Orcas Island Airport Master Plan

OPEN HOUSE

WELCOME

THE PORT OF ORCAS

DOWL

Airport Master Plan

Master Plan Goals:

- **Provide a graphic representation of existing airport features, future airport development and anticipated land use.**
- **Establish a realistic schedule for implementation of the proposed development.**
- **Identify a realistic financial plan to support the development.**
- **Validate the plan technically and procedurally through investigation of concepts and alternatives on technical, economic and environmental grounds.**
- **Prepare a plan to the public that adequately addresses all relevant issues and satisfies local, state and federal regulations.**
- **Establish a framework for a continuous planning process.**

What are the steps?

Pre-planning – The pre-planning process usually includes an Initial Needs Determination, Request for Proposal and Consultant Selection, Development of Study Design, Negotiation of Consultant Contract, and Application for Study Funding.

Public Involvement – Once the project starts, a public involvement program is begun to identify and document the key issues for various stakeholders and solicit input.

Environmental Considerations – A clear understanding of the environmental requirements needed to move forward with proposed projects in the recommendations.

Existing Conditions – An inventory of all pertinent airport data.

Aviation Forecasts – Forecasts of aeronautical demand for short-, medium-, and long-term time frames.

Facility Requirements – Assess the ability of the existing airport infrastructure, both airside and landside, to support the forecast demand. Identify the demand levels that will trigger the need for facility additions or improvements, and estimate the extent of new facilities that may be required to meet that demand.

Alternatives Development and Evaluation – Identify options to meet projected facility requirements and alternative configurations. Assess the expected performance of each alternative against a wide range of evaluation criteria, including its operational, environmental, and financial impacts. A recommended development alternative will emerge from this process and will be further refined in subsequent tasks. This will also aid in developing the purpose and need for subsequent environmental documents.

Airport Layout Plans – One of the key products of a master plan is a set of drawings that provides a graphic representation of the long-term development plan for an airport. The primary drawing in this set is the "Airport Layout Plan". Other drawings are usually included as well, depending on the size and complexity of the individual airport.

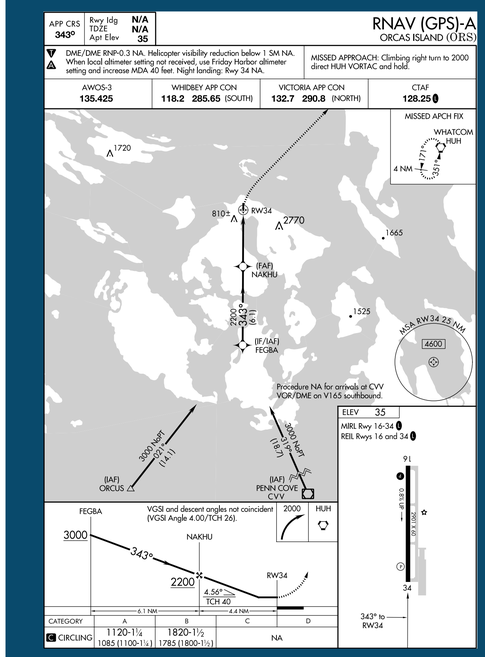
Facilities Implementation Plan – Provides a summary description of the recommended improvements and associated costs. The schedule of improvements depends, in large part, on the levels of demand that trigger the need for expansion of existing facilities.

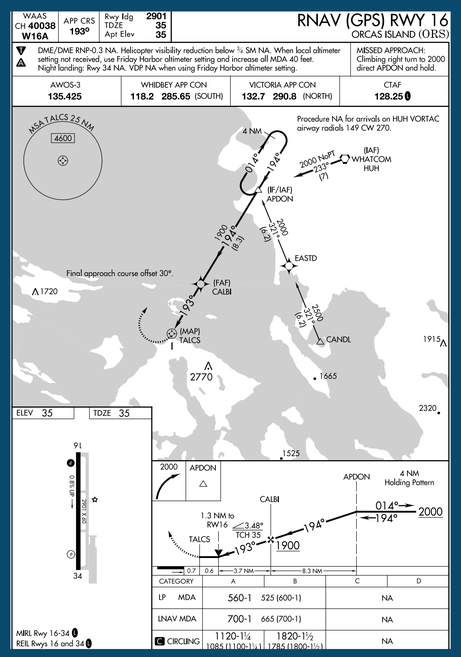
Financial Feasibility Analysis – Identifies a financial plan for the airport, describes how the sponsor will finance the projects recommended in the master plan, and demonstrate the financial feasibility of the program.

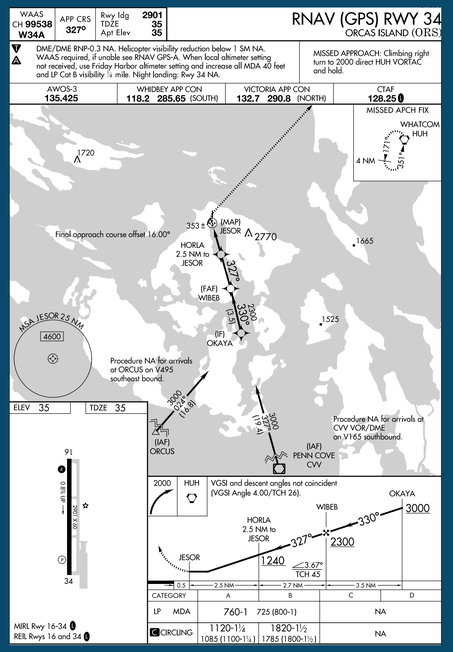
Instrument Flight Operations In and Out of Orcas Island Airport

Over the past year, there were over **3600** instrument flight plans filed to or from the Orcas Island Airport from the states and provinces highlighted in this map.

The vast majority of VFR and IFR flights to and from the Orcas Island Airport are within the State of Washington.







Instrument Approach Plates for Orcas Island Airport

Runway Design Codes

Example Aircraft

A-I Cessna 182*

A-II Cessna 208*

B-I Cessna 340*

B-II Beechcraft King Air 90*

B-II Cessna Citation X

C-II Bombardier Challenger 800

C-III Gulfstream V

D-III Gulfstream G650

*intended for aircraft weighing 12,500lbs or less

Aircraft Design Classifications

Aircraft Approach Category

A	Approach speed less than 91 knots.
B	Approach speed 91 knots but less than 121 knots.
C	Approach speed 121 knots but less than 141 knots.
D	Approach speed 141 knots but less than 166 knots.
E	Approach speed 166 knots or more.

Airplane Design Group

#	Tail Height [ft.(m)]	Wingspan [ft.(m)]
I	<20’ (<6m)	<49’ (<15m)
II	20’ - <30’ (6m - <9m)	49’ - <79’ (15m - <24m)
III	30’ - <45’ (9m - <13.5m)	79’ - <118’ (24m - <36m)
IV	45’ - <60’ (13.5m - <18.5m)	118’ - <171’ (36m - <52m)
V	60’ - <66’ (18.5m - <20m)	171’ - <214’ (52m - <65m)
VI	66’ - <80’ (20m - <24.5m)	214’ - <262’ (65m - <80m)

General Aviation Airport Category

Group (Number of Airports)	Description
National (84)	**Serves national-global markets** Very high levels of activity with many jets and multiengine propeller aircraft averaging about 200 total based aircraft, including 30 jets
Regional (467)	**Serves regional-national markets** High levels of activity with some jets and multiengine propeller aircraft averaging about 90 total based aircraft, including 3 jets
Local (1,236)	**Serves local-regional markets** Moderate levels of activity with many jets and multiengine propeller aircraft averaging about 33 total based aircraft and no jets
Basic (668)	**Often serving critical aeronautical functions within local/regional markets** Moderate to low levels of activity averaging about 10 propeller-driven aircraft and no jets

Functions
(Varies among individual airports)

- Emergency Preparedness/Response
- Critical Community Access
- Other Aviation Specific Functions
- Commercial, Industrial, and Economic Activities
- Destination and Special Functions

Airport Design

Existing Runway Conditions

Runway 16-34	
Design Group:	
Aircraft Approach Category:	**Category B** Approach speed 91 knots but less than 121 knots.
Airplane Design Group:	**Group I** Tail height <20' (<6m), wingspan <49' (<15m)
Orientation	N-S
Length	2,901 feet
Width	60 feet
Surface Type	Asphalt
Weight Capacity	Small - 12,500 lbs
Lighting	Medium Intensity Runway Lighting (MIRL)
Pavement Markings	Non-Precision

B-II Design Standards

Future Design Criteria

Runway	
Length	Variable
Runway Width	75'
Crosswind Component	13
Runway center to Taxiway center	240'
Runway Safety Area (RSA)	
Length Beyond Departure End	300'
Length Prior to Threshold	300
Width	150
Runway Object Free Area (ROFA)	
Length Beyond Runway End	300
Length Prior to Threshold	300
Width	500
Primary Surface	
Width	500'
Length	RWY+400'
Approach Slope	
Widths	1,000' to 4,000'
Length	Appx. 10,000'
Slope	>34:1
Runway Protection Zone	
Length	1,000
Inner Width	500
Outer Width	700
Total acres	**13.77**

Instrument Approach no lower than ¾ mile visibility

Representative Design Aircraft

ORS Fleet Mix

Sample Aircraft Influencing Design Standards at ORS

- Cessna 207 Stationaire
- Cessna 208 Caravan
- Cessna Citation
- Beechcraft King Air

Expected Critical Aircraft Design Standards – B-II Small

- Approach Speeds of less than 121 knots
- Wingspans of less than 79 feet
- Maximum weights less than 12,500 lbs

Typical ORS aircraft fleet mix includes:

- Cessna, Beech, Mooney, Piper and other light prop aircraft
- Cessna 208, Pilatus PC-12, Beech King Air and similar prop jets
- Cessna Citation and similar light turbofan jets
- De Havilland Beaver, Otter and similar
- Assorted helicopters

Schedule

JAN 2018 *

JUN 2018 *

SEPT 2018 *

SEPT 2017 — **MAY 2018**

INVESTIGATION

- Issues
- Airport Inventory
- Aviation Forecasts
- Airport Facility Requirements

APR 2018

SOLUTIONS

- Draft Alternatives
- Alternatives Evaluation
- Environmental Review
- Recommended Alternative

IMPLEMENTATION

MAR 2019

- Capital Improvement Program
- Funding
- Airport Layout Plan
- Draft / Final Report

* **Public Open House & Master Plan Advisory Committee Meeting**

Some Critical Factors Affecting ORS Forecast

National / Regional / Local Forecast Trends

US National FAA Growth Estimates

(over next 30 year period)

- Regional Carrier Ops 2.2%
- Local Ops 0.4%
- General Aviation Ops 0.3%

Northwestern US FAA Growth Estimates

(over next 30 year period)

- Commercial Aircraft Ops 1.63%
- Passenger Enplanements 2.27%
- Itinerant Ops 1.22%
- Total Aircraft Ops 1.06%
- Based Aircraft 0.93%

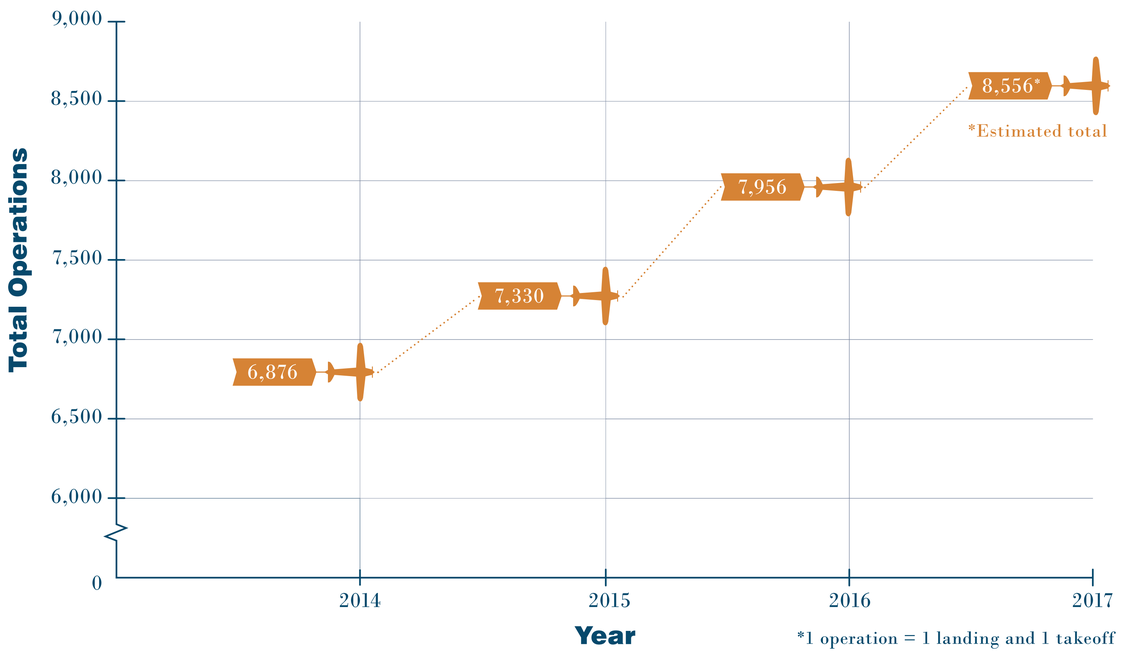
20 Year Orcas Island Population Forecasts

- Population forecast models for Orcas Island reflect growth rates ranging from approximately +0.28% to +2.00%. Relative percentage population model predicts 0.88% growth

Some Critical Data Affecting ORS Forecast

ORS Historical Trends and FAA Forecast Data

*1 enplanement = 1 passenger leaving ORS



*1 operation = 1 landing and 1 takeoff

Historical Trends at ORS (over 20 year period, when data is available)	
FAA 20 year enplanements estimates	**-1.47%**
FAA 20 years commercial operations estimates	**-0.24%**
FAA 20 year total operations estimates	**-0.18%**
FAA based aircraft estimates	**+0.86%**
FAA IFR operations activity	**+11.18%**
Recent ORS enplanement data	**+1.99%** (2014-2017)
Recent ORS total ops data	**+4.48%** (2014-2017)
US Census established 10 year growth rate	**+1.88%**
Orcas Island established 20 year growth rate	**+2.48**

Current FAA 20 Year Forecast Estimates for ORS	
Enplanements	**+3.1%**
Total Operations	**+1.27%**
Commercial Ops	**+0.87%**
Based Aircraft	**+3.32%**

Aerial of Orcas Island Airport

How can you participate?

We would love to have your comments!

Please write your comments on the provided post-it notes and stick it to this display board. It's as simple as that! Your comments will be reviewed, discussed and included as part of the master planning process. *(Comment cards are also available below)*