EXECUTIVE **SUMMARY**

OREGON

AVIATION PLAN V6.0

OREGON

AVIATION PLAN V6.0

EXECUTIVE **SUMMARY**

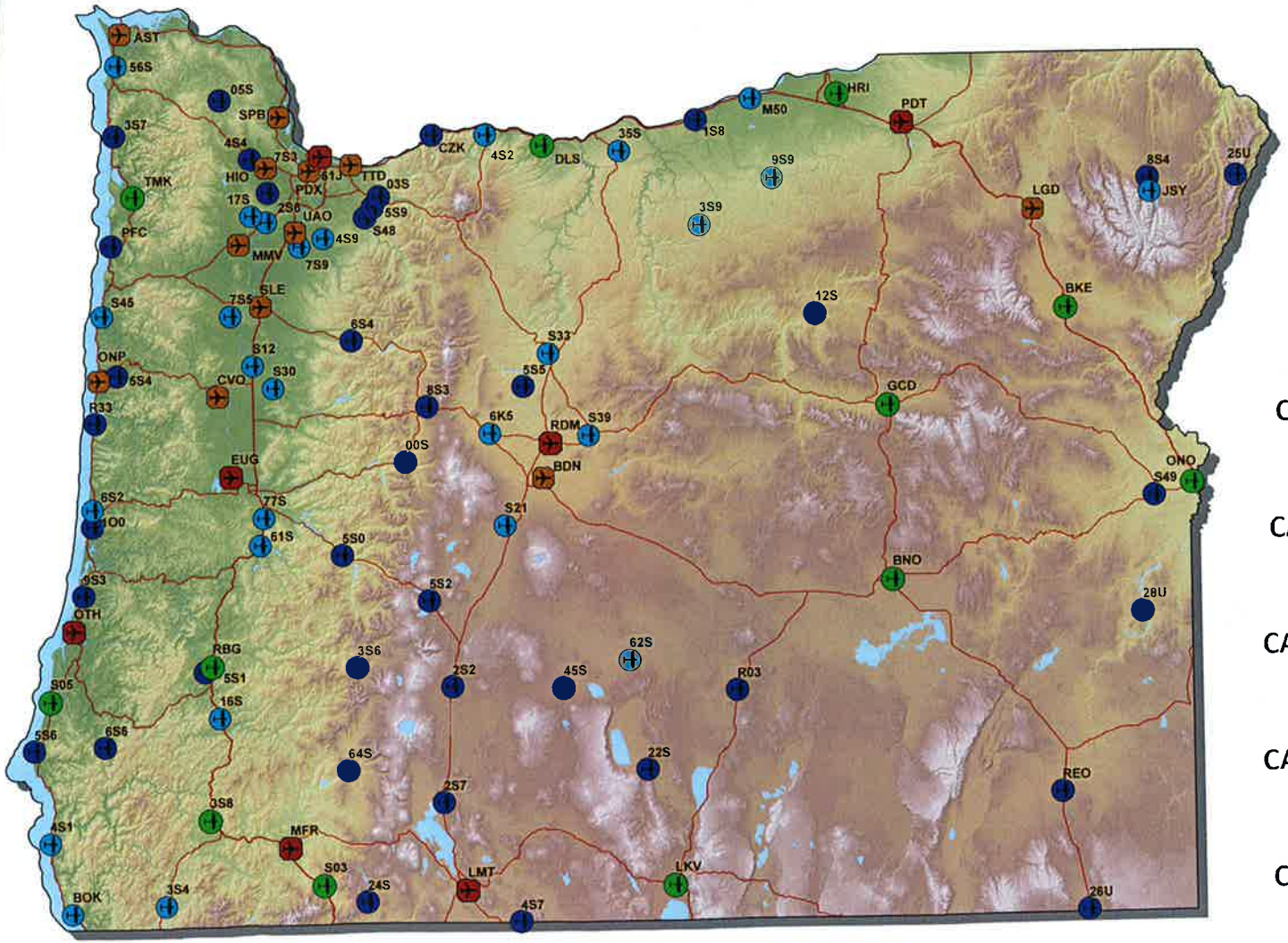
Oregon's system of airports consists of 95 airports ranging in size from large commercial service facilities to small rural airstrips. The system also includes one seaplane base and one heliport for a total of 97 aviation facilities. These airports are vital to Oregon's economic development by providing safe and efficient access to the state's communities, businesses, 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. 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, business travel, 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 V6.0). The Plan was last updated in 2007. The Oregon Aviation 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. 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 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 the OAP reflects changes in the state and the aviation industry that have taken place since the last plan was published.

INTRODUCTION TO STUDY

OREGON
AVIATION PLAN V6.0

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 OAP provides a better look at the big picture. 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.



CATEGORY I

CATEGORY II

CATEGORY III

CATEGORY IV

CATEGORY V

OREGON AVIATION SYSTEM FACTS

THERE ARE:

- **15 airports** serving as a base for air ambulance aircraft
- **14 airports** that have scheduled air cargo flights
- **11 airports** that have wildland fire fighting tanker aircraft based on the field
- **26 airports** that have supported wildland fire fighting aircraft operations during the fire season
- **3 airports** that have US Coast Guard stations
- **97 public-use airports** that have a wide variety of ownership types, including: City, County, Port, Airport District, Private, State, and U.S. Forest Service (USFS).
- **57 airports** are included in the National Plan of Integrated Airport Systems (NPIAS)
- **7 airports** supporting commercial airline service
- **33 airports** with paved runways more than 5,000 feet in length
- **23 airports** supporting economic development (> 5,000 feet long runway, an approach supported by vertical guidance, FBO services, jet fuel, and rental car service)
- **23 airports** with instrument approach capabilities with vertical guidance
- **11 airports** with an air traffic control tower
- **42 airports** with on-site weather reporting
- **52 airports** with fuel service
- **17 airports** with more than 100 based aircraft
- **39 airports** with more than 10,000 annual operations (take-offs and landings)
- **4,530 based aircraft** in Oregon at system airports; of these, 755 are located at commercial service airports and 3,775 are located at general aviation airports

Forecasts of aviation activity are used to identify expected activity levels and based aircraft at individual airports in the system. Each airport's individual forecast can be found in the Technical Report. A forecast based on the FAA's Terminal Area Forecast shows an increase in enplanements to 15,658,097 by 2035 representing an annual average of 2.64 percent growth each year. The Portland International Airport (PDX) market share is 88 percent of Oregon's total enplanements. Portland is the fastest growing metropolitan area in the state.

AIRPORT	2015	2020	2025	2035	TAF AAGR 2015-2035
Eastern Oregon Regionalat 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 Regional*	8,218	7,375	13,620	15,260	3.0%
Portland International (PDX)	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 International -Medford Airport	359,129	438,797	479,408	568,069	2.32%
Southwest Oregon Regional	15,849	15,970	16,781	18,530	0.78%
Statewide Total	**9,290,866**	**11,939,084**	**13,112,683**	**15,658,097**	**2.64%**

**Crater Lake-Klamath Regional enplanement forecast from 2018 Master Plan forecast*

GENERAL AVIATION OUTLOOK

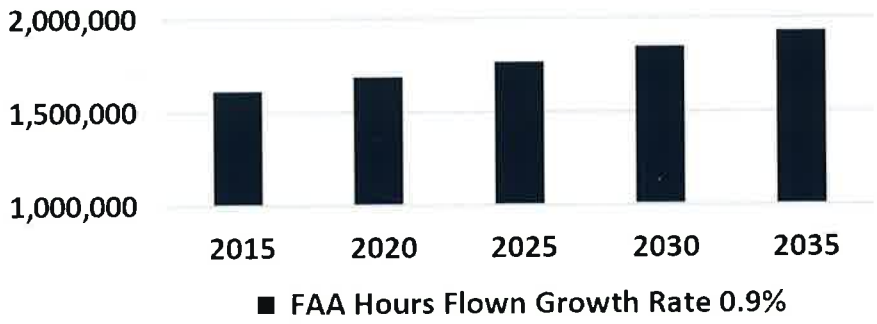
General aviation refers to all segments of aviation that are not military or commercial. Demand forecasts for the Oregon airports were generally anticipated to follow national trends for general aviation as projected by the Federal Aviation Administration (FAA). According to the FAA, business aviation is the fastest growing segment of the general aviation industry, and businesses based in Oregon, as well as those businesses that use general aviation to visit Oregon companies, are contributing to increased general aviation activity at some study airports.

The Oregon system airports examined in this analysis accommodated 1.6 million general aviation aircraft operations (take-offs and landings). Three forecast methodologies were used to produce a statewide projection for general aviation operations in 2035. Growth rates ranged from 0.9 to 1.6 percent. The average annual growth rate of 0.9 percent was chosen as the preferred growth rate and is based on FAA national average growth forecasted for hours flown. Utilizing this rate increases annual general aviation operations from 1.6 million to 1.9 million by 2035.

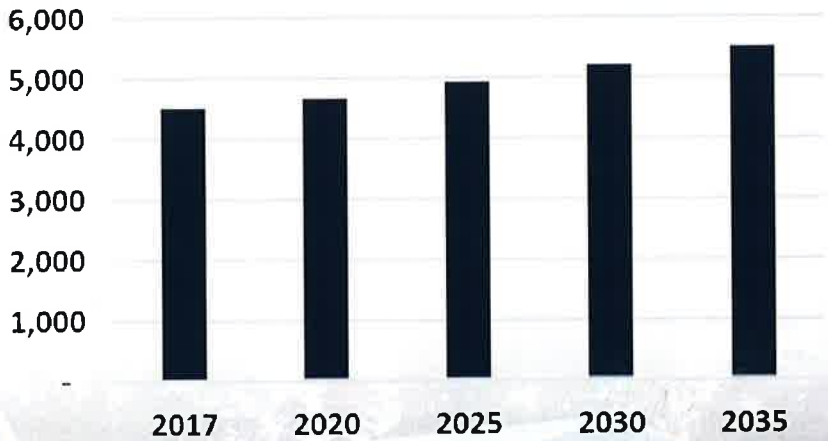
GENERAL AVIATION BASED AIRCRAFT PROJECTIONS

In 2017, Oregon system airports were home to 4,489 based aircraft, of these, 755 are located at commercial airports and 3,734 are located at general aviation airports. Three growth rates were used to produce forecasts for based aircraft: population growth rate by Connect Oregon Region, historical Per Capita Real Gross Domestic Product, and FAA Terminal Area Forecast (TAF) growth rate. The FAA TAF growth rate for based aircraft of 1.1 percent was chosen as the preferred forecast. This growth rate projects aircraft to increase in Oregon to over 5,400 by 2035.

General Aviation Operations Projections



Total Based Aircraft Projections



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 FAA airport design criteria known as the Airport Reference Code (ARC) was used to create performance measures to develop the airport functional roles. OAP V6.0 maintains the OAP 2007 classification system. Analysis of each airport's classification, however, was prepared to see if its assigned category should be changed. In the 2007 OAP, La Grande/Union County Airport was designated a Category III airport; however, improvements in airport facilities and increased aviation activity at the airport warrant elevating the airport to Category II. This is the only airport to change categories as a result of this analysis.

AIRPORT CATEGORIES

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.

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.

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.

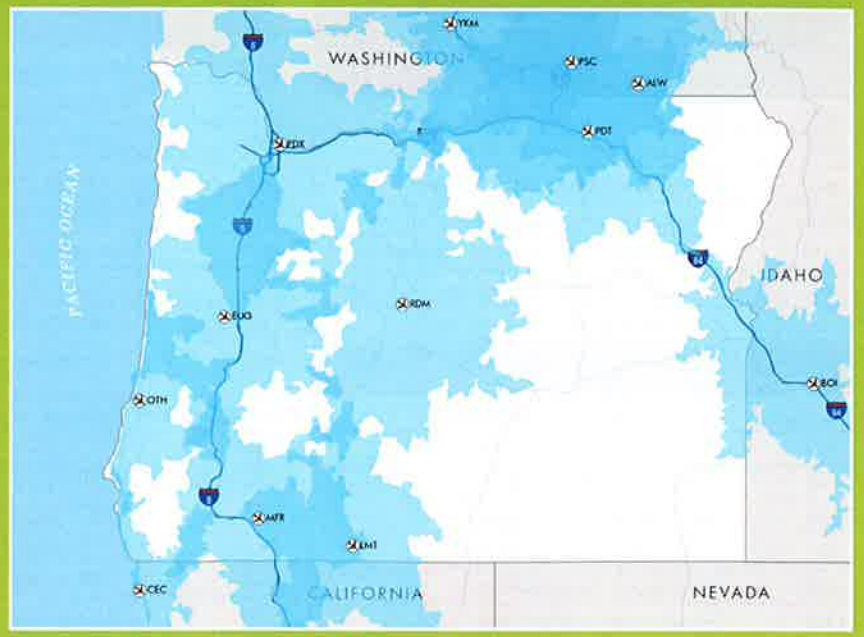
IV. Local General Aviation Airport: These airports primarily accommodate single-engine general aviation aircraft, but are capable of accommodating smaller twin-engine general aviation aircraft. These airports support local air transportation needs and special-use aviation activities. The minimum runway length objective for Category IV airports is 3,000 feet.

V. Remote Access/Emergency Services (RAES): These airports primarily support 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.

AIRPORT SYSTEM EVALUATION, GIS AIRPORT GEOGRAPHIC COVERAGE ACCESSIBILITY MAPS

COMMERCIAL SERVICE AIRPORTS

Current system accessibility to Category I Commercial Service airports in Oregon and out-of-state commercial airports on the border are shown with 120-minute drive times. Approximately 3,994,800 Oregon residents (98 percent) are within 120 minutes or less of a Category I airport as well as 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.



GENERAL AVIATION AIRPORTS

The system consists of 90 public-use general aviation airports. As illustrated, accessibility at a 30-minute drive time to all Oregon general aviation airports is measured at 84 percent of all Oregonians (3,412,300 residents). By land area, the 30-minute drive time boundaries associated with these 90 airports covers roughly 22 percent of Oregon's total land area.

CATEGORY I

FAA ID	AIRPORT
PDT	Eastern Oregon Regional Airport
EUG	Eugene Airport-Mahlon Sweet Field
LMT	Crater Lake-Klamath Regional Airport
PDX	Portland International Airport
RDM	Redmond Municipal Airport-Roberts Field
MFR	Rogue Valley International-Medford Airport
OTH	Southwest Oregon Regional Airport

CATEGORY II

AST	Port of Astoria Regional Airport
UAO	Aurora State Airport
BDN	Bend Municipal Airport
CVO	Corvallis Municipal Airport
LGD	La Grande/Union County Airport
MMV	McMinnville Municipal Airport
ONP	Newport Municipal Airport
HIO	Portland-Hillsboro Airport
TTD	Portland-Troutdale Airport
61J	Portland Downtown Heliport
SLE	Salem McNary Field
SPB	Scappoose Industrial Airpark

CATEGORY III

S03	Ashland Municipal Airport-Sumner Parker Fld
BKE	Baker City Municipal Airport
S05	Bandon State Airport
BNO	Burns Municipal Airport
DLS	Columbia Gorge Regional-The Dalles
GCD	Grant County Regional Airport/Ogilvie Field
3S8	Grants Pass Airport
HRI	Hermiston Municipal Airport
LKV	Lake County Airport
ONO	Ontario Municipal Airport
RBG	Roseburg Regional Airport
TMK	Tillamook Airport

CATEGORY IV

S12	Albany Municipal Airport
M50	Boardman Airport
BOK	Brookings Airport
17S	Chehalem Airpark
62S	Christmas Valley Airport
3S9	Condon State Airport-Pauling Field
61S	Cottage Grove State Airport-Jim Wright Fld
77S	Creswell Hobby Field Airport
6S2	Florence Municipal Airport
4S1	Gold Beach Municipal Airport
3S4	Illinois Valley Airport
7S5	Independence State Airport
JSY	Joseph State Airport
4S2	Ken Jernstedt Airfield
S30	Lebanon State Airport
7S9	Lenhardt Airpark
9S9	Lexington Airport
S33	Madras Municipal Airport
4S9	Mulino State Airport
16S	Myrtle Creek Municipal Airport
S39	Prineville Airport
56S	Seaside Municipal Airport
S45	Siletz Bay State Airport
6K5	Sisters Eagle Air Airport
2S6	Sportsman Airpark
S21	Sunriver Airport
35S	Wasco State Airport

CATEGORY V

R03	Alkali Lake State
1S8	Arlington Municipal
2S2	Beaver Marsh
5S6	Cape Blanco State Airport
CZK	Cascade Locks State Airport

CATEGORY V

2S7	Chiloquin State Airport
S48	Country Squire Airpark
5S2	Crescent Lake State Airport
6S4	Davis Field
8S4	Enterprise Municipal
5S1	George Felt
5S5	Lake Billy Chinook
1O0	Lake Woahink SPB
9S3	Lakeside Municipal
4S7	Malin
26U	McDermitt State Airport
00S	McKenzie Bridge State
25U	Memaloose USFS
S49	Miller Memorial Airpark
12S	Monument Municipal
3S7	Nehalem Bay State Airport
5S0	Oakridge State
28U	Owyhee Reservoir State
PFC	Pacific City State Airport
22S	Paisley
24S	Pinehurst State Airport
6S6	Powers Hayes Field
64S	Prospect State Airport
REO	Rome State
03S	Sandy River
8S3	Santiam Junction State
45S	Silver Lake USFS
4S4	Skyport
7S3	Stark's Twin Oaks
3S6	Toketee State
5S4	Toledo State Airport
5S9	Valley View
05S	Vernonia Municipal
R33	Wakonda Beach State

ACCESSIBILITY TABLE

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. The seven Commercial Service airports in Oregon serve the state well, with 96 percent of the state's population being within a 120-minute 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 120-minute drive of a commercial service airport, when taking into consideration the seven Commercial Service airports in Oregon and five out-of-state commercial service airports in Washington, Idaho, and California. 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 aviation facilities) supports 89 percent of Oregon residents living within 30 minutes of these airports.

	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%

AIRPORT FACILITY AND SERVICE OBJECTIVES PERFORMANCE

OAP V6.0 examined the current ability of Oregon's airports to meet facility and service objectives established as part of the study. This section provides a summary of compliance with the objectives by airport role. It is possible that, based on local need, some 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.

AIRSIDE FACILITIES	CATEGORY I	CATEGORY II	CATEGORY III	CATEGORY IV	CATEGORY V
FAA – ARC	100%	50%	69%	44%	85%
NPIAS	100%	100%	100%	NA	NA
Based Aircraft	NA	91%	100%	74%	NA
Runway Orientation	100%	100%	100%	85%	NA
Runway Length	86%	91%	85%	74%	67%
Runway Width	100%	100%	85%	85%	44%
Runway Pavement Type	100%	100%	100%	100%	100%
Runway Pavement Strength	100%	82%	92%	63%	NA
Runway Pavement PCI	71%	100%	85%	74%	44%
Taxiways	100%	90%	100%	100%	NA
Approach Type	100%	82%	85%	NA	NA
Visual Approach Aids	100%	92%	100%	74%	NA
Instrument Approach Aids	100%	NA	NA	NA	NA
Runway Lighting	100%	100%	100%	100%	NA
Taxiway Lighting	100%	60%	15%	56%	NA

AIRPORT SYSTEM IMPROVEMENT COSTS & OAP AIRPORT DEFICIENCIES RELATED COSTS

The OAP identified necessary projects to help airports meet their specific facility and service objective. Costs related to meeting all objectives were estimated as part of the system planning process. Oregon airports also have individual Statewide Capital Improvement Plans (SCIPs) that identify safety and development projects, including equipment purchases, for nearly all airports. The list of SCIP projects is updated annually by ODA. SCIP data presented is from the 2017 SCIP. It is important to note that current SCIP projects for Oregon airports are not necessarily approved, by either ODA or the FAA, at this time. They provide a view of potential financial needs for the system. Finally, through the Pavement Evaluation Program (PEP), ODA has identified pavement maintenance and rehabilitation projects that should be considered in the next few years just to address the needs of the state's airport-related pavement infrastructure. Pavement maintenance and rehabilitation needs at Oregon airports change annually. The OAP includes pavement-related projects for system airports, as they are known at this time, from the state's Pavement Evaluation Program.

As shown, costs associated with system plan recommendations make up the second largest share with 26.5 percent of the total. SCIP project costs represent the largest share with 62.6 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 only system planning related projects are considered, total estimated costs are $165.3 million.

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%
PEP 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%**	

AIRPORT DEFICIENCIES TABLE

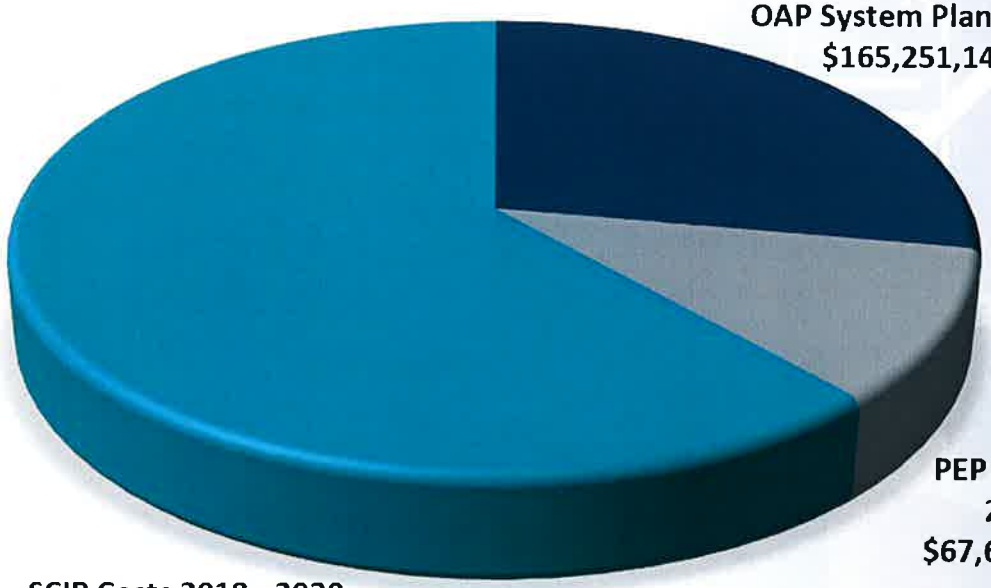
Airport-specific projects identified in this analysis must still be confirmed/supported by bottom-up planning as part of an airport master plan. As airports in Oregon update their individual airport master plans, projects identified in this analysis should be incorporated into those plans. Some projects identified in the OAP, 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.

GENERAL FACILITIES	CATEGORY I	CATEGORY II	CATEGORY III	CATEGORY IV	CATEGORY V
Rotating Beacon	100%	100%	100%	89%	NA
Lighted Wind Indicator	100%	100%	100%	89%	NA
Weather Reporting	100%	91%	92%	NA	NA
Hangared Aircraft Storage	86%	100%	92%	100%	NA
Apron Parking/Storage	71%	64%	92%	89%	NA
Terminal Building	100%	91%	92%	NA	NA
Auto Parking	100%	82%	100%	81%	NA
Fencing	86%	70%	46%	NA	NA
Cargo	71%	27%	100%	NA	NA
Deicing Facility	57%	NA	NA	NA	NA
SERVICES	**CATEGORY I**	**CATEGORY II**	**CATEGORY III**	**CATEGORY IV**	**CATEGORY V**
Fuel Jet A	100%	91%	92%	NA	NA
Fuel AvGas 24 hour	100%	91%	100%	74%	NA
FBO	100%	91%	100%	NA	NA
Ground Transportation	100%	82%	100%	NA	NA
Food Service	100%	27%	31%	NA	NA
Restrooms	100%	100%	100%	70%	NA
Pilot Lounge	100%	73%	77%	NA	NA
Snow Removal	86%	55%	69%	37%	NA
Telephone	100%	100%	92%	NA	NA

AIRPORT SYSTEM IMPROVEMENT COSTS, OAP AIRPORT SCIPS, AND PEP RELATED COSTS, FUNDING SUMMARY

COMBINED DEVELOPMENT COSTS BY PLAN

Over the last two years, when other financial commitments are considered, ODA had approximately $2.5 million in annual average funds to apply to development and preservation needs at the airports in the state system. FAA Airport Improvement Program (AIP) funding for commercial service and general aviation airports in Oregon has averaged $50.4 million per year over the past two years. This indicates that between state and FAA funding sources, approximately $52.9 million might be available on an annual basis to apply toward the $623.1 million in improvement needs over the next five to ten years. These funds will be applied to PEP, SCIP, and OAP related costs; however, Master Plan and SCIP costs are updated annually and new improvement and preservation costs will be added to the list. As a result, a funding gap exists since the list of project costs are greater than the resources available. ODA, the FAA, and airport sponsors work together to prioritize airport improvement and preservation projects throughout Oregon.



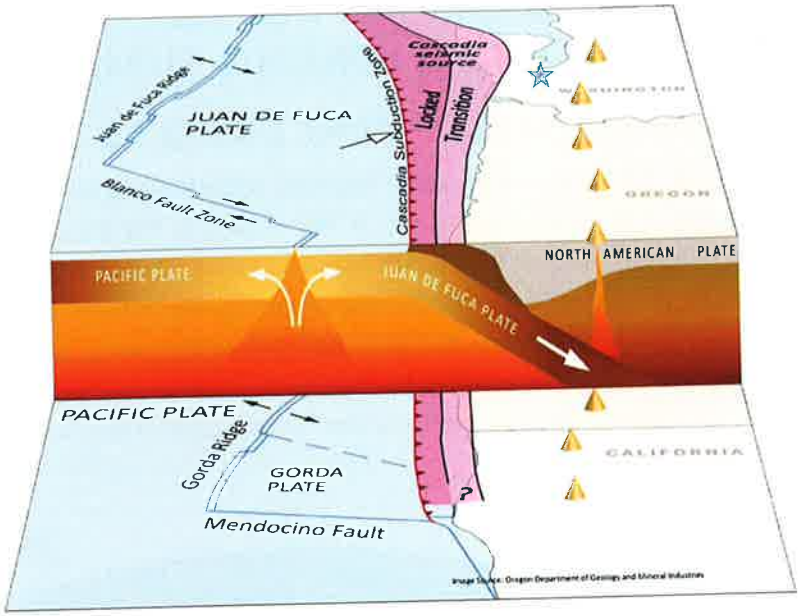
OAP System Plan Cost Estimates
$165,251,147 | 26%

PEP Program Costs
2018 - 2023
$67,656,597 | 11%

SCIP Costs 2018 - 2030
$390,202,709 | 63%

CASCADIA SUBDUCTION ZONE (CSZ)

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 would impact the coastal area. 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.



AIRPORT SUPPORT

Ten airports out of the 18 airports on the Oregon Coast are less likely to be impacted by a tsunami due to airport elevation and distance inland, based on topographic research. These airports may be used to support communities on the coast resulting from a CSZ event and/or tsunami. Each airport's attributes are identified in an individual Quick Reference table in the Technical Report. Population data for airports based on 30-minute drive time analysis are provided for each airport. An example is shown on the next page.

LAND USE AND ZONING COMPLIANCE

Oregon is a national leader in providing guidance on compatible land use in the airport environs. State law requires that airports be included in locally adopted comprehensive plans and transportation system plans, as well as protected through zoning and land use development codes and ordinances. However, not all jurisdictions have land use authority over state airports, so therefore, cannot sufficiently protect airport operations and environs through their adopted land use mapping and ordinances. The OAP took steps to verify the status of airport-related land use planning and local regulations for each Oregon airport and identify which jurisdictions are not in compliance with state law (OAR 660-013, OAR 738-070, ORS 836).

The OAP compiled a list of local policy and regulatory documents for municipalities that govern land use at each airport and developed an up-to-date assessment of the local regulatory environment for each airport. This assessment is included in the compliance chapter, the conclusion of which listed of all municipalities and related airports that are currently not in compliance with existing state land use law. In addition, the final report broadly identified appropriate actions these municipalities will need to take to become compliant. Criteria for prioritizing needed updates were explored and applied to this list of jurisdictions. These include such factors as age of adopted ordinance, land use development/airport operation threats, and Runway Protection Zones statutes.

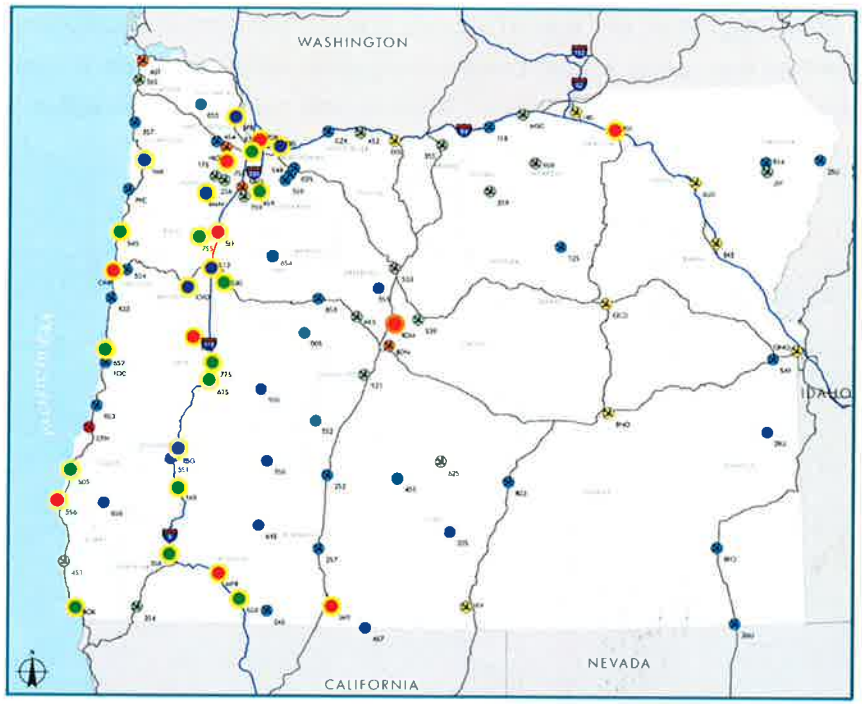
OREGON RESILIENCE PLAN AIRPORTS

The Oregon Resilience Plan identifies system airports within each category that have the potential to maintain or quickly restore operational functions after a major earthquake. The Transportation Task Group arranged these 29 airports into a tier system to indicate the priorities for making future investments. Tier 1 (T1) is comprised of the essential airports that will allow access to major population centers and areas considered vital for both rescue operations and economic restoration. Tier 2 (T2) is a larger network of airports that provide access to most rural areas and will be needed to restore major commercial operations. Tier 3 (T3) airports will provide economic and commercial restoration to the entire region after a Cascadia subduction zone event.

COASTAL RECOVERY AIRPORTS

There are 10 airports that have a higher probability of less damage by tsunami and can be utilized in the event of a natural disaster along the Oregon coast. They are located outside a known coastal hazard area related to tsunami. Additionally, seven of the ten airports profiled are listed in the Oregon Resilience Plan (ORP) and have the potential to maintain or quickly restore operational functions after a major earthquake.

Bandon State Airport	**T3**
Brookings Airport	**T3**
Cape Blanco State Airport	**T1**
Florence Municipal Airport	**T3**
Lakeside Municipal Airport	**NA**
Newport Municipal Airport	**T1**
Powers Hayes Field	**NA**
Siletz Bay State Airport	**T3**
Tillamook Airport	**T2**
Toledo State Airport	**NA**



DATA SOURCE: OAP 2018

AIRPORTS BY ROLE

- I - COMMERCIAL SERVICE
- II - URBAN GENERAL AVIATION
- III - REGIONAL GENERAL AVIATION
- IV - LOCAL GENERAL AVIATION
- V - REMOTE ACCESS/EMERGENCY SERVICE

AIRPORTS BY RESILIENCE

- FEMA BASE
- TIER I
- TIER II
- TIER III

EXECUTIVE **SUMMARY**

Based on criteria that can be compared between the 2007 and 2017 data, analysis of land use ordinances show slight improvements have been made related to compliance. For example, in the 2007 OAP only 68 percent of jurisdictions had height restrictions for areas surrounding airports. According to the most recent data, that number has grown to 78 percent.

Despite some gains, implementation of the requirements in the Airport Planning Rule (APR), has clearly not been uniformly achieved throughout Oregon. Of the jurisdictions assessed in 2017, 29 percent do not have any policies related to airport planning in their adopted comprehensive plans, 23 percent do not have an airport safety overlay zone in their development codes, and 28 percent 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.

EACH SYSTEM AIRPORT WAS INCLUDED IN RUNWAY SAFETY AREA, OBJECT FREE AREA, AND RUNWAY PROTECTION ZONE LAND USE ANALYSIS

UNMANNED AIRCRAFT SYSTEMS

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. The FAA UAS policy is developing and there have been many modifications to UAS policy in the last year. It is expected that Federal and state laws and policies will continue to evolve as UAS technology and capabilities are developed. For example, the FAA is currently updating existing regulations to allow drones to deliver products to consumers. Companies, such as Amazon, are working to incorporate these emerging technologies into their business models. As new opportunities and efficiencies present themselves, UAS are being used increasingly by a variety of private businesses and recreational users.

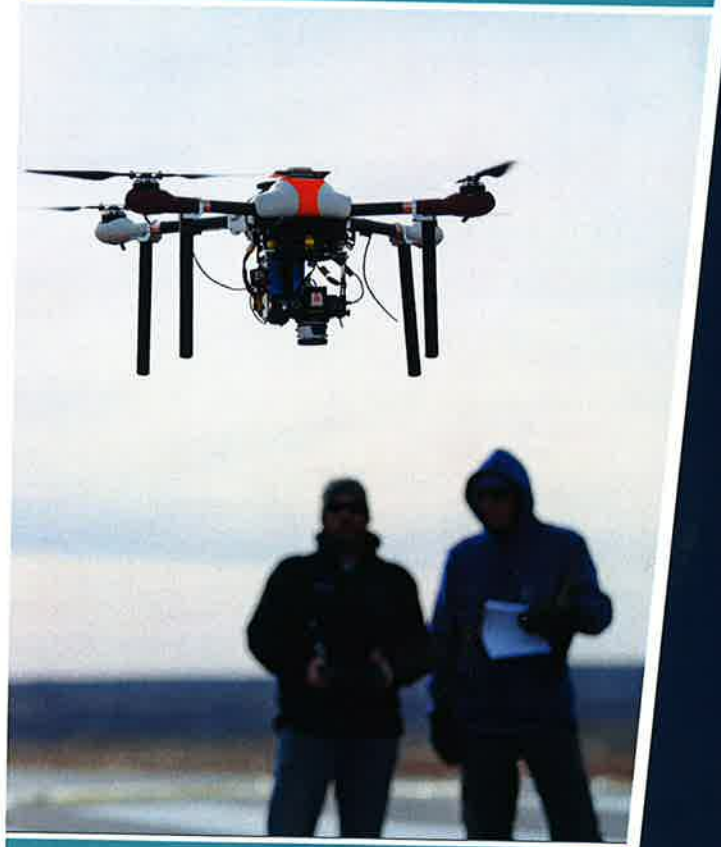
PRACTICAL APPLICATIONS

Businesses in Oregon are using UAS for a broad range of activities related to agriculture, land and structure management, infrastructure mapping, law enforcement and research. For example, in 2017 a team from Oregon called Insitu used UAS in recovery operations in Texas, Oregon, and California. These UAS allowed for faster, up-to-date information and allowed responders to act quickly. One advantage of this type of UAS is that it can be flown in many conditions, such as heavy smoke, where manned aircraft cannot. For example, in 2017, a ScanEagle unmanned aircraft was used to gather data on the wildfire at Eagle Creek, which burned nearly 50,000 acres throughout the Columbia River Gorge region.

UAS RESEARCH

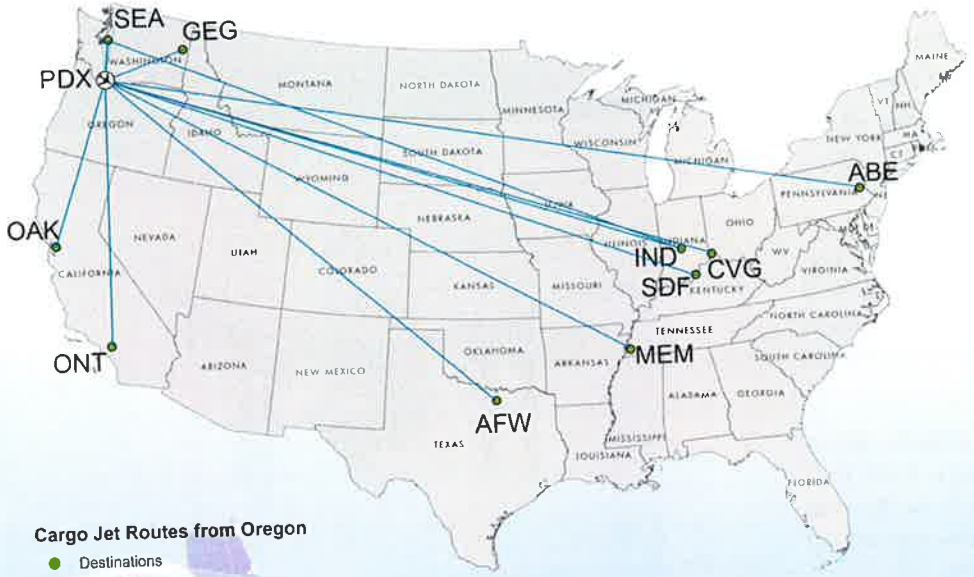
Oregon airports are at the forefront of UAS research. The University of Alaska, Fairbanks, one of the FAA's six national test sites, has extended their research to include three test ranges in Oregon. These include Tillamook Airport UAS Test Range, Eastern Oregon Airport at Pendleton, and Warm Springs Reservation, managed by VDOS, Inc. on behalf of the Confederated Tribes of Warm Springs. These three Oregon ranges offer a variety of terrains, weather conditions, and flight environments.

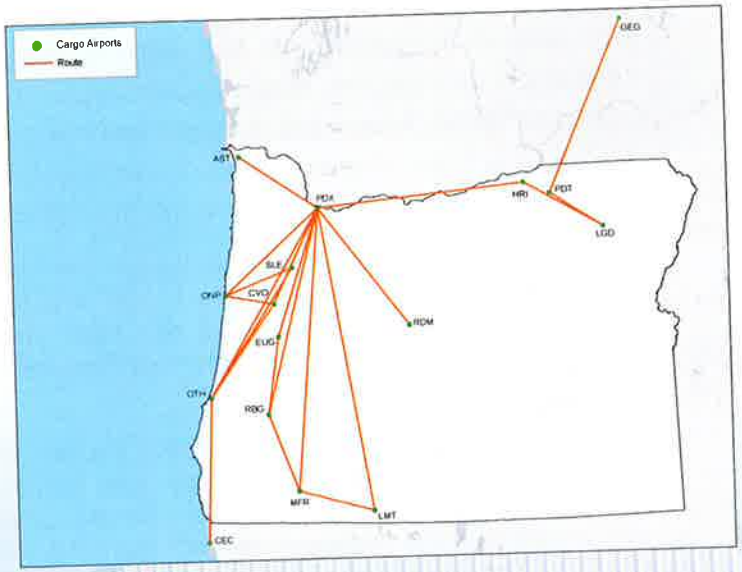
- **Tillamook Airport UAS Test Range:** The Tillamook Airport UAS Test Range became operational in 2015. This facility competitively addresses the emerging UAS test flight market and supports unique high-altitude flight tests of unmanned balloons, drones, and hybrid aircraft.
- **Eastern Oregon Airport at Pendleton:** The airport, which enjoys 347 Visual Flight Rules (VFR) days per year, has a 2,800-foot UAS-dedicated strip and a full-service UAS operating area. Beyond the airfield in Pendleton, the UAS Test Range extends over 14,000 square miles to allow easy access for specialty testing.
- **Warm Springs Reservation:** Located on the high desert of Central Oregon, this test range provides both startups and established industry participants easy access to the wide-open spaces of central Oregon. Averaging 325 VFR days per year, the range is usable almost all year long. In 2017, this test range expanded its operations to include Prineville and Madras Airports. The expansion 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.



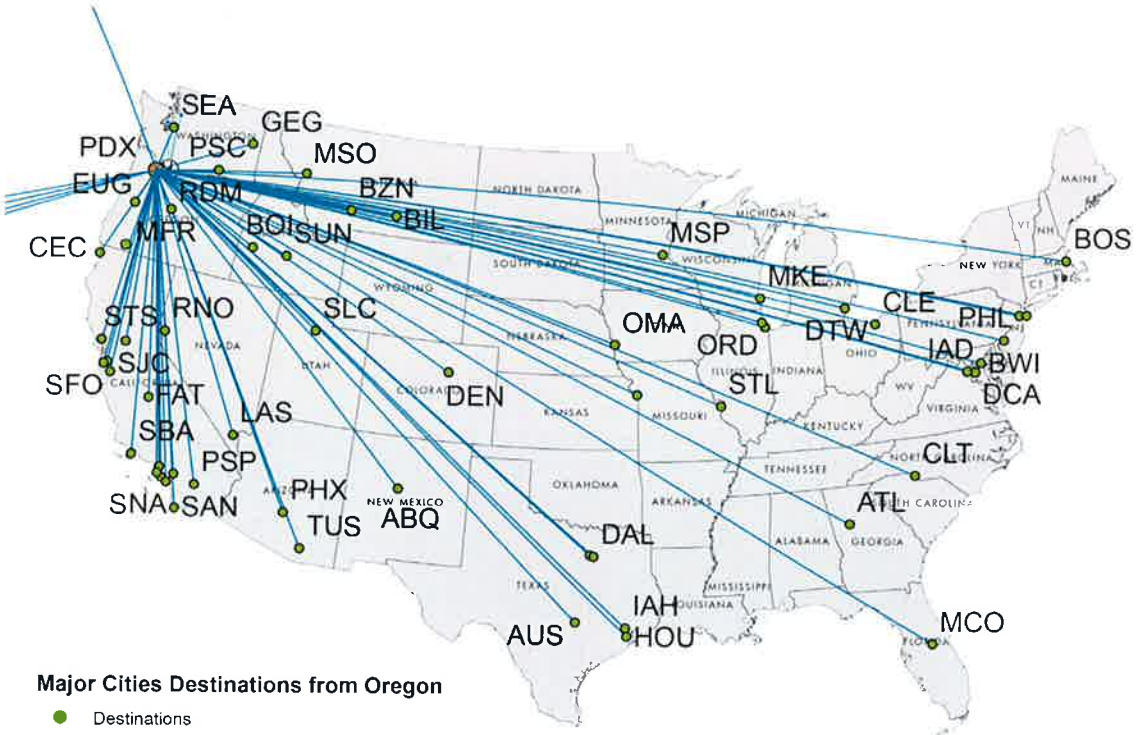
AIR CARGO ACTIVITY

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 majority of air cargo arrives and departs on dedicated air cargo aircraft. Portland International Airport is the only Oregon airport with dedicated cargo jet facilities, which are operated by FedEx Express, DHL, Amazon 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.





Commercial airline operations take place at seven Category I – Commercial Service airports in Oregon, and include major, national, regional, and commuter carriers. Portland International is served by 17 air carriers with nonstop routes to over 75 North America destinations, as illustrated. The map of the western U.S. on this page identifies air carrier routes related to six commercial service airports in Oregon. 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. Crater Lake-Klamath Regional Airport lost service during the OAP study time-period.



ECONOMIC IMPACT SUMMARY

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 evaluated, 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 2014 ODA 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

EXECUTIVE **SUMMARY**

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 spinoff/multiplier effects associated with these two activities.

In addition, the Port of Portland completed a separate economic impact study for PDX and the table below displays results from that analysis. The economic impacts from the analysis conducted in 2014, combined with PDX, accounts for the economic impacts generated by all of Oregon's public-use airports. The OAP Technical Report provides levels of economic impact that are estimated for individual airports, regions within the state, and the state as a whole.

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

CATEGORIES OF ACTIVITY	DIRECT	INDIRECT/ INDUCED	TOTAL
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**

RECOMMENDED PLAN SUMMARY

This OAP 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 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 airport 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.

Additional study for airport wind coverage: As part of the OAP, 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.

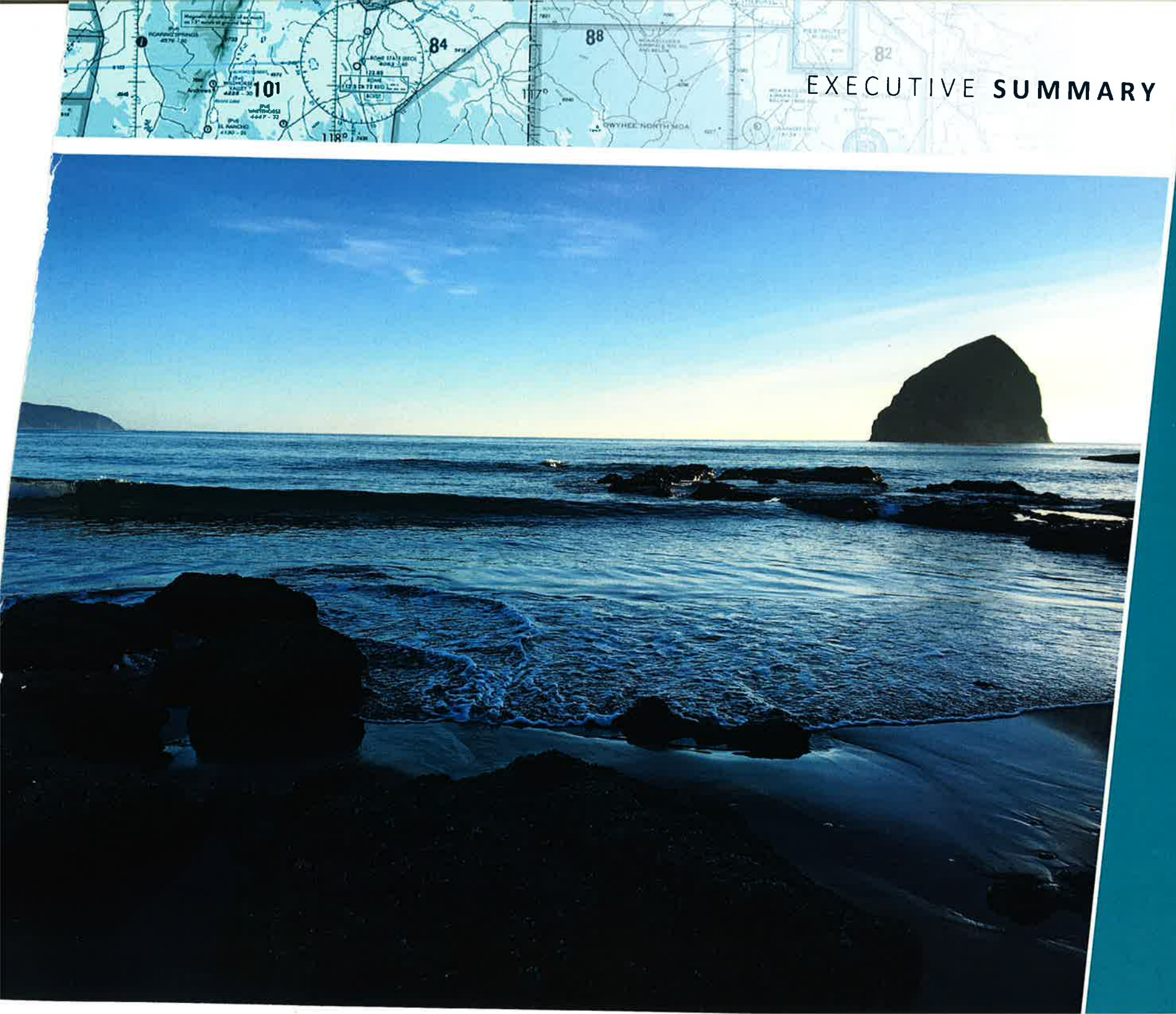
Realign NPIAS Airports in Oregon to include Cape Blanco State Airport: Coverage of Oregon by NPIAS airports could be improved through the designation of one OAP system airport to the NPIAS. Should the opportunity present itself, Cape Blanco State Airport should be considered for inclusion in the NPIAS. 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 provided 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.

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.

It is recommended that airports and nearby jurisdictions addressing land use and zoning utilize the ODA Airport Land Use Compatibility Guidebook. This 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. Additionally, 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 seven-10 years, depending on the jurisdiction's size.

EXECUTIVE **SUMMARY**



EXECUTIVE **SUMMARY**

OREGON

AVIATION PLAN V6.0