Affected Environment

Introduction

This Affected Environment chapter, per FAA Orders 1050.1E, Change 1 and 5050.4B is designed to briefly provide context for the environmental setting of the proposed project. Thus, this section describes the relevant characteristics of the potentially affected environment.

Project Setting

Snohomish County Airport/Paine Field is located in an unincorporated area of the County. The northern and eastern portion of airport property abuts the City of Everett, while the western portion of airport property abuts the City of Mukilteo. There is also a small portion of airport property in the northwest corner of the Airport that is within the City of Mukilteo. The corporate boundaries of the cities of Lynnwood and Edmonds are approximately three miles to the south of airport property.

Paine Field is owned and operated by Snohomish County, Washington. Under the direction of the County Executive and the County Council, the Airport Director and Staff supervise the day-to-day operation of the Airport. Paine Field is an enterprise department of Snohomish County and is mandated to generate all revenue necessary to operate and maintain the Airport. In the Federal Aviation Administration's (FAA's) National Plan of Integrated Airport Systems (NPIAS), Paine Field is designated as a “general aviation reliever airport” for Seattle-Tacoma International Airport. A general aviation reliever airport is an airport that is located in a metropolitan area and is intended to reduce congestion at a large commercial service airport by providing general aviation pilots with alternative landing areas.

Figure C1, AIRPORT ENVIRONS MAP, provides a graphic description of Paine Field’s location in relation to surrounding communities and roadways in Snohomish County. Paine Field is located approximately six miles southwest of the Everett Central Business District (CBD) and approximately twenty miles north of downtown Seattle.
Source: Snohomish County Planning Department Mapping, Aerial Photography, and United States Geological Survey (USGS) Quadrangle Sheets.
Snohomish County Airport/Paine Field is the major general aviation/industrial aviation airport serving Snohomish County and multiple communities located in the northern portion of the Seattle Metropolitan Area. The airport is home 650 based aircraft, The Boeing Company, Aviation Technical Services (ATS), and other major aerospace companies. There are daily operations of Boeing 747, 777, 767, 787 and 737 aircraft and regular operations of MD 80 series aircraft, corporate and military aircraft including F/A-18 tactical jets, C-17, P-3, C-40, C-130 and C-5. ATS provides maintenance, inspection and repair services for multiple airlines, including: Southwest, Delta, Hawaiian, and Alaska.

The Airport consists of approximately 1,250 acres of land owned by Snohomish County located adjacent to the City of Everett and the City of Mukilteo. There is also a small portion of airport property in the northwest corner of the Airport that is within the City of Mukilteo. Paine Field has three runways, an extensive system of taxiways, aircraft parking aprons, hangars, an old terminal building, and various other airport facilities. Figure C2, EXISTING AIRPORT LAYOUT, provides a graphic description of the existing airport facilities, including an inset of the terminal area.

This Affected Environment chapter is organized in the same manner as the Environmental Consequences chapter, as per FAA Order 1050.1E, Change 1, Appendix A. However; the project and its reasonable alternatives are not likely to affect the following resources: Farmlands; or Wild and Scenic Rivers. There is no farmland in the project area and the Airport is not located in the vicinity of the three designated wild and scenic rivers in the state, the Klickitat, the Skagit, or the White Salmon Rivers. The closest river is the Skagit River, located approximately 30 miles north of the Airport. Consequently, these resources will not be presented in the Affected Environment chapter or discussed further in the E.A.
Air Quality

The Washington State Department of Ecology (Ecology) and the Puget Sound Clean Air Agency (PSCAA) have established State and local ambient air quality standards similar to the National Ambient Air Quality Standards for:

- Ozone (O₃)
- Carbon Monoxide (CO)
- Nitrogen Dioxides (NO₂)
- Particulate Matter (PM₁₀ and PM₂.₅)
- Sulfur Dioxide (SO₂)
- Lead (Pb)

Because air monitoring in the Puget Sound Region has indicated compliance with the lead standard since 1980, lead was not examined in this study.

The Clean Air Act requires states with areas that have exceeded the ambient air quality standards to develop plans (State Implementation Plans - SIP) for each area that, when implemented, would reduce air pollutants and attain the standards. Areas that have not attained the standards in the past are referred to as non-attainment areas. The severity classifications for non-attainment areas are in increasing order of severity: marginal, moderate, serious, severe, and extreme.

The Puget Sound Region, including Snohomish County, was designated as a ‘high-moderate’ non-attainment area for carbon monoxide and as a ‘marginal’ ozone non-attainment area until 1996, when an attainment with the standards was demonstrated and a maintenance plan developed to ensure that pollutant levels do not increase. No exceedances of the PM₁₀ standard have occurred in the region since 1990. In 2005, the 1-hour ozone standard, for which the Puget Sound Region was in nonattainment, was rescinded. The Region has achieved attainment for the 8-hour ozone standard, which replaced the 1-hour standard. Thus, Snohomish County is in attainment for all air pollutant standards, but remains subject to a carbon monoxide maintenance plan/SIP.

The USEPA, Washington State Department of Ecology, and the Puget Sound Clean Air Agency conduct measurements throughout the State for purposes of monitoring compliance with the Ambient Air Quality Standards (AAQS). The closest air quality monitoring stations to the Paine Field are located in Marysville (7th Ave) about 10 miles north of the Airport, and Lynnwood (on 212th) about 9 miles south of the Airport. Two other sites also measure concentrations in Snohomish County – Darrington (Fir Street) and Woodinville. Both of these monitoring sites measure PM₂.₅ concentrations.

The PSCAA has noted that “Concentrations at the Marysville and Darrington monitors, both in Snohomish County, are on the brink of violating the new daily standard” (35 µg/m³ which was adopted in 2006). ” Daily PM₂.₅ measurements in
Snohomish County have shown that measurements at Lynnwood have not exceeded the federal standard since measurements began in 2002, but measurements at Maryville equaled or exceeded the standards between 2001 and 2007, except in 2006. Woodstoves are the suspected cause. Relative to the annual PM$_{2.5}$ standard, measurements at the two Snohomish County sites have been below the standard between 2001 and 2007.

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**Coastal Resources**

All of Snohomish County (including the Airport) is included in the Washington State’s Coastal Zone Management Program, although there are no specially designated areas of particular concern within the County except for the Snohomish River Estuary which is approximately nine miles to the northeast of the Airport. The Airport has prepared and adopted both a Stormwater Pollution Prevention Plan (SWPPP) and a Master Drainage Plan to control and regulate run-off and other types of potential pollution.

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**Compatible Land Use & Zoning**

As mentioned previously, Snohomish County Airport is located in an unincorporated area of Snohomish County. The City of Mukilteo is considering an annexation of approximately 2,661 acres of unincorporated portions of Snohomish County immediately south of the Airport. The relationship of the Airport to the surrounding cities and the potential Mukilteo annexation was illustrated previously on Figure C1 entitled *AIRPORT ENVIRONS MAP*.

The *Snohomish County 2025 Comprehensive Plan* has designated an Airport Influence Area (AIA) which is defined as the property within the environs of the Airport where land uses are either influenced by, or will influence the operation of the Airport in a positive or negative manner. The purpose of the AIA is to require that a disclosure notice be provided to potential property buyers of the proximity of their property to the Airport and to discourage the siting of land uses that attract birds, create visual hazards, discharge any particulate matter in the air that could alter atmospheric conditions, emit transmissions that would interfere with aviation communications, and/or instrument landing systems, or otherwise obstruct or conflict with aircraft patterns. The AIA is also illustrated on Figure C1 entitled *AIRPORT ENVIRONS MAP*.

Existing land use and zoning within the airport environs play an important role in determining both existing and short-term potential noise impacts as well as in predicting potential long-term impacts. The following paragraphs will describe the existing land use and zoning within the airport environs.
Existing Zoning

General existing zoning within the vicinity of the Airport is illustrated on Figure C3 entitled *GENERAL EXISTING ZONING*, reflecting the zoning designations of the cities of Everett and Mukilteo, along with those for the unincorporated areas of Snohomish County. Due to several jurisdictions having different individual zoning designations and considering the scale of the base map, the different jurisdictional zoning designations have been consolidated into generally similar zoning types. For purposes here, zoning falls into the following types: residential, commercial, industrial/office park, and parks/open space. The Airport itself is zoned light industrial.

In the area north/northeast of the Airport, there is a large manufacturing/industrial and office zoning tract associated with the Boeing facilities. The area north of the Airport and adjacent to Possession Sound is primarily zoned residential. Some commercial zoning does exist north of the Airport associated with the ferry landing and at the intersection of Mukilteo Speedway and Mukilteo Boulevard.

The area east of the Airport is characterized by residential zoning with strips of commercial zoning along the major roadways; i.e., SR 99 and Airport Road. In addition, Kasch Park and Walter E. Hall Golf Course are located directly east of airport property, south of Casino Road.

The area directly southeast of the Airport is dominated by business park and residential zoning, while southwest of the Airport, zoning uses along the Mukilteo Speedway are characterized by a combination of general commercial, community business, industrial, and manufacturing. General commercial and community business zoning extend laterally along SR 99. The area south of the Airport is dominated by various residential uses, with dispersed areas of commercial and industrial zoning.

Within Mukilteo, west of the Airport, lies the Harbour Pointe Community zoned primarily for residential uses, with several areas of park/open space and community business. In the northwest portion of Mukilteo, zoning consists of waterfront mixed use and downtown business district.
Figure C3 General Existing Zoning

Source: Snohomish County Planning Department Mapping, Aerial Photography, and United States Geological Survey (USGS) Quadrangle Sheets.
Existing Land Use

As illustrated in the following figure, entitled **GENERAL EXISTING LAND USE**, land use generally reflects existing zoning. In the area directly adjacent to the Airport, industrial and commercial uses prevail; one notable exception is the residential area west of Paine Field Boulevard. Commercial uses are found along major arterials and at the intersections of these arterials. Densities of residential use vary in the area, but generally reflect single-family, suburban development with areas of open space. Additionally, clusters of multi-family development exist laterally along Casino Road, between Airport Road and SR 99; along 112th St. SW, between SR 99 and I-5; west of SR 525, south of Harbor Pointe Blvd, and along 128th St. SW, between SR 99 and I-5. The waters of Possession Sound are located approximately one and one-half miles west of the Airport and approximately two miles north of the Airport. In addition, it should be noted that there is a substantial amount of land that is undeveloped or dedicated to parks/open space in the vicinity of the Airport. Several large tracts of undeveloped land exist within the environs on the Airport. Some of these are associated with parks, or areas with limited development potential because of steep slopes or drainage features. There are two large open spaces near the Airport; the west side of airport property and the area directly north and west of The Boeing Company plant.

Growth Management

The Washington State Growth Management Act requires certain counties and cities in the state to engage in comprehensive planning activities and to follow a process for identifying and siting essential public facilities like airports. Snohomish County is one such county. Because airports are designated as essential public facilities, the implementation of both land use and development controls is vested within the authority of local city, county, or state governments and these governments are responsible for ensuring compatible land use and appropriate zoning requirements around airports. The comprehensive plans must contain certain elements, including land use, housing, utilities, transportation, capital facilities, and rural elements. Optional elements include conservation, solar energy, recreation, and sub-area plans. The Act requires planning to be consistent with broad stated goals, based on individual city and county visions of the future.

Comprehensive Plans and Future Land Use

The area surrounding the Airport is covered by multiple comprehensive planning documents. The comprehensive plans of the City of Everett, the City of Mukilteo, and Snohomish County’s 2025 **Comprehensive Plan** depict future land uses within the various jurisdictions in the vicinity of the Airport. Generally speaking, the comprehensive plans as illustrated in **Figure C4, GENERAL FUTURE LAND USE**, reflect both existing zoning and existing land use. Close in, the area surrounding the Airport will continue to be primarily industrial and commercial uses. Within the area as a whole, residential uses will continue to dominate with strips and pockets of commercial, industrial and parks/open space.
Figure C4 General Existing Land Use

Source: Snohomish County Planning Department Mapping, Aerial Photography, and United States Geological Survey (USGS) Quadrangle Sheets.
Figure C5 General Future Land Use

Source: Snohomish County Planning Department Mapping, Aerial Photography, and United States Geological Survey (USGS) Quadrangle Sheets.
Department of Transportation Action: Section 4(f)

Section 4(f) of DOT Act of 1966 (recodified and renumbered as section 303(c) of 49 U.S.C.), provides that the Secretary of Transportation shall not approve any program or project that requires the use of any publicly owned land from a public park, recreation area or wildlife and waterfowl refuge of National, State or Local significance or land from a historic site of National, State or Local significance, as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such project includes all possible planning to minimize impact.

The closest parks are Paine Field Community Park and 92nd Street Park, approximately one mile west of the project area (the existing terminal area) and west of Mukilteo Speedway and Kasch Memorial Park located less than one mile east of the project area. The proposed project will take place entirely on airport property that has been previously disturbed. Also, as described in the following section entitled Historical, Architectural, Archeological, and Cultural Resources, there are no known historic sites located within the project area.

Fish, Wildlife, and Plants

Section 7 of the Endangered Species Act (ESA) of 1973 (16 USC Section 1531, et. seq. (ESA)) requires Federal agencies to examine if projects may have an adverse impact on federally listed endangered or threatened species. The U.S. Fish and Wildlife Service (USFWS) defines an endangered species as one that is in danger of extinction within all or a significant part of its natural range. A threatened species is a species identified as one that will likely become endangered within the foreseeable future.

The USFWS and the National Marine Fisheries Service (NMFS) list several endangered, threatened and candidate species, along with species of concern for Snohomish County, as shown in Table C1, SNOHOMISH COUNTY THREATENED AND ENDANGERED SPECIES AND SPECIES OF CONCERN. The USFWS has also designated critical habitat for bull trout, the Marbled murrelet and the northern spotted owl in Snohomish County but this critical habitat does not exist on airport property. The closest designated priority habitat to the project area is the “Paine Field Open Space” located off airport property, approximately 1,200 feet north of the terminal area adjacent to the Boeing Company ramp. The Paine Field Open Space is designated under the Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) Program as urban natural open space, or an area that contains habitat that is valuable to fish or wildlife and is mostly comprised of native vegetation. These areas may have more limited wildlife functions than other priority habitat areas due to the general nature and constraints of these sites in that they are often isolated or surrounded by highly urbanized lands.
The list below of endangered, threatened and candidate species, along with the species of concern for Snohomish County was reviewed by airport personnel in consultation with the fulltime on-site USDA Wildlife Services Biologist who has been conducting weekly wildlife surveys on the Airport since 2001 (Appendix H). Of all the species on the list, only the Peregrine Falcon and Bald Eagle have been observed during the weekly surveys. The Peregrine Falcon was only observed once in 2004 and the Bald Eagle observations are infrequent. Neither species is a permanent resident at the Airport.

Table C1
SNOHOMISH COUNTY THREATENED AND ENDANGERED SPECIES AND SPECIES OF CONCERN
Snohomish County Airport Environmental Assessment

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gray Wolf</td>
<td>Canis lupus</td>
<td>E</td>
</tr>
<tr>
<td>Bull Trout</td>
<td>Salvelinus confluentus</td>
<td>T</td>
</tr>
<tr>
<td>Canada Lynx</td>
<td>Lynx canadensis</td>
<td>T</td>
</tr>
<tr>
<td>Grizzly Bear</td>
<td>Ursus arctos</td>
<td>T</td>
</tr>
<tr>
<td>Marbled Murrelet</td>
<td>Brachyramphus marmoratus</td>
<td>T</td>
</tr>
<tr>
<td>Northern Spotted Owl</td>
<td>Strix occidentalis caurina</td>
<td>T</td>
</tr>
<tr>
<td>Oregon Spotted Frog</td>
<td>Rana pretiosa</td>
<td>C</td>
</tr>
<tr>
<td>Yellow-billed cuckoo</td>
<td>Coccyzus americanus</td>
<td>C</td>
</tr>
<tr>
<td>Bald Eagle</td>
<td>Haliaeetus leucocephalus</td>
<td>SC</td>
</tr>
<tr>
<td>Beller’s Ground Beetle</td>
<td>Agonum belleri</td>
<td>SC</td>
</tr>
<tr>
<td>California Wolverine</td>
<td>Gulo gulo letens</td>
<td>SC</td>
</tr>
<tr>
<td>Long-eared Myotis</td>
<td>Myotis ews</td>
<td>SC</td>
</tr>
<tr>
<td>Long-legged Myotis</td>
<td>Myotis volans</td>
<td>SC</td>
</tr>
<tr>
<td>Northern Goshawk</td>
<td>Accipiter gentiles</td>
<td>SC</td>
</tr>
<tr>
<td>Olive-sided flycatcher</td>
<td>Contopus cooperi</td>
<td>SC</td>
</tr>
<tr>
<td>Pacific Lamprey</td>
<td>Lampetra tridentate</td>
<td>SC</td>
</tr>
<tr>
<td>Pacific Townsend’s Big-eared Bat</td>
<td>Corynorhinus townsendii</td>
<td>SC</td>
</tr>
<tr>
<td>Peregrine Falcon</td>
<td>Falco peregrinus</td>
<td>SC</td>
</tr>
<tr>
<td>River Lamprey</td>
<td>Lampetra ayres</td>
<td>SC</td>
</tr>
<tr>
<td>Tailed Frog</td>
<td>Acratus truei</td>
<td>SC</td>
</tr>
<tr>
<td>Western Toad</td>
<td>Bufo boreas</td>
<td>SC</td>
</tr>
<tr>
<td>Botrychium Pedunculosum</td>
<td>Stalked moonwort</td>
<td>SC</td>
</tr>
<tr>
<td>Chinook salmon</td>
<td>Oncorhynchus tshawytscha</td>
<td>T</td>
</tr>
<tr>
<td>Steelhead trout</td>
<td>Oncorhynchus mykiss</td>
<td>T</td>
</tr>
</tbody>
</table>

Source: USFWS and NMFS

T = federally-listed threatened
E = federally-listed endangered
C = Candidate
SC = Species of Concern
Floodplains

Executive Order 11988 requires Federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by floodplains.

According to published Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, the majority of the Airport is located within Zone X, or areas determined to be outside of the 500 year floodplain. The closest 100 year floodplains are associated with Possession Sound and Stickney Lake both located slightly more than two miles from the project area.

Hazardous Materials, Pollution Prevention, and Solid Waste

Four primary laws have been passed governing the handling and disposal of hazardous materials, chemicals, substances, and wastes, including: Resource Conservation and Recovery Act (RCRA) (as amended by the Federal Facilities Compliance Act of 1992), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA or Superfund), and the Community Environmental Response Facilitation Act of 1992. RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment. The EPA keeps detailed information on all businesses dealing with Hazardous Materials, water discharge, Superfund sites, toxic releases, and air emissions.

There are a number of sites located on airport property that are permitted as either small quantity generators of hazardous wastes, large quantity generators of hazardous waste, water dischargers, or multiple-activities. However, all sites are outside the immediate area that would be disturbed for the proposed modular terminal. There is a former pistol range located on the west side of the Airport that is listed on the State Ecology’s Hazardous Sites List, however, the site has been cleaned up and Ecology is proposing to remove the site from the list. A letter from the Department of Ecology as well as a public notice proposing to remove the site from the Hazardous Site List is included in Appendix O. To date, the Department of Ecology has not received any comments on this notice.

The Airport has conducted multiple Phase I\(^1\) and other environmental investigations throughout airport property. No known hazardous material sites are located on or within close proximity to the site of the proposed modular terminal.

\(^1\) Environmental Due Diligence Audit (EDDA) for the evaluation of properties for potential hazardous substances contamination.
The Airport has a Stormwater Industrial Permit issued by the State Department of Ecology under the Nation Pollutant Discharge Elimination System (NPDES) to regulate the discharge of stormwater that might contain traces of harmful pollutants. In addition, construction contractors are required to apply for a Stormwater Construction General Permit that regulates potential pollution sources and harmful erosion.

Waste Management of Washington Inc. collects solid waste from the Airport. Two compactors are collected weekly and one compactor is collected twice a week.

**Historical, Architectural, Archeological, and Cultural Resources**

The National Historic Preservation Act of 1966 requires a review to determine if any properties impacted by the proposed action are in or eligible for inclusion in the National Register of Historic Places (NRHP). This includes the areas within which direct and indirect impacts could occur and cause a change in historic, architectural, archaeological or cultural properties. Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to consider the impact of their undertaking on properties on or eligible for inclusion in the NRHP. Compliance with section 106 of the NHPA requires consultation with the Department of Archeology and Historic Preservation. The Area of Potential Effect (APE) for the proposed action consists primarily of the inner terminal ramp area located between the ATCT and the existing terminal building, but also includes the area with in the 65 DNL contour (see Noise section). A review of 49 facilities listed on the National Register of Historic Places for Snohomish County was conducted. No historical, architectural, archeological or cultural sites are known to exist on airport property.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments and the Presidential Memorandum of April 29, 1994, Government-to-government Relations with Native American Tribal Governments require that the responsible FAA official should consult directly with tribal governments.

FAA initiated NHPA Section 106 consultation with the Washington Department of Archaeology and Historic Preservation on September 3, 2009. They also initiated both NHPA Section 106 and government-to-government consultation with the Stillauamish, Sauk-Suiattle and Tulalip Tribes on September 3, 2009. The letters can be found in Appendices J and N, respectively.

**Light Emissions and Visual Impact**

The Airport is bordered by the City of Everett on two sides, the City of Mukilteo on one side, and unincorporated Snohomish County on one side. The Airport is surrounded by both industrial and residential areas. Existing light sources at the Airport include the rotating beacon for airplane guidance at night or in low visibility
conditions, runway and taxiway lights, parking lot lighting, aircraft ramp lighting, road lighting, and lights from buildings.

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**Natural Resources, Energy Supply, and Sustainable Design**

Electrical service is provided by Snohomish County Public Utility District (PUD) #1, natural gas service is provided by Puget Sound Energy, telephone/data service is provided by Verizon, while both water and sewer services are provided by Mukilteo Water and Wastewater District. Fuel storage facilities on the Airport include one 750 gallon Avgas tank, one 1,000 gallon Avgas truck, one 1,000 gallon Jet-A truck, one 3,000 gallon Jet-A truck and two 8,000 gallon Jet-A trucks. Permanent above ground fuel storage facilities include six 60,000 gallon Jet-A tanks, one 20,000 Avgas tank, and one 4,000 gallon diesel tank. Permanent underground fuel storage facilities include one 15,000 gallon Avgas tank. There are no existing natural resource extractive activities occurring on the Airport.

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**Noise**

Current aircraft related noise exposure has been defined through the use of noise contours prepared with the Federal Aviation Administration’s (FAA’s) Integrated Noise Model (INM) version 7.0a. The INM is a state-of-the-art FAA approved computer model used to model the noise exposure levels from aircraft operations and engine testing and produce contours of equal noise exposure for selected points on the ground. These contours are presented using the 65 Day-Night Average Sound Level (DNL) noise contour metric, where 65 DNL represents “noise impacted” areas. The 65 DNL contour is utilized by FAA as the threshold of significance when determining noise impacts of a proposed action. DNL metric measures the overall noise experienced during an entire (24-hour) day. DNL calculations account for the sound exposure level of aircraft, the number of aircraft operations and a penalty for nighttime operations. In the DNL scale, each aircraft operation occurring between the hours of 10 p.m. to 7 a.m. is penalized by 10 dB. This penalty is used to account for the higher sensitivity to noise in the nighttime and the expected further decrease in background noise levels that typically occur at night. DNL provides a numerical description of the weighted 24-hour cumulative noise energy level using the A-weighted decibel scale, typically over a period of a year. Noise sensitive areas exposed to increases of 1.5 DNL within the 65 DNL contour are considered a significant impact.

The existing noise contours from aircraft operations at the Airport and from engine testing on the adjacent Boeing owned property are presented in the Figure C6, *EXISTING NOISE CONTOURS (2008).* This figure shows the existing 65 DNL and 70 DNL noise contours.

The 2008 base case 65 DNL noise contour encompasses approximately 656.2 acres of land and extends slightly off Airport property to the southwest onto the Mukilteo
Speedway. The area on the southwest side of Mukilteo Speedway is commercial in nature and is shown to continue to develop as such in the Mukilteo future land use plan. The 65 DNL noise contour also extends beyond Airport property to the north and east, over the Boeing Company industrial complex. The 65 DNL also extends over State Route 526 to the extreme northwest corner of the Airport. There are 0 residential or other noise sensitive uses and 0 people located within the 65 or greater DNL noise contours.

The 70 DNL noise contour is entirely on Airport property except for an area to the northeast where it extends over the Boeing Company complex.
Figure C6  Existing Noise Contours (2008)

(1) Note: "These Parks Are Protected Under Section 6(f) of the Land and Water Conservation Fund (LWCF) Act, which Requires Replacement Property as Mitigation for Conservation of Park Property that was Purchased or Deveoped with Stateside LWCF Funds".


Socioeconomic Environment, Environmental Justice, Children's Environmental Health and Safety Risks

**Socioeconomic Environment.** Because The Boeing Company’s manufacturing activity at the Airport is often used as the county's economic yardstick, the current and future economic picture within Snohomish County looks positive. In addition, other forms of manufacturing (especially advanced technology) have been relocating to Snohomish County in recent years. Much of this development activity has been concentrated in the County’s **Technology Corridor**. The Corridor is a group of office/industrial development parks which straddle the I-5/I-405 area.

According to census data, the current estimated population in Snohomish County is 683,655 people and the population in Snohomish County is steadily growing. The population increased 12.8 percent from 2000 to 2008 and has a population density of about 328 people per square mile. The population growth in Everett has been slightly slower, increasing from 91,488 in 2000 to an estimated 98,295 in 2007, a rate of 7.4 percent, while the population growth of Mukilteo has been slightly faster increasing from 18,019 in 2000 to 20,544 in 2008 a rate of 14 percent. The City of Mukilteo is also proposing a large annexation of a portion of currently unincorporated Snohomish County immediately south of the Airport. Using the 2006 Buildable Lands population estimate for this area of 14,910, the annexed population would be approximately 73 percent of the City’s current population.

The largest employer in the County is obviously Boeing with facilities located adjacent to the Airport. Other major employers in Snohomish County include Naval Station Everett, the State of Washington, Snohomish County Government and the Providence Everett Medical Center, Premera and Aviation Technical Services (located at the Airport).

The **Countywide Planning Policies** for Snohomish County call for a long-term monitoring process to review population and employment growth, annexations and incorporations, land consumption and supply, and housing availability and affordability. The monitoring program was developed jointly by cities and Snohomish County. Results of the monitoring process are published annually in the Snohomish County Tomorrow Growth Monitoring Report or GMR. The first GMR came out in 1997 and it is updated annually.

**Environmental Justice.** Executive Order 12898, Environmental Justice and the U.S. Department of Transportation (DOT) order on Environmental Justice require an assessment of potential inequitable distribution of negative effects to special population groups. U.S. Census data and Census block maps were reviewed and there are no known special population groups within the project area.

According to the Washington State Employment Security Department, the labor force in Snohomish County has been increasing steadily since 2000 and the unemployment rate has been increasing from 4.1 percent in 2007 to 10.2 percent in October of 2009. According to U.S. Census data, the 2007 median household
income in Snohomish County was $65,324 and approximately 8 percent of the County was living below the poverty level. Based on an analysis of census block data, approximately 13.6 percent of the population in the vicinity of the Airport is living below the poverty level. The Washington Office of Financial Management projects the population of Snohomish County to grow to an estimated 950,066 people by 2030. Based on the previously presented noise contours, the four U.S. Census Designated Places (CDPs) in the vicinity of the Airport with the potential to be impacted by aircraft generated noise include the Paine Field-Lake Stickney CDP, the Picnic Point-North Lynwood CDP, Mukilteo city and Everett city. According to U.S. Census Bureau block maps and demographic data, these four places had a combined population in 2000 of 156,843 residents, of which, 80.5 percent were white, 3.1 percent were black, 1.3 percent were Indian or Alaska Native, 7.7 percent were Asian, less than 1 percent were Native Hawaiian, 2.9 percent where some other race, 4.2 percent were two or more races and 6.5 percent were identified as Hispanic or Latino (of any race).

**Children's Environmental Health and Safety Risks.** Executive Order 13045, the Protection of Children from the Environmental Health Risks, directs Federal agencies to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. There are no residences or schools within the project area. The closest K-12 school is a technical high school located less than one mile northeast of the terminal building and an elementary school located less than one mile south of the terminal building.

**Surface Transportation**

Transportation networks in the vicinity of the Airport include Interstate Highway 5 (I-5), three state routes (SRs) and one principal arterial. I-5, which runs north/south, is a limited access highway approximately four miles east of the airport, thereby, providing good access to the nation's Interstate Highway System. SR 526 (Boeing Freeway) is an east/west controlled access roadway that is adjacent to the north side of airport property, providing the primary access to Boeing facilities. Providing direct access to the west side of the Airport, Paine Field Boulevard and SR 525 (Mukilteo Speedway) tie in with I-5 and I-405 approximately four miles southeast of the airport and with SR 526 at the northwest corner of the airport. In addition, SR 99, a southeast/northwest travel corridor, is located east of the airport and connects SR 525 and SR 526.

The Airport Road/128th Street SW corridor provides the most direct access to the terminal entrance and passes through the east side of airport property. Airport Road connects with I-5 approximately three miles southeast of the Airport where it becomes SR 96 and with Boeing Freeway (SR 526) at the north side of the Airport. Direct landside access to airport property is provided by a series of streets with access to the terminal area provided by 100th Street SW. A more comprehensive inventory of the road network is included in the Snohomish County Airport Traffic 
Impact Analysis, Appendix F. Potential impacts to traffic patterns are addressed further in the *Environmental Consequences Chapter.*

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**Water Quality**

The dominant water features in the vicinity of the Airport is the Puget Sound and the Pacific Ocean. The Airport drains to four drainage basins, Japanese Gulch, Big Gulch, Smugglers Gulch and Swamp Creek. These four drainage basins are illustrated in Figure C7, *PAINE FIELD DRAINAGE BASINS.* This section provides a brief description of each of these basins and their aquatic resources.

The *Paine Field Master Drainage Plan, October 2008* was prepared to guide stormwater management for future development through planned build-out of the Airport. The plan includes an inventory of existing facilities, determines conveyance and detention capacities, identifies existing deficiencies, forecasts changes in land cover (i.e., impervious areas) based airport development plans, identifies future stormwater facility needs to meet planned growth, and identifies capital improvement plan stormwater projects to address near-term and long-term needs.

According to the *Paine Field Master Drainage Plan,* Swamp Creek watershed drains to the east and discharges to the north end of Lake Washington. Big Gulch, Smugglers Gulch and Japanese Gulch watersheds drain north (Japanese Gulch) and west (Big Gulch and Smugglers Gulch) to Puget Sound. The majority of the Airport’s Swamp Creek watershed discharges to the main stem of Swamp Creek via Lake Stickney southeast of the Airport.

Within the more developed parts of the Airport, catch basin and pipe systems are used for collection and conveyance of stormwater runoff. In the less developed areas, ditch and culvert systems are used for collection and conveyance. Detention for Japanese Gulch watershed is provided in a large linear regional detention pond (Alpha Pond) located immediately west of the Boeing property at the north end of Runway 16R/34L. The Smugglers Gulch watershed is partially undeveloped and contains a large regional detention facility. Detention in the Big Gulch watershed is provided principally by Wetland 25 with additional detention being provided by the Swanson Wetland Mitigation Bank and Wetland 24. The Big Gulch watershed also includes several smaller facilities including two open pond detention facilities that serve Mukilteo Speedway drainage; linear detention ponds west of Runway 16R/34L; and four open pond facilities. Detention in the Swamp Creek watershed is provided by constructed ponds and buried vaults. Due to the underlying geology of the area, there are no significant ground water resources. The deep compacted tills in this area have low permeability and low potential yield. Ground water flow in this type of terrain generally follows the topography.
Figure C7: Paine Field Drainage Basins

Source: Google Maps-June 2010.

C.22
Snohomish County has developed a Stormwater Pollution Prevention Plan for the entire Airport, along with the previously mentioned Master Drainage Plan. The Airport has a permit under the State of Washington's Industrial Stormwater General Permit requirements. The Plan includes a detailed facility assessment, Best Management Practices for various activities on the Airport and a Stormwater Monitoring Plan.

Water quality considerations related to airport development often include increased surface runoff, erosion, and pollution from fuel, oil, solvents and deicing fluids. State and Federal laws and regulations have been established to prevent potential environmental impacts due to spills. These regulations include standards for above ground and underground storage tanks, leak detection and overflow protection.

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**Wetlands**

Executive Order 11990, Order DOT 5660 requires Federal agencies to minimize the impact of construction projects on wetlands. The Airport has completed two recent reports pertaining to wetlands; a *Critical Areas Study* and the *Master Drainage Plan*. The Critical Areas Study identifies jurisdictional wetlands on the Airport and addresses mitigation measures if they are impacted. Mitigation will be achieved by using credits in the Airport’s Wetland Compensation Bank program, utilizing two separate banks in the vicinity, the Narbeck and Swanson banks.

The Master Drainage Plan identifies drainage basins on the Airport, where run-off goes and developed a Stormwater Capital Improvement Program. The Plan identifies drainage areas and contemplates run-off from Airport projects.