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# ORCAS ISLAND AIRPORT MASTER PLAN



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# CHAPTER 1

## INVENTORY



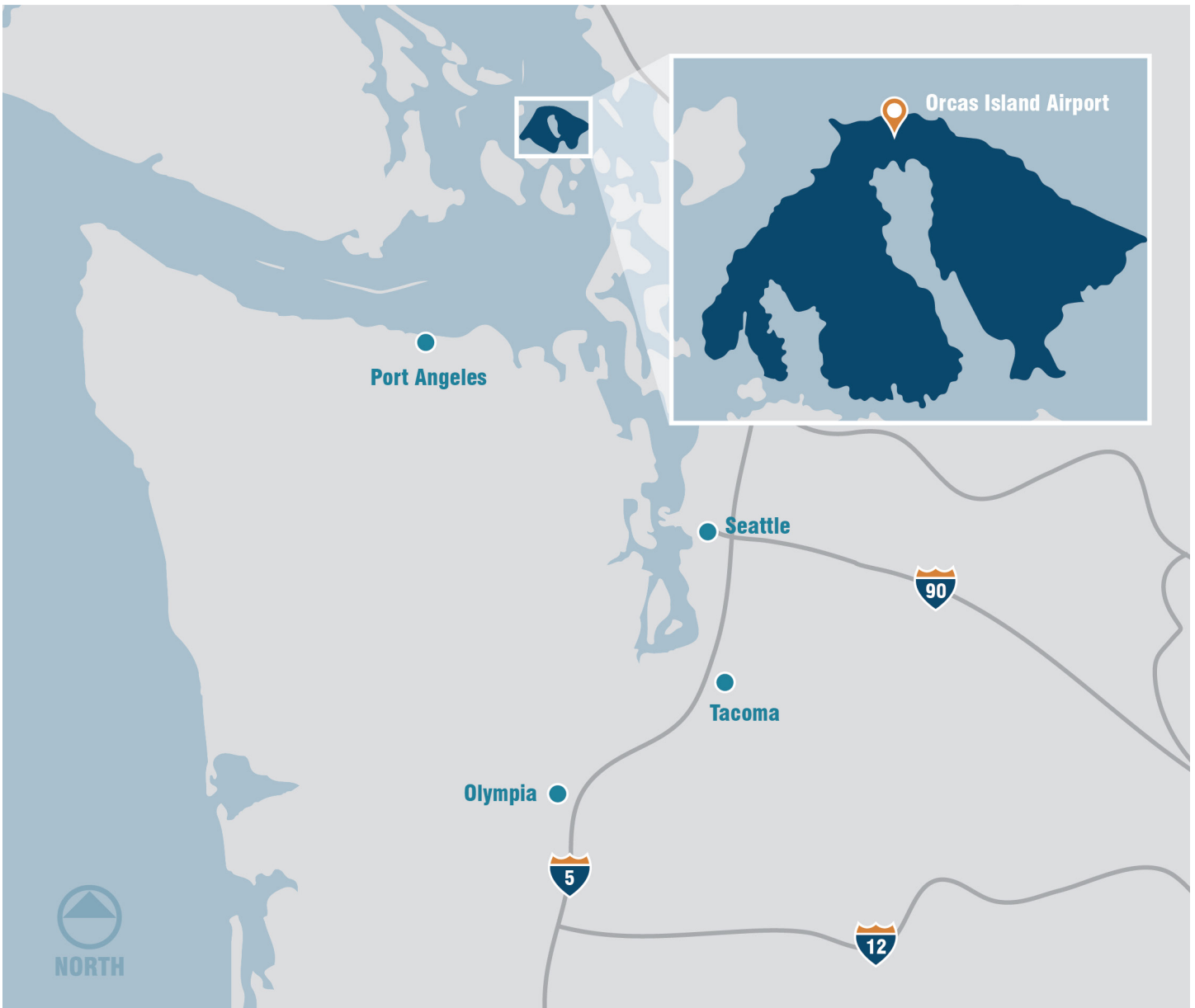


**BACKGROUND**

The Orcas Island Airport (ORS) is located on Orcas Island in San Juan County, Washington. (See **Figure 1.1**). It lies approximately ¾ 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.

✈ ..... **Figure 1.1. Vicinity Map**





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Figure 1.2. Eastsound, WA and Orcas Island Airport



## 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

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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 Classifications**

Classification	Primary Activities	Factors to Classify Airports
<b>Major</b>	<ul style="list-style-type: none"> <li>Commercial service</li> <li>Aircraft or aerospace manufacturing</li> </ul>	<ul style="list-style-type: none"> <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>
<b>Regional</b>	<ul style="list-style-type: none"> <li>Corporate GA and travel business</li> </ul>	<ul style="list-style-type: none"> <li>ARC B-II or greater</li> <li>Primary Activity: corporate GA and travel business</li> <li>Population over 30,000</li> </ul>
<b>Community</b>	<ul style="list-style-type: none"> <li>GA-personal transportation/business and recreational</li> <li>Pilot training</li> </ul>	<ul style="list-style-type: none"> <li>Not metro or regional</li> <li>Paved primary runway surface</li> <li>15 or more based aircraft</li> </ul>
<b>Local</b>	<ul style="list-style-type: none"> <li>GA-personal transportation/recreational</li> <li>Pilot training</li> <li>Agriculture</li> </ul>	<ul style="list-style-type: none"> <li>Not metro or regional</li> <li>Paved primary runway surface</li> <li>Less than 15 based aircraft</li> </ul>
<b>General Use</b>	<ul style="list-style-type: none"> <li>GA-personal transportation/recreational, including backcountry</li> </ul>	<ul style="list-style-type: none"> <li>Unpaved primary runway surface (including all seaplane bases)</li> </ul>

Source: 2017 WASP



### **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-to-day 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 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



Figure 1.3. Orcas Island Airport



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 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.





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Table 1.4. Existing Taxiway System

Taxiway	Surface	Purpose	Length (feet)	Width (feet)	Lighting
Parallel Taxiway	Asphalt	Parallel Taxiway	2,900	25	MITL
A4	Asphalt	Connector Taxiway	100	115	MITL
A3	Asphalt	Connector Taxiway	100	35	MITL
A2	Asphalt	Connector Taxiway	100	45	MITL
A1	Asphalt	Connector Taxiway	100	35	MITL
B2 <sup>1</sup>	Asphalt	Connector Taxiway	100	25	N/A
B1	Asphalt	Connector Taxiway	150	25	N/A

<sup>1</sup>Taxiway 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

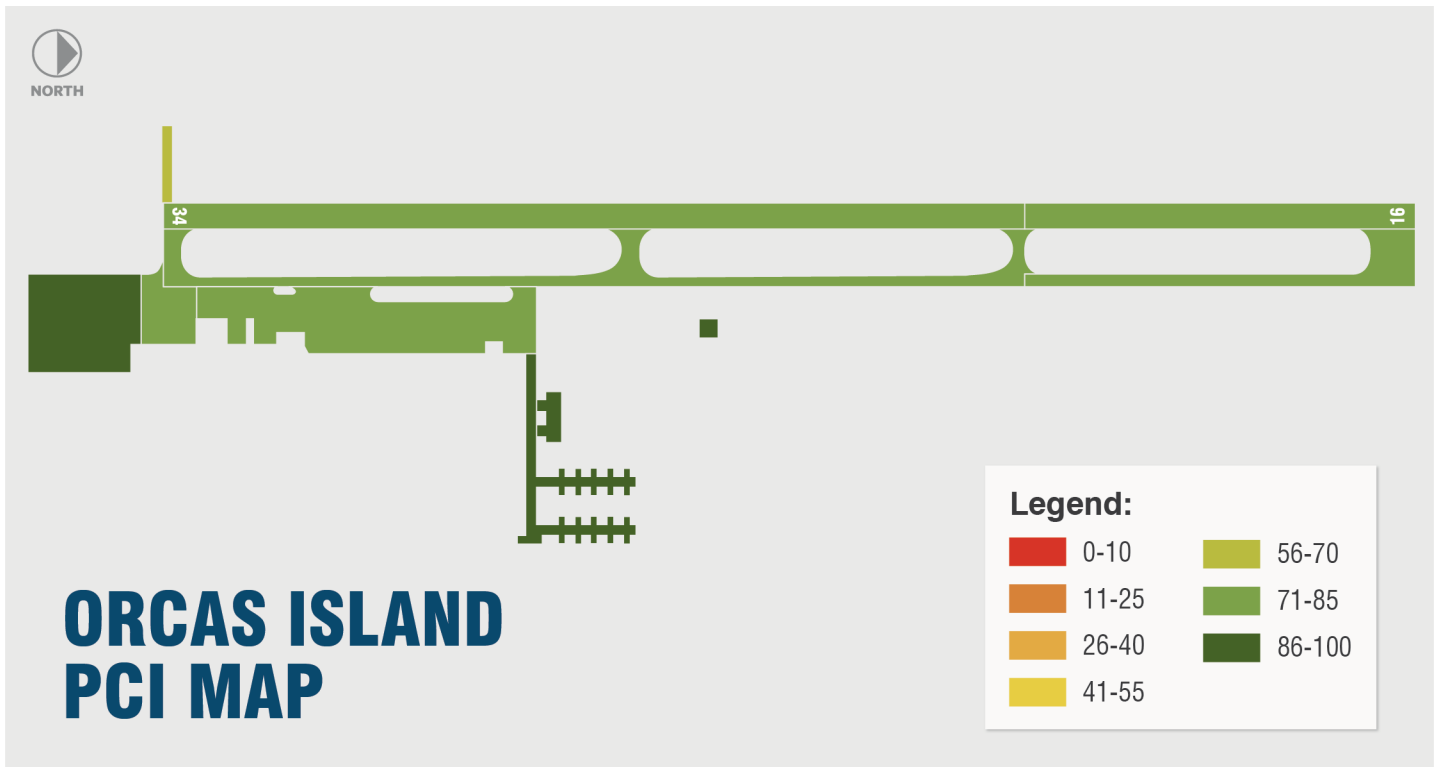
There are two paved aprons and two turf aprons at ORS, as detailed below in **Table 1.5**.

Table 1.5. Existing Apron Areas

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



Figure 1.4. PCI Map



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

### Pavement Condition

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