

Orcas Island Airport – Introduction to Development Alternatives

An airport Master Plan typically has a 20-year planning horizon. It provides the framework needed to guide future airport development that will cost-effectively satisfy aviation demand, while considering potential environmental and socioeconomic impacts. This Master Plan for Orcas Island Airport is being prepared because the airport does not meet current design standards. Every attempt must be made to meet all applicable standards.

Improvement projects at Orcas Island Airport are initiated by the Port of Orcas, as owner, but 90 percent of eligible costs can be paid with federal funds. The FAA, acting as a responsible steward for federal tax dollars and in conformance with federal legislation, requires that airports receiving federal funds comply with environmental regulations, purchasing rules, and other laws. These obligations take the form of grant assurances to which an airport sponsor agrees. Included with the grant assurances is a requirement that airport property be used for aeronautical purposes unless non-aeronautical uses are approved by the FAA.

Runway/Taxiway Alternatives 1 – 4 were developed to show a range in the level of effort and cost of development for modifications to the runway, parallel taxiway, and connector taxiways. Alternative 1 has the least development and cost, and Alternative 4 has the most. The alternatives are described below with corresponding figures for each.

The Preferred Alternative is not simply a matter of selecting one of these alternatives to the exclusion of all others. Rather, it emerges from desirable elements of the others and from additional suggestions and input that is important to the community. Implementation of the Preferred Alternative is expected to take years or decades. It is anticipated that any land acquisition needed for development of Preferred Alternative projects will be purchased over the years as property comes up for sale on the market.

Each development project being undertaken will require environmental analysis and review before design work is started. The environmental process often results in alterations to the design that are incorporated into the construction work.

- **Alternative 1: No-Build** – Minor maintenance and management of the existing runway and taxiways with minor use of capital projects.
 - **Pro**
 - No further property acquisition required.
 - Expenditures at a maintenance-only level.
 - No effects on roads or structures adjacent to the airfield.
 - **Con**
 - Does not meet FAA standard for runway width.
 - Does not meet FAA standard for runway-parallel taxiway separation.

- Mt. Baker Road conflicts with existing Runway 34 RPZ.
 - Probable loss of FAA funding for future maintenance and capital projects. Possible requirement to repay FAA grant funds previously expended. Potential repercussions if current grant obligations are not met.
- **Alternative 2: Runway Widening and 156-foot Runway/Taxiway Separation** – Widen the runway from 60 feet to 75 feet, relocate the parallel taxiway to increase separation from the runway to 156 feet.
 - **Pro**
 - Least amount of property acquisition required to meet an acceptable safety standard. Small parcels are needed on both sides of the north end for Runway and Taxiway Object Free Areas.
 - Widens runway to 75 feet to meet FAA standard.
 - **Con**
 - Requires a Modification of Standard (MoS), which will be reviewed at least every five years, and is not guaranteed to be approved in the future.
 - Does not meet FAA standard for runway-parallel taxiway separation.
 - Mt. Baker Road conflicts with Runway 34 RPZ.
 - Moderate impact to the marina, but modifications could result in enhancing the marina during the project.
- **Alternative 3: Runway Widening, Displaced Thresholds, and 240-foot Runway/Taxiway Separation** – Widen the runway from 60 feet to 75 feet, mark existing runway pavement to include displaced thresholds (total runway length after pavement is redesignated is 3,400 feet), and relocate the parallel taxiway to increase separation from the runway to 240 feet.
 - **Pro**
 - Meets current runway-parallel taxiway separation requirement.
 - Widens runway to 75 feet.
 - Runway length will serve 100 percent of existing fleet mix.
 - **Con**
 - Adds displaced thresholds to each runway end.
 - Mt. Baker Road conflicts with Runway 34 RPZ.
 - Significant impact to the marina, but modifications could result in enhancing the marina during the project.
- **Alternative 4: Runway Realignment, Displaced Thresholds, and 240-foot Runway/Taxiway Separation** – Widen and rotate the runway slightly, mark existing runway pavement to include displaced thresholds (total runway length after pavement is re-marked is 3,400 feet. This is just a marking change and does not lengthen the pavement), and relocate the parallel taxiway to increase separation from the runway to 240 feet.
 - **Pro**
 - Meets current runway-parallel taxiway separation requirement.
 - Widens runway to 75 feet.

- Runway length will serve 100 percent of existing fleet mix and will be marked to correspond with how it is already being operationally used.
- **Con**
 - Adds displaced thresholds to each runway end.
 - Mt. Baker Road conflicts with Runway 34 RPZ.
 - Requires improvements to the marina to maintain marina access and maintain/increase marina capacity. These modifications could result in enhancing the marina during the project.

Alternatives were also developed for the southeast area of the airfield. Southeast Development Alternatives 1 and 2 show different configurations for the terminal building, cargo hangar, based-aircraft hangars, parking areas, etc. These layouts are shown in Figures 5 and 6.

The Airport owns a considerable amount of property on the west side of the runway which is currently not in use. A potential layout for the construction of new hangars in this area is shown in Figure 7.

At the north end of the runway Brandts Landing Lane encroaches into the Runway Protection Zone (RPZ) for Runway 16. Roads are considered an incompatible land use for the property below an RPZ, and Figure 8 shows the dimensions and location of the Runway 16 RPZ if the road were removed from the RPZ. It also shows a possible aircraft holding area at Taxiway A4 near the north end of the runway. Any project to modify Brandts Landing Lane to eliminate the conflict with the RPZ would include improvements for marina access. These modifications could be planned to enhance the marina during the project.

Just off the south end of the runway, Mt. Baker Road encroaches into the RPZ for Runway 34. This encroachment is an existing condition. It is not a result of any of the development alternatives discussed, nor does it have anything to do with standards for runway or taxiway dimensional criteria. The RPZ has been in place for many years, and Mt. Baker Road presents a serious safety issue within it due to the potential that an obstacle, such as a tall semi-trailer or a school bus, could be on the road just as an airplane full of people is on low approach to the runway. Figure 9 shows options for relocating Mt. Baker Road outside of the RPZ. Actual design of the roadway and any necessary traffic control or flow control would be determined during the design process of the roadway. Other options to resolve the conflict include moving the runway and its RPZ to the north, which would require property acquisition, or implementing measures to stop traffic while aircraft are on approach. Such measures could include signals and crossing guards, similar to those found at railroad crossings, which would be activated when an aircraft is on approach to the runway. Such measures have been successfully installed at other airports.