# Occas Island Airport

#### BACKGROUND

The Orcas Island Airport (ORS) is located on Orcas Island in San Juan County, Washington. (See **Figure 1.1**). It lies approximately <sup>3</sup>/<sub>4</sub> mile north of the community of Eastsound (**Figure 1.2**). The airport is a facility that is publicly-owned and operated by the Port of Orcas (Port).

The Port was formed January 12, 1959 out of a need for critical public air service. The Port then purchased property and a private airstrip to establish ORS. During the 1970s through the 1990s, ORS went through a construction and expansion phase using Federal Aviation Administration (FAA) Airport Improvement Program (AIP) grants. ORS continues to accept AIP grants to fund reconstruction and enhancement of the airfield.









#### **ORCAS ISLAND**

Orcas Island is the largest of the San Juan Islands, which are located in San Juan County in the northwestern corner of Washington State. Approximately an hour and twenty minutes from the mainland city of Anacortes by ferry or an hour flight from Boeing Field to ORS, Orcas Island is home to an eclectic community of artisans and small cottage businesses. Orcas has a diverse landscape of countryside, ocean, and mountains which makes it a popular destination for both day trips and extended vacations. Eastsound is the largest town on the island and is home to a variety of accommodations and restaurants. Four other small

communities, Olga, Deer Sound, West Sound, and Doe Bay are scattered across the horseshoe-shaped island.

#### **Ferry Service**

Washington State Ferries operates ferry service crossing the Puget Sound and its inland waterways. This marine highway carries commercial users, tourists, daily commuters, and cargo, offering a transportation alternative to air service for freight and passengers traveling between the mainland and Orcas Island. Several vessels currently provide service between Anacortes and the San Juan Islands, with a stop at the Orcas Island Ferry Terminal. Each vessel can typically carry a maximum of 124 to 144 vehicles and up to 1,200 to 2,000 passengers depending on vessel size. A

one-way trip between Anacortes and the Orcas Island ferry terminal ranges from approximately 50 to 90 minutes depending on time of day and the number of stops in each direction. Service generally runs from early morning to late evening, with route schedules varying by season.

#### ROLE

ORS primarily serves the residents of Orcas Island and specifically the community of Eastsound. The Airport offers vital scheduled passenger service to and from Orcas Island and is the home base for dozens of general aviation and commercial aircraft. Transient aircraft routinely utilize the airport for a wide variety of public, private, and commercial purposes, including medical flights, flight instruction, charter services, and cargo just to name a few. The abundant natural beauty of the other surrounding San Juan Islands and the numerous recreational opportunities the entire vicinity has to offer naturally draws many visitors to the area. ORS is officially classified by the FAA as a Non-primary Commercial Service Airport.

This designation identifies the airport as having scheduled or unscheduled passenger service with at least 2,500, but not more than 10,000 passenger enplanements per year. The airport is also part of the FAA's National Plan of Integrated Airport Systems (NPIAS). As a NPIAS Airport, the facility must comply with a multitude of federal requirements. The NPIAS designation also allows the airport to be eligible for federal funds for planning and development projects.

The Washington State Department of Transportation (WSDOT) Aviation Division periodically prepares a Washington Aviation System Plan (WASP). This document was last updated in 2017. The WASP defines the three pillars of the Washington Aviation System as air cargo, commercial uses, and general aviation, and ORS embodies each of those three pillars. The WASP classifies airports according to their role within the Washington transportation system as shown in Table 1.1. ORS is classified as a Community Class Airport.

Table 1.1. WASP Airport Classification				
Classification	Primary Activities	Factors to Classify Airports		
Major	<ul><li>Commercial service</li><li>Aircraft or aerospace manufacturing</li></ul>	<ul> <li>ARC C-III or greater</li> <li>Primary Activity: commercial service and/or aerospace manufacturing/MRO</li> <li>Population over 40,000</li> </ul>		
Regional	• Corporate GA and travel business	<ul> <li>ARC B-II or greater</li> <li>Primary Activity: corporate GA and travel business</li> <li>Population over 30,000</li> </ul>		
Community	<ul> <li>GA-personal transportation/business and recreational</li> <li>Pilot training</li> </ul>	<ul><li>Not metro or regional</li><li>Paved primary runway surface</li><li>15 or more based aircraft</li></ul>		
Local	<ul> <li>GA-personal transportation/recreational</li> <li>Pilot training</li> <li>Agriculture</li> </ul>	<ul> <li>Not metro or regional</li> <li>Paved primary runway surface</li> <li>Less than 15 based aircraft</li> </ul>		
General Use	• GA-personal transportation/recreational, including backcountry	• Unpaved primary runway surface (including all seaplane bases)		

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## **INVENTORY OF EXISTING CONDITIONS**

#### OWNERSHIP, MANAGEMENT, & OPERATIONS

ORS is owned by the Port of Orcas. The Port of Orcas is a statutorily regulated municipal corporation located in Eastsound. The Port of Orcas independently owns and governs various properties and facilities. A Board of Commissioners oversees the management of the Port of Orcas and the airport. The board consists of five officials elected by the registered voters of the District of Orcas Island. The airport manager and airport staff are responsible for the day-today operation of ORS.

#### **DEVELOPMENT HISTORY**

After the Port acquired the airport in 1959 work began to improve the airport in 1975 using federal funds. In September of 1975 the runway, much of Taxiway A, and the original apron were constructed. In 1986 the runway was lengthened, Taxiway A extended to become a full parallel taxiway, and the apron was expanded to the area in front of the current terminal building. As the airport grew and hangars were constructed, a taxilane was constructed in 1990, to access the hangars to the east of the existing apron. In 1994 an additional taxiway was constructed. In 2011, the apron was expanded once again to include the apron area to the south along Mt Baker Road. The helipad was constructed in 2007.

#### EXISTING AIRSPACE & WIND DATA

A federally certified and commissioned Automated Weather Observation Station (AWOS-III) is located on at ORS. The information from this AWOS station provides the most accurate historical climatological data for the Airport. The data listed within **Table 1.2** was obtained from the AWOS historical observation data and denotes the wind data necessary and crosswind components for runway orientation compliance for the Airport. The prevailing winds at the Airport are to the South and the current runway orientation for the Airport is very adequate for wind coverage.

#### Table 1.2. Wind Coverage During All Weather Reported

Runway	Crosswind (knots)	Wind Coverage
16-34	10.5	99.93%
16-34	13	99.98%
16-34	16	100%
16-34	20	100%

#### AIRSIDE FACILITIES Runway 16-34

ORS has only one runway, constructed in 1975 and 1986. It is oriented on an approximate North/South axis along the magnetic headings of 160 degrees and 340 degrees. This gives the runway the designation of 16-34. The runway is 2,901 feet long and 60 feet wide and in good condition. The elevation above Mean Sea level (MSL) of the threshold of Runway 16 is 11.2 feet MSL and the threshold elevation of Runway 34 is at 34.7 feet MSL. Runway 16-34 is an asphalt paved runway with an aggregate friction seal coat surface treatment. The runway is designed for use by small aircraft with single wheel gear weighing less than 12,500lbs. The surface of

#### Table 1.3. Existing Runway Conditions

Runway	16-34
Orientation	N-S
Length (feet)	2,901
Width (feet)	60
Design Group	B-I (Small)
Surface Type	Asphalt
Weight Capacity	Single - 12,500
Lighting	MIRL
Markings	Non-precision

Source: FAA 5010 Master Record, 2017





the runway is currently listed as being in good condition. The runway is marked as required for non-precision instrument approaches on both runway ends. These markings include runway designator numbers (16 and 34), a threshold bar and four threshold stripes at each runway end and a centerline stripe. Blast pads marked with yellow chevrons are also present beyond the end of each threshold. These pads measure 230 feet long and 60 feet wide at the Runway 16 end and 250 feet long and 60 wide on the at the Runway 34 end. Runway 16-34 has nighttime medium intensity runway edge lighting (MIRL) as well as Runway End Identifier Lights (REILs) installed. These lights can be activated and remotely by pilots in flight by clicking the common traffic advisory frequency (CTAF) of 128.25 on their radios. Table 1.3 on the previous page shows

the reported conditions of the runway as currently depicted by the FAA.

#### **Taxiways**

Taxiways allow movement and transition by aircraft between the less secure landside and developed areas of an airport and the more safety critical area of the runway. There is a total of seven taxiways at ORS including four connector taxiways on the east side, 2 connector taxiways on the west side, and a full parallel taxiway. All taxiways are asphalt paved and in good condition. The parallel taxiway and all taxiway connectors east of the runway are equipped with pilot activated medium intensity taxiway edge lighting (MITL), similar in function to the runway edge lighting system. **Table 1.4** on the following page breaks down the taxiway system at ORS.



Table 1.4. Existing Taxiway System		-	-
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Taxiwa	y	Surface	Purpose	Length (feet)	Width (feet)	Lighting
Paralle	el Taxiway 🔑 🗚	Asphalt	Parallel Taxiway	2,900	25	MITL
ATT	A4	Asphalt	Connector Taxiway	100	115	MITL
Az	A3	Asphalt	Connector Taxiway	100	35	MITL
Ar	A2	Asphalt	Connector Taxiway	100	45	MITL
1.	A1	Asphalt	Connector Taxiway	100	35	MITL
B2 <sup>4,2</sup>	B2 <sup>1</sup>	Asphalt	Connector Taxiway	100	25	N/A
24	B1	Asphalt	Connector Taxiway	150	25	N/A

-Existing taxiways are not designated. For discussion purposes, the parallel taxiway has been labeled as Taxiway A, and the connectortaxiways on the east side are labeled A1-A4, north to south. Corresponding taxiways on the west side are designated as B3 and B4, aligning with connectors on the east side of the runway.

Taxiway B is currently marked with a painted taxiway closure X and is not in use.

#### Helipad

A designated 40-foot by 40-foot helipad is located on the east side of the parallel taxiway near the segmented circle.

#### **Aircraft Parking Areas/Apron**

There are two paved aprons and two turf aprons at ORS, as detailed below in **Table 1.5**.

#### **Pavement Condition**

Approximately every five years WSDOT Aviation conducts a system-wide study of pavement to assess the relative condition of pavements for selected Washington airports. The program serves as a tool to identify system pavement needs at each airport. The Pavement Condition Index (PCI) procedure is the standard used by the aviation industry to visually assess pavement condition.

Apron	Surface	Apron Area	# of Tiedowns
North Paved Apron	Asphalt	65,000	12
South Paved Apron	Asphalt	60,000	11
North Turf Apron	Grass	55,000	21
South Turf Apron	Grass	30,000	9

#### Table 1.5. Existing Apron Areas





Source: Washington State Department of Transportation Aviation 2012 Pavement Management Program Update https://www.appliedpavement.com/hosting/washington/#path=2/52/3/2

**Paragraph Deletion** 

The PCI provides a consistent, objective, and repeatable tool to represent the overall pavement condition. The methodology involves walking over the pavement, identifying the type and severity of distress present, and measuring the quantity of distress. The information is then used to develop a composite index (PCI number) that represents the overall condition of the pavement in numerical terms, ranging from 100 (excellent) to 0 (failed). The PCI number is a measure of overall condition and is indicative of the level of work that will be required to maintain or repair a pavement. Further, the distress information provides insight into what is causing the pavement to deteriorate, which is the first step in selecting the appropriate repair. The last PCI study was conducted in 2012 at ORS.

Overall ORS pavements are in good condition and range from an index of 69 to an index of 100. Most pavement is in the 71-85 range.

#### Signage

Runway 16-34 has distance remaining signs and hold signs installed. Taxiway A has designator, direction and location signs installed.

#### **Navigational Aids**

Navigational Aids (NAVAIDs) are used by pilots to assist with navigation during various stages of any flight, under both visual flight rules (VFR) and instrument flight rules (IFR), and can be used to assist with both visual and instrument approaches to an airport.





NAVAIDs can be both visual and electronic. The use of visual NAVAIDS or electronic NAVAIDs by an aircraft properly equipped to receive electronic signals from them can be either optional or mandatory, depending upon the type of flight and/ or approach to an airport. Typical "visual" NAVAIDs include airport beacons, precision approach path indicators (PAPIs)/visual approach slope indicators (VASIs) and runway approach lighting systems. Typical electronic NAVAIDs include items such as instrument landing systems (ILS); Global Positioning Systems (GPS), non-directional (radio) beacons (NDBs), Very High-Frequency Omnidirectional Range (VORs) and marker beacons.

The following is a list of NAVAIDs installed or in operation at ORS:

- Runway 16 is equipped with a 4-box Precision Approach Path Indicator (PAPI) on the right side of the runway, with a threshold crossing height of 35 feet and visual glide angle of 3.48 degrees.
- Runway 34 is equipped with a 2-box PAPI on the left side of the runway with a threshold crossing height of 26 feet and visual glide angle of 4.00 degrees.
- Lighted wind cone and segmented circle

are located to the east of the runway, near the EMS Helipad.

• A white and green lens rotating beacon is located to the north of the helipad.

#### **Instrument Approach Procedures**

Instrument approach procedures (IAPS) are heavily regulated and designed procedures developed by the FAA that allow specially trained pilots utilizing appropriately equipped aircraft to fly an approach to an airport and land an aircraft under limited visibility conditions, commonly referred to as Instrument Meteorological Conditions (IMC). The availability of an instrument approach procedure at an airport greatly enhances the utilization and accessibility to the airport. ORS has several developed IAPs and is heavily reliant upon them to move passengers and cargo in and out of the airport. The approaches allow pilots to fly in and out of ORS with ceilings as low as 525 feet above the airport elevation and with visibility as low as 1 mile. The often-inclement weather surrounding ORS makes it important to ensure that these approaches are never in jeopardy from incompatible obstructions or use. There are currently three published non-precision



IAPS at ORS and a helicopter RNAV approach (COPTER164) that is not published at ORS:

- RNAV (GPS)-A circling approach with minimums down to 1120' Addi and 1-1/4-mile visibility
- RNAV (GPS) RWY 34 with minimums down to 725 AMH and 1-mile visibility
- RNAV (GPS) RWY 16 with minimums down to 525 AAH and 1-mile visibility

Noise abatement procedures are in effect due to noise sensitive residential areas near the Airport. Preferred quiet routes are designated for Runway 34 and Runway 16 departures to avoid flying over homes. Aircraft departing Runway 34 are requested to climb to 1,100' and track the runway centerline, heading of 340 degrees and fly past Parker Reef before turning. Runway 16 departures are directed to climb straight out to 1,100' or past the shoreline before turning. Departure and arrival on Runway 16 is preferred under light wind conditions. Reduction in power is recommended as soon as safely possible. Turns over Eastsound Village, touch and go landings, and takeoffs between 2200 and 0700 hours are to be avoided. Nighttime circling approaches are not permitted from the west side of runway. Noise abatement procedures may be modified when safety, aircraft operation restrictions, or weather factors dictate.

#### PASSENGER AIR SERVICE Scheduled/Unscheduled Operations

Scheduled passenger service is available to and from Orcas Island by both an intercostal island water ferry service and by commuter air service. Scheduled passenger air service is currently provided by two commuter operations. Unscheduled charter/air taxi services are also available by several companies that operate throughout the area. **Table 1.6** describes the current scheduled and unscheduled air service operators that routinely operate in and out of the Orcas Island airport.

#### Figure 1.6. ORS Scheduled/Unscheduled Operations

Operator	Service	Primary Aircraft	Base Airport
Kenmore Air	Scheduled appx 2 flights per day	C-208	Boeing Field
San Juan Airlines	Scheduled appx 3 flights per day	C-206/C-207/C-172	Bellingham & Anacortes
Island Air	Charter/Air Ambulance	C-207/C-172/C-208	Friday Harbor
Westwind Aviation <sup>3</sup>	Charter	C-303/C-172	Friday Harbor
Point to Point Air	Charter	C-172	Arlington
Rite Brothers	Charter	C-206/C-172	Port Angeles
Airpac Airlines	Charter	PA-31-350	Tukwila
Rose Air	Charter	C-172	Portland, OR.
Empire Airlines <sup>1</sup>	Charter/Freight	Various Aircraft	Hayden, ID
Magic Air <sup>2</sup>	Charter/Sightseeing	Stearman Biplane	Orcas Island

<sup>1</sup>Empire Airways flights to ORS Airport are primarily freight related.

<sup>2</sup>Magic Air flights are primarily sightseeing trips originating and terminating at ORS.

<sup>3</sup>Westwind was purchased by Avion, but current data still shows the operator as Westwind.



## **INVENTORY OF EXISTING CONDITIONS**

### LANDSIDE FACILITIES

#### **Roadways & Landside Access**

The Airport property is bordered by two public roadways, Mount Baker Road to the south and North Beach Road to the east.

Mount Baker Road is federally designated as a major collector. The portion of the roadway immediately south of the airport is categorized by annual average daily traffic (AADT) volumes ranging from 2,000 to 3,000 vehicles per day in 2014. Mount Baker Road is designated by the County as a Priority 1 route for snow clearing.

North Beach Road is designated as a local access roadway and carries AADT volumes ranging from 1,200 to 2,000 vehicles daily. North Beach Road is designated as a Priority 2 route for snow clearing.

Private roadways provide access into and adjacent to the airport grounds, including Schoen Lane from the south; Cessna Road, Commercial Park Road, and Brandt's Landing Road from the east; and Aeroview Lane and Nina Lane from the west.

#### Airport Terminal Building & Parking Facilities

The terminal building is approximately 1,500 square feet and includes a passenger waiting area, a public conference room, and office space to support port operations. San Juan Airlines and Kenmore Air operate a ticket counter within the terminal building and provide scheduled passenger and chartered air service. The terminal building is in fair condition and generally accommodates the needs of ORS.

Public auto parking is available at the entrance to ORS and to the north of the terminal building. The terminal building parking area can accommodate 8 automobiles; the long-term parking area can accommodate 60 automobiles. Most of the long-term parking consists of commercial and privately-owned vehicles of inbound passengers that work on, vacation on, or maintain second homes on the island. The parking area near the Aeronautical Services building can accommodate 18 automobiles. During peak times, long-term parking can reach capacity. As enplanements continue to grow it may be necessary to look at options for additional long-term parking.

#### **SUPPORT FACILITIES**

ORS offers a variety of aviation services to both based and transient aircraft including selfserve 100LL fuel, aircraft storage, minor and major aircraft repair, cargo sorting and delivery, scheduled and charter air service, and scenic bi-plane rides.

#### Fuel

Self-serve 100LL fuel is currently provided by Aeronautical Services on the north end of the main parking apron. Fuel is stored in a 10,000-gallon underground storage tank. The Airport collects a \$0.11/gallon fuel flowage fee. Due to the high costs of fuel, flowage is low and commercial operators do not typically fuel. Jet A is not available at ORS, except privately.

#### Hangars

ORS has a variety of hangar structures both on- and off-airport property with some having approved through-the-fence (TTF) agreements. All on-airport hangars are located on the eastside of the Airport with some off-airport hangars also located on the eastside. The westside hangars are all off-airport property. The Port of Orcas owns 2 hangars; all other on-airport hangars are personal property on land leases. Hangars range from standard t-hangars to conventional box hangars and executive hangars. All onairport hangars are at capacity. Hangars range in condition from fair to excellent.

#### Cargo

Cargo handling facilities are provided by FedEx and UPS. Packages arrive mostly by ferry and truck, but also by aircraft, are sorted, and then loaded onto delivery trucks for delivery to residents of Eastsound. The facilities are small and are in fair condition. The Aeronautical/UPS facility is operating in clear excess of capacity and design.

#### **SURROUNDING LAND USE**

#### Land Use Planning & Zoning Designations

The San Juan County Comprehensive Plan (SJCCP) is intended to guide planning and design decisions affecting land uses and future growth