

6. Environmental Consequences and Mitigation

This Chapter provides a summary of the impacts of the four alternatives under analysis, No Action, Alternatives 5 and 6, and the Sponsor's Preferred Alternative, for each of the environmental elements described in the previous chapter. In some cases, the impacts may be short-term, generally associated with construction activity, or they may be long-term, associated with the new facilities or the operation of the improved airport. In some cases, there may be no impact. Where applicable, the reader may be referred to an appendix containing a topic-specific report that provides greater detail. Because the on-airport actions are identical in the build alternatives, many of the long-term impacts are identical between the alternatives. The differences in the road relocation alternatives may result in differences or nearly identical impacts, depending on the resource.

6.1 Air Quality

6.1.1 Significance Criteria

The U.S. Environmental Protection Agency (USEPA) has adopted air quality standards that specify the maximum permissible short-term and long-term concentrations of air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of a primary and secondary standard for each pollutant. Air quality standards are the levels established to protect the public health and welfare from harm within a margin of safety. All areas of the country are required to demonstrate attainment with the NAAQS.

The Washington State Department of Ecology (Ecology) has established State ambient air quality standards that are at least as stringent as the national standards. The Southwest Clean Air Agency (SWCAA) administers these standards.

The air quality standards focus on limiting the quantity of six criteria pollutants:

- Ozone (O₃)
- Carbon Monoxide (CO)
- Nitrogen Dioxides (NO₂)
- Particulate Matter (PM₁₀ and PM_{2.5})
- Sulfur Dioxide (SO₂)
- Lead (Pb)

Volatile Organic Compounds (VOCs) are not a criterion pollutant and therefore no ambient air standards have been established for this pollutant. Since VOCs, however, react with nitrogen oxides (NO_x) in sunlight to form ozone, VOCs, and NO_x emissions are included in this analysis.

FAA Order 1050.1E (change 1) *Environmental Impacts: Policies and Procedures* identifies the analysis requirements for air quality. That approach relies on the FAA's *Air Quality Procedures for Civilian Airports and Air Force* to provide guidance concerning the breadth of air quality review required under NEPA. That document indicates:

... not all of the steps are required for every action. Many projects at airports and air bases are too small to require detailed air quality analysis and only a few projects are both broad enough in scope and located in nonattainment or maintenance areas such that the full complement of analyses described in this handbook would be required. Screening techniques that streamline the process for many air quality assessment actions are available... (Page 7)

Actions that would not increase airport capacity, lead to increased congestion of roadways or airfields, or relocate aircraft or vehicular activity closer to sensitive receptors are not likely to exceed the NAAQS for CO. For deciding whether a NAAQS assessment should be considered, the total number of airport passengers and general aviation/air taxi operations should be evaluated. If the level of annual enplanements exceeds 1,300,000 (or 2.6 MAP), the level of general aviation and air taxi activity exceeds 180,000 operations per year or a combination thereof, a NAAQS assessment should be considered. Forecasts prepared for the Airport show 7,500 operations in 2004 (the base year) and 10,742 forecasted operations in 2020, which is far below the NAAQS threshold.

6.1.2 Analysis

An Air Quality Analysis (see **Appendix J**) was prepared for this project. Construction activity would be necessary to complete the runway extension, which will produce construction vehicle exhaust emission, as well as construction employee commute-related emissions. As noted in the Purpose and Need Chapter and Alternatives Chapter of this EA, the proposed actions would not alter the number of aircraft operations serving Grove Field, as the airfield revision will enable the Airport to meet current runway safety area standards. As a result, aircraft taxi patterns would be altered with the proposed project. The airfield change will also require tunneling of Delp Road in its current configuration.

The air quality analysis focused on quantifying the emissions associated with these activities. The emissions inventory was prepared, as applicable to each source, for existing conditions (the base year from the ALP narrative – 2004 – was used), and future conditions (2012, 2016, and 2020) for the No Action and With Project alternatives.

The aircraft, ground support equipment (GSE) and surface travel emissions inventory was performed using the FAA's Emissions and Dispersion Modeling System (EDMS) Version 5.1. FAA requires the use of this model in airport environmental studies, and EDMS is approved by the USEPA. Default aircraft time-in-mode from EDMS was used for all scenarios and all aircraft based on the anticipated levels of activity. Similarly, default GSE equipment and their use were assumed, as the proposed project would not alter GSE use.

Included in the evaluation was a review of air emissions associated with ground vehicle use. The air quality evaluation identifies the changes in emissions associated with the vehicle miles traveled (VMT), based on the emissions factors noted in EDMS (which reflects EPA's MOBILE6 factors). VMT was determined based on the length of Delp Road, and the number of vehicles traversing that roadway based on actual vehicle counts during 2009 (see traffic counts in **Appendix K**). Activity levels of vehicles using the

roadway were increased one percent per year to represent regional background growth in the area over the planning years noted above.

The evaluation of construction emissions was conducted using the EPA's NONROAD2008 model using construction equipment emission factors specific to Clark County. Construction equipment mix and use was estimated based on the cost estimates prepared for the proposed project, translated into estimates of construction vehicle use. These estimates included material delivery, construction employee work commute and site preparation/pavement. Mitigation for air quality is required if the project exceeds 100 tons of project-related emissions.

6.1.2.1 No Action Alternative

With the No Action, the proposed project would not be undertaken. Therefore, no project-related construction would occur and there would be no construction emissions. Surface transportation emissions would continue to increase as background traffic increases.

6.1.2.2 Sponsor's Preferred Alternative

A comparison of the Sponsor's Preferred Alternative emissions to those of the No Action shows that less than 1 ton of emissions from any individual pollutant would occur due to the proposed projects in any single year. With the Sponsor's Preferred Alternative, CO emissions would be expected to increase over the No Action by 0.89 tons in 2012; 57.3% of the project-related increase would be due to changes in aircraft movement. In 2016, the project-related difference in CO emissions would be 0.92 tons; the majority of the project-related increase in 2016 (63% of this increase) would be due to the changes in aircraft taxi distance. This similar relationship would occur for all other pollutants and for year 2020 project-related changes.

Surface transportation emissions would remain the same as in the No Action Alternative, as the length of Delp Road would not be altered.

6.1.2.3 Alternative 5

A comparison of the Alternative 5 emissions to those of the No Action shows that less than 1 ton of emissions from any individual pollutant would occur due to the proposed projects in any single year. With the proposed projects, CO emissions would be expected to increase over the No Action by 0.89 tons in 2012; 57.3% of the project-related increase would be due to changes in aircraft movement, while and 42.7% would be due to the rerouting of Delp Road and the associated increase in distance that vehicles would travel. In 2016, the project-related difference in CO emissions would be 0.92 tons; the majority of the project-related increase in 2016 (63% of this increase) would be due to the changes in aircraft taxi distance while 37% would be due to auto movement on the relocated Delp Road. This similar relationship would occur for all other pollutants and for year 2020 project-related changes.

6.1.2.4 Alternative 6

The impacts to air quality under the Alternative 6 would be similar to those from Alternative 5.

6.1.3 Mitigation

No mitigation is required, as the proposed projects would not result in an exceedance of the general conformity de minimis threshold (100 tons of project-related emissions); thus, no significant adverse impact is expected to occur with the proposed project.

6.2 Biotic Resources

6.2.1 Significance Criteria

According to Federal Aviation Administration (FAA) Order 1050.1E Chg 1, *Environmental Impacts: Policies and Procedures*, a project would have significant impacts on biotic communities when analysis or consultation with agencies having jurisdiction over or special expertise with regard to a non-listed species indicates that a project would have a substantial adverse effect on such species. This could include substantial effects on reproductive success rates, natural or non-natural mortality rates, and the ability of a species to maintain adequate population levels. According to FAA Order 1050.1E, a project would have significant impacts on biotic communities when:

- input from the U.S. Fish and Wildlife Service indicates that substantial, project-induced damage to wildlife cannot be mitigated to minimal levels; or,
- analysis indicates that project implementation would result in the loss of a substantial amount of habitat, of habitat that supports rare species, or of small amounts of sensitive habitat with a significant accompanying loss of plant communities and displacement of wildlife when these adverse impacts to wildlife or wildlife habitat cannot be mitigated to the satisfaction of the resource agencies.

According to FAA Order 1050.1E Chg 1, a project would have significant impacts on special status species when the USFWS determines that the proposed action would be likely to jeopardize the continued existence of Federally listed endangered or threatened species, potentially resulting in extinction or extirpation, or would result in the destruction or adverse modification of Federally-designated critical habitat in the affected area.

According to FAA Order 1050.1E Chg1, a project would have significant impacts on special status species when:

- input from the USFWS or National Marine Fisheries Service (NMFS) indicates that listed or proposed to be listed species are present within the area affected by the proposed action, and the biological assessment for the proposed action

indicates an adverse effect on endangered or threatened species or on critical habitat;

- input from the USFWS indicates that substantial, project-induced damage to wildlife cannot be mitigated to minimal levels; or,
- analysis indicates that project implementation would result in the loss of a substantial amount of habitat, of habitat that supports rare species, or of small amounts of sensitive habitat with a significant accompanying loss of plant communities and displacement of wildlife when these adverse impacts to wildlife or wildlife habitat cannot be mitigated to the satisfaction of the resource agencies.

6.2.2 Analysis

Information in the *Biological Resources Technical Report* (see Appendix E) describes four vegetation communities on the airport and within the project vicinity. The report confirms that there are no listed terrestrial plant or animal species present, nor are there listed fish species in the project area. The habitat types are not unique within the eastern region of Clark County.

6.2.2.1 No Action Alternative

There would be no change to the habitat types found on and around the airport, other than continued maintenance of Upland Grassland (mowed) area, the habitat found within the maintained airport area.

6.2.2.2 Sponsor's Preferred Alternative

Trees penetrating the Airport's approach and transitional surface will be topped or removed, in cooperation with private property owners.

The Sponsor's Preferred Alternative would add 0.3 acres of new pavement for the roadway along the existing Delp Road alignment. Minimal habitat of upland grassland and upland grassland (mowed) would be altered for construction of the tunnel.

The Sponsor's Preferred Alternative would also add 6.2 acres of new pavement for the runway and southern taxiway extensions. Approximately 3.1 acres of pavement would be removed (net increase of 3.1 acres) and planted to match existing airport vegetation when the existing runway is removed.

6.2.2.3 Alternative 5

Trees penetrating the Airport's approach and transitional surface will be topped or removed, in cooperation with private property owners.

Alternative 5 would add 0.8 acres of new pavement for the roadway realignment. Minimal habitat of upland grassland and upland grassland (mowed) would be altered for construction of the new road segment.

Alternative 5 would also add 6.2 acres of new pavement for the runway and southern taxiway extensions. Approximately 3.1 acres of pavement would be removed (net increase of 3.1 acres) and planted to match existing airport vegetation when the existing runway is removed.

6.2.2.4 Alternative 6

Trees penetrating the Airport's approach and transitional surface will be topped or removed, in cooperation with private property owners.

Alternative 6 would add 0.5 acres of new pavement for the roadway along the realigned Delp Road. Minimal habitat of upland grassland and upland grassland (mowed) and riparian forest would be altered for construction of the new road segment.

Alternative 6 would also add 6.2 acres of new pavement for the runway and southern taxiway extensions. Approximately 3.1 acres of pavement would be removed (net increase of 3.1 acres) and planted to match existing airport vegetation when the existing runway is removed.

6.2.3 Mitigation

In order to minimize the effects of the tree removal project on private properties, site-specific re-planting plans will be developed. These plans will include use of low-growing, dwarf varieties so that plantings do not grow to penetrate the airspace. Additionally, the plants will be non-fruit bearing as to reduce wildlife hazards.

Since the habitat types found on and near the project area are not unique, no mitigation is proposed for habitat removed on the airport, other than removal of existing pavement and revegetation in plant materials similar to what is in place. No mitigation is proposed for vegetation lost for the tunnel other than removal of existing pavement, where appropriate.

6.3 **Compatible Land Use**

6.3.1 Significance Criteria

Order 1050.1E Chg 1 states, "the compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport's noise impacts." In addition, if a project would result in other significant impacts having land use implications, the effects on land use may be described under the appropriate impact sections, with cross-referencing as necessary to avoid duplication.

6.3.2 Analysis

Noise impacts for the project fall into two general areas: aircraft noise and traffic noise.

Airport noise level projections were performed using the FAA Integrated Noise Model Version 7.0 (see Appendix F). All airport noise levels were assessed in terms of the yearly day-night average sound level (YDNL) contours. The FAA's INM is widely used by the civilian aviation community for evaluating aircraft noise impacts near airports. INM is an average-value model and is designed to estimate long-term effects using average annual input conditions.

The noise report concluded there are two residences that are within the 65 dBA DNL. By the year 2015, that number will increase to three due to the relocation of the runway approximately 400 feet west of its current position.

The tunneling of Delp Road should not alter the perception of noise events. Alternatives 5 and 6 would shift the road closer to a few residences; however, the area would still be compatible even though residents would clearly hear differences in individual events.

Clark County has an Airport Environs Overlay District that is intended to identify and protect the Airport by providing protective surfaces standards that are combined with the underlying zoning district to minimize the conflicts between airports and proposed future development. These protective surfaces prevent future incompatible uses and the establishment of airspace obstructions in airport clear zones, approaches and surrounding areas through height restrictions, and restrict noise-sensitive uses and regulate further establishment of uses sensitive to airport operations by precluding some uses and notification of airport impacts of other uses.

The airport is located on a plateau. Approximately 600 feet west of the future runway end, there is a significant drop of about 100 feet to the land below. The property is a portion of about 500 acres, known as Lacamas Northshore, which was annexed into the City of Camas in April 2008. At the time of annexation, it was rezoned from agricultural to several zones. The Employment Center Zone is located closest to the Airport and is intended for job creation. Approximately 5 acres of the property is within the Airport's runway protection zone.

6.3.2.1 No Action Alternative

The no action alternative would maintain noise at its current level. Vehicle noise would increase over time, as traffic volumes increase in the project vicinity due to new residential and commercial development. Aircraft noise may increase slightly over time, as operations are forecasted to increase modestly in the next 20 years.

6.3.2.2 Sponsor's Preferred Alternative

The extended Runway 7 would elongate the noise profile to the west for aircraft taking off and landing. Since the Runway 25 threshold would be located further to the west, it would decrease noise impacts to residents east of the Airport. There would be minimal impact to properties on the north and south sides.

Delp Road will not be realigned; rather, it would be tunneled in its existing location. No noise impacts are expected from the tunnel.

The area immediately to the west of the new runway end is currently farmland, but is in the process of being master planned for development. Acquisition of about 5 acres of this land is recommended to protect the runway protection zone (RPZ) from penetration by buildings or other incompatible uses.

6.3.2.3 Alternative 5

The extended Runway 7 would elongate the noise profile to the west for aircraft taking off and landing. Since the Runway 25 threshold would be located further to the west, it would decrease noise impacts to residents east of the Airport. There would be minimal impact to properties on the north and south sides.

Delp Road will be realigned. Using the Federal Highway Administration Traffic Noise Model (TNM version 2.5) it was determined the overall increase in traffic noise levels is predicted to be 1 dBA or less (see Appendix F). As such, no noise impacts are predicted and no traffic noise mitigation is recommended.

The area immediately to the west of the new runway end is currently farmland, but is in the process of being master planned for development. Acquisition of about 5 acres of this land is recommended to protect the runway protection zone (RPZ) from penetration by buildings or other incompatible uses.

6.3.2.4 Alternative 6

The extended Runway 7 would elongate the noise profile to the west for aircraft taking off and landing. Since the Runway 25 threshold would be located further to the west, it would decrease noise impacts to residents east of the Airport. There would be minimal impact to properties on the north and south sides.

Delp Road will be realigned. Using the Federal Highway Administration Traffic Noise Model (TNM version 2.5) it was determined the overall increase in traffic noise levels is predicted to be 1 dBA or less. As such, no noise impacts are predicted and no traffic noise mitigation is recommended.

The area immediately to the west of the new runway end is currently farmland, but is in the process of being master planned for development. Acquisition of about 5 acres

of this land is recommended to protect the runway protection zone (RPZ) from penetration by buildings or other incompatible uses.

6.3.3 Mitigation

No mitigation measures are proposed, as the vehicular noise increases are not significant according to Title 23 CFR Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, which cites significance when noise sensitive areas to experience an increase in noise of 10 dBA or approaches 67 dBA. Additionally, the change in aircraft noise is not significant according to FAA criteria (an increase of 1.5 dBA or more above the 65 dBA noise exposure line).

6.4 Construction

6.4.1 Significance Criteria

All construction would be conducted in accordance with FAA Advisory Circular 150/5370-10A, *Standards for Specifying Construction of Airports*, Item P156, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control (FAA, 1991). Additionally, the Port of Camas-Washougal would obtain authorization under the Washington Department of Ecology for a Pollutant Discharge Elimination System (NPDES) Construction General Permit and prepare a Stormwater Pollution Prevention Plan (SWPPP) to control stormwater runoff and obtain an air quality permit for land clearing/earthmoving activities.

6.4.2 Analysis

The No Action Alternative includes minimal construction and minor maintenance activities over a 20-year timeframe. Alternatives 5, 6, and the Sponsor's Preferred Alternative would be built over two to four construction seasons in accordance with funding availability. Once funding is secured, Delp Road will be relocated first, with the runway and taxiway improvements in the following construction season(s).

The tree removal would occur in 2011. This component is anticipated to be completed in two months, and impacts would be distributed over the properties where removal is targeted.

The construction impacts of the project will predominantly be temporary, resulting from activities that are necessary to meet the project's purpose and need.

6.4.2.1 No Action Alternative

The No Action Alternative would have minimal construction impacts, as no construction would take place. Over a 20-year timeframe, minor maintenance activities, such as re-paving the runway and taxiway surfaces may occur. These actions would be contained on the existing airport footprint.

6.4.2.2 Sponsor's Preferred Alternative

It is anticipated that material delivery would involve heavy-duty diesel vehicles traveling an average of 30 miles round trip in the Portland-Vancouver Carbon Monoxide (CO) maintenance area. Construction employee travel, in light duty trucks, would be expected to travel an average of 40 miles round trip.

No construction related impacts are anticipated for Biotic Resources, Land Use, Section 4(f) Resources, Endangered and Threatened Species, Environmental Justice, Farmlands, and Wetlands.

6.4.2.2.1 Air Quality Impacts

Construction-related air quality impacts would be slightly less than Alternatives 5 or 6, due to the reduced need for imported fill. Other construction-related impacts, including dust and equipment emissions would be equivalent to those described above and in Appendix J.

6.4.2.2.2 Energy Supplies, Natural Resources, and Sustainable Design

Construction impacts on energy supplies, natural resources and sustainable design would be slightly less sand gravel and asphalt will be used, as the Sponsor's Preferred Alternative has a shorter roadway than Alternatives 5 and 6.

6.4.2.2.3 Hazardous Materials

Any time construction occurs; there is a risk that fuel, lubricants or other potentially hazardous materials may be accidentally spilled. The contractor will be required to have a spill prevention and pollution control (SPPC) plan in place, as well as maintain a supply of absorbent materials on-site in the event a spill occurs.

6.4.2.2.4 Historical, Architectural, and Cultural Resources, including Native American and Tribal Resources

Construction will occur in ground that has not been disturbed. The Cultural Resources Report (Appendix G), and subsequent consultation with the potentially affected tribes, suggest that resources are not likely to be present in the project work area. There is a remote possibility that during the earthwork phases, resources may be uncovered.

If any archaeological or historic materials are encountered during construction, work will stop and the State and Tribal historic offices will be

contacted. If materials that are considered sensitive materials are found the Port and the contractor, will:

- Implement reasonable measures to protect the discovery site, including any appropriate stabilization or covering;
- Take reasonable steps to ensure the confidentiality of the discovery site; and,
- Take reasonable steps to restrict access to the site of discovery.

6.4.2.2.5 Induced / Secondary Socioeconomic Effects

The construction of the tunnel would require vehicular traffic to follow a detour using existing roads. Residents and travelers who use Delp Road would incur an increase in vehicle miles of travel, and a proportionate increase in fuel costs. The increased travel distance would also increase air emissions at a minor level and temporarily relocate road noise, primarily to the SR 500 corridor.

6.4.2.2.6 Light Emissions and Visual Effects

During the construction process, the view of the area will change temporarily. In the first year of construction, Delp Road will be closed in the construction zone. Construction equipment and material stockpiles will be visible. In the second year, additional construction equipment will be on-site. Material stockpiles will also be visible. These may include earth (fill), sand, gravel and recycled pavement from the existing runway.

6.4.2.2.7 Noise

Construction will add to the background noise in the project area. In the first year, noise will be limited to the Delp Road vicinity. In the second year, construction noise will vary along the runway, depending on where the construction activity is occurring. Limiting construction to daylight hours, and noise suppression equipment on construction machinery will be required to minimize noise impacts.

Vegetation removal would likely include the use of chainsaws. The vegetation removal component affects 14 private properties with residences. Residents would likely incur temporary noise impacts during the tree removal process. Affected residents would be notified in advance of work beginning on their properties.

6.4.2.2.8 Social Impacts

Construction of the proposed action will require closure and/or detour of Delp Road in the vicinity of the work area. This will result in out of direction travel

for residents, primarily those north of the relocation area, and minor traffic increases in traffic on other local roads, including SR 500. Delp Road currently has about 300 vehicles per day; relocation of these trips to SR 500 will not adversely affect the level of service on SR 500, as the volumes on SR 500 in the airport vicinity are well under capacity. This impact will occur primarily in the first year of construction, with the potential for some short-term closures during the second year.

Recreational uses of the road, including bicycle use and horseback riders, will also need to find alternate routes, primarily during the first year of construction.

Delp Road will be posted at least one month in advance of construction, warning users of the closure. Neighbors will be notified of long-term (first year) and short-term (second year) closures.

6.4.2.2.9 Solid Waste

Removal of the existing Delp Road pavement and the existing runway will generate solid waste. Pavement material may be recycled into the new runway and road surfaces. Other construction-related waste material may include concrete forms and other temporary structures; food and packaging waste from construction workers; and containers from oil, lubricants and other materials used in construction. Some of these materials may be recycled by the contractor on future projects. The contractor will be required to provide a collection area for non-recyclable waste and arrange for its removal as appropriate.

6.4.2.2.10 Water Quality

The Sponsor's Preferred Alternative will expose large areas of bare ground. This has the potential to create erosion. The project will require a National Pollution Discharge Elimination System (NPDES) 1200C Construction Stormwater Permit and be required to implement erosion control methods per the permit conditions. The NPDES 1200C Permit focuses on preventing pollution from erosion and runoff. In addition, the permit requires permittees to inspect and maintain their controls to ensure they are working properly to prevent erosion and sediment runoff from leaving the site. Other Best Management Practices (BMPs) will also be required, per FAA Order 1050.1E.

Additional construction-related water quality impacts may occur from spills, as discussed above in Hazardous Materials.

6.4.2.3 Alternative 5

It is anticipated that material delivery would involve heavy-duty diesel vehicles traveling an average of 30 miles round trip in the Portland-Vancouver Carbon Monoxide (CO) maintenance area. Construction employee travel, in light duty trucks, would be expected to travel an average of 40 miles round trip.

Construction of the runway extension would require fill material from an off-site source for alternatives 5 and 6, while material excavated for tunnel would be moved on-site and used as runway fill.

No construction related impacts are anticipated for Biotic Resources, Land Use, Section 4(f) Resources, Endangered and Threatened Species, Environmental Justice, Farmlands, and Wetlands.

6.4.2.3.1 Air Quality Impacts

Construction-related air quality impacts are described in detail in Appendix J. Impacts are related to motor vehicle emissions associated with materials delivery and construction worker trips to the site, and from construction equipment used on-site. Emissions from these sources are considered minor in the context of regional air quality.

Earthwork has the potential to generate airborne dust. The contractor will be required to use water or other dust suppression methods to reduce off-site impacts. Construction vehicles and equipment will be required to be washed before leaving the site if they have the potential to track dirt, dust or mud onto local roads.

Vegetation removal may also create dust impacts associated with root removal on larger trees.

6.4.2.3.2 Energy Supplies, Natural Resources, and Sustainable Design

Petroleum and electrical energy resources will be used for construction of the road relocation and airport improvements. These resources are not considered in short supply in the project vicinity. Sand, gravel and asphalt will be used to build the road, runway and on-airport improvements. These resources are readily available in the project vicinity.

6.4.2.3.3 Hazardous Materials

Construction-related hazardous materials impacts would be equivalent to the Sponsor's Preferred Alternative.

6.4.2.3.4 Historical, Architectural, and Cultural Resources, including Native American and Tribal Resources

The risk of uncovering resources is equivalent to the Sponsor's Preferred Alternative. The same requirements described above would be in place, should cultural resources be uncovered during construction.

6.4.2.3.5 Induced / Secondary Socioeconomic Effects

Construction-related induced socioeconomic effects would be equivalent to those for the Sponsor's Preferred Alternative.

6.4.2.3.6 Light Emissions and Visual Effects

Construction-related light emissions and visual effects would be equivalent to those for the Sponsor's Preferred Alternative.

6.4.2.3.7 Noise

Construction-related noise impacts would be equivalent to those for the Sponsor's Preferred Alternative.

6.4.2.3.8 Social Impacts

Construction of the Alternative 5 would not require closure and/or detour of Delp Road in the vicinity of the work area, except during construction of the transition between the old and new road alignments. The temporary detours will result in out of direction travel for residents, primarily those north of the relocation area, and minor traffic increases in traffic on other local roads, including SR 500. Delp Road currently has about 300 vehicles per day; relocation of these trips to SR 500 will not adversely affect the level of service on SR 500, as the volumes on SR 500 in the airport vicinity are well under capacity. This impact will occur primarily in the first year of construction, with the potential for some short-term closures during the second year.

Recreational uses of the road, including bicycle use and horseback riders, will also need to find alternate routes, primarily during the first year of construction.

Delp Road will be posted at least one month in advance of construction, warning users of the construction. Neighbors will be notified of long-term (first year) and short-term (second year) impacts.

6.4.2.3.9 Solid Waste

Construction-related solid waste impacts would be equivalent to those for the Sponsor's Preferred Alternative.

6.4.2.3.10 Water Quality

Construction-related water quality impacts would be equivalent to those for the Sponsor's Preferred Alternative. The same permitting requirements and BMPs would be in place.

6.4.2.4 Alternative 6

Construction impacts for Alternative 6 would be nearly identical to the Sponsor's Preferred Alternative and Alternative 5 described above.

No construction related impacts are anticipated for Biotic Resources, Land Use, Section 4(f) Resources, Endangered and Threatened Species, Environmental Justice, Farmlands, and Wetlands.

6.4.2.4.1 Air Quality Impacts

Construction-related air quality impacts are described in detail in Appendix J and would be equivalent to the impacts for Alternative 5.

6.4.2.4.2 Energy Supplies, Natural Resources, and Sustainable Design

Construction impacts on energy supplies, natural resources and sustainable design would be equivalent to the impacts of Alternative 5. Slightly less sand gravel and asphalt will be used, as the roadway in Alternative 6 is shorter than in Alternative 5.

6.4.2.4.3 Hazardous Materials

Construction-related hazardous materials impacts would be equivalent to the Sponsor's Preferred Alternative.

6.4.2.4.4 Historical, Architectural, and Cultural Resources, including Native American and Tribal Resources

The risk of uncovering resources is equivalent to the Sponsor's Preferred Alternative. The same requirements described above would be in place, should cultural resources be uncovered during construction.

6.4.2.4.5 Induced / Secondary Socioeconomic Effects

Construction-related induced socioeconomic effects would be equivalent to those for the Sponsor's Preferred Alternative.

6.4.2.4.6 Light Emissions and Visual Effects

Construction-related light emissions and visual effects would be equivalent to those for the Sponsor's Preferred Alternative.

6.4.2.4.7 Noise

Construction-related noise impacts would be equivalent to those described for the Sponsor's Preferred Alternative.

6.4.2.4.8 Social Impacts

Construction of the Alternative 5 would not require closure and/or detour of Delp Road near the work area, except during construction of the transition between the old and new road alignments. The temporary detours will result in out of direction travel for residents, primarily on other local roads, including SR 500. Delp Road currently has about 300 vehicles per day; relocation of these trips to SR 500 will not adversely affect the level of service on SR 500, as the volumes on SR 500 in the airport vicinity are well under capacity. This impact will occur primarily in the first year of construction, with the potential for some short-term closures during the second year.

Recreational uses of the road, including bicycle use and horseback riders, will also need to find alternate routes, primarily during the first year of construction.

Delp Road will be posted at least one month in advance of construction, warning users of the construction. Neighbors will be notified of long-term (first year) and short-term (second year) impacts.

6.4.2.4.9 Solid Waste

Construction-related solid waste impacts would be equivalent to those described for the Sponsor's Preferred Alternative.

6.4.2.4.10 Water Quality

Construction-related water quality impacts would be equivalent to those described for the Sponsor's Preferred Alternative.

6.4.3 Mitigation

Specific effects during construction that may create adverse environmental impacts include noise of construction equipment on the site; noise and dust from delivery of materials and transport of construction equipment to the site; and water pollution from erosion and spills. No mitigation is required but minimization and avoidance techniques will be employed.

BMPs for construction impacts include a variety of measures, discussed above, to minimize impacts. In summary, these include:

- Limits on hours of construction
- Requirements for engine mufflers for construction equipment to reduce noise
- SPPC Plan and on-site materials for spill containment and clean up
- Washing earthmoving equipment washing before it leaves site
- Recycling of pavement and other waste materials where appropriate
- Neighborhood notification and road posting in advance of traffic closures/detours
- Neighborhood notification of tree removal activity, which will occur during the non-nesting period that typically begins after September 1st
- Upon completion of construction, unpaved areas will be seeded in grass or grass-type vegetation to provide soil stabilization
- Federal and State recommended BMPs for erosion control and water quality protection

6.5 Department of Transportation Act Section 4(f) Resources

6.5.1 Significance Criteria

FAA Order 1050.1E Chg 1 indicates that a significant impact would occur when the Sponsor's Preferred Alternative involves more than a minimal physical use of the 4(f) property or is deemed a "constructive use" substantially impairing the 4(f) property, and mitigation measures do not eliminate or reduce the effects of the use below the threshold of significance.

6.5.2 Analysis

A review of maps of the local area shows two potential resources, Lacamas Park and Camp Currie. Lacamas Park is a public park at the southeast end of Lacamas Lake, approximately 1.5 miles south of the existing runway. Camp Currie is a privately owned historic youth camp with a mission of providing organized youth groups an experience of natural and primitive beauty. The camp property is located approximately 1.25 miles southwest of the current west end of the runway.

The only potential "constructive use" of these properties by the airport is associated with noise.

6.5.2.1 No Action Alternative

The No Action Alternative would not alter the way airport noise is perceived at these two recreation sites.

6.5.2.2 Sponsor's Preferred Alternative

The two sites are sufficiently removed from the Airport such that the improvements will have no effect.

The shift and extension of the runway 450 feet to the west and south will alter the flight path of aircraft approaching from the west slightly by shifting traffic south by approximately 125 feet. The aircraft will also be descending slightly sooner than currently. The extension will locate take-off noise closer to the west for aircraft taking off to the east. The relocation of the Runway 25 threshold will decrease noise at residences east of the Airport.

According to the noise model prepared for the airport, noise generated from the Airport does not affect the two sites.

The relocation of Delp Road is also significantly removed from the two sites, such that noise related to traffic would also not change.

6.5.2.3 Alternative 5

The two sites are sufficiently removed from the Airport and Delp Road, such that the improvements will have no effect. Effects would be equivalent to the Sponsor's Preferred Alternative.

6.5.2.4 Alternative 6

The two sites are sufficiently removed from the Airport and Delp Road, such that the improvements will have no effect. Effects would be equivalent to the Sponsor's Preferred Alternative.

6.5.3 Mitigation

No mitigation is proposed, since no Section 4(f) properties will be affected. The Port has adopted a Fly Friendly program, which will need to be updated because of any actions at the Airport. The traffic pattern at the Airport is a standard left pattern. However, the Fly Friendly program directs pilots taking off from Runway 7 to turn 10 degrees to the right to avoid homes on the upwind leg. When turning crosswind on a Runway 7 pattern, aircraft are also directed to not turn until 1,000 feet from end of runway and at least 400 feet above ground level (AGL).

6.6 Federally Listed Endangered and Threatened Species

(See section 5.2 above)

6.7 Energy Supplies, Natural Resources, and Sustainable Design

6.7.1 Significance Criteria

FAA Order 1050.1E Chg 1 provides the NEPA requirements for the analysis of impacts and the information needed for environmental assessment when an action's construction, operation or maintenance would cause demands that would exceed available or future natural resource or energy supplies. For purposes of the EA, the proposed action will be examined to identify any proposed major changes in stationary facilities or the movement of aircraft and ground vehicles that would have a measurable effect on local supplies of energy or natural resources. If there are major changes, power companies or other suppliers of energy will be contacted to determine if projected demands can be met by existing or planned source facilities. The use of natural resources other than for fuel need be examined only if the action involves a need for unusual materials or those in short supply.

6.7.2 Analysis

The airport's electricity is provided by Clark Public Utilities. On-airport improvements will increase demand for electricity slightly, as the additional runway and taxiway length will require lighting. The roadway will require minimal lighting inside the tunnel.

The additional runway and taxiway length will increase fuel consumption slightly, due to the longer distance to the end of the runway.

Construction materials to be used for the project, including gravel, rock and asphalt paving material are not in short supply in the project area.

Where appropriate, existing pavement may be removed and recycled into base material for the new runway.

6.7.2.1 No Action Alternative

The No Action Alternative would not alter the current use of energy and natural resources at the airport.

6.7.2.2 Sponsor's Preferred Alternative

In addition to creating the new paved areas for the runway and taxiway (approximately 3.7 acres), the Sponsor's Preferred Alternative would create about 500 feet of new roadway (approximately 0.3 acres), at the same orientation of the

existing Delp Road. However, the tunnel structure would also require sand and gravel for the concrete and embankment material.

6.7.2.3 Alternative 5

In addition to creating the new paved areas for the runway and taxiway (approximately 3.7 acres), Alternative 5 would create about 0.8 acres of new roadway. On-Airport energy use would increase slightly with the longer runway and taxiway. Off-airport travel on Delp Road would be longer and require an increase in fuel use due to the 1,355-foot longer road segment.

6.7.2.4 Alternative 6

In addition to creating the new paved areas for the runway and taxiway (approximately 3.7 acres), Alternative 6 would create about 0.5 acres feet of new roadway. On-Airport energy use would increase slightly with the longer runway and taxiway. Off-airport travel on Delp Road would be longer and require an increase in fuel use due to the 600-foot longer road segment.

6.7.3 Mitigation

No mitigation measures are proposed since the proposed action does not involve a need for unusual materials or those in short supply.

6.8 Environmental Justice

6.8.1 Significance Criteria

Determining significance under NEPA is guided by FAA Order 1050.1E Chg 1. According to the Order, a major airport development proposal could potentially have induced or secondary impacts on public services in surrounding communities. Normally, induced socioeconomic impacts on public services would not be considered significant unless there were significant impacts in other categories, such as land use. For purposes of analysis, an action is considered to have a significant impact on public services if construction of major new facilities, such as a permanent new school building or a community center, is required to accommodate the projected demand from the action.

To determine whether an environmental justice population is present, Federal agencies must refer to U.S Census data to establish the demographic and socioeconomic baseline. If a Proposed Action causes disproportionately high and adverse human health or environmental effects on a minority- and low-income population, it would represent a significant impact associated with environmental justice.

Environmental health risks and safety risks include those attributable to products or substances with which a child is likely to come into contact. Disproportionate health and safety risks to children that would result from a proposed action may represent a significant impact. For the purpose of this analysis, a significant impact to air quality,

schools or public recreational facilities would be considered a significant risk to children's health and safety.

6.8.2 Analysis

A review of area land use shows there are no concentrations of children's uses (schools, daycare, etc), or specific concentrations of elderly (nursing home, retirement housing) in the airport vicinity. The mobile home park across SR-500 from the airport may include low income or elderly residents; however, the census data available for the area were not sufficiently detailed to draw any conclusions about the actual numbers. Relocation of the Runway 25 threshold will move airport noise farther away from the mobile home park.

6.8.2.1 No Action Alternative

The No Action Alternative would not alter the airport from its current configuration. There would be no change to the manner in which the airport affects the surrounding community.

6.8.2.2 Sponsor's Preferred Alternative

No residential or business relocations will occur as part of the Sponsor's Preferred Alternative. The alterations will not affect jobs or residences. As discussed in other sections of this EA, the Proposed Action creates minimal off-site impact. As there are no identified populations of ethnic minorities, children, low income or elderly persons, no disproportionate impacts would occur to one segment of the population.

6.8.2.3 Alternative 5

No residential or business relocations will occur as part of Alternative 5. The alterations will not affect jobs or residences. Effects would be equivalent to the Sponsor's Preferred Alternative.

6.8.2.4 Alternative 6

No residential or business relocations will occur as part of Alternative 6. The alterations will not affect jobs or residences. Effects would be equivalent to the Sponsor's Preferred Alternative.

6.8.3 Mitigation

No mitigation is proposed, as there would be no disproportionate impacts to one segment of the population.

6.9 Farmlands

6.9.1 Significance Criteria

Order 1050.1E Chg. 1 deems a significant impact occurs when farmland being taken for a project exceeds Natural Resource Conservation Service standards.

6.9.2 Analysis

The area of proposed acquisition is not considered prime or unique farmland. Natural Resources Conservation Service soil maps indicate the predominant soil type is Hesson clay loam, 0 to 8 percent slopes and 8 to 20 percent slopes (<http://websoilsurvey.nrcs.usda.gov>).

6.9.2.1 No Action Alternative

The No Action Alternative would not require any property acquisition or conversion of land in farm use for airport compatibility needs. Any conversion of farmland to other uses would be at the discretion of the property owner and the appropriate land use agency (either City of Camas or Clark County).

6.9.2.2 Sponsor's Preferred Alternative

Under each of the build alternatives, approximately 5 acres of property currently in farm use will be acquired to protect it from incompatible uses. The airport is located on a plateau. Approximately 600 feet west of the future runway end, there is a significant drop of about 100 feet to the farmland below. The area to be acquired lies in the west approach to the runway. The property is a part of about 500 acres, known as Lacamas Northshore, which was annexed into the City of Camas in April 2008. At the time of annexation, it was rezoned from agricultural to Employment Center. The current property owner is working with other area property owners and development consultants to formulate a mixed-use development plan for the entire area.

Acquisition of the property by the Port will not negate the opportunity for a tenant to continue farming on the land via land lease, although such use may be deemed incompatible with the adjacent Lacamas Northshore development. The property could be farmed until development at Lacamas Northshore occurs, at which time the land could be designated open space. However, the open space should not have any water features or other attributes that could be bird or wildlife attractants.

6.9.2.3 Alternative 5

The impacts to farmland under the Alternative 5 would be identical to those from the Sponsor's Preferred Alternative.

6.9.2.4 Alternative 6

The impacts to farmland under the Alternative 6 would be identical to those from the Sponsor's Preferred Alternative.

6.9.3 Mitigation

No mitigation is proposed, as no prime or unique farmlands would be taken.

6.10 Hazardous Materials

6.10.1 Significance Criteria

FAA Order 1050.1E Chg 1 provides the NEPA requirements for the analysis of impacts and the information needed for environmental assessment. According to FAA Order 1050.1E Chg 1, the environmental analysis should demonstrate that the FAA (or applicant as appropriate) has determined whether hazardous wastes as defined in 40 CFR part 261 (RCRA) will be generated, disturbed, transported or treated, stored or disposed, by the action under consideration. If so, management of these wastes is regulated by 40 CFR parts 260-280 and transportation is governed by 49 CFR parts 171-199. It should also demonstrate that the FAA or applicant has considered pollutant prevention and control in accordance with EO 12088.

The analysis should indicate the presence of any sites within the action area listed or under consideration for listing on the National Priorities List (NPL) established by EPA in accordance with CERCLA. NEPA documentation should include a discussion of the impact of any NPL or NPL candidate sites on the action area and/or impacts of the action on any NPL or NPL candidate sites. NEPA documentation should also identify sites in the vicinity that have been designated RCRA Solid Waste Management Units (SWMU's) and that may impact or be impacted by the action.

6.10.2 Analysis

Property recently acquired by the Port of Camas-Washougal for use in the proposed project has undergone due diligence, including a review of property history and a site visit to identify any potential hazardous materials risks. No concerns were identified. The report stated the building may have some asbestos, so asbestos abatement during razing of the building may be required.

On-airport, underground storage tanks were removed in 2002. Above-ground fuel storage tanks were installed at that time, with the appropriate spill containment aprons. Periodic monitoring of the fuel tanks shows no leakage has occurred.

6.10.2.1 No Action Alternative

The No Action Alternative will not increase the generation of potentially hazardous materials on the airport. The No Action Alternative will not increase the risk of finding previously contaminated areas on- or off airport property.

6.10.2.2 Sponsor's Preferred Alternative

Generation of potentially hazardous materials is typically associated with the presence of a fixed base operator (FBO) at the airport. Typical FBO business includes aircraft maintenance and repair, flight lessons, and possibly fuel sales. The FBO area has been constructed to include aboveground fuel tanks with spill containment aprons,

The relocation and extension of the runway, along with relocation of Delp Road, under any build alternative, will require earthwork in areas the Port has acquired, west of Delp Road. The Port has conducted due diligence on properties it has acquired or will be acquiring. There is currently no reason to believe that there is any increased risk of finding contaminated areas.

6.10.2.3 Alternative 5

The risks associated with hazardous materials are equivalent under all of the build alternatives.

6.10.2.4 Alternative 6

The risks associated with hazardous materials are equivalent under all of the build alternatives.

6.10.3 Mitigation

If, during earthwork, the contractor identifies any material or odors that could be of a hazardous nature, work will cease until the material can be identified and appropriately disposed of. No additional mitigation is proposed.

6.11 Historical, Architectural, and Cultural Resources, including Native American and Tribal Resources

6.11.1 Significance Criteria

FAA Order 1050.1E Chg 1 provides the NEPA requirements for the analysis of impacts and the information needed for environmental assessment. According to FAA Order 1050.1E Chg 1, The National Historic Preservation Act (NHPA) of 1966, as amended, establishes the Advisory Council on Historic Preservation (ACHP) and the National Register of Historic Places (NRHP) within the National Park Service (NPS). Section 106

requires Federal agencies to consider the effects of their undertaking on properties on or eligible for inclusion in the NRHP; Compliance with section 106 requires consultation with the ACHP, the State Historic Preservation Officer (SHPO), and/or the Tribal Historic Preservation Officer (THPO) if there is a potential adverse effect to historic properties on or eligible for listing on the National Register of Historic Places.

The responsible FAA official determines whether the proposed action is an “undertaking,” as defined in 36 CFR 800.16(y) (and not an undertaking that is merely subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency), and whether it is a type of activity that has the potential to cause adverse effects on historic properties eligible for or listed on the NRHP. If an undertaking may have an adverse effect, the first step is to identify the area of potential effect (APE) and the historical or cultural resources within it.

If a NRHP-eligible property occurs within the undertaking’s APE and the proposed action may affect the property’s historic characteristics, the Responsible FAA Official must apply the criteria of effect listed in 36 CFR 800.5(a). The Official must examine the potential effects in consultation with the SHPO/THPO and any Tribe or Native Hawaiian organization attaching religious or cultural importance to the identified property. 36 CFR 800.5(a)(3) permits phased assessments of effects when alternatives the agency is considering involve corridors, large land areas, or when access to property is restricted. The FAA Official may propose a “finding of no adverse effect” after determining that the undertaking would not:

- physically destroy the property;
- alter the property, but, if alterations would occur, they meet the requirements of the Secretary of the Interior’s “Standards for Treatment of Historic Properties” (36 CFR part 68);
- remove the property from its historic location;
- introduce an atmospheric, audible, or visual feature to the area that would diminish the integrity of the property’s setting, provided the setting contributes to the property’s historical significance; or,
- through transfer, sale, or lease, diminishes the long-term preservation of the property’s historic significance that Federal ownership or control would otherwise ensure.

6.11.2 Analysis

The Cultural Resource Inventory conducted for this project (see Appendix G) reports findings of two archaeological sites and five historic-period above-ground structures. It is recommended that none of the sites or structures are eligible for listing in the NRHP.

The FAA consulted with the applicable tribes (Cowlitz, Shoalwater Bay, Warm Springs, Siletz, Grand Ronde) and Washington State Department of Archaeology and Historic Preservation (DAHP) on May 27, 2009. A response was received from the Cowlitz Indian Tribe. The tribe requested that Inadvertent Discovery language be included in any

construction permits. The Inadvertent Discovery language states in the event any archaeological or historic materials are encountered, work in the immediate area must stop and the following actions be taken: implement reasonable measures to protect the discovery site, take reasonable steps to ensure the confidentiality of the discovery site, and take reasonable steps to restrict access to the site of discovery.

6.11.2.1 No Action Alternative

Taking no action will have no effect on cultural, archaeological, architectural or historic resources.

6.11.2.2 Sponsor's Preferred Alternative

Based on consultation with the DAHP and tribes included in Appendix G, the Sponsor's Preferred Alternative will have no effect on cultural, archaeological, architectural or historic resources. The FAA has determined the project may proceed in accordance with Section 106 regulations.

6.11.2.3 Alternative 5

The Area of Potential Effect was the same for all build alternatives; therefore, the Sponsor's Preferred Alternative is representative of Alternative 5.

6.11.2.4 Alternative 6

The Area of Potential Effect was the same for all build alternatives; therefore, the Sponsor's Preferred Alternative is representative of Alternative 6.

6.11.3 Mitigation

No mitigation is proposed. The Inadvertent Discovery recommendations will be implemented if any archaeological or historic materials are encountered. Any inadvertent discovery would likely happen during the construction phases of the project, and these guidelines are identified in the Construction Impacts section of this chapter, and repeated here. The Inadvertent Discovery outlines the following steps be taken if sensitive materials are found:

- Implement reasonable measures to protect the discovery site, including any appropriate stabilization or covering;
- Take reasonable steps to ensure the confidentiality of the discovery site; and,
- Take reasonable steps to restrict access to the site of discovery.

6.12 Induced / Secondary Socioeconomic

6.12.1 Significance Criteria

FAA Orders 1050-1E and FAA 5050-4B do not identify threshold criteria for analysis of impacts. However, Order 1050-1E describes general guidance that could be used to measure a potential secondary or induced impact. That guidance is described as induced impacts will normally not be significant except where there are also significant impacts in other categories, especially noise, land use or direct social impacts. In such circumstances, an EIS may be needed.

6.12.2 Analysis

As discussed in Chapter 2, *Purpose and Need*, the Port of Camas-Washougal views the airport as an economic resource for the community. As an agency, the Port has been studying the airport, the need to improve safety of the airport, and the impacts on the agency of becoming an FAA-obligated airport. The Port is considering the improvements, and if so would require outside funding from the FAA, WSDOT Aviation and possibly other sources, in order to increase local economic development opportunities and improve safety for airport operations.

In order to complete the improvements, relocation of Delp Road, and a temporary detour to accomplish this, would be required.

During the public process, residents in the airport vicinity raised concerns about secondary social impacts associated with the roadway relocation alternatives that were being considered. The relocation of Delp Road presents several potential social impacts:

- Loss of privacy – The area around the airport is zoned for 5-acre minimum lots. Residents of the area moved there to be in a low-density, quiet rural environment. Depending on the alternative, relocation of Delp Road may require removal of vegetation that screens homes from the road, and may move the road closer to homes.
- Road noise closer to homes – Residents were concerned that moving Delp Road, under Alternatives 5 and 6, places it closer to several homes, with a potential noise effect. However, after additional study it was determined there is no significant traffic noise impact with either alternative.
- Potential for road to become a nuisance attraction – The relocated segment of Delp Road would need to be built to modern standards, including 12-foot wide lanes and shoulders. Sight distance and curvature standards would also need to be met. There is anecdotal evidence within the Camas area that when straight modern segments are built on older roads, they encourage speeding. There is also concern that the rural nature of the area could encourage activities such as late-night street racing.

6.12.2.1 No Action Alternative

The Port has identified design deficiencies at the airport. If the airport is not improved, the potential for new rental hangars and the ability to attract new aviation-related businesses to the airport, along with the associated local jobs, is highly unlikely.

Delp Road would remain as-is, and potential secondary impacts associated with the road relocation would not occur.

6.12.2.2 Sponsor's Preferred Alternative

The Sponsor's Preferred Alternative would bring Grove Field up to FAA design guidelines and safety standards, making it more desirable for hangar development and new business opportunities on and near the airport. New options to create jobs could increase revenues for the Port, its nearby cities and Clark County.

The tunnel alternative to relocate Delp Road does not increase vehicle travel and the associated effects such as fuel costs, emissions and noise. While the short-term construction detour would temporarily increase these costs (as described above in the Construction Impacts section), it does not outweigh the overall benefits of a tunnel: the Sponsor's Preferred Alternative.

The tunnel may require a minimal amount of vegetation to be removed adjacent to the existing roadway. No houses would be more exposed or closer to the road as a noise source. The road would be built to modern standards, but the grades used to approach and exit the tunnel would likely not encourage excessive speed or racing behavior.

As described in Chapter 3, the Port and public support this alternative and have expressed concerns over supporting any other build alternative, meaning there is a potential for the No Action Alternative if the Sponsor's Preferred Alternative is not funded. This would create a negative economic impact at the Airport and the surrounding community.

6.12.2.3 Alternative 5

All of the build alternatives would bring Grove Field up to FAA design guidelines and safety standards, making it more desirable for hangar development and new business opportunities on and near the airport. New options to create jobs could increase revenues for the Port, its nearby cities and Clark County.

The road relocation would add about 1,355 feet to the current distance traveled and may encourage drivers to divert to SR 500 or other routes.

The proposed projects do not create significant adverse off-Airport impacts, as determined by FAA's thresholds of significance. No disproportionate impacts would occur to one segment of the population.

The alignment may require a minimal amount of vegetation to be removed adjacent to the existing roadway, especially where the new road diverges on the north side. Two houses would be more exposed or closer to the road as a noise source. The road would be built to modern standards, but the three substantial curves would likely discourage excessive speed or racing behavior.

6.12.2.4 Alternative 6

All of the build alternatives would bring Grove Field up to FAA design guidelines and safety standards, making it more desirable for hangar development and new business opportunities on and near the airport. New options to create jobs could increase revenues for the Port, its nearby cities and Clark County.

The road relocation would add about 600 feet to the current distance traveled, and may encourage drivers to divert to SR 500 or other routes.

The proposed projects do not create significant adverse off-Airport impacts, as determined by FAA's thresholds of significance. No disproportionate impacts would occur to one segment of the population.

The alignment will require vegetation to be removed along the unnamed creek and on residential properties, especially on the north side of the airport. Three houses would be more exposed or closer to the road as a noise source. The new road would be built to modern standard and the two approximately 1,150-foot straight sections may encourage excessive speed or racing behavior.

6.12.3 Mitigation

No mitigation is proposed, since the project will not create any negative induced socioeconomic impacts.

6.13 Light Emissions and Visual Effects

6.13.1 Significance Criteria

FAA Order 1050.1E Chg 1 provides the NEPA requirements for the analysis of impacts and the information needed for environmental assessment. According to FAA Order 1050.1E Chg 1, the responsible FAA official considers the extent to which any lighting associated with an action will create an annoyance among people in the vicinity or interfere with their normal activities. Because of the relatively low levels of light intensity compared to background levels associated with most air navigation facilities (NAVAIDS) and other airport development actions, light emissions impacts are unlikely

to have an adverse impact on human activity or the use or characteristics of the protected properties.

Visual quality impacts deal more broadly with the extent that the development contrasts with the existing environment and whether the jurisdictional agency considers this contrast objectionable.

6.13.2 Analysis

Runway lighting will be extending commensurate with the runway extension. This will extend the Airport's lighting footprint to the west by 450 feet. There will be no change to the lighting impacts east of the Airport. Lights will be installed as part of the tunnel, but should have no off-site impacts.

The airport beacon will remain in its present location and continue operation.

6.13.2.1 No Action Alternative

Taking no action would not alter the view of the Airport, nor would it alter the amount of light generated by the Airport.

6.13.2.2 Sponsor's Preferred Alternative

The Sponsor's Preferred Alternative will shift runway lighting west and slightly south of its current location. The overall lighting intensity, however, will not change. The tunnel lighting will be confined within the tunnel. Views from surrounding homes of the road segment will not change.

6.13.2.3 Alternative 5

All build alternatives will shift runway lighting west and slightly south of its current location. The overall lighting intensity, however, will not change.

Views from two of the neighbors will change to include the new road segment.

6.13.2.4 Alternative 6

All build alternatives will shift runway lighting west and slightly south of its current location. The overall lighting intensity, however, will not change.

Views from four of the neighbors will change to include the new road segment. Some of the vegetation along the creek will be removed for the new creek crossing, altering the views from the neighborhood.

6.13.3 Mitigation

No mitigation is proposed, as Airport light emissions will not significantly increase.

6.14 Noise

6.14.1 Significance Criteria

FAA guidelines indicate 65 DNL is the level of noise “acceptable to a reasonable person residing in the vicinity of an airport.” This is consistent with federal (FAA and U.S. Department of Housing and Urban Development [HUD]) land use compatibility guidelines and federal noise attenuation grant funding eligibility criteria. Therefore, the primary focus of the noise impact analysis is on areas located within the 65 DNL noise contours for the Proposed Action and the No Action Alternative. FAA guidance concerning aircraft noise indicates that noise exposure impacts are considered significant only if there is a 1.5 DNL or greater increase at noise sensitive areas within the 65 DNL noise contour as when comparing the Proposed Action to the No Action Alternative. If this increase is expected, then additional significance thresholds apply. An increase of 3.0 DNL or greater within the 60-65 DNL noise contour is considered significant when comparing the Proposed Action to the No Action Alternative.

6.14.2 Analysis

Noise modeling, using the FAA’s Integrated Noise Modeling (INM) software was prepared for the project (see Appendix F). Two contours were developed: one that represents the current noise activity for the No Action Alternative and a second that represents the Sponsor’s Preferred Alternative using operations forecasts for 2015.

Currently, the 65 dBA DNL contour line extends outside the airport to the north and there are two residences inside the contour. Both residences have aircraft hangars and have the direct access to the airport runway. Under the year 2015 analysis, the 65 dBA DNL contour will shift slightly to the north and south of the airport resulting in three residences within the 65 dBA DNL. Of these three residences, two will have an increase of 0.1 dBA or less. One resident will have an increase of 2.8 dBA; however, this property is owned by the Port.

6.14.2.1 No Action Alternative

No change to the current conditions will occur.

6.14.2.2 Sponsor’s Preferred Alternative

Currently, two residences are within the 65 dBA DNL. By the year 2015, that number will increase to three due to the proposed action. However, one residence will have a decrease in noise exposure, and the other increase is 0.1 dBA. The one residence that will experience an increase is owned by the Port and on Port-owned property.

Noise impacts due to tunneling of Delp Road will not change for the surrounding residences.

6.14.2.3 Alternative 5

Airport-related noise impacts for Alternative 5 are identical to the Sponsor's Preferred Alternative.

As previously stated, Delp Road will be realigned. Using the Federal Highway Administration Traffic Noise Model (TNM version 2.5) it was determined the overall increase in traffic noise levels is predicted to be 1 dBA or less (see Appendix F). As such, no noise impacts are predicted and no traffic noise mitigation is recommended.

6.14.2.4 Alternative 6

Airport-related noise impacts for Alternative 6 are identical to the Sponsor's Preferred Alternative.

As a result of Alternative 6, Delp Road will be realigned. Using the Federal Highway Administration Traffic Noise Model (TNM version 2.5) it was determined the overall increase in traffic noise levels is predicted to be 1 dBA or less. As such, no noise impacts are predicted and no traffic noise mitigation is recommended.

6.14.3 Mitigation

No mitigation is proposed, as there are no significant noise impacts. The Port has adopted a Fly Friendly program, which will need to be updated in accordance with any actions at the Airport.

6.15 Social Impacts

6.15.1 Significance Criteria

According to Order 1050.1E, Chg1, there are two categories considered under social impacts, which are children's environmental health and safety risks and socioeconomic impacts. The significance threshold for children's environmental health and safety is disproportionate health and safety risks to children. Socioeconomic impacts factors may be relocation of residents, relocation of community businesses, disruption of local traffic patterns, or substantial loss in community tax base.

6.15.2 Analysis

No residential or business relocations are proposed under the Sponsor's Preferred Alternative. Additional property to the east of the airport is to be acquired as part of the project, which will not affect jobs or residences.

6.15.2.1 No Action Alternative

No change to the current conditions will occur; therefore, there is no impact.

6.15.2.2 Sponsor's Preferred Alternative

As described in previous sections, the Sponsor's Preferred Alternative does not relocate any residents or businesses, road detours will be temporary and there will be no long-term alteration of travel patterns.

The proposed projects do not create significant adverse off-Airport impacts. No disproportionate impacts would occur to one segment of the population...

6.15.2.3 Alternative 5

As described in previous sections, this alternative does not relocate any residents or businesses.

6.15.2.4 Alternative 6

As described in previous sections, this alternative does not relocate any residents or businesses.

6.15.3 Mitigation

No mitigation is proposed, as the project would not create disproportionate impacts to one segment of the population.

6.16 Solid Waste

6.16.1 Significance Criteria

FAA Order 1050-1E, Chg 1, does not identify threshold criteria for analysis of impacts. However, Order 1050-1E, Chg 1, describes general guidance that could be used to measure a potential solid waste impact. Generally, additional information or analysis is needed only if problems are anticipated with respect to meet local, State, Tribal or Federal laws and regulation on solid waste management.

6.16.2 Analysis

The Airport currently generates solid waste as associated with conducting the business of airport management. Materials may include paper, food waste and wrappings, and replaced aircraft parts. The construction of the runway and road will include removal of the existing pavement. The asphalt will be hauled off-site and either recycled or disposed of in an appropriate landfill.

6.16.2.1 No Action Alternative

Solid waste generation under the No Action Alternative will increase at the rate of increasing use of the airport.

6.16.2.2 Sponsor's Preferred Alternative

Completion of any of the build alternatives will not affect operations at the Airport in a manner that significantly impacts solid waste generation over the No Action Alternative.

6.16.2.3 Alternative 5

Solid waste impacts for Alternative 5 are identical to the Sponsor's Preferred Alternative.

6.16.2.4 Alternative 6

Solid waste impacts for Alternative 6 are identical to the Sponsor's Preferred Alternative.

6.16.3 Mitigation

There are no significant impacts to solid waste generation at the Airport; therefore, no mitigation is proposed.

6.17 Water Quality

6.17.1 Significance Criteria

FAA Order 1050.1E Chg 1 specifies that the environmental assessment include sufficient description of design, mitigation measures and construction controls applicable to the proposal to demonstrate that state water quality standards and any federal, state and local permit requirements be met. FAA Order 1050.1E Chg 1 also states that significant impacts on water quality for most Airport actions can typically be avoided by design considerations, construction phase controls, and other mitigation measures. Furthermore, the environmental assessment shall include documentation from regulating and permitting agencies and list required permits. FAA Order 1050.1E Chg 1 requires that any proposed federal action that would impound, divert, drain, control, or otherwise modify the waters of any stream or body of water is applicable to the Fish and Wildlife Coordination Act (FWCA). Under the FWCA, the U.S. Fish and Wildlife Service (USFWS) have the authority to investigate and report on all proposals for work in or affecting the waters of the U.S. that need approval from the federal government. FAA Order 1050.1E Chg 1 also states that consultation with the EPA regional office is required for any project that could potentially contaminate an aquifer designated by the EPA as a sole or principal drinking water source.

6.17.2 Analysis

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. The proposed action will need to comply with all permit requirements for the capture, treatment, monitoring, and reporting of stormwater from a new impervious surface.

6.17.2.1 No Action Alternative

The No Action Alternative creates no long-term water quality impacts.

6.17.2.2 Sponsor's Preferred Alternative

The Sponsor's Preferred Alternative will result in an increase of approximately 174,240 square feet of new impervious surface. The project will use BMPs to capture and treat at least 91% of stormwater runoff, including infiltration swales, storm filters, or water quality manholes. All stormwater will discharge through the existing outfall system. The project will be designed to meet or exceed requirements set by the Clark County Stormwater Manual (January 2009) and Clark County Code 40.385.

6.17.2.3 Alternative 5

Alternative 5 will result in an increase of approximately 196,020 square feet of new impervious surface. The project will use BMPs to capture and treat at least 91% of stormwater runoff, including infiltration swales, storm filters, or water quality manholes. All stormwater will discharge through the existing outfall system. The project will be designed to meet or exceed requirements set by the Clark County Stormwater Manual (January 2009) and Clark County Code 40.385.

6.17.2.4 Alternative 6

Alternative 6 will result in an increase of approximately 182,952 square feet of new impervious surface. The project will use BMPs to capture and treat at least 91% of stormwater runoff, including infiltration swales, storm filters, or water quality manholes. All stormwater will discharge through the existing outfall system. The project will be designed to meet or exceed requirements set by the Clark County Stormwater Manual (January 2009) and Clark County Code 40.385.

6.17.3 Mitigation

BMPs will be utilized to capture and treat stormwater runoff. No additional mitigation is proposed.

6.18 Wetlands

6.18.1 Significance Criteria

FAA Order 1050.1E Chg 1 states that a significant impact would occur when a proposed action would adversely affect the quality or quantity of municipal water or aquifers; substantially alter the hydrology needed to sustain the functions and values of wetlands supported by the water; cause a substantial reduction in the water-holding capacity of the wetlands; adversely affect the maintenance of natural systems that support wildlife and fish habitat and/or economically important timber, food, or fiber resources in the affected or surrounding wetlands; or would be inconsistent with applicable State wetland strategies.

6.18.2 Analysis

A delineation of wetlands and other waters at the project area was prepared after site visits on August 19 and 27, 2009. The field investigation identified five areas within the project area that met wetland criteria, plus a reach of the perennial stream, a stormwater detention basin, a stormwater drainage ditch and roadside ditches, totaling approximately 45,594 square feet (1.05 acres). Corps of Engineers Approved Jurisdictional Determination Forms were completed for each of these features and submitted to the Corps on May 4, 2009. The preliminary determination was made that the stormwater detention basin, two airport infield drainage swales and an airport stormwater drainage ditch are not under Corps jurisdiction. The perennial stream and adjacent wetlands are under Corps jurisdiction. This determination was initially made informally by a site visit with Steve Gagnon, Corps Project Manager, on April 7, 2009, but the Jurisdictional Determination has not been finalized.

The State of Washington does take jurisdiction over “isolated” wetlands, including the two airport infield drainage swales, in addition to the stream and adjacent wetlands, but not the stormwater detention basin.

6.18.2.1 No Action Alternative

Taking no action will allow the existing on-Airport wetland areas to remain undisturbed.

6.18.2.2 Sponsor’s Preferred Alternative

The proposed action will have no effect on jurisdictional wetlands under Corps jurisdiction. No Corps Section 404 permit will be required, though a Final Jurisdictional Determination will need to be issued by the Corps. There will be minor impacts on the two airport infield drainage swales, which are under state jurisdiction, and a state permit will be required.

6.18.2.3 Alternative 5

Wetlands impacts for Alternative 5 are identical to the Sponsor's Preferred Alternative.

6.18.2.4 Alternative 6

Wetlands impacts for Alternative 6 are identical to the Sponsor's Preferred Alternative.

6.18.3 Mitigation

Mitigation may be required for impacts to the drainage swales under state jurisdiction.

6.19 Cumulative Impacts

6.19.1 Significance Criteria

Cumulative Impact is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period. Determining whether a Proposed Action will have a significant impact, the EA shall include considerations of whether the action is related to other actions with individually insignificant but cumulatively significant impacts. This analysis shall include identification and consideration of the cumulative impacts of ongoing, proposed and reasonably foreseeable future actions and may include information garnered from FAA, Port Authority and the NEPA process.

6.19.2 Analysis

The analysis considered the possible impacts of the Proposed Action and other development both on and off the Airport. The analysis identified if any of the following actions are planned to occur within the vicinity of the Proposed Action: development by local government or planning agencies, land development projects, other development or improvements at the Airport, roadway improvements and public infrastructure projects.

6.19.3 Past Projects (3-5 year timeframe)

Past projects at the Airport or in the airport vicinity include pavement maintenance, development of the stormwater detention pond, and relocation of the fire station.

6.19.4 Present Projects

The proposed project is to widen, shift and extend the runway, remove Delp Road from the runway OFA, and to clear OFA penetrations (vegetation). As described in this

chapter, the difference in environmental consequences between alternatives is insignificant. Therefore, the discussion of cumulative impacts covers all three build alternatives.

The only other planned project at the Airport is the development of approximately 17 T-hangar units.

6.19.5 Reasonably Foreseeable Projects (3-5 year horizon)

On-airport projects within the near-term horizon include those projects included in the Sponsor's Preferred Alternative.

The only identified development in the airport vicinity is the Lacamas Northshore property. A conversation with a representative of the Lacamas Northshore consultant team has stated that, given the economic conditions in October 2009, no tenants have been identified, and it is likely that they will not have broken ground on development within the three-year timeframe.

6.19.6 Cumulative Impacts Summary

The above discussion shows there are no project-related impacts, but for these categories: Air Quality, Biotic Resources, Construction, Noise and Water Quality. There may be some associated incremental growth on and near the Airport, as a result of the project, but when combined with past, present and reasonably foreseeable future projects it is not anticipated that there will be significant impacts

- Air quality – increases in traffic due to land development in the airport vicinity, including traffic to new hangars may increase pollutants.
- Biotic Resources – increased land development may remove habitat on land currently undeveloped.
- Construction – temporary impacts from construction will be minimized by utilizing best management practices
- Noise – increases in traffic due to land development may increase noise, especially during commute periods
- Water Quality – increases in impervious surface due to land development may increase stormwater runoff.

Any new development outside of State-recognized thresholds would be required to undergo review under the Washington State Environmental Policy Act (SEPA) and comply with all state and federal permitting processes.

6.20 Conclusion

The proposed action, including best management practices and avoidance of environmental impacts where applicable, has been developed in consultation with Federal, state and local officials as appropriate. The project does not appear to be inconsistent with Federal, state or local laws or determinations on environmental issues. Based on written and verbal

communication with the permitting agencies, the avoidance and best management practices proposed are satisfactory to meet regulatory requirements. There has been no identified controversy on environmental grounds. Communications with regulatory agencies suggest the purpose and need for the proposed action is well understood.