

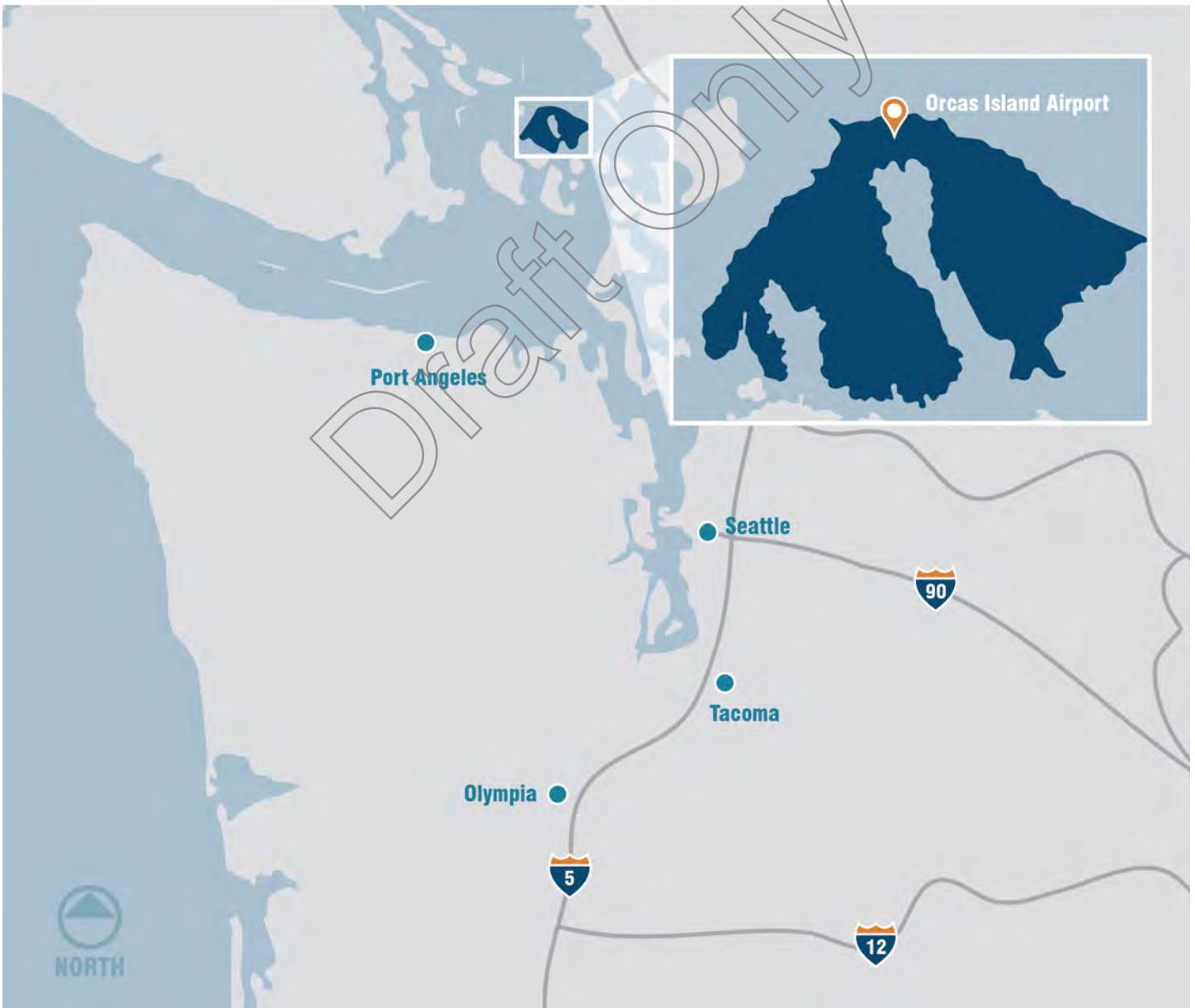


BACKGROUND

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**





INVENTORY OF EXISTING CONDITIONS

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
Major	<ul style="list-style-type: none"> Commercial service Aircraft or aerospace manufacturing 	<ul style="list-style-type: none"> ARC C-III or greater Primary Activity: commercial service and/or aerospace manufacturing/MRO Population over 40,000
Regional	<ul style="list-style-type: none"> Corporate GA and travel business 	<ul style="list-style-type: none"> ARC B-II or greater Primary Activity: corporate GA and travel business Population over 30,000
Community	<ul style="list-style-type: none"> GA-personal transportation/business and recreational Pilot training 	<ul style="list-style-type: none"> Not metro or regional Paved primary runway surface 15 or more based aircraft
Local	<ul style="list-style-type: none"> GA-personal transportation/recreational Pilot training Agriculture 	<ul style="list-style-type: none"> Not metro or regional Paved primary runway surface Less than 15 based aircraft
General Use	<ul style="list-style-type: none"> GA-personal transportation/recreational, including backcountry 	<ul style="list-style-type: none"> Unpaved primary runway surface (including all seaplane bases)

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 taxiway 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



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 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..



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Table 1.4. Existing Taxiway System

Taxiway	Surface	Purpose	Length (feet)	Width (feet)	Lighting
Parallel Taxiway (A ¹)	Asphalt	Parallel Taxiway	2,900	25	MITL
A1 ¹	Asphalt	Connector Taxiway	100	115	MITL
A2 ¹	Asphalt	Connector Taxiway	100	35	MITL
A3 ¹	Asphalt	Connector Taxiway	100	45	MITL
A4 ¹	Asphalt	Connector Taxiway	100	35	MITL
B3 ^{1,2}	Asphalt	Connector Taxiway	100	25	N/A
B4	Asphalt	Connector Taxiway	150	25	N/A

¹Existing taxiways are not designated. For discussion purposes, the parallel taxiway has been labeled as Taxiway A, and the connector taxiways 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.

²Taxiway B3 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.

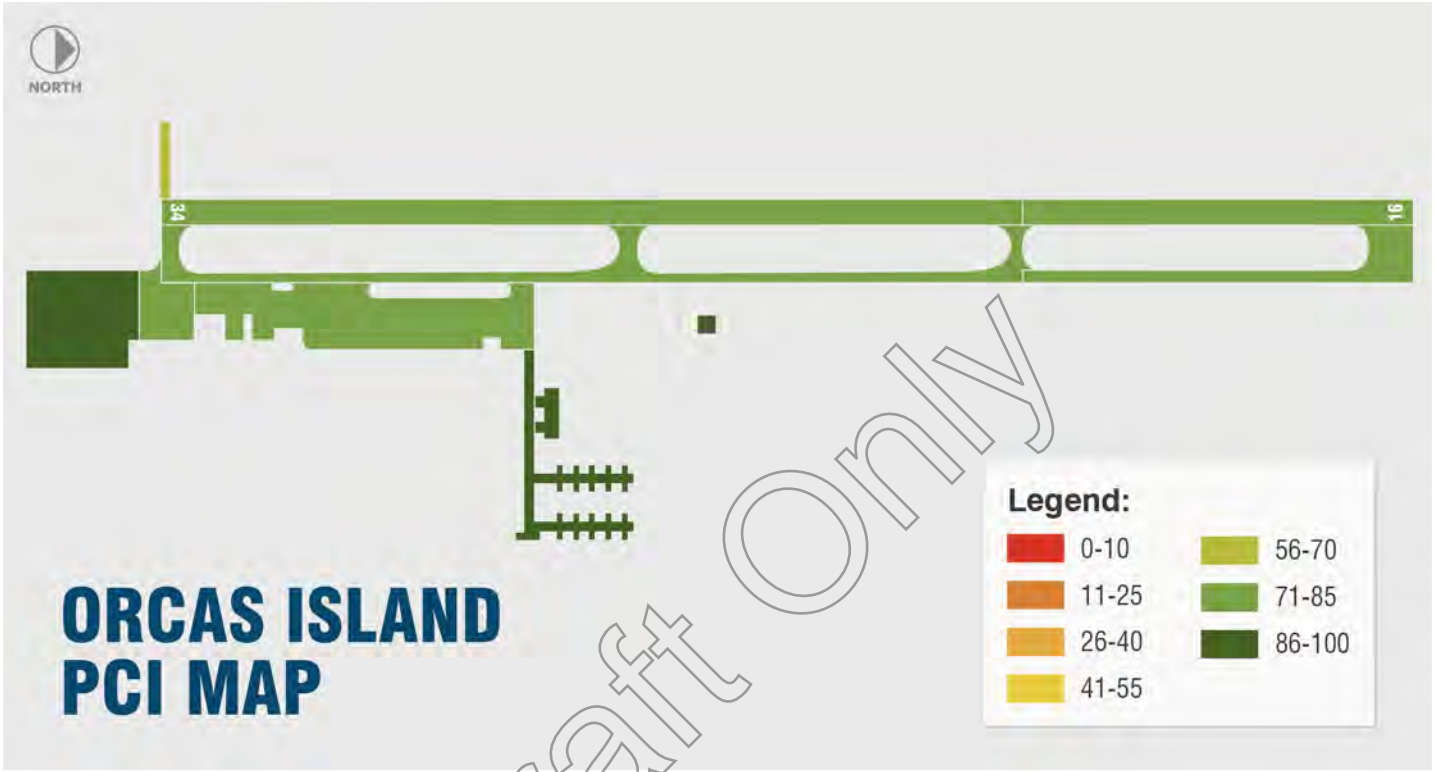
Table 1.5. Existing Apron Areas

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

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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>

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. 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.



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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-increment 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' AAH and 1-1/4-mile visibility
- RNAV (GPS) RWY 34 with minimums down to 725 AAH 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 ³	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 ¹	Charter/Freight	Various Aircraft	Hayden, ID
Magic Air ²	Charter/Sightseeing	Stearman Biplane	Orcas Island

¹Empire Airways flights to ORS Airport are primarily freight related.

²Magic Air flights are primarily sightseeing trips originating and terminating at ORS.

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



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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 self-serve 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 on-airport 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



in San Juan County. ORS is defined in the SJCCP as an essential public facility (EPF). The plan outlines a goal to ensure land use needs for EPFs are addressed through a coordinated land use system. The plan notes that land use decisions should prevent the siting of incompatible uses adjacent to general aviation airports.

The SJCCP establishes an Airport Overlay District encompassing the airport and surrounding area to protect the public health, safety and welfare and to promote compatibility between airport uses and adjacent land uses. The SJCP directs the county to designate FAA Airspace Zones and Aircraft Accident Safety Zones and to establish development standards and regulations outlining allowable uses within the District. The San Juan County Code (SJCC) implements SJCCP policies. Specifically, SJCC 18.35.150 defines the purpose and requirements for an airport overlay district. The code also defines performance and use-specific standards for airports (SJCC 18.40.030) and for airport overlay districts (SJCC 18.40.031). SJCC 18.40.032 defines prohibited developments, uses, and activities for the following five aircraft accident safety zones specific to the Orcas Island Airport. Aircraft accident safety zones are illustrated in the Eastsound Subarea Plan Official Map (included as Appendix 1 to this report). A miniaturized version of the map is depicted in **Figure 1.5**.

- **Zone 1:** Runway Protection Zone
- **Zone 2:** Inner Safety Zone, North and South Portions
- **Zone 3:** Inner Turning Zone
- **Zone 4:** Outer Safety Zone
- **Zone 5:** Sideline Safety Zone/Airport Development Zone

The Eastsound Subarea Plan augments the SJCCP by providing additional guidance for the area immediately surrounding the Eastsound community. In support of its goal to anticipate and manage growth in Eastsound, the subarea plan attempts to minimize conflicts between the airport and surrounding land uses. As illustrated in Attachment 2 the airport property is located within the Eastsound Airport District, which accommodates the airport and related facilities and prohibits residential development. Adjacent designations include Service and Light Industrial (which accommodates existing airport-related facilities and services located outside the Airport District), Marina (which recognizes existing north shore marina and resort uses and allows compatible commercial and residential development), and areas designated as Eastsound Residential and Village Residential/Institutional which include a mix of residential densities..

Socioeconomic Trends

The 2010 United States Census identified a population of 5,354 for the Orcas Census County Division (CCD). The 2016 American Community Survey (ACS) estimate for the Orcas CCD was 5,408. The San Juan County Department of Community Development projects population on the island will grow to 5,602 by 2030 and 5,768 by 2040 under a medium growth projection scenario.

The SJCCP designates a portion of the island, which includes the ORS, as an Urban Growth Area (UGA). Per the Washington State Growth Management Act, UGAs must accommodate 50% of a county's total increase in population growth over a 20-year planning period. The Eastsound UGA is illustrated in Attachment 3.

¹ San Juan County Comprehensive Plan, Appendix 6 – Transportation (2016), p.3

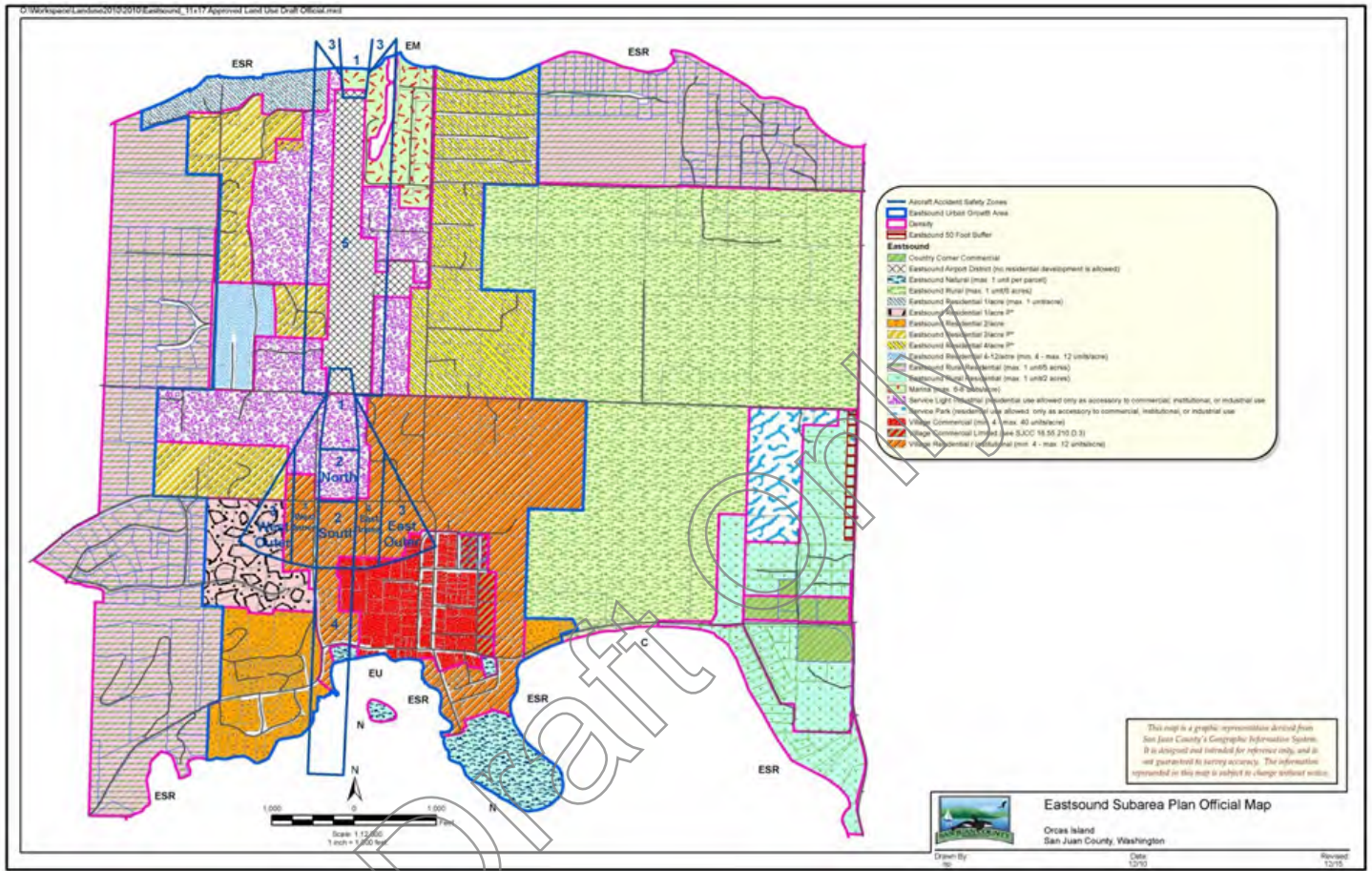
² San Juan County Comprehensive Plan, Section B, Element 2, Land Use (2010), p. 6.

³ Ibid, p. 28.

⁴ Eastsound Subarea Plan, Section 5 – Eastsound Landuse Districts, H – Eastsound Airport District, p. 30.

⁵ Note: The FAA has developed Part 77 airspace delineations but does not use or recognize San Juan County's terminology for "Aircraft Accident Safety Zones."

Figure 1.5. Eastbound Subarea Plan



⁴ Eastsound Subarea Plan, Section 5 – Eastsound Landuse Districts, H – Eastsound Airport District, p. 30.

ENVIRONMENTAL DATA

This section describes the surrounding environmental conditions of the ORS as of the fall of 2017. The inventory included adheres to FAA guidelines, and briefly examines the impact categories identified in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, as follows:

- Air quality
- Biological resources (including fish, wildlife, and plants)
- Climate
- Coastal resources
- Department of Transportation Act, Section 4(f)
- Farmlands
- Hazardous materials, solid waste, and pollution prevention
- Historical, architectural, archaeological, and cultural resources
- Natural resources and energy supply
- Noise and compatible land use
- Socioeconomics, environmental justice, and children’s environmental health and safety risks
- Visual effects (including light emissions)
- Water resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers).



Air Quality

The U.S. Environmental Protection Agency (EPA) sets air quality standards for six pollutants known to impact human health, and cannot approve an action that is not supportive of the attainment and maintenance of National Ambient Air Quality Standards (NAAQS) conformity. Conformity applies to areas designated as “maintenance” or “non-attainment” for any of the criteria pollutants. The six criteria pollutants include carbon monoxide (CO), particulate matter (PM), ozone (O3), sulfur dioxide (SO2), lead (Pb), and nitrogen oxide (NOx).

The EPA defined geographic areas in one of four ways, with respect to air quality. “Non-attainment” areas are those areas where standards have been violated for one of the six monitored pollutants. “Maintenance” areas are those geographic areas that had a history of non-attainment, but now consistently meet the NAAQA. Geographic areas classified as “attainment” are those that are typically monitored, but have had no violations. Areas

are considered “non-classified” if air quality is generally not a concern. Orcas Island is a non-classified area, however air quality, including construction emissions, would need to be considered for any future project during the environmental documentation process in compliance with the National Environmental Policy Act (NEPA).

Biological Resources

Threatened and Endangered Species

The Endangered Species Act of 1973 (ESA) is administered by the U.S. Fish and Wildlife Service (USFWS). Under ESA, species may be listed as either threatened or endangered. The EPA defines “endangered” species as those plants and animals that have been designated as being rare enough that they are in danger of becoming extinct. “Threatened” species are those plants and animals that are likely to be endangered within the foreseeable future. According to the USFWS and Washington State Department of Fish and Wildlife (WDFW), the following species are listed as threatened, endangered, or species of concern in the vicinity of the Airport.

Figure 1.7. Non-fish Species

Species	Genus	WA State Status	Federal Status
Taylor’s Checkerspot (butterfly)	Euphydryas editha taylori	Endangered	Endangered
Brown Pelican	Pelicanus occidentalis	Endangered	Species of Concern
Marbled Murrelet	Brachyramphus marmoratus	Threatened	Threatened
Humpback Whale	Megaptera novaeangliae	Endangered	Endangered
Killer Whale (Orca)	Orcinus orca	Endangered <i>(all populations)</i>	Endangered <i>(southern resident population)</i>
Sea Otter	Enhydra lutris	Endangered	Species of Concern
Steller Sea Lion	Eumetopias jubatus	Threatened	Species of Concern
Western Pond Turtle	Actinemys marmorata	Endangered	Species of Concern
Green Sea Turtle	Chelonia mydas	Threatened	Threatened
Leatherback Sea Turtle	Dermochelys coriacea	Endangered	Endangered
Loggerhead Sea Turtle	Caretta	Threatened	Endangered



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Table 1.8. Fish and Shellfish

Species	Genus	WA State Status	Federal Status
Bull Trout/Dolly Varden	Salvelinus confluentus/S. malma	Candidate	Threatened
Chinook	Oncorhynchus tshawytscha	Candidate	Threatened
Chum	Oncorhynchus keta	Candidate	Threatened
Ozette Lake Sockeye	Oncorhynchus nerka	Candidate	Threatened
Steelhead	Oncorhynchus mykiss	Candidate	Threatened
Bocaccio	Sebastes paucispinis	Candidate	Endangered
Canary Rockfish	Sebastes pinniger	Candidate	Threatened
Yelloweye Rockfish	Sebastes ruberrimus	Candidate	Threatened
Pinto (Northern) Abalone	Haliotis kamtschatkana	Candidate	Species of Concern

Table 1.9. Other Species of Concern

Species	Genus	WA State Status	Federal Status
Island Marble Butterfly	Euchloe ausonides insulanus	Candidate	Species of Concern
Great Arctic Butterfly	Geneis nevadensis gigas	Candidate	None
Sand Verbena Moth	Copablepharon fuscum	Candidate	None
Valley Silverspot Butterfly	Speyeria zerene bremnerii	Candidate	Species of Concern
Bald Eagle	Haliaeetus lucocephalus	Sensitive	Species of Concern
Black Oystercatcher	Haematopus bachmani	None	None
Golden Eagle	Aquila chrysaetos	Candidate	None
Common Loon	Gavia immer	Sensitive	None
Great Blue Heron	Ardea herodias	None	None
Northern Harrier	Circus cyaneus	None	None
Peregrine Falcon	Falco peregrinus	Sensitive	Species of Concern
Short-eared Owl	Asio flammeus	None	None
Wilson's Snipe	Gallinago delicata	None	None
Northern Flying Squirrel	Glaucomys sabrinus	None	None



Essential Fish Habitat (EFH)

Essential Fish Habitat (EFH) are those waters and substrate necessary for fish spawning, breeding, feeding, and growth to maturity as defined under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The MSA requires the National Marine Fisheries Service (NOAA Fisheries) and regional fishery management councils to minimize, to the extent practicable, adverse effects to EFH caused by fishing activities. The MSA also requires Federal agencies to consult with NOAA Fisheries about actions that could damage EFH. The Airport is located within the San Juan Islands Hydrologic Unit 17110003, which is designated as EFH for Chinook, Coho, and Pink salmon. These salmon species may occur in the marine waters to the north of the Airport property.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), enacted in 1918, prohibits the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations, and does not require intent to be proven. Section 703 of the MBTA states:

“ Unless and except as permitted by regulations ... it shall be unlawful at any time, by any means or in any manner, to ... take, capture, kill, attempt to take, capture, or kill, or possess ... any migratory bird, any part, nest, or eggs of any such bird... ”

The Bald and Golden Eagle Protection Act (BGEPA) prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagles or their body parts, nests, or eggs, which includes collection, molestation, disturbance, or killing. The project

area is within the Pacific Flyway bird migration route, which encompasses most of western Washington. Many common migratory bird species nest and breed along this flyway route.

Climate

Although greenhouse gasses (GHGs) are not directly discussed within FAA Order 1050.1F, they are discussed in the 1050.1F Desk Reference. GHGs are discussed here because research has shown a direct correlation between fuel consumption and GHG emissions. The FAA is participating in a number of initiatives to better understand the role played by commercial aviation in the production of GHG emissions. The FAA has developed the Aviation Climate Change Research Institute to attempt to advance understanding of regional and global climate impacts of aircraft emissions.

The amount of GHGs emissions created at the Airport are unknown; however, due to the modest operations at this airport, emissions are likely minimal.

Coastal Resources

Coastal Zone Management

Consistency with coastal zone regulations falls under the auspices of the National Oceanic and Atmospheric Administration (NOAA) regulations, and state regulations under Washington’s Coastal Zone Management Program.

Washington was the first state to establish an approved Coastal Zone Management Program as part of the federal Coastal Zone Management Act. Washington’s Coastal Zone comprises the state’s fifteen coastal counties that have shoreline either along the Pacific Ocean or Puget Sound.

San Juan County is one of 15 counties within Washington’s coast zone. As such, the Airport must obtain permits for certain actions with federal implication, such as the adoption of an Airport Layout Plan and Airport Capital Improvement Program that seeks federal funding assistance.

Coastal Barriers

This category involves the undeveloped coastal barriers along the Atlantic and Gulf coasts and therefore is not applicable to the Airport..



Department of Transportation Act, Section 4(f) Resources

Section 4(f) of the U.S. DOT Act of 1966 (now codified at 49 U.S.C.) protects significant publicly owned land including public parks, recreation areas, or wildlife or waterfowl refuge of national, state, or local significance, or land of an historic site of national, State, or local significance. The Secretary of Transportation will not approve any program that requires the use of this publicly owned land, unless there is no feasible and prudent alternative to the use of this land, and the project includes all possible planning to minimize harm.

A review of Orcas Island maps shows a number of potential resources in the vicinity of the project. Doughty Point Park is located approximately 1.5 miles west of the Airport. Turtleback Mountain Preserve is located approximately 4.5 miles southwest of the Airport. Moran State Park is located approximately 4.0 miles southeast of the Airport, and Buck Park and Orcas Island Skatepark are located approximately 0.75 miles southeast of the Airport. Orcas Island Middle School is also located approximately 0.75 miles southeast of the Airport, and Eastsound Village Green Park is located approximately 0.75 miles south of the Airport.

There is a recreational trail located south of the Airport, between Mt. Baker Road and Enchanted Forest Road that is considered a 4(f) resource. It is located on land owned by the Port of Orcas and was granted through an easement to the County. The easement is approximately 10-feet wide and is a non-motorized ingress/egress, providing written allowances to maintain and improve the area (WH Pacific EA).

Farmlands

The Soil Survey of San Juan County indicates that Sholander-Speiden complex is considered prime farmland, if it is irrigated. Although there is Sholander-Speiden complex located south of Mt. Baker Road, this area is not irrigated; therefore, it is not considered prime farmland. Deadmanbay-Morancreek complex is also considered prime farmland, but there is only a small amount of this located on the western edge of the property south of Mt. Baker Road.

Hazardous Materials, Solid Waste, and Pollution Prevention

The Resource Conservation and Recovery Act (RCRA) of 1976 directs the EPA to protect the environment and human health and welfare from improper hazardous waste management practices. The RCRA requires labeled and effective containers for hazardous waste, record keeping, and transport manifests.

An Airport's airside and landside operations use, transport, or generate various kinds of hazardous materials. These substances include hazardous wastes and hazardous substances as well as petroleum and natural gas substances and materials.

The Airport has one 10,000-gallon underground fuel storage tank. The fuel service area has spill containment aprons. The Airport generates solid waste associated with aircraft use and the operation of a fixed base operator. When these materials are discarded, they may fall under RCRA regulations as hazardous waste.

A records search of the Washington State Department of Ecology's Facility/Site Database (<http://www.ecy.wa.gov/fs/>) showed no history of spills or dumping on the site. This was further verified by searching Washington State Department of Ecology's Cleanup Site Search database (<https://fortress.wa.gov/ecy/gsp/SiteSearchPage.aspx>); therefore, it is unlikely that the Airport ground is contaminated by hazardous materials.

The Airport generates solid waste from Fixed Base Operators and from aircraft using the Airport. Solid waste is picked up as part of a regular garbage collection cycle. Solid waste from the Airport is disposed of at the Orcas transfer station located at 3398 Orcas Road.

Historical, Architectural, Archeological, & Cultural Resources

A desktop review of the Washington Information System for Architectural and Archaeological Records Data (WISAARD) has determined there are no historic properties located within the Orcas Island Airport project area.

A cultural resources survey was carried out for proposed improvements to the Orcas Island Airport in 2013 (Elder, Reed, and Sparks 2015). The survey



included extensive pedestrian and subsurface survey, and identified no cultural resources.

One significant property lies in proximity to the project area. 1159 North Beach Road—the Michael & Myra Donohue House—was nominated for National Register of Historic Places and is on the Washington Heritage Register. Its significance lies in Criterion C as a property that embodies the distinguishing characteristics of its period of construction. The house is a late example of the Greek Revival style, dating to 1890.

Natural Resources & Energy Supply

FAA Order 1050.1, Environmental Impacts: Policies and Procedures, asserts that Airport improvement projects will be examined to identify effects on local energy supplies or natural resources. If impacts are identified, energy producers and environmental stakeholders must coordinate activities. In its appendix, the FAA order makes reference to Executive Order 13123. Executive Order 13123 encourages the use of renewable energy and requires federal agencies to reduce air emissions and the consumption of petroleum, energy, and water.

Electric energy is used to power navigation aids, airfield lighting, and Airport buildings. Petroleum fuels are used to power aircraft, maintenance vehicles, and other equipment, such as generators. Other natural resources affected by the Airport are discussed in the water quality, wetlands, biotic communities, and threatened and endangered species sections.

Coordination with natural resource and energy supply companies is recommended prior to the construction of new facilities requiring these services.

Noise & Compatible Land Use

Land use within the vicinity of the Airport consists of service and light industrial, as well as marina and residential. **Figure 1.5** and Attachment 4 illustrate designated land uses and corresponding development density surrounding the airport. Aircraft-generated noise impacts are the primary source of incompatibility between airports and surrounding land uses. Preparing

and implementing plans for compatible land uses in the vicinity of an airport is strongly encouraged by the FAA. The FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of yearly day/night average sound level (DNL) as FAA's primary metric. FAA Order 1050.1F, Appendix B also states:

“ No noise analysis is needed for projects involving Design Group I and II airplanes (wingspan less than 79 feet) in Approach Categories A through D (landing speed less than 166 knots) operating at airports whose forecast operations in the period covered by the NEPA document do not exceed 90,000 annual propeller operations (247 average daily operations) or 700 annual jet operations (2 average daily operations). Also, no noise analysis is needed for projects involving existing heliports or airports whose forecast helicopter operations in the period covered by the NEPA document do not exceed 10 annual daily average operations with hover times not exceeding 2 minutes.



The annual operations of the Airport consist of approximately 41,000 aircraft. Because this falls under the threshold of 90,000 propeller operations or 700 annual jet operations, the Airport is exempt from developing noise contours.

Socioeconomics, Environmental Justice, & Children's Environmental Health/Safety Risks

The area around the Airport is service and light industrial, with some residential properties. These properties are more highly populated in the summer months, compared to the winter months because many of the properties are summer homes. The Airport has not identified any development projects that require land acquisition. It will be necessary to evaluate the impacts of future projects on surrounding communities.

The Airport has been present on Orcas Island for over 55 years. The surrounding areas have been predominantly service and light industrial, with some low density residential. There are no concentrations of minority or low-income populations within the immediate vicinity of the Airport.

Under Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, Register, the FAA must evaluate environmental health risks and safety risks that may disproportionately affect children by creating new or exacerbating existing adverse impacts to priority areas including asthma, unintentional injuries, development disorders (including lead poisoning), and cancer. This includes products or substances that a child is likely to touch or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or be exposed to.

There are no places where children congregate (e.g., schools, recreation centers, or daycare centers) immediately adjacent to the Airport, although Buck Park, Orcas Island Skatepark, Orcas Island Middle School, and Eastsound Village Green Park are located within a mile to the south/southeast of Airport property

Visual Effects

The Airport has a medium-intensity runway and taxiway lighting system, and is also equipped

with a rotating beacon, a lighted windsock and segmented circle, a two-light precision approach path indicator on the left side of Runway 34, and a four-light visual approach slope indicator on the left side of Runway 16. The Airport lighting is contained on-site and does not spill over into the neighboring properties; however, it may be visible to the adjacent homes and businesses at night. In addition, the beacon may be visible at distances greater than one mile from the Airport.

Water Resources

Wetlands

Executive Order 11990, Protection of Wetlands, requires the FAA to protect, preserve, or enhance wetlands. This order is often called the 'no net loss' provision for wetlands, and is the source for how mitigation programs are developed. According to the U.S. Fish and Wildlife Service National Wetlands Inventory (<https://www.fws.gov/wetlands/>), the Airport and its vicinity have estuarine and marine deepwater and wetland habitats, freshwater emergent wetlands, freshwater forested/shrub wetlands, and freshwater ponds (**Figure 1.6**).

Floodplains

Executive Order 11988 directs Federal agencies to "take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains...." A review of on-line Flood Insurance Rate Maps, prepared by the Federal Emergency Management Administration shows the area is not within the mapped floodplain.

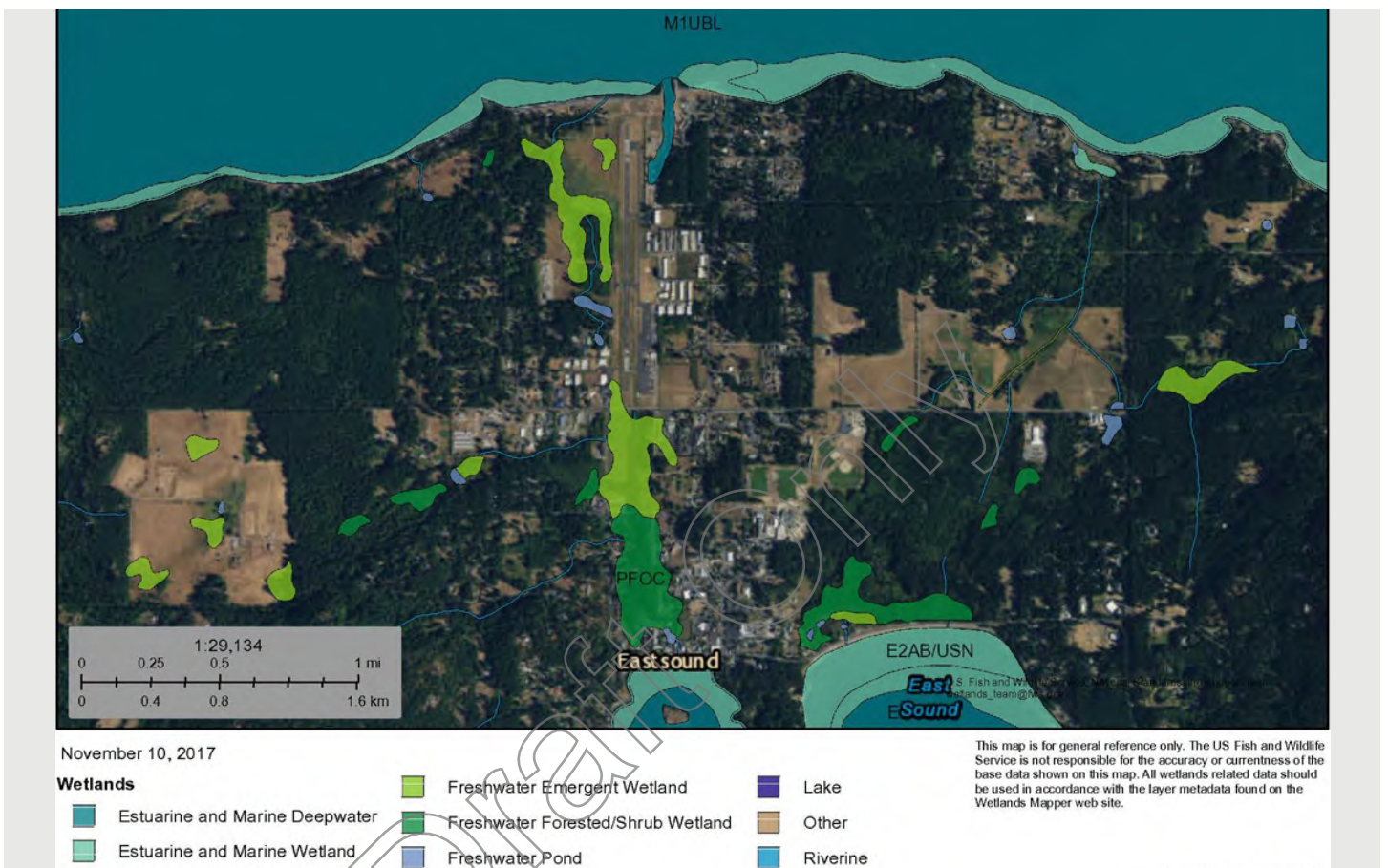
Water Quality

Water quality is generally governed under the provisions of the federal Water Pollution Control Act, as amended by the Clean Water Act and other amendments. Washington State Department of Ecology maintains a listing of water bodies and impediments to meeting water quality standards for each body. These standards are typically thresholds for the presence of a particular element or general conditions.

The primary water quality concern for airports is runoff generated from the creation of impervious surfaces, as well as potential impacts from oil or fuel spillage, and de-icing chemicals. The Airport does not generally use de-icing chemicals; however, oil and fuel are used in airport maintenance and operations, and



✈ **Figure 1.6. U.S. Fish and Wildlife Service National Wetlands Inventory**



Source: U.S. Fish and Wildlife Service National Wetlands Inventory, (www.fws.gov/wetlands/)

aircraft operations. The fueling station has a spill containment pad and the Airport maintains a set of procedures that are followed in the event of a spill. These procedures will prevent contaminants from entering the surface and groundwater, as well as local water bodies.

Wild & Scenic Rivers

Since passage of the Wild and Scenic Rivers Act in 1968, six rivers (segments) in the state of Washington have been designated as part of the National System, although a seventh, the Snake River was nominated but not recommended. These include segments of the Klickitat River, the Skagit River, and the White Salmon River. There are no System Rivers on, near, or of similar drainage confluence downstream from the Airport.

Solid Waste Recycling Plan

To comply with the FAA Modernization and Reform Act of 2012 (FMRA). Section 132 (b) this master plan specifically identifies specific aspects to further decrease solid waste by increasing resources that can be recycled in a more efficient manner.

ORS, as a Port and County facility, falls under the requirements of the 2012 San Juan County Solid and Hazardous Waste Management Plan. The purposes of this plan is to establish the basis for implementing any new or revised solid waste systems that may serve the County’s needs. It is also used to inform the public regarding the current solid waste management system and changes to the collection system.



INVENTORY OF EXISTING CONDITIONS

The Orcas Island community currently trucks and barges all collected solid and hazardous waste off the island. This is accomplished using San Juan Sanitation and the Orcas Island Transfer Station. ORS uses the San Juan Sanitation services to dispose of all collected solid waste on the Airport. The current agreement between San Juan Sanitation and the Airport allows for the trucking off site of 1.5 cubic yards of disposable solid waste once every two weeks (every other Thursday), and trucking off site of 1 cubic yard of clean recyclables also every two weeks (every other Tuesday). All hazardous waste is dropped off at the Orcas Island Transfer station once a year in mid-June to be barged off the Island to the mainland. Most initial disposable waste and recyclable collection points at ORS are via trash receptacles and dedicated recycling bins located within the Terminal Building. As described, trash and mixed recycling dumpsters are picked up on alternating weeks (26 times a year) by San Juan Sanitation. Each dumpster is rented at the rate established by the local provider.

Additional recycling could be encouraged by ORS through enhanced signage in the Terminal Building to encourage passengers to use the recycling bins. By increasing recycling and decreasing waste the Airport could reduce the size of the trash dumpster and save up to \$20 per month.

Very little hazardous waste is typically collected by the Airport. The hazardous waste that is collected is usually small or contained, such as batteries. This type of hazardous waste is collected with other refuse and disposed of at the landfill, which has the capability to accept this type of waste, as per guidelines.

No other specific waste is collected by ORS, with the exception of unsolicited waste usually generated by scheduled or chartered air passenger travelers (campers, recreationalists, etc.). Since waste disposal costs are high on the Island, it is not uncommon for travelers to discreetly dump trash in the airport receptacles before they depart. This is highly discouraged, however, active enforcement, control or discouragement through increased rates or other measures would be expensive and difficult, especially for the total amounts collected.

It is unknown if construction waste is recycled or disposed of off-airport. Future projects should include a plan to recycle millings and other materials either on- or off-airport. For off-site recycling San Juan Sanitation provides construction recycling for the following:

- Wood (all types including roofing shingles, siding, decking)
- Fiber Board, Particle Board, Plywood
- Sheet Rock, Ceiling Tiles – painted is ok
- Concrete & Asphalt
- Brick & Rocks
- Asphalt Shingles (Residential 3-Tab Only)
- Glass (jars, windows)
- Appliances (may require special loading)
- Scrap Metal (all types including ferrous and non-ferrous metal)
- Aluminum, Brass, Copper, Iron, Steel
- Electric Wire
- Plastic Film – lumber wrap, insulation bags, Visqueen, etc.
- Plastic Pipe (including PVC, HDPE)
- Plastic Containers (no liquid residual)

Construction recycling is available at \$80 per ton plus dumpster rental cost and delivery/pick-up fees.