817	$482,057
Lenhardt Airpark	$36,872	$27,009	$63,881
Lexington	$8,233	$6,031	$14,264
Madras Municipal	$140,849	$103,175	$244,025
Malin	$3,881	$2,843	$6,724
McDermitt State	$19,453	$14,250	$33,703
McKenzie Bridge State	$0	$0	$0
McMinnville Municipal	$1,630,123	$1,194,101	$2,824,224
Memaloose USFS	$7,022	$5,143	$12,165
Miller Memorial Airpark	$0	$0	$0
Monument Municipal	$0	$0	$0
Mulino Airport	$64,429	$47,195	$111,624
Myrtle Creek Municipal	$82,453	$60,399	$142,852
Nehalem Bay State Airport	$17,783	$13,027	$30,810
Newport Municipal	$841,092	$616,118	$1,457,211
Oakridge State	$16,372	$11,993	$28,365
Ontario Municipal	$244,612	$179,183	$423,795
Owyhee Reservoir State	$0	$0	$0
Pacific City State Airport	$60,616	$44,403	$105,019
Paisley	$4,682	$3,430	$8,112
Pinehurst State Airport	$3,648	$2,673	$6,321
Portland Downtown Heliport	$642,855	$470,905	$1,113,760
Portland-Hillsboro Airport	$14,300,000	$2,400,000	$16,700,000
Portland-Troutdale	$6,700,000	$1,100,000	$7,800,000
Powers Hayes Field	$0	$0	$0
Prineville Airport	$205,671	$150,658	$356,329
Prospect State	$17,245	$12,632	$29,877
Redmond Municipal Airport-Roberts Field	$1,954,232	$1,431,518	$3,385,750
Rogue Valley International	$2,710,247	$1,985,315	$4,695,561
Rome State	$0	$0	$0
Roseburg Regional	$1,105,981	$810,155	$1,916,136
Salem McNary Field	$1,374,741	$1,007,028	$2,381,769
Sandy River	$11,644	$8,529	$20,173
Santiam Junction State	$0	$0	$0
Scappoose Industrial Airpark	$1,323,228	$969,294	$2,292,522
Seaside Municipal	$102,597	$75,154	$177,751

TABLE 8-11: SALES/OUTPUT FROM GENERAL AVIATION VISITOR SPENDING

Airport	Annual Sales/Output		
	Direct	Indirect/Induced	Total
Siletz Bay State	$68,896	$50,468	$119,364
Silver Lake USFS	$194	$142	$336
Sisters Eagle Air Airport	$61,167	$44,806	$105,974
Skyport	$0	$0	$0
Southwest Oregon Regional	$258,468	$189,333	$447,801
Sportsman Airpark	$325,129	$238,164	$563,294
Stark's Twin Oaks	$1,027,616	$752,751	$1,780,367
Sunriver	$244,977	$179,451	$424,428
Tillamook	$575,201	$421,347	$996,548
Toketee State	$0	$0	$0
Toledo State Airport	$8,539	$6,255	$14,794
Valley View	$14,205	$10,406	$24,611
Vernonia Municipal	$11,644	$8,529	$20,173
Wakonda Beach State	$28,236	$20,684	$48,920
Wasco State	$12,279	$8,995	$21,273
Total	**$66,686,684**	**$36,966,490**	**$103,653,173**

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package
*Portland International Airport is not included in this table as it was not part of this survey.

As the service industries re-spend direct output, money continues to circulate, resulting in indirect/induced impacts. The indirect/induced impacts related to general aviation visitor output are estimated at $37.0 million each year. The total annual output from spending by visitors arriving via general aviation visitors at Oregon's airports exceeds $103.6 million.

8.7 Centers of Economic Activity: Capital Improvements

As mentioned in the methodology section, each year many of Oregon's airports undertake capital improvement projects such as runway rehabilitation, hangar construction, apron paving, etc. These projects employ many people not otherwise related to an airport's day-to-day operations; these jobs are in categories such as construction and engineering.

For this analysis, airport-related construction impacts for Category I - Commercial Service Airports and Category II - Urban General Aviation Airports are presented separately for each airport. Construction impacts related to the remaining Category III to V general aviation airports are presented for as a group for all remaining airports in these two role categories since nearly all general aviation airport construction activity at these airports fluctuates and relies on construction workers and engineers from outside the airport's immediate market area. Impacts in this category are based on an average of three years, 2013 to 2015, of construction spending at airports in Oregon.

8.7.1 Capital Improvements: Employment

This study's findings support the conclusion that on-airport construction projects are an important source of jobs in Oregon. Direct employment from construction activities at Oregon's airports accounts for approximately 506 jobs, of which 67% are related to Category I - Commercial Service Airports and Category II - Urban General Aviation Airports. These jobs consist of people engaged directly in the projects—construction workers, equipment operators, foremen, management, etc. Indirect/induced employment supported by on-airport construction jobs accounts for another 531 jobs. These jobs are created by the multiplier effects stemming from direct construction jobs. For example, an employee of an equipment supplier may owe part of his job to a construction company that provides runway pavement maintenance.

Table 8-12 shows that a total of 1,036 jobs are associated with airport construction projects in Oregon annually. These employment figures include the direct and indirect/induced impacts. Approximately 346 of these jobs, or 33%, are related to Category III to V - General Aviation Airports.

TABLE 8-12: EMPLOYMENT IMPACTS OF CONSTRUCTION

Airport	Employment		
	Direct	Indirect/Induced	Total
Port of Astoria Regional	15.5	16.3	31.8
Aurora State	5.7	5.9	11.6
Bend Municipal Airport	19.5	20.5	39.9
Corvallis Municipal	2.2	2.3	4.5
Eugene Airport -Mahlon Sweet Field	28.8	30.2	58.9
Crater Lake-Klamath Regional	25.6	26.9	52.4
McMinnville Municipal	22.6	23.8	46.4
Newport Municipal	23.7	24.9	48.5
Redmond Municipal Airport -Roberts Field	61.7	64.8	126.6
Rogue Valley International	107.5	112.9	220.4
Salem McNary Field	7.3	7.6	14.9
Scappoose Industrial Airpark	0.6	0.6	1.2
Southwest Oregon Regional	16.2	17.0	33.1
CIP Spending at Category I - II	**336.7**	**353.6**	**690.3**
CIP Spending at Category III - V	**168.8**	**177.3**	**346.1**
Total Impacts	**505.6**	**530.9**	**1,036.5**

Source: Jviation, IMPLAN econometric package
*Portland International Airport is not included in this table as it was not part of this survey.

8.7.2 Capital Improvements: Payroll

The payroll impacts attributable to construction spending at Oregon's airports are important to the state's economy as well. The findings of this study show that nearly $27.6 million are paid in wages to construction workers directly employed by capital improvement projects at the Oregon airports. Approximately 66% of this payroll is related to Category I - Commercial Service Airports and Category II - Urban General Aviation Airports. Construction activities at the remaining Category III to V general aviation airports support $9.2 million in annual payroll.

As shown in **Table 8-13**, a total of approximately $48.3 payroll is paid each year to employees who are involved in on-airport capital improvement-related construction projects; this includes direct and indirect/induced impacts. Approximately $16.1 million of this payroll is related to Category III to V general aviation airports.

TABLE 8-13: PAYROLL IMPACTS OF CONSTRUCTION

Airport	Payroll		
	Direct	Indirect/Induced	Total
Port of Astoria Regional	$847,869	$633,291	$1,481,160
Aurora State	$309,186	$230,937	$540,123
Bend Municipal Airport	$1,064,511	$795,106	$1,859,616
Corvallis Municipal	$119,670	$89,384	$209,055
Eugene Airport -Mahlon Sweet Field	$1,571,047	$1,173,448	$2,744,495
Crater Lake-Klamath Regional	$1,397,610	$1,043,904	$2,441,514
McMinnville Municipal	$1,236,230	$923,367	$2,159,596
Newport Municipal	$1,293,921	$966,458	$2,260,379
Redmond Municipal Airport -Roberts Field	$3,372,881	$2,519,277	$5,892,158
Rogue Valley International	$5,874,661	$4,387,910	$10,262,571
Salem McNary Field	$397,138	$296,631	$693,769
Scappoose Industrial Airpark	$31,174	$23,285	$54,459
Southwest Oregon Regional	$883,467	$659,881	$1,543,348
CIP Spending at Category I - II	**$18,399,364**	**$13,742,879**	**$32,142,242**
CIP Spending at Category III - V	**$9,225,305**	**$6,890,578**	**$16,115,882**
Total Impacts	**$27,624,668**	**$20,633,456**	**$48,258,125**

Source: Jviation, IMPLAN econometric package
*Portland International Airport is not included in this table as it was not part of this survey.

8.7.3 Capital Improvements: Sales/Output

Output is synonymous with economic activity and includes annual gross sales and capital expenditures of firms involved in on-airport construction. Average annual direct output by companies involved in providing construction services to Oregon's airports equals about $60.0 million. Another $47.5 million in impacts come from multiplier output impacts, such as those stemming from the equipment supplier company in the example discussed with employment.

In all, as shown in **Table 8-14**, about $107.5 million in output is generated each year, on average, by capital-improvement-related construction spending at Oregon's airports. Approximately $69.7 million of this total output is related to Category I - Commercial Service Airports and Category II - Urban General Aviation Airports.

TABLE 8-14: SALES/OUTPUT IMPACTS OF CONSTRUCTION

Airport	Direct	Indirect/Induced	Total
Port of Astoria Regional	$1,939,667	$1,537,006	$3,476,672
Aurora State	$707,323	$560,488	$1,267,811
Bend Municipal Airport	$2,435,278	$1,929,731	$4,365,009
Corvallis Municipal	$273,769	$216,937	$490,706
Eugene Airport - Mahlon Sweet Field	$3,842,190	$3,044,579	$6,886,769

Airport	Direct	Indirect/Induced	Total
Crater Lake-Klamath Regional	$3,197,307	$2,533,569	$5,730,876
McMinnville Municipal	$2,828,119	$2,241,022	$5,069,141
Newport Municipal	$2,960,100	$2,345,604	$5,305,704
Redmond Municipal Airport - Roberts Field	$7,716,130	$6,114,316	$13,830,446
Rogue Valley International	$9,965,761	$7,896,940	$17,862,701
Salem McNary Field	$908,531	$719,927	$1,628,458
Scappoose Industrial Airpark	$71,317	$56,512	$127,828
Southwest Oregon Regional	$2,021,106	$1,601,538	$3,622,644
CIP Spending at Category I - II	**$38,866,599**	**$30,798,169**	**$69,664,767**
CIP Spending at Category III - V	**$21,104,703**	**$16,723,516**	**$37,828,219**
Total Impacts	**$59,971,302**	**$47,521,685**	**$107,492,987**

Source: FAA AIP and ODA records, Jviation, IMPLAN econometric package
*Portland International Airport is not included in this table as it was not part of this survey.

8.8 Centers of Economic Activity: Airport Dependent and Reliant Business

The 2014 ODA Economic Impact of Airports Study identified benefits for businesses within the state and that rely on aviation. This section summarizes the findings from the business reliance analysis.

The value that airports contribute to the state's economy goes beyond tenant, capital spending, and visitor impacts. Aviation-dependent impacts measure the reliance that Oregon manufacturers and agricultural producers have on Oregon airports in order to deliver their products and services to domestic and international customers. Industries also rely on air travel to attend business meetings, provide on-site consulting, and deliver on-site services. Business dependency includes:

- The cost of air-carrier business travel as a proportion of total business sales revenue per industry
- The value of goods (manufactured and agricultural products) produced in the state and exported as air cargo from Oregon's airports

These two categories of dependence combine for over $8.0 billion in direct annual sales/output (**Table 8-15**).

The sources of data to estimate reliance and dependence on aviation in Oregon include:

- The portion of business sales by industry used to purchase air transport was estimated using US Bureau of Economic Analysis (BEA) data aggregated by IMPLAN.
- The value of Oregon-produced goods shipped by air to domestic customers (by commodity type, volume, and value) was gathered from the Freight Analysis Framework (FAF) provided by the Federal Highway Administration. This information is based on FHWA's Commodity Flow Survey (CFS), which is published every five years. Since the FAF data does not designate the airport of origin, commodity flows were collected at the state level, converted to three-digit NAICS, and then allocated to each of the five Connect Oregon regions within the state, according to the portion of output each region contributed, relative to the state total.
- Data from the Bureau of Census International Trade Administration provided by WISER were collected for all international goods manufactured in Oregon and shipped to foreign destinations. These exports were allocated to each the five regions within Oregon according to the portion of industry output for the region when compared to the state total.

- Aviation-reliant and dependent impacts by Connect Oregon region are presented in **Table 8-16.**

Utilization of aviation services by Oregon businesses for shipping cargo and conducting air travel contribute an estimated total of $15.5 billion to the state economy, as shown in **Table 8-15**. Aviation business reliant activity supports 76,000 jobs and $4.7 billion in annual payroll (averaging more than $61,600 per job).

TABLE 8-15: STATEWIDE ECONOMIC IMPACTS FROM AVIATION RELIANT AND DEPENDENT BUSINESSES

	Direct	Indirect/Induced	Total
Employment	23,782	52,202	**75,984**
Payroll	$1,989,215,000	$2,691,171,000	**$4,680,386,000**
Sales/Output	$8,036,636,000	$7,463,624,000	**$15,500,260,000**

Source: Mead and Hunt, EDR Group, IMPLAN econometric package

Aviation reliant/dependent business airports are not necessarily associated with one system airport; therefore, impacts in this category are reported for a statewide total and are not estimated/listed for each airport. Impacts in this category are, however, provided by region within the state as an indicator of the importance of airports to area businesses.

Impacts were allocated to each region according to the percentage of output each region has, compared to the state total for each industry type. PDX is the dominant airport in facilitating business travel and air cargo movement within the state. The Portland/Metro region accounts for over 75% of the estimated value of goods shipped and aviation travel.

Aviation-reliant and aviation-dependent impacts, categorized by region, are illustrated in **Table 8-16.** Total impacts for each region related to reliant and dependent business use are based on regional multipliers from IMPLAN and do not sum to the statewide total presented in Table 8-15.

TABLE 8-16: RELIANT AND DEPENDENT BUSINESS BY CONNECT OREGON REGION

Connect Oregon Region	Direct	Indirect/Induced	Total
Employment			
Region 1-Portland Metro	15,983	39,188	55,171
Region 2-Willamette Valley & Coast	4,717	5,586	10,303
Region 3-Southwestern Oregon	1,677	1,526	3,203
Region 4-Central Oregon	1,025	1,017	2,042
Region 5-Eastern Oregon	380	309	689
Employment Total	**23,782**	**47,626**	**71,408**
Payroll			
Region 1-Portland Metro	$1,537,267,000	$2,084,491,000	$3,621,758,000
Region 2-Willamette Valley & Coast	$310,238,000	$222,057,000	$532,295,000
Region 3-Southwestern Oregon	$69,936,000	$56,270,000	$126,206,000
Region 4-Central Oregon	$54,505,000	$39,630,000	$94,135,000
Region 5-Eastern Oregon	$17,269,000	$10,884,000	$28,153,000
Payroll Total	**$1,989,215,000**	**$2,413,332,000**	**$4,402,547,000**
Sales/Output			
Region 1-Portland Metro	$5,992,196,000	$5,380,935,000	$11,373,131,000

Connect Oregon Region	Direct	Indirect/Induced	Total
Region 2-Willamette Valley & Coast	$1,319,304,000	$629,692,000	$1,948,996,000
Region 3-Southwestern Oregon	$355,256,000	$169,848,000	$525,104,000
Region 4-Central Oregon	$241,318,000	$111,807,000	$353,125,000
Region 5-Eastern Oregon	$128,562,000	$33,387,000	$161,949,000
Sales/Output Total	**$8,036,636,000**	**$6,325,669,000**	**$14,362,305,000**

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package

8.9 Center of Economic Activity: Portland International Airport

8.9.1 Summary of Economic Impacts from Portland International Airport

The Port of Portland retained the services of Martin Associates to quantify the economic impact of the Port's seaport and airport activities in fiscal year 2015. The Port of Portland owns and operates Portland International Airport, as well as general aviation airports at Troutdale and Portland-Hillsboro. The airport impact analysis completed by the Port included the quantification of the economic impacts supported by passengers, freight, military, and general aviation activity at PDX for fiscal year 2015. **Table 8-17** presents the economic impacts of Portland International Airport, as estimated in the Port of Portland study.

8.9.2 PDX Economic Impact Methodology

For the PDX economic impact analysis, local re-spending models were developed to estimate the impact of local purchases by individuals directly employed by PDX operations, as well as economic impacts from firms providing support services to airport operations. The economic impact of air cargo terminals, shippers, and consignees using PDX to support their services was also quantified.

In the PDX study, the flow of economic impacts was measured for four separate and non-additive types of impacts. Those impact measures, as presented in the Port of Portland, study are:

- Employment impact
- Personal earnings impact
- Business revenue impact
- Tax impact

Direct jobs are those jobs held by employees of a particular firm, and these jobs are measured in terms of full-time equivalent workers (the number of jobs reported by a firm as paid employees). Direct employees were estimated from surveys of 916 firms; surveys were completed by Martin Associates.

In fiscal year 2015, passenger and air freight activity at PDX had the following reported impacts:

- 17,756 direct and induced/indirect jobs were supported for residents of the Portland area. Of the 17,756, jobs, 10,574 were direct jobs, while 5,013 jobs were induced throughout the region, supported by the purchase of goods and services by the 10,574 direct employees. An additional 2,169 indirect jobs were also supported in the local economy, as a result of $205 million in local purchases by firms directly dependent on the airport.
- $1.0 billion of direct and induced/indirect personal earnings and consumption expenditures were generated in the Portland area.
- Over $4.9 billion in business revenue was supported.

- The federal government received $309 million in airport-specific taxes.
- State and local governments received $102 million in tax revenues.

TABLE 8-17: ECONOMIC IMPACT OF PORTLAND INTERNATIONAL AIRPORT

	Direct	Indirect/Induced	Total
On-Airport Tenants			
Employment	10,574	7,182	17,756
Payroll	$485,000,000	$546,000,000	$1,031,000,000
Sales/Output			$4,929,000,000
Visitor Impacts			
Employment	63,281	36,070	99,351
Payroll	$1,603,000,000	$1,911,000,000	$3,514,000,000
Sales/Output			$5,870,000,000
Total Impacts			
Employment	73,855	43,252	**117,107**
Payroll	$2,088,000,000	$2,457,000,000	**$4,545,000,000**
Sales/Output			**$10,799,000,000**

Source: The Local and Regional Economic Impacts of The Port of Portland, 2015

In addition to these airport-supported impacts, it is estimated that 99,351 direct and induced/indirect jobs were supported in the Portland area visitor industry due to expenditures by the 4.8 million visitors who arrived via PDX. The impacts from visitor spending were estimated from the results of an on-going passenger survey conducted at PDX. Domestic and international visitors to Oregon, arriving via PDX, spend about $5.9 billion (direct, indirect, induced) on area hotels, restaurants, retail stores, and entertainment establishments. This spending in turn supported other jobs in the Portland area visitor industry; $314 million in state and local tax revenues were generated as a result of spending from visitors arriving via PDX.

Total economic impact of PDX in 2015 was estimated at $10.8 billion. The 117,000 total full-time equivalent employees are estimated to have a total payroll associated of $4.5 billion.

8.10 Economic Impacts by Connect Oregon Regions

ODOT breaks the state into five regions known at Connect Oregon Regions. The table presented below shows the economic contributions of airports to each of the five regional economies within Oregon. The contribution made by an airport to a regional economy, as opposed to its contribution to the state economy, differs for two reasons:

- Regional impacts account for visitors traveling within Oregon, as well as for visitors that arrive from out-of-state. When measuring contributions to the state economy, only travelers arriving from out-of-state were counted in the analysis. For general aviation visitors, only those visitors that are true transient[4] are included in the analysis.
- Economic multipliers (spin-off effects reflected as indirect/induced impacts) for the state are larger than regional multipliers. This is because regional analyses are limited to regional borders when accounting for multiplier effects. Transactions that cross a regional border, but that stay within

[4] True transient visitors on general aviation aircraft are assumed to travel from a distance and make purchases off airport in the hospitality industry.

Oregon, are not counted in the analyses for regional economic impacts. These cross-regional purchases, however, are counted in the statewide context and are reflected in the total statewide economic impact estimate. For example, if a business or consumer purchases a computer one town outside a regional boundary, that purchase would be counted the state's total annual economic impact estimate, but not in that region's economic impact estimate. Statewide multipliers are larger than multipliers in the individual Connect Oregon Regions.

TABLE 8-18: TOTAL ANNUAL IMPACTS FROM ALL SYSTEM AIRPORTS BY REGION

Connect Oregon Region	Direct	Indirect/Induced	Total
Jobs			
Region 1-Portland Metro	91,077	83,669	174,746
Region 2-Willamette Valley and Coast	9,670	10,678	20,348
Region 3-Southwestern Oregon	4,786	4,035	8,821
Region 4-Central Oregon	3,199	2,948	6,147
Region 5-Eastern Oregon	729	598	1,327
Jobs Total	**109,460**	**101,928**	**211,388**
Payroll			
Region 1-Portland Metro	$3,685,569,036	$4,615,197,771	$8,300,766,807
Region 2-Willamette Valley and Coast	$577,005,331	$389,332,093	$966,337,424
Region 3-Southwestern Oregon	$199,574,050	$134,665,044	$334,239,095
Region 4-Central Oregon	$185,607,136	$118,242,757	$303,849,893
Region 5-Eastern Oregon	$32,056,902	$18,057,406	$50,114,308
Payroll Total	**$4,679,812,456**	**$5,275,495,070**	**$9,955,307,526**
Sales/Output			
Region 1-Portland Metro	$6,134,602,910	$5,469,598,981	$22,403,201,891
Region 2-Willamette Valley and Coast	$2,231,905,038	$1,226,994,382	$3,458,899,420
Region 3-Southwestern Oregon	$773,367,883	$433,422,998	$1,206,790,880
Region 4-Central Oregon	$583,408,962	$303,209,431	$886,618,393
Region 5-Eastern Oregon	$183,038,039	$58,129,241	$241,167,279
Sales/Output Total	**$9,906,322,831**	**$7,491,355,032**	**$28,196,677,863**

Source: Mead and Hunt, EDR Group, Jviation, IMPLAN econometric package
*PDX totals taken directly from Port of Portland study. Direct and Multiplier impacts for Sales/Output not provided for PDX

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OREGON AVIATION PLAN

9. COMPLIANCE REPORT

9.1 Introduction

The Oregon Aviation Plan v6.0 considered Oregon and federal compliance regulations within three areas: Municipal and County Land Use and Zoning, FAA airport design standards, and Oregon Transportation Plan guidance.

9.2 Land Use Compatibility

Regulating the development patterns surrounding airports is critical to preventing incompatible land uses, which are of concern to both airport operations and to the health, safety, and welfare of nearby communities. Oregon state law currently requires that airports be considered in locally-adopted comprehensive plans and be protected from incompatible uses through adopted zoning and land use development codes and ordinances. However, not all jurisdictions with land use authority over public use airports in the Oregon Department of Aviation (ODA) system sufficiently protect airport operations through their adopted ordinances.

The 2007 Oregon Aviation Plan (OAP) Update verified the status of airport-related land use planning and local regulations for each jurisdiction (both city and county) with land use authority over an ODA system airport. The ODA updated the Oregon Aviation Plan to review and analyze local jurisdiction compliance with state regulations regarding land uses surrounding airports and make recommendations on how to better implement those regulations. This Land Use Compatibility Compliance Report details the steps taken to collect and analyze land use compatibility information for public use airports, explains how this data was analyzed, and identifies the extent to which jurisdictions comply with state laws. The last section of this report provides guidance on prioritizing assistance for jurisdictions whose policies and land use regulations put airports and adjacent communities at risk.

9.3 Airport Protection Methods

The primary methods through which Oregon's statewide regulations are intended to protect incompatible land uses surrounding airports are summarized below:

- **Transportation Planning Rule (TPR).** Oregon's TPR implements Statewide Planning Goal 12 (Transportation) and requires local jurisdictions to adopt regulations that protect public-use airports by controlling land uses within noise corridors and imaginary surfaces and limit physical hazards to air navigation. The TPR also requires jurisdictions to develop a process for coordinated review of future land use decisions affecting transportation corridors or facilities (including public use airports).
- **Airport Planning Rule (APR).** The APR, embodied in Oregon Administrative Rules (OAR) Chapter 660, Division 13, was adopted to aid the TPR with the implementation of Statewide Planning Goal 12, and establishes requirements for local jurisdictions related to airport planning in order to limit incompatible uses. Under the APR, local jurisdictions with land use authority over a public use airport are required to comply with the following measures:
    - Adopt comprehensive plan and land use regulations for airports and update local plans and land use regulations to conform to the APR during Periodic Review.
    - Map and document airport boundaries, existing and future facilities, airport safety and compatibility zones and imaginary surfaces, and noise impact boundaries.

- Adopt an Airport Safety Overlay Zone that includes height restrictions, as well as exceptions to height limitations and a means of approving variances when supported by the ODA and the Federal Aviation Administration (FAA).
- Develop compatibility standards that prohibit residential and public assembly uses within Runway Protection Zones (RPZs).
- Limit certain uses within noise impact boundaries.
- Limit outdoor lighting for new and expanded industrial, commercial, or recreational uses.
- Prohibit new and expanded industrial uses that cause emissions that would obscure visibility within airport approach corridors.
- Coordinate the review of all radio, telephone, and television towers and electrical lines with ODA.
- Regulate water impoundments and prohibit new landfills in proximity to an airport.
- Adopt land use regulations for non-towered airports authorizing various aviation and airport-related uses and activities.
- Allow certain industrial, manufacturing, and other uses within airport boundaries if they would result in no significant hazard or limitation on approved airport uses, and are consistent with local comprehensive plans, statewide planning goals, and other OARs.

- **Comprehensive Planning and Periodic Review.** Oregon Statewide Planning Goal 2 and its implementing statutes and regulations require each city and county to develop and adopt a comprehensive plan, as well as the zoning and development ordinances needed to implement the plan. Cities and counties are also required to examine and, as necessary, update their comprehensive plans and implementing codes through the process of Periodic Review in order to respond to changing conditions and bring their plans and codes into compliance with updated state regulations. However, pursuant to ORS 197.629, Periodic Review is only required for cities with a population of over 10,000 or for cities that are located within the boundaries of a Metropolitan Planning Organization (MPO), leaving many smaller rural cities exempt from the requirement. Counties are exempt from state Periodic Review requirements altogether.

9.4 Data Collection

Angelo Planning Group (APG) used SurveyMonkey software to create a survey to gather local comprehensive plan and land use regulation information for each jurisdiction (city and county) with land use authority over a public use airport. In some cases, an airport's boundary or imaginary surfaces can impact more than one municipal boundary. In these cases, information was gathered from each affected jurisdiction. The objective of the survey was to ascertain the status of airport-related land use planning and local regulations within currently adopted plans and identify which jurisdictions are not in compliance with state laws (OAR 660-013 – Airport Planning Rule, OAR 738-070 – Physical Hazards to Air Navigation, and ORS 836 – Airports and Landing Fields). The survey requested that local staff assess their jurisdictions' current compliance with state laws through questions about airport-related policies, guiding documents, and regulatory requirements. The survey also asked for links or citations for applicable local policy and regulatory documents and maps.

ODA sent a hyperlink to the SurveyMonkey questionnaire via email to city and county planning directors for all jurisdictions with land use authority over a public use airport on May 17, 2017. The survey was originally intended to close on June 2; however, the deadline was extended to June 30 due to the low number of complete responses received by the original closing date. A follow-up email was sent to staff for each non-responsive jurisdiction on June 19 notifying them of the extension. For those jurisdictions that provided incomplete responses, APG followed up with the respective jurisdictions' planning director individually. A total of forty-two (42) complete responses were received by the June 30 deadline.

Given the number of jurisdictions that did not respond to the survey, ODA's focus turned to obtaining information for the 97 airports that make up ODA's public use airport system. In the fall of 2017, surveys for non-responsive jurisdictions were manually inputted by the project consultant team. Research included reviewing local comprehensive plan policies; researching local airport overlays and zoning; auditing local land use requirements; and, in some cases, verifying information with local staff.

9.5 Data Analysis

The data gathered during the survey phase of the project was compiled into a searchable database (Existing and Future Airport Operations and Land Uses Survey Database, attached as an appendix to this report). The database is comprised of the answers to questions posed in the 2017 survey for each jurisdiction with land use authority over one or more of the 97 public use airports in the ODA system. The database includes references and links to applicable local goals, policies, maps, and code/ordinance sections. In addition to the information gathered through the survey, the database also identifies each airport's associated city, the jurisdiction in which the airport is located, the airport's category, National Plan of Integrated Airport Systems (NPIAS) listings, whether the airport falls within its associated city's municipal boundary, the estimated horizontal surface that falls outside the municipal boundary, the airport's sponsor, and the jurisdictions' prioritization score (discussed further in this report under Compliance Results).

The project team used this database to review the survey data for consistency, completeness, and accuracy. Where information from the original survey was lacking or absent, the consultant team focused their efforts on filling in information for counties and municipalities with land use regulation over and/or in close proximity to an ODA system airport. For airports with 100% of the horizontal surface located outside of nearby municipal boundaries, the consultant team only filled in information relating to county land use regulations. As part of the analysis, the consultant team referred to results documented in the 2007 OAP (Table 1.1 - Application of the Airport Planning Rule) to support filling in missing database information for jurisdictions whose locally adopted regulations have not been updated since 2007. A summary of jurisdictions' compliance with state airport protection requirements is provided in **Table 9-1**.

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TABLE 9-1: COMPLIANCE WITH STATE LAND USE REGULATIONS FOR PUBLIC USE AIRPORTS

Airport	Jurisdiction	FAA Notification Required	ODA Notification Required	Height Restrictions	Means to Approve Variance to Height Restrictions if Supported by FAA/ODA	RPZ Protection	Limit Uses Within Noise Impact Boundary	Industrial Uses that Obstruct Visibility	Limit Outdoor Lighting	Coordinate Transmission Facilities and Electrical Transmission Lines with ODA	Regulate Water Impoundments	Prohibit New Landfills	Airport Safety Overlay Zone	Airport Zone	Required Eligible Uses: Customary & Usual Aviation-Related Activities	Emergency Medical Flight Services	Law Enforcement & Firefighting Activities	Flight Instruction	Aircraft Service, Maintenance, and Training	Aircraft Rental	Sale of Aircraft & Aeronautic Equipment and Supplies	Aeronautic Recreational & Sporting Activities	Crop Dusting Activities	Agricultural & Forestry Activities	Air Passenger & Freight Services and Facilities
Albany Municipal Airport	Albany			X									X	X											
	Millersburg			X				X	X	X															
	Linn County												X	X											
Alkali Lake State Airport	Lakeview a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Lake County			X		X		X	X			X	X	X	X									X	
Arlington Municipal Airport	Arlington			X	X	X	X	X	X		X		X	X	X	X	X	X	X	X	X	X	X		X
	Gilliam County	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ashland Municipal Airport - Sumner Parker Field	Ashland			X									X												
	Jackson County	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Port of Astoria Regional Airport	Astoria	X	X	X	X																				
	Warrenton	X		X		X	X		X				X												
	Clatsop County		X	X		X	X	X	X				X										X	X	
Aurora State Airport	Aurora c			X	X	X		X	X				X		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Marion County	X	X	X		X			X			X	X	X											
Baker City Municipal Airport	Baker City a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Baker County		X	X		X		X			X	X	X	X	X				X		X			X	
Bandon State Airport	Bandon			X	X	X		X	X	X			X												
	Coos County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Beaver Marsh Airport	Beaver Marsh a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Klamath County			X									X												
Bend Municipal Airport	Bend a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Deschutes County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Boardman Airport	Boardman a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Morrow County		X	X	X	X		X	X				X	X	X		X	X	X		X			X	
Brookings Airport	Brookings	X	X			X	X	X	X	X	X	X	X	X										X	
	Curry County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X			X			
Burns Municipal Airport	Burns a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Harney County	X		X				X	X	X	X		X	X	X	X			X	X	X			X	X
Cape Blanco State Airport	Sixes a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Curry County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X			
Cascade Locks State Airport	Cascade Locks			X		X			X				X	X											
	Hood River County	X	X		X	X	X	X	X	X	X	X													
Chehalem Airpark	Newberg a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

OREGON AVIATION PLAN

Airport	Jurisdiction	FAA Notification Required	ODA Notification Required	Height Restrictions	Means to Approve Variance to Height Restrictions if Supported by FAA/ODA	RPZ Protection	Limit Uses Within Noise Impact Boundary	Industrial Uses that Obstruct Visibility	Limit Outdoor Lighting	Coordinate Transmission Facilities and Electrical Transmission Lines with ODA	Regulate Water Impoundments	Prohibit New Landfills	Airport Safety Overlay Zone	Airport Zone	Customary & Usual Aviation-Related Activities	Emergency Medical Flight Services	Law Enforcement & Firefighting Activities	Flight Instruction	Aircraft Service, Maintenance, and Training	Aircraft Rental	Sale of Aircraft & Aeronautic Equipment and Supplies	Aeronautic Recreational & Sporting Activities	Crop Dusting Activities	Agricultural & Forestry Activities	Air Passenger & Freight Services and Facilities
															Required Eligible Uses										
	Yamhill County			X	X	X		X	X			X	X	X	X									X	
Chiloquin State Airport	Chiloquin																								
	Klamath County			X				X	X				X	X											
Christmas Valley Airport	Christmas Valley a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Lake County			X		X		X	X			X	X	X	X									X	
Columbia Gorge Regional / The Dalles Municipal Airport	The Dalles	X	X	X	X			X	X		X	X	X												
	Wasco County			X		X			X				X	X										X	
Condon State Airport - Pauling Field	Condon			X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X
	Gilliam County	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Corvallis Municipal Airport	Corvallis												X												
	Benton County		X	X		X		X	X				X												
Cottage Grove State Airport - Jim Wright Field	Cottage Grove	X	X		X			X		X	X	X													
	Lane County			X				X	X				X	X	X			X	X					X	X
Country Squire Airpark	Sandy a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Clackamas County						X				X		X	X	X	X	X	X	X	X	X	X	X	X	X
Crescent Lake State Airport	Crescent Lake Junction a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Klamath County			X									X												
Creswell Hobby Field Airport	Creswell	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X			X			X
	Lane County			X				X	X				X	X	X			X	X					X	X
Davis Field Airport	Gates																								
	Marion County	X	X	X		X			X			X	X	X											
Eastern Oregon Regional Airport at Pendleton	Pendleton c			X	X								X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Umatilla County			X				X	X				X	X											
Enterprise Municipal Airport	Enterprise		X	X	X	X		X	X				X	X	X	X	X	X	X	X	X	X	X	X	X
	Wallowa County		X	X	X	X	X	X	X	X	X		X	X											
Eugene - Mahlon Sweet Field Airport	Eugene c			X	X	X		X	X				X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Veneta c														N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Lane County			X				X	X				X	X	X			X	X					X	X
Florence Municipal Airport	Florence	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Lane County			X				X	X				X	X	X			X	X					X	X
George Felt Airport	Roseburg			X	X	X		X	X	X			X	X	X			X	X	X	X			X	X
	Douglas County			X		X	X	X	X				X												
Gold Beach Municipal Airport	Gold Beach												X	X	X	X	X	X	X	X	X	X	X	X	X
	Curry County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X			

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															Required Eligible Uses										
Grant County Regional / Ogilvie Field Airport	John Day		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Grant County		X	X	X	X	X	X	X	X	X	X	X	X										X	
Grants Pass Airport	Grants Pass a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Josephine County			X	X				X				X	X	X									X	
Hermiston Municipal Airport	Hermiston			X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
	Umatilla County			X				X	X				X	X											
Hillsboro Airport	Hillsboro c			X	X										N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Washington County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Illinois Valley Airport	Cave Junction a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Josephine County			X	X								X	X	X									X	
Independence State Airport	Independence			X	X	X		X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X
	Polk County		X	X	X			X	X				X	X	X				X		X				
Joseph State Airport	Joseph																								
	Wallowa County		X	X	X	X	X	X	X	X	X		X	X											
Ken Jernstedt Airfield	Hood River a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Hood River County	X	X	X	X	X	X		X	X			X	X	X	X	X	X	X	X	X	X	X	X	X
Crater Lake-Klamath Regional Airport	Klamath Falls c												X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Klamath County			X		X	X		X				X												
La Grande / Union County Airport	La Grande a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Union County			X		X		X	X		X	X	X	X											
Lake Billy Chinook Airport	Culver a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Jefferson County	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Lake County Airport	Lakeview																								
	Lake County			X		X		X	X			X	X	X	X									X	
Lake Woahink Seaplane Base	Florence a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Lane County			X				X	X				X	X	X			X	X					X	X
Lakeside Municipal Airport	Lakeside		X	X		X	X		X				X	X											
	Coos County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Lebanon State Airport	Lebanon	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Linn County												X	X											
Lenhardt Airpark	Hubbard a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Marion County	X	X	X		X			X			X	X	X											
Lexington Airport	Lexington																								
	Morrow County		X	X	X	X		X	X				X	X	X		X	X	X		X			X	

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															Required Eligible Uses										
Madras Municipal Airport	Madras	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Jefferson County	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Malin Airport	Malin	X																							
	Klamath County			X									X												
McDermitt State Airport	McDermitt a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Malheur County													X											
McKenzie Bridge State Airport	McKenzie Bridge a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Malheur County													X											
McMinnville Municipal Airport	McMinnville	X	X	X	X	X	X						X												
	Yamhill County			X	X	X		X	X			X	X	X	X									X	
Memaloose USFS Airport	Imnaha a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Union County			X		X		X	X		X	X	X	X											
Miller Memorial Airpark	Vale			X	X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Malheur County													X											
Monument Municipal Airport	Monument																								
	Grant County		X	X	X	X	X	X	X	X	X	X	X	X										X	
Mulino State Airport	Mulino a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Clackamas County						X				X		X	X	X	X	X	X	X	X	X	X	X	X	X
Myrtle Creek Municipal Airport	Myrtle Creek																								
	Douglas County												X												
Nehalem Bay State Airport	Manzanita			X		X		X	X				X												
	Tillamook County		X	X	X			X	X				X	X											
Newport Municipal Airport	Newport			X	X		X	X	X				X	X											
	Lincoln County			X	X	X	X		X			X	X												
Oakridge State Airport	Oakridge			X	X	X	X	X		X			X												
	Lane County			X				X	X				X	X	X			X	X					X	X
Ontario Municipal Airport	Ontario	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Malheur County													X											
Owyhee Reservoir State Airport	Owyhee a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Malheur County													X											
Pacific City State Airport	Pacific City a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Tillamook County		X	X	X			X	X				X	X											
Paisley Airport	Paisley a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Lake County			X		X		X	X			X	X	X	X									X	

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															Required Eligible Uses										
Pinehurst State Airport	Pinehurst a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Jackson County	X	X	X		X	X	X	X	X	X	X	X	X									X	X	
Portland Downtown Heliport	Portland	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Portland International Airport	Portland c	X		X	X	X	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Multnomah County	X		X		X			X				X												
Powers Hayes Field Airport	Powers																								
	Coos County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Prineville Airport	Prineville	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Crook County			X	X			X	X				X												
Prospect State Airport	Prospect a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Jackson County	X	X	X		X	X	X	X	X	X	X	X	X									X	X	
Redmond Municipal Airport (Roberts Field)	Redmond c	X	X	X									X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Deschutes County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rogue Valley International Airport - Medford	Medford c	X	X	X	X	X	X	X		X			X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Jackson County	X	X	X		X	X	X	X	X	X	X	X	X									X	X	
Rome State Airport	Rome a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Malheur County													X											
Roseburg Regional Airport	Roseburg			X	X	X		X	X	X			X	X	X			X	X	X	X			X	X
	Douglas County			X		X	X	X	X				X	X										X	
Salem McNary Field Airport	Salem c			X	X				X				X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Marion County	X	X	X		X			X			X	X	X											
Sandy River Airport	Sandy																								
	Clackamas County						X				X		X	X	X	X	X	X	X	X	X	X	X	X	X
Santiam Junction State Airport	Santiam Junction a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Linn County												X	X											
Scappoose Industrial Airpark	Scappoose	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
	Columbia County			X	X		X	X	X				X	X	X		X		X	X	X	X	X	X	X
Seaside Municipal Airport	Seaside			X	X								X	X		X	X	X	X	X	X				
	Gearhart			X	X	X			X				X	X											
	Clatsop County		X	X		X	X	X	X				X	X									X	X	
Siletz Bay State Airport	Gleneden Beach a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Lincoln County			X	X	X	X		X			X	X												
Silver Lake USFS Airport	Silver Lake a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Lake County			X		X		X	X			X	X	X	X									X	

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															Required Eligible Uses										
Sisters Eagle Air Airport	Sisters	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Deschutes County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Skyport Airport	Cornelius a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Washington County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Southwest Oregon Regional Airport	North Bend c			X	X	X	X	X	X	X	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Coos County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Sportsman Airpark	Newberg	X	X	X	X					X			X	X	X	X	X	X	X	X	X	X			X
	Yamhill County			X	X	X		X	X			X	X	X	X									X	
Stark's Twin Oaks Airport	Hillsboro a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Washington County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sunriver Airport	Sunriver a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Deschutes County	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tillamook Airport	Tillamook a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Tillamook County		X	X	X			X	X				X	X											
Toketee State Airport	Toketee Falls a b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Douglas County			X		X	X	X	X				X												
Toledo State Airport	Toledo a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Lincoln County			X	X	X	X		X			X	X												
Troutdale Airport	Troutdale c	X		X									X		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Multnomah County	X		X		X			X				X												
Valley View Airport	Estacada				X																				
	Clackamas County						X				X		X	X	X	X	X	X	X	X	X	X	X	X	X
Vernonia Airfield	Vernonia a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Columbia County			X	X		X	X	X				X	X	X		X		X	X	X	X	X	X	X
Wakonda Beach State Airport	Waldport																								
	Lincoln County			X	X	X	X		X			X	X												
Wasco State Airport	Wasco																								
	Sherman County	X	X	X	X	X	X	X	X	X			X	X	X	X	X						X		

[a] Information was not gathered for cities where 100% of the airport's horizontal surface is located outside the municipal boundary
[b] Information not applicable to unincorporated communities; land use authority lies with the associated county
[c] Towered airports are exempt from municipally-regulated required eligible uses

9.5.1 Compliance Results

Oregon's public use airports are a vital component of the state's transportation system, critical to the provision of emergency services and fundamental to maintaining the economic vitality of both state and local economies. The encroachment of development and incompatible uses on areas surrounding airports is a major concern both to the operational efficiency of an airport and to the safety of nearby communities. To protect airports from incompatible land uses, Oregon's TPR and APR contain strong language requiring jurisdictions in proximity to a public use airport to regulate development and land uses.

As summarized in **Table 9-1**, compliance was assessed for jurisdictions with land use authority pertaining to airports in the ODA public use airport system, which is made up of 97 airports. A summary of ownership for public use airports is provided in **Table 9-2**.

TABLE 9-2: AIRPORT OWNERSHIP

Airport Owner Type	Number of Airports
City/County	40
State	28
Port	10
Private	15
Other [a]	4
Total:	97

[a] This category includes the U.S. Forest Service, Wallowa Whitman National Forest, a county airport district, and a local park and recreation district.

There are 93 individual jurisdictions regulating land uses for these airports. This number excludes municipalities for which 100% of the airport's horizontal surface lies outside of the municipal boundary. It also excludes unincorporated communities, since counties have land use authority over these areas.

The results of the most recent survey update information from Table 1.1 of the 2007 OAP **Table 9-1** of this report reflects an assessment of applicable local policy and regulatory compliance with both TPR and APR requirements; Table 1.1 of the 2007 OAP solely addressed requirements found in the APR. Based on criteria that can be compared between the 2007 and 2017 data, some slight improvements have been made related to compliance. For example, in the 2007 OAP only 68% of jurisdictions had height restrictions for areas surrounding airports. According to the most recent data, that number has grown to 78%.

Despite some gains, implementation of the requirements in the APR has clearly not been uniformly achieved throughout Oregon. Of the jurisdictions assessed in 2017, 29% do not have any policies related to airport planning in their adopted comprehensive plans, 23% do not have an airport safety overlay zone in their development codes, and 28% do not have adopted height restrictions for areas surrounding airports. Reasons for continued deficiencies may include a lack of funding, motivation, or pressing need at the local level to bring comprehensive plans and development codes into compliance with provisions in the APR.

Periodic Review is a state program that could potentially provide the motivation and state assistance for plan and code updates.[1] In 1997 the Oregon Legislature passed ORS 836.600-836.630 (Local Government Airport Regulations), which states:

> "(2)(a) Local governments shall amend their comprehensive plan and land use regulations as required under subsection (1) of this section not later than the first periodic review, as described in ORS 197.628 to 197.651, conducted after the date of the adoption of a list of airports by the Oregon Department of Aviation under subsection (3) of this section."

The ODA created complementary rules in OAR 660-013 (Airport Planning):

> "Local government plans and land use regulations shall be updated to conform to this division at periodic review..."

Since 1997, however, many jurisdictions have been exempted from Periodic Review, thus removing the requirement for jurisdictions to adopt provisions in the APR. Jurisdictions may still choose to voluntarily adopt airport planning requirements; however, many jurisdictions—particularly smaller, rural jurisdictions—lack the funding and staff capacity to undertake such a comprehensive planning exercise. A 2016 League of Oregon Cities survey found that the process requires a significant amount of time, staffing, and funding to complete.[2]

9.5.2 Prioritization of Non-Compliant Airports

The persistence and scope of non-compliance with state laws suggests a need to develop a prioritization system that identifies jurisdictions with the highest urgency for updating their land use regulations. The proposed prioritization system provided in this report scores each city and county individually based on four factors that relate to the airport within its regulatory jurisdiction. The factors that impact a jurisdiction's prioritization score are: the airport's OAP V6.0 category; whether the airport is located within a municipal boundary; the estimated percentage of the airport's horizontal surface that falls outside of the municipal boundary; and whether the jurisdiction has in place an airport safety overlay zone consistent with state rules.

The prioritization system presented in this analysis allots points for each of the four factors, with a maximum of 30 points available. Jurisdictions with the lowest number of points are the highest priority for reviewing and updating land use regulations. Due to regulatory and boundary differences, cities and counties are scored differently for two of the categories: whether the airport is located within the municipal boundary and the estimated horizontal surface located over the municipality. Below is an overview of and rationale for the prioritization system for both cities and counties.

City Prioritization

- **OAP V6.0 Category.** Cities receive one point for Commercial Service Airports (Category I), two points for Urban General Aviation Airports (Category II), three points for Regional General Aviation Airports (Category III), four points for Local General Aviation Airports (Category IV), and five points for Remote

[1] Periodic Review is a process whereby jurisdictions examine and, as needed, update their comprehensive land use plans and implementing codes based on an evaluation and work program developed with the assistance of DLCD. As explained in *The Complete Planner's Guide to Periodic Review*, the process of completing a task on the work program "varies based on the needs and practices of the affected jurisdiction and the nature of the task. Generally speaking, the local process is essentially the same as it would be for a plan amendment outside periodic review."

[2] https://www.orcities.org/Portals/17/Library/Periodic%20Review%20Survey%20Report_FINAL%202016.pdf As stated in the report, when asked about challenges during the Periodic Review process, responses could be categorized within the following themes: Length of the process; Lack of necessary funding; Lack of necessary staff; Failure of the process to address a city's unique situation; and Process rules changed during the process of periodic review.

Access/Emergency Service Airports (Category V). The rationale for this scoring is related to airport function, design, and services provided, as described in the 2007 OAP.[3]

- **Airport Within Municipal Boundary.** A city receives zero points if the airport's runway is located partially or completely within a municipality's boundary. If the airport is located entirely outside the municipal boundary it gets five points. This reflects the assumption that an airport that is located partially or completely within a municipal boundary is more likely to be susceptible to incompatible land uses associated with urban growth and development. Municipal jurisdictions are responsible for regulating the land uses that occur within their boundaries.
- **Estimated Horizontal Surface Outside of Municipal Boundary.** The municipality is assigned from one to five points based on the percentage of each airport's horizontal surface that is located over a municipal boundary. For example, if 100% of the airport's horizontal surface is located outside a municipal boundary it receives five points. If 0% of the horizontal surface is located outside a municipal boundary (meaning the horizontal surfaces falls entirely over the municipality) it receives zero points.[4] An airport can be located entirely outside of a municipality, but still have a portion of its horizontal surface located over a municipality, putting that community and the airport itself at risk for impacts such as noise, obstructions to visibility, and the penetration of horizontal surfaces by tall structures. The more of the horizontal surface that is located over the municipality, the more important it is for that municipality to regulate their land uses accordingly.
- **Airport Safety Overlay Zone.** A jurisdiction with an adopted Airport Safety Overlay Zone receives 15 points; if it does not have a Safety Overlay Zone it receives zero points. Having an Airport Safety Overlay Zone (or a similar regulatory protection) that complies with State laws for protecting communities from safety and noise-related impacts is considered the most important criteria for preventing incompatible land uses in areas surrounding airports.

County Prioritization

- **OAP V6.0 Category.** As with the prioritization system developed for cities, counties receive one point for Commercial Service Airports (Category I), two points for Urban General Aviation Airports (Category II), three points for Regional General Aviation Airports (Category III), four points for Local General Aviation Airports (Category IV), and five points for Remote Access/Emergency Service Airports (Category V).
- **Airport Within Municipal Boundary.** If the airport's runway is located outside of the county's jurisdictional boundary the county receives zero points, and if it is located partially or completely within a municipality's boundary, the county receives five points. The point system here reflects that counties are responsible for regulating land uses for rural areas and those areas located outside of municipal boundaries.
- **Estimated Horizontal Surface Outside of Municipal Boundary.** If 100% of the horizontal surface falls outside a municipal boundary the county receives zero points. If 0% of the horizontal surface falls outside a municipal boundary the county receives five points.[5] The scoring for this category is the inverse of the points allotted to cities for each airport. The more of the horizontal surface that falls outside city limits and over the county-regulated rural areas, the more important it is for counties to have adopted land use regulations to protect airports and adjacent communities. As with the system developed for cities, points range from zero to five and are scored to the nearest tenth of a point.

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[3] The 2007 update of the OAP revised the airport classification system established in the 2000 OAP to account not only for airport function and design, but also to integrate the types of facilities and services that should be provided at each airport category. For more information about functional airport roles, please see Chapter 4 of the 2007 Oregon Aviation Plan: http://www.oregon.gov/aviation/docs/system_plan/chapter_4_-_airport_functional_roles.pdf

[4] Points for this category range from zero to five and are estimated to the nearest tenth of a point.

[5] Points for this category range from zero to five and are estimated to the nearest tenth of a point.

- **Airport Safety Overlay Zone.** Similar to the prioritization system for cities, if a county has an adopted Airport Safety Overlay Zone it receives 15 points; if it does not it receives zero points.

There are 35 cities and two counties that received scores of under 15 points and, therefore, are considered the highest priority for updating land use policies and regulations. Based on the prioritization system, the two jurisdictions in the greatest need of code updates are the City of Astoria for the Port of Astoria Regional Airport and the City of Hillsboro for the Hillsboro Airport. A complete list of jurisdictions and their corresponding prioritization scores are provided in **Table 9-3** and **Table 9-4**, as well as in the Existing and Future Airport Operations and Land Uses Survey Database.

TABLE 9-3: PRIORITIZATION OF CITIES

Airport	Jurisdiction	OAP Category	Airport Within Municipal Boundary	Estimated Horizontal Surface Outside Municipal Boundary	Airport Safety Overlay Zone	Total Score
Albany Municipal Airport	Albany	4	0	2.5	15	21.5
Albany Municipal Airport	Millersburg	4	0	2.5	0	6.5
Alkali Lake State Airport	Lakeview	5	5	5	0	15
Arlington Municipal Airport	Arlington	5	0	2.5	15	22.5
Ashland Municipal Airport - Sumner Parker Field	Ashland	3	0	1.25	15	19.25
Port of Astoria Regional Airport	Astoria	2	0	3	0	5
Port of Astoria Regional Airport	Warrenton	2	0	3	15	20
Aurora State Airport	Aurora	2	5	4.5	15	26.5
Baker City Municipal Airport	Baker City	3	5	5	0	13
Bandon State Airport	Bandon	3	5	3.5	15	26.5
Bend Municipal Airport	Bend	2	5	5	0	12
Boardman Airport	Boardman	4	5	5	0	14
Brookings Airport	Brookings	4	5	2.5	15	26.5
Burns Municipal Airport	Burns	3	5	5	0	13
Cascade Locks State Airport	Cascade Locks	5	0	0.5	15	20.5
Chehalem Airpark	Newberg	4	5	5	15	29
Chiloquin State Airport	Chiloquin	5	0	2.5	0	7.5
Columbia Gorge Regional / The Dalles Municipal Airport	The Dalles	3	5	4.5	15	27.5
Condon State Airport - Pauling Field	Condon	4	5	4	15	28
Corvallis Municipal Airport	Corvallis	2	5	4.5	15	26.5
Cottage Grove State Airport - Jim Wright Field	Cottage Grove	4	5	2.5	0	11.5

Airport	Jurisdiction	OAP Category	Airport Within Municipal Boundary	Estimated Horizontal Surface Outside Municipal Boundary	Airport Safety Overlay Zone	Total Score
Country Squire Airpark	Sandy	5	5	5	0	15
Creswell Hobby Field Airport	Creswell	4	5	2.5	15	26.5
Davis Field Airport	Gates	5	5	1	0	11
Eastern Oregon Regional Airport at Pendleton	Pendleton	1	0	3.75	15	19.75
Enterprise Municipal Airport	Enterprise	5	0	2.5	15	22.5
Eugene - Mahlon Sweet Field Airport	Eugene	1	5	0.5	15	21.5
Eugene - Mahlon Sweet Field Airport	Veneta	1	5	0.05	0	6.05
Florence Municipal Airport	Florence	4	0	0	15	19
George Felt Airport	Roseburg	5	5	4.5	15	29.5
Gold Beach Municipal Airport	Gold Beach	4	0	4	15	23
Grant County Regional / Ogilvie Field Airport	John Day	3	5	1.5	15	24.5
Grants Pass Airport	Grants Pass	3	5	5	0	13
Hermiston Municipal Airport	Hermiston	3	0	2.5	15	20.5
Hillsboro Airport	Hillsboro	2	0	3	0	5
Illinois Valley Airport	Cave Junction	4	5	5	0	14
Independence State Airport	Independence	4	0	3	15	22
Joseph State Airport	Joseph	4	5	1	0	10
Ken Jernstedt Airfield	Hood River	4	5	5	0	14
Crater Lake-Klamath Regional Airport	Klamath Falls	1	0	2	15	18
La Grande / Union County Airport	La Grande	3	5	5	0	13
Lake Billy Chinook Airport	Culver	5	5	5	0	15
Lake County Airport	Lakeview	3	5	4.75	0	12.75
Lake Woahink Seaplane Base	Florence	5	0	5	15	25
Lakeside Municipal Airport	Lakeside	5	0	0.5	15	20.5
Lebanon State Airport	Lebanon	4	0	2.5	15	21.5
Lenhardt Airpark	Hubbard	4	5	5	0	14
Lexington Airport	Lexington	4	5	2.5	0	11.5
Madras Municipal Airport	Madras	4	0	2.5	15	21.5
Malin Airport	Malin	5	5	1.25	0	11.25

Airport	Jurisdiction	OAP Category	Airport Within Municipal Boundary	Estimated Horizontal Surface Outside Municipal Boundary	Airport Safety Overlay Zone	Total Score
McMinnville Municipal Airport	McMinnville	2	0	2.5	15	19.5
Miller Memorial Airpark	Vale	5	5	4.5	15	29.5
Monument Municipal Airport	Monument	5	5	3.75	0	13.75
Myrtle Creek Municipal Airport	Myrtle Creek	4	0	2.5	0	6.5
Nehalem Bay State Airport	Manzanita	5	5	2.5	15	27.5
Newport Municipal Airport	Newport	2	0	2.5	15	19.5
Oakridge State Airport	Oakridge	5	5	2	15	27
Ontario Municipal Airport	Ontario	3	0	2.5	15	20.5
Paisley Airport	Paisley	5	5	5	0	15
Portland Downtown Heliport	Portland	2	0	0	15	17
Portland International Airport	Portland	1	0	3.5	15	19.5
Powers Hayes Field Airport	Powers	5	5	3.75	0	13.75
Prineville Airport	Prineville	4	0	2.5	15	21.5
Redmond Municipal Airport (Roberts Field)	Redmond	1	0	2.5	15	18.5
Rogue Valley International Airport - Medford	Medford	1	0	2.5	15	18.5
Roseburg Regional Airport	Roseburg	3	0	2	15	20
Salem McNary Field Airport	Salem	2	0	2	15	19
Sandy River Airport	Sandy	5	5	3.5	0	13.5
Scappoose Industrial Airpark	Scappoose	2	0	2.5	15	19.5
Seaside Municipal Airport	Seaside	4	0	3	15	22
Seaside Municipal Airport	Gearhart	4	0	3	15	22
Sisters Eagle Air Airport	Sisters	4	5	2.5	15	26.5
Skyport Airport	Cornelius	5	5	5	0	15
Southwest Oregon Regional Airport	North Bend	1	0	2.5	15	18.5
Sportsman Airpark	Newberg	4	5	0.5	15	24.5
Stark's Twin Oaks Airport	Hillsboro	5	5	5	0	15
Tillamook Airport	Tillamook	3	5	5	0	13
Toledo State Airport	Toledo	5	5	5	0	15
Troutdale Airport	Troutdale	2	0	1.5	15	18.5

Airport	Jurisdiction	OAP Category	Airport Within Municipal Boundary	Estimated Horizontal Surface Outside Municipal Boundary	Airport Safety Overlay Zone	Total Score
Valley View Airport	Estacada	5	5	4.5	0	14.5
Vernonia Airfield	Vernonia	5	5	5	0	15
Wakonda Beach State Airport	Waldport	5	5	4.95	0	14.95
Wasco State Airport	Wasco	4	0	2.5	0	6.5

TABLE 9-4: PRIORITIZATION OF COUNTIES

Airport	Jurisdiction	OAP Category	Airport Within Municipal Boundary	Estimated Horizontal Surface Outside Municipal Boundary	Airport Safety Overlay Zone	Total Score
Albany Municipal Airport	Linn County	4	5	2.5	15	26.5
Alkali Lake State Airport	Lake County	5	0	0	15	20
Arlington Municipal Airport	Gilliam County	5	5	2.5	15	27.5
Ashland Municipal Airport - Sumner Parker Field	Jackson County	3	5	3.75	15	26.75
Port of Astoria Regional Airport	Clatsop County	2	5	2	0	9
Aurora State Airport	Marion County	2	0	0.5	15	17.5
Baker City Municipal Airport	Baker County	3	0	0	15	18
Bandon State Airport	Coos County	3	0	1.5	15	19.5
Beaver Marsh Airport	Klamath County a	5	0	0	15	20
Bend Municipal Airport	Deschutes County	2	0	0	15	17
Boardman Airport	Morrow County	4	0	0	15	19
Brookings Airport	Curry County	4	0	2.5	15	21.5
Burns Municipal Airport	Harney County	3	0	0	15	18
Cape Blanco State Airport	Curry County a	5	0	0	15	20
Cascade Locks State Airport	Hood River County	5	5	4.5	0	14.5
Chehalem Airpark	Yamhill County	4	0	0	15	19

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Airport	Jurisdiction	OAP Category	Airport Within Municipal Boundary	Estimated Horizontal Surface Outside Municipal Boundary	Airport Safety Overlay Zone	Total Score
Chiloquin State Airport	Klamath County	5	5	2.5	15	27.5
Christmas Valley Airport	Lake County[a]	4	0	0	15	19
Columbia Gorge Regional / The Dalles Municipal Airport	Wasco County	3	0	0.5	15	18.5
Condon State Airport - Pauling Field	Gilliam County	4	0	1	15	20
Corvallis Municipal Airport	Benton County	2	0	0.5	15	17.5
Cottage Grove State Airport - Jim Wright Field	Lane County	4	0	2.5	15	21.5
Country Squire Airpark	Clackamas County	5	0	0	15	20
Crescent Lake State Airport	Klamath County[a]	5	0	0	15	20
Creswell Hobby Field Airport	Lane County	4	0	2.5	15	21.5
Davis Field Airport	Marion County	5	0	4	15	24
Eastern Oregon Regional Airport at Pendleton	Umatilla County	1	5	1.25	15	22.25
Enterprise Municipal Airport	Wallowa County	5	5	2.5	15	27.5
Eugene - Mahlon Sweet Field Airport	Lane County	1	0	4.5	15	20.5
Florence Municipal Airport	Lane County	4	5	0	15	24
George Felt Airport	Douglas County	5	5	0.5	15	25.5
Gold Beach Municipal Airport	Curry County	4	5	1	15	25
Grant County Regional / Ogilvie Field Airport	Grant County	3	0	3.5	15	21.5
Grants Pass Airport	Josephine County	3	0	5	15	23
Hermiston Municipal Airport	Umatilla County	3	5	2.5	15	25.5
Hillsboro Airport	Washington County	2	5	2	15	24
Illinois Valley Airport	Josephine County	4	0	0	15	19
Independence State Airport	Polk County	4	5	2	15	26
Joseph State Airport	Wallowa County	4	0	4	15	23
Ken Jernstedt Airfield	Hood River County	4	0	0	15	19
Crater Lake-Klamath Regional Airport	Klamath County	1	5	3	15	24
La Grande / Union County Airport	Union County	3	0	0	15	18
Lake Billy Chinook Airport	Jefferson County	5	0	0	15	20
Lake County Airport	Lake County	3	0	0.25	15	18.25
Lake Woahink Seaplane Base	Lane County	5	5	4.75	15	29.75

Airport	Jurisdiction	OAP Category	Airport Within Municipal Boundary	Estimated Horizontal Surface Outside Municipal Boundary	Airport Safety Overlay Zone	Total Score
Lakeside Municipal Airport	Coos County	5	5	4.5	15	29.5
Lebanon State Airport	Linn County	4	5	2.5	15	26.5
Lenhardt Airpark	Marion County	4	0	0	15	19
Lexington Airport	Morrow County	4	0	2.5	15	21.5
Madras Municipal Airport	Jefferson County	4	5	2.5	15	26.5
Malin Airport	Klamath County	5	0	3.75	15	23.75
McDermitt State Airport	Malheur County[a]	5	0	0	0	5
McKenzie Bridge State Airport	Malheur County[a]	5	0	0	0	5
McMinnville Municipal Airport	Yamhill County	2	5	2.5	15	24.5
Memaloose USFS Airport	Union County[a]	5	0	0	15	20
Miller Memorial Airpark	Malheur County	5	0	0.5	0	5.5
Monument Municipal Airport	Grant County	5	0	1.25	15	21.25
Mulino State Airport	Clackamas County[a]	4	0	0	15	19
Myrtle Creek Municipal Airport	Douglas County	4	5	2.5	15	26.5
Nehalem Bay State Airport	Tillamook County	5	0	2.5	15	22.5
Newport Municipal Airport	Lincoln County	2	5	2.5	15	24.5
Oakridge State Airport	Lane County	5	0	3	15	23
Ontario Municipal Airport	Malheur County	3	5	2.5	0	10.5
Owyhee Reservoir State Airport	Malheur County[a]	5	0	0	0	5
Pacific City State Airport	Tillamook County[a]	5	5	3	15	28
Paisley Airport	Lake County	5	0	0	15	20
Pinehurst State Airport	Jackson County[a]	5	0	0	15	20
Portland International Airport	Multnomah County	1	5	1.5	15	22.5
Powers Hayes Field Airport	Coos County	5	0	1.25	15	21.25
Prineville Airport	Crook County	4	5	2.5	15	26.5
Prospect State Airport	Jackson County[a]	5	0	0	15	20
Redmond Municipal Airport (Roberts Field)	Deschutes County	1	5	2.5	15	23.5
Rogue Valley International Airport - Medford	Jackson County	1	5	2.5	15	23.5
Rome State Airport	Malheur County[a]	5	0	0	0	5
Roseburg Regional Airport	Douglas County	3	5	3	15	26

Airport	Jurisdiction	OAP Category	Airport Within Municipal Boundary	Estimated Horizontal Surface Outside Municipal Boundary	Airport Safety Overlay Zone	Total Score
Salem McNary Field Airport	Marion County	2	5	3	15	25
Sandy River Airport	Clackamas County	5	0	1.5	15	21.5
Santiam Junction State Airport	Linn County[a]	5	0	0	15	20
Scappoose Industrial Airpark	Columbia County	2	5	2.5	15	24.5
Seaside Municipal Airport	Clatsop County	4	5	2	15	26
Siletz Bay State Airport	Lincoln County[a]	4	5	2.5	15	26.5
Silver Lake USFS Airport	Lake County[a]	5	0	0	15	20
Sisters Eagle Air Airport	Deschutes County	4	0	2.5	15	21.5
Skyport Airport	Washington County	5	0	0	15	20
Southwest Oregon Regional Airport	Coos County	1	5	2.5	15	23.5
Sportsman Airpark	Yamhill County	4	0	0	15	19
Stark's Twin Oaks Airport	Washington County	5	0	0	15	20
Sunriver Airport	Deschutes County[a]	4	0	0	15	19
Tillamook Airport	Tillamook County	3	0	0	15	18
Toketee State Airport	Douglas County[a]	5	0	0	15	20
Toledo State Airport	Lincoln County	5	0	0	15	20
Troutdale Airport	Multnomah County	2	5	3.5	15	25.5
Valley View Airport	Clackamas County	5	0	0.5	15	20.5
Vernonia Airfield	Columbia County	5	0	0	15	20
Wakonda Beach State Airport	Lincoln County	5	0	0.05	15	20.05
Wasco State Airport	Sherman County	4	5	2.5	15	26.5

[a] Airport is associated with an unincorporated community

Counties regulate land uses for airports that are not located within—and have no horizontal surface radius over—the municipal boundaries of a city. In many cases these airports are in rural areas and are less likely to encounter development that is incompatible with airport operations. There are, however, unincorporated communities[6] within counties that have urban uses and densities.

Despite being located outside city limits, airports in unincorporated communities are more likely to include incompatible land uses due to the fact that new and expanded urban uses may be permitted by counties in such areas. There are 18 airports associated with unincorporated communities in the ODA public use airport system, as denoted in **Table 9-4**.

Additional factors that could be considered when determining which jurisdictions to assist with bringing their policies and regulations into compliance include:

- Areas experiencing rapid population growth and urbanization, which include cities such as Sandy, Molalla, Hillsboro, The Dalles, Bend, and Redmond
- Airports with current or planned expansion projects

Port of Astoria Regional Airport is located within the City of Warrenton near Highway 101. It is one of the most accessible general aviation airports in the northern Oregon coast region and is home to the Columbia River sector of the United States Coast Guard. The airport is adjacent to the 45-acre Port of Astoria Regional Airport Industrial Airport Industrial Park, which, according to the Port of Astoria, is "available for industrial development or logistics warehouse capacity."[7]

The City of Warrenton currently has some land use regulations in place in the Warrenton Municipal Code to protect airport operations. These regulations include requiring FAA notification for the development of tall structures, height restrictions, limiting uses within a noise impact boundary, limiting outdoor lighting, and establishment of an Airport Hazard Overlay District[8]. The City of Astoria also has a portion of the airport's horizontal surface over its city limits, and although it does have some height restrictions located in Article 15 (Wireless Communication Service Facilities) of the City of Astoria Development Code, they do not have an Airport Overlay Zone or any other airport-related regulations.

Land uses surrounding the Hillsboro Airport are also of particular concern. In 2016, it experienced 190,069 flights—roughly 20,000 fewer than the Portland International Airport. This is a 4.8% growth in flights from 2015, indicating increasing airport activity. The airport is located in and serves the "Silicon Forest." It is located only a few miles from Intel's Ronler Acres campus, which recently completed a major five-year-long expansion and was the largest capital project in Oregon's history at the time. Intel relies heavily on the Hillsboro airport for business flights, as does Nike's nearby World Headquarters.

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[6] Unincorporated communities are areas with existing development that are located outside urban growth boundaries (UGBs) and are not governed by a local municipal body. When Oregon's Statewide Planning Program was put into effect 1973, counties were required to inventory farm and forest lands and zone them accordingly. For areas that were located outside UGBs but that were already physically developed to the point where farm or forest use was impracticable, counties were able to include them in their comprehensive plans as "exception areas," which would later be termed unincorporated communities. In 1994 the Land Conservation and Development Commission (LCDC) adopted the Unincorporated Communities Rule (OAR 660, Division 22) and recognized these "exception areas" as established development centers that were never incorporated but nevertheless shared many qualities with small cities. Under state law, counties are responsible for regulating land uses and development in unincorporated communities, and for ensuring that any new or expanded uses do not adversely affect farm or forest operations or interfere with the function of UGBs.

[7] http://www.portofastoria.com/Airport_Information.aspx

[8] In October 2018, the City of Warrenton revised the Airport Hazard Overlay District and renamed it the Airport Operations Overlay District. The RPZ was addressed.

9.5.3 Recommendations

Based on the number of jurisdictions with land use authority over an ODA system airport that are not currently in compliance with State regulations, there is a significant amount of work needed to achieve statewide compliance. Recommendations for land use zoning related to airport planning is presented in the Recommendations Chapter of this report.

9.6 FAA Airport Design Standards Review

The Federal Aviation Administration (FAA) has standards and recommendations for the geometric layout and engineering design of runways, taxiways, aprons, and other facilities at civil airports. As part of the Oregon Aviation Plan, each airport in the system was reviewed for non-standard design and construction related to airport Object Free Areas (OFA), Runway Safety Areas (RSA), and Runway Protection Zones (RPZ).

9.7 OFA, RSA, and RPZ Analysis

The consultant began the aerial portion of the analysis of statewide airport system deficiencies by developing KMZ files for each airport depicting each Runway OFA, RSA, and RPZ. Aerial images overlain with these KMZ files were analyzed individually by the consultant for deficiencies, which generally includes vehicle/aircraft parking, trees, brush, man-made obstructions, roads, buildings, structures, pedestrian trails, and potential RSA grading issues. In some instances, consultant knowledge of a specific issue, known obstacle, or deficiency not recognizable in the aerial images were able to be identified. Additionally, the runway/taxiway separation for each primary runway with a full or partial parallel taxiway was analyzed for compliance with FAA standards and any non-standard separation issues identified.

Table 9-5 sums the number of the deficiencies for the OFA, RSA, RPZ and parallel taxiway separation found for each airport. **Appendix F** provides aerial images of each airport and color codes deficiencies by three types. Green symbols indicate nonstandard issues in the OFA, Red symbols indicate nonstandard land use issues in the RPZ and Blue indicate nonstandard issues found in the RSA. In September 2012, the FAA issued interim policy guidance[1] on Land Uses within RPZs; to address what constitutes a compatible land use and how to evaluate proposed land uses contained within an RPZ. The FAA is now requesting Airports analyze RPZ land use conditions if a land use change is being proposed as a result of:

- An airfield project (e.g. runway extension, runway shift)
- A change in the critical aircraft that increases the RPZ dimensions
- A new or revised instrument approach procedure that increases the RPZ dimensions
- A local development proposal in the RPZ (either new or reconfigured)

An Alternatives Analysis of existing and proposed incompatible land use conditions within an RPZ provides information to the FAA to allow them to determine whether the future actions of a proposed plan (e.g. Master Plan/ALP) are sufficient to meet the FAA RPZ land use compatibly guidance. The objective of an RPZ Alternatives Analysis is to identify preferred plans to improve compliance with FAA Airport Design Standards for Runway Protection Zones (RPZ) at the end of each runway.

TABLE 9-5: NUMBER OF DEFICIENCIES FOR THE OFA, RSA, RPZ, AND PARALLEL TAXIWAY SEPARATION

FAA ID	Airport	Number of Non-Standard Deficiencies			
		RSA	OFA	RPZ	RWY/TWY Separation
S12	Albany Municipal			19	
R03	Alkali Lake State	1	2	2	
1S8	Arlington Municipal	1	2	3	
S03	Ashland Municipal Airport - Sumner Parker Field		6	7	
AST	Port of Astoria Regional			4	
UAO	Aurora State		9	23	
BKE	Baker City Municipal			17	
S05	Bandon State				Non-Standard
2S2	Beaver Marsh State		4	9	
BDN	Bend Municipal			3	
M50	Boardman			3	
BOK	Brookings		1	6	
BNO	Burns Municipal			2	
5S6	Cape Blanco State Airport				
CZK	Cascade Locks State	1	8	17	
17S	Chehalem Airpark		16	11	
2S7	Chiloquin State			8	
62S	Christmas Valley			7	
DLS	Columbia Gorge Regional-The Dalles			10	
3S9	Condon State Airport - Pauling Field			3	
CVO	Corvallis Municipal			6	
61S	Cottage Grove State Airport - Jim Wright Field				
S48	Country Squire Airpark		7	7	Non-Standard
LMT	Crater Lake-Klamath Regional		2	9	
5S2	Crescent Lake State	1	5	14	
77S	Creswell Hobby Field Airport			5	
6S4	Davis		2	7	
PDT	Eastern Oregon Regional Airport at Pendleton				
8S4	Enterprise Municipal	3	6	6	Non-Standard
EUG	Eugene Airport-Mahlon Sweet Field			2	
6S2	Florence Municipal			4	
5S1	George Felt	2	8		
4S1	Gold Beach Municipal			8	

FAA ID	Airport	Number of Non-Standard Deficiencies			
		RSA	OFA	RPZ	RWY/TWY Separation
GCD	Grant County Regional			8	
3S8	Grants Pass			1	
HRI	Hermiston Municipal			6	
3S4	Illinois Valley		2	13	
7S5	Independence State			3	
JSY	Joseph State			9	
4S2	Ken Jernstedt Airfield		11	6	
LGD	La Grande-Union County		1	5	
5S5	Lake Billy Chinook			3	
LKV	Lake County			3	
9S3	Lakeside Municipal			41	
S30	Lebanon State			9	
7S9	Lenhardt Airpark	6	3	7	
9S9	Lexington		1	5	
S33	Madras Municipal				
4S7	Malin	2	1	7	
26U	McDermitt State				
00S	Mckenzie Bridge State	1	9		
MMV	McMinnville Municipal	1	1	4	
25U	Memaloose	4	9	4	
S49	Miller Memorial Airpark			4	
12S	Monument Municipal	2	5	7	
4S9	Mulino State		1	3	
16S	Myrtel Creek Municipal				
3S7	Nehalem Bay State	3	16	7	
ONP	Newport Municipal				Non-Standard
5S0	Oakridge State	1	7	5	
ONO	Ontario Municipal			20	
28U	Owyhee reservoir State				
PFC	Pacific City State	3	23	29	
22S	Paisely		14	3	
24S	Pinehurst State		20	3	
HIO	Portland-Hillsboro Airport		2	7	
PDX	Portland International Airport				

FAA ID	Airport	Number of Non-Standard Deficiencies			
		RSA	OFA	RPZ	RWY/TWY Separation
TTD	Portland-Troutdale Airport			4	
6S6	Powers Hayes Field		2	6	
S39	Prineville-Crook County			4	
64S	Prospect State	3	18	4	
RDM	Redmond Municipal Airport-Roberts Field			3	
MFR	Rogue Valley International - Medford			11	
REO	Rome State	2		2	
RBG	Roseburg Regional			11	
SLE	Salem McNary Field		1	22	
03S	Sandy River	5	11	15	
8S3	Santiam Junction State	1	4	4	
SPB	Scappoose Industrial Airpark			5	
56S	Seaside Municipal		5	8	
S45	Siletz Bay State		4	7	
45S	Silver Lake USFS			2	
6K5	Sisters Eagle Air		31	19	Non-Standard
4S4	Skyport	2	2	3	
OTH	Southwest Oregon Regional	1			
2S6	Sportsman Airpark	2	1	23	Non-Standard
7S3	Starks Twin Oaks	2	1	4	Non-Standard
S21	Sunriver		16	5	Non-Standard
TMK	Tillamook			6	
3S6	Toketee State		15	3	
5S4	Toledo State		8	6	
5S9	Valley View	6	12	8	Non-Standard
05S	Vernonia Municipal	3	5	1	
R33	Wakonda Beach State	3	20	17	
35S	Wasco State				
	Total	**60**	**336**	**551**	**9**

Source: Century West, Jviation

9.8 Compliance with Oregon Transportation Plan Goals

The OAP v6.0 has addressed each of the Transportation Plan (OTP) goals, where applicable, to meet the intent of the OTP. Continual assessment of the goals and the OAP v6.0 is recommended to provide a fresh evaluation of the ever-changing needs and demands placed on the system by the various aviation users. The foundation provided in the OAP v6.0 is used to assess all state, regional, and local aviation facilities and services and creates a strategy that will guide transportation improvement decisions over the next 20 years.

OTP Goal 1 – Mobility and Accessibility

To enhance Oregon's quality of life and economic vitality by providing a balanced, efficient, cost-effective and integrated multimodal transportation system that ensures appropriate access to all areas of the state, the nation and the world, with connectivity among modes and places.

An effort was made to address mobility and accessibility to the aviation system in several ways. First, it was noted that it was important to have aviation opportunities throughout the state, therefore it is necessary to maintain the existing infrastructure as is it exists today. To increase the accessibility for aircraft passengers and cargo, additional precision approaches with vertical guidance were noted as being recommended at select airports. Additionally, ground transportation was noted as being available at airports serving larger population areas. Ground transportation included taxi service, rental car, courtesy transportation, or Uber/Lyft service.

OTP Goal 2 – Management of the System

To improve the efficiency of the transportation system by optimizing the existing transportation infrastructure capacity with improved operations and management.

The OAP v6.0 provides guidance on developing and preserving a system of airports ranging in size from large commercial service airports to small rural airstrips providing access to all Oregonians. Research using GIS identified that nearly 90 percent of all Oregonians reside within 30 minutes' drive of an airport.

OTP Goal 3 – Economic Vitality

To promote the expansion and diversification of Oregon's economy through the efficient and effective movement of people, goods, services and information in a safe, energy-efficient and environmentally sound manner.

Economic Vitality identifies that a reliable public transportation system supports the livability and economic vitality of Oregon communities, including airports. The OAP v6.0 promotes and supports the use of airports for tourism, business, and recreation purposes. Additionally, each airport was evaluated for its economic impact to its local community as well as the state. Creating this baseline impact of the aviation system was an initial step addressing this goal. Additionally, the performance criteria, as outlined in Chapter 4 of this document, provided a set of evaluation criteria that are facilities or services which increase the potential economic vitality for an airport. These services include providing such options as fuel service, aircraft maintenance, pilot lounge areas, aircraft storage areas, etc. Addressing these issues was noted as an important element for most of the airport categories.

OTP Goal 4 - Sustainability

To provide a transportation system that meets present needs without compromising the ability of future generations to meet their needs from the joint perspective of environmental, economic and community objectives. This system is consistent with, yet recognizes differences in, local and regional land use and economic development plans. It is efficient and offers choices among transportation modes. It distributes benefits and burdens fairly and is operated, maintained and improved to be sensitive to both the natural and built environment.

The OAP focuses on the safety of its users while maintaining a sustainable future – socially sustainable, providing for the aviation needs of the residents of the state; economically sustainable, providing economic development opportunities and financing the aviation system; and, environmentally sustainable, incorporating stewardship of natural resources.

The ODA updated the OAP v6.0 to review and analyze local jurisdiction compliance with state regulations regarding land uses surrounding airports and make recommendations on how to better implement those regulations. This Land Use Compatibility Compliance Report details the steps taken to collect and analyze land use compatibility information for public use airports, explains how this data was analyzed, and identifies the extent to which jurisdictions comply with state laws. The last section of this report provides guidance on prioritizing assistance for jurisdictions whose policies and land use regulations put airports and adjacent communities at risk. Land use compliance is presented in Chapter 9 of the report.

Goal 5: Safety and Security

To plan, build, operate and maintain the transportation system so that it is safe and secure.

The extensive aviation system in Oregon is a crucial asset to the state during times of emergency. Airports enable emergency rescue crews to quickly access remote or hard-hit areas, and supply resources to and evacuate areas that may otherwise be unreachable via roadway, boat, and rail. As such, this study included an inventory of airports that support emergency services. Further, this study inventoried airports located within the Cascadia subduction zone (CSZ) that may be impacted or destroyed during a zone event. This study did not include an in-depth resiliency analysis but rather a high-level overview of airports that currently provide emergency services and those that may likely be unable to provide such service following a Cascadia subduction zone event.

Goal 6: Funding and Strategic Investment

To create a transportation funding structure that will support a viable transportation system to achieve state and local goals today and in the future.

Based on the analysis of the recommended airport system's performance, the OAP v6.0 identifies specific projects for airports in the Oregon system. These are presented in Chapter 8. These projects improve the airport system's performance, especially as it relates to facility and service objectives identified as part of this study.

Estimated costs for each airport project were developed using broad assumptions appropriate for system level planning. Circumstances at individual airports vary considerably, often requiring additional expenditures not covered by these broad assumptions. With that in mind, these cost estimates are best viewed as a starting point for understanding overall project costs.

OTP Goal 7 - Coordination, Communication, and Cooperation

To pursue coordination, communication and cooperation among transportation users, providers and those most affected by transportation activities to align interests, remove barriers and bring innovative solutions so that transportation system functions as one system.

State Aviation Board Coordination

As the appointed body that governs actions related to the aviation system of Oregon, coordination with the State Aviation Board was vital in the development of the OAP v6.0. The extensive knowledge each of these Board members provided related to individual airports, state issues, FAA policies and procedures, and their commitment to serving the people of Oregon was invaluable to the process. ODA Board Members meet bimonthly and ODA staff, or the consultant, updated them on a regular basis. Project documents and reports were made available to the Board three weeks prior to ODA Board Meetings.

Public Involvement

The involvement of the public in the development of the OAP v6.0 was encouraged throughout the development of the document via the project website, conferences and ODA Board meetings. ODA staff and the project consultant updated key stakeholders and airport managers on the studies at several Oregon Airport Managers Association meetings and conferences. The public attending ODA Board bi-monthly meetings were appraised of the study process and results. Public comments and questions related to the study were addressed during these meetings. In addition, a 35-day public-comment period was provided for interested persons and agencies to review the entire OAP v6.0 Technical Report which was posted to the Project Web Page. This period was from December 3, 2018 to January 8, 2019.

Project Web Page

A project web page was established to allow the public to learn about the project through postings as the project progressed. Meeting handouts and copies of draft report chapters and documents as well as presentations were posted on the web page for public review. The final draft document was posted on the web page in December 2018 to allow for general public and agency review. Additionally, a project email address was also provided on the project web page which allowed persons to communicate with the Project Team via an online form.

10. RECOMMENDED PLAN

This update to Oregon Aviation Plan (OAP v6.0) has taken a comprehensive look at how the system is performing based on current conditions. This evaluation identified various actions and projects that are recommended to improve the performance of the Oregon airport system. The process for how the recommendations were developed are summarized in this chapter.

10.1 Review of FAA ASSET Roles for Oregon Airports

The National Plan of Integrated Airport Systems (NPIAS) is a document used by the Federal Aviation Administration (FAA). The NPIAS includes airports in the United States that are open to the public and that are eligible for federal funding. Fifty-seven of the publicly-owned airports in Oregon are included in the NPIAS. This section compares roles assigned by the FAA to study airports to their current state airport roles.

There are 3,340 existing or proposed airports in the United States that are included in the NPIAS[1]; 382 of these airports have scheduled commercial airline service. Commercial airports are classified as "Primary" airports, and commercial airports in the United States are further defined by the FAA as Large, Medium, Small, and Non-Hub airports. The hub assignments are based on the number of enplanements accommodated at each commercial airport. The remaining 2,958 landing facilities (which include airports, seaplane bases, and heliports) are referred to as "Nonprimary" airports; the nonprimary airports mainly consist of the nation's general aviation airports. However, within the Nonprimary category, 127 of the airports are "Nonprimary Commercial Service" airports. Nonprimary commercial service airports always have less than 10,000 annual passenger enplanements. Eastern Oregon Regional Airport in Pendleton, and Crater Lake-Klamath Regional, are Non-Primary Commercial Service airports.

Of the remaining airports in the Nonprimary category, 259 are classified as "reliever" airports. Reliever airports are designated by the FAA as high activity general aviation airports that provide general aviation operators with alternatives to congested commercial hubs. The remaining Nonprimary airports are all classified by the FAA in the NPIAS as general aviation airports.

Recognizing the unique roles played by the general aviation airports throughout the United States, the FAA conducted a study to further classify the general aviation airports included in the NPIAS. FAA classifications apply to all reliever and general aviation airports included in the NPIAS. FAA published a report, *General Aviation Airports: A National Asset (ASSET)*, in May 2012. This report documented the following:

- The importance of the nation's general aviation airport system
- The need to establish new categories or roles for general aviation airports
- A description of each ASSET role or category
- Lists showing each airport in the NPIAS identified by its FAA ASSET category

A second study was completed by the FAA in March 2014 (*ASSET 2: In-Depth Review of the 497 Unclassified Airports*) to further consider classifications for general aviation airports, especially those that initially fell in the "Unclassified" category. Airports assigned to the Unclassified category were determined, by the FAA, to no longer meet the basic criteria for NPIAS inclusion. At this time, the Unclassified airports continue to be shown in the NPIAS, but they are not eligible for FAA entitlement funding. The Unclassified airports can still compete for discretionary funding and state apportionment from the FAA.

[1] From the FAA's National Plan of Integrated Airport Systems (2017-2021)

ASSET noted five key aeronautical functions or types of activity supported by the nation's general aviation airport system. As part of ASSET, airports in the Oregon aviation system were examined by the FAA to determine their appropriate role in the national airport system; not all airports included in the state system are part of the federal system as defined in NPIAS[2].

Aeronautical functions considered for airports as part of the ASSET role assignment process included:

- Emergency preparedness and response,
- Critical community access for remote areas,
- Commercial, industrial, and economic activity functions,
- Access to tourism and special events, and
- Other aviation specific functions, including corporate flights and flight instruction.

As part of ASSET, five categories or roles were identified by the FAA to further refine and distinguish roles played by general aviation airports included in the NPIAS. New categories/roles for general aviation airports included in the NPIAS were developed to provide federal policy makers with a better understanding of the relative contribution of all airports to the nation's vast general aviation system. While more detailed than the previous category designations of only reliever and general aviation, the new federal roles established in ASSET are still broad. The five roles for general aviation airports included in the NPIAS (as established by ASSET), and the criteria used to place each airport into a role, are presented in **Table 10-1.**

TABLE 10-1: FAA ASSET AIRPORT CATEGORIES AND CRITERIA

Asset Category (# of NPIAS Airports in the United States assigned to the category)	Criteria
National (89 airports nationwide): Supports national and state airport systems by providing communities with access to national and international markets in multiple states and throughout the United States.	1) 5,000+ instrument operations, 11+ based jets, 20+ international flights, or 500+ interstate departures 2) 10,000+ enplanements OR 3) 500+ million lbs. of landed cargo
Regional (530 airports nationwide): Supports regional economies connecting communities to statewide and interstate markets.	1) Metropolitan Statistical Area (MSA) and 10+ domestic flights of 500 miles, 1,000 instrument ops, 1+ based jet, or 100+ based AC 2) Located in an MSA and meets definition of commercial service
Local (1,262 airports nationwide): Supplements local communities by providing access to intrastate and some interstate markets.	1) 10+ instrument operations and 15+ based aircraft OR 2) 2,500+ passengers
Basic (813 airports nationwide): Links the community with national airport system and supports general aviation activities.	1) 10+ based aircraft; OR 2) 4+ based helicopters; OR 3) Located 30+ miles from nearest NPIAS airport 4) Used by US Forest Service, or US Marshalls, or US Customs and Border Protection, or US Postal Service, or has Essential Air Service; OR 5) New or replacement airport activated after 1/1/01
Unclassified (256 airports nationwide): Tends to have limited activity; and does not meet NPIAS eligibility criteria.	Airports that do not meet the criteria of the Basic category

Source: FAA National Plan of Integrated Airport Systems (2017-2021), *General Aviation Airports: A National Asset (ASSET)*, and *ASSET 2: In-Depth Review of the 497 Unclassified Airports*

The FAA uses general aviation categories to "provide a baseline from which to measure changes in operations and needs." ASSET airport categories are incorporated into NPIAS reports to Congress; these reports identify five-year nationwide development and funding needs for the federal airport system. The FAA re-examines and

[2] There are 38 additional general aviation airports included in the Oregon aviation system that are not included in the NPIAS.

updates the roles of Nonprimary airports biennially, in conjunction with the NPIAS Report to Congress. This update was last completed in 2015, in preparation of the 2017 NPIAS report.

Nine of the Nonprimary airports in Oregon that were initially designated as Unclassified in the 2012 study were re-categorized from the original ASSET study, based on a review of the criteria shown in **Table 10-1**. Airports being removed from the Unclassified category include: Illinois Valley (3S4), Lexington (9S9), and Myrtle Creek Municipal (16S). Every two years, the FAA will further evaluate airport criteria for inclusion in the NPIAS, compare historic funding levels by general aviation funding category, and look at other funding considerations.

As shown in **Table 10-1**, the criteria used to place airports in various ASSET roles are largely driven by operational activity at an airport (based aircraft and operations). State roles for Oregon airports established in the 2007 OAP are summarized below:

- **Category I – Commercial Service Airports:** These airports support some level of scheduled commercial airline service to both domestic and international destinations, in addition to a full range of general aviation aircraft operations.
- **Category II – Urban General Aviation Airports**: These airports support all general aviation aircraft and accommodate corporate aviation, including operations by business jets, helicopters, and other general aviation aircraft. The primary users are business-related and service a large geographic region, or they experience robust levels of general aviation activity
- **Category III – Regional General Aviation Airports**: These airports support most twin and single engine aircraft, may accommodate occasional business jets, and also support regional transportation needs
- **Category IV – Local General Aviation Airports**: These airports primarily support single engine, general aviation aircraft, but can accommodate smaller twin-engine general aviation aircraft. They also support local air transportation needs and special use aviation activities
- **Category V – Remote Access/Emergency Service (RAES) Airports**: These airports primarily support single-engine, general aviation aircraft, special use aviation activities, and access to remote areas and/or provide emergency service access

It is important to note there are differences in the factors used to establish FAA roles for general aviation airports, when compared to the more comprehensive list of factors used to assign airport roles within the Oregon aviation system. ASSET roles primarily consider activity, while state factors considered a more comprehensive set of unique airport and community characteristics.

There are 256 US airports in the NPIAS that do not currently fall into one of the four original ASSET airport categories described in **Table 10-1**; included in this number are six airports in Oregon. These airports are considered "Unclassified" airports. The primary factor used by FAA for assigning airports to the Unclassified category is that the airport has less than 10 based aircraft. It was noted by FAA in the ASSET report that Unclassified airports have seen an erosion of based aircraft and activity due to population decreases, economic shifts, aviation industry changes, or economic recession.

The general aviation NPIAS airports in the Oregon aviation system are listed by their corresponding ASSET category in **Table 10-2**. This table shows the current state role for each airport and compares it to the state role, as applicable, to the airport's role in ASSET. As **Table 10-2** reflects, for the most part, ASSET and state roles for Oregon airports are generally consistent. There are some instances where the FAA has a "higher" role for an Oregon airport in the federal system, but there are also instances where the state role reflects a higher level of importance. As part of this update to the OAP, information presented in **Table 10-2** will be one factor considered to determine if ODA airport role changes are appropriate.

OREGON AVIATION PLAN

TABLE 10-2: COMPARISON OF OREGON AIRPORT ROLES TO 2017 FAA ASSET ROLES (GENERAL AVIATION NPIAS)

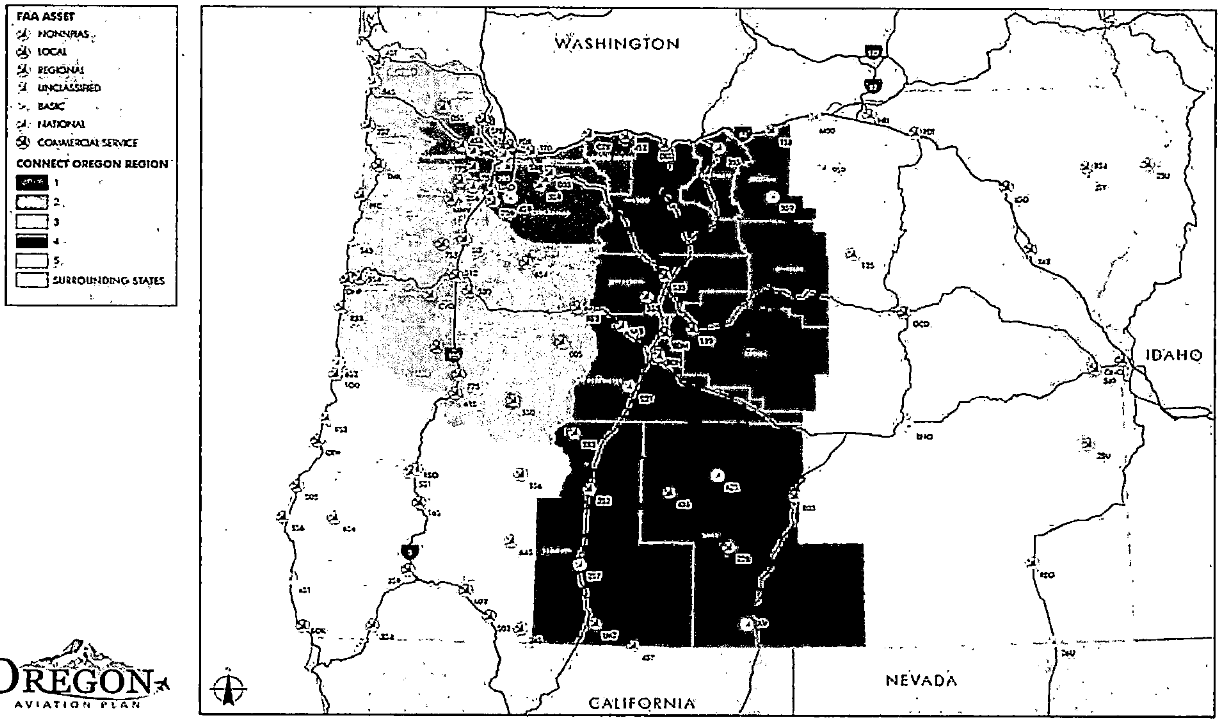
Associated City	FAA ID	Airport Name	NPIAS 2016	FAA Asset Study	OAP v6.0 2016
Albany	S12	Albany Municipal Airport	Yes	Local	IV
Ashland	S03	Ashland Municipal-Sumner Parker Field	Yes	Local	III
Astoria	AST	Port of Astoria Regional Airport	Yes	Local	II
Aurora	UAO	Aurora State Airport	Yes	National	II
Baker City	BKE	Baker City Municipal Airport	Yes	Local	III
Bandon	S05	Bandon State Airport	Yes	Local	III
Bend	BDN	Bend Municipal Airport	Yes	Regional	II
Boardman	M50	Boardman Airport	Yes	Unclassified	IV
Brookings	BOK	Brookings Airport	Yes	Local	IV
Burns	BNO	Burns Municipal Airport	Yes	Local	III
Cave Junction	3S4	Illinois Valley Airport	Yes	Local	IV
Chiloquin	2S7	Chiloquin State Airport	Yes	Basic	V
Christmas Valley	62S	Christmas Valley Airport	Yes	Basic	IV
Condon	3S9	Condon State – Pauling Field	Yes	Basic	IV
Corvallis	CVO	Corvallis Municipal Airport	Yes	Regional	II
Cottage Grove	61S	Cottage Grove State Airport	Yes	Basic	IV
Creswell	77S	Creswell - Hobby Field	Yes	Local	IV
Florence	1O0	Florence Municipal Airport	Yes	Local	IV
Gleneden Beach	S45	Siletz Bay State Airport	Yes	Basic	IV
Gold Beach	4S1	Gold Beach Municipal Airport	Yes	Basic	IV
Grants Pass	3S8	Grants Pass Airport	Yes	Local	III
Hermiston	HRI	Hermiston Municipal Airport	Yes	Regional	III
Hood River	4S2	Ken Jernstedt Airfield	Yes	Local	IV
Independence	7S5	Independence State Airport	Yes	Local	IV
John Day	GCD	Grant County Regional / Ogilvie Field	Yes	Basic	III
Joseph	JSY	Joseph State Airport	Yes	Basic	IV
Klamath Falls	LMT	Crater Lake-Klamath Regional Airport	Yes	Regional	I
La Grande	LGD	La Grande / Union County Airport	Yes	Local	III
Lakeview	LKV	Lake County Airport	Yes	Basic	III
Lebanon	S30	Lebanon State Airport	Yes	Local	IV
Lexington	9S9	Lexington Airport	Yes	Basic	IV
Madras	S33	Madras City-County Airport	Yes	Local	IV
McDermitt	26U	McDermitt State Airport	Yes	Basic	V
McMinnville	MMV	McMinnville Municipal Airport	Yes	Regional	II
Myrtle Creek	16S	Myrtle Creek Municipal Airport	Yes	Basic	IV
Newberg	2S6	Sportsman Airpark	Yes	Unclassified	IV

Associated City	FAA ID	Airport Name	NPIAS 2016	FAA Asset Study	OAP v6.0 2016
Newport	ONP	Newport Municipal Airport	Yes	Regional	II
Ontario	ONO	Ontario Municipal Airport	Yes	Local	III
Pendleton	PDT	Eastern Oregon Regional Airport	Yes	Regional	I
Portland	61J	Portland Downtown Heliport	Yes	Unclassified	II
Portland	HIO	Portland Hillsboro Airport	Yes	National	II
Portland	4S9	Mulino State Airport	Yes	Local	IV
Portland	TTD	Portland Troutdale Airport	Yes	Local	II
Prineville	S39	Prineville Airport	Yes	Local	IV
Roseburg	RBG	Roseburg Regional Airport	Yes	Regional	III
Salem	SLE	McNary Field	Yes	Regional	II
Scappoose	SPB	Scappoose Industrial Airpark	Yes	Local	II
Seaside	56S	Seaside Municipal Airport	Yes	Unclassified	IV
Sunriver	S21	Sunriver Airport	Yes	Unclassified	IV
The Dalles	DLS	Columbia Gorge Regional Airport/The Dalles Municipal Airport	Yes	Local	III
Tillamook	TMK	Tillamook Airport	Yes	Local	III
Wasco	35S	Wasco State Airport	Yes	Unclassified	IV

Source: Jviation, 2019 FAA NPIAS REPORT (published September 2018)

Figure 10-1 shows ASSET roles for Oregon airports; this figure also shows NPIAS airports that currently are in the Unclassified category and system airports that are not included in the NPIAS.

FIGURE 10-1: FAA ASSET CATEGORY ROLES FOR OREGON PUBLIC AIRPORTS



Source: FAA 2019 NPIAS Report, Jviation

Table 10-3 presents a summary of the ASSET roles compared to current state airport roles set in the OAP v6.0. As shown, two of the Oregon NPIAS airports (3.5 percent) are classified as National Airports, nine airports (15.8 percent) are classified as Regional Airports, 23 airports (40.4 percent) are Local Airports, 12 airports (21.1 percent) are Basic Airports, and six airports (10.5 percent) are Unclassified. There are 40 Non-NPIAS airports in the state system (41.2 percent) which are not presented in **Table 10-3**. This information shows that it is possible that ODA could be the only non-local source of funding for maintaining and improving 46 of the airports in the Oregon aviation system (the 40 airports that do not qualify for NPIAS inclusion and the six that are currently Unclassified in ASSET).

For comparison, according to the *FAA National Plan of Integrated Airport Systems (2017-2021)*,approximately 3 percent of the general aviation airports in the United States (included in the NPIAS) fall in the National category, 16 percent are Regional Airports, 38 percent are Local Airports, 24 percent are Basic Airports, and about 7 percent are Unclassified.

TABLE 10-3: SUMMARY COMPARISON OF ASSET AND OAP V6.0 AIRPORT ROLES FOR OREGON NPIAS AIRPORTS

NPIAS/ASSET Category						Oregon	US NPIAS
	CS	Cat II	Cat III	Cat IV	Cat V	Total	Total
CS*	5					5	382
National		2				2	88
Regional	2	5	2			9	492
Local		3	9	11		23	1,278

NPIAS/ASSET Category						Oregon	US NPIAS
	CS	Cat II	Cat III	Cat IV	Cat V	Total	Total
Basic			2	8	2	12	840
Unclassified		1		5		6	243
	7	11	13	24	2	57	3,323
Percentage of Oregon Total							
CS*	8.8%	0%	0%	0%	0%	8.8%	11.5%
National	0.0%	3.5%	0%	0%	0%	3.5%	2.6%
Regional	3.5%	8.8%	3.5%	0%	0%	15.8%	14.8%
Local	0%	5.3%	15.8%	19.3%	0%	40.4%	38.5%
Basic	0%	0%	3.5%	14.0%	3.5%	21.1%	25.3%
Unclassified	0%	1.8%	0%	8.8%	0%	10.5%	7.3%
						100.0%	100.0%

Source: 2019-2023 NPIAS Report, https://www.faa.gov/airports/planning_capacity/npias/reports/ , Jviation analysis
Note: * Crater Lake-Klamath Regional and Eastern Oregon Airport at Pendleton are Commercial Service airports in the OAP v6.0 but are listed as Regional airports in the FAA ASSET categories.

As **Table 10-3** shows, when compared to the national distribution of airports by ASSET role, Oregon's NPIAS airports are within approximately four percentage points of the US NPIAS. For example, 14.8 percent of the airports in the US NPIAS are in the Regional category while 15.8 percent of Oregon's NPIAS Airports are in the Regional category. Should FAA move to a system for distributing FAA grants to eligible airports that is ASSET-based, Oregon airports may be able to compete relatively well. On the other hand, the state's percentage of airports in the "Unclassified" category is higher than the national average. Historically, the Unclassified airports in the Oregon system were each eligible for $150,000 in annual general aviation entitlement funding; this is no longer the case.

10.1.1 Unclassified Airports

There are six Oregon NPIAS airports that are in the Unclassified ASSET category; these airports are included in **Table 10-4**. As **Table 10-4** shows, only two of the Unclassified airports, Sportsman's Airpark and Sunriver, meet the FAA minimum ASSET inclusion criteria of 10 or more based aircraft. Two of the Unclassified airports (Seaside Municipal and Sportsman Airpark) shown in **Table 10-4** are also each relatively close to another NPIAS airport. Three of the airports are greater than 20 miles driving distance from another airport and are not considered to have an overlapping service area.

Based on available data, ownership status, and current characteristics for the Unclassified airports in Oregon, there does not appear, at this time, to be justification for requesting FAA to reconsider the Unclassified status for these Oregon airports.

TABLE 10-4: FAA UNCLASSIFIED CATEGORY AIRPORT SUMMARY

City	Airport	FAA ID	Ownership	Based Aircraft	Distance to Closest NPIAS Airport in Miles
Boardman	Boardman	M50	Port	0	HRI - Hermiston Municipal Airport (30)
Newberg	Sportsman Airpark	2S6	Private	44	UAO - Aurora State Airport (15)
Portland	Portland Downtown	61J	City	0	PDX - Portland International Airport (8)
Seaside	Seaside Municipal	56S	City	3	AST – Port of Astoria Regional Airport (10)

Sunriver	Sunriver	S21	Private	28	BDN - Bend Municipal Airport (24)
Wasco	Wasco State	35S	State	4	DLS - Columbia Gorge Regional/The Dalles Municipal Airport (31)

Source: Jviation analysis, MapQuest.com

10.1.2 Non-NPIAS Airport Review

Forty Non-NPIAS airports are analyzed for their ability to meet NPIAS candidacy. Non-NPIAS airports with more than 10 based aircraft currently, (or forecasted to have more than 10 based aircraft by 2025), are reviewed for their ownership, activity in terms of based aircraft, and proximity to NPIAS airports in Oregon. While these airports are included in Oregon's state airport system, they are not included in NPIAS. These airports are shown in **Table 10-5**, which provides basic information on these airports as it was collected as part of this study's inventory effort.

The FAA's criteria for an airport's inclusion in the NPIAS are based on a variety of factors such as operational demand, geographic location, airport sponsorship, as well as other criteria. The following sections discuss criteria considered for an airport's inclusion in the NPIAS:

- Airport formerly in the NPIAS
- Airport's location in relation to the nearest NPIAS airport (serves a community located at least 20 miles or a 30-minute drive from the nearest existing or proposed NPIAS airport)
- Reliever airport
- Airports receiving US Mail Service
- Airports with a National Defense Role

TABLE 10-5: CHARACTERISTICS OF OREGON NON-NPIAS AIRPORTS

FAA ID	Associated City	Non-NPIAS Airport	Based Aircraft	Nearest NPIAS Airport	Driving Distance in Miles	Drive Time in Minutes
17S	Newberg	Chehalem Airpark	31	Sportsman's	6	12
7S9	Hubbard	Lenhardt Airpark	113	Aurora	8	14
6K5	Sisters	Sisters Eagle Air Airport	17	Redmond	21	27
S48	Sandy	Country Squire Airpark	27	Portland-Troutdale	20	25
8S4	Enterprise	Enterprise Municipal	31	Joseph State Airport	7	10
5S1	Roseburg	George Felt	17	Roseburg	5	7
5S5	Culver	Lake Billy Chinook	10	Madras	25	37
03S	Sandy	Sandy River	20	Portland-Troutdale	18	25
7S3	Hillsboro	Stark's Twin Oaks	113	Portland-Hillsboro	13	17
5S4	Toledo	Toledo State*	9	Newport	13	24
5S9	Estacada	Valley View	33	Portland-Troutdale	20	29

Source: Jviation analysis, www.mapquest.com
Note: *only non-NPIAS airport in Oregon forecast to exceed 10 based aircraft by 2025

An existing or proposed airport not meeting the criteria above may be included in the NPIAS if it meets all the following:

- It is included in the state airport system plan (SASP)

- It serves a community more than 30 minutes from the nearest NPIAS airport
- It is forecast to have 10 or more based aircraft within the short-term planning period (five years)
- There is an eligible public sponsor willing to undertake the ownership and development of the airport

Airports that do not meet any of the previously discussed entry criteria may be considered for inclusion in the NPIAS based on a special justification. This justification must show that there is a significant national interest in the airport. Special justifications include:

- A determination that the benefits of the airport will exceed its development costs
- Written documentation describing isolation
- Airports serving the needs of Native American communities
- Airports needed to support recreational areas
- Airports needed to develop or protect important national resources

For the 40 Oregon airports that are not currently included in the NPIAS, 11 of the airports meet the minimum NPIAS inclusion criteria of having, or are forecast to have, 10 based aircraft. However, 10 of these 11 airports are 30 minutes or less from another airport already included in the NPIAS. The single airport which is greater than thirty minutes from a NPIAS airport is Lake Billy Chinook Airport near Culver, Oregon. The nearest NPIAS airport is Madras, which is a 37-minute drive. Lake Billy Chinook Airport currently has 10 based aircraft which are mainly stored in "through-the-fence" hangars adjacent to the airport. Lake Billy Chinook Airport is a privately-owned facility, and although there are other privately-owned airports in Oregon currently in the NPIAS, it is unlikely the FAA would consider an additional privately-owned airport for NPIAS inclusion.

The next section discusses and identifies any suggested changes to current ASSET role classifications for the Oregon airports included in NPIAS.

10.2 Analysis and Recommendations for Changes to Current State Airport Roles

Aviation is a dynamic industry and airports and the role they play in meeting the state's transportation and economic needs and objectives can change over time. A review of current airport roles was undertaken to determine if changes to current roles appear to be appropriate. Current roles for Oregon airports are shown in **Table 10-2.** The need to change state airport roles identified in the OAP v6.0 considered several factors which include:

- Outside influences on an airport.
- Significant improvements in airport infrastructure.
- Current aviation activity on the airport.

This section explains the process used to incorporate these factors.

An OAP Category Change Matrix was developed using a ranking by level of importance to determine whether an airport's OAP v6.0 Category should be elevated. The OAP Category Change Matrix is presented in **Table 10-8.** The three main factors had more than one component to address changes at an airport since the 2007 study. The OAP Category Change Matrix assigned points to each component. For example, if an airport extended its runway since 2007 it received two points. The following provides an explanation of the three ranking factors.

Outside Influences on Airports

Airports are influenced by off airport activity as well public policies over which the airport sponsor may have little control. These range from population growth in the airport's service area, to the FAA's classification in the NPIAS and ASSET. Outside influences considers the following three factors:

- Population growth
- FAA NPIAS Inclusion, ASSET category
- ASSET category

Population growth: The OAP Category Change matrix analysis assigned 1 point to the airport in the matrix if the population of the county the airport is located in experienced a growth rate greater then than the State's growth rate experienced between 2010 and 2016. This growth rate for Oregon was 6.4 percent over the six-year period. Only 17 airports of the 97 facilities are located in counties that met or exceeded this growth rate.

NPIAS Inclusion: There are 56 airports and one heliport in the NPIAS in Oregon for a total of 57 facilities. If an airport is included in the NPIAS, it was assigned one point. Non-NPIAS airports receive no points.

FAA ASSET Category Analysis: A review to determine changes to current state airport roles considered the airport's role as assigned by FAA in the ASSET study. The review found that airport roles in the OAP v6.0 are generally aligned with FAA ASSET roles. In some instances, however, FAA-assigned roles show more federal significance for some Oregon airports. If this was the case the airport received one point in the OAP Category Change matrix. **Table 10-6** compares the FAA ASSET Role with the OAP v6.0 Category.

TABLE 10-6: OAP V6.0 CATEGORIES COMPARISON TO FAA ASSET ROLES

FAA ASSET Role	National	Regional	Local	Basic	Unclassified
OAP Category	II	II	III	IV	V

OAP v6.0 Category I Commercial Service does not apply in the FAA ASSET since its focus is primarily on general aviation airports. For example, Albany Municipal has an OAP v6.0 category of IV, while the FAA ASSET role is considered a Local role. Since Albany Municipal has a relatively higher ASSET role than OAP v6.0 role, it is assigned one point in the matrix to reflect its higher federal significance. There are 15 OAP airports with more federal significance than OAP categorization and each are assigned one point. These are identified in **Table 10-8.**

Significant Airport Infrastructure and Improvements in Airport Infrastructure

Since the 2007 OAP, several airports have made significant facility improvements. Improvements such as runway extensions, Runway End Identifier Lights (REIL) and weather equipment installations, and global positioning system (GPS) approaches were included in the OAP Category Change Matrix. These improvements may lead to increased airport operations as well as attract aircraft owners to base their aircraft at the airport. Points were assigned to airports for the following factors. (Two points were assigned for each of these factors):

Installation of Weather Reporting Equipment: Automated Weather Observing System (AWOS) and Automated Surface Observing System (ASOS) are fully configurable airport weather system that provides continuous, real time information and reports on airport weather conditions. AWOS stations are mostly operated, maintained and controlled by aviation service providers. Installing weather reporting equipment improves operational safety at an airport for pilots. Weather reporting equipment also enhances GPS and instrument landing system (ILS) approaches at an airport. Two points were assigned to an airport in the matrix if weather equipment were installed since 2007.

Installation of Runway End Identification Lights: The REIL system provides rapid and positive identification of the end of the runway. The system consists of two synchronized, unidirectional flashing lights. These lighting systems are important for night time operations and operations during inclement weather. Two points were assigned to an airport in the matrix if REILs were installed since 2007.

Installation of a GPS based approach: Improved approaches to airports, which significantly increase operational benefits and safety, are now being implemented even at remote locations where conventional ground-based NAVAIDs such as ILS are unavailable. Since 2007 OAP, five Oregon airports have improved aircraft approaches with certificated GPS approaches. Two points were assigned to an airport in the matrix if GPS approaches were installed since 2007.

Extending the runway more than 400 fee: A runway extension of 400 feet or greater is used to identify significant improvements by the airport sponsor and FAA. Only two Oregon airports had runway extensions that met the criteria since the 2007 OAP. Two points were assigned to each of these airports.

Having a primary runway 5,000 in length or greater: A 5,000-foot paved runway is the typical minimum for business jet operations and longer runways are generally required for jets used by air carriers. Runway length for business jet aircraft can be based on an insurance industry requirement for a minimum length of 5,000 feet for aircraft greater than 12,500 pounds. Two points were assigned to an airport in the matrix if an airport has a primary runway 5,000 or greater in length.

Based aircraft increasing to more than 10 since 2007 OAP: Airports with less than 10 based aircraft in 2007 and increasing to over 10 based aircraft by 2017 were assigned two points. Five airports in Oregon met this criterion.

Current Aviation Activity on the Airport

Key aviation activities that benefit the local economy and welfare of the community were included in the OAP Category Change Matrix. These activities were given the most weight in the matrix since it they are tied to off-airport needs such as patient transport to hospitals, protection of property and natural resources as well as direct links to the national economy.

Scheduled Air Cargo: There are 14 airports in Oregon that support regularly scheduled air cargo service. PDX is the only airport in Oregon with cargo jet activity. There are 13 airports in Oregon with contracted air cargo feeder aircraft activity. These contractors utilize turboprop or piston engine aircraft. Three points were assigned to an airport in the matrix if it has scheduled air cargo service.

Air Ambulance Based: There are 15 Oregon airports that support emergency services through a local air ambulance service provider with air ambulance aircraft based on the airport. Three points were assigned to an airport in the matrix if it has an air ambulance based on the airport.

Based Aerial Wildland Firefighting: There are 15 airports in Oregon that support wildland firefighting services through a full-time based firefighting aircraft operation. These airports support on a year-round basis either a single engine attack (SEAT) aircraft or a multi-engine aerial tanker. Three points were assigned to an airport in the matrix if it has wildland firefighting aircraft based on the airport.

United States Coast Guard (USCG) Station: Three airports in on or near the Oregon Coast have either a US Coast Guard Station or Facility with based USCG aircraft. Three points were assigned to an airport in the matrix if it has a USCG Station or Facility.

10.2.1 OAP Category Change Matrix Review

A review of airports was undertaken and presented in a matrix to determine whether airports in the OAP v6.0 should be elevated to a higher role in the OAP v6.0 Airport Category. The analysis applied to system airports in Category V, IV and III. The analysis did not apply to airports in Category I since there is no higher category nor does it apply to Category II airports since these airports need to have scheduled airline service to meet the Category I requirements. Additionally, airports that are privately owned will remain within their current OAP v6.0 Categories. Lowering airport categories was not considered in the analysis since the focus was on airport system improvements that have been made and or where key aviation activities exist.

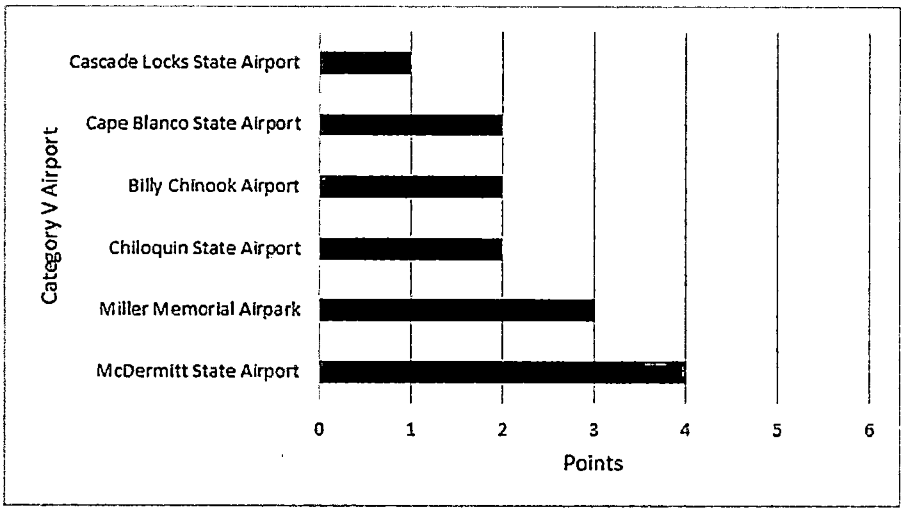
A matrix was developed based on a point system. The maximum points possible is 27 if an airport were to have points added for each factor. Changing an airport's Category is considered significant in airport system planning and the OAP Category Change Matrix developed for the analysis applies a stringent threshold for category changes. In order for a Category V airport to be elevated to a Category IV it needed to reach more than 5 points, while Category IV airports need to have more than 10 points to reach Category III status. For a Category III airport to be elevated to Category II it would need more than 15 points.

Results of the analysis are presented in **Table 10-8** while summaries for each OAP v6.0 category are provided as follows.

OAP v6.0 Category Matrix Results Summary

Category V – RAES Airports: There are 40 Category V airports in the OAP v6.0 (and one seaplane base) with 30 of these being publicly owned and considered in this analysis. Most of these airports, 24 in all, had no improvements since the 2007 OAP study nor significant aviation activity. These airports received no points. Category V airports need to have more than five points to reach Category IV status. Six airports received points, but none crossed the threshold of greater than five points. McDermitt State Airport has four points as a result of having both a paved runway greater than 5,000 feet in length and the airport's inclusion in the FAA NPIAS and ASSET. **Figure 10-2** identifies the six airports that received points in Category V. More detail of the point distribution is presented in the OAP Category Change Matrix in **Table 10-8.**

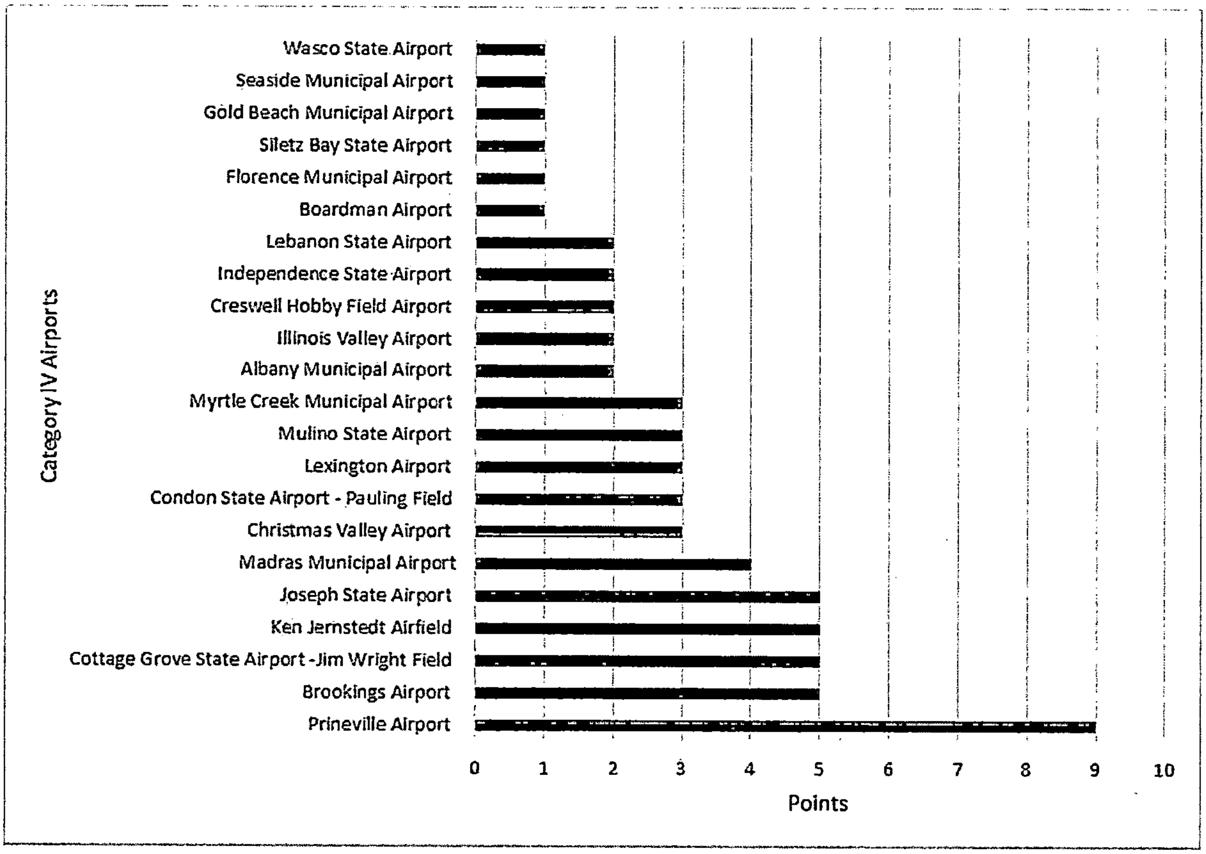
FIGURE 10-2: OAP CATEGORY CHANGE MATRIX RESULTS SUMMARY - CATEGORY V AIRPORTS



Source: Jviation

Category IV – Local General Aviation Airports: There are 27 Category IV airports in the OAP v6.0 with 22 being publicly owned and; therefore, considered in this OAP Category Change Matrix analysis. All 22 airports had improvements since the 2007 OAP study and/or some level of significant aviation activity identified. Category IV airports need to have more than 10 points to be upgraded to Category III status. Prineville Airport was assigned nine points and is the highest scoring airport in the Category IV analysis. Five airports trailed Prineville with just five points each. **Figure 10-3** identifies the 22 airports with points for Category IV airports. More detail of the point distribution is presented in **Table 10-8**.

FIGURE 10-3: OAP CATEGORY CHANGE MATRIX RESULTS SUMMARY - CATEGORY IV AIRPORTS



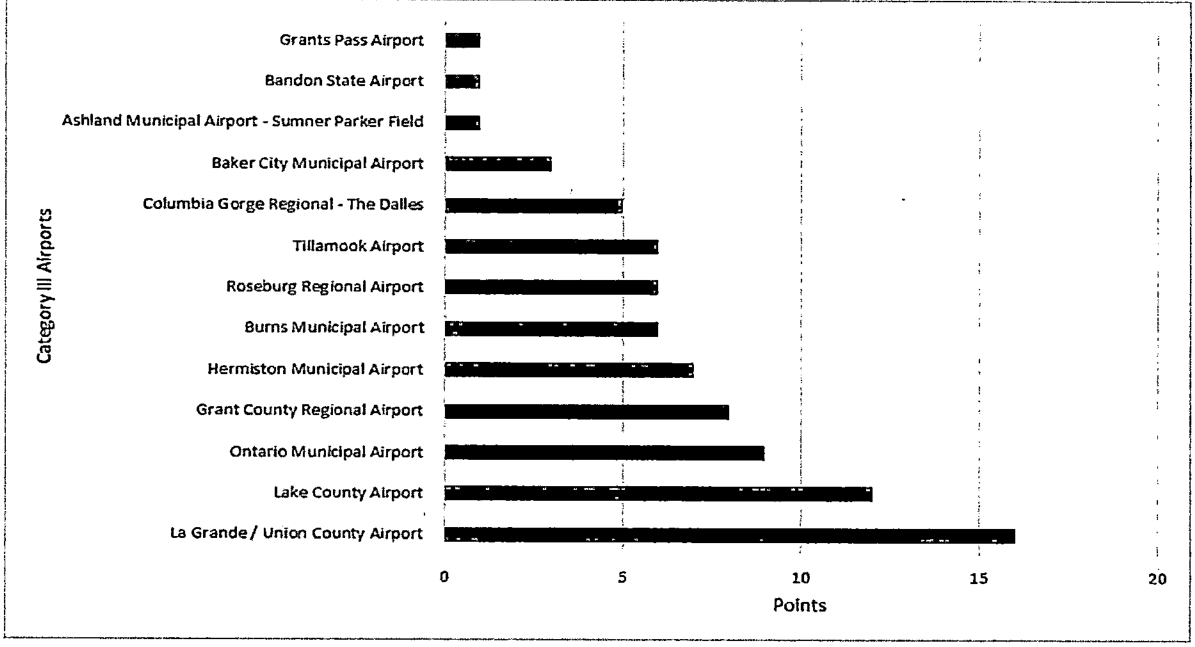
Source: Jviation

Category III – Regional General Aviation Airports: There are 13 Category III airports in the OAP v6.0 with all being publicly owned and therefore included in the OAP Category Change Matrix analysis. Each of these airports received points based on facility improvements since the 2007 OAP study and/or identified significant aviation activity. Category III airports need to have more than 15 points to reach Category II status. La Grande / Union County Airport was assigned 16 points, qualifying it for Category II status. La Grande is the highest scoring airport in the Category III analysis. La Grande has scheduled air cargo activity, an air ambulance based on the airport and the USFS has an Air Tanker Base located on the airport. Improvements at the airport since the 2007 OAP include a runway extension and a GPS approach. La Grande is the only airport in the matrix analysis reaching the threshold to be upgraded to a higher level.

Based on the OAP Category Change Matrix analysis it is recommended that La Grande / Union County Airport be assigned to the Category II – Urban General Aviation Airport. By assigning La Grande to Category II, the airport will be the only Category II airport in eastern Oregon on the Interstate 84 Corridor and will increase the population coverage for Category II airports from 2,459,600 to 2,481,848. Re-classifying the airport to Category II will require greater commitment by ODA, the FAA and the airport sponsor incoming years related to funding future improvements and annual maintenance. The following chapter will include information on airport funding of airports by OAP v6.0 Category.

Figure 10-4 identifies the 13 airports the points for Category III airports. More detail of the point distribution is presented in the matrix **Table 10-8**.

FIGURE 10-4: OAP CATEGORY CHANGE MATRIX RESULTS SUMMARY - CATEGORY III AIRPORTS



Source: Jviation

10.2.2 Land Use Compliance Recommendations

Based on the number of jurisdictions with land use authority over an ODA system airport that are not currently in compliance with State regulations, there is a significant amount of work needed to achieve statewide compliance. Fortunately, there are existing tools, programs, and grant opportunities that can be leveraged to enhance local compliance with the APR. The following sections describe these opportunities as well as the limitations associated with these tools, and what actions the ODA, as well as local jurisdictions, may pursue to meet mutually beneficial goals of enhancing safety around the State's public use airports.

State Programs

The ODA Airport Land Use Compatibility Guidebook includes model code language for safety overlay zones and land use and development requirements. These comprehensive model ordinances are an excellent starting point for jurisdictions undertaking policy and regulatory updates to protect airport operations. However, lack of funding and weak regulatory triggers to initiate or prioritize local updates make planning projects focused on APR compliance unlikely without incentives.

As discussed in this report, updating airport policies and protections in local comprehensive plans and regulatory development codes could be included as part of a local jurisdiction's Periodic Review, which is to be completed every 7-10 years, depending on the jurisdiction's size. The limitation of this approach includes the fact that it is not compulsory for all jurisdictions and the program, as noted by past participants in the League of Oregon Cities survey, suffers from complexity and length, as well as lack of funding. However, there is a regulatory requirement for some jurisdictions to undertake Periodic Review and the recent survey indicates that some cities remain interested in the program to update their long-range plans and implementing ordinances and that there are proponents of increased program funding. Funding for periodic review is typically procured through the Department of Land Conservation and Development (DLCD).

A more promising planning approach to APR compliance is addressing deficiencies as part of local Transportation System Plan (TSP) updates[3]. A TSP can be updated as a task in a local jurisdiction's Periodic Review program, but more typically the impetus is a need to update and fund transportation improvement lists. Funding for TSPs often comes through the Oregon Department of Transportation (ODOT) or through Transportation Growth Management (TGM), a joint ODOT/DLCD program.

The TPR dictates that airport districts—as well as public transit and port districts—participate in the development of TSPs for the facilities and services they provide. Local TSPs must be consistent with the policies in the OAP v6.0, and during the TSP update process development requirements are supposed to be reviewed and, if necessary, updated to be consistent with the APR. A TSP update must include an evaluation of the airport's consistency with state, regional, and local transportation and land use plans and the airport's function regarding meeting state, regional, and local air travel needs. The "Air" modal element of the TSP must be consistent with any facility master plans for all existing and planned public use airports within the jurisdiction's planning area and should address multi-modal access[4] to those airports as well as airport operations and protections. A good example of a TSP with a well-integrated airport plan is the 2012 Florence TSP, in which the Florence Municipal Airport Master Plan and Airport Layout Plan are summarized and specific projects related to the airport are listed as part of the City's transportation system.

Undertaking a robust modal element for Air, or an Air Plan section—as is found in the Florence TSP—as part of a TSP planning process is more of an exception than the rule. TSP planning projects are directed by the TPR and, while a required TSP element, the airport-related requirements are not typically a focus of a local TSP project scope. The reasons for the lack of focus on airport planning depend on the scope of the TSP project and the jurisdiction, limited project funding, the pressing need for funding for roadway projects and maintenance, and the more recent focus on active transportation modes (bicycle, walking, and transit).

Land Use Recommended Actions

State

- Continue coordination with DLCD
    - Schedule regular meetings between the Directors of ODA and DLCD to discuss where program objectives overlap.
    - Share with DLCD the findings of this report and identify "high priority" local jurisdictions that may be primed to undertake legislative updates that could include airport-related protections.
    - Develop systems to regularly communicate with DLCD to increase awareness of available state moneys that could be used by local jurisdictions to address needed airport protections in policy and regulatory requirements. In particular, coordinate with the TGM Program to align the

[3] TSP Guidelines can be used as a tool for developing Air modal elements in TSPs. The guidelines were updated in 2018. https://www.oregon.gov/ODOT/Planning/TSP-Guidelines/Pages/default.aspx
[4] https://www.oregon.gov/ODOT/Planning/TSP-Guidelines/Documents/TSP-Guidelines.pdf, page 10

priorities of this program with the objectives identified in this report and establish regular communications related to the TGM grant cycle and available funding.

- Engage with Regional Solutions
  - Establish regular communications with Regional Solutions staff and articulate ODA's interest in being "at the table" when issues arise that are related to, or have an impact on, airports within the State.
- Communicate with local planners
  - In communities that are just beginning, or have plans to begin, a new or updated airport master plan, communicate directly with planners—department heads or project managers in particular—regarding opportunities for updating policy and code language as part of the funded project.
  - Engage planners in the State through membership associations, such as the League of Oregon Cities, Association of Oregon Counties, and the Oregon chapter of the American Planning Association to communicate needs related to protecting the State's airports. Take advantage of both informal and formal speaking opportunities afforded by these organizations through regularly held meetings, special events, and annual conferences.
  - Use mailing lists and email contacts to communicate the findings of this report and promote ODA objectives related to improving local policies and regulatory requirements related to airports, as well as funding opportunities for regulatory updates that may be available.
- Explore partnership between ODA and Business Oregon
  - Correlate economic opportunities and initiatives (available industrial land, Enterprise Zones) with High Priority jurisdictions/airports and identify ways to coordinate and fund needed plan and ordinance updates.
- Explore partnership between ODA and ODOT
  - Coordinate the scoping of TSP projects (both new and updated local plans) to enhance the Air modal element in TSP planning projects.
  - Explore the option of ODA contributing funding to TSP projects for enhanced Air modal elements.
  - Consider TPR and APR Rulemaking to clarify and enhance the use of TSP planning and TSP updates to "trigger" consistency with and adoption of APR provisions.
- Enhance resources available to local jurisdictions
  - Create "how to" informational sheets regarding access to and use of model code language for safety overlay zones and land use and development requirements.
  - Encourage the use of centralized mapping for public use airport boundaries, runway protection zones, horizontal surfaces, future expansion areas, and noise contours.
  - Identify additional funding needed to help with local mapping and/or code updates and consider a legislative ask to secure funding.

Local

- Consider using the model ordinance language developed by ODA when updating local land use ordinances to ensure compliance with APR regulations regarding land use compatibility, height limitations, safety zones, etc.
- Seek state grant funding through sources such as ODOT and TGM to bring local comprehensive plans and development ordinances into compliance with the APR, either as a standalone project or as a component of a larger TSP update. Because the APR was developed to aid in the implementation of the State's TPR, projects aimed at bringing local codes into compliance with the APR fall under Category 1 of the TGM grant program.

- Regulatory updates to local land use and development codes could be coordinated with larger legislative code update projects.
- Consider exemplary ordinance or development code language that has been adopted by a local jurisdiction for the protection of airport operations. Two such examples are the Washington County Community Development Code's Public Use Airport Overlay District and Public Use Airport Safety and Compatibility Overlay District and the Sisters Development Code's Airport Overlay District and Airport District.

10.2.3 Additional Recommendations

Analysis in previous chapters resulted in several recommendations which are expanded on in this section.

Recommendation: Airport Wind Coverage Analysis

Airports with a single runway in Oregon may lack adequate wind coverage since the runway may not be oriented to local prevailing winds. Airport wind coverage was discussed in **Chapter 5** and four airports which lack adequate wind coverage where identified. A review of the wind coverage data collected during the inventory for Category I through Category IV study airports is presented in **Table 10-8**. Reliable wind data is not available for Category V airports; therefore, they were not evaluated in this analysis. As part of the OAP v6.0 it is recommended that a future wind coverage analysis be prepared to provide more accurate information for airports currently lacking enough wind and climate data. The four airports in the OAP v6.0 that do not meet the wind coverage objective, based on current analysis, include:

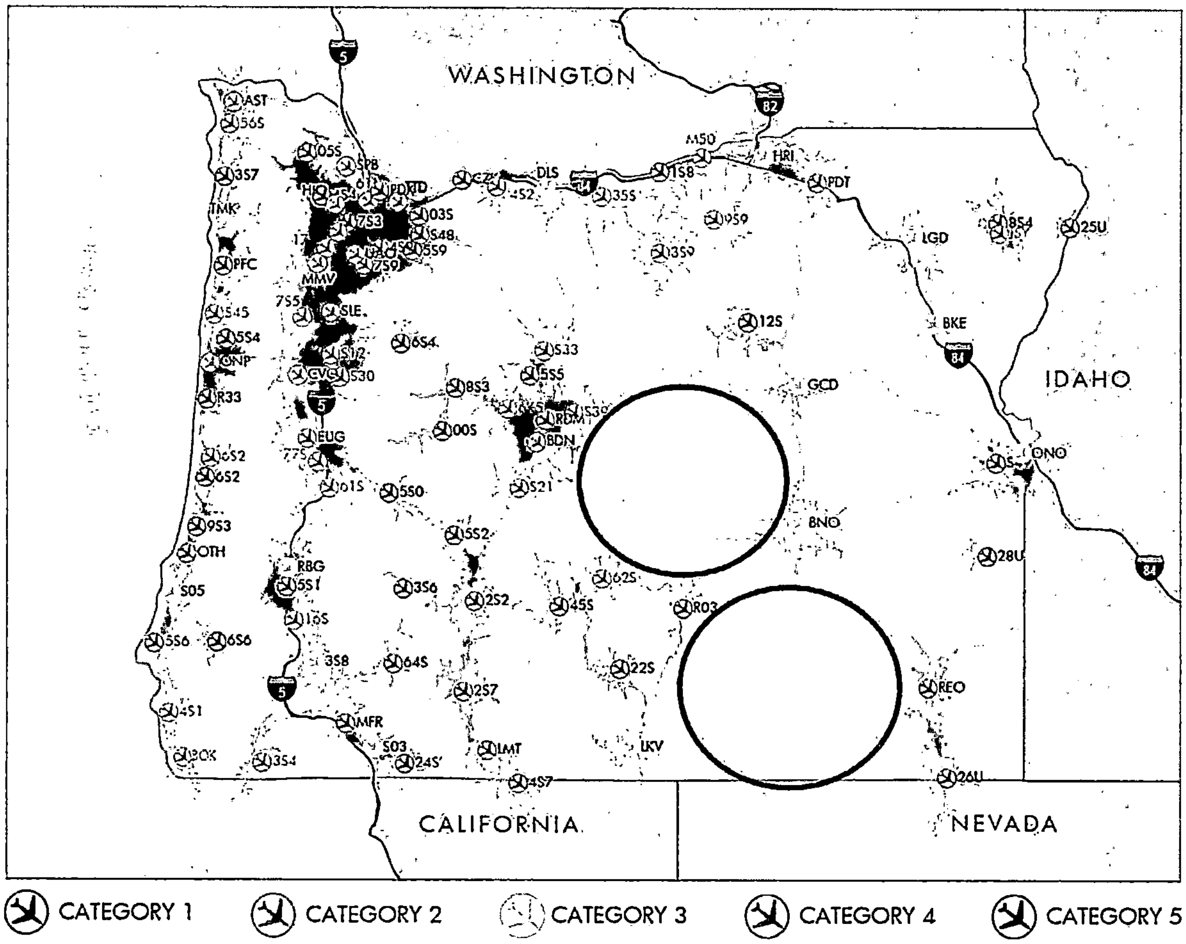
- 3S9 Condon Condon State Airport - Pauling Field
- S30 Lebanon Lebanon State Airport
- 56S Seaside Seaside Municipal Airport
- 35S Wasco Wasco State Airport

Wind studies are recommended for these four airports.

Recommendation: Airport Geographic Coverage Gaps

As presented in **Chapter 6 , Special Considerations** there are large areas of the State which lack an airport in the Oregon system of Airports. While these areas are sparsely populated, airports within these areas would provide alternates for pilots needing an emergency landing facility. Two primary gap areas that lack a state or NPIAS system airports are in South Central Oregon, primarily Harney County, and an area east of Bend/Redmond north of US 20, primarily Crook County (See **Figure 10-5**). Other areas of the state have been considered in the past for adding airports to the system. In 2003, the state contracted with W&H Pacific to conduct the *Jordan Valley Airport Siting Study* which considered a new airport on the Oregon/Idaho border where a large gap in system airports exists in both Southeast Oregon and Southwest Idaho. Although there are private airports and airstrips in these areas, they lack state or federal funding support. Further study of coverage gaps eastern Oregon is recommended to address these extensive areas lacking system airports.

FIGURE 10-5: RECOMMENDED AREAS FOR FURTHER STUDY OF AIRPORT GEOGRAPHIC COVERAGE GAPS



Source: Jviation

Recommendation: Study Six Airports for Lateral Precision Performance with Vertical Guidance (LPV) Approaches Related to Enhance Local Economic Development

Chapter 5, System Evaluation provides analysis of 30-minute accessibility to airports supporting economic development/businesses utilizing aviation. The analysis includes airports with the following facility and services attributes:

1. Airports with a runway of at least 5,000 feet long
2. Airports with an approach supported by vertical guidance
3. Airports with FBO services
4. Airports with jet fuel sales
5. Airports with rental car service (on-site or pre-arranged)

There are 23 airports in the Oregon system of airports meeting all the facility and service attributes for airports enhancing local economic development in the state. There are six airports, however, that meet all the facilities and service attributes except for a vertical guidance approach. These six airports (identified in **Table 10-7**) all have published area navigation (RNAV) approaches, which provide pilots with guidance to align with the runway, but no ILS or LPV approach, which guide the aircraft down to the runway. An approach with vertical guidance would better support all-weather operations at these airports by crucial aircraft such as air ambulance, aerial firefighting and air cargo flights. Airports listed in **Table 10-7** that lack the desired approach capabilities may be able to have their RNAV, lateral navigation (LNAV) and localizer performance (LP) approaches improved to LPV status, providing vertical guidance.

The RNAV, LNAV and LP approaches listed in **Table 10-7** may lack the vertical portion of the approach due to obstructions near the airport approach surface or a conservative evaluation by the FAA when the Instrument Flight Procedure (IFP) was analyzed. It is recommended that further evaluation of approaches for airports in **Table 10-7** be obtained through protocols and forms as determined by the FAA Center in Oklahoma City. It is possible that re-survey of airports may be required. [5]

TABLE 10-7: OREGON AIRPORTS NEEDING VERTICAL GUIDANCE APPROACHES TO SUPPORT ECONOMIC DEVELOPMENT/BUSINESSES

FAA ID	OAP v6.0 Category	City	Airport Name	Population within 30 minutes	Approach Type
TTD	II	Portland	Portland -Troutdale Airport	831,290	RNAV
S39	IV	Prineville	Prineville Airport	9,540	LP
RBG	III	Roseburg	Roseburg Regional Airport	83,389	RNAV
TMK	III	Tillamook	Tillamook Airport	18,838	RNAV
S21	IV	Sunriver	Sunriver Airport	29,985	LNAV
BNO	III	Burns	Burns Municipal Airport	7,216	LNAV

Source: Jviation, US Census Data, FAA

Recommendation: NPIAS Airport Realignment

Geographic coverage of Oregon by NPIAS airports could be improved through the designation of one OAP v6.0 system airport to the NPIAS. Should the opportunity present itself, Cape Blanco State Airport should be considered for inclusion in the NPIAS. The following discussion provides the rationale and strategies to include Cape Blanco State Airport into the NPIAS in the near future.

Cape Blanco State Airport (5S6) is a non-NPIAS, state-owned airport that is located on the southern portion of the Oregon Coast. The nearest NPIAS airport is Bandon which is 30 minutes to the north. Cape Blanco currently has seven based aircraft and is a Category V-Remote Access/Emergency Service airport in the OAP v6.0. The airport has a concrete runway 5,100 feet in length which was constructed during World War II between 1944 and 1945 for the US Navy. This airport offers the only runway along the south Oregon Coast greater than 5,000 feet in length that is outside the tsunami inundation zone. The airport is bordered by state park land on three sides and has approximately 3,380 residents within a 30-minute drive of the airport.

Cape Blanco is listed by the Oregon Legislature Airport Resiliency Workgroup as a Tier 1 airport which will support emergency and economic recovery in the event of a Cascadia Event earthquake or Tsunami. The airport is significantly higher in elevation than other OAP airports located along the coast giving it a prime location outside of the Tsunami zone. The two closest NPIAS airports to Cape Blanco, Bandon State Airport to the north and Gold Beach Municipal to the south have relatively short runways in comparison to Cape Blanco's runway length of 5,100 feet and are much lower in elevation placing them at risk to tsunami.

[5] https://www.faa.gov/air_traffic/flight_info/aeronav/procedures/

As presented in **Chapter 6** of this study, Tier 1 airports are also referred to as Incident Staging Bases by the Federal Emergency Management Agency (FEMA), Base Support Installation (by the Department of Defense), Type 1 Federal Staging Area (by FEMA), or National Guard Logistics Staging Base (by the State). These are functioning as Aerial Port of Embarkation / Departure for the response and simultaneously Tier 3 resupply points. Tier 1 airports are capable of the full spectrum of response operations. In this resiliency role, Cape Blanco State Airport could function in multiple uses in recovery such as distribution point to local communities, as a Responder Base Camp and as a "joint reception, staging, onward movement, and integration" / or Relief in Place Location[6].

Including Cape Blanco in the NPIAS would allow for this important airport to receive federal funds for facility improvements and preservation. NPIAS inclusion would also elevate the significance of the airport in the national system and acknowledge the importance the airport related to the Cascadia Event and tsunami recovery.

Two Options for Cape Blanco NPIAS Inclusion

The OAP v6.0 recommends considering two options to provide NPIAS status for Cape Blanco Airport. These options do not add another Oregon airport to the NPIAS but offer an exchange of an existing NPIAS airport for a non-NPIAS airport already in the Oregon system of airports.

Option 1 - Cape Blanco NPIAS Inclusion: The first option under consideration, and the ODA preferred option, is for discontinuing Wasco as a NPIAS airport in exchange for adding Cape Blanco to the NPIAS. Both Wasco State Airport and Cape Blanco State are owned and operated by ODA. Wasco State Airport is listed as an Unclassified airport in the 2019 NPIAS Report[7]. Unclassified airports in the NPIAS are not eligible for FAA funds, however, the airport's sponsor, ODA, currently provides funding for improvements on the airport. If Wasco State Airport were to be dropped from the NPIAS, the funding options for this airport remains unchanged, since ODA, the airport's sponsor, would continue its future capital improvement plan (CIP) funding. The population within a 30-minute drive time of the airport is approximately 1,600 residents. The airport has four based aircraft in 2017.

Since Wasco is an Unclassified airport in the FAA NPIAS, should the realignment based on this option be implemented, Cape Blanco would need to be added as a Basic airport in the NPIAS which would enable it to be eligible for FAA Entitlement funds for capital improvements.

Option 2 - Cape Blanco NPIAS Inclusion: The second option is for discontinuing Chiloquin as a NPIAS airport in exchange for adding Cape Blanco to the NPIAS. Chiloquin is listed as a Basic airport in the 2019 NPIAS report and has six based aircraft, thus falling short of the NPIAS goal of 10 based aircraft. The airport serves a population of approximately 4,800 residents within a 30-minute drive. The nearest NPIAS airport to Chiloquin is Crater Lake-Klamath Regional (LMT) which is 35 minutes directly to the south. If Chiloquin State Airport were to be removed from the NPIAS, it would rely entirely on ODA, the airport's sponsor, for its future CIP funding.

[6] Airport Resiliency Workgroup, ftp://ftp.odot.state.or.us/State_Aviation_Board/Strategic%20Retreat%202017/Identify%20Airports-%20Airport%20Resiliency%20Workgroup.pdf

[7] https://www.faa.gov/airports/planning_capacity/npias/reports/

10.2.4 Recommendations Summary

This OAP v6.0 has taken a comprehensive look at how the system is performing based on current conditions. The evaluation identified various actions and projects that are recommended to improve the performance of the Oregon airport system. The recommendations are summarized and include:

Upgrade La Grande to Category II airport: Based on the OAP Category Change Matrix analysis, it is recommended that La Grande / Union County Airport be assigned to the Category II – Urban General Aviation Airport. By assigning La Grande to Category II, the airport will be the only Category II airport in eastern Oregon on the Interstate 84 Corridor. La Grande has scheduled air cargo activity, an air ambulance based on the airport and the USFS has an Air Tanker Base located there. Capital improvements at the airport since the 2007 OAP include a runway extension and a GPS approach.

Additional study for airport wind coverage: As part of the OAP v6.0 it is recommended that future wind coverage analyses be prepared to provide more accurate wind coverage information for airports lacking current wind and climate data. There are four airports in the statewide OAP that do not meet the wind coverage objective. Further wind coverage analysis for these airports will more accurately depict local wind conditions at these airports.

Additional study for airport geographic coverage: There are large areas of the state which lack an airport in the Oregon system of Airports. Two primary gap areas that lack a state or NPIAS system airports are in South Central Oregon, primarily Harney County, and an area east of Bend/Redmond north of US 20, primarily Crook County. Although there are private airports and airstrips in these areas, they lack state or federal funding. A study of coverage gaps in eastern Oregon is recommended to address these large areas without system airports.

Realign NPIAS Airports in Oregon to include Cape Blanco State Airport: Coverage of Oregon by NPIAS airports could be improved through the designation of one OAP v6.0 system airport to the NPIAS. Should the opportunity present itself, Cape Blanco State Airport should be considered for inclusion in the NPIAS. Including Cape Blanco State Airport in the NPIAS would allow for this important facility to receive federal funds for capital improvements and preservation. NPIAS inclusion would also elevate the significance of the airport in the national system and acknowledge the importance the airport related to the Cascadia Event and tsunami recovery.

Study Six Airports for LPV Approaches Related to Enhancing Local Economic Development: There are 23 airports meeting all the facility and service attributes in the state. There are six airports, however, that meet all the facilities and service attributes except for a vertical guidance approach. These six airports all have published RNAV approaches, which provide pilots with guidance to align with the runway, but no ILS or LPV approach, which guide the aircraft down to the runway. An approach with vertical guidance would support operations at these airports for critical aircraft such as air ambulance, aerial firefighting and air cargo flights.

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TABLE 10-8: OAP V6.0 AIRPORT CATEGORY CHANGE MATRIX

FAA ID	City	Airport Name	Population growth > than State Rate	FAA Asset Category Lower than OAP	NPIAS Airport	Increased past 10 Based Aircraft?	GPS Approach since 2007	>400' Primary Runway Extension	Paved Runway >4999'	Added Weather Equip since 2007	Installed REILs	Scheduled Air Cargo	Air Ambulance Based	Based Aerial Firefighting	USCG Station	Total Points
Category III to II																
LGD	La Grande	La Grande / Union County Airport	0	0	1	0	2	2	2	0	0	3	3	3	0	16
LKV	Lakeview	Lake County Airport	0	0	1	0	2	0	2	2	2	0	0	3	0	12
ONO	Ontario	Ontario Municipal Airport	0	0	1	0	0	0	2	0	0	0	3	3	0	9
GCD	John Day	Grant County Regional Airport	0	0	1	0	0	0	2	0	2	0	0	3	0	8
HRI	Hermiston	Hermiston Municipal Airport	0	1	1	0	0	0	0	0	2	3	0	0	0	7
BNO	Burns	Burns Municipal Airport	0	0	1	0	0	0	2	0	0	0	0	3	0	6
RBG	Roseburg	Roseburg Regional Airport	0	0	1	0	0	2	0	0	0	3	0	0	0	6
TMK	Tillamook	Tillamook Airport	0	0	1	0	0	0	2	0	0	0	3	0	0	6
DLS	The Dalles	Columbia Gorge Regional - The Dalles	0	0	1	0	0	0	2	2	0	0	0	0	0	5
BKE	Baker City	Baker City Municipal Airport	0	0	1	0	0	0	2	0	0	0	0	0	0	3
S03	Ashland	Ashland Municipal Airport - Sumner Parker Field	0	0	1	0	0	0	0	0	0	0	0	0	0	1
S05	Bandon	Bandon State Airport	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3S8	Grants Pass	Grants Pass Airport	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Category IV to III																
S39	Prineville	Prineville Airport	0	1	1	0	0	0	2	2	0	0	0	3	0	9
BOK	Brookings	Brookings Airport	0	1	1	0	0	0	0	0	0	0	3	0	0	5
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field	0	1	1	0	0	0	0	0	0	0	3	0	0	5
4S2	Hood River	Ken Jernstedt Airfield	1	1	1	0	0	0	0	0	2	0	0	0	0	5
JSY	Joseph	Joseph State Airport	0	0	1	2	0	0	2	0	0	0	0	0	0	5

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FAA ID	City	Airport Name	Population growth > than State Rate	FAA Asset Category Lower than OAP	NPIAS Airport	Increased past 10 Based Aircraft?	GPS Approach since 2007	>400' Primary Runway Extension	Paved Runway >4999'	Added Weather Equip since 2007	Installed REILs	Scheduled Air Cargo	Air Ambulance Based	Based Aerial Firefighting	USCG Station	Total Points
S33	Madras	Madras Municipal Airport	0	1	1	0	0	0	2	0	0	0	0	0	0	4
62S	Christmas Valley	Christmas Valley Airport	0	0	1	0	0	0	2	0	0	0	0	0	0	3
3S9	Condon	Condon State Airport - Pauling Field	0	0	1	2	0	0	0	0	0	0	0	0	0	3
9S9	Lexington	Lexington Airport	0	0	1	2	0	0	0	0	0	0	0	0	0	3
4S9	Mulino	Mulino State Airport	1	1	1	0	0	0	0	0	0	0	0	0	0	3
16S	Myrtle Creek	Myrtle Creek Municipal Airport	0	0	1	2	0	0	0	0	0	0	0	0	0	3
S12	Albany	Albany Municipal Airport	0	1	1	0	0	0	0	0	0	0	0	0	0	2
3S4	Cave Junction	Illinois Valley Airport	0	1	1	0	0	0	0	0	0	0	0	0	0	2
77S	Creswell	Creswell Hobby Field Airport	0	1	1	0	0	0	0	0	0	0	0	0	0	2
7S5	Independence	Independence State Airport	0	1	1	0	0	0	0	0	0	0	0	0	0	2
S30	Lebanon	Lebanon State Airport	0	1	1	0	0	0	0	0	0	0	0	0	0	2
M50	Boardman	Boardman Airport	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6S2	Florence	Florence Municipal Airport	0	0	1	0	0	0	0	0	0	0	0	0	0	1
S45	Gleneden Beach	Siletz Bay State Airport	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4S1	Gold Beach	Gold Beach Municipal Airport	0	0	1	0	0	0	0	0	0	0	0	0	0	1
56S	Seaside	Seaside Municipal Airport	0	0	1	0	0	0	0	0	0	0	0	0	0	1
35S	Wasco	Wasco State Airport	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Category V to IV																
26U	McDermitt	McDermitt State Airport	0	1	1	0	0	0	2	0	0	0	0	0	0	4
S49	Vale	Miller Memorial Airpark	0	0	0	0	0	0	0	0	0	0	0	3	0	3
2S7	Chiloquin	Chiloquin State Airport	0	1	1	0	0	0	0	0	0	0	0	0	0	2

FAA ID	City	Airport Name	Population growth > than State Rate	FAA Asset Category Lower than OAP	NPIAS Airport	Increased past 10 Based Aircraft?	GPS Approach since 2007	>400' Primary Runway Extension	Paved Runway >4999'	Added Weather Equip since 2007	Installed REILs	Scheduled Air Cargo	Air Ambulance Based	Based Aerial Firefighting	USCG Station	Total Points
5S5	Culver	Lake Billy Chinook	0	0	0	2	0	0	0	0	0	0	0	0	0	2
5S6	Sixes	Cape Blanco State Airport	0	0	0	0	0	0	2	0	0	0	0	0	0	2
CZK	Cascade Locks	Cascade Locks State Airport	1	0	0	0	0	0	0	0	0	0	0	0	0	1
R03	Alkali Lake	Alkali Lake State	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1S8	Arlington	Arlington Municipal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3S6	Clearwater	Toketee State	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5S2	Crescent Lake	Crescent Lake State Airport	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8S4	Enterprise	Enterprise Municipal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25U	Imnaha	Memaloose USFS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9S3	Lakeside	Lakeside Municipal Airport	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4S7	Malin	Malin	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3S7	Manzanita	Nehalem Bay State Airport	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00S	McKenzie Bridge	McKenzie Bridge State	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12S	Monument	Monument Municipal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5S0	Oakridge	Oakridge State	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28U	Owyhee Reservoir	Owyhee Reservoir State	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PFC	Pacific City	Pacific City State Airport	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22S	Paisley	Paisley	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24S	Pinehurst	Pinehurst State Airport	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6S6	Powers	Powers Hayes Field	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64S	Prospect	Prospect State Airport	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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FAA ID	City	Airport Name	Population growth > than State Rate	FAA Asset Category Lower than OAP	NPIAS Airport	Increased past 10 Based Aircraft?	GPS Approach since 2007	>400' Primary Runway Extension	Paved Runway >4999'	Added Weather Equip since 2007	Installed REILs	Scheduled Air Cargo	Air Ambulance Based	Based Aerial Firefighting	USCG Station	Total Points
REO	Rome	Rome State	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8S3	Santiam Junction	Santiam Junction State	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45S	Silver Lake	Silver Lake USFS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5S4	Toledo	Toledo State Airport	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05S	Vernonia	Vernonia Municipal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R33	Waldport	Wakonda Beach State	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Jviation Analysis

OREGON AVIATION PLAN

APPENDIX A, AIRPORT MANAGER SURVEY 2015

OREGON DEPARTMENT OF AVIATION

Airport Manager Survey 2015

Oregon Aviation Plan Update

Thank you for your time and assistance. Your participation is crucial to the success of this study. Should you have questions about the study, please contact: Greg Reince, Century West Engineering at 541-322-8962 or e-mail, Jeff Caines, Oregon Department of Aviation at 503-378-2529,e-mail, or Heather Peck e-mail.

* 1. Airport Name & Airport Code

2. Airport Manager (Contact) Information

Manager Name:

Sponsor Name (city, county, port, private owner):

Address:

Address 2:

City/Town:

State:

ZIP:

Country:

Email Address:

Phone Number:

3. Are any lighting or natural gas projects identified in the CIP? Your Airport may be eligible for a rebate or grant, but there is no guarantee.

☐ Yes

☐ No

If Yes, please list the proposed year and name of the project(s).

4. Please provide the following 2014 activity data for your airport where applicable. If the number of operations is not readily available, please consult your Air Traffic Control Tower (if applicable) or most recent Master Plan for operations estimate.

Local Operations

Itinerant Operations

Military Operations

Tons of Air Cargo Shipped

Average Passengers per Aircraft Operation (including pilot)

5. Please identify companies that base aircraft at your airport for the purpose of conducting their businesses.

6. What is your current Airport employee level (e.g., administration, operations, maintenance)?

Full Time:

Part Time:

7. Does your Airport have a Fixed Base Operator (FBO)?

☐ Yes ☐ No

If Yes, please list the FBO(s), services provided, etc.

8. Please provide the total capacity of the listed fuels at your Airport in gallons (e.g., tank size, number of fuel trucks and their capacity, etc.):

Jet A

100LL

Mogas

9. What is the sale price per gallon for the listed fuels at your Airport (if applicable):

Jet A

100LL

Mogas

10. Please provide 2014 operating expenses, not including capital improvements at your Airport:

11. Please report your total capital expenditure inclusive of all sources (federal, state, local) over the last 3 years:

2012 - $

2013 - $

2014 - $

12. What is the general liability limit requirement for your tenants?

Commercial:

Non-Commercial:

13. Does your Airport own and rent aircraft storage hangar space?

○ Yes

○ No

14. Describe your Airport's current aircraft storage hangar situation:

	Yes	No
Waiting List	○	○
Current Vacancy	○	○

15. If applicable, what are your current rates and fees for the following items:

Land Lease Rate:

Hangar Rental Rate:

Access Rate (Through-The-Fence, etc.):

Tie-Down Rate:

16. Do you charge landing fees?

- [ ] Yes
- [ ] No

If yes, explain fee structure.

17. Please check all applicable activities/attributes at your airport.

- [ ] Aeromedical Flights
- [ ] Law Enforcement/National/Border Security
- [ ] Emergency Response (Search and Rescue)
- [ ] Aerial Fire Fighting Support
- [ ] Emergency Diversionary Airport
- [ ] Aircraft Storage
- [ ] Aerospace Engineering/Research
- [ ] Agricultural Support (Aerial Applicators)
- [ ] Aerial Surveying and Observation
- [ ] Low Orbit Space Launch and Landing
- [ ] Oil and Mineral Exploration/Survey
- [ ] Utility/Pipeline Control and Inspection
- [ ] Air Taxi/Charter Services
- [ ] Scheduled Passenger Service
- [ ] Essential Air Service Airport
- [ ] Military Operations
- [ ] Corporate Flights (turboprop, business jet)
- [ ] Air Cargo/Express
- [ ] Flight Instruction
- [ ] 24-Hour Self Fueling
- [ ] Fixed Base Operator
- [ ] Aircraft Maintenance
- [ ] Aircraft Rental
- [ ] Tourism and Access to Special Events or Attractions
- [ ] Personal/Recreational Flying (LSA, Glider, etc.)
- [ ] Intermodal Connections (rail/ship)
- [ ] Special Aeronautical (skydiving, airshows, fly-ins, etc.)
- [ ] Aircraft Avionics Manufacture/Maint.

Other (please specify)

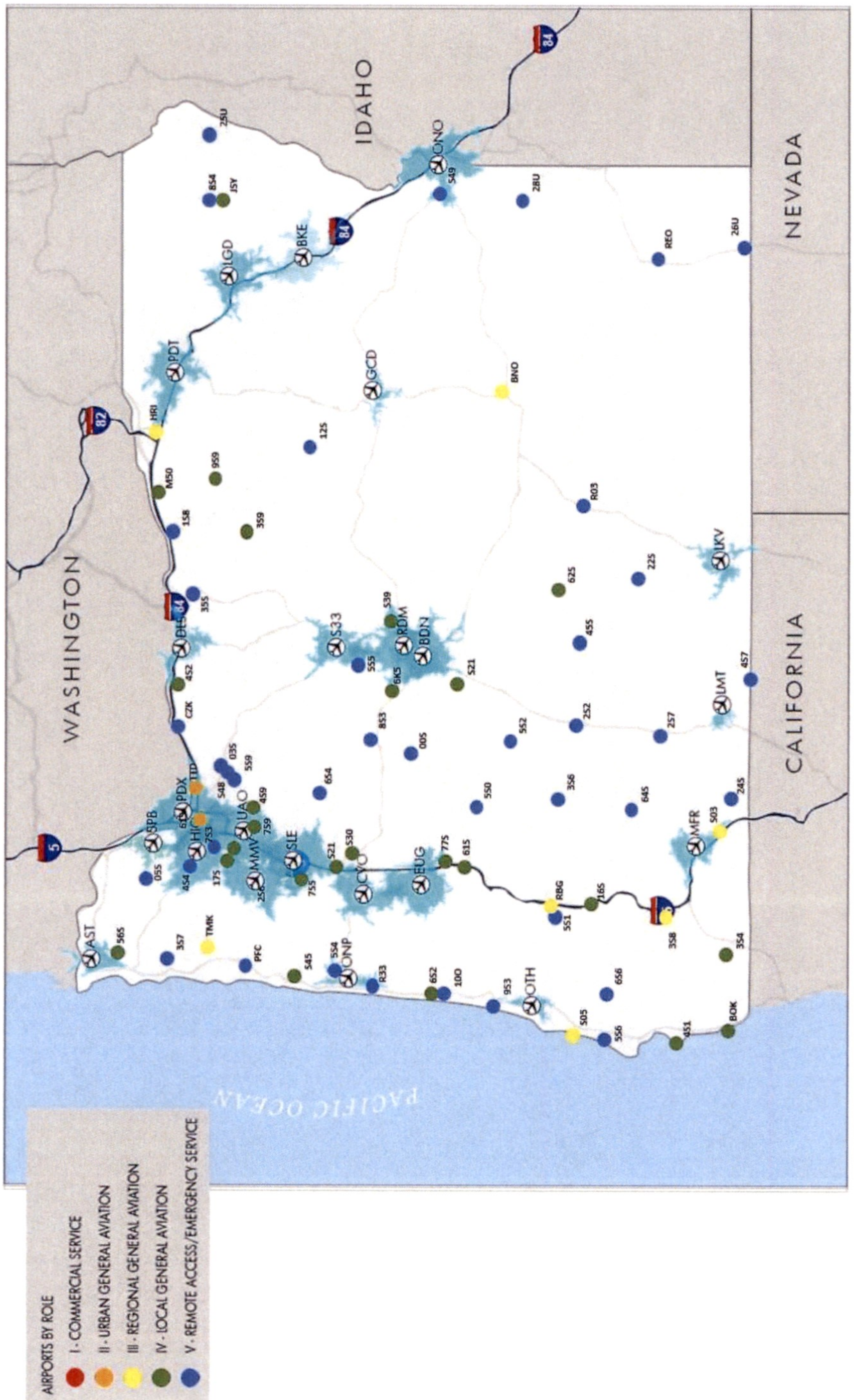
18. Please use the space below to discuss any special attributes of this airport, or ways in which it is special or important to the community it serves.

APPENDIX B, USER ACCESSIBILITY MAPS

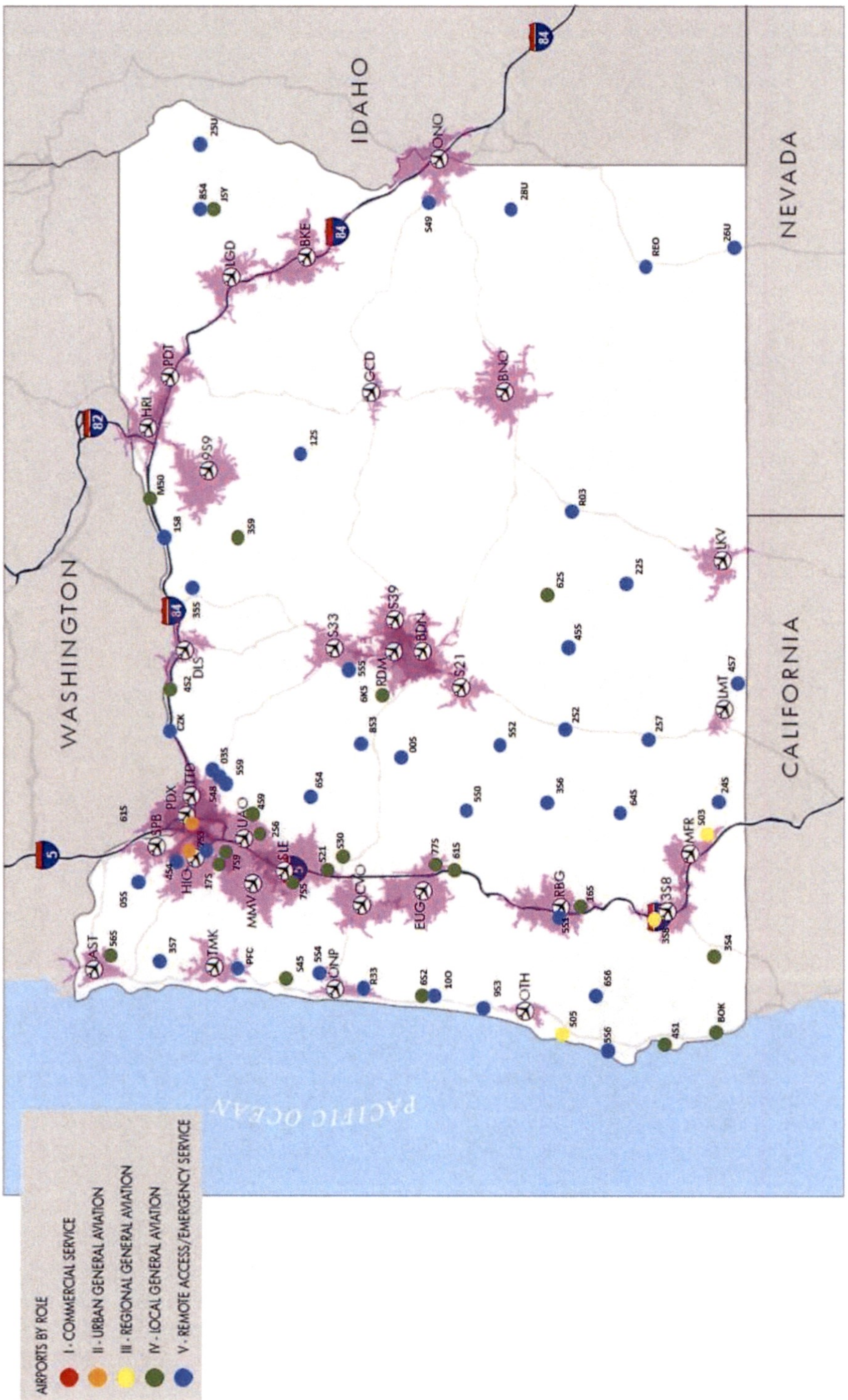
OREGON AVIATION PLAN

APPENDIX B

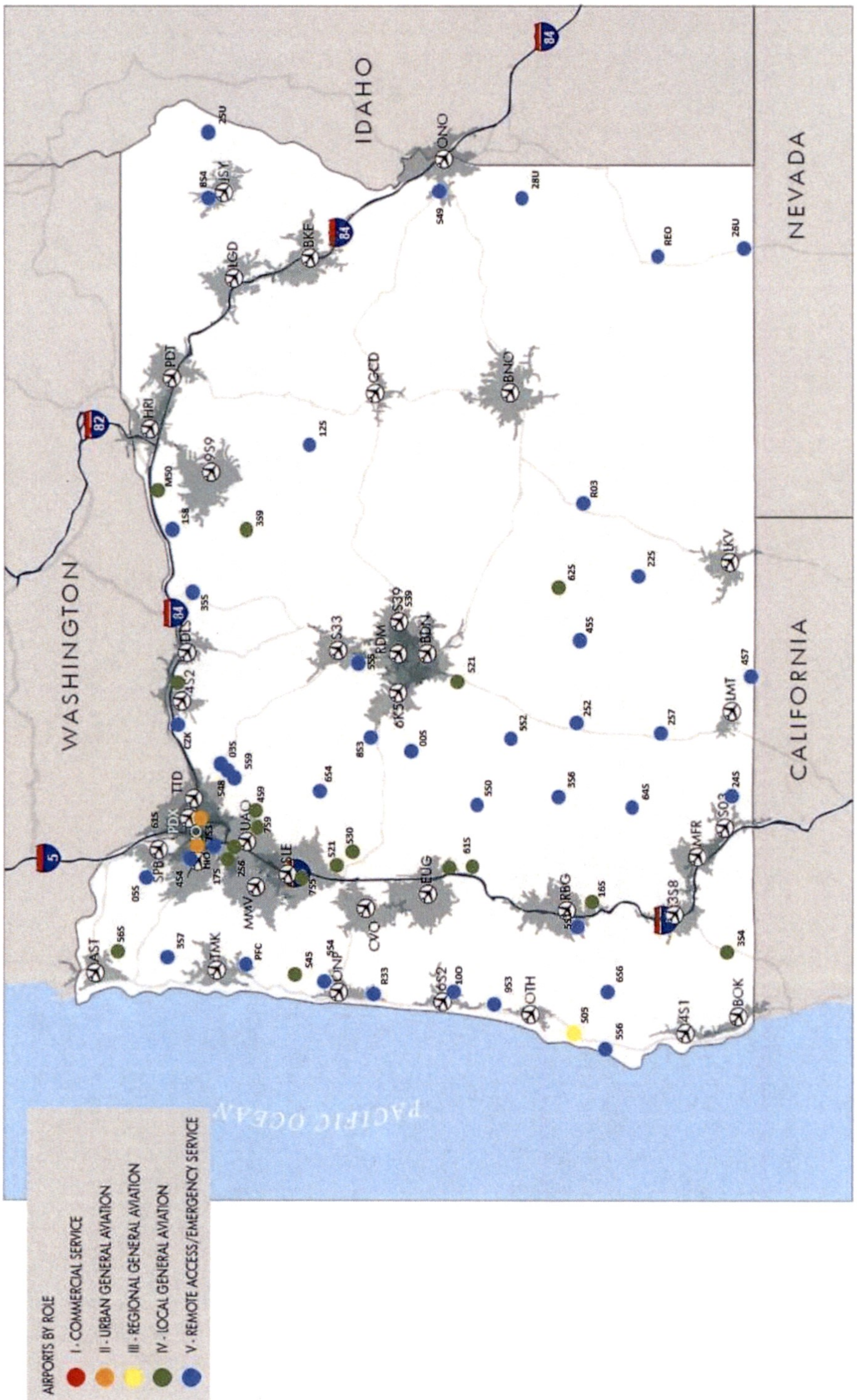
Appendix B – Airports with An Approach Supported by Vertical Guidance, 30-Minute Drive Times and locations of OAP v6.0 System Airports (Associated with Figure 5-3)



Appendix B – Airports With A Published Approach, 30-Minute Drive Times and locations of OAP V6.0 System Airports (Associated with Figure 5-4)

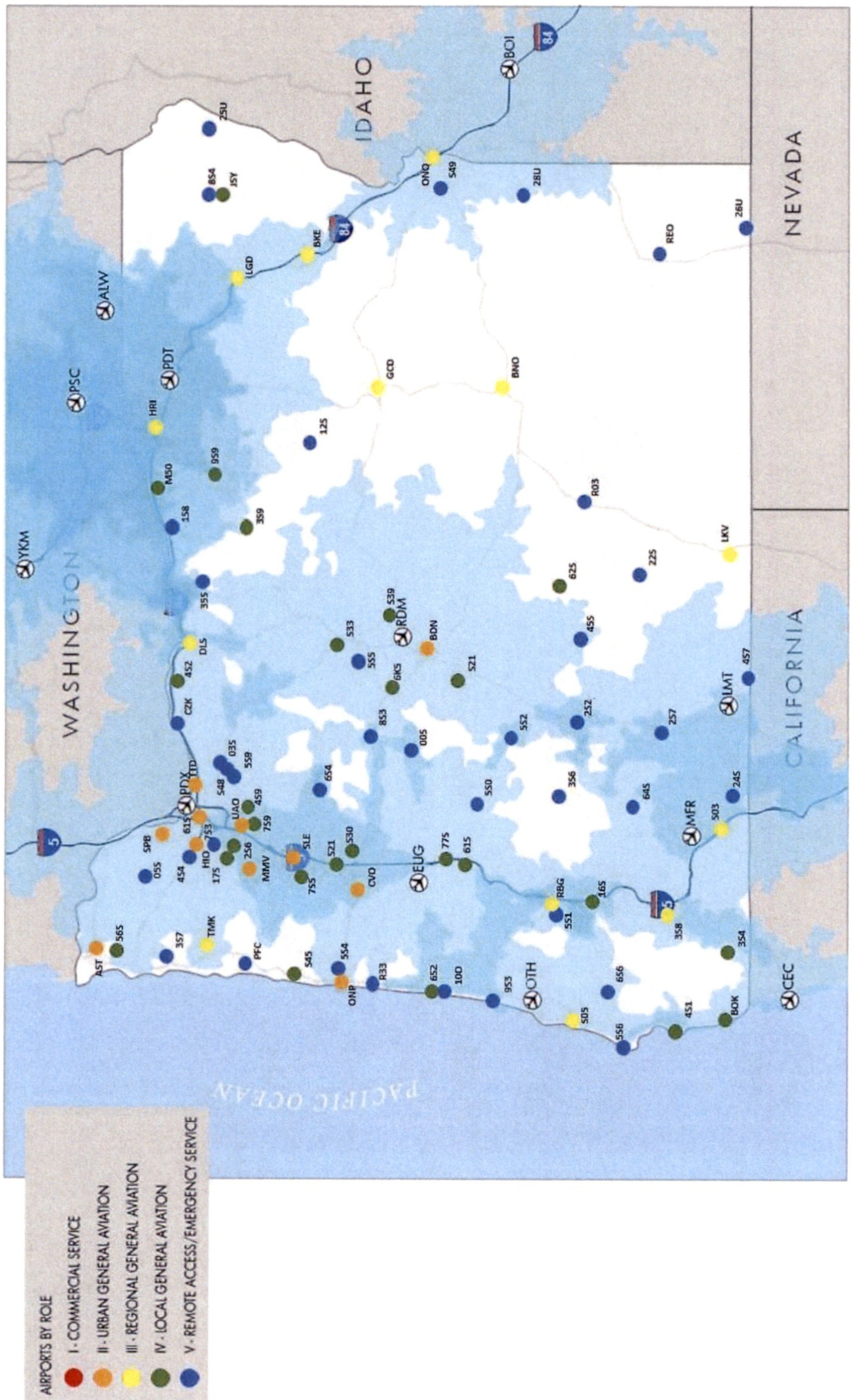


Appendix B – Airports with Weather Reporting, 30-Minute Drive Times and locations of OAP V6.0 System Airports (Associated with Figure 5-5)



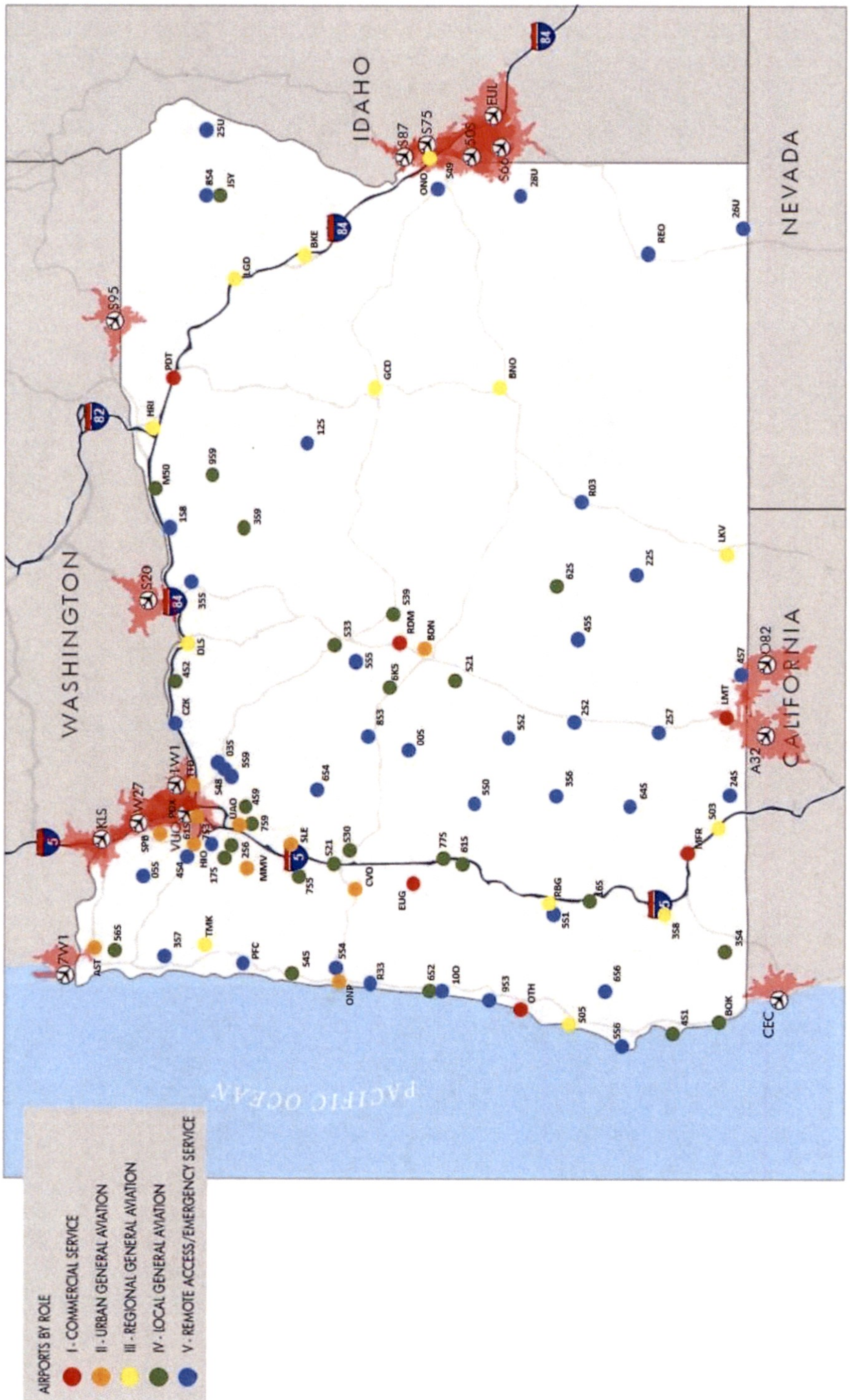
OREGON AVIATION PLAN

Appendix B – Commercial Airports On Borders And Category I Oregon Airports, 120-Minute Drive Times and locations of OAP V6.0 System Airports (Associated with Figures 5-6 to 5-8)



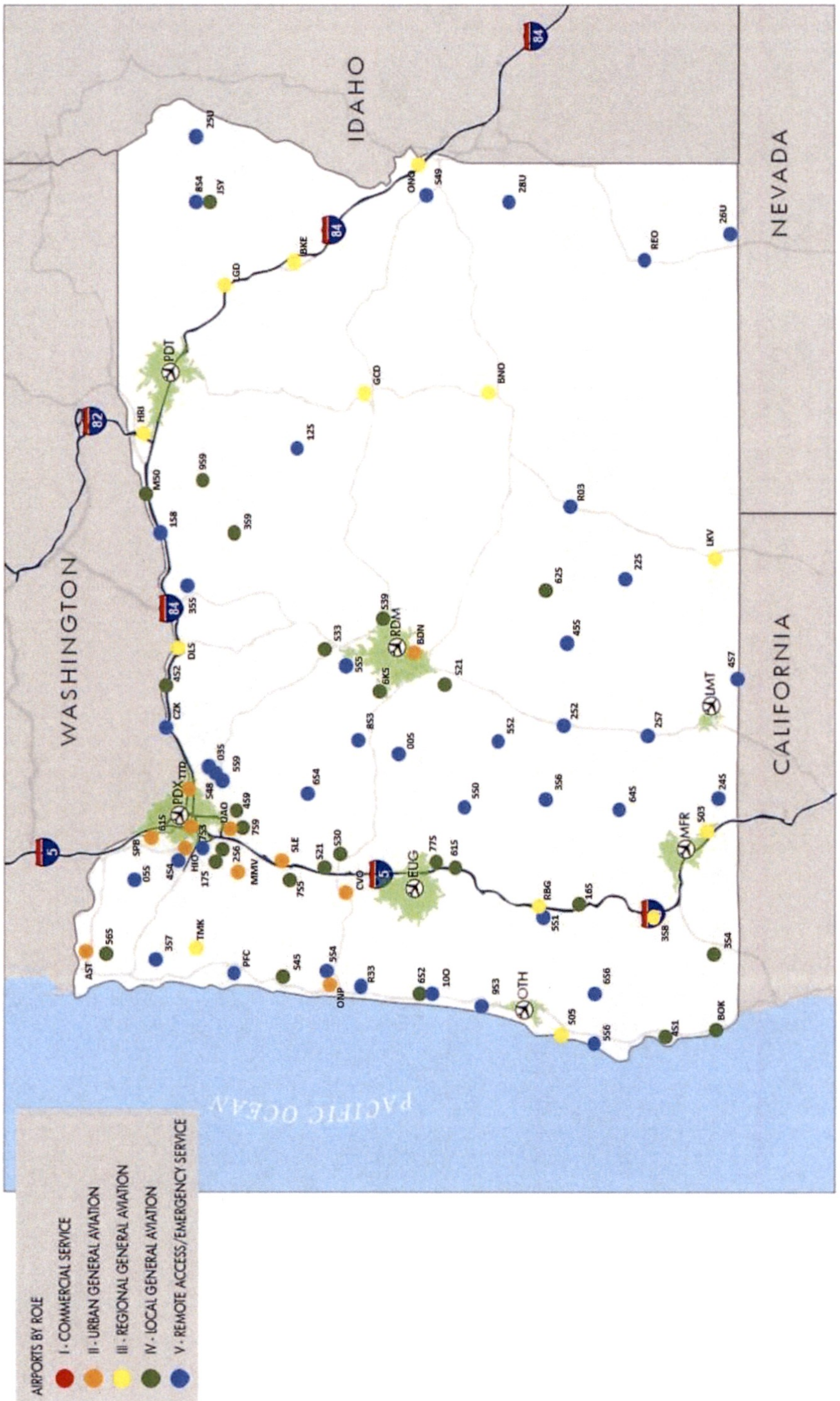
OREGON AVIATION PLAN

Appendix B – Out-Of-State General Aviation Airports, 30-Minute Drive Times and locations of OAP V6.0 System Airports (Associated with Figure 5-10)



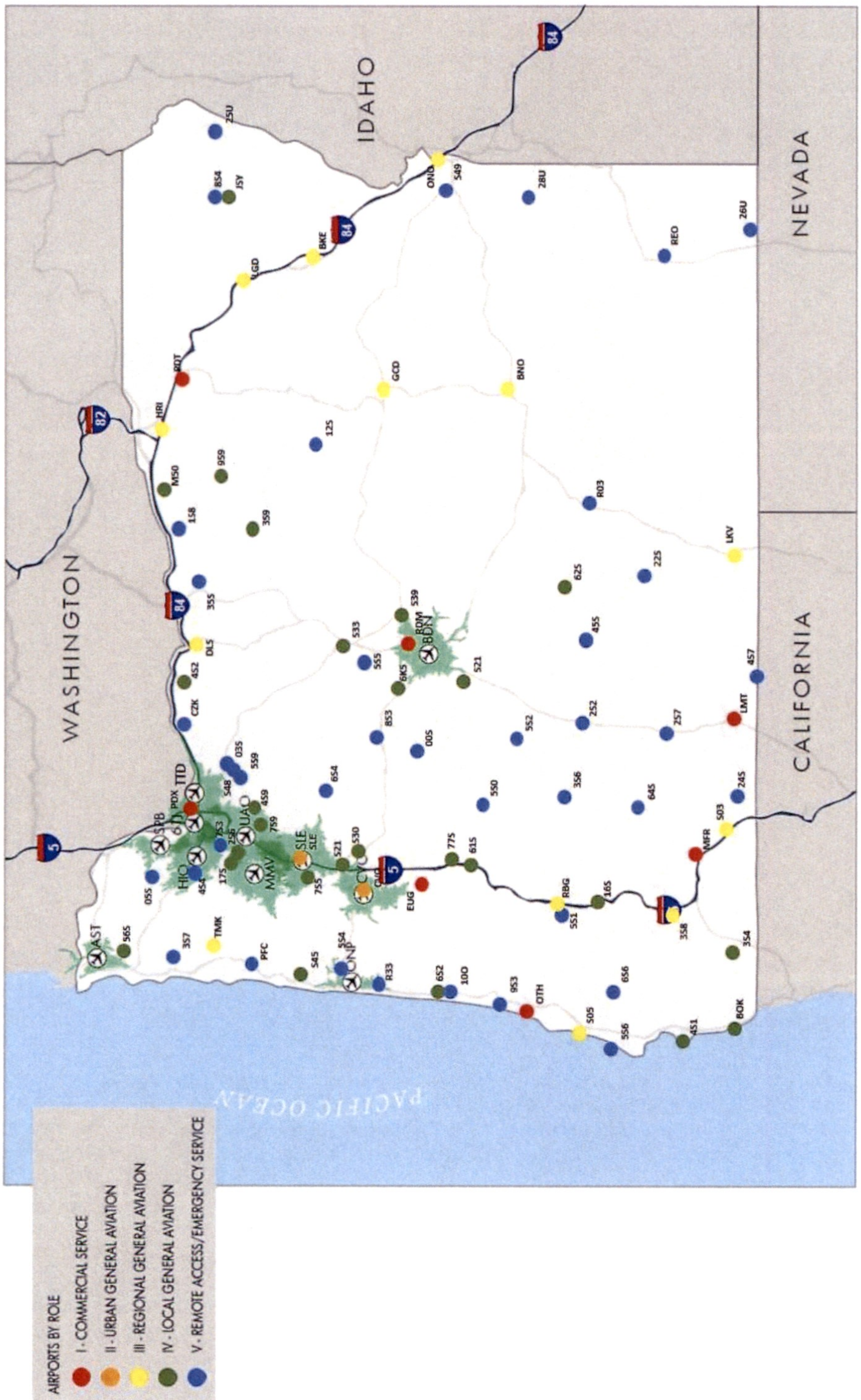
OREGON AVIATION PLAN

Appendix B – Category I: Commercial Service Airports And 30-Minute Drive Times, 30-Minute Drive Times and locations of OAP V6.0 System Airports (Associated with Figure 5-11)



OREGON
AVIATION PLAN

Appendix B – Category II: Urban General Aviation Airports, 30-Minute Drive Times and locations of OAP V6.0 System Airports (Associated with Figure 5-12)



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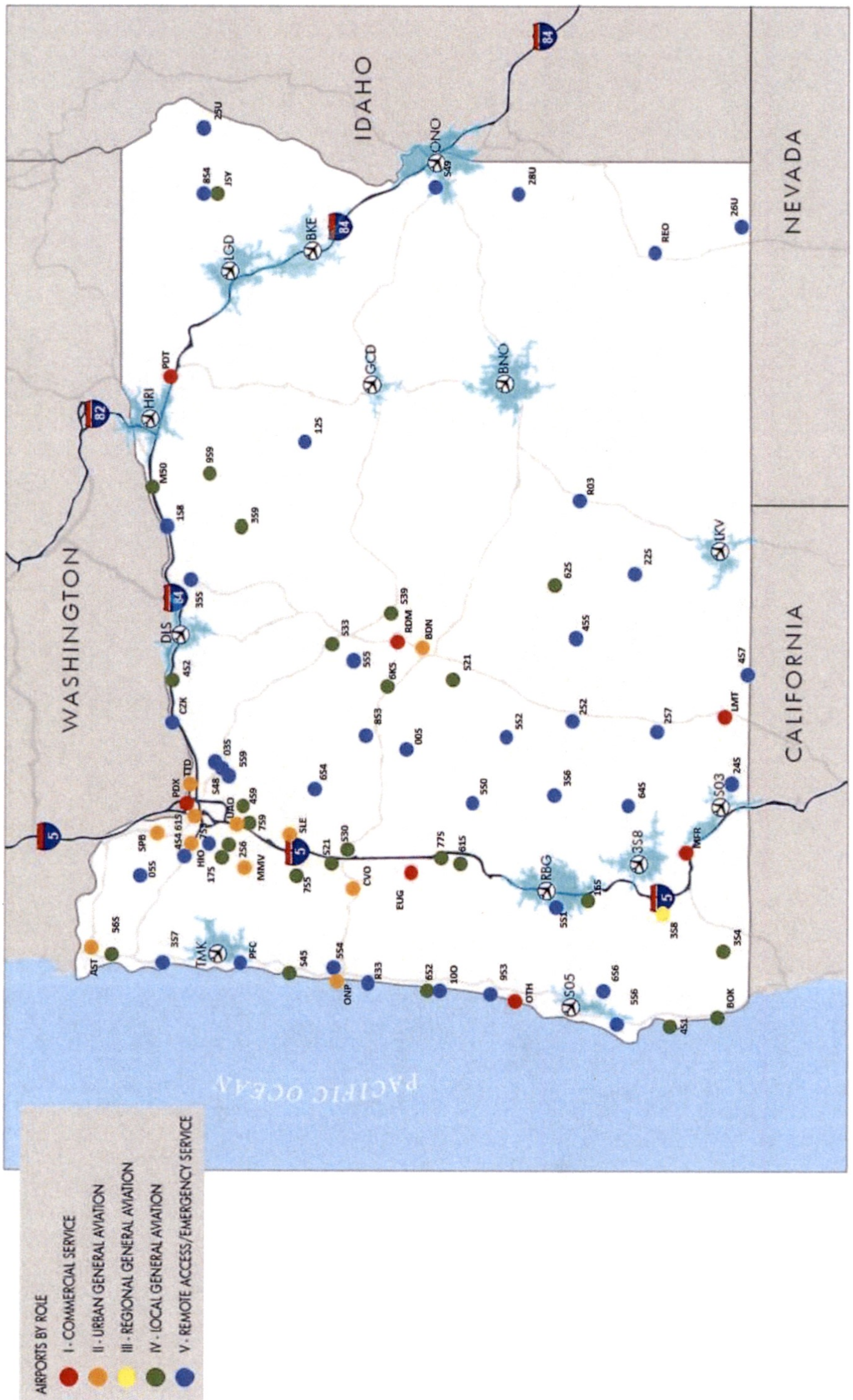
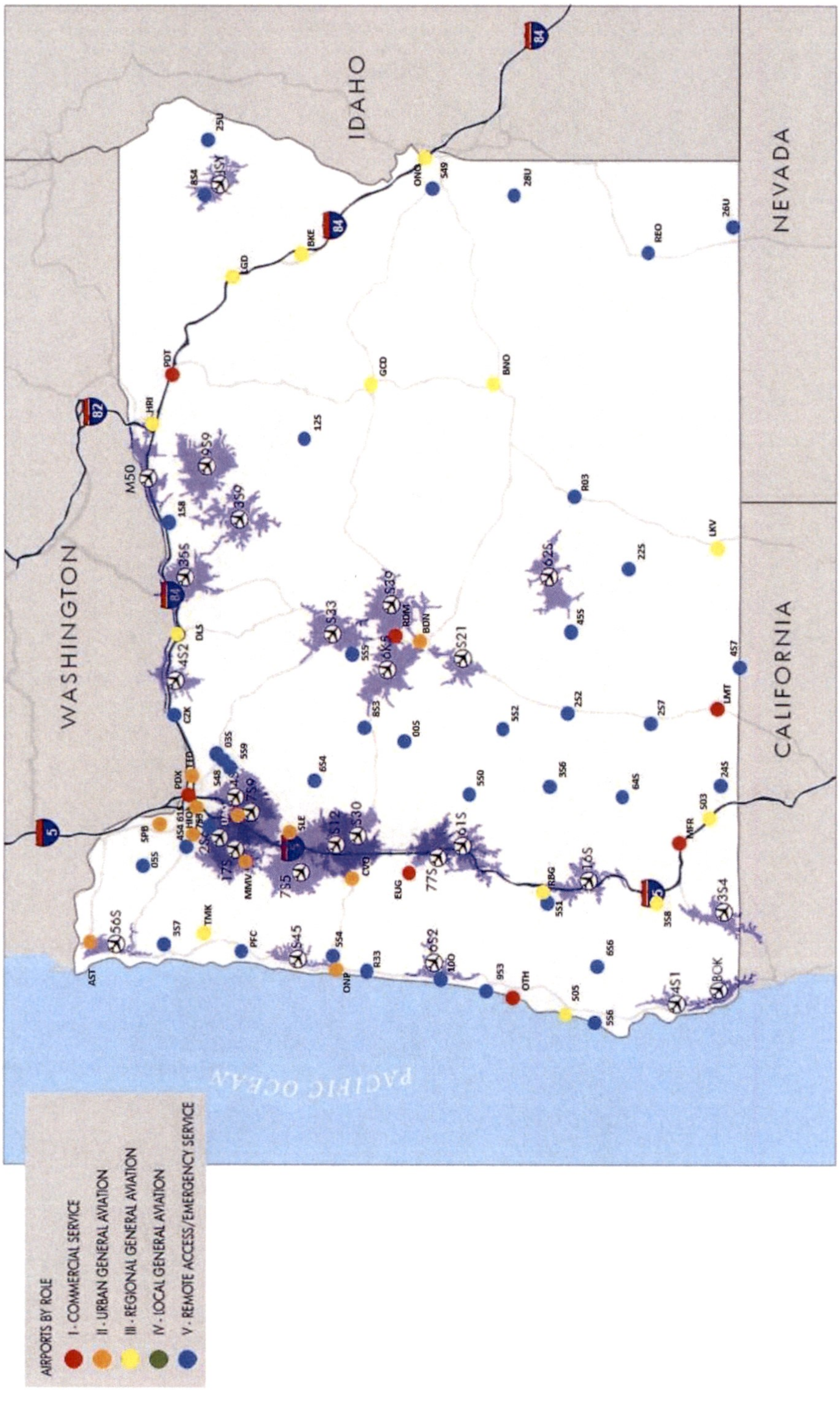
Appendix B – Category III: Regional General Aviation Airports, 30-Minute Drive Times and locations of OAP V6.0 System Airports (Associated with Figure 5-13)

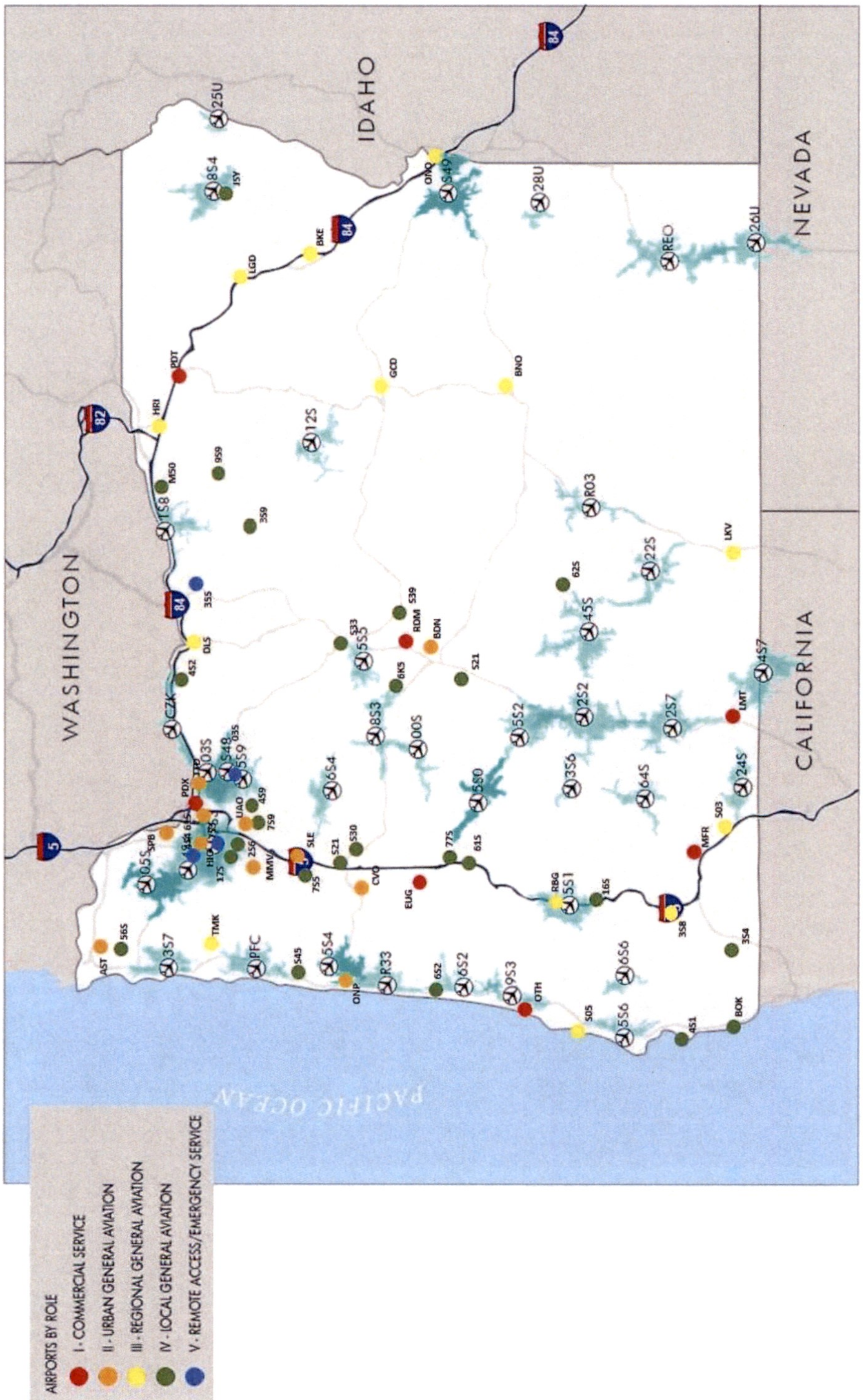


Appendix B – CATEGORY IV: Local General Aviation Airports, 30-Minute Drive Times and locations of OAP V6.0 System Airports (Associated with Figure 5-14)



OREGON AVIATION PLAN

Appendix B – CATEGORY V: Remote Access/Emergency Services (RAES) General Aviation Airports, 30-Minute Drive Times and locations of OAP V6.0 System Airports (Associated with Figure 5-15)



OREGON AVIATION PLAN

Appendix B – State-Owned Airports, 30-Minute Drive Times and locations of OAP V6.0 System Airports (Associated with Figure 5-16)

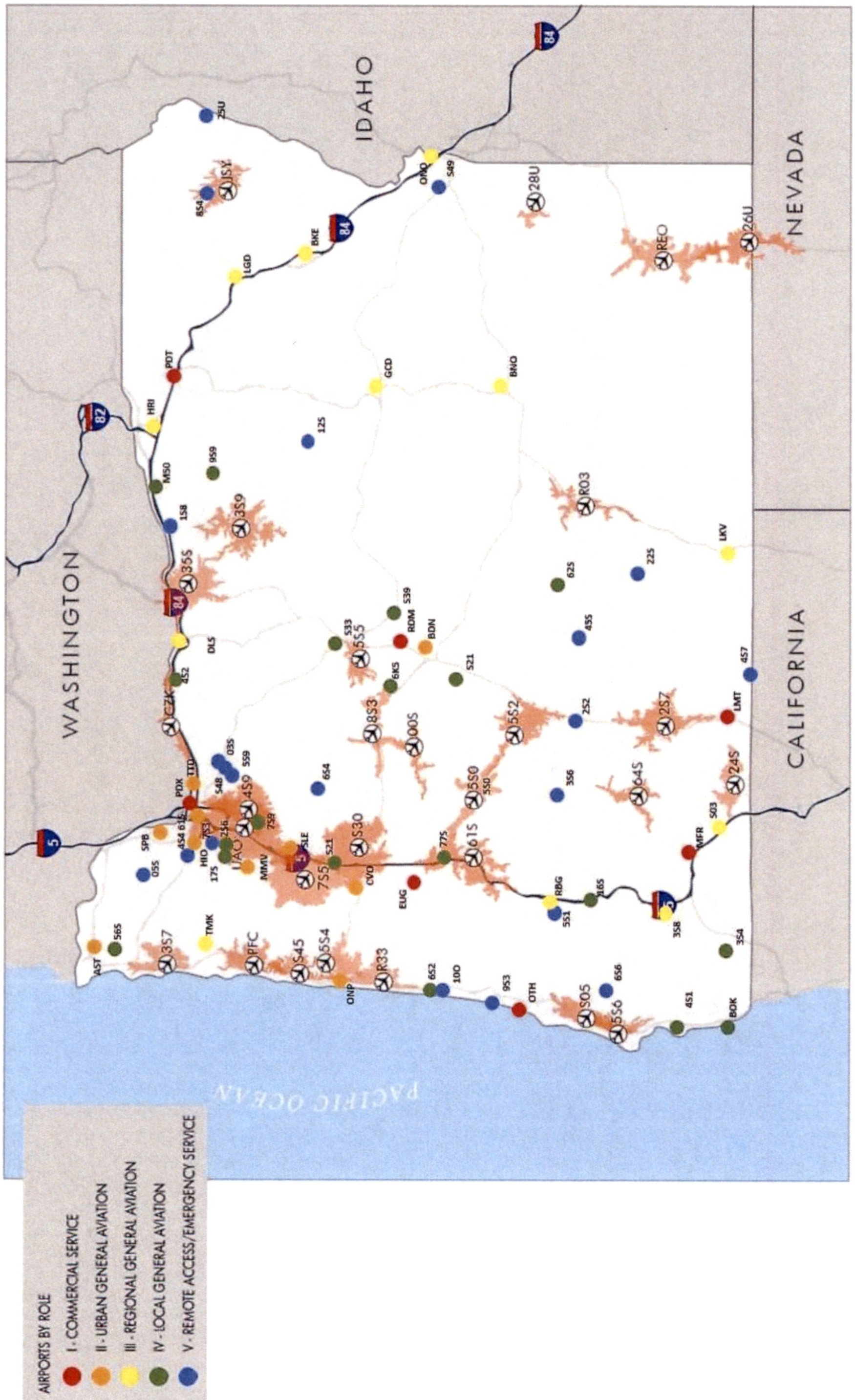


Exhibit 28, Page 392 of 572

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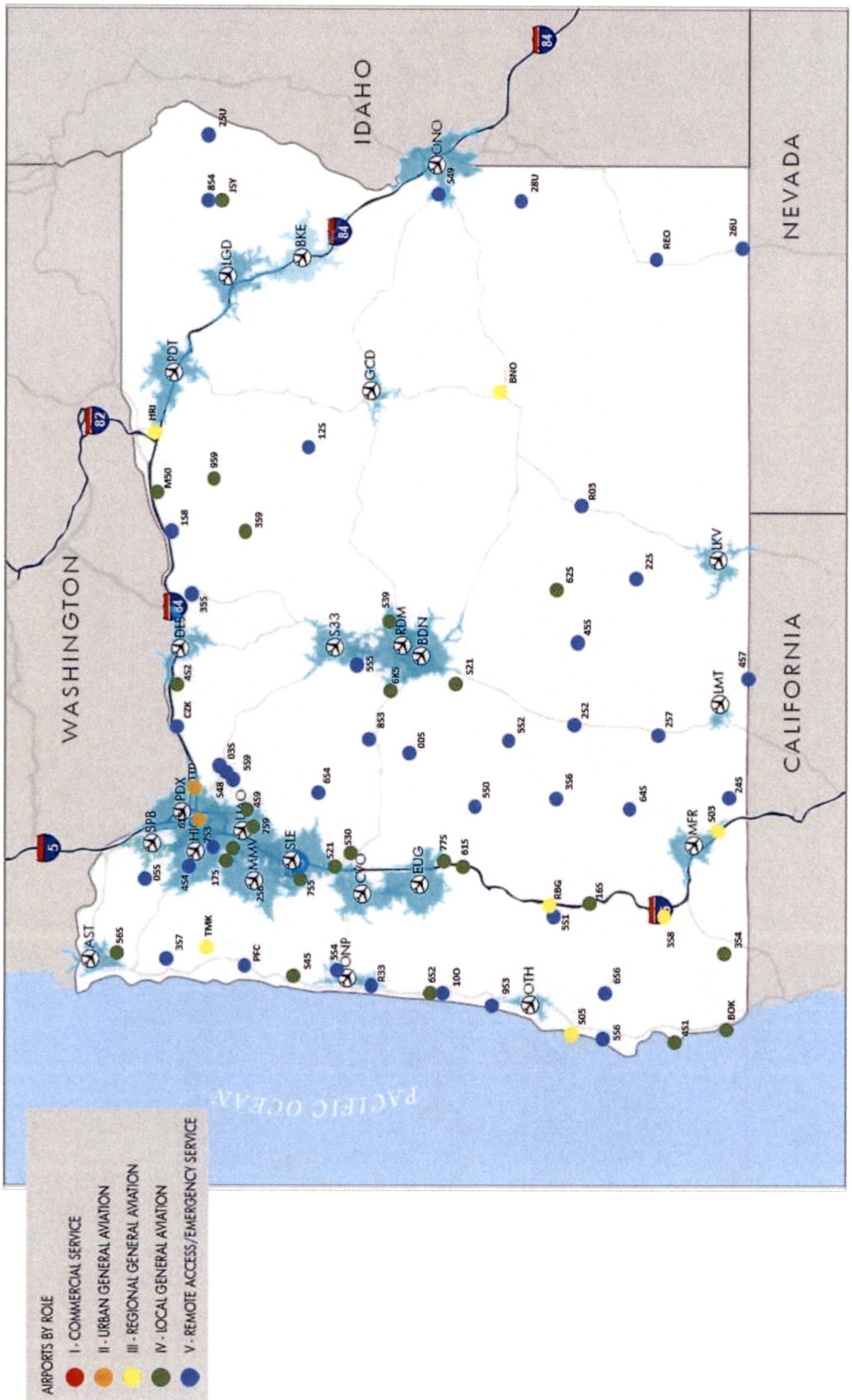
Appendix B – Airports Supporting Economic Development/Businesses Utilizing General Aviation, 30-Minute Drive Times and locations of OAP V6.0 System Airports (Associated with Figure 5-17)



OREGON AVIATION PLAN

APPENDIX C, POPULATION & LABOR FORCE ACCESSIBILITY

OREGON AVIATION PLAN

APPENDIX C

Oregon Population and Labor Force Accessibility to Oregon Airports - Detailed Summary

FAA Code	Associated City	Airport Name	Airport Category	30-minute Drive Time Oregon Population[1]	Associated City Population	Estimated Labor Force Size in 30-minute drive
S12	Albany	Albany Municipal Airport	IV	321,693	52,446	206,620
R03	Alkali Lake	Alkali Lake State	V	3	0	0
1S8	Arlington	Arlington Municipal	V	763	580	233
S03	Ashland	Ashland Municipal Airport -Sumner Parker Field	III	147,791	21,083	94,333
AST	Astoria	Port of Astoria Regional Airport	II	28,648	9,700	16,339
UAO	Aurora	Aurora State Airport	II	1,052,366	978	625,876
BKE	Baker City	Baker City Municipal Airport	III	14,355	9,684	7,382
S05	Bandon	Bandon State Airport	III	7,564	3,117	3,119
2S2	Beaver Marsh	Beaver Marsh	V	870	137	527
BDN	Bend	Bend Municipal Airport	II	140,802	88,920	80,246
M50	Boardman	Boardman Airport	IV	6,801	3,356	3,611
BOK	Brookings	Brookings Airport	IV	12,192	6,467	5,355
BNO	Burns	Burns Municipal Airport	III	7,216	2,724	2,674
5S6	Sixes	Cape Blanco State Airport	V	2,547	1,142	955
CZK	Cascade Locks	Cascade Locks State Airport	V	11,917	1,154	6,726
17S	Newberg	Chehalem Airpark	IV	130,636	22,753	55,309
2S7	Chiloquin	Chiloquin State Airport	V	4,820	694	1,195
62S	Christmas Valley	Christmas Valley Airport	IV	918	1,313	0
DLS	The Dalles	Columbia Gorge Regional -The Dalles[2]	III	21,011	11,810	12,069
3S9	Condon	Condon State Airport -Pauling Field	IV	1,057	664	1,131
CVO	Corvallis	Corvallis Municipal Airport	II	98,199	56,223	66,081
61S	Cottage Grove	Cottage Grove State Airport -Jim Wright Field	IV	198,180	10,029	110,917
S48	Sandy	Country Squire Airpark	V	103,447	10,899	30,709
5S2	Crescent Lake	Crescent Lake State Airport	V	1,096	122	0
77S	Creswell	Creswell Hobby Field Airport	IV	275,568	5,198	153,862

[1] Airports in proximity to adjacent state borders, such as Port of Astoria Regional and Ontario Municipal, have 30 minute drive-times that indicate these airport also serve residents and businesses of neighboring states. These out-of-state populations are not included in this analysis.
[2] DLS is located in Washington State immediately across the Columbia River, it is the only state system airport outside of Oregon .

OREGON AVIATION PLAN

FAA Code	Associated City	Airport Name	Airport Category	30-minute Drive Time Oregon Population[1]	Associated City Population	Estimated Labor Force Size in 30-minute drive
6S4	Gates	Davis Field	V	9,515	481	1,242
PDT	Pendleton	Eastern Oregon Regional Airport at Pendleton	I	27,473	16,996	15,438
8S4	Enterprise	Enterprise Municipal	V	6,196	1,887	4,419
EUG	Eugene	Eugene Airport -Mahlon Sweet Field	I	290,954	165,291	155,653
6S2	Florence	Florence Municipal Airport	IV	14,886	8,702	5,681
5S1	Roseburg	George Felt	V	67,327	22,186	33,355
4S1	Gold Beach	Gold Beach Municipal Airport	IV	3,695	2,298	3,013
GCD	John Day	Grant County Regional Airport	III	5,590	1,649	3,896
3S8	Grants Pass	Grants Pass Airport	III	74,185	37,305	30,515
HRI	Hermiston	Hermiston Municipal Airport	III	34,031	17,167	12,339
3S4	Cave Junction	Illinois Valley Airport	IV	7,265	1,948	2,059
7S5	Independence	Independence State Airport	IV	269,469	9,558	60,877
JSY	Joseph	Joseph State Airport	IV	4,029	1,060	2,728
4S2	Hood River	Ken Jernstedt Airfield	IV	21,209	7,713	12,097
LMT	Klamath Falls	Crater Lake-Klamath Regional Airport	I	48,580	39,990	10,412
LGD	La Grande	La Grande / Union County Airport	III	22,248	13,085	13,166
5S5	Culver	Lake Billy Chinook	V	3,523	1,455	532
LKV	Lakeview	Lake County Airport	III	4,920	2,263	2,673
1O0	Florence	Lake Woahink SPB	V	19,050	24,147	0
9S3	Lakeside	Lakeside Municipal Airport	V	28,278	1,740	6,065
S30	Lebanon	Lebanon State Airport	IV	140,520	16,573	43,993
7S9	Hubbard	Lenhardt Airpark	IV	221,199	3,296	147,513
9S9	Lexington	Lexington Airport	IV	2,880	234	1,993
S33	Madras	Madras Municipal Airport	IV	16,079	6,723	7,403
4S7	Malin	Malin	V	3,667	807	913
26U	McDermitt	McDermitt State Airport	V	64	513	64
00S	McKenzie Bridge	McKenzie Bridge State	V	933	915	0
MMV	McMinnville	McMinnville Municipal Airport	II	109,392	34,314	39,339
25U	Imnaha	Memaloose USFS	V	0	0	0
S49	Vale	Miller Memorial Airpark	V	13,066	1,819	6,384
12S	Monument	Monument Municipal	V	183	137	0
4S9	Mulino	Mulino State Airport	IV	198,580	9,111	60,520

OREGON AVIATION PLAN

FAA Code	Associated City	Airport Name	Airport Category	30-minute Drive Time Oregon Population[1]	Associated City Population	Estimated Labor Force Size in 30-minute drive
16S	Myrtle Creek	Myrtle Creek Municipal Airport	IV	63,059	3,474	36,667
3S7	Manzanita	Nehalem Bay State Airport	V	6,769	634	3,848
ONP	Newport	Newport Municipal Airport	II	24,189	10,309	14,361
5S0	Oakridge	Oakridge State	V	5,940	3,161	1,690
ONO	Ontario	Ontario Municipal Airport	III	32,433	10,914	13,670
28U	Owyhee Reservoir	Owyhee Reservoir State	V	0	0	0
PFC	Pacific City	Pacific City State Airport	V	10,239	1,126	3,447
22S	Paisley	Paisley	V	351	237	137
24S	Pinehurst	Pinehurst State Airport	V	235	214	0
61J	Portland	Portland Downtown Heliport	II	1,405,375	641,544	773,809
HIO	Portland	Portland -Hillsboro Airport	II	680,954	641,544	374,938
PDX	Portland	Portland International Aiport	I	987,465	641,544	543,705
TTD	Portland	Portland -Troutdale Airport	II	831,290	641,544	457,714
6S6	Powers	Powers Hayes Field	V	883	656	136
S39	Prineville	Prineville Airport	IV	35,668	9,540	14,841
64S	Prospect	Prospect State Airport	V	1,396	468	0
RDM	Redmond	Redmond Municipal Airport -Roberts Field	I	142,623	29,303	82,215
MFR	Medford	Rogue Valley International -Medford	I	178,047	80,589	88,655
REO	Rome	Rome State	V	12	20	0
RBG	Roseburg	Roseburg Regional Airport	III	83,389	22,186	41,312
SLE	Salem	Salem McNary Field	II	349,357	165,497	155,353
03S	Sandy	Sandy River	V	125,596	10,899	37,284
8S3	Santiam Junction	Santiam Junction State	V	999	0	0
SPB	Scappoose	Scappoose Industrial Airpark	II	39,593	6,978	11,090
56S	Seaside	Seaside Municipal Airport	IV	28,174	6,557	16,164
S45	Gleneden Beach	Siletz Bay State Airport	IV	20,728	8,651	9,190
45S	Silver Lake	Silver Lake USFS	V	282	50	0
6K5	Sisters	Sisters Eagle Air Airport	IV	22,499	2,563	10,612
4S4	Cornelius	Skyport	V	445,448	12,409	167,681
OTH	North Bend	Southwest Oregon Regional Airport	I	38,154	9,773	18,984
2S6	Newberg	Sportsman Airpark	IV	311,391	10,309	184,873
7S3	Hillsboro	Stark's Twin Oaks	V	635,803	104,628	451,839
S21	Sunriver	Sunriver Airport	IV	29,985	1,008	6,808

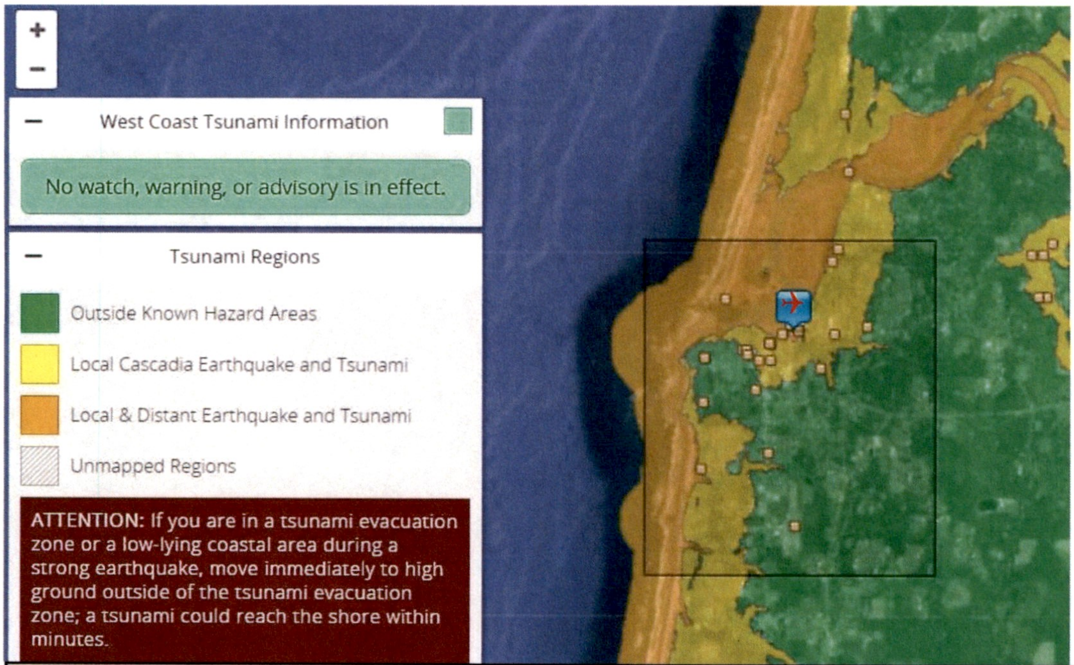
FAA Code	Associated City	Airport Name	Airport Category	30-minute Drive Time Oregon Population[1]	Associated City Population	Estimated Labor Force Size in 30-minute drive
TMK	Tillamook	Tillamook Airport	III	18,838	4,976	9,096
3S6	Clearwater	Toketee State	V	61	0	0
5S4	Toledo	Toledo State Airport	V	17,510	3,507	12,441
5S9	Estacada	Valley View	V	119,404	3,271	20,821
05S	Vernonia	Vernonia Municipal	V	6,748	2,109	1,221
R33	Waldport	Wakonda Beach State	V	9,616	2,147	4,863
35S	Wasco	Wasco State Airport	IV	1,618	386	653

Source: US Census Bureau, Jviation Analysis, Oregon Zoomprospector.com

OREGON AVIATION PLAN

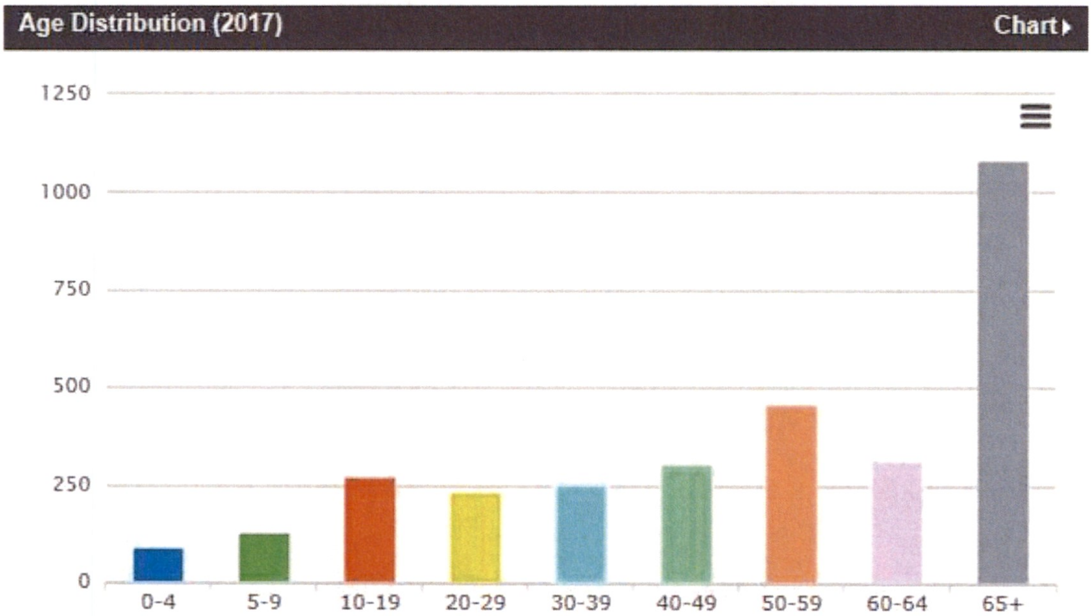
APPENDIX D, RESILIENCY

Airport Name	Bandon State Airport	**FAA ID:**	S05
Contact:	503-378-4880		Frequency 122.8
Airport Location:	Miles from Coast 1.3	**Elevation Ft.**	117
Cascadia Event Hazard	Violent	**Liquefaction Hazard**	Moderate
Airport Inside DOGAMI Hazard Areas:	No	**In 100 Year Floodplain**	No
Resiliency Plan Tier	T2		



Airport Infrastructure		
Runway Dimensions	3,601	60
Navaids	PAPI, REIL, VOR, GPS	Runway Strength: S–12,000
Weather Reporting	AWOS	
Services		
FBO	Bandon Aero Club	
Fuel	AvGas	
Air Ambulance Based on Airport	NA	
Location		
CBD To Airport(NM) & Direction:	02 SE	
Distance to Local Hospital:	3 Miles, Southern Coos Hospital and Health Center	
Next nearest coastal airport:	Cape Blanco State Airport, 25 Minutes Drive Time	
Other nearby airports with instrument procedures:		
KOTH - Southwest Oregon Regional Airport (21 nm N)		
KRBG - Roseburg Regional Airport (47 nm E)		
3S8 - Grants Pass Airport (57 nm SE)		
KCEC - Jack Mc Namara Field Airport (79 nm S)		
KMFR - Rogue Valley International - Medford Airport (80 nm SE)		

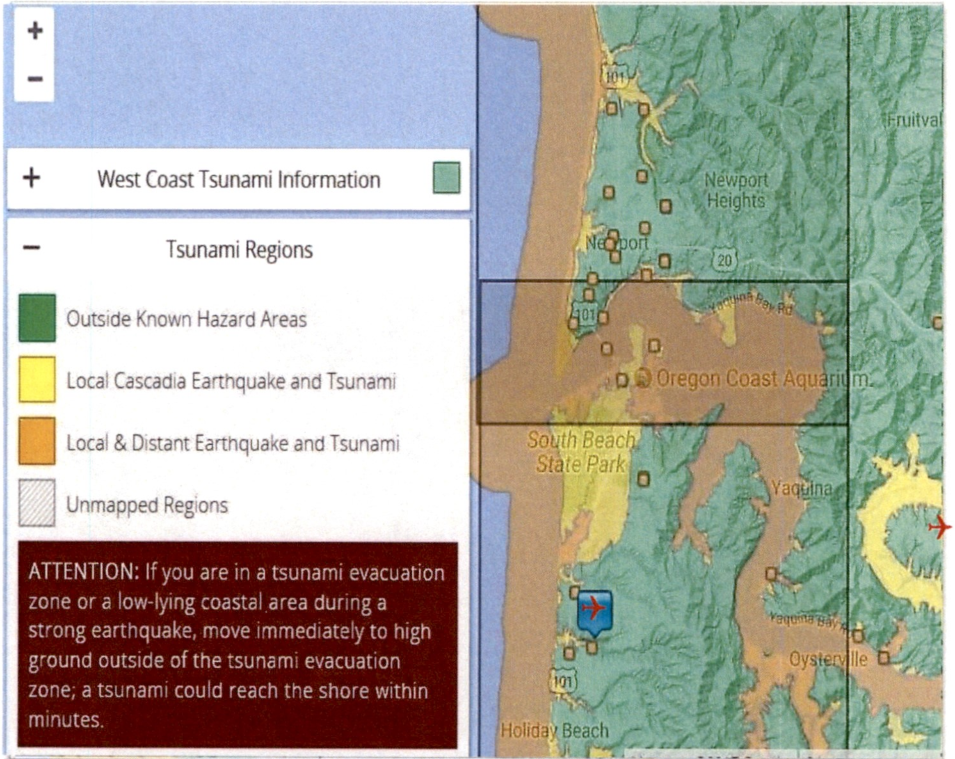
Community Profile	Bandon
Population within 30-minute Drive Time:	7,554
Population within 20-mile Radius:	29,567
Population within City Limits:	3,147



Source: Oregon.zoomprospector.com

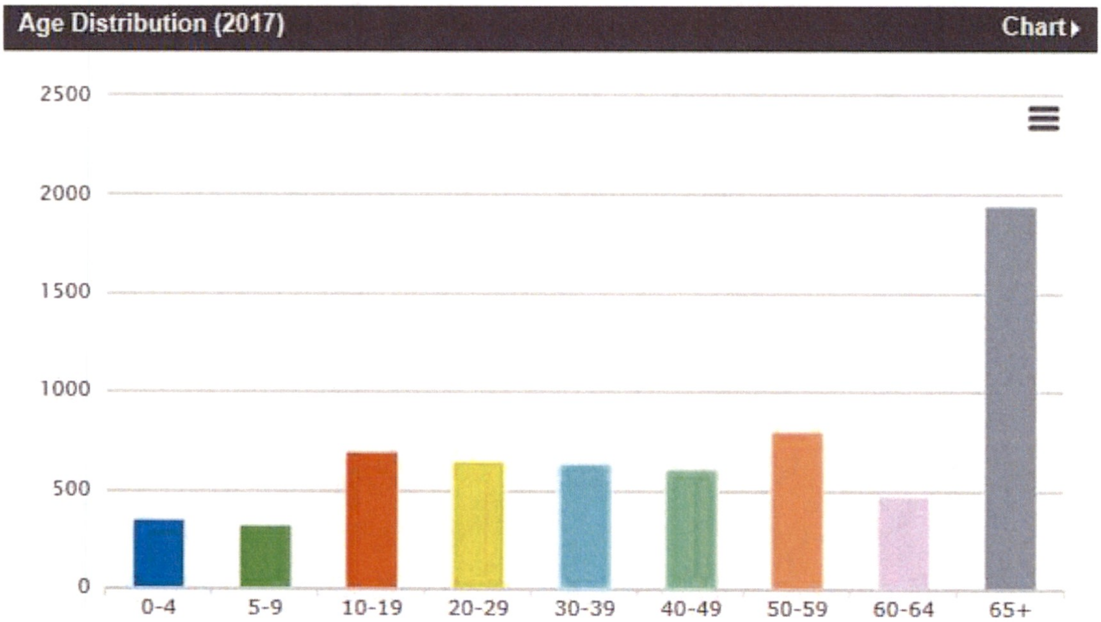
BANDON
30 Minute Drive Time

Airport Name	Brookings Airport	**FAA ID:**	BOK
Contact:	541-247-3296		Frequency 122.8
Airport Location:	Miles from Coast 1.1	**Elevation Ft.**	459
Cascadia Event Hazard	Severe	**Liquefaction Hazard**	N/A
Airport Inside DOGAMI Hazard Areas:	No	**In 100 Year Floodplain**	No
Resiliency Plan Tier	T2		



Airport Infrastructure			
Runway Dimensions	2,900	60	
Navaids	PAPI, VASI, REIL, VOR, GPS, NDB		
Weather Reporting	ASOS	Runway Strength	S–30,000
Services			
FBO	Brookings Fly Club		
Fuel	AvGas, Jet A		
Air Ambulance Based on Airport	REACH Air Medical Services		
Location			
CBD To Airport(NM) & Direction:	01 NE		
Distance to Local Hospital:	29 Miles, Curry General Hospital		
Next nearest coastal airport:	Gold Beach Municipal Airport, 38 Minutes Drive Time		
Other nearby airports with instrument procedures:			
KCEC - Jack Mc Namara Field Airport (18 nm S)			
3S8 - Grants Pass Airport (48 nm NE)			
KMFR - Rogue Valley International - Medford Airport (65 nm E)			
KACV - California Redwood Coast-Humboldt County Airport (66 nm S)			
KEKA - Murray Field Airport (77 nm S)			

Community Profile	Brookings
Population within 30-minute Drive Time:	13,833
Population within 20-mile Radius:	25,779
Population within City Limits:	6,497



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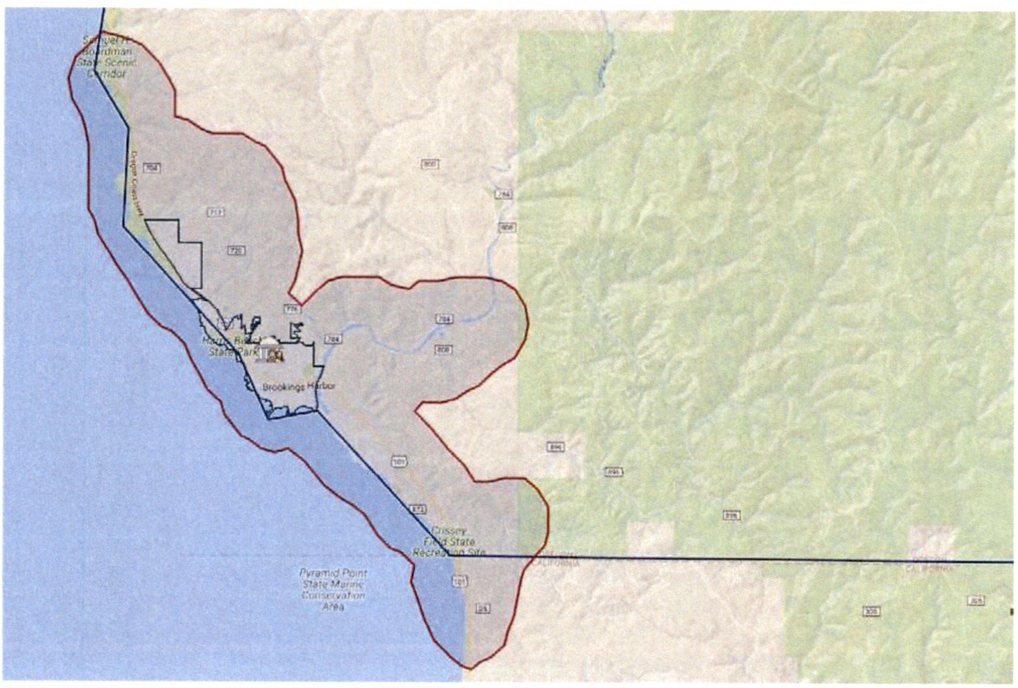
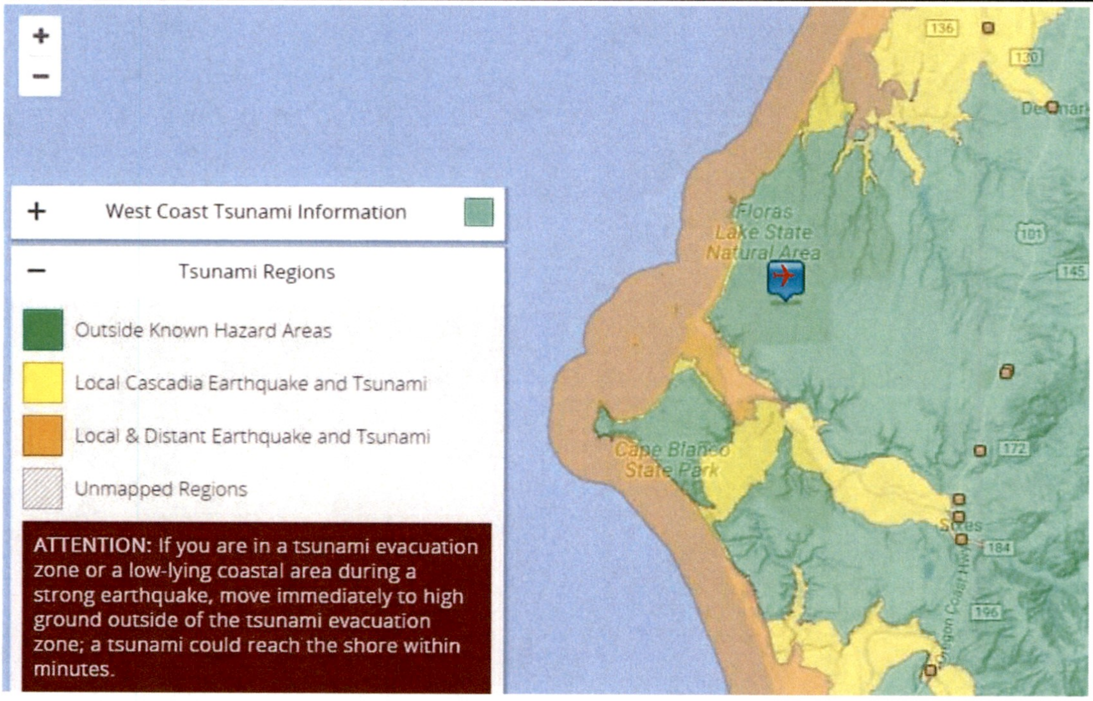
BROOKINGS
30 Minute Drive Time

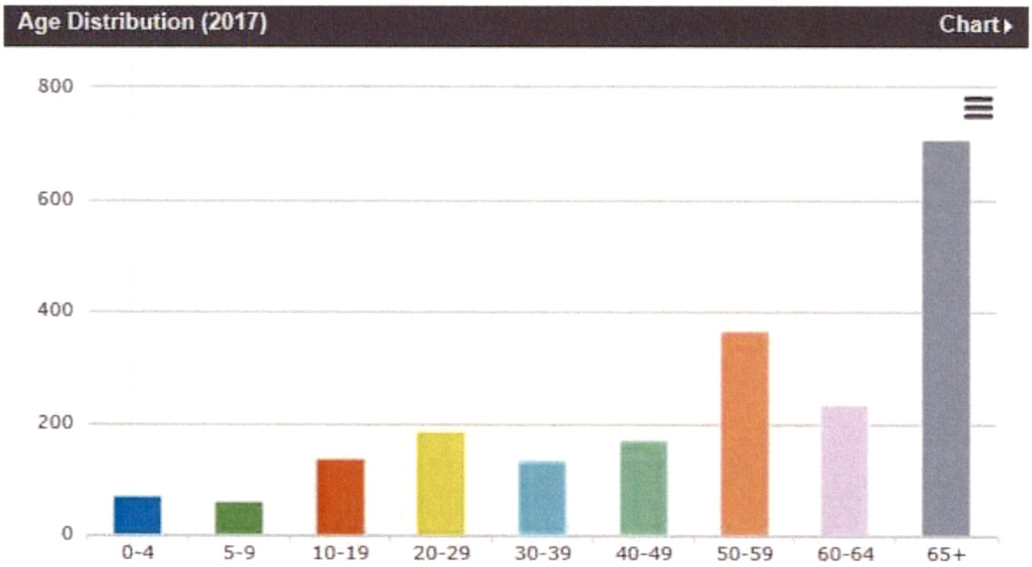


Airport Name	Cape Blanco State Airport	**FAA ID:**	5S6
Contact:	503-378-4880		Frequency 122.9
Airport Location:	Miles from Coast 1.0	**Elevation Ft.**	214
Cascadia Event Hazard	Violent	**Liquefaction Hazard**	Moderate
Airport Inside DOGAMI Hazard Areas:	No	**In 100 Year Floodplain**	No
Resiliency Plan Tier	T2		



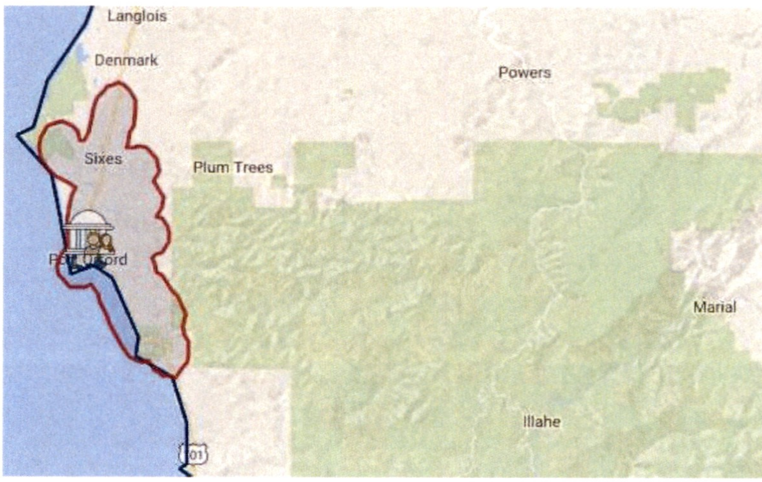
Airport Infrastructure		
Runway Dimensions	5,100	150
Navaids	PAPI, REIL, VOR	
Weather Reporting	Runway Strength	S–115000, D–185000, 2D–340000
Services		
FBO	NA	
Fuel	NA	
Air Ambulance Based on Airport	NA	
Location		
CBD To Airport(NM) & Direction:	04 NW	
Distance to Local Hospital:	23 Miles, Southern Coos Hospital and Health Center	
Next nearest coastal airport:	Bandon State Airport, 26 Minutes Drive Time	
Other nearby airports with instrument procedures:		
KOTH - Southwest Oregon Regional Airport (36 nm N)		
3S8 - Grants Pass Airport (54 nm E)		
KRBG - Roseburg Regional Airport (56 nm NE)		
KCEC - Jack Mc Namara Field Airport (66 nm S)		
KMFR - Rogue Valley International - Medford Airport (78 nm E)		

Community Profile	Port Oxford
Population within 30-minute Drive Time:	**3,382**
Population within 20-mile Radius:	**4,998**
Population within City Limits:	**1,146**

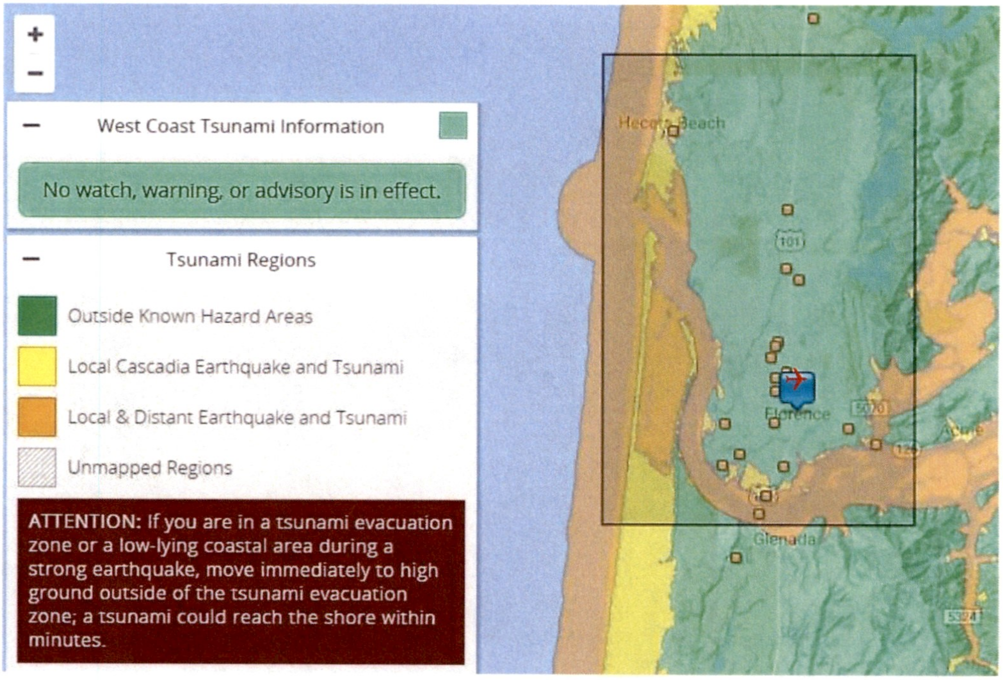


Source: Oregon.zoomprospector.com

PORT OXFORD
30 Minute Drive Time

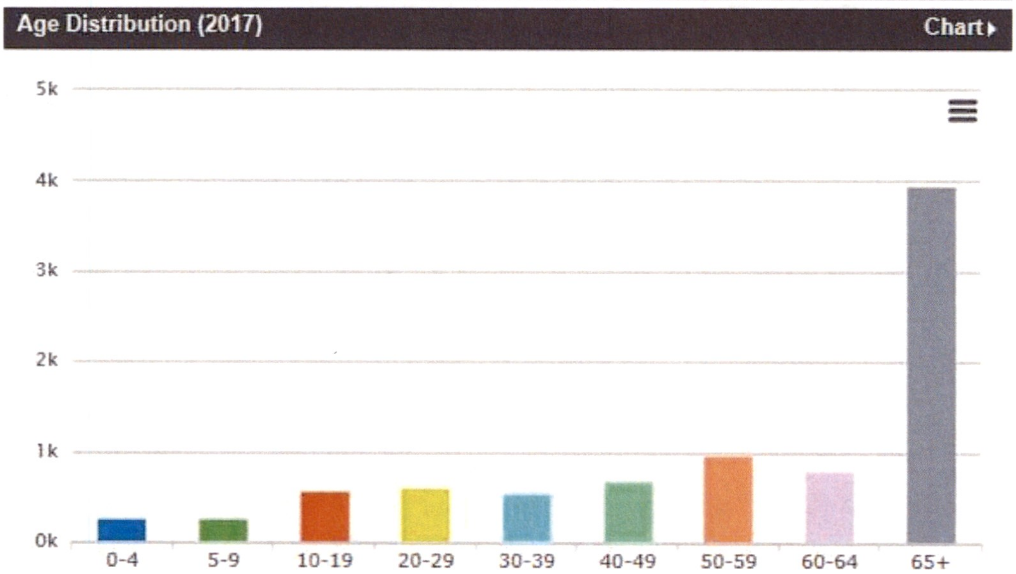


Airport Name	Florence Municipal Airport	**FAA ID:**	6S2
Contact:	541-997-8069		Frequency 122.8
Airport Location:	Miles from Coast 1.4	**Elevation Ft.**	51
Cascadia Event Hazard	Severe	**Liquefaction Hazard**	High
Airport Inside DOGAMI Hazard Areas:	No	**In 100 Year Floodplain**	No
Resiliency Plan Tier	T3		



Airport Infrastructure			
Runway Dimensions	3,000	60	
Navaids	PAPI, REIL, VOR, GPS		
Weather Reporting	AWOS	Runway Strengh:	S-12,500
Services			
FBO	Florence Airport Volunteer Group		
Fuel	AvGas, Jet A		
Air Ambulance Based on Airport	NA		
Location			
CBD To Airport(NM) & Direction:	01 N		
Distance to Local Hospital:	1.3 Miles, Peace Harbor Hospital		
Next nearest coastal airport:	Wakonda Beach Airport, 45 Minute Drive Time		
Other nearby airports with instrument procedures:			
KOTH - Southwest Oregon Regional Airport (34 nm S)			
KONP - Newport Municipal Airport (36 nm N)			
KEUG - Mahlon Sweet Field Airport (40 nm E)			
KCVO - Corvallis Municipal Airport (47 nm NE)			
KRBG - Roseburg Regional Airport (55 nm SE)			

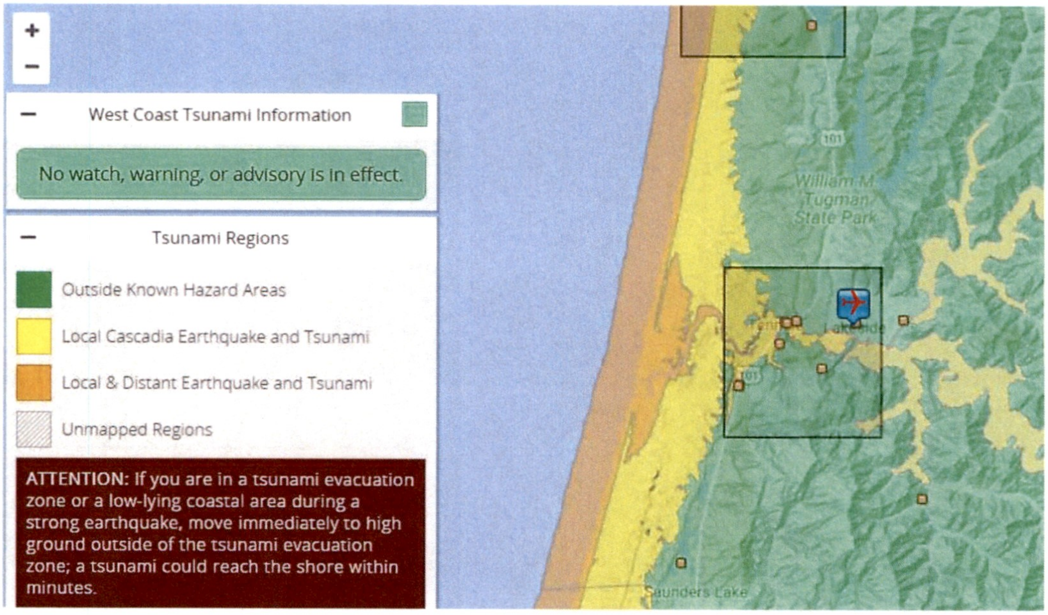
Community Profile	Florence
Population within 30-minute Drive Time:	15,006
Population within 20-mile Radius:	17,530
Population within City Limits:	8,703



Source: Oregon.zoomprospector.com

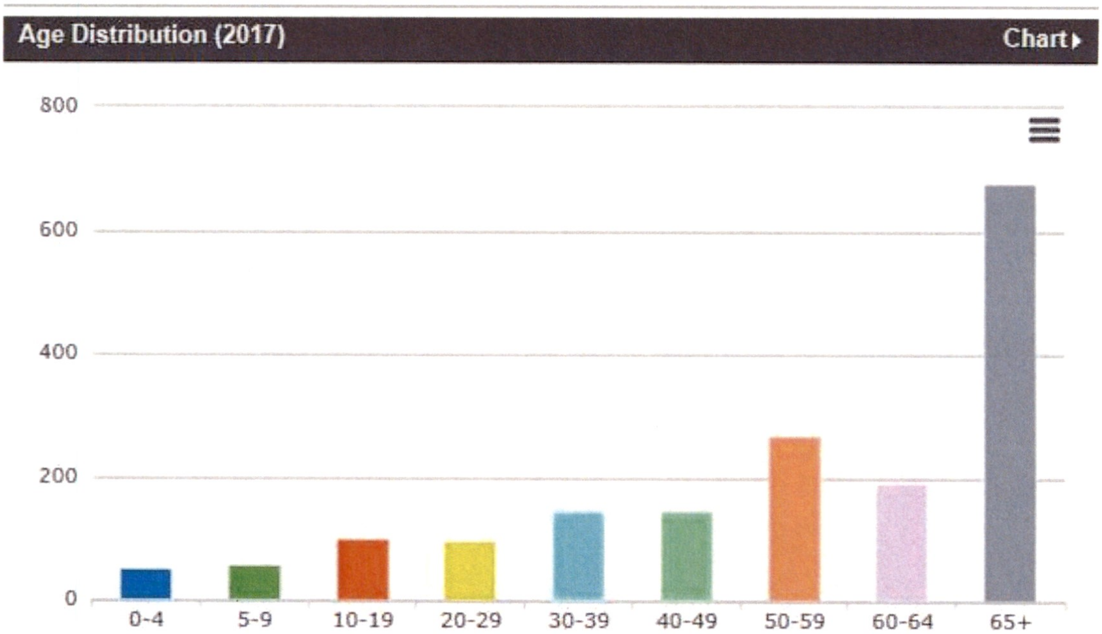
FLORENCE
30 Minute Drive Time

Airport Name	Lakeside Municipal Airport	**FAA ID:**	9S3
Contact:	541-759-3011		Frequency 122.9
Airport Location:	Miles from Coast 2.3	**Elevation Ft.**	20
Cascadia Event Hazard	Severe	**Liquefaction Hazard**	Moderate
Airport Inside DOGAMI Hazard Areas:	No	**In 100 Year Floodplain**	No
Resiliency Plan Tier	NA		



Airport Infrastructure		
Runway Dimensions	2,150	100
Navaids	VOR	
Weather Reporting	NA	Runway Strength: Turf
Services		
FBO	NA	
Fuel	AvGas	
Air Ambulance Based on Airport	NA	
Location		
CBD To Airport(NM) & Direction:	00 NW	
Distance to Local Hospital:	14 Miles, Lower Umpqua Hospital	
Next nearest coastal airport:	Southwest Oregon Regional Airport, 23 Miles Drive Time	
Other nearby airports with instrument procedures:		
KOTH - Southwest Oregon Regional Airport (10 nm S)		
KRBG - Roseburg Regional Airport (41 nm SE)		
KEUG - Mahlon Sweet Field Airport (53 nm NE)		
KONP - Newport Municipal Airport (60 nm N)		
KCVO - Corvallis Municipal Airport (67 nm NE)		

Community Profile	Lakeside
Population within 30-minute Drive Time:	29,167
Population within 20-mile Radius:	48,208
Population within City Limits:	1,748



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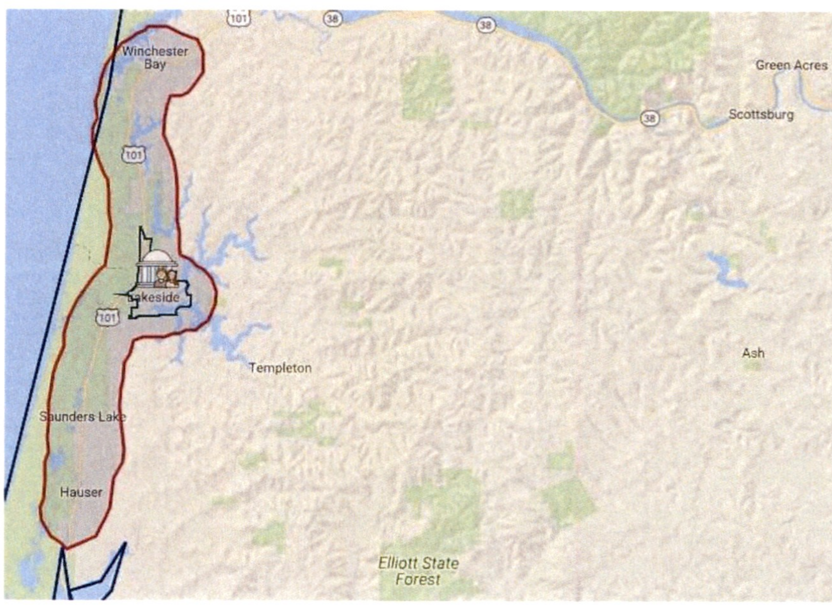
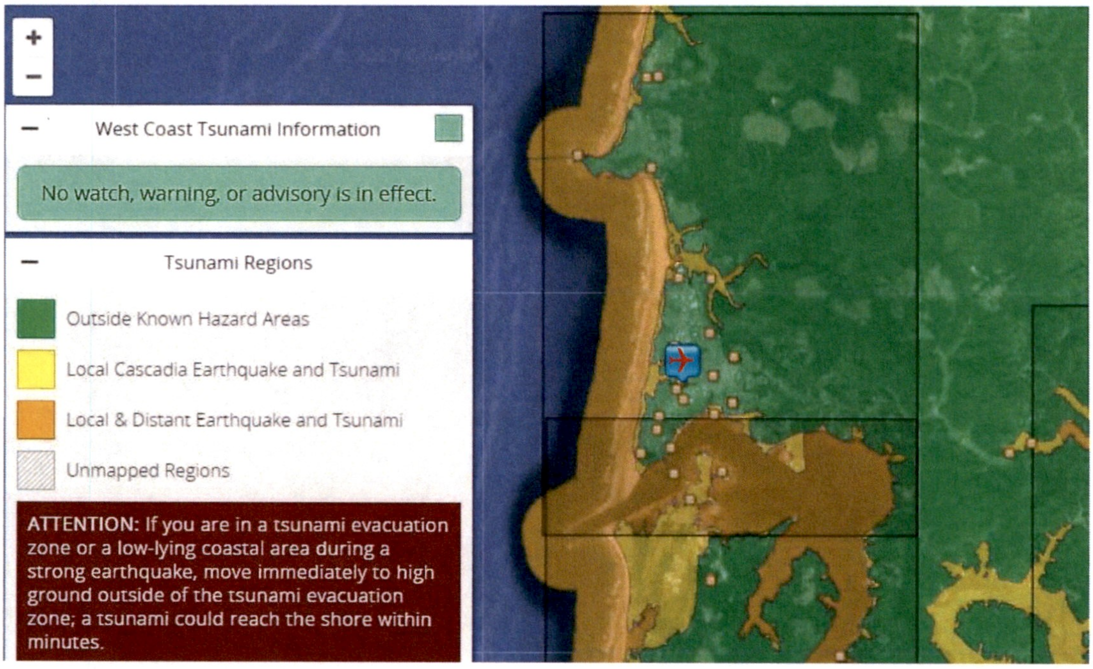
LAKESIDE
30 Minute Drive Time

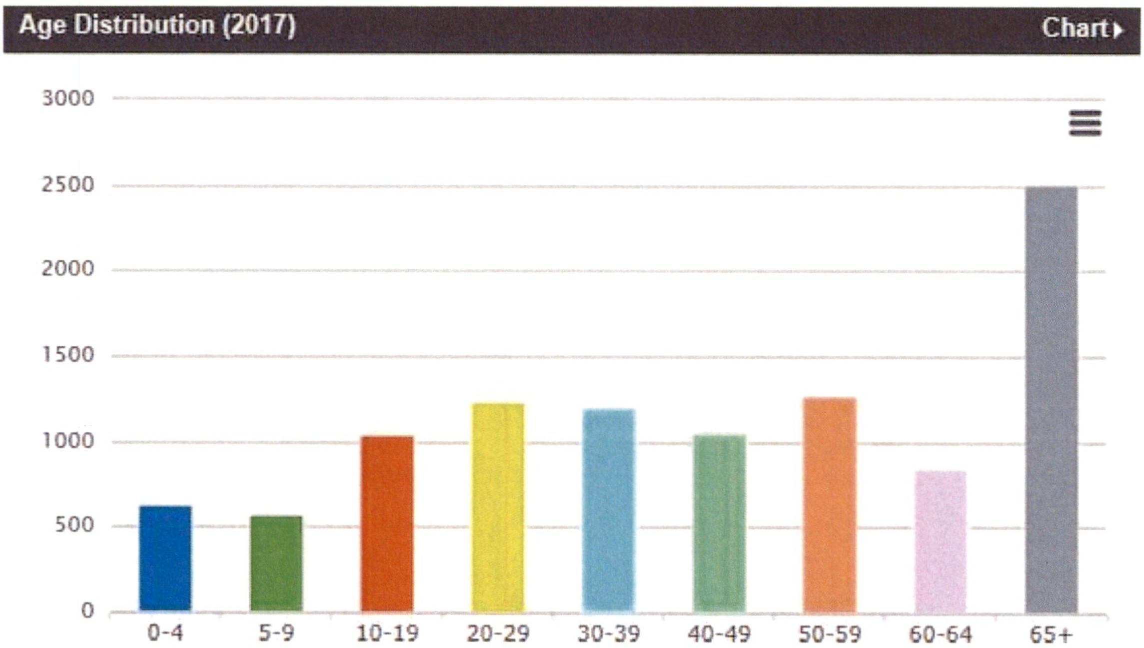


Airport Name	Newport Municipal Airport		**FAA ID:**	ONP	
Contact:	(541) 867-7422			Frequency 122.8	
Airport Location:	Miles from Coast	0.3	**Elevation Ft.**		132
Cascadia Event Hazard	Severe	**Liquefaction Hazard**		Low	
Airport Inside DOGAMI Hazard Areas:		No	**In 100 Year Floodplain**	No	
Resiliency Plan Tier	T2				



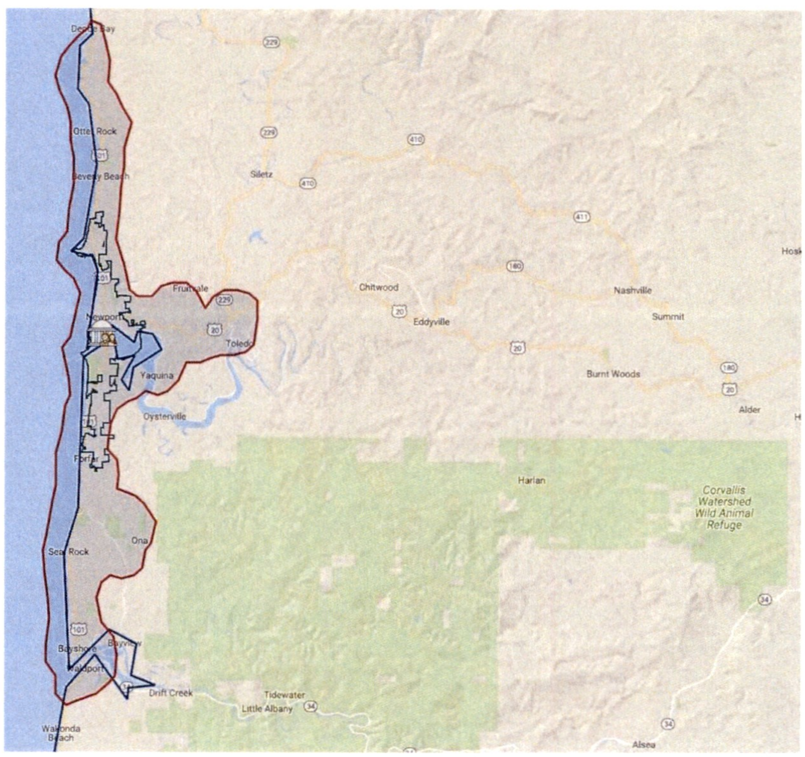
Airport Infrastructure		
Runway Dimensions	5,398	100
Navaids	PAPI, REIL, MLS, ILS, LOC, MALSR, DME, VOR, GPS, NDB	
Weather Reporting	AWOS	
Rwy Strength:	S–75000, D–120000, 2S–152000, 2D–170000	
Services		
FBO	Newport Municipal Airport	
Fuel	Jet A, AvGas	
Air Ambulance Based on Airport	NA	
Location		
CBD To Airport(NM) & Direction:	03 S	
Distance to Local Hospital:	4.5 Miles, Samaritan Pacific Communities Hospital	
Next nearest coastal airport:	Toledo State Airport, 26 Minute Drive Time	
Other nearby airports with instrument procedures:		
KCVO - Corvallis Municipal Airport (33 nm E)		
S12 - Albany Municipal Airport (43 nm E)		
KEUG - Mahlon Sweet Field Airport (45 nm SE)		
KSLE - McNary Field Airport (49 nm NE)		
KTMK - Tillamook Airport (51 nm N)		

Community Profile	Newport
Population within 30-minute Drive Time:	24,298
Population within 20-mile Radius:	34,539
Population within City Limits:	10,344

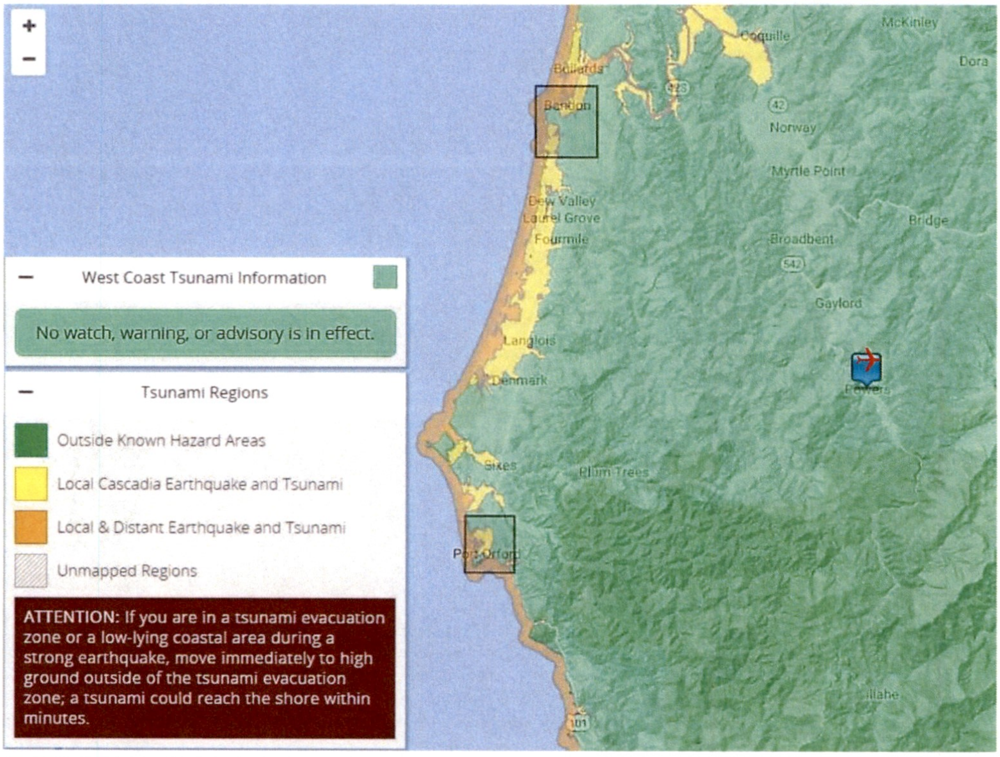


Source: Oregon.zoomprospector.com

NEWPORT
30 Minute Drive Time

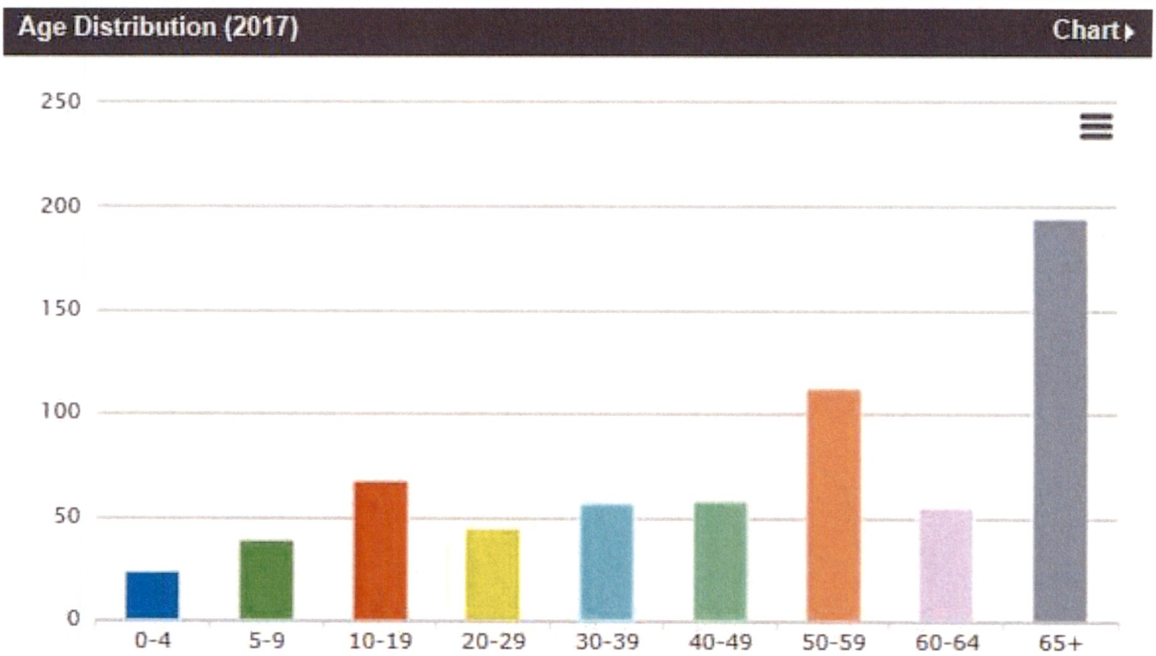


Airport Name	Powers Hayes Field	**FAA ID:**	6S6
Contact:	(541) 572-2737		Frequency 122.9
Airport Location:	Miles from Coast 22.9	**Elevation Ft.**	326
Cascadia Event Hazard	Severe	**Liquefaction Hazard**	Moderate
Airport Inside DOGAMI Hazard Areas:	No	**In 100 Year Floodplain**	No
Resiliency Plan Tier	NA		



Airport Infrastructure		
Runway Dimensions	2,500	60
Navaids	VOR	
Weather Reporting	NA	
Runway Strength	NA	
Services		
FBO	NA	
Fuel	AvGas, Jet A	
Air Ambulance Based on Airport	NA	
Location		
CBD To Airport(NM) & Direction:	01 SE	
Distance to Local Hospital:	49 Miles, Southern Coos Hospital and Health Center	
Next nearest coastal airport:	Bandon State Airport, 1 Hour and 15 Minute Drive Time	
Other nearby airports with instrument procedures:		
KOTH - Southwest Oregon Regional Airport (34 nm N)		
3S8 - Grants Pass Airport (37 nm SE)		
KRBG - Roseburg Regional Airport (38 nm NE)		
KMFR - Rogue Valley International - Medford Airport (60 nm SE)		
KCEC - Jack Mc Namara Field Airport (66 nm S)		

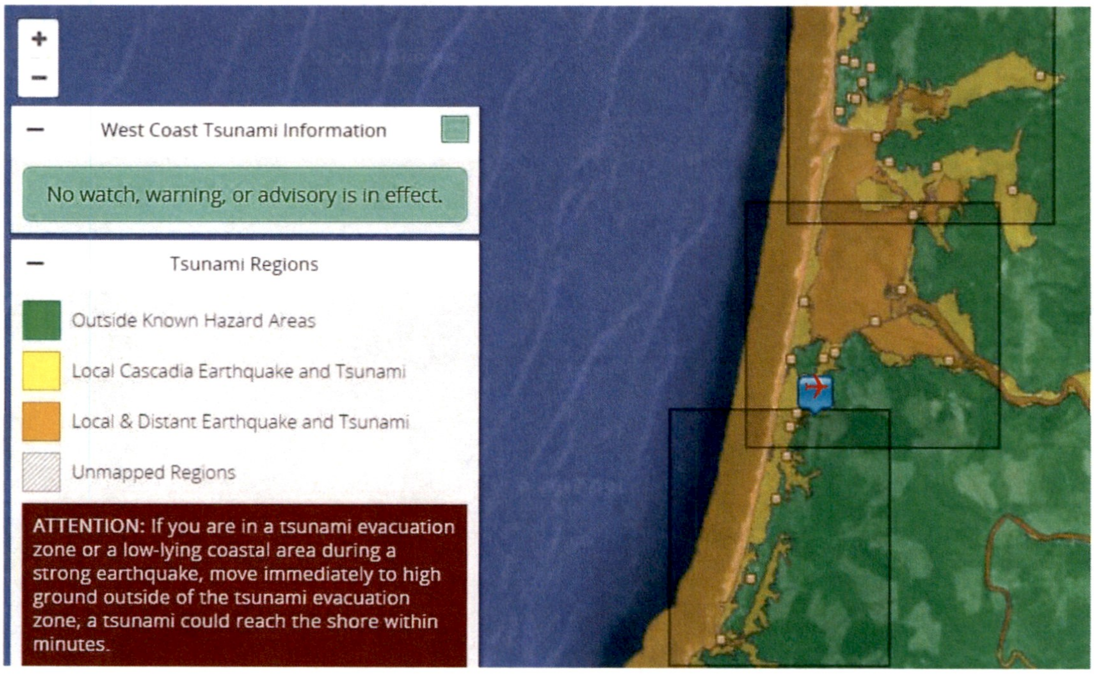
Community Profile	Powers
Population within 30-minute Drive Time:	891
Population within 20-mile Radius:	7,638
Population within City Limits:	660



Source: Oregon.zoomprospector.com

POWERS
30 Minute Drive Time

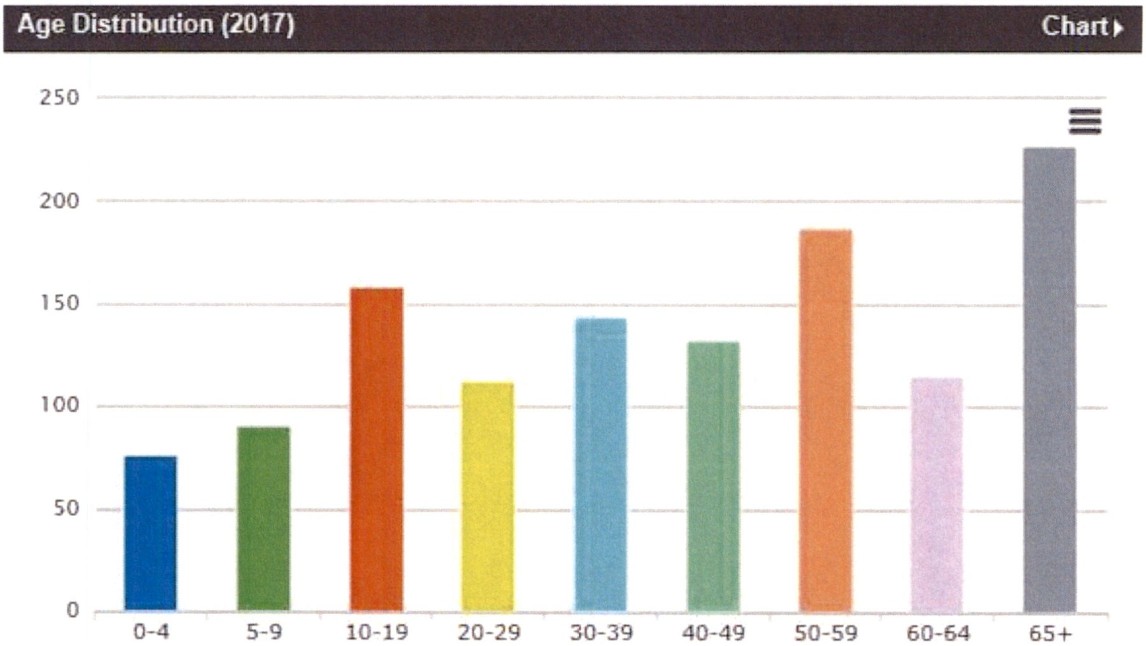
Airport Name	Siletz Bay State Airport	**FAA ID:**	S45
Contact:	503-378-4880		Frequency 122.7
Airport Location:	Miles from Coast 0.5	**Elevation Ft.**	69
Cascadia Event Hazard	Severe	**Liquefaction Hazard**	Moderate
Airport Inside DOGAMI Hazard Areas:	No	**In 100 Year Floodplain**	Yes
Resiliency Plan Tier	T2		



Airport Infrastructure		
Runway Dimensions	3,297	60
Navaids	PAPI, REIL, ODALS, VOR, GPS, NDB	
Weather Reporting	ASOS	Runway Strength S-11000
Services		
FBO	NA	
Fuel	AvGas, Jet A	
Air Ambulance Based on Airport	NA	
Location		
CBD To Airport(NM) & Direction:	01 SE	
Distance to Local Hospital:	9.5 Miles, Samaritan North Lincoln Hospital	
Next nearest coastal airport:	Newport Municipal Airport, 38 Minute Drive Time	

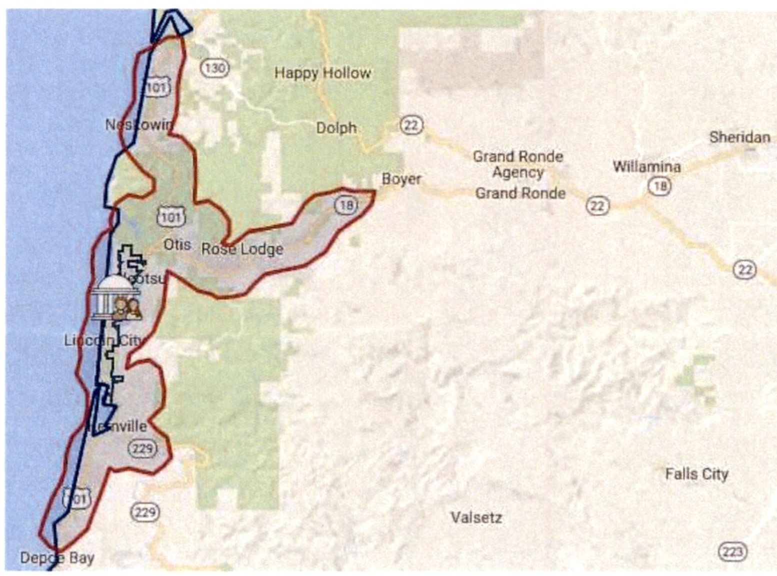
Other nearby airports with instrument procedures:
KONP - Newport Municipal Airport (18 nm S)
KTMK - Tillamook Airport (34 nm N)
KCVO - Corvallis Municipal Airport (39 nm SE)
KMMV - Mc Minnville Municipal Airport (42 nm NE)
KSLE - McNary Field Airport (44 nm E)

Community Profile	Lincoln Beach
Population within 30-minute Drive Time:	20,385
Population within 20-mile Radius:	37,804
Population within City Limits:	2,110

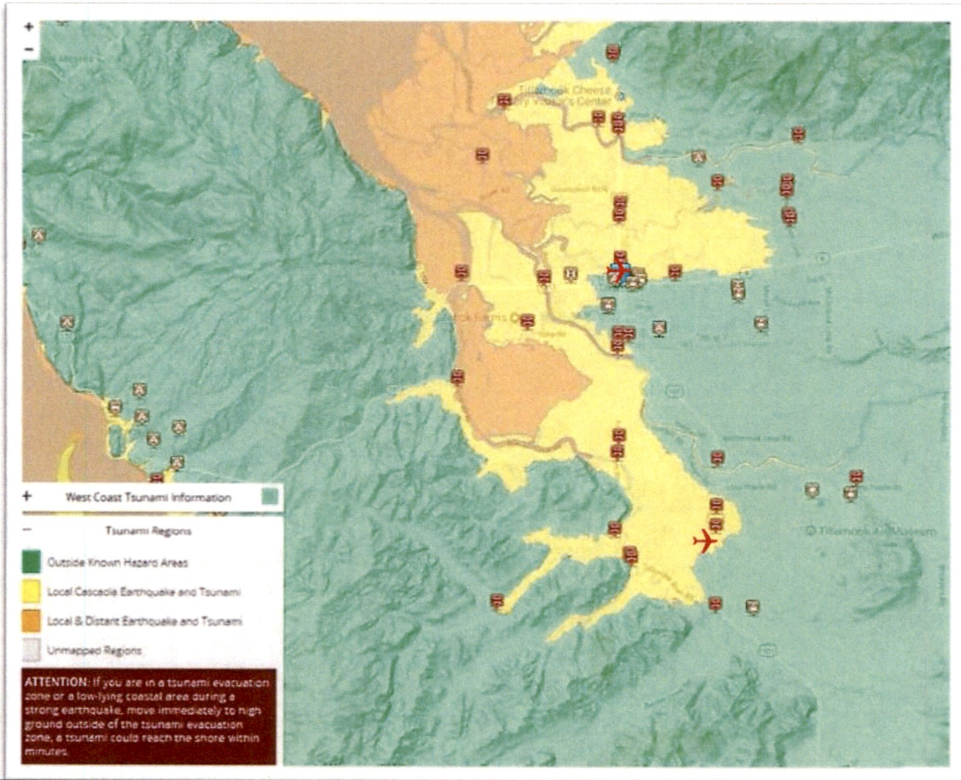


Source: Oregon.zoomprospector.com

LINCOLN BEACH
30 Minute Drive Time

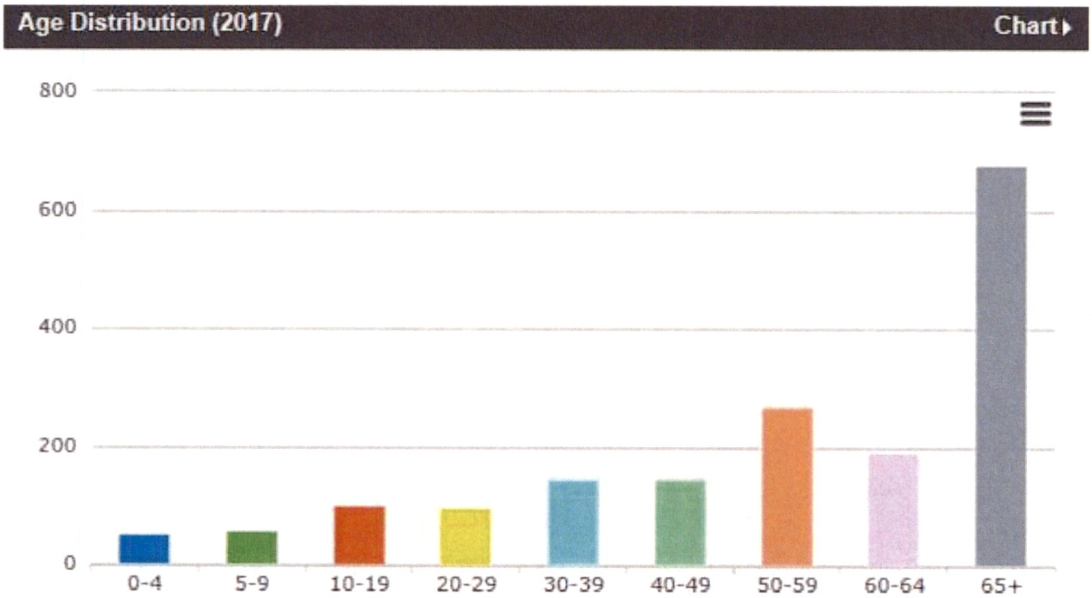


Airport Name	Tillamook Airport	**FAA ID:**	TMK
Contact:	(503)842-7152		Frequency 122.8
Airport Location:	Miles from Coas 7.1	**Elevation Ft.**	39
Cascadia Event Hazard	Severe	**Liquefaction Hazard**	Moderate
Airport Inside DOGAMI Hazard Areas:	No	**In 100 Year Floodplain**	Partial
Resiliency Plan Tier	T2		



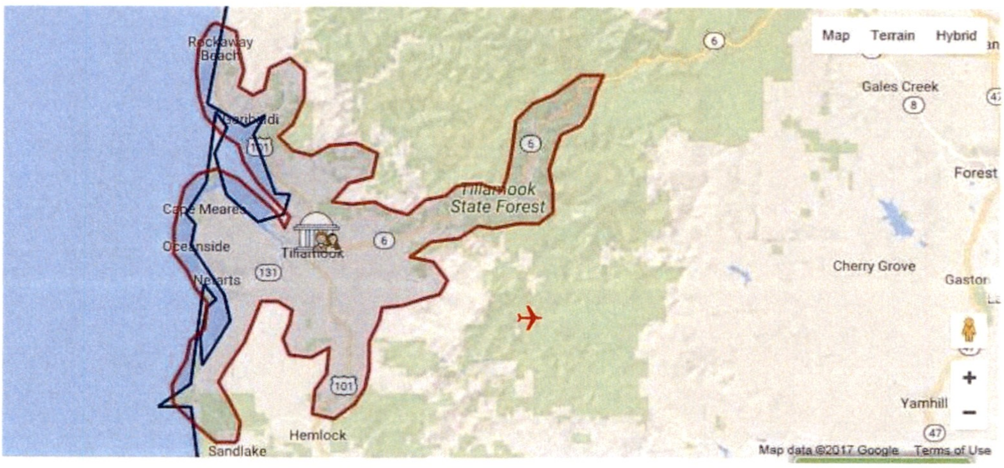
Airport Infrastructure	
Runway Dimensions	5,001 75
Navaids	ILS
Weather Reporting	AWOS
Runway Strength	S-60000, D-75000,2D-125000
Services	
FBO	Port of Tillamook Bay Airport
Fuel	Jet A, AvGas
Air Ambulance Based on Airport	Classic Air Medical
Location	
CBD To Airport(NM) & Direction: **03 S**	
Distance to Local Hospital – 3.6 Miles, Tillamook Regional Medical Center	
Next nearest coastal airport: Nehalem Bay, 41 Minutes drive time	
Other nearby airports with instrument procedures:	
KMMV - Mc Minnville Municipal Airport (32 nm SE)	
KHIO - Portland-Hillsboro Airport (37 nm E)	
KAST - Astoria Regional Airport (44 nm N)	
KUAO - Aurora State Airport (45 nm E)	
KSPB - Scappoose Industrial Airpark (45 nm NE)	

Community Profile	Tillamook
Population within 30-minute Drive Time:	17,630
Population within 20-mile Radius:	25,025
Population within City Limits:	4,976

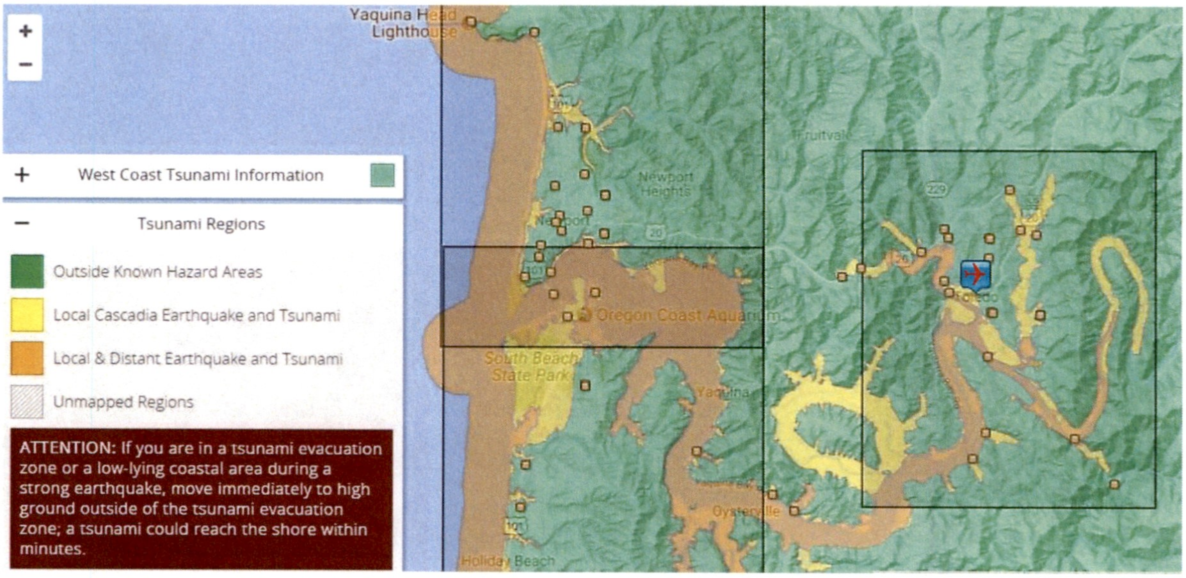


Source: Oregon.zoomprospector.com

Tillamook
30 Minute Drive Time



Airport Name	Toledo State Airport		**FAA ID:**	5S4
Contact:	503-378-4880			Frequency 122.9
Airport Location:	Miles from Coast	6.4	**Elevation Ft.**	12
Cascadia Event Hazard	Severe	**Liquefaction Hazard**	Moderate	
Airport Inside DOGAMI Hazard Areas:		No	**In 100 Year Floodplain**	Yes
Resiliency Plan Tier	NA			



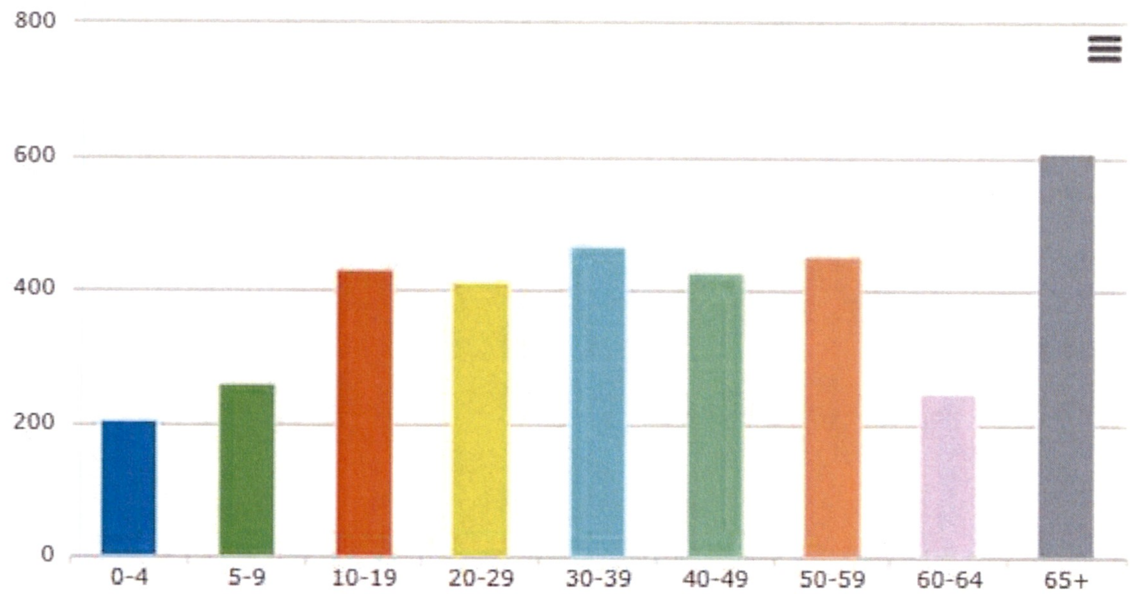
Airport Infrastructure		
Runway Dimensions	1,750	40
Navaids	VOR, NDB	
Weather Reporting	NA	Runway Strength: NA
Services		
FBO	NA	
Fuel	NA	
Air Ambulance Based on Airport	NA	
Location		
CBD To Airport(NM) & Direction:	01 SW	
Distance to Local Hospital:	9.3 Miles, Samaritan Pacific Communities Hospital	
Next nearest coastal airport:	Newport Municipal Airport, 26 Minutes Drive Time	
Other nearby airports with instrument procedures:		

KONP - Newport Municipal Airport (5 nm W)
KCVO - Corvallis Municipal Airport (28 nm E)
S12 - Albany Municipal Airport (38 nm E)
KEUG - Mahlon Sweet Field Airport (42 nm SE)
KSLE - McNary Field Airport (44 nm NE)

Community Profile	Toledo
Population within 30-minute Drive Time:	19,578
Population within 20-mile Radius:	32,436
Population within City Limits:	3,515

Age Distribution (2017)

Chart



Source: Oregon.zoomprospector.com

TOLEDO
30 Minute Drive Time

OREGON AVIATION PLAN

APPENDIX E, COST ESTIMATE NARRATIVE

APPENDIX E

Deficiencies Cost Estimates Methodologies

Once the required facility improvements had been identified for each airport within the state system, the rough-order-magnitude cost to address each need was determined. Since the costs are planning level estimates and did not require a detailed engineering cost breakdown for each improvement, a more high-level approach was needed.

The costs for each airport were based on average unit prices sourced from the 2009 Oregon Department of Aviation Unit Cost Estimate Update. These unit prices represent a large sample size of actual bidding information from similar projects collected over many years. To account for inflation, an inflation value was assumed and then validated and adjusted using historical Turner Building Cost Index information. The individual improvements needed such as taxiway widening, runway extensions, lighting, drainage etc., then were assembled and using the unit prices, formed the basis of each cost. Soft costs including environmental, surveying, testing, design, bidding, construction administration, construction observation, and miscellaneous administrative costs were factored in to each total cost as well. For larger capital improvement projects where expansion would require acquisition of land, the total cost also included land acquisition, associated appraisals, and property surveys.

Generally, the categories of major improvements needed was broken down as follows:

Airfield Pavements

- Construct/Rehabilitate
- Add Runway Extension
- Add Runway Width
- Add New Taxiway
- Earthwork

Runway Markings

- Visual Painting
- Non-Precision Painting
- Precision Painting

Runway/Taxiway Lighting

- Runway Lighting
- Taxiway Lighting
- Reflectors

Drainage

Fencing

The estimated cost to install the systems and facility improvements below was estimated based on similar previous installations at airports within the state. It was assumed suitable space was available on the respective airports and no land acquisition, clearing of obstructions, or other major improvements were required. All costs account for applicable soft costs such as permitting, project administration, contingencies, etc.

- Visual Approach Aids – Lump sum cost estimate
- Rotating Beacon and Wind Cone – Lump sum cost estimate
- Weather Reporting – Lump sum cost estimate
- Fuel – Lump sum cost estimate
- Snow Removal – Lump sum cost estimate
- Deicing Facility – Lump sum cost estimate
- Terminal Building – Lump sum cost estimate
- Hangars/Aircraft Storage – 1500 SF per Hangar at $75/SF
- Apron Parking Storage – 5000 SF per spot at $5/S for CAT I and CAT II and $3.79/SF for all other CATs.
- Auto Parking – 400 SF per parking spot at $4/SF
- Fencing - $40 per linear foot plus gates.
- Cargo Aprons – Remarking existing apron space at $25,000
- Cargo Handling Facilities – 5,000 SF Facility at $300/SF

OREGON AVIATION PLAN

APPENDIX F, OFA, RPZ, RSA COMPLIANCE

S12 – Albany Municipal

RSA
- NA

OFA
- NA

RPZ
- Roads
- Aircraft Parking
- Buildings
- Vehicle Parking

RWY/TWY Separation
- 150’

R03 – Alkali Lake State

RSA
- Road

OFA
- Road

RPZ
- Road

RWY/TWY Separation
- NA

1S8 – Arlington Municipal

RSA
- Road

OFA
- Road

RPZ
- Road

RWY/TWY Separation
- NA

S03 – Ashland Municipal-Sumner Parker Field

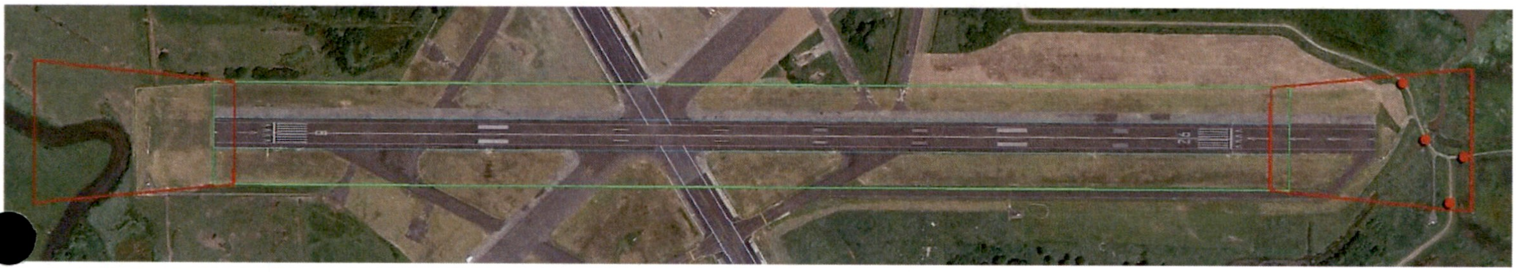
RSA
- NA

OFA
- Trees/Brush

RPZ
- Roads
- Buildings

RWY/TWY Separation
- 150' – 165'

AST – Astoria Regional



RSA
- NA

OFA
- NA

RPZ
- Airport Dike Trail

RWY/TWY Separation
- 270'

UAO – Aurora State

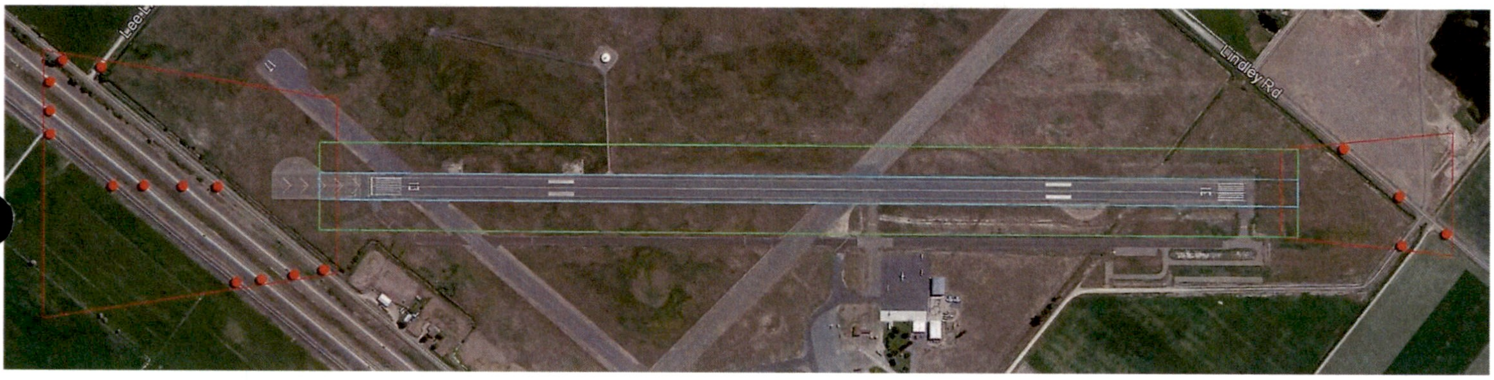
RSA
- NA

OFA
- Road
- Fuel Tanks
- Aircraft Parking

RPZ
- Roads
- Buildings/Residential
- Outside Storage
- Vehicle Storage

RWY/TWY Separation
- 300’

BKE – Baker City Municipal



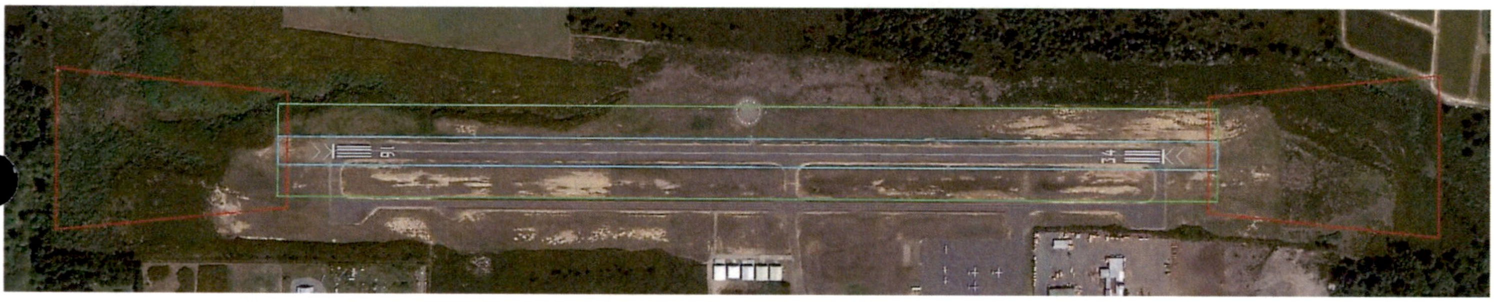
RSA
- NA

OFA
- NA

RPZ
- Roads

RWY/TWY Separation
- 300’

S05 – Bandon State



RSA
- NA

OFA
- NA

RPZ
- NA

RWY/TWY Separation
- 225' – Non-Standard

2S2 – Beaver Marsh State

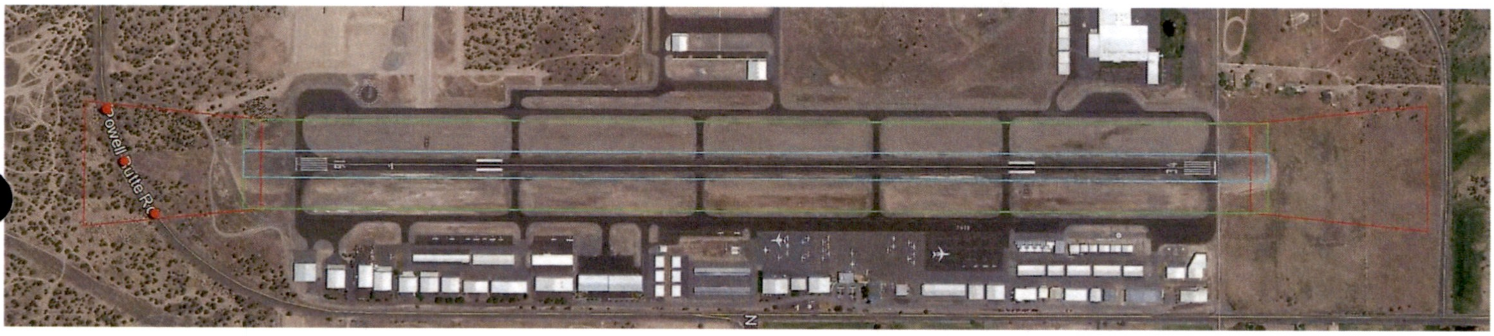
RSA
- NA

OFA
- Road
- Trees/Brush

RPZ
- Roads
- Buildings

RWY/TWY Separation
- NA

BDN – Bend Municipal



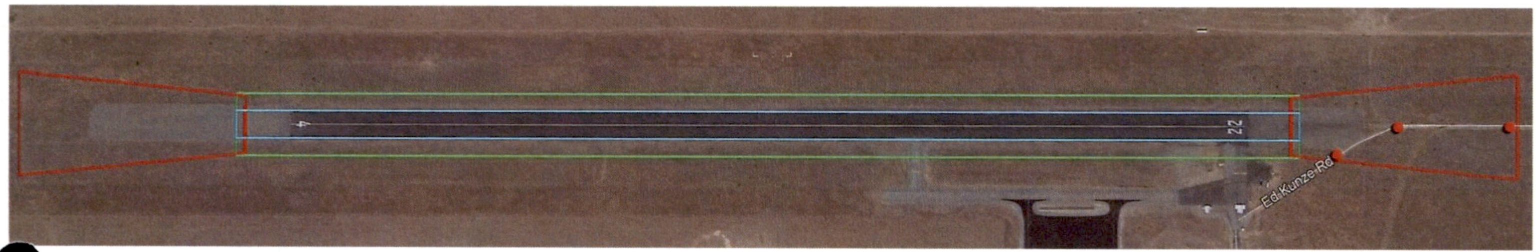
RSA
- NA

OFA
- NA

RPZ
- Road

RWY/TWY Separation
- 300’

M50 - Boardman



RSA
- NA

OFA
- NA

RPZ
- Road

RWY/TWY Separation
- 300’

BOK - Brookings

RSA
- NA

OFA
- NA

RPZ
- Roads

RWY/TWY Separation
- 150’

BNO – Burns Municipal

RSA
- NA

OFA
- NA

RPZ
- Road

RWY/TWY Separation
- NA

5S6 – Cape Blanco State

RSA
- NA

OFA
- NA

RPZ
- NA

RWY/TWY Separation
- NA

CZK – Cascade Locks State

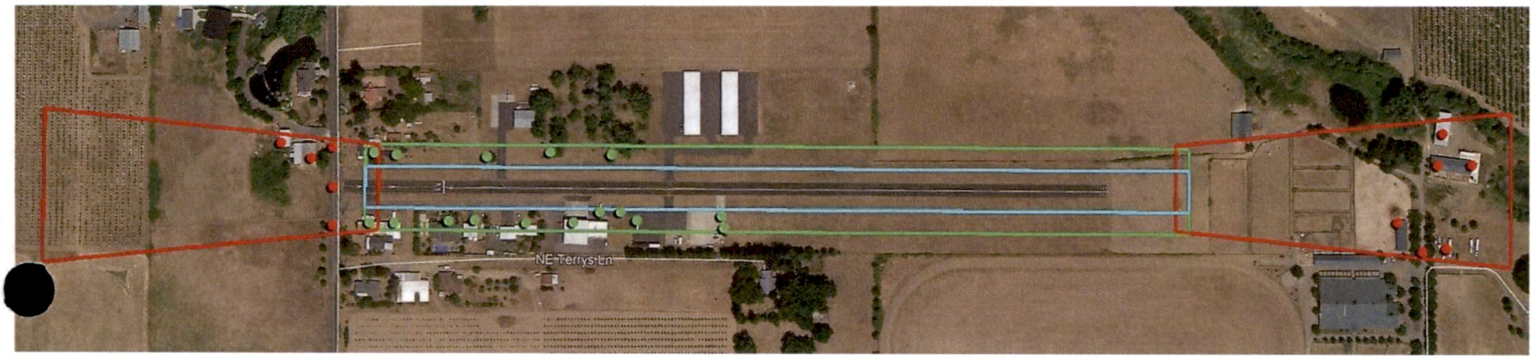
RSA
- Road

OFA
- Trees/Brush
- Road

RPZ
- Railroad
- Roads
- Buildings/Residential

RWY/TWY Separation
- NA

17S – Chehalem Airpark



RSA
- NA

OFA
- Trees/Brush
- Buildings
- Aircraft Parking

RPZ
- Roads
- Buildings
- Outside Storage

RWY/TWY Separation
- NA

2S7 – Chiloquin State

RSA
- NA

OFA
- NA

RPZ
- Roads

RWY/TWY Separation
- NA

62S – Christmas Valley

RSA
- NA

OFA
- NA

RPZ
- Roads
- Buildings

RWY/TWY Separation
- NA

DLS – Columbia Gorge Regional/The Dalles Municipal

RSA

OFA

RPZ
- Roads
- Buildings/Residential

RWY/TWY Separation
- NA

3S9 – Condon State

RSA
- NA

OFA
- NA

RPZ
- Road

RWY/TWY Separation
- NA

CVO – Corvallis Municipal

RSA
- Roads
- Grade

OFA
- NA

RPZ
- Roads

RWY/TWY Separation
- 400’

61S – Cottage Grove State

RSA
- NA

OFA
- NA

RPZ
- NA

RWY/TWY Separation
- 150’

S48 – Country Squire Airpark

RSA
- NA

OFA
- Trees/Brush

RPZ
- Roads
- Buildings
- Vehicle Parking

RWY/TWY Separation
- 130' – Non-Standard

LMT – Crater Lake-Klamath Regional

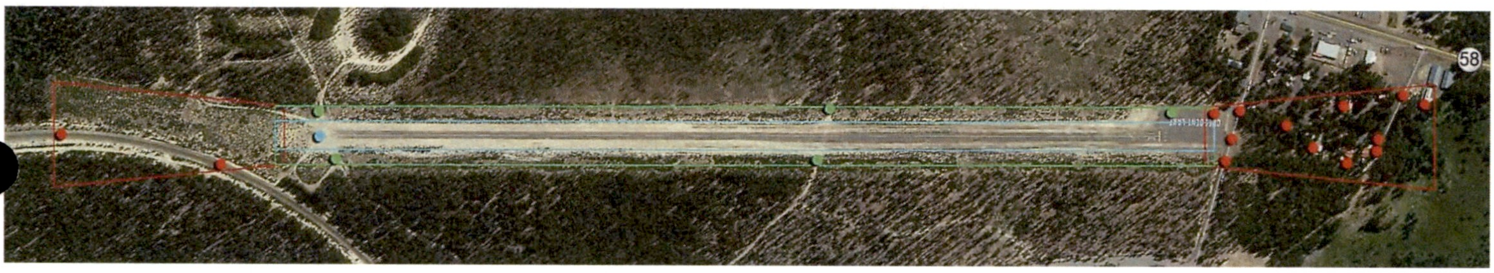
RSA
- NA

OFA
- Road

RPZ
- Roads

RWY/TWY Separation
- 790’

5S2 – Crescent Lake State



RSA
- Road
- Grade

OFA
- Trees/Brush
- Roads
- Aircraft Parking

RPZ
- Buildings
- Roads

RWY/TWY Separation
- NA

77S – Cresswell Hobby Field

RSA
- NA

OFA
- NA

RPZ
- Roads

RWY/TWY Separation
- 200’

6S4 - Davis

RSA
- NA

OFA
- Aircraft/Auto Parking
- Building

RPZ
- Roads
- Auto Parking

RWY/TWY Separation
- NA

PDT – Eastern Oregon Regional

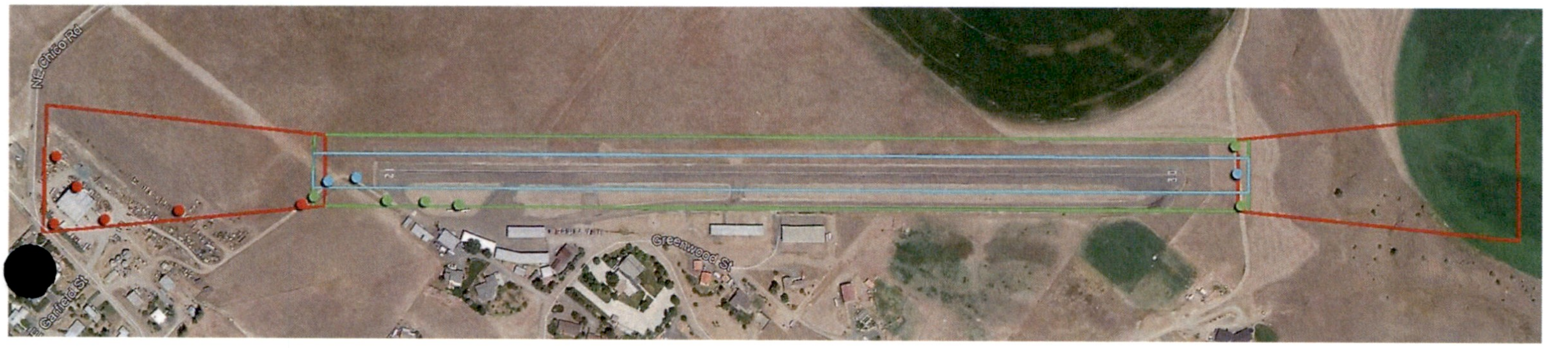
RSA
- NA

OFA
- NA

RPZ
- NA

RWY/TWY Separation
- 400'

8S4 – Enterprise Municipal



RSA
- Road

OFA
- Road
- Aircraft Parking

RPZ
- Road
- Building
- Vehicle Storage

RWY/TWY Separation
- 108' – Non-Standard

EUG – Mahlon Sweet Field

RSA
- NA

OFA
- NA

RPZ
- Taxiway

RWY/TWY Separation
- 500’

6S2 – Florence Municipal

RSA
- NA

OFA
- NA

RPZ
- Roads
- Parking

RWY/TWY Separation
- 175’

5S1 – George Felt

RSA
- Road
- Grading

OFA
- Trees/Brush
- Buildings

RPZ
- NA

RWY/TWY Separation
- NA

4S1 – Gold Beach Municipal

RSA
- NA

OFA
- NA

RPZ
- Roads
- High School Track/Field

RWY/TWY Separation
- 150’

GCD – Grant County Regional/Ogilvie Field

RSA
- NA

OFA
- NA

RPZ
- Roads

RWY/TWY Separation
- NA

3S8 – Grants Pass

RSA
- NA

OFA
- NA

RPZ
- Road

RWY/TWY Separation
- 240’

HRI – Hermiston Municipal

RSA
- NA

OFA
- NA

RPZ
- Roads

RWY/TWY Separation
- 240’

3S4 – Illinois Valley

RSA
- NA

OFA
- Road

RPZ
- Roads
- Buildings
- Outside Storage
- Pedestrian Trail

RWY/TWY Separation
- NA

7S5 – Independence State

RSA
- NA

OFA
- NA

RPZ
- Road

RWY/TWY Separation
- 150'

JSY – Joseph State

RSA
- NA

OFA
- NA

RPZ
- Roads
- Pioneer Cemetery
- Vehicle Parking

RWY/TWY Separation
- 227’

4S2 – Ken Jernstedt Airfield

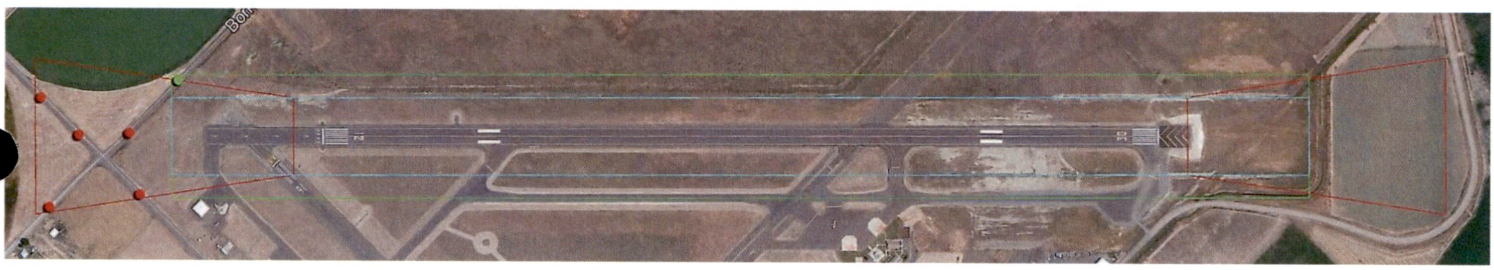
RSA
- NA

OFA
- Buildings/Residential
- Aircraft Parking

RPZ
- Road
- Buildings

RWY/TWY Separation
- 240'

LGD – La Grande/Union County



RSA
- NA

OFA
- Road

RPZ
- Roads

RWY/TWY Separation
- 400’

5S5 – Lake Billy Chinook

RSA
- NA

OFA
- Trees/Brush

RPZ
- Road

RWY/TWY Separation
- NA

LKV – Lake County

RSA
- NA

OFA
- NA

RPZ
- Road

RWY/TWY Separation
- NA

9S3 – Lakeside Municipal

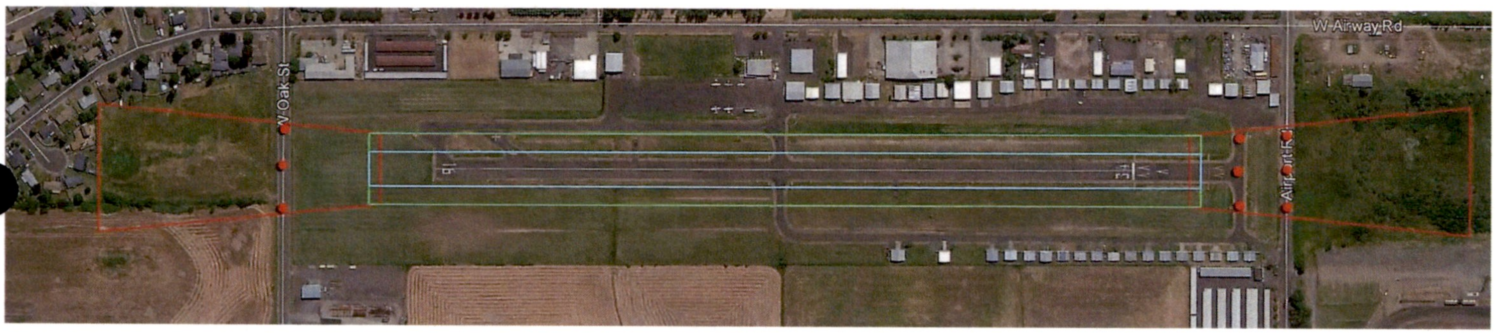
RSA
- NA

OFA
- NA

RPZ
- Road
- Railroad
- Buildings/Residential

RWY/TWY Separation
- NA

S30 – Lebanon State



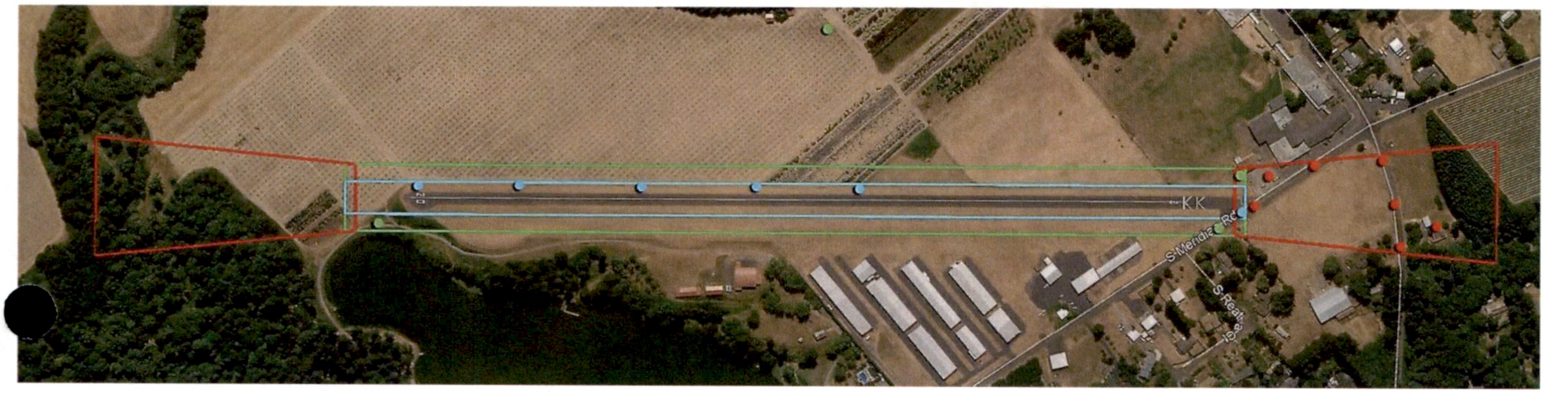
RSA
- NA

OFA
- NA

RPZ
- Roads
- Taxiway

RWY/TWY Separation
- 150' – 240'

7S9 – Lenhardt Airpark



RSA
- Fencing

OFA
- Roads
- Building

RPZ
- Roads
- Buildings

RWY/TWY Separation
- NA

9S9 - Lexington

RSA
- NA

OFA
- Trees/Brush

RPZ
- Road

RWY/TWY Separation
- 240’

S33 – Madras Municipal

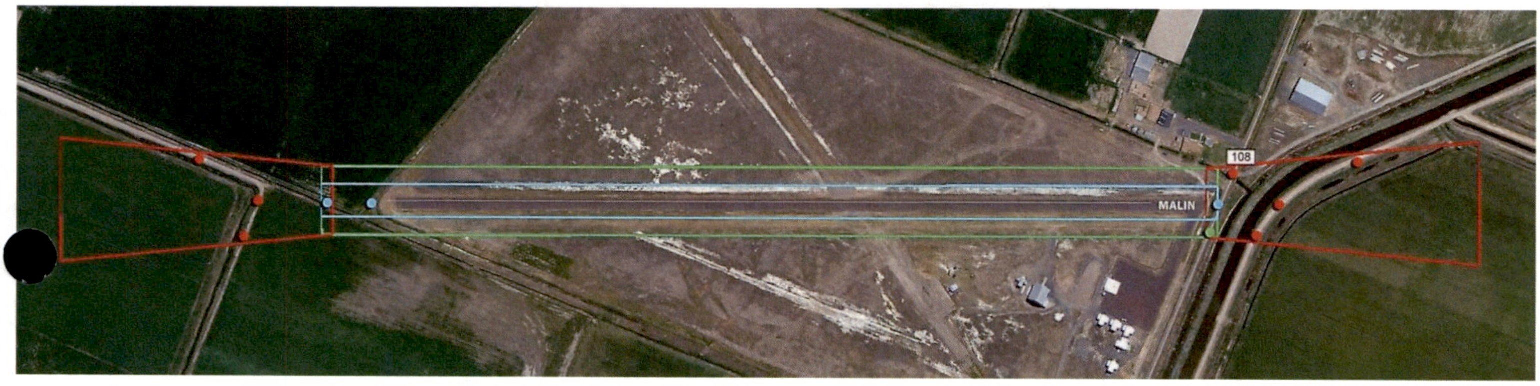
RSA
- NA

OFA
- NA

RPZ
- NA

RWY/TWY Separation
- 682’

4S7 - Malin



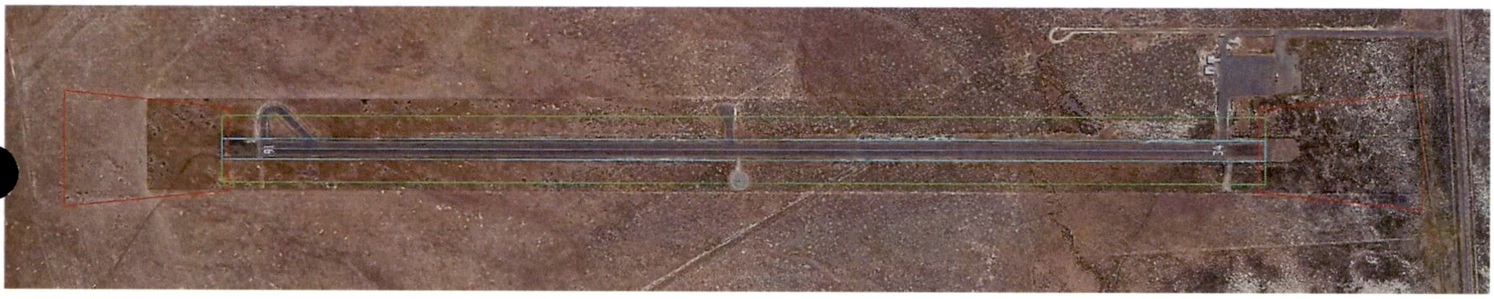
RSA
- Road
- Grading

OFA
- Road

RPZ
- Roads

RWY/TWY Separation
- NA

26U – McDermitt State



RSA
- NA

OFA
- NA

RPZ
- NA

RWY/TWY Separation
- NA

00S – McKenzie Bridge State

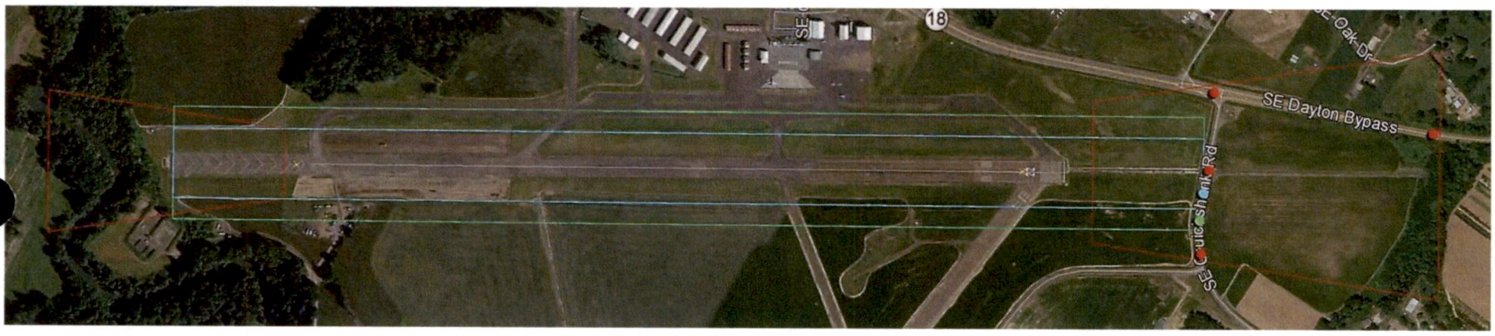
RSA
- Obstructions/Trees
- Grade

OFA
- Obstructions/Trees

RPZ
- NA

RWY/TWY Separation
- NA

MMV – McMinnville Municipal



RSA
- Road

OFA
- Road

RPZ
- Road

RWY/TWY Separation
- 400’

25U - Memaloose

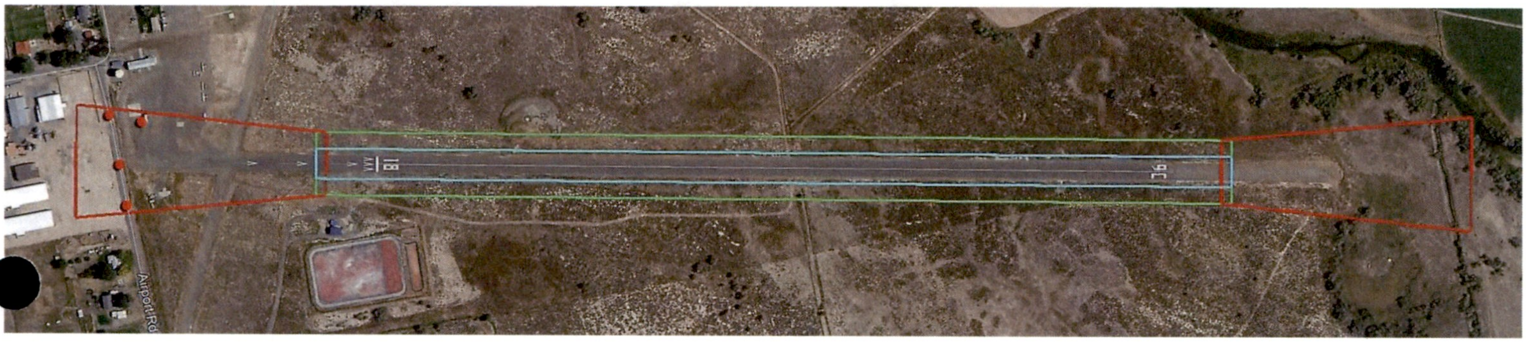
RSA
- Road

OFA
- Trees/Brush
- Roads

RPZ
- Roads

RWY/TWY Separation
- NA

S49 – Miller Memorial Airpark



RSA
- NA

OFA
- NA

RPZ
- Roads
- Fuel Tanks
- Outside Storage

RWY/TWY Separation
- NA

12S – Monument Municipal

RSA
- Grade

OFA
- Road
- Aircraft Parking

RPZ
- Waste Transfer Station
- Road

RWY/TWY Separation
- NA

4S9 – Mulino State

RSA
- NA

OFA
- Trees/Brush

RPZ
- Road

RWY/TWY Separation
- 400’

16S – Myrtle Creek Municipal

RSA
- NA

OFA
- NA

RPZ
- NA

RWY/TWY Separation
- 150’

3S7 – Nehalem Bay State

RSA
- Grade
- Pedestrian Trail

OFA
- Trees/Brush
- Aircraft Parking
- Pedestrian Trail

RPZ
- Road
- Pedestrian Trail

RWY/TWY Separation
- NA

ONP – Newport Municipal

RSA
- NA

OFA
- NA

RPZ
- NA

RWY/TWY Separation
- 287' – Non-Standard

5S0 – Oakridge State

RSA
- Road
- Grading

OFA
- Roads
- Trees/Brush

RPZ
- Roads

RWY/TWY Separation
- NA

ONO – Ontario Municipal

RSA
- NA

OFA
- NA

RPZ
- Buildings
- Roads
- Outside Storage

RWY/TWY Separation
- 245'

28U – Owyhee Reservoir State

RSA
- NA

OFA
- NA

RPZ
- NA

RWY/TWY Separation
- NA

PFC – Pacific City State

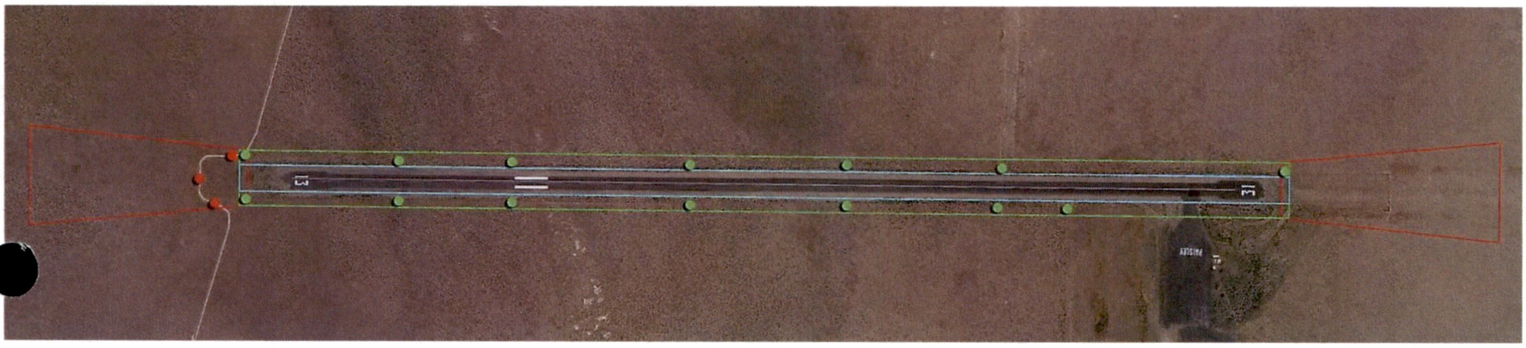
RSA
- Grade
- Trees/Brush

OFA
- Roads
- Aircraft Parking
- Vehicle Parking
- Buildings/Residential

RPZ
- Roads
- Buildings/Residential
- Vehicle Parking

RWY/TWY Separation
- NA

22S - Paisley



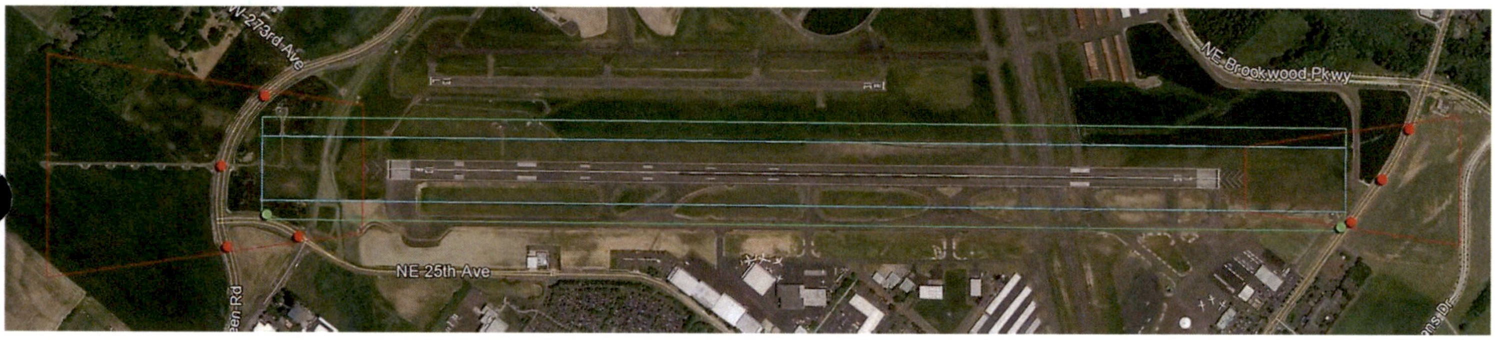
RSA
- NA

OFA
- Road
- Fencing

RPZ
- Road

RWY/TWY Separation
- NA

HIO – Portland-Hillsboro



RSA
- NA

OFA
- Roads

RPZ
- Roads

RWY/TWY Separation
- 400’

TTD – Portland-Troutdale

RSA
- NA

OFA
- NA

RPZ
- Roads

RWY/TWY Separation
- 240' – 275'

6S6 - Powers

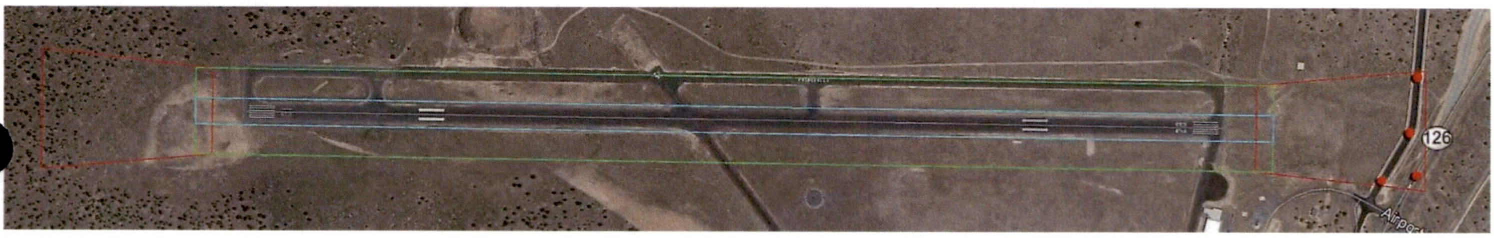
RSA
- Grading

OFA
- Trees/Brush

RPZ
- Roads
- Buildings/Residential

RWY/TWY Separation
- NA

S39 – Prineville/Crook County



RSA
- NA

OFA
- NA

RPZ
- Roads

RWY/TWY Separation
- 240'

64S – Prospect State

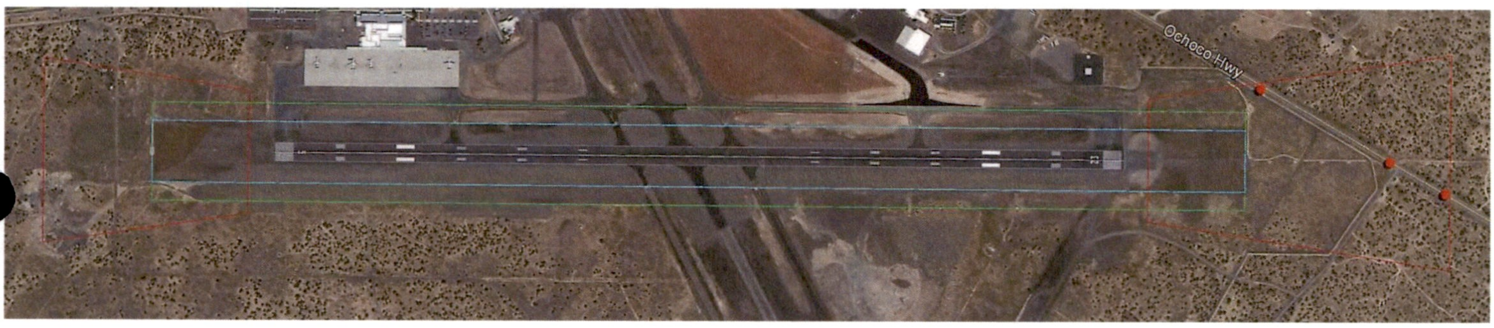
RSA
- Grading
- Trees/Brush

OFA
- Road
- Trees/Brush

RPZ
- Buildings
- Roads

RWY/TWY Separation
- NA

RDM – Redmond Municipal Roberts Field



RSA
- NA

OFA
- NA

RPZ
- Road

RWY/TWY Separation
- 400’

MFR – Rogue Valley International-Medford

RSA ●
- NA

OFA ●
- NA

RPZ ●
- Roads
- Buildings
- Outside Storage

RWY/TWY Separation
- 400’

24S – Pinehurst State

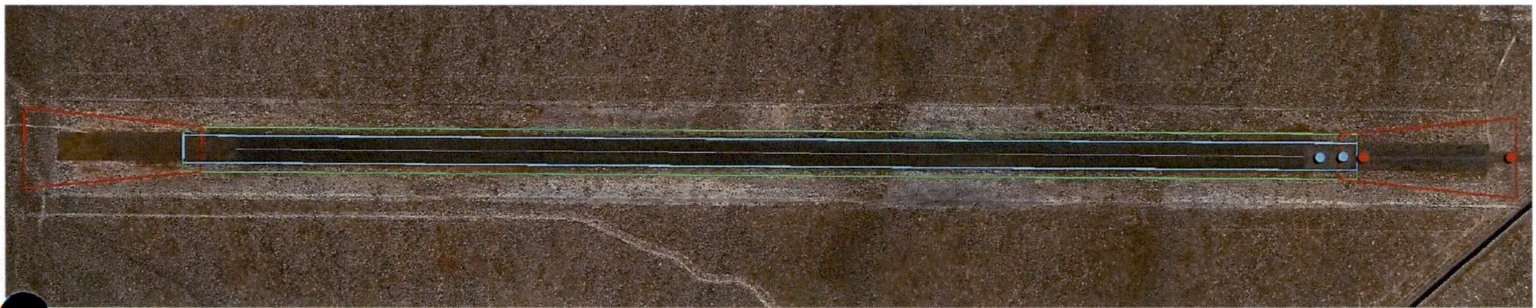
RSA
- NA

OFA
- Trees/Brush
- Buildings
- Outside Storage
- Aircraft Parking

RPZ
- Road

RWY/TWY Separation
- NA

REO – Rome State



RSA
- Road

OFA
- NA

RPZ
- Road

RWY/TWY Separation
- NA

RBG – Roseburg Regional

RSA
- NA

OFA
- NA

RPZ
- Roads
- Buildings/Residential
- Auto Parking

RWY/TWY Separation
- 240’

SLE – McNary Field

RSA
- NA

OFA
- Road

RPZ
- Buildings/Residential
- Roads

RWY/TWY Separation
- 400’

03S – Sandy River

RSA
- Road
- Vehicle Parking
- Fence

OFA
- Road
- Buildings
- Trees/Brush
- Fencing

RPZ
- Roads
- Buildings/Residential

RWY/TWY Separation
- NA

8S3 – Santiam Junction State

RSA
- NA

OFA
- Trees/Brush
- Roads
- Outside Storage

RPZ
- Roads

RWY/TWY Separation
- NA

SPB – Scappoose Industrial Airpark

RSA	OFA	RPZ	RWY/TWY Separation
• NA	• NA	• Roads	• 240’

56S – Seaside Municipal

RSA
- NA

OFA
- Trees/Brush

RPZ
- Roads
- Buildings

RWY/TWY Separation
- 150'

S45 – Siletz Bay State

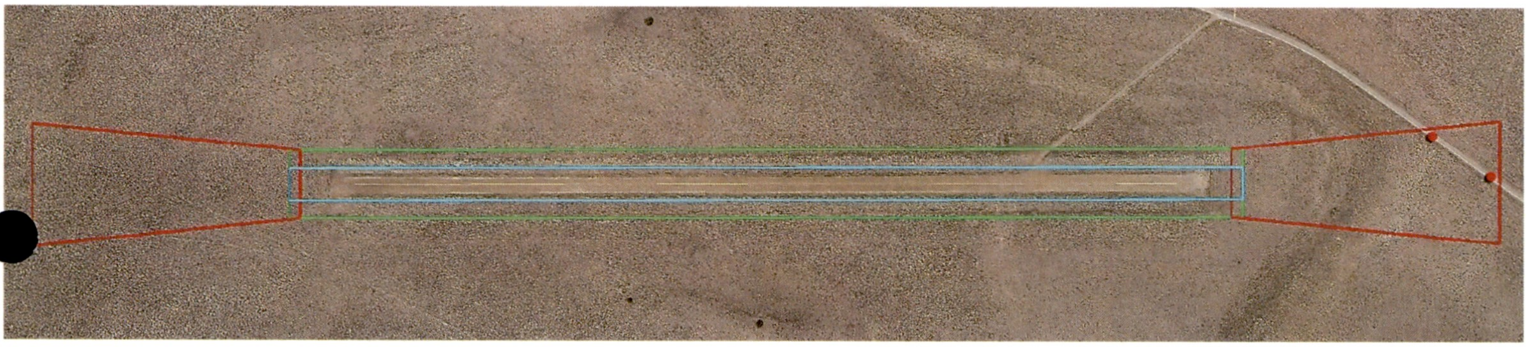
RSA
- NA

OFA
- Trees/Brush

RPZ
- Golf Course
- Roads

RWY/TWY Separation
- NA

45S – Silver Lake Forest Service Strip



RSA
- NA

OFA
- NA

RPZ
- Road

RWY/TWY Separation
- NA

6K5 – Sisters Eagle Air

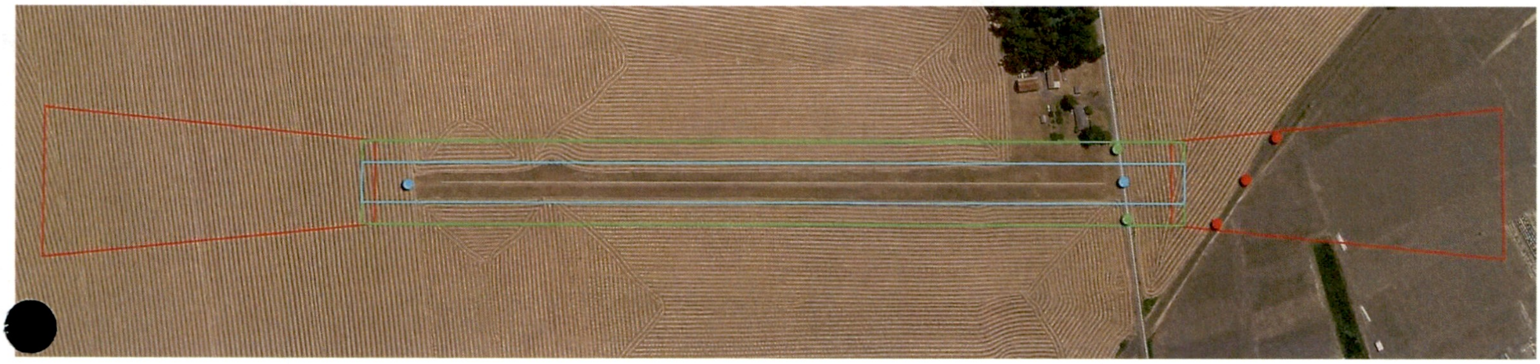
RSA
- NA

OFA
- Trees/Brush
- Buildings/Residential
- Aircraft Parking

RPZ
- Roads
- Buildings/Residential

RWY/TWY Separation
- 90' – Non Standard

4S4 – Skyport



RSA
- Road
- Grading

OFA
- Road

RPZ
- Railroad

RWY/TWY Separation
- NA

OTH – Southwest Oregon Regional

RSA
- Grade

OFA
- NA

RPZ
- NA

RWY/TWY Separation
- 400’

2S6 – Sportsman Airpark

RSA
- Road

OFA
- Road

RPZ
- Roads/Highways
- Buildings

RWY/TWY Separation
- Varies 130'-225'

7S3 – Starks Twin Oaks Airpark

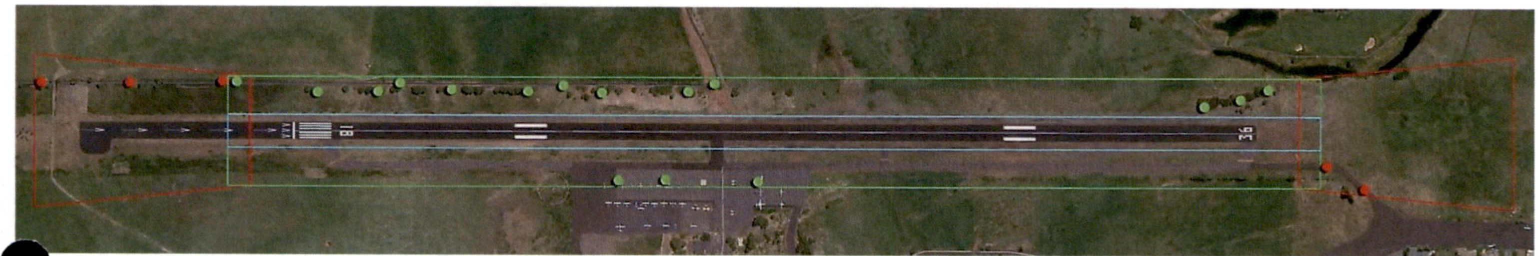
RSA
- Road
- Grade

OFA
- Road

RPZ
- Road

RWY/TWY Separation
- 100’

S21 - Sunriver



RSA
- NA

OFA
- Trees/Brush
- Aircraft Parking
- Pedestrian Trail

RPZ
- Taxiway
- Pedestrian Trail

RWY/TWY Separation
- 150' – Non-Standard

TMK - Tillamook

RSA
- NA

OFA
- NA

RPZ
- Roads

RWY/TWY Separation
- 300'+

3S6 – Toketee State

RSA
- NA

OFA
- Road
- Trees/Brush

RPZ
- Roads

RWY/TWY Separation
- NA

5S4 – Toledo State

RSA
- NA

OFA
- Trees/Brush
- Vehicle Parking
- Outside Storage

RPZ
- Roads
- Buildings

RWY/TWY Separation
- NA

5S9 – Valley View

RSA
- Trees/Brush

OFA
- Trees/Brush

RPZ
- Roads
- Buildings/Residential

RWY/TWY Separation
- 115' – 135'

05S – Vernonia Municipal

RSA
- Road
- Grade
- Trees/Brush

OFA
- T-Hangars
- Road
- Trees/Brush

RPZ
- Building

RWY/TWY Separation
- NA

R33 – Wakonda Beach State

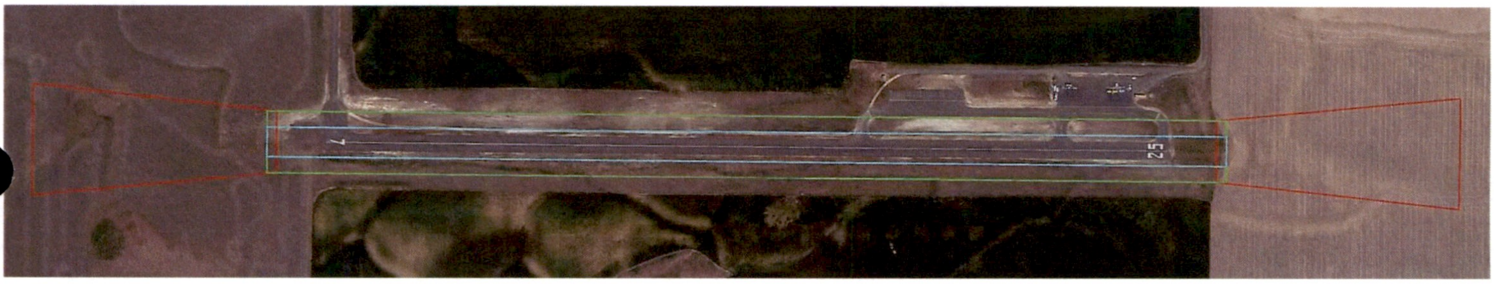
RSA
- Road
- Trees/Brush
- Grading

OFA
- Trees/Brush
- Road
- Buildings

RPZ
- Roads
- Buildings/Residential

RWY/TWY Separation
- NA

35S – Wasco State



RSA
- NA

OFA
- NA

RPZ
- NA

RWY/TWY Separation
- 150’

APPENDIX G, GLOSSARY

APPENDIX G, GLOSSARY

Advisory Circular (AC). (FAA RGL Library) Advisory Circulars (ACs) provide guidance such as methods, procedures, and practices for complying with regulations and grant requirements. ACs may also contain explanations of regulations, other guidance material, best practices, or information useful to the aviation community. They do not create or change a regulatory requirement.

Acoustical. (Merriam-Webster Dictionary Online) Relating to the deadening or absorbing of sound.

Aeronautical Activities. (FAA AC 150/5190-6) Any activity that involves, makes possible, or is required for the operation of aircraft, or that contributes to or is required for the safety of such operations. Activities within this definition, commonly conducted on airports, include, but are not limited to, the following: general and corporate aviation, air taxi and charter operations, scheduled and nonscheduled air carrier operations, pilot training, aircraft rental and sightseeing, aerial photography, crop dusting, aerial advertising and surveying, aircraft sales and services, aircraft storage, sale of aviation petroleum products, repair and maintenance of aircraft, sale of aircraft parts, parachute or ultralight activities, and any other activities that, because of their direct relationship to the operation of aircraft, can appropriately be regarded as aeronautical activities. Activities, such as model aircraft and model rocket operations, are not aeronautical activities.

Aeronautical Study. (FAA AC 70/7460-2K general definition) A study performed pursuant to FAR Part 77 *"Objects Affecting Navigable* Airspace" concerning the effect of proposed construction or alternation on the use of air navigation facilities or navigable airspace by aircraft. The conclusion of each study is normally a determination as to whether the specific proposal studied would be a hazard to air navigation and/or a determination for marking and/or lighting.

Air Cargo. All commercial air express and air freight with the exception of airmail and parcel post.

Air Carrier/Airline. All regularly scheduled airline activity performed by airlines certificated in accordance with Federal Aviation Regulations (FAR Part 121).

Air Taxi. Operations of aircraft "for hire" for specific trips, commonly referred to an aircraft available for charter (FAR Part 135).

Aircraft Approach Category. A grouping of aircraft based how fast they come in for landing. As a rule of thumb, slower approach speeds mean smaller airport dimensions and faster speeds mean larger dimensions from runway widths to the separation between runways and taxiways.

The aircraft approach categories are:

- Category A - Speed less than 91 knots;
- Category B - Speed 91 knots or more but less than 121 knots
- Category C - Speed 121 knots or more but less than 141 knots
- Category D - Speed 141 knots or more but less than 166 knots
- Category E - Speed 166 knots or more

Aircraft Operation. (FAA) An aircraft arrival or departure from an airport with FAA airport traffic control service. There are two types of operations: local and itinerant.

Air Carrier Airport. (FAA FAR Sec. 152.3) An existing public airport regularly served by an air carrier, or a new public airport that the Administrator determines will be regularly served, by and air carrier, other than a charter air carrier, certificated by the Civil Aeronautics Board under section 401 of the Federal Aviation Act of 1958; and a commuter service airport.

Aircraft. (FAA FAR Sec. 1.1) A device that is used or intended to be used for flight in the air.

Aircraft Owners and Pilots Association (AOPA). International aviation organization.

Air Installation Compatible Use Zones (AICUZ) (FAA AC 150/5020-1). A Department of Defense (DOD) program designed to encourage compatible uses of public and private lands in the vicinity of military airfields through the local communities' comprehensive planning process.

Area Navigation. (FAA FAR Sec 1.1). A method of navigation that permits aircraft operations on any desired flight path.

Air Traffic. (FAA FAR Sec. 1.1) Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas.

Air Traffic Control (ATC). (FAA FAR Sec. 1.1) A service operated by appropriate authority to promote the safe, orderly, and expeditious flow of air traffic.

Airport. (FAA FAR Sec. 152.3) Any areas of land or water that is used, or intended for use, for the landing and takeoff of aircraft. Any appurtenant areas that are used, or intended for use, for airport buildings, other airport facilities, or rights-of-way; and all airport buildings and facilities located on the areas specified in this definition.

Airport Elevation. (FAA AC 150/5190-4A) The highest point on an airport's usable landing area measured in feet from sea level.

Airport Environs. The land use and people in the areas surrounding an airport which can be directly affected by the operation of the airport.

Airport Hazard. (FAA FAR Sec. 152.3) Any structure or object of natural growth located on or in the vicinity of a public airport, or any use of land near a public airport that- obstruct the airspace required for the flight of aircraft landing or talking off at the airport; or is otherwise hazardous to aircraft landing or taking off at the airport.

Airport Impact Zones. Defined areas on and off airport property that are zoned to ensure airport compatible land uses. Low-activity airports without significant aircraft noise exposure contours can benefit by identifying and implementing land use controls in Airport Impact Zones. The Impact Zones generally include the runway protection zone, the FAR Part 77 approach surface and the airport traffic pattern.

Airport Improvement Program (AIP). (FAA Order 5050.4B) Chapter 471 of Title 49 USC establishes the general requirements and conditions for federally financing the Airport Improvement Program (AIP) that ARP administers on FAA's behalf. AIP funding is used to develop a nationwide public-use airport system to meet the country's current and projected civil aviation needs. The airports comprising that system make up the National Plan of Integrated Airport Systems (NPIAS). The AIP also provides funding for noise compatibility programs (NCPs) and implementing FAA-reviewed and approved recommendations comprising an NCP. FAA Order 5100.38, *Airport Improvement Program Handbook*, provides details on administering the AIP.

Airport Layout Plan (ALP). (FAA FAR Sec. 152.3) The plan of an airport showing the layout of existing and proposed airport facilities.

Airport Manager. Any person or authority having the operational control of an airport as defined in the ASNA Act.

Airport Master Plan. (FAA AC 150/5050-4) An airport master plan is a presentation of the phased development of a specific airport. It presents the research and logic from which the plan evolved and displays the plan in a graphic and written report. Master plans are applied to the modernization and expansion of existing airports and to site selection and planning for new airports, regardless of their size or functional role. It is desirable that airport master plans be developed within the framework of metropolitan or regional plans or state airport system plans.

Airport Noise Abatement Policy. (FAA AC 2050-1) Policy adopted jointly by the Secretary of Transportation and the FAA, on November 18, 1976. delineating the responsibilities of FAA, air carriers, airport operators and local communities in achieving reductions in airport noise.

Airport Noise and Capacity Act of 1990. (FAA Website) This act required the establishment of a National Noise Policy and a requirement to eliminate Stage 2 aircraft weighing 75,000 pounds or greater operating in the contiguous United States by the year 2000.

Airport Operations. (FAA Website) The total number of movements in landings (arrivals) plus take-offs (departures) from an airport.

Airport Overlay Zone. A zone intended to place additional land use conditions on land impacted by the airport while retaining the existing underlying zone.

Airport Owner. (FAA Website) Any person or authority having the operational control of an airport as defined in the ASNA Act.

Airport Reference Code (ARC). (FAA Website) The ARC is an FAA coding system used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at the airport.

Airport Reference Point (ARP). (FAA AC 150/5300-13) The latitude and longitude of the approximate center of the airport.

Airport Sponsor. (FAA AC 150/5190-6) The airport sponsor is the entity that is legally, financially, and otherwise able to assume and carry out the certifications, representations, warranties, assurances, covenants and other obligations require of sponsors, which are contained in the AIP grant agreement and property conveyances.

Airports District Office (ADO) - The "local" office of the FAA that coordinates planning and construction projects. Staff in the ADO is typically assigned to a particular state, i.e., Oregon or Washington. The ADO for Oregon and Washington is located in Des Moines, Washington.

Airside. (FAA Website) That portion of the airport facility where aircraft movements take place, airline operations areas, and areas that directly serve the aircraft, such as taxiway, runway, maintenance and fueling areas.

Airspace. (FAA Website) The space lying above the earth or above a certain area of land or water that is necessary to conduce aviation operations.

Ambient Noise. (FAA Website) The total amount of noise in a given place and time, which is usually a composite of sounds from varying sources at varying distances.

Approach and Runway Protection Zone Map. The approach and Runway Protection Zone Map is compiled from the criteria in FAR Part 77, *"Objects Affecting Navigable Airspace"*. It shows the area affected by the Airport Overlay Zoning Ordinance, and includes the layout of runways, airport boundaries, elevations, and area topography. Applicable height limitation areas are shown in detail.

Approach Slopes. (FAR Part 77) The ratios of horizontal to vertical distance indicating the degree of inclination of the Approach Surface. The various ratios include:

- **20:1.** For all utility and visual runways extended from the primary surface a distance of 5,000 feet.
- **34:1.** For all non-precision instrument runways extended from the primary surface for a distance of 10,000 feet.
- **50:1/40:1.** For all precision instrument runways extending from the primary surface for a distance of 10,000 feet at an approach slope of 50.1 and an additional 40,000 feet beyond this at a 40:1 Approach Slope.

Approach Surface. (FAA AC 150/5190-4A) A surface longitudinally centered on the extended runway centerline, extending outward and upward from the end of the primary surface and at the same slope as the approach zone height limitation slope set forth in this Ordinance. In plan the perimeter of the approach surface coincides with the perimeter of the approach zone.

ARFF. Aircraft Rescue and Fire Fighting, i.e., an on-airport response required for certificated commercial service airports (see FAR Part 139).

ASNA Act. (FAA Website) The Aviation Safety and Noise Abatement Act of 1979, as amended (49 USC 2101 et seq.).

Attainment Area. (Planning and Urban Design Standards) A geographic area whose air has been determined through monitoring and modeling to have criteria pollutant levels below the primary standard.

Automated Surface Observation System (ASOS) and Automated Weather Observation System (AWOS) – Automated observation systems providing continuous on-site weather data, designed to support aviation activities and weather forecasting.

Average Day-Night Sound Level (DNL). (FAA AC 5020-1) The 24-hour average sounds level, in decibels, for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the periods between midnight and 7 a.m. and between 10 p.m. and midnight, local time, as averaged over a spans of one year. It is the FAA standard metric for determining the cumulative exposure of individuals to noise.

AVGAS. Gasoline used in airplanes with piston engines.

Avigation Easement. (FAA Website) A grant of a property interest in land over which a right of unobstructed flight in the airspace is established.

Back-Taxiing. The practice of aircraft taxiing on a runway before takeoff or after landing, normally, in the opposite direction of the runway's traffic pattern. Back-taxiing is generally required on runways without taxiway access to both runway ends.

Based Aircraft. (FAA Website) An aircraft permanently stationed at an airport by agreement between the aircraft owner and the airport management.

Building Codes. (The Practice of Local Government Planning) Codes, either local or state, that control the functional and structural aspects of buildings and/or structures. Local ordinances typically require proposed buildings to comply with zoning requirements before building permits can be issued under the building codes.

Building Restriction Line (BRL). A line which identifies suitable building area locations on airports, typically associated with the transitional surfaces and a 35' height restriction.

Charter. Operations of aircraft "for hire" for specific trips, commonly referred to an aircraft available for charter.

Circle to Land or Circling Approach. An instrument approach procedure that allows pilots to "circle" the airfield to land on any authorized runway once visual contact with the runway environment is established and maintained throughout the procedure.

Civil Aircraft. (FAA FAR Sec. 1.1) Any aircraft other than a public aircraft.

Code of Federal Regulations (CFR). (FAA AIM Glossary) The FAA publishes the Code of Federal Regulations (CFRs) to make readily available to the aviation community the regulatory requirements placed upon them. These regulations are sold as individual parts by the Superintendent of Documents.

Commercial Service Airport. (FAA Website) A public airport that has at least 2,500 passengers boarding each year and is receiving scheduled passenger aircraft service.

Compatibility. The degree to which land uses or types of development can coexist or integrate.

Comprehensive Plan. (FAA Website) Similar to a master plan, the comprehensive plan is a governmental entity's official statement of its plans and policies for long-term development. The plan includes maps, graphics and written proposals, which indicate the general location for streets, parks, schools, public buildings, airports and other physical development of the jurisdiction.

Conditional Zoning. (FAA Website) The imposition or exaction of conditions or promises upon the grant of zoning by the zoning authority.

Conical Surface. One of the "FAR Part 77 "Imaginary" Surfaces. The conical surface extends outward and upward from the edge of the horizontal surface at a slope of 20:1 to a horizontal distance of 4,000 feet.

Crosswind. When used concerning wind conditions, the word means a wind not parallel to the runway or the path of an aircraft. Sometimes used in reference to a runway as in "Runway 7/25 is the crosswind runway" meaning that it is not the runway normally used for the prevailing wind condition. As an aeronautical term, a direct crosswind is exactly 90-degrees opposite the direction of flight; more acute crosswind angles are known as quartering headwinds or tailwinds. From an airport planning perspective, crosswind runways are generally justified when a primary runway accommodates less than 95 percent of documented wind conditions (see wind rose).

Crosswind Runway. A secondary runway that is oriented to allow aircraft to safely take off or land when wind conditions do not favor the primary runway.

Decibel (dB). (FAA Website) Sound is measured by its pressure or energy in terms of decibels. The decibel scale is logarithmic; when the scale increases by ten, the perceived sound is two times as loud.

Displaced Threshold. A landing threshold that is located at a point other than the runway end. Usually provided to mitigate close-in obstructions to runway approaches for landing aircraft.

Easement. (FAA AC 5020-1) The legal right of one party to use a portion of the total rights in real estate owned by another party. This may include the right of passage over, on, or below property; certain air rights above the property, including view rights; and the rights to any specified from of development or activity, as well as any other legal rights in the property that may be specified in the easement document.

Enplanement. (FAA Website) A passenger boarding of a commercial flight.

Environmental Assessment (EA). (FAA AC 150/5020-1) Environmental assessments are prepared for many types of airport development projects and/or airport operational changes under the requirements of the National Environmental Policy Act (NEPA), Regulations of the Council on Environmental Quality (CEQ), Department of Transportation Order 5610.1C (Procedures for Considering Environmental Impacts), FAA Order 1050.1C (Policies and Procedures for Considering Environmental Impacts), and FAA Order 5050.4 (Airport Environmental Handbook). Many EA's contain analyses of airport noise, compatible land use, social impacts, and induced socioeconomic impacts. An Airport Noise Compatibility Program may supplement, but is not intended to replace an EA in meeting required environmental analyses. Similarly, an EA may contain information that, provided it is current, can be valuable inputs to developing airport noise exposure maps and airport noise compatibility programs. To the extent the information in EA is appropriate, such use of existing sources is encouraged.

Environmental Impact Statement (EIS). (FAA Website) A document that provides full and fair discussion of the significant environmental impacts that would occur as a result of a proposed project and informs decision makers and the public of the reasonable alternatives that would avoid or minimize adverse impacts.

Euclidean Zoning. (FAA Website) A traditional legislative method or device for controlling land use by establishing districts with boundaries and providing for specific uniform regulations as to type of permitted land use, height, bulk and lot coverage of structure, setback and similar building restrictions. (Reference from 1929 US Supreme Court landmark decision upholding zoning as a means of land use control in "City of Euclid, Ohio v. Ambler Realty).

Exclusive Right. (FAA AC 150/5190-6) A power, privilege, or other right excluding or debarring another from enjoying or exercising a like power, privilege, or right. An exclusive right may be conferred either by express agreement, by imposition of unreasonable standards or requirements, or by any other means. Such a right conferred on one ore more parties but excluding others from enjoying or exercising a similar right or rights would be an exclusive right.

Farm. (Planning and Urban Design Standards) The land, buildings, and machinery used in the commercial production of farm products. The USDA (United States Department of Agriculture) defines a farm as generating at least $1,000 a year in the sale of crops or livestock.

Farm Land. (Planning and Urban Design Standards) The area containing the farmhouse, barns, and other outbuildings.

Farm Operation. A condition or activity which occurs on a farm in connection with the production of farm products and includes but is not limited to the raising, harvesting, drying, or storage of corps; the care of feeding livestock; the handling or transportation of crops or livestock; the treatment or disposal of wastes resulting from livestock; the marketing of products at roadside stands or farm markets; the creation of noise, odor, dust, or fumes; the operation of machinery and irrigation pumps; ground and aerial seeding and spraying; the application of chemical fertilizers, conditioners, insecticides, pesticides, and herbicides; and employment and use of labor.

Farm Products. Those plants and animals and their products which are useful to people and includes but is not limited to forages and sod crops, grains and feed crops, dairy and dairy products, poultry and poultry products, livestock, fruits, vegetables, flowers, seeds, grasses, trees, fish, honey, and other similar products, or any other plant, animal, or plant or animal product which supplies people with food, feed, fiber, or fur.

Federal Aviation Administration (FAA). (FAA Website) A federal agency charged with regulating air commerce to promote its safety and development; encourage and develop civil aviation, air traffic control, and air navigation; and promoting the development of a national system of airports.

Federal Aviation Regulations (FAR). (FAA FAR Regulations established and administered by the FAA that govern civil aviation and aviation-related activities.

FAR Part 36. (FAA FAR Sec. 36.1) Regulation establishing noise standards for the civil aviation fleet.

FAR Part 91. (FAA FAR Sec. 91.1) Regulation pertaining to air traffic and general operating rules, including operating noise limits.

FAR Part 150. (FAA FAR Sec. 150.1) Regulation pertaining to airport noise compatibility planning.

FAR Part 161. (FAA FAR Sec. 161.1) Regulation pertaining to notice and approval of airport noise and access restrictions.

FAR Part 77. (FAA FAR Sec. 77.1)*Objects Affecting Navigable Airspace* - Part 77 (a) establishes standards for determining obstructions in navigable airspace; (b) defines the requirements for notice to the FAA Administrator of certain proposed construction or alteration; (c) provides for aeronautical studies of obstructions to air navigation to determine their effect on the safe and efficient use of airspace; (d) provides for public hearings on the hazardous effect of proposed construction or alteration on air navigation; and (e) provides for establishing antenna farm areas.

Federal Grant Assurance. (FAA AC 150/5190-6) A Federal grant assurance is a provision with a Federal grant agreement to which the recipient of Federal airport development assistance has agreed to comply in consideration of the assistance provided.

Fixed Base Operator (FBO). An individual or company located at an airport providing aviation services. Sometimes further defined as a "full service" FBO or a limited service. Full service FBOs typically provide a broad range of services (flight instruction, aircraft rental, charter, fueling, repair, etc.) where a limited service FBO provides only one or two services (such as fueling, flight instruction or repair).

Fixed Wing. A plane with one or more "fixed wings," as opposed to a helicopter that utilizes a rotary wing.

Glide Slope (GS). For precision instrument approaches, such as an instrument landing system (ILS), the component that provides electronic vertical guidance to aircraft. Visual guidance indicators (VGI) define a glide slope (glide path) through a series of colored lights that are visible to pilots when approaching a runway end for landing.

General Aviation (GA). (FAA Website) Refers to all civil aircraft and operations that are not classified as air carrier, commuter or regional. The types of aircraft used in general aviation activities cover a wide spectrum from corporate multi-engine jet aircraft piloted by professional crews to amateur-built single engine piston acrobatic planes, balloons and dirigibles.

General Aviation Airport. Any airport that is not an air carrier airport, or a military facility.

Global Positioning System (GPS). GPS is a system of navigating which uses satellites (SATNAV) to establish the location and altitude of an aircraft. GPS supports both enroute flight and instrument approach procedures.

Grant Assurance. (FAA AC 150/5100-16A) The Grant Assurances, including Assurances 1, are required to be submitted as part of the application by sponsors requesting funds under the provisions of the Airport and Airway Improvement Act of 1982 and the Aviation Safety and Noise Abatement Act of 1979. Upon acceptance of the grant offer by the sponsor, the Grant Assurances, including Assurance 1, are incorporated in and become a part of the grant agreement.

Growth Policy. (Planning and Urban Design Standards) A local or regional governmental policy intended to influence the rate, amount, type, location and/or quality of future development within the jurisdiction.

Helicopter Landing Pad (Helipad). A designated landing area for rotor wing aircraft. Requires protected FAR Part 77 imaginary surfaces, as defined for heliports (FAR Part 77.29).

Helicopter Parking Area. A designated area for rotor wing aircraft parking that is typically accessed via hover-taxi or ground taxiing from a designated landing area (e.g., helipad or runway-taxiway system). If not used as a designated landing area, helicopter parking pads do not require dedicated FAR Part 77 imaginary surfaces.

Heliport. A designated helicopter landing facility (as defined by FAR Part 77).

High Intensity Runway Lights (HIRL). High intensity (i.e., very bright) lights are used on instrument runways where landings are made in foggy weather. The bright runway lights help pilots to see the runway when visibility is poor.

Hold Harmless Agreement. An agreement which holds airport sponsors or jurisdictions harmless for alleged damages resulting from airport operations. Such agreements are recorded in deeds or permits as a condition of approval of a regulatory land use decision.

Housing Codes. (FAA Website) The codes that usually apply to both existing and future living units. The codes include minimum standards of occupancy, and usually govern spatial, ventilation, wiring, plumbing, structural and heating requirements.

Imaginary Surfaces. (FAA FAR Part 77.25) Those areas established in relation to the airport and to each runway consistent with FAR Part 77 in which any object extending above these imaginary surfaces, by definition, is an obstruction.

Transitional surface extends outward and upward at right angles to the runway centerline and extend at a slope of seven feet horizontally for each one foot vertically (7:1) from the sides of the primary and approach surfaces. The transitional surfaces extend to the point at which they intercept the horizontal surface at a height of 150 feet above the established airport elevation.

Horizontal surface is a horizontal plane located 150 feet above the established airport elevation and encompasses an area from the transitional surface to the conical surface. The perimeter is constructed by generating arcs from the center of each end of the primary surface and connecting the adjacent arcs by lines tangent to those arcs.

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

Approach surface is longitudinally centered on the extended runway centerline and extends outward and upward from the end of the runway primary surface. The approach slope of a runway is a ratio of 20:1, 34:1, or 50:1, depending on the approach type. The length of the approach surface varies from 5,000 to 50,000 feet and also depends upon the approach type.

Incompatible Land Use. (FAA FAR Sec. 150.7) The use of land which is normally incompatible with the aircraft and airport operations (such as, but not limited to, homes, schools, nursing homes, hospitals, and libraries).

Infrastructure. (FAA Website) A community's built elements that establish the community's foundation for maintaining existing populations, activities, future growth and development. Infrastructure elements include airports, roads, highways, bridges, water and sewer systems, waste disposal facilities, utilities, telecommunications systems, schools, and governmental and community facilities.

Instrument Approach Procedure. (FAA Pilot/Controller Glossary) A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority.

Instrument Flight Rules (IFR) (FAA Pilot/Controller Glossary) Rules governing the procedure for conducting instrument flight. In addition, it is a term used by pilots and controllers to indicate a type of flight plan.

Instrument Landing System (ILS). (FAA Pilot/Controller Glossary) A precision instrument approach system which normally consists of the following electronic components and visuals aids: localizer, glideslope, outer marker, middle marker, and approach lights.

Integrated Noise Model (INM). FAA's computer model used by the civilian aviation community for evaluating aircraft noise impacts near airports. The INM uses a standard database of aircraft characteristics and applies them to an airport's average operational day to produce noise contours.

Itinerant Operation. (FAA AC 150/5325-4B) Takeoff or landing operations of airplanes going from one airport to another airport that involves a trip of at least 20 miles. Local operations are excluded.

Jet Fuel (Jet A). Highly refined grade of kerosene used by turbine engine aircraft. Jet-A is currently the common commercial grade of jet fuel.

Land Banking. The purchase of property by a government (state or local) to be held for future use and development either by the government or for resale for the development of compatible uses.

Land Use Compatibility. (FAA Website) The coexistence of land uses surrounding the airport with airport-related activities.

Land Use Controls. (FAA Website) Measures established by state or local government that are designed to carry out land use planning. The controls include: zoning, subdivision regulations, planned acquisition, easements, covenants or conditions in building codes and capital improvement programs, such as the establishment of sewer, water, utilities or their service facilities.

Land Use Management Measures. (FAA Website) Land use management techniques that consist of both remedial and preventive measures. Remedial, or corrective, measures typically include sound insulation or land acquisition. Preventive measures typically involve land use controls that amend or update the local zoning ordinance, comprehensive plan, subdivision regulations, and building code.

Landing Area. (FAA Pilot/Controller Glossary) Any locality, either of land or water, including airports/heliports and intermediate landing fields, which is used, or intended to be used, for the landing and takeoff of aircraft whether or not facilities are provided for the shelter, servicing, or for receiving or discharging passengers or cargo.

Landside. (FAA Website) That part of an airport used for activities other than the movement of aircraft, such as vehicular access roads and parking.

Lighting and Marking of Hazards to Air Navigation. Installation of appropriate lighting fixtures, painted markings or other devices to such objects or structures that constitute hazards to air navigation.

Limited Avigation Easement. (FAA AC 150/5100-17) Action and resulting legal document which grants the purchaser the right of flight at any altitude above acquired surfaces. It also often prevents the erection or growth of all objects above the acquired surfaces. The right of entry to remove, mark, or light any structures or growth above acquired surfaces is also granted.

Local Operation. (FAA Website) Any operation performed by an aircraft that (a) operates in the local traffic pattern or within sight of the tower or airport, or (b) is known to be departing for, or arriving from, flight in local practice areas located within a 20-mile radius of the control tower or airport, or (c) executes a simulated instrument approach or low pass at the airport.

Localizer. For precision instrument approaches, such as an instrument landing system (ILS), the component that provides electronic lateral (course) guidance to aircraft.

Localizer Performance with Vertical Guidance (LPV). Satellite navigation (SATNAV) based GPS approaches providing "near category I" precisions approach capabilities with course and vertical guidance LPV approaches are expected to eventually replace traditional step- down, VOR and NDB procedures by providing a constant, ILS glideslope-like descent path. LPV approaches use high accuracy WAAS signals, which allows narrower glideslope and approach centerline obstacle clearance areas, safely providing decision altitudes as low as 250 feet, compared with 200 feet for ILS.

Magnetic Declination. Also called magnetic variation, is the angle between magnetic north and true north. Declination is considered positive east of true north and negative when west. Magnetic declination changes over time and with location. Runway end numbers, which reflect the magnetic heading/alignment (within 5 degrees +/-) occasionally require change due to declination.

MALSR. Medium-intensity Approach Lighting System with Runway alignment indicator lights. An airport lighting facility which provides visual guidance to landing aircraft.

Medevac. Fixed wing or rotor-wing aircraft used to transport critical medical patients. These aircraft are equipped to provide life support during transport.

Medium Intensity Runway Lights (MIRL). Runway lights which are not as intense as HIRLs (high intensity runway lights). Typical at medium and smaller airports which do not have sophisticated instrument landing systems.

Mediation. (FAA Website). The use of a mediator or co-mediators to facilitate open discussion between disputants and assist them to negotiate a mutually agreeable resolution. Mediation is a method of alternative dispute resolution that provides an initial forum to informally settle disputes prior to regulatory intervention on the part of the FAA.

Mitigation. (FAA Website) The avoidance, minimization, reduction, elimination or compensation for adverse environmental effects of a proposed action.

Mitigation Measure. (FAA Website) An action taken to alleviate adverse impacts.

National Environmental Policy Act of 1969 (NEPA). (FAA AC 150/5020.1) FAA compliance with the NEPA is controlled by FAA Order 1050.1C, Policies and Procedures for Considering Environmental Impacts. The FAA has determined that approval or disapproval of airport noise compatibility programs are "categorical exclusions" to the requirements for environmental assessment under Order 1050.1C. The ASNA Act requires an airport noise compatibility program to be either approved or disapproved within 180 days of receipt or it will be automatically approved. Development of a noise exposure map or noise compatibility program does not replace an environment assessment but can be used in the preparation of such an assessment. Environmental assessment leading to a finding of no significant impact or to any environmental impact statement must still be conducted, where required by applicable procedures, prior to taking any Federal implementing action such as grant approvals or covered air traffic actions. Although the 180 day time constraint does no permit the normal federal Environmental Impact Assessment process, consideration of the potential impacts remain an integral part of the planning process. Airport operators should fully consider environmental as well as noise and land use consequences in developing an airport noise compatibility program.

National Plan of Integrated Airport Systems (NPIAS). (FAA NPIAS Report) The Secretary of Transportation transmitted the 2007-2011 National Plan of Integrated Airport Systems (NPIAS) to Congress on September 29, 2006. The AIP-eligible development needs identified in this report were compiled as of December 2005 with selected updates through July 2006.

Nautical Mile. (FAA Website) A measure of distance equal to one minute of arc on the earth's surface, which is approximately 6,076 feet.

Navigation Aids (NAVAID). (FAA Website) Any facility used by an aircraft for guiding or controlling flight in the air or the landing or take-off of an aircraft.

Navigable Airspace. The airspace above minimum altitude for safe flight, and includes the airspace needed to ensure safety in take-off and landing of aircraft.

Noise. (Planning and Urban Design Standards) Unwanted sound.

Noise Abatement Procedures. (FAA Website) Changes in runway usage, flight approach and departure routes and procedures, and vehicle movement, such as ground maneuvers or other air traffic procedures that shift aviation impacts away from noise sensitive areas.

Noise Compatibility Program (NCP). (FAA AC 150/5020.1) The purpose of such a program is to seek optimal accommodation of both airport operations and community activities within acceptable safety, economic and environmental parameters. That may be accomplished by reducing existing noncompatible land uses in the vicinity of the airport and preventing the introduction of new noncompatible land uses in the future. To that end, the airport proprietor and other responsible officials should consider a wide range of feasible alternatives of noise control actions and land use patterns.

Noise Exposure Contours. (FAA Website) Lines drawn around a noise source indicating constant energy levels of noise exposure. DNL is the measure used to describe community exposure to noise.

Noise Exposure Map (NEM). (FAA AC 150/5020.1) A scaled, geographic, depiction of an airport, its noise contours, and surrounding area developed in accordance with Section A150.101 of Appendix A of FAR Part 150, including the accompanying documentation setting forth the required descriptions of projected aircraft operations at the airport during 1985 and if submitted after 1982, during the fifth calendar year beginning after submission of the map, together with the ways, if any those operations for each of those years will affect the map.

Noise Impact. A condition that exists when the noise levels that occur in an area exceed a level identified as appropriate for the activities in that area.

Noise Sensitive Area. (FAA AC 91-36D) Defined as an area where noise interferes with normal activities associated with the area's use. Examples of noise-sensitive areas include residential, educational, health, and religious structures and sites, and parks, recreational areas (including areas with wilderness characteristics), wildlife refuges, and cultural and historical sites where a quiet setting is a generally recognized feature or attribute.

Non-Aeronautical Activities. The following are examples of non-aeronautical activities: ground transportation (taxis, car rentals, limousines); restaurants; barber shops; auto parking lots. See Aeronautical Activities.

Non-Attainment Area. (FAA Website) Areas that exceeded the national ambient air quality standards for any of six pollutants (ozone or smog, carbon monoxide, lead, particulate matter, PM-10 or nitrogen dioxide).

Non-Conforming Use. (FAA Website) Any pre-existing structure, tree, or use of land that is inconsistent with the provisions of the local land use or airport master plans.

Non-Precision Instrument Runway. (FAA AC 150/5190-4A) 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 non-precision instrument approach procedure has been approved or planned.

Obligated Airport. (FAA PPM 5190.10) A public use airport that is developed or improved with federal assistance under the various Federal grant programs, surplus property transfers, and other federal government deeds of conveyance.

Object. (FAA AC 150/5300-13) Includes, but is not limited to above ground structures, NAVAIDs, people, equipment, vehicles, natural growth, terrain, and parked aircraft.

Obstacle Free Zone (OFZ). (FAA 150/5300-13) The OFZ is the airspace below 150 feet (45 m) above the established airport elevation and along the runway and extended runway centerline that is required to be clear of all objects, except for the frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance protection for the aircraft landing or taking off from the runway, and for missed approaches.

Obstruction. (FAA AC 150/5190-4A) Any structure, growth, or other object, including a mobile object, which exceeds a limiting height, specific to its geographic location relative to the runway/airport.

Off Airport Property. (FAA Website) Property that is beyond the boundary of land owned by the airport sponsor.

Official Map. (FAA Website) A legally adopted map that conclusively shows the locations and width of proposed streets, public facilities, public areas, and drainage rights-of-way.

On-Airport Property. (FAA Website) Property that is within the boundary of land owned by the airport sponsor.

Overlay Zone. (FAA Website) A mapped zone that imposes a set of requirements in addition to those of the underlying zoning district.

Parallel Taxiway. A taxiway that is aligned parallel to a runway, with connecting taxiways to allow efficient movement of aircraft between the runway and taxiway. The parallel taxiway effectively separates taxiing aircraft from arriving and departing aircraft located on the runway. Used to increase runway capacity and improve safety.

Passenger Facility Charge (PFC). A user fee charged by public agencies controlling a commercial service airport can charge enplaning passengers a fee facility charge. Public agencies must apply to the FAA and meet certain requirements in order to impose a PFC.

Precision Approach Path Indicator (PAPI). A system of lights located by the approach end of a runway that provides visual approach slope guidance to aircraft during approach to landing. The lights typically show green if a pilot is on the correct flight path, and turn red of a pilot is too low.

Part 77. (FAA FAR Sec. 77.31) 14 CFR Part 77, *Objects Affecting Navigable Airspace,* establishes standards for determining obstructions in navigable airspace; defines the requirements for notice to the FAA Administrator of certain proposed construction or alteration; provides for aeronautical studies of obstructions to air navigation to determine their effect on the safe and efficient use of airspace; provides for public hearings on the hazardous effect of proposed construction or alteration on air navigation; and provides for establishing antenna farm areas.

Part 150 Study. (FAA Website) Part 150 is the abbreviated name for the airport noise compatibility planning process outlined in Part 150 of the Federal Aviation Regulation (FAR) that allows airport owners to voluntarily submit noise exposure maps and noise compatibility programs to the FAA for review and approval. See "Noise Compatibility Plan."

Passenger Facility Charge (PFC) Program. (FAA Website) Program allows the collection of fees up to a set dollar amount, approved by the FAA for every enplaned passenger at commercial airports controlled by public agencies. Airports use these fees to fund FAA-approved projects that enhance safety, security, or capacity; reduce noise; or increase air carrier competition.

Performance Standards. (FAA Website and Planning and Urban Design Standards) Minimum acceptable levels of performance, imposed by zoning that must be met by each land use. These standards set limits on externalities such as noise, odor, smoke, dust, noxious gases, vibration, heat and glare. They may be used to control physical, traffic, and fiscal impacts of development.

Precision Instrument Runway. (FAA AC 150/5190-4A) A runway having an existing instrument approach procedure utilizing an Instrument Landing System (ILS) or a Precision Approach Radar (PAR). It also means a runway for which a precision approach system is planned and is so indicated on an approved airport layout plan or any other planning document.

Primary Surface. (FAA AC 150/5190-4A) 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 FAR Part 77. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline.

Primary Runway. (FAA AC 150/5325-4B General Definition) The runway used for the majority of airport operations. Large, high-activity airports may operate two or more parallel primary runways.

Proponent. Any person who proposes to erect or construct any object or structure that exceeds certain minimum altitudes that may be a potential hazard to air navigation and who may be responsible for lighting and marking such object or structure.

Public Aircraft. An aircraft used exclusively in the service of any government or of any political subdivision thereof, including the government of any state, territory, or possession of the United States, or the District of Columbia, but not including any government-owned aircraft engaged in carrying persons or property for commercial purposes.

Public Use Airport. (FAA AC 150/5190-6) Means either a publicly owned airport or a privately owned airport open for public use.

Reliever Airport. (FAA FAR Sec. 152.3) A general aviation airport designated by the Administrator as having the primary function of relieving congestion at an air carrier airport by diverting from that airport general aviation traffic.

Resiliency. The ability to recover readily from natural disaster, adversity, or the like.

Rotorcraft. A helicopter.

Runway. A defined area intended to accommodate aircraft takeoff and landing. Runways may be paved (asphalt or concrete) or unpaved (gravel, turf, dirt, etc.), depending on use. Water runways are defined takeoff and landing areas for use by seaplanes.

Runway End Identifier Lights (REILs). These are distinctive flashing lights that help a pilot identify the runway.

Runway Object Free Area (OFA). A defined area surrounding a runway that should be free of any obstructions that could in interfere with aircraft operations. The dimensions for the OFA increase for runways accommodating larger or faster aircraft.

Runway Protection Zone (RPZ). (FAA AC 150/5300-13) An area off the runway end designed to enhance the protection of people and property on the ground.

Runway Safety Area. (FAA AC 150/5300-13). A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an overshoot, or excursion from the runway.

Segmented Circle. A system of visual indicators designed to show a pilot in the air the direction of the traffic pattern at that airport.

Small Aircraft. An aircraft that weighs less than 12,500 lbs.

Sound Attenuation. (FAA FAR Part 150) Acoustical phenomenon whereby a reduction of sound energy is experienced between the noise source and the receiver. This energy loss can be attributed to atmospheric conditions, terrain, vegetation, constructed features (e.g., sound insulation) and natural features.

Sound Exposure Level (SEL). (FAA FAR Sec. 150.7) The level, in decibels, of the time integral of squared A-weighted sounds pressure during a specified period or event, with reference to the square of the standard reference sound pressure of 20 micropascals and a duration of one second.

Special Exceptions. (FAA Website) Land uses that are not specifically permitted as a matter of right, but can be permitted in accordance with performance standards and other local criteria. Also known as "conditional uses."

Stage 2 Aircraft. (FAA Website) Aircraft that meet the noise levels prescribed by FAR Part 36 and are less stringent than noise levels established for the quieter designation Stage 3 aircraft. The Airport Noise and Capacity Act requires the phase-out of all Stage 2 aircraft by December 31, 1999, with case-by-case exceptions through the year 2003.

Stage 3 Aircraft. (FAA Website) Aircraft that meet the most stringent noise levels set forth in FAR Part 36.

Statute Mile. (FAA Website) A measure of distance equal to 5,280 feet.

Structure. Any object constructed or installed by humans, including, but without limitation, buildings, towers, smokestacks, and overhead transmission lines, including the poles or other structures supporting the same.

T-Hangar. A rectangular aircraft storage hangar with several interlocking "T" units that minimizes building per storage unit. Usually two-sided with either bi-fold or sliding doors.

Taxiway Safety Area (TSA). (FAA AC 150/5300-13) A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

Terminal Area. (FAA Website) A general term used to describe airspace in which airport traffic control or approach control service is provided.

Transfer of Development Rights (TDR). (FAA Website) This involves separate ownership and use of the various "rights" associated with a parcel of real estate. Under this concept, some of the property's development rights are transferred to a remote location where they may be used to intensify allowable development.

Transitional Surface. (FAA AC 150/5190-4A) These surfaces extend outward at 90 degree angles to the runway centerline and the runway centerline extended at a slope of seven (7) feet horizontally for each foot vertically from the aides of the primary and approach surfaces to where they intersect the horizontal and 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.

Tree. (FAA AC 150/5190-4A and Merriam-Webster Dictionary Online) Any object of natural growth. A woody perennial plant having a single usually elongate main stem generally with few or no branches on its lower part.

Turbojet Aircraft. (FAA AC 20-147 General Definition) Aircraft operated by jet engines incorporating a turbine-driven air compressor to take in and compress the air for the combustion of fuel, the gases of combustion (or the heated air) are used both to rotate the turbine and to create a thrust-producing jet.

Turboprop Aircraft. (FAA Website) Aircraft in which the main propulsive force is supplied by a gas turbine driven conventional propeller. Additional propulsive force may be supplied from the discharged turbine exhaust gas.

Unmanned aerial vehicle (UAV). Commonly known as a drone, is an aircraft without a human pilot aboard. UAVs are a component of an unmanned aircraft system (UAS); which include a UAV, a ground-based controller, and a system of communications between the two.

Unmanned aircraft system (UAS). Unmanned Aerial System (UAS) has three components: An autonomous or human-operated control system which is usually on the ground or a ship but may be on another airborne platform; An Unmanned Aerial Vehicle (UAV); A command and control (C2) system - sometimes referred to as a communication, command and control (C3) system - to link the two. The acronym was adopted by the United States Department of Defense (DoD) and the United States Federal Aviation Administration in 2005.

Utility Runway. A utility runway constructed for and intended to be used by propeller driven aircraft of 12,500 pounds gross weight or less.

Variance. (FAA Website) An authorization for the construction or maintenance of a building or structure, or for the establishment or maintenance of a use of land that is prohibited by a zoning ordinance. A lawful exception from specific zoning ordinance standards and regulations predicated on the practical difficulties and/or unnecessary hardships on the petitioner being required to comply with those regulations and standards from which an exemption or exception is sought.

Vertical Navigation (VNAV). Vertical navigation descent data or descent path, typically associated with published GPS instrument approaches. The use of any VNAV approach technique requires operator approval, certified VNAV capable avionics, and flight crew training.

Visual Approach Slope Indicator (VASI). A system of lights located by the approach end of a runway which provides visual approach slope guidance to aircraft during approach to landing lights typically show some combination of green and white if a pilot is on the correct flight path and turn red of a pilot is too low.

Visual Approach. (FAA Website) An approach to an airport conducted with visual reference to the terrain.

Visual Runway. (FAA AC 150/5300-13) A runway without an existing or planned straight-in instrument approach procedure.

Visual Flight Rules (VFR). (FAA FAR Sec. 170.3) Rules that govern the procedures for conducting flight under visual conditions. The term "VFR" is also used in the United States to indicate weather conditions that are equal to or greater than minimum VFR requirements. In addition, "VFR" is used by pilots and controllers to indicate the type of flight plan.

Weighted Sound Level (also referred to as DBA). (FAA AC 20-133) A single event sound level which has been filtered or weighted to discriminate against the low and high frequency extremes to approximate the auditory sensitivity of the human ear.

Wetland. Land on which water covers the soil or is present either at or near the surface of the soil or within the root zone, all year or for varying periods of time during the year, including during the growing season. **(FAA AC 150/5200-33A)** Wetlands provide a variety of functions and can be regulated by local, state, and Federal laws. Normally, wetlands are attractive to many types of wildlife, including many which rank high on the list of hazardous wildlife species.

Wetland Mitigation Banking. (FAA AC 150/5200-33A) Wetland mitigation banking is the creation or restoration of wetlands in order to provide mitigation credits that can be used to offset permitted wetland losses. Mitigation banking benefits wetland resources by providing advance replacement for permitted wetland losses; consolidating small projects into larger, better designed and managed units; and encouraging integration of wetland mitigation projects with watershed planning.

Wind Rose. A diagram indicating the prevalence of winds from various directions in relation to existing or proposed runway alignments.

Yearly Day-Night Average Sound Level (YDNL). (FAA FAR Sec. 150.7) The 365-day average, in decibels, day-night average sound level. The symbol for YDNL is also Ldn.

Zoning. (FAA AC 150/5020-1) An exercise of the police powers of the State, as delegated to local governments, designating the uses permitted on each parcel of land within the zoning jurisdiction.

Zoning Ordinance. (FAA AC 150/5190-4A general definition) Primarily a legal document that allows a local government effective and legal regulation of uses of property while protecting and promoting the public interest.

OREGON AVIATION PLAN

APPENDIX H, COMMENTS

OREGON AVIATION PLAN

APPENDIX H, COMMENTS

Oregon Aviation Plan v6.0 Comments Received via Email

A public comment period on the Oregon Aviation Plan (OAP) v6.0 was conducted for 35 days from December 5, 2018 to January 8, 2019. Comments were emailed to OAPcomments@jviation.com; all commenters were sent an email confirming receipt of the comments. No comments were received via USPS mail. All comments received are presented below.

Reply Reply All Forward

RH Randy Hooper <randy.hooper@co.del-norte.ca.us> OAP Comments 12/5/2018

Oregon Aviation Plan

You replied to this message on 1/30/2019 1:45 PM.

Hello Mr. Maynard, I received notification of the Oregon Department of Aviation's request for public comments for the Oregon Aviation Plan. I am the airport director of the Del Norte County Regional Airport, located in Crescent City, California. We are a public use airport located in the far northwestern California and are administered by a Joint Powers Agreement between several local government agencies and Tribes including the City of Brookings and Curry County, both Oregon local governments. As such I am curious to know if we have any standing to be represented in the OAP? Thank for any insight you can provide in this! All the best,

Randy

Randy Hooper
Airport Director, Border Coast Regional Airport Authority
707.464.7288 (Desk) 707.951.2656 (Mobile)

Reply Reply All Forward

JB John Barsalou <jbarsalou@klamathfalls.city> | OAP Comments 12/6/2018

Oregon Aviation System Plan

You replied to this message on 12/7/2018 9:34 AM.

Hi Mike,

I hope all is well with you and you had a nice Thanksgiving holiday.

I'd like to have a conversation regarding the plan, and possibly set up a meeting to discuss several items in the plan regarding LMT. What is your availably tomorrow or next week? I'm open all day tomorrow and in the morning on Monday.

Thanks.

John T. Barsalou, A.A.E.
Airport Director
(541) 883-5373 office
(810) 730-9882 cell
CRATER LAKE KLAMATH REGIONAL AIRPORT
www.flykfalls.com

Reply Reply All Forward

BS Bateman, Steve <Steve.Bateman@aopa.org> OAP Comments; +1 12/6/2018

Aviation Plan Download

You replied to this message on 12/11/2018 8:46 AM.

Hello,

I would like to download and read the Oregon Aviation Plan and would be grateful if you would create a single PDF containing the complete document.
Feel free to send it to me at this email address.

Many thanks and best regards,
Steve Bateman

Stephen C. Bateman (Steve), CFI, Ph.D.
Director, Flying Clubs Initiative
steve.bateman@aopa.org
Tel: 301-695-2356
www.aopa.org

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Reply Reply All Forward

DG Donald Grotjohn <dwgrotjohn@gmail.com> | OAP Comments 12/7/2018

Responding to Public Comment Request

You replied to this message on 12/12/2018 10:28 AM.

As a member of the Friends of Pacific City State Airport committee I offer this response.

I live directly adjacent to the tie down areas on the west side of the airport. I commend the ODA's decision to remove our airport from the possibility of sale and look forward to a future of combined efforts to maintain and improve it.

I find the response request to be missing a major reason for the future of this particular facility. That would be the availability of the airport in times of emergencies. Not only is this airport often used by both the Coast Guard and Life Flight , but it's available between Tillamook and Newport.

A perfect example is about four days ago. I heard a big helo approaching from the South, it didn't sound like Coast Guard. I went to my window and saw a Huey coming from the south, pretty low and fast. He circled and landed to the south with no hesitation. When he had shut down he got out and checked the prop shaft area on top.

It turned out he was returning from dropping water on California wild fires and had gotten some kind of signal requiring inspection from the instruments. He immediately looked for a landing opportunity and came to Pacific City State Airport.

After his inspection he left and continued north to Astoria. I've no idea what the problem was, but he was able to get on the ground quickly and safely in minutes, with local help available.

Thanks for the opportunity to respond to your request for comments

Donald Grotjohn, Pacific City

Reply Reply All Forward

LT Lisa Trauernicht <LTrauernicht@co.marion.or.us> 2 1 1/3/2019

Public Comment - Oregon Aviation Plan

You forwarded this message on 1/4/2019 12:56 PM.
If there are problems with how this message is displayed, click here to view it in a web browser.

ODA Plan Public Comment 010319.pdf
465 KB

Good Afternoon!

Please see the attached public comment regarding the Oregon Aviation Plan, from the Marion County Board of Commissioners.

Please let me know if you have any questions.

Thank you for providing this opportunity to comment.

Sincerely,
Lisa Trauernicht

Lisa Trauernicht
Sr. Policy Analyst
Marion County Board of Commissioners
Phone: 503-589-3264
ltrauernicht@co.marion.or.us

OREGON AVIATION PLAN

Marion County
OREGON
Board of Commissioners

January 3, 2019

(503) 588-5212
(503) 588-5237-FAX

Oregon Department of Aviation
ATTN: Oregon Aviation Plan – Update
3040 25th Street SE
Salem, OR 97302

RE: Oregon Aviation Plan Public Comment

To Whom It May Concern:

The Marion County Board of Commissioners appreciates this opportunity to comment on the Oregon Aviation Plan. We support the plan's conclusions that the Aurora State Airport and Salem McNary Field provide a significant economic impact to Marion County, and that the plan's estimates for maintenance and improvement needs at the airports are realistic.

The McNary Field is home to a variety of businesses, which include on-site charters, dining, car rentals, and private aircraft hangars, as well as supporting aerial firefighting. It is also home to the Oregon National Guard's Army Aviation Support Facility. The Aurora State Airport is one of the busiest and largest state-owned airports in Oregon, with nearly 95,000 aircraft operations per year. The airport has a robust property tax base that results in growing revenue for the residents of Marion County. In addition to the economic benefits of these airports, each may play a critical role in natural emergencies, such as the expected Cascadia earthquake event, when bridges are expected to be inoperable and vehicular travel difficult.

Marion County fully supports the plan's conclusions relating to Salem McNary Field and the Aurora State Airport. Thank you again for the opportunity to comment.

Sincerely,

Janet Carlson

Janet Carlson, Chair

Kevin Cameron, Vice Chair

Samuel A. Brentano, Commissioner

555 Court Street NE, Suite 5232 • P.O. Box 14500 • Salem, OR 97309-5036 • www.co.marion.or.us

MM Mike Maynard | patrick ireton; OAP Comments 1/4/2019

RE: Pacific City Airport OAP Plan

We removed extra line breaks from this message.

Office 303.524.3030
Fax 303.524.3031
www.jviation.com

-----Original Message-----
From: patrick ireton <caperock@embarqmail.com>
Sent: Wednesday, January 2, 2019 1:20 PM
To: OAP Comments <OAPcomments@jviation.com>
Subject: Pacific City Airport OAP Plan

This is a public comment regarding the OAP plan.
The Pacific City airport has been condemned as unsafe.Due to a group of loud monied individuals in Pacific City the airport has been kept open even as the unsafe problems still exists. The airport is too short and as has been stated to narrow even with foliage removal. The airport will not pass any FAA license requirements for a rural airport as it can never expand and is underwater most of the time in winter. The airport host 4,000 less pilots than is claimed by some people and draws no real economic value to our community . The FAA puts the amount of traffic at 1,200 at most and further promotes my idea of this airport not being and economic necessity as most of those planes stay for less than 4 hours.
In September a plane crashed in the river. Nearly killing the pilot. One of many crashes not recorded by the ODA .
Planes still cross over Pacific avenue coming within close contact to cars trucks and buses.
Rule 91.119 (minimum safe altitudes) is largely ignored by most pilots and overflights over tourist rentals are common. Bringing a dangerous element to our biggest economic money maker for Tillamook county beach Rentals . When a plane eventually hits one of theses rental it will destroy our biggest industry in Pacific City. Even though the FAA makes light of the problem of planes taking off and landing over my home and beach rental they do conclude that pilots land at safe altitudes and this has not been the case.
No attempts by anyone have curbed the problem of takeoff and landing.
I am particularly concerned by night and heavy fog landings and takeoffs.
In short this is a very dangerous airport and should be shut down to remove the possibility of the cost of litigation and crash payouts causing bigger insurance claims and costs.
Patrick Ireton

Sent from my iPad

Reply Reply All Forward

Wes <mr_wes@yahoo.com> OAP Comments 1/23/2019

oap comments

You replied to this message on 1/25/2019 3:43 PM.

In reading the OAP, I see two areas where ODA objectives do not seem to align with those which are significant to pilots.

The first is no inclusion of non-ethanol premium in the fuel planning objectives. Many presently flying GA airplanes are able to use this fuel when it is available. This would reduce lead emissions without any change to the planes or waiting for a general 100LL replacement. Non-ethanol premium is generally significantly less expensive than 100LL, so this would also make flying more affordable for Oregon's pilot population that owns planes which can use this fuel. ODA should be creating incentives for FBOs to stock and sell non-ethanol premium to benefit the environment and Oregon's pilots. This low hanging fruit should not be neglected.

The second area where ODA is under serving its pilot population is in choosing to have weather reporting "not an objective" for category IV airports. The report acknowledges that Oregon's weather patterns can be very geography specific. Many pilots now have the ability to get in-flight weather updates, but a lack of weather reporting at the destination airport still leaves pilots guessing what weather they will find when they arrive. Having weather reporting at as many category IV airports as possible would not only help those pilots using the airports, but would also paint a more complete picture of weather for all pilots using airports in the general vicinity. Increasing weather reporting should be a strong and major objective for ODA in the next 10 years. Pilots should not have to guess what weather they will find at a majority of Oregon's airports. When someone needs to find a safe place to land, it doesn't matter to them how many points that airport earned in an upgrade system. What matters is whether or not weather there is better than at other airports in the area. Without weather reporting this is difficult to determine in a timely manner. Please reconsider your position on this issue. It could literally save lives.

-Wes Strubhar

Reply Reply All Forward

LG Larry Graves <LGraves@co.josephine.or.us> 4 2 1/24/2019

Josephine County Airports Comments on Draft OAP 2019-01-24

You replied to this message on 1/25/2019 5:18 PM.

OAP - 3S8-3S4 Comments Chapter 2.pdf 718 KB

OAP - 3S8-3S4 Comments Chapter 3.pdf 175 KB

Hi Jeff and Mike,

Apologies for the delay in getting these to you. I have taken the tables in the inventory section where 3S8 and 3S4 appear and made markups where appropriate. In some cases my markups turned out to be redundant, but were needed on the pages I was reviewing. Significantly, I added in the actual aircraft inventory present at the Illinois Valley Airport (AKA Cave Junction or 3S4) which was reported at zero but is above 30 in all years shown.

I can't find any reason to update anything in the forecasting section.

Mark/Jeff, can you refresh my memory – I recall doing the managers' survey back in 2015 or 2016 – do you have a submission from me at that time?

Larry Graves

Director
Josephine County Airports
1441 Brookside Blvd.
Grants Pass, Oregon, 97526
541-955-4535 Office
541-660-2169 Cell

Reply Reply All Forward

LG Larry Graves <LGraves@co.josephine.or.us> Mike Maynard; +4 1/25/2019

Re: Josephine County Airports Comments on Draft OAP 2019-01-24

Hi Mike,

Thanks for asking. I was not sure what the current OAP says about the pavement strength at Grants Pass Airport (3S8) so since the field was blank, I added what I believe to be the correct number which is 19,000 lbs per axle.

I asked our engineer of record to take a look at my comments at the same time I sent them to you, and he had some corrections for me. If you don't mind, I'll send you a revised set of comments on Monday, with apologies. I think most of my edits were correct, but because I did not recognize the ancient acronym "MLS" I mistakenly claimed we had them. Microwave landing systems are few and far-between...

Thanks,

LARRY GRAVES
Director
Josephine County Airports
541-955-4535 Office
541-660-2169 Cell

From: Mike Maynard <Mike.Maynard@jviation.com>
Sent: Friday, January 25, 2019 2:18 PM
To: Larry Graves; OAP Comments; Jeff Caines
Cc: Barbara Rodriguez; Corley McFarland
Subject: RE: Josephine County Airports Comments on Draft OAP 2019-01-24

EXTERNAL EMAIL: Please verify links by hovering over them!

Hi Larry,

I am updating documents based on your comments. Can you clarify the comment regarding 19K on table 2-1? I can read the writing.

Thanks,
Mike

Mike Maynard
Senior Aviation Planner / Project Manager
Jviation, Inc.
Direct 513.484.2519
Cell 513.484.2519
Mike.Maynard@jviation.com

Reply | Reply All | Forward

GJ Gary Judd <gjudd@bendoregon.gov> | 3 | 1 | 1/31/2019

Bend Airport BDN- Oregon Aviation Plan Edits

You replied to this message on 2/1/2019 11:33 AM.

Exhibit A rev2.pdf
2 MB

In reviewing the OAP the new Heliport is not included. A drawing is attached and more information is provided below.

The heliport consists of the following:

Lighted Landing Helipad: 80'x80' Concrete
Parking pads 3 pads measuring 72'x72'
18 Parking Pads measuring 35'x35'

The development areas has full utilities available to each building site.

If you need additional information please contact me via email or call at 541-389-0058.

Thank you,

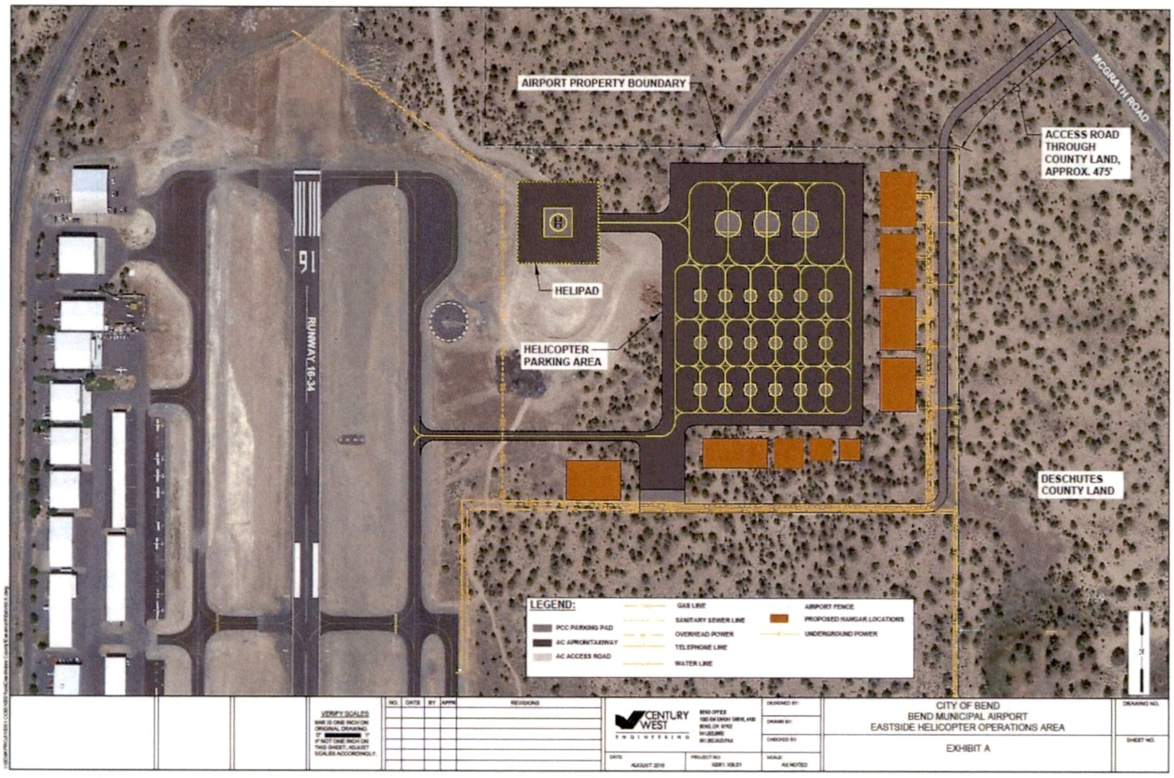
Gary

Gary Judd | Airport Manager
Bend Municipal Airport
A Division of the Economic Development Department
City of Bend
O: 541-389-0258 | 541-647-0828
gjudd@bendoregon.gov

www.bendoregon.gov/airport

"Never assume that anyone outside your profession understands your acronyms"

You may not be able to do all that can be done, but you should do all that you are able to do.


AIRPORT PROPERTY BOUNDARY
MCGRATH ROAD
ACCESS ROAD THROUGH COUNTY LAND, APPROX. 475'
HELIPAD
HELICOPTER PARKING AREA
RUNWAY 16-34
DESCHUTES COUNTY LAND
LEGEND:
PCC PARKING PAD
AC APRON/TAXIWAY
AC ACCESS ROAD
GAS LINE
SANITARY SEWER LINE
OVERHEAD POWER
TELEPHONE LINE
WATER LINE
AIRPORT FENCE
PROPOSED HANGAR LOCATIONS
UNDERGROUND POWER
CENTURY WEST ENGINEERING
CITY OF BEND
BEND MUNICIPAL AIRPORT
EASTSIDE HELICOPTER OPERATIONS AREA
EXHIBIT A

Reply Reply All Forward

JK jack kahle <jackekahle@yahoo.com> | OAP Comments 2/3/2019

UAO Proposed runway extension

You replied to this message on 2/7/2019 9:46 AM.

Comment: I would like a breakdown of the $37.5 mil runway extension cost proposed for UAO. (The original capital estimate was $7 mil.) Without this info it is very difficult to evaluate the merits of the proposal. Thank You.

Jack Kahle 503-694-8022 Pilot,
aircraft hangar owner at UAO
Board member of Positive Aurora Airport Management (PAAM)

Reply Reply All Forward

MG Mary Gionta <mjgionta@hotmail.com> OAP Comments 2/7/2019

Aurora Airport expansion

You replied to this message on 2/7/2019 9:51 AM.

As a resident of Aurora I am concerned over the attitude and feeling of some pushing for this expansion, when they do not even live near the airport. I have not talked to one resident impacted by this attempt to railroad this expansion in. Bypassing any community hearings, studies, or up to date plans, other than those by special interest groups. I attended the only open forum, the city of Wilsonville held, that allowed us to speak up. During that meeting all of the parties that benefit this proposal do not even live in or around Aurora. They were from other areas outside Aurora, outside the state, and even the country, but not anywhere near the Aurora airport. Don't you find that overwhelmingly odd? They want this airport to grown despite the past studies that clearing state it would not be appropriate due to the geological reports that were done, along with other studies like land use. Some updated airport statement were falsified clearly, and they were called out for that. One such is that there will be less noise because of longer runways. The truth of the matter is the noise is not planes taking off, but the larger planes flying over our homes to land, not take off. I've not heard anyone complain of excessive noise on take off, but landings. When we purchased our home we did our homework and felt safe purchasing our home even though we are in direct path of the income flight paths of these aircraft. With all the obvious authentic negative reports refuting the past proposals. The increase in noise from the bigger air craft that have wavers rattle our home all hours of the night. This to should not be allowed, but this I know is not up to you. But, as long as you allow this to be pushed through you are in truth denying us residents to live a normal life. I have no problem with the current airport, the helicopters and small aircraft but this is no place for larger corporate jets. They have other airport more equipped to handle them. At this meeting in Wilsonville these interest groups had signs saying they will bring in more money and jobs. That is hogwash. They all bragged how much they spend money in Wilsonville in eating, getting parts, lodging, but not one of them mentioned Aurora. Not that they have spent money to eat, lodge, or purchased parts in Aurora. So, admittingly there is no income presently coming into Aurora, nor will any jobs be made for this community. What ever employment they will need for the expansion will come from other communities that already have airports, like Hillsboro, McMinnville, Salem, or Troutdale. This will add more congestion to an already overwhelmed infrastructure. I could go on for hrs, but you get my point. There are plenty of concrete facts presented that overwhelmingly prove that the Aurora airport is not an appropriate airport for this expansion. Please do your due diligence and listen to what we the people are pleading for. Please do what is right for all the residence, not the few interest groups.

Thank you for your time,
Jon & Mary Gionta

PT

Potter, Tom <tom.potter@te.com> OAP Comments 2 2/11/2019

Letter in opposition

You forwarded this message on 2/11/2019 5:43 PM.

2018 07 19 Oregon Aviation Board Meeting Excerpts Transcription.pdf 171 KB

18-014-based-aircraft-inventory.pdf 170 KB

I am writing in opposition to the plans for the extension of the runway of the Aurora Airport and in opposition to the ODA's submission of the FAA grant request of 37 Million dollars.

The problems with the Aurora Airport Master Plan have been many and varied. Citizen input in opposition on the issue has been greatly ignored. The citizens of Aurora have a right to be heard on this issue but our opinions are largely ignored.

Some problems with the plan include:

- Reports of 'based aircraft' of quantities upward of 300, 350, 400 are false and misleading. The FAA had released a bulletin (attached) that specifically states that aircraft are not be counted when they exist on private property adjacent to airport property – in this case it is widely known that Aurora Airport is a large 'through the fence operation' and that is specifically addressed in this FAA bulletin. It was these based aircraft numbers that were used to justify HB4092 back in 2017 which failed, and since it is obvious that these based aircraft numbers are false, they should not be used in any justification for this extension – there is simply no room for 300 + aircraft on the state owned land at UAO.
- Counts of 'constrained operations' at UAO appear to be largely exaggerated. Senator Betsy Johnson was recorded at an Oregon Aviation Board meeting (July 19th, 2018 – Excerpts and link to Audio attached) coaching ODA representatives on how to reach out to flight ops directors and add in affirmative responses to the question – 'would you use UAO if the runway was 1000' longer?' leaving the resulting constrained ops counts in question. It was the constrained operations study that was used to justify the ODA's grant request to the FAA and it is specifically noted in that request that this tactic was used.
- Over time, airport flight operations have made major capital investments in aircraft that are larger than the facilities available at UAO. Larger jets without the ability to work efficiently out of UAO are being seen operating more frequently there – perpetuating the constrained operations problem when in reality it would seem like many of those are simply poor business decisions being made that directly impact and contribute to constrained operations. The constrained operations in the numbers submitted to the FAA did not exist prior to the larger jets and the FAA is now being asked to pay for those contrived numbers.
- Forecast projections of overall operations numbers have never been realized. Operations have never exceeded 90,000 / year, yet projections in 2011 were upward of 98,000. So it would seem that since the total ops projections were not materializing, the next best thing was an attempt to use constrained operations instead, and it was these numbers that were used in the grant application.
- A cry of 'Safety!' has been common among proponents of the extension. Yet it could easily be pointed out that if it had really been unsafe then we would not have seen the increase in the number of jets operations there over the last 20+ years.

I will conclude by saying that there are numerous other arguments on why this should not be allowed at UAO. The 'constant' that I see in the information I have submitted is a continued effort to come up with any new tactic necessary by extension proponents to see this through. The bulk of the proponents backing the extension are FOR PROFIT businesses located at the airport. The arguments made are in the best interest of business, not safety and they are not interested in citizen concerns or input.

Link to OAB Meeting from July 19, 2018
https://www.oregon.gov/aviation/Pages/AVB_18_07_19.aspx

Refer to link labeled: Meeting Minutes: Audio 1 & 2

Tom Potter

OREGON AVIATION PLAN

OREGON AVIATION BOARD
VERBATIM EXCERPTS OF JULY 19, 2018

DATE	July 19, 2018
LOCATION	Oregon Manufacturing Innovation Center (OMIC) 33701 Charles T Parker Way Scappoose, OR 97056
DIAL IN	(888) 251-2909 - Access Code: 5634428 (please mute your phone)
TIME	9:00 AM to 1:00 PM

PRESENTING AGENDA Board Chair, Martha Meeker

Board Information & Action Items

Airports & Operations Division Update
- Aurora State Airport Discussion – Maass; Meeker

Start 2:04:25

Chair Martha Meeker: So, that's Pacific City; also, another busy airport that we have is Aurora. So, the latest on Aurora; we haven't heard about it for a while.

Maass: Just, real quick, because I know we're running way behind schedule, our Constrained Operations Study is moving forward. We met with a lot of concerned parties with this, as far as getting the number of constrained operations when meeting in Aurora, I believe it was about three weeks ago, and so the process of collecting data is still moving forward. I believe I saw an email that came across that I think they are getting close to the end of that data collection and then we'll have a look at, you know, some initial reports/chapters of the study for review. I would expect that to probably be here in the next—

2:05:18
Heather: —by the next Board meeting, you will have a draft of some of the preliminaries of the work that's been done. Is that what you're—?

2:05:28
Sen. Betsy Johnson: By what process is the data being collected for constrained operations? Who's responsible for doing it, and what's the process?

Maass: This is the contract that is with Century West Engineering, and so, they have the engineering contract for Aurora State Airport. There was a work order contract that was put together that was vetted through the FAA, and the FAA signed off on the process for collecting the constrained operations and so, we did not want to start this process unless it was something the FAA was going to accept and approve. Because, ultimately, they're going to be the ones that are going to be footing the

JVIATION

	bill for any runway extensions, so, this work order contract—scope of work—has been vetted through the FAA, and they've signed off on it. And so, now we're just going through the process and reaching out to the operators at Aurora State Airport to verify the equipment that is used in the airport on a regular basis.
2:06:40 Sen. Betsy Johnson	Follow up, Madam Chair? I heard you say that it was approved by the FAA; that was fine. I heard you say reaching out, and I don't know what that means, and if you are reaching out to the current operators; finding out what their operations are, are you reaching out to potential operators who are not using Aurora because of limitations. I mean, if you're just talking to "the family," you may ignore the fact that the XYZ financial institution wants to fly in because they're doing business in Wilsonville, but their corporate documents say they have to have—I'm making this up, obviously—7,000 feet. So, if you're calling Ted and saying, "How often are you flying?" I think you're missing data.
2:07:26 Heather	But, we're not. We're actually—from the businesses that are out there, they are also providing—they're supposed to be providing that data where ever they can. Ted's [Millar's] group is providing the data that is being left out; what he needs to—you were supposed to be working with the consultant to provide that. That's the last—the last group meeting we had was with all of the businesses that were participating in the current operations that were out there, and what their restrictions are and if they had upcoming needs. That's what's supposed to be getting to the consultant.
2:07:58 Sen. Betsy Johnson	I'm sorry to beat this to death, but you still haven't answered my question. You're talking to "the family".......
Heather	Right.
Sen. Betsy Johnson	What I'm trying to figure out is when you go to Ted Millar, who knows more about that airport than anybody else around I would submit, and you say to him, "Has the XYZ bank called you and said, 'with another 1,000 feet, we'd be in and out of there every other day.'" I don't know how you're getting that which is unknown to you now. Are you calling flight departments? Has somebody reached out to Nike and said, "Given the congestion at Hillsboro, would you go to Aurora if there was another 2,500 feet? And, again, I'm just making these numbers up, but I don't know how you are soliciting the unknown.
2:08:42 Heather	Unfortunately, we can't solicit the unknown for this study as it's paid for and acceptable—it's not paid for—but accepted in a strict statement of work by the FAA. We are—
Sen. Betsy Johnson	Then how do you answer the question, Heather?
Heather	You don't know what you don't know. I don't know if the consultant can actually go out there and try to find that data. They don't know what they are looking for without getting all of the information from all of the aircraft

	owners, operators, and sponsors, and everybody that's on that airport now.
2:09:09 Sen. Betsy Johnson	May I just tell you, anecdotally, we needed to discuss constrained operations at Scappoose. I must have made a hundred phone calls to flight departments and talking to chief pilots and soliciting information about, "would you use us if..." and that's the piece that, for me, is missing. And I don't care that the FAA signed off on it; I think they've signed off on a flawed study if you don't have a mechanism to go out and try to find the unknown, which based on my experience at Scappoose, you can find if somebody sits down and makes the calls.
2:09:48 Maass	The other piece to that though is I know that with constrained operation, the FAA is not going to counter this constrained operation based on "if you build it, they will come", but we have aircraft that are going into Aurora and flying out of Aurora that are coming in light, taking off light, flying somewhere else, landing to continue to their destination; those are the ones that we know and that we know that we have over 500 of those operations and so, we are reaching out to that low hanging fruit. Because, if we can get that information just from the operations that are currently happening at Aurora, and we can verify that, then that is additional money that we don't have to spend calling out to the hundreds of flight departments because the numbers are already there. We're just verifying those.
2:10:41 Sen Betsy Johnson	I'll buy that, but I still think it's valuable to reach out to some of the bigger flight departments, particularly with the air space constraints, and the crowding at Hillsboro, and noise issues, it's just a thought—
Heather	I agree.
Sen. Betsy Johnson	And, I don't see it being onerous. I did it in a couple weeks, just sitting down and making the calls for half an hour every day.
Maass	The other piece that we've discussed about putting in the publications—aviation publications to reach out to those flight departments.
Heather	So, we are, like Matt said 500, we're actually, we're nearing 600, and we should be completely where the study needs us to be with the operations that currently happen now without doing that outreach. We'll be able to do that outreach once we're done with this one case that they do so much for your [inaudible 2:11:33].
Maass	The only other piece on Aurora that I would bring up is that we have—there's a piece of property that's not airport—that ODA does not own, but it's listed as the church property or church camp property that has been recently acquired for airport use. And, I believe that that is going through the process to get the land use changed. It's currently, I believe, EFU, and it's going to be changed over to airport. In the Master Plan, both in 2012-13 and in 1976, that property was identified and discussed in a couple meetings about that being used as airport—for airport use. And

so, I know—I believe that there was a request that was sent to the Board for a letter of support, and that this was sent to the Board and Mitch Schweiker right as Mitch Schweiker was retiring, and I believe the correspondence back was that he did not want to take action on it and thought it would be better for the next Director to work with the property owner to deal with this, but I don't know if the Board wants to have any discussion on that as well, but—

[2:13:05]
Chair Meeker — Well, if it's in the Master Plan, I think by default that that talks a little bit about our support; if it states in there that that—that might—a future date that it be brought in as part of airport operations—

[2:13:18]
Heather — Well, [inaudible] it doesn't.

Maass — It just says in the alternatives it was discussed as future airport use under private ownership.

Chair Meeker — Okay.

Maass — So, it was just in the alternatives, it wasn't saying, "Hey, this will be…". So, the other thing for the Board to know also is HTS [Helicopter Transport Services] built their operations down in a corner of the airport; southeast corner of the airport and just recently also—well, not recently, but they went through the land use process to get it converted over to airport.

Chair Meeker — OK. Well, hopefully the process will go well. I met a new family member there, and they upgraded [inaudible 2:14:05]. I know we talked about, that we were going to kind of accelerate it a little bit and take some things off the table, but I really would—

End 2:14:15

Start 2:27:30

Chair Meeker — Ted.

Ted Millar — Can I just make a comment on Aurora before you get too far passed it? I'm Ted Millar from the South End Air Park at Aurora and I see new Board members that I don't really know, but 20 years ago the Department of Aviation asked us to put together a support group for Aurora, and we did called PAAM {Positive Aurora Airport Management]. We have regular meetings the last Thursday of every month. In fact, we meet at Aurora. and probably 50 people come every time to those meetings. And the only point I wanted to make is that because of that, we formed what we call a public/private partnership with ODA, and it's a very successful model that even Pacific City might want to copy, and I'd be happy to talk to them about how we did that. Because we formed a formal group and we had a formal agreement that we'd be a public/private partnership. We went with the City. With the State, we put security fencing around the airport, security gates, signing; we did all those things on a private partnership basis. Now, we're the third busiest airport in the state. We have more airport—airplanes based there than any. And, now we're going—we got a control tower put in with public/private partnership participation and the D's and R's all came together, even at the federal level, and supported that control tower. We are in there now for the runway extension and we're going through the constrained operations that they're talking about and we have been outreaching to the consultant, and I think in the last two weeks—the criteria is you had to get—document 500 existing constrained operations, and I understand from yesterday we're over 600—

2:29:42 Heather	We're over—we're at 609.
Ted Millar	And, there's a lot more than that, but we've at least been able to document and prove that there's over 600, so I think we've reached that level. The only thing I'm asking the Board, especially when you're setting policy, is that, well, Karmen Fore, you know, the lady that was at the Governor's Office before, said here at the Tillamook ORAVI [Oregon Aviation Industries] meeting last year that the Department of Aviation needs to be more aggressive in promoting, protecting, and improving airports, and they need to be much more aggressive in going after funding and doing the support necessary to place aviation at a higher level in the transportation system. So, it's a policy thing. And, it's easy to say, but especially for Aurora, and I'm being selfish with that cause that's where we're from, we'd really like to see that policy really put into place, to be more aggressive in promoting aviation and in our efforts to get this runway extended, it's going to take some real effort. And the previous director, I don't know if he was told to do that or not, but would constantly say, "Well, I have to stay neutral. I need to not be an advocate. I can't be against it or for it." And, I'm asking you to be an advocate.
2:31:20 Chair Meeker	And, I think we talked a little about this in the Legislative goals that we set, and one of them is to get in there and talk about it; be a promoter of aviation. It gets into being the home for UAS and perhaps, we can try to become the center of gravity away from SOAR; so we owe you that; we owe you more support.
Tim Millar	Thank you.

End 2:31:45

Federal Aviation
Administration

New York Airports District Office
159-30 Rockaway Blvd, Room 111
Jamaica, New York 11434
Telephone: 718-995-5770
Fax: 718-995-5790
https://www.faa.gov/airports/eastern/nyado_bulletin/

Re: Based Aircraft Inventory

Dear Airport Sponsor,

The purpose of this communication is to inform you of your responsibility to review and update, as needed, your based aircraft information at www.basedaircraft.com by **November 30, 2017.**

The verified based aircraft information will be used in the FAA's preparation of the next National Plan of Integrated Airport Systems (NPIAS) and *General Aviation Airports: A National Asset* (ASSET) Report to Congress.

The FAA is required to publish the NPIAS report every other year identifying the airports included in the NPIAS, the role they serve, and the amounts and type of development eligible for Federal funding under the Airport Improvement Program (AIP) over the next 5 years. Concurrently, the ASSET Report is prepared to review the unclassified airports' status.

****Please be reminded not to include aircraft associated with through-the-fence operations at your airport.**

Per the AIP Handbook, Table A-1 -Based Aircraft - *Per the FAA ASSET Report: General Aviation Airports: A National Asset, May 2012, Based Aircraft are aircraft that are stored at an airport.*

Based Aircraft – ASSET Report 2012, Glossary – *Based aircraft are aircraft that are "operational and airworthy", which are based at an airport for a majority of the year. This is the definition used by airports when reporting based aircraft on the website www.basedaircraft.com, National Based Aircraft Inventory Program (Airport Master Record, FAA Form 5010-1).* **(Aircraft based at an airport ≥6 months each year)**

A through-the-fence agreement allows people who own property with aircraft storage facilities near an airport to access the airport from off-airport property. Aircraft that are stored off airport, but are allowed to access airfield facilities via through-the-fence, should not be report to the FAA as 'based' at the airport.

If you have any questions, please contact your assigned ADO Planner.

Thank you.

Reply Reply All Forward

DB Deb Barnes <geemo_deb@hotmail.com> OAP Comments 1 2/11/2019

OAP Comments

You forwarded this message on 2/11/2019 6:08 PM.

2019-02-12 ODA ltr 2pgs.doc
40 KB

To: Mike Maynard and Jeff Caines

I learned of the OAP after the time to comment had closed.
Last Wednesday, I found out you will accept comments up to the Feb 12th Board Meeting, Thank you.

I have attached my two page document to be entered into the record of the Board Meeting Minutes.

Again, Thank You for extending the submission date.

Debra Barnes - Resident near Aurora State Airport
14570 NE Mulligan Ct.
Aurora, OR 97002

Contact Us

For further information regarding the Aviation Plan, please email OAPComments@jviation.com or contact one of the following individuals:

Jeff Caines, AICP
Aviation Planner
Oregon Department of Aviation
503.378.2529

Mike Maynard
Project Manager
Jviation, Inc.
513.484.2519

Please include the following information in your email so we can respond to you quickly and efficiently:

Name
Phone Number
Email Address
Affiliation (i.e. general public, general aviation tenant)
Comments

We will strive to reply to inquiries within one business day. Let us know how we are doing!
http://sites.jviation.com/oregonaviationplan/contact-us.html

2019-02-11 Document is total 2 pages

Chair Granato and Members of the Board:

My comments pertain to Agenda item #7 the OAP and Aurora State Airport (ASA)

The OAP has ASA classified as a Cat II Airport. Ch4 Table 4-3 Category II Performance Criteria: indicates a runway length of 5000'. ASA has a length of 5004' so why the big push for the $37Million FAA grant to expand the runway? And why so much money? A Cat II airport doesn't need a 6000' runway. Unless there are plans we are unaware of. True transparency seems to be an issue.

ASA is a rural airport surrounded by EFU land. ASA is not in an urban area, and lacks municipal governance and urban services. Reviewing OAP's Airport Classifications - ASA is truly a Cat III airport, NOT a Cat II.

Expansion at the Aurora State Airport is not necessary.

A Global Express pilot out of ASA, in a 2018 letter to Rep. Lewis stated *"I wanted to contact you because we are having huge operational constraints going in and out of Aurora given the size of the aircraft and the relatively short margins at Aurora."* He goes on to state *"...both Hillsboro and PDX are more than adequate for the type of operation we conduct and they would love our business.... This is a move we are seriously considering at this point as Aurora makes less and less sense as we continue to grow and acquire larger turbine aircraft."* His full letter can be found online at this link https://olis.leg.state.or.us/liz/2018R1/Downloads/CommitteeMeetingDocument/140767

Salem Airport is a few nautical miles south, right off of I-5 and can handle aircraft of all sizes, with NO waivers required. At the September 2018 Legislative hearing on the issue, Salem Mayor Bennett indicated that Salem has the runway length and infrastructure in place and is OPEN for business right now. You can see him address the subcommittee at this link. http://oregon.granicus.com/MediaPlayer.php?clip_id=25137 @ 31:15 Mayor Bennett

In that same September 2018 Legislative hearing, Senator Betsy Johnson (@32:20) said "Businesses have made the decision to locate at the south end of the Aurora Airport and have invested somewhere in the area between $70 to $85 Million dollars..." Those businesses were well aware of the status of the Aurora State Airport. Everyone knows prior to a major expenditure to scrutinize the details, it is due diligence. If their businesses require a longer runway, they should have invested in an airport that would support their needs and growth.

The purposed ASA expansion is for the benefit of a few elite aviation owners, with absolutely NO concern how the expansion will affect surrounding communities or even the smaller prop planes using the airport. Bigger and heavier aircraft will greatly magnify the problems local residents already experience. We know this because of the *permanent waivers* that have been issued to these types of aircraft so they can legally use ASA. They fly low and loud right over our homes. Not all pilots honor the noise abatement procedure now in place that was developed to address the problem. I would like to know the rationalization for issuing permanent waivers to aircraft too big for an airport. This is a blatant disregard for safety.

I moved to the rural area of Aurora near the airport 42 years ago. Planes using ASA have changed over time. I understand there will be change as years pass. Extending the ASA runway is not necessary when there are at least three other airports in the region that, as the Global Express pilot said, are "*more than adequate*".

Thank you,
Debra Barnes
14570 NE Mulligan Ct.
Aurora, OR 97002

OREGON AVIATION PLAN

Debra Barnes – 2019-02-11 Document
Page 2

Mr. Maletis states there is clearly a safety issue with his planes using Aurora State Airport.

He further indicates "both Hillsboro and PDX are more than adequate for the type of operation we conduct"
The Salem Airport would be adequate too.

Hi Rep Lewis,

My name is John Maletis and I operate a Global Express out of the Aurora State Airport. I wanted to contact you because we are having huge operational constraints going in and out of Aurora given the size of the aircraft and the relatively short margins at Aurora. I work with Ernie Sturm and our operation has grown from a small fleet of Citations and King Airs to large, ultra long range business aircraft and we anticipate steady growth for 2018 and additional long range aircraft.

I'm concerned that due to the short length of the runway at Aurora, we may have to reconsider our base in the future if something is not done about the runway at Aurora. We need at least 6,000' to operate with full fuel...both Hillsboro and PDX are more than adequate for the type of operation we conduct and they would love our business, especially given the high vacancy rates for hangar space at Hillsboro currently. This is a move we are seriously considering at this point as Aurora makes less and less sense as we continue to grow and acquire larger turbine aircraft.

I really like Aurora, I've been here for 10+ years, and I am hoping that the runway will be lengthened to a more safer length however I'm worried that time is running out and if progress isn't made soon on this issue, our fleet will be moving out of Aurora, along with tens of thousands of jet fuel purchases every year and our wonderful staff that we employ to help run our fleet.

I can be reached at 503-341-5719 if you have further questions.

Best
John Maletis

Available online:
https://olis.leg.state.or.us/liz/2018R1/Downloads/CommitteeMeetingDocument/140767
Meeting materials/exhibits - John Maletis testimony 1 - Limnes Aviation LCC – 2/9/2018

https://olis.leg.state.or.us/liz/2018R1/Measures/Exhibits/HB4092
HB 4092 Full list of testimony submitted

Reply Reply All Forward

GL Greg Leo <greg@theleocompany.com> 2 3 2/11/2019

Testimony by Ben Williams

You replied to this message on 2/12/2019 1:57 PM.

OAviation Board_Public Comments_02-12-19.pdf
594 KB

FOFP Press Release_OR Solutions Assessment Report.pdf
204 KB

Oregon Solutions_Aurora State Airport Assessment_final combined_12-12-18.pdf

To Mike Maynard and Jeff Caines

See attached testimony for the February 12, 2019 ODA Board Meeting, on behalf of Ben Williams.

Thank you for accepting testimony for the record.

THE LEO COMPANY, LLC
Media Relations, Public & Government Affairs Counsel

Greg Leo
(503) 804-6391
Greg@theleocompany.com

From: ben.williams@liturgica.com [mailto:ben.williams@liturgica.com]
Sent: Monday, February 11, 2019 7:50 AM
To: 'Greg Leo' <greg@theleocompany.com>
Subject: Written testimony

Greg;

Here's my testimony on letterhead, and the two pieces of additional material to be submitted for the record.

Ben

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Friends of
French Prairie

Friends of French Prairie is an Oregon non-profit corporation

PO Box 403 | Donald, Oregon 97020 | www.friendsoffrenchprairie.org

FARMS FIRST OREGON FRENCH PRAIRIE SINCE 1843

February 12, 2019

Chair Meeker and members of the Aviation Board;

Thank you for the opportunity to make comments and submit written testimony for the record. I will limit my comments to the Aurora State Airport section of the Oregon Aviation Plan.

First, in the Recommended Role section it is recommended that Aurora State Airport remain a Category II airport. I would note that the definitions of OAP Airport Categories describes a Category II airport as having a minimum runway length of 5,000 feet and that a 6,000 foot runway is the minimum for a Category I, Commercial Service Airport. If it is recommended in the OAP for Aurora to remain a Category II airport, why does it need a runway extension to 6,000 feet. Is Commercial Service contemplated in the future?

Further It is interesting that the Other Identified Facility Improvement Costs section details \$6.27 million in "improvement for Aurora State Airport ... identified in the SCIP for the next five to ten years." How does the Aviation Board reconcile that fact, in the plan about to be adopted, with the request to the Legislature last year for approval of a \$37 million application for FAA funding? There is a massive disconnect in costs here.

Equally of importance, the outcome that you must all know resulted from the initial request of the Legislature for retroactive permission for the \$37 Million FAA application, was the engagement of Oregon Solutions to do an assessment of the Aurora Airport. The result of that engagement was the delivery on Monday December 10th of a formal Assessment Report, which I am submitting along with my testimony. In the Findings Section of the report are detailed sixteen Substantive Issues. I am also including a copy of these with my written testimony.

My question is: how can a highly regarded and objective third party deliver a comprehensive Assessment Report on one of the airports in the about-to-be-approved Oregon Aviation Plan, a report that details so many problems at that airport, and the report not even be mentioned in the aviation plan?

Sincerely

Benjamin D Williams

Benjamin D Williams
Friends of French Prairie

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AURORA, OR; January 18, 2019

Oregon Solutions Assessment Report identifies *sixteen Substantive Issues* concerning the Aurora State Airport

On Dec. 12, 2018, Oregon Solutions (College of Urban and Public Affairs at Portland State University) delivered to the Legislative Emergency Board a requested Assessment Report regarding the Aurora State Airport. The legislative request was made in response to the significant opposition presented to the Emergency Board on Sept. 24 when the Department of Aviation requested of the legislature "retroactive permission" to apply to the FAA for $37 million in funds to expand the Aurora Airport. This permission to apply for FAA funds is in conflict with the current Master Plan for the Aurora State Airport, (about which there is significant concern that it was not legally adopted) which describes a future 1,000 foot runway extension estimated to cost $7.1 million.

Oregon Solutions was engaged to conduct an "impartial assessment" including:

- A civil and accurate dialog by conducting an assessment of local governments, community members, and key stakeholders of the airport
- Frame the key issues of the diverse stakeholders around the expansion
- Identify information and process needs

The resulting document, *Aurora State Airport Assessment Report* (December, 2018) was a comprehensive assessment by an objective and well reputed third-party organization.

In the Findings section of the Assessment Report, Oregon Solutions identified sixteen **Substantive Issues:**

- **Cost of the Aurora State Airport Runway Extension:** the escalation from $7.3M in the 2012 Master Plan to the $37M in the FAA application with lack of clarity as to what the money buys. [page 15]
- **Safety:** improving aviation safety has become the major stated justification, but the safety problems are self-created due to basing corporate jets at Aurora that are beyond the airport's design specifications. [page 15]

- **Noise:** the airport has a noise abatement procedure, but it is voluntary and frequently violated and the noise problems for Aurora, Charbonneau and Wilsonville promise to worsen not improve. [page 16]
- **Surface Traffic (Motor Vehicle):** essentially no traffic impact assessments have been done and few surface road improvements, and ODOT has opposed airport expansion due to traffic impacts on the I-5 Boone Bridge which is already beyond capacity and causing serious congestion in Wilsonville. [page 16]
- **Land Use:** Annexation/Zoning/County Comprehensive Plan
  - Annexation: the airport's sewer and water problems likely cannot be solved without annexation by City of Aurora which the airport opposes.
  - Farmland / EFU: airport expansion will have significant impact on surrounding EFU farmland in terms of 1) property purchased for the expansion, and 2) development pressure on surrounding farmland.
  - Marion Co. Land Use Decision: the 2012 Master Plan with runway extension was not "adopted" by Marion County, but was "acknowledged" in terms of the County comprehensive plan. [page 17]
- **Public Process:** a "broken public process" compounded by "lack of clarity about the distinction between the function and purpose of an airport master plan that is under the guidance of the FAA and ODA, versus land use impacts that are under the jurisdiction of local governments and the State of Oregon." [page 18]
- **Interagency Coordination:** significant questions exist about the validity of ODA's state agency coordinating agreements (carried forward from ODOT) until creation and approval of their own SACs. [page 19]
- **Constrained Operations:** a critical data point to secure FAA funding and one subject to manipulation by the consultant doing the study and ODA granting waivers to oversized aircraft. [page 19]
- **Air Pollution:** No assessment of air pollution impact due to expansion have been conducted. [page 20]
- **Airport as an Emergency Operation Location:** though the expansion continues to be sold in terms of emergency response, the State's geology maps show the southern half of the existing airport subject to liquefaction in the event of a major earthquake, and thus its unavailability for emergency or disaster response. [page 20]
- **Employment:** the range of job growth based on airport expansion is extremely large (1,200 to 4,000 jobs) and no assessment has been done of local and regional impacts (infrastructure, traffic, etc.). [page 20]
- **Dept. of Aviation Capacity:** significant questions have been raised about the Dept. capacity and capability to carry out its mission with its staffing levels and lack of permanent leadership. [page 20]
- **Trust:** the identified broken public process and appearance of expansion for the benefit of the few at the expense of the many have resulted in a significant lack of trust. [page 21[

- **Communications:** Public communication is widely seen as being characterized by a lack of clarity regarding the process, purpose and outcomes and characterized by communication and coordination gaps between and among decision making agencies and jurisdictions. [page 21]
- **Who Benefits:** Significant concern exists about who benefits including which business interests and jurisdictions, and at what expense does expansion occur, especially in terms of the state's goal to preserve farm land. [page 22]
- **Community Solidarity:** A significant level of community solidarity exists in spite of the challenges and frustrations, but taking advantage of this will require constructive deliberation to inform future decisions. [page 22]

The Assessment Report also includes specific **Process Recommendations** including:

- **Information, Facts and Procedural Requirements:** These include the provision of third-party experts, review of land use rules and conducting a seismic review. [page 23]
- **Communications and Engagement:** Important identified communications requirements include meaningful public engagement, resources, clarifying facts and fair information sharing. [page 23]
- **Noise abatement:** significant differences exist regarding effectiveness of the current noise abatement program and opportunities for improvement exist. [page 24
- **Long Term Vision:** Lack of clarity about a long-term vision has contributed to the conflict and is compounded by the absence of how the Aurora Airport fits into the regional aviation system. [page 25]

We encourage all parties interested in the Aurora State Airport, regardless of position on expansion, to read this report in its entirety and consider the implications of the number of significant issues which this outside, third-party assessment identified.

The *Oregon Solutions Aurora State Airport Assessment Report* can be downloaded in PDF here.

http://www.friendsoffrenchprairie.org/pdf/Oregon_Solutions_Aurora_State_Airport_Assessment_final_combined_12-12-18.pdf

Reply Reply All Forward

GL Greg Leo <greg@theleocompany.com> 2 1 2/11/2019

Written Testimony by Wayne Richards

Wayne Richards Representing Charbonneau Country Club - ODA Board 2.12.2019.pdf
103 KB

To Mike Maynard and Jeff Caines

Please see attached testimony for the February 12, 2019 ODA Board Meeting, on behalf of Wayne Richards.

Thank you for accepting testimony for the record.

THE LEO COMPANY, LLC
Media Relations, Public & Government Affairs Counsel

Greg Leo
(503) 804-6391
Greg@theleocompany.com

OREGON
AVIATION PLAN

Wayne Richards Representing Charbonneau Country Club

Chair Meeker and Member of the Oregon Aviation Commission:

Today I am representing the 3, 500 citizens of the Charbonneau District of Wilsonville, in Clackamas County. I was also an Army aviator and combat pilot in Viet Nam. Our residence are the most impacted citizens of the most densely populated neighborhood only a mile to the north of the runway of the Aurora State Airport.

Long standing issues of poor communication and lack of recognition of the problems with the neighbors at the Aurora State Airport by the Oregon Department of Aviation has created a legacy of conflict which been seen at the Oregon Legislature and other forums over the last 20 years. These conflicts are worse today than ever before and are now outlined in the Oregon Solutions Assessment, as have been mentioned.

Simply put, the majority of the neighbors of the Aurora State Airport do not want a private corporate jet oriented airport, with an longer than necessary runway which encourages increasing number of jets, surface transportation congestion, noise and a myriad of other problems in our community.

We have said this at the legislature, and in many other public forums. In fact the City of Wilsonville was the ONLY jurisdiction to hold a public hearing about the proposed lengthening of the Aurora State Airport for citizens to comment about your funding application which directly and negatively impacts the quality of life in my neighborhood.

When we moved into Charbonneau, we knew there was an airport, but it was a small General Aviation with piston driven light aircraft. Your unwise policies have now made this a multi-window corporate jet oriented airport, surrounded by exclusive farm use land (EFU) with no sewer and water services and no consensus about who would provide these services and the public governance or community consensus to support the growth the Oregon Aviation Plan you consider today forces on our community.

That I have outlined today is a recipe for conflict which will surely continue to grow until this Board listens to the citizens who must live with this "bad neighbor' you insist on growing.

What is the purpose of the Oregon Aviation Commission? A booster for aviation or a state agency that looks after the aviation interests of all Oregonians. Please choose the path which helps all Oregonians, not just those who make money flying aircraft.

For the record, I submit the following questions:

What is it about the airport expansion that allows this very unpopular project to avoid all the regulatory processes every other project of this scope has to comply with?

Why haven't you done an environmental study of the effects of increasing jet traffic?

Why have our citizens been denied the right to express their opinion?

Wayne Richards
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503-516-7879
Rich4748@outlook.com