3 Affected Environment

3.1 Introduction

This section of the EIS describes existing conditions for the SEPA elements of the environment (WAC 197-11-444) that have the potential to experience adverse impacts as a result of the Action Alternatives. The descriptions of existing conditions incorporate by reference Section 3, Affected Environment, of the NEPA EA.

3.2 Overview of the Affected Environment

3.2.1 Airport Setting and Location

SEA is located primarily within the City of SeaTac in southern King County, Washington, 12 miles south of downtown Seattle and 20 miles north of the City of Tacoma (**Exhibit 3.2.1-1**). SEA is located on approximately 2,800 acres of land generally bounded by SR 99 to the east, SR 509 to the west, S. 142nd Place to the north, and S. 200th Street to the south. Additional land owned by the Port and used for runway protection and noise compatibility extends northward to S. 136th Street and southward to S. 216th Street.

Cities nearest to SEA include Burien, Des Moines, Normandy Park, SeaTac, and Tukwila, as well as portions of unincorporated King County. Other nearby cities include Federal Way, Kent, and Seattle. Much of the area immediately surrounding SEA is developed with commercial uses serving the Airport; in addition, several major state and interstate highways provide access between SEA and nearby communities. Beyond the immediate Airport environment, the predominant land uses nearest to SEA are residential, local commercial, park land, and some industrial areas. The entire area is located within an urban growth area, as designated under Washington's Growth Management Act (Revised Code of Washington Chapter 36.70A). Exhibit 3.2.1-1 shows SEA and the general pattern of nearby development.

3.2.2 Study Area

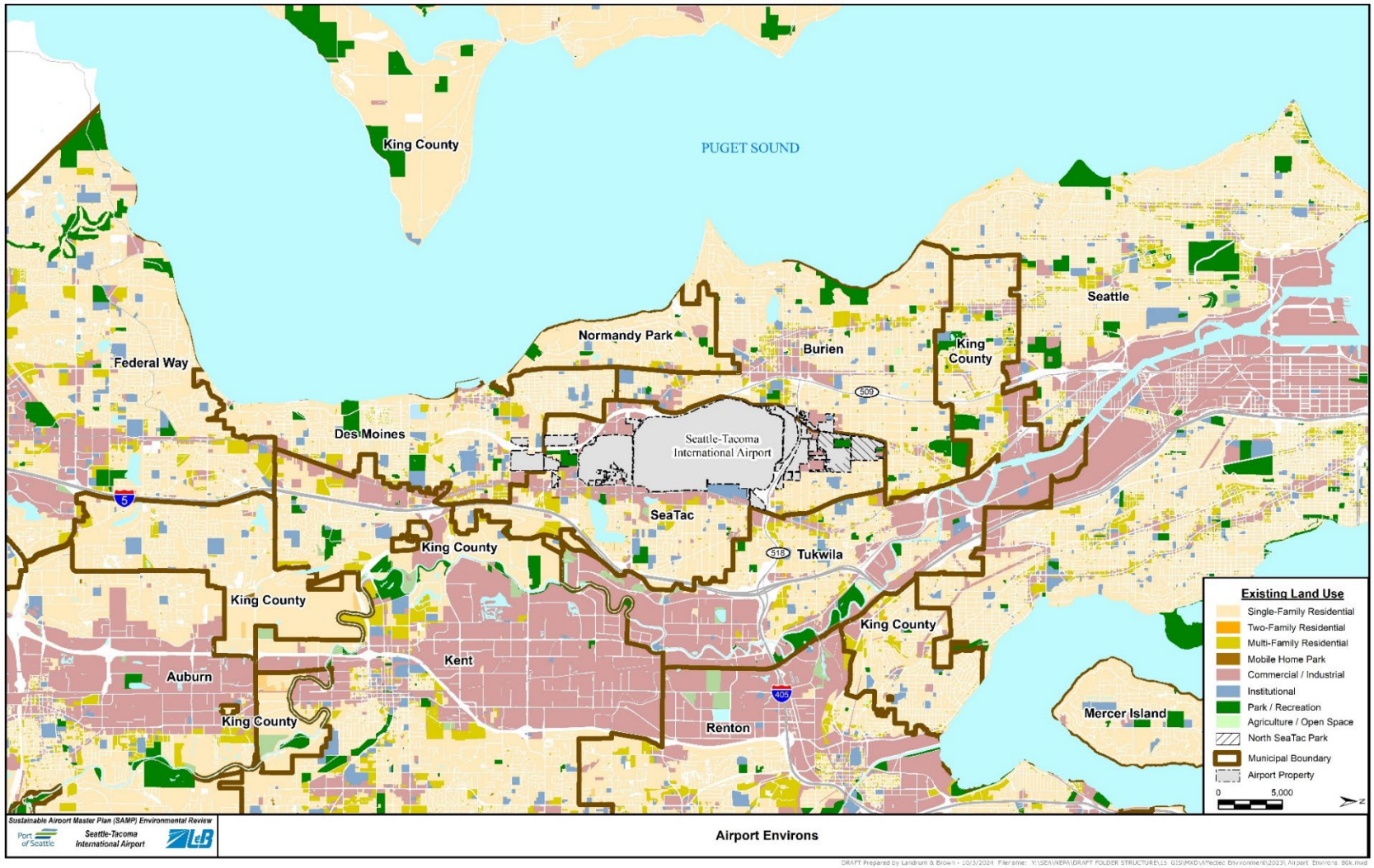
The GSA (**Exhibit 3.2.1-2**) represents the area where reasonably foreseeable direct or indirect impacts may occur as a result of implementing the Proposed Action or alternatives. The GSA includes an area encompassing 3,692 acres (5.8 square miles). The GSA is loosely bounded by S. 140th Street to the north, 33rd Avenue S. to the east, S. 20th Street to the south, and Des Moines Way to the west. The study area for certain resources varies from the GSA. Where that occurs, the applicable study area is explained in the resource section.

3.2.3 Analysis Years

The affected environment sections for each element of the environment provide a description of the baseline conditions in 2022 in and around the vicinity of SEA that may be directly or indirectly affected by the Proposed Action or alternatives. The year 2022 was chosen for the NEPA EA because it was the last full year for which a complete inventory of annual statistical data was available for SEA after the construction schedule was revised and the forecast was updated. For the SEPA EIS, the Port has continued to use the year 2022 because conditions have not substantially changed in subsequent years. In addition, because the Port is incorporating the NEPA EA by reference, retaining 2022 as a baseline maintains consistency with the NEPA EA analysis. However, for topics where additional analysis was done for the SEPA EIS, the Port used data from the most recent available full calendar year.

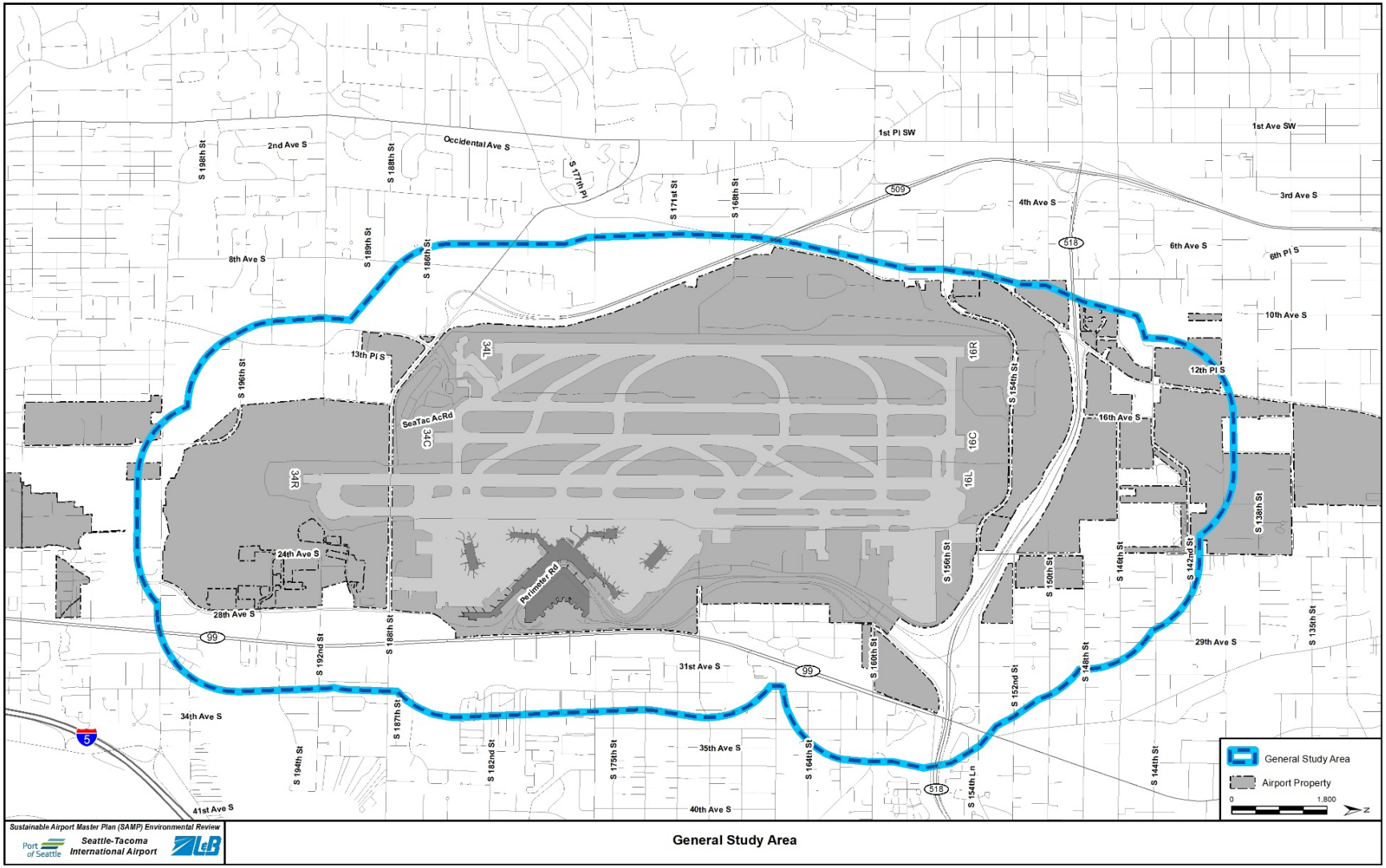
THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.2.1-1: AIRPORT ENVIRONS



THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.2.1-2: GENERAL STUDY AREA (GSA)



THIS PAGE INTENTIONALLY LEFT BLANK

3.3 Elements of the Environment

3.3.1 Air Quality

Air quality is a SEPA element of the environment that can be evaluated in an EIS (WAC 197-11-444[1][b]). This section of the SEPA EIS incorporates by reference Section 3.3.1, Air Quality, of the NEPA EA. To augment the NEPA air quality analysis, this SEPA EIS also includes new evaluations of criteria pollutant concentrations and human health risks associated with toxic air pollutants (TAPs). These evaluations are summarized in this section and Section 4.3.1. Additional information on these analyses can be found in **Appendix C, Air Quality and Greenhouse Gas Emissions**.

Air quality is the measure of the condition of the air expressed in terms of ambient pollutant concentrations and their temporal and spatial distribution. Air quality regulations are based on concerns that high concentrations of air pollutants can harm human health, especially for children, the elderly, and people with compromised health conditions; as well as adversely affect public welfare by damage to crops, vegetation, buildings, and other property. Appendix C provides detailed information on regulations, methodology, and the Air Quality and Greenhouse Gas Technical Report.

3.3.1.1 Regulatory Setting

Under the Clean Air Act (CAA) the U.S. Environmental Protection Agency (USEPA) established the National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and welfare (criteria air pollutants) (**Table 3.3.1-1**). These standards have been established for the following criteria air pollutants: carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), particulate matter less than or equal to ten microns aerodynamic diameter (PM_{10}), fine particulate matter less than or equal to 2.5 microns aerodynamic diameter ($PM_{2.5}$), and lead (Pb). Because emissions of O_3 cannot be calculated directly, volatile organic compounds (VOCs) and oxides of nitrogen (NO_X) (precursors to O_3 formation) are used as surrogates.

TABLE 3.3.1-1: FEDERAL STATUTE AND REGULATION RELATED TO THE PROTECTION OF AIR QUALITY

Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
Clean Air Act (CAA)	42 U.S.C. §§ 7401-767q 40 CFR parts 6, 9, 50-53, 60, 61, 63, 66, 67, 81, 82 and 83	USEPA	Regulates air pollutant emissions from stationary and mobile sources; authorizes USEPA to establish NAAQS for criteria pollutants

Note: Table 3.3.1-1 was Table 3-1 of the NEPA Final EA.

TABLE 3.3.1-2: STATE AND LOCAL REGULATIONS RELATED TO AIR QUALITY

Washington State Law	Code Implementing or Supporting Regulation	Oversight Agency	Summary
Washington Clean Air Act	Chapter 70A.15 RCW	Washington State Department of Ecology (WSDE)	Establishes the state's policy to achieve significant reductions in air pollution and empowers both the WSDE and local clean air agencies to enforce federal, state, and local air quality regulations.
Washington State Conformity Regulations	WAC 173-420-110; WAC 173-420-120	WSDE	Primarily ensures local, regional, and state transportation plans comply with federal Clean Air Act standards, ensuring projects do not exceed motor vehicle emissions budgets (MVEBs) in nonattainment areas.
State Fugitive Dust Regulations	WAC 173-400-040(9)	WSDE	Requires that all reasonable precautions be taken to prevent fugitive dust from becoming airborne, with emissions not allowed to escape beyond property boundaries
Washington State Air Toxics Rule	Chapter 173-460 WAC	WSDE	Establishes the systematic control of new or modified sources emitting toxic air pollutants in order to prevent air pollution, reduce emissions to the extent reasonably possible, and maintain such levels of air quality as will protect human health and safety.

For each of the six criteria pollutants, the USEPA established primary NAAQS intended to protect public health, including that of sensitive populations such as the elderly, children, and people with asthma, as well as secondary standards for the protection of public welfare. The NAAQS are summarized in **Table 3.3.1-3**. All areas of the country are required to demonstrate attainment with the NAAQS. Attainment areas are areas where pollutant levels have not exceeded the NAAQS, whereas nonattainment areas are those where one or more NAAQS were exceeded. Maintenance areas are areas that previously exceeded the NAAQS but currently meet the standards. States with nonattainment or maintenance areas are required to have a State Implementation Plan (SIP) in place to identify how the region will attain the NAAQS. Maintenance areas are subject to a SIP for two consecutive 10-year periods (20 years) after reaching attainment to ensure continued attainment.

In addition to these federal requirements, SEA is subject to state and local air quality regulations that the Washington State Department of Ecology (WSDE) and Puget Sound Clean Air Agency (PSCAA) enforce, respectively. Based on the Air Quality Data Summary for 2022 prepared by the PSCAA, the State of Washington and the Puget Sound region have adopted the USEPA's NAAQS.[1,2]

[1] Puget Sound Clean Air Agency. 2022 Air Quality Data Summary, December 2023. https://pscleanair.gov/DocumentCenter/View/5360.

[2] The Puget Sound Clean Air Agency has developed an air quality health goal for daily $PM_{2.5}$ concentrations. The health goal of 25 µg/m^3 for a daily average is more protective than the current federal standard of 35 µg/m^3. However, the State of Washington has not approved this health goal as an ambient air quality standard.

TABLE 3.3.1-3: NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

Pollutant	Primary / Secondary	Averaging Time	Level	Form Of Measurement
Carbon Monoxide (CO)	Primary	8 hour	9 ppm	Not to be exceeded more than once per year
Carbon Monoxide (CO)	Primary	1 hour	35 ppm	Not to be exceeded more than once per year
Lead (Pb)	Primary and Secondary	Rolling 3-month average	0.15 µg / m^3 (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
Nitrogen Dioxide (NO_2)	Primary and Secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_3)	Primary and Secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particulate Matter ($PM_{2.5}$)	Primary	1 year	9.0 µg / m^3	Annual mean, averaged over 3 years
Particulate Matter ($PM_{2.5}$)	Secondary	1 year	15.0 µg / m^3	Annual mean, averaged over 3 years
Particulate Matter ($PM_{2.5}$)	Primary and Secondary	24 hours	35 µg / m^3	98th percentile, averaged over 3 years
Particulate Matter (PM_{10})	Primary and Secondary	24 hours	150 µg / m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)	Primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
Sulfur Dioxide (SO_2)	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Notes: Table 3.3.1-3 was Table 3-2 in the NEPA Final EA. ppm is parts per million; ppb is parts per billion and µg / m^3 is micrograms per cubic meter.

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg / m^3 as a calendar quarter average) also remain in effect.

(2) The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) O_3 standards.

(4) The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is a USEPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Source: USEPA, https://www.epa.gov/criteria-air-pollutants/naaqs-table, accessed March 2024.

3.3.1.2 King County Air Quality Status

SEA is located within King County, Washington, which is included in the Puget Sound Intrastate Air Quality Control Region. The area was previously designated maintenance for ozone under the 1-hour 1979 ozone standard; however, the 1-hour standard was revoked by USEPA effective June 15, 2005. The maintenance period for ozone ended on November 25, 2016.[3] The region is currently designated as in attainment for both the 2015 and 2008 8-hour ozone standard.

In the past, King County was also designated as nonattainment for CO; however, on October 11, 1996, the USEPA determined the area had attained the standard and the region was redesignated to attainment of the 1971 standard. The maintenance period for CO ended on October 11, 2016.[4] Several areas within King County are classified as maintenance for the PM_{10} (coarse particles) standard. The Airport is not within any of these areas. Therefore, the Proposed Action would occur in an area considered in attainment for all criteria pollutants. Because the region is in attainment, conformity analysis is not required under the Washington State Conformity Regulations.

3.3.1.3 Existing Conditions

The air quality analysis completed for the NEPA EA considered the sources of emissions and local meteorology. Sources of emissions such as ground support equipment (GSE) or stationary sources are limited to the project site. The analysis of aircraft operations extends beyond the project site (Port-owned property) up to the mixing height, which is where air pollutants are "capped" from going higher by relative air temperature. The mixing height used in this assessment is defined as 3,084 feet in altitude above field elevation based on the USEPA's *Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution Throughout the Contiguous United States*, as recommended by the FAA and concurred on by the PSCAA. Furthermore, the analysis included impacts associated with potential changes to motor vehicle traffic on the surrounding road network. The vehicle traffic analysis included volumes reflecting (1) vehicles traveling Airport roadways; (2) vehicles accessing parking facilities; (3) vehicles accessing the terminal curbside areas for passenger pick-up and drop-off; and (4) vehicles traveling off-Airport roadways.

Methods for Criteria Pollutant Emissions Inventory

In the FAA's NEPA Final EA, emissions were evaluated using the FAA's Aviation Environmental Design Tool (AEDT) Version 3f. AEDT models aircraft performance in space and time to estimate fuel consumption, air quality emissions, and noise consequences at airports. Emission factors for motor vehicles were derived from the USEPA's Motor Vehicle Emissions Simulator (MOVES) model version 4. Since the release of the Final EA, AEDT Version 3g and MOVES model version 5 were released, so the Port reevaluated the criteria pollutant emissions inventory using the most recent models for the SEPA EIS. The same source data were used as input to both analyses. The updated results are included in the Air Quality and Human Health Risk Assessment Technical Report, which is part of Appendix C.

[3] Washington State Department of Ecology. Plans for Maintaining Air Quality. https://ecology.wa.gov/Regulations-Permits/Plans-policies/State-implementation-plans/Maintenance-SIPs, accessed December 2023.
[4] Ibid.

AEDT 3g includes a set of targeted technical updates that refine emissions inventory development and dispersion modeling relative to version 3f. These updates improve consistency with current FAA-accepted data sources and USEPA approved methods, while maintaining the same overall regulatory framework and impact determination approach used in environmental analyses. MOVES5 allows users to model new regulations promulgated since MOVES4 was released, incorporates the latest emissions data, and has improved functionality. The approach to use AEDT and MOVES models was developed and coordinated with the FAA and the PSCAA; the approach to update to the most recently available models for SEPA was coordinated with the PSCAA.

Existing Criteria Air Pollutant Emissions Inventory

An emissions inventory for the Existing Condition is a summary of the total criteria air pollutants generated by all active emissions sources that may be affected by the Proposed Action. The emissions inventory provides the total annual pollutant emissions as short tons per year.[5] The updated emissions inventory for the Existing Condition is shown in **Table 3.3.1-4**. The analysis included criteria air pollutants CO, NO_2, PM_{10}, $PM_{2.5}$, SO_2 and ozone precursor pollutants NO_x and VOCs. Lead was not included because Avgas (the only aviation fuel containing lead) fueling ceased at SEA in 2018 and the Proposed Action does not involve any potentially significant source of lead emissions.

TABLE 3.3.1-4: EXISTING (2022) CONDITION ANNUAL EMISSIONS INVENTORY (SHORT TONS PER YEAR)

Emissions Source	CO	VOC	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Aircraft	**1,798**	**255**	**2,081**	**186**	**21**	**21**
LTO (includes Start-Up, Approach, Climb, and Taxiing)	1,681	244	1,977	175	12	12
APUs	1	0	44	2	0	0
Aircraft Run-Ups	116	10	60	9	9	9
GSE	**196**	**6**	**17**	**0**	**1**	**1**
Tenant-Owned GSE	193	6	13	0	1	1
Port-Owned Airfield Vehicles and Equipment	3	0	4	0	0	0
Stationary Sources	**15**	**10**	**25**	**33**	**1**	**1**
Natural Gas Boilers	13	1	16	0	0	0
Diesel Generators	2	0	10	33	0	0
Fuel Farm Tanks	0	9	0	0	0	0
Motor Vehicles	**3,169**	**60**	**413**	**2**	**8**	**8**
Parking Facilities	52	2	6	0	0	0
On and Off-Airport Roadways (includes Airside Deliveries)	3,117	58	408	2	8	8
Total	**5,178**	**332**	**2,537**	**221**	**31**	**31**

Notes: Table 3.3.1-4 was Table 3-3 in the NEPA Final EA. Results shown are based on AEDT Version 3f and MOVES Version 4. Totals may not sum due to rounding; Zeros may not indicate an absolute zero value.

SO_x= sulfur oxides, PM_{10}=coarse particulate matter, $PM_{2.5}$= fine particulate matter, LTO = landing / take-off cycle, APU = auxiliary power unit

Source: Port of Seattle and Landrum & Brown, 2023.

[5] A short ton in the United States is commonly just called a ton. One short ton equals 2,000 pounds.

In terms of total tons of emissions occurring in 2022, the largest quantity of criteria pollutants emitted was CO at 5,178 short tons followed by the two ozone precursors NO_x and VOC at 2,537 and 332 short tons respectively. The dominant source of emissions of all criteria pollutants was from aircraft operations and motor vehicles.

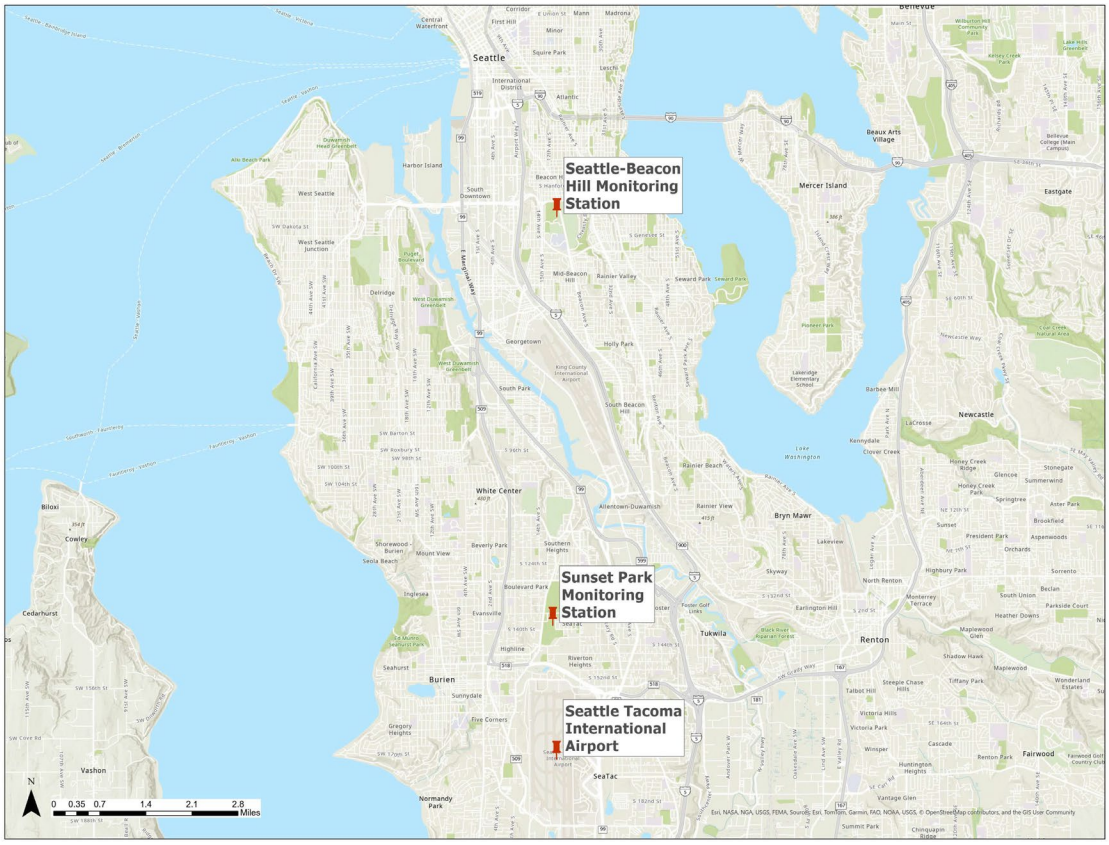
Criteria Air Pollutant Concentrations

For this SEPA EIS, the Port performed additional analysis of criteria air pollutants using air dispersion modeling. Whereas emissions inventories identify only the amount of a given pollutant generated by project activity, air dispersion modeling simulates how pollutants disperse in the atmosphere to estimate downwind ground-level concentrations. This provides information on whether pollutant concentrations may exceed air quality standards and/or result in health risks at specific locations.

Methods for Criteria Air Pollutant Concentrations Analysis

Existing pollution levels include emissions from automobiles, industry, and other sources unrelated to the Airport. Background criteria air pollutant concentrations were obtained from monitoring stations in the Seattle area. Specifically, concentrations of CO, NO_2, SO_2, $PM_{2.5}$, PM_{10}, and Pb were estimated from the most recent three years of monitoring data collected at the Seattle-Beacon-Hill station. Additionally, $PM_{2.5}$ concentrations from the SeaTac-Sunset Park station are summarized for informational purposes but are not used for background concentrations because three complete years of data is not available. **Exhibit 3.3.1-1** illustrates the monitoring station locations used for background pollutant concentrations.

EXHIBIT 3.3.1-1: MONITORING STATION LOCATIONS



Source: CDM Smith 2026

Existing Criteria Air Pollutant Concentrations

Table 3.3.1-5 summarizes the existing concentrations of criteria pollutants measured at the Seattle-Beacon Hill monitoring station. These were used as the background concentrations in the analysis of future conditions described in Section 4.3.1.

TABLE 3.3.1-5: BACKGROUND AIR QUALITY DATA FOR NAAQS COMPARISON

Pollutant	Averaging Period	Unit	Regulatory Threshold	Monitored Pollutant Concentration			Background Concentration
				2023	2024	2025	
CO	1 hour	ppm	35	0.949	0.892	0.639	0.949
	8 hour	ppm	9	0.	0.7	0.5	0.8
NO_2	1 hour	ppb	100	42	40.3	38	42
	Annual	ppb	53	9.34	8.76	8.57	8.89
$PM_{2.5}$	24 hour	µg/m^3	35	9.6	13.7	9.2	10.8
	Annual	µg/m^3	9	4.29	4.84	4.55	4.56
PM_{10}	24 hour	µg/m^3	150	17	34	25	34
SO_2	1 hour	ppb	75	2.6	2	2.9	2.9
	Annual	ppb	10	0.508	0.143	0.099	0.250
Pb	3-month rolling average	µg/m^3	0.15	0.016	0.022	0.017	0.022

Source: USEPA, 2026. Air Data Pre-Generated Data Files. Annual Summary Data. Available for review at: https://aqs.epa.gov/aqsweb/airdata/download_files.html#Annual. Accessed March 2, 2026. Key: µg/m3 = micrograms per cubic meter; CO = carbon monoxide; NO_2 = nitrogen dioxide; Pb = lead; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; ppb = parts per billion; ppm = parts per million; SO_2 = sulfur dioxide

Fine Particulate Matter

As noted above, criteria pollutants include fine particulate matter with an aerodynamic diameter of 2.5 µm or less ($PM_{2.5}$). EPA has the exclusive power to regulate emissions of this pollutant and has established regulatory standards that are designed to be protective of public health and welfare from exposure to them.

More recently, scientific literature has begun to explore the potential for adverse health effects from exposure to smaller categories of fine particulate matter: ultrafine particles (UFPs), commonly considered by the scientific community to have an aerodynamic diameter of 100 nanometers (nm), or 0.1 micrometers (µm), or less; and ultra-ultrafine particles (UUFPs), which are a relatively newly measured subset of UFPs, commonly considered to have aerodynamic diameters of less than 20 nm, or 0.020 µm. UFPs and UUFPs are subsets of $PM_{2.5}$. As described in Appendix C, these initial studies have not shown specific causal health effects from UFP and UUFP exposures that are distinct and independent from the broader health effects currently addressed by $PM_{2.5}$ standards. Accordingly, while EPA is aware of studies considering exposure to UFPs and UUFPs from aircraft operations, it has declined to address UFPs and UUFPs because of limited and conflicting epidemiologic and toxicologic data and insufficient context to infer independent effects from $PM_{2.5}$.

Ambient Levels of Fine Particulate Matter

The SeaTac-Sunset Park $PM_{2.5}$ monitoring station, operated by the Puget Sound Clean Air Agency, was installed in 2024 and became fully operational in spring 2025 following commissioning and quality assurance procedures. The air monitoring station was established to characterize $PM_{2.5}$ concentrations in communities located immediately north of SEA, an area influenced by a combination of airport operations, major roadway traffic (including SR99, SR-518, and SR-509), and nearby industrial and urban sources. Operated as part of the regional ambient air quality monitoring network, the station provides continuous, quality-assured $PM_{2.5}$ data used to assess compliance with NAAQS and to track long-term air quality trends in a location representative of population exposure near the airport environment.

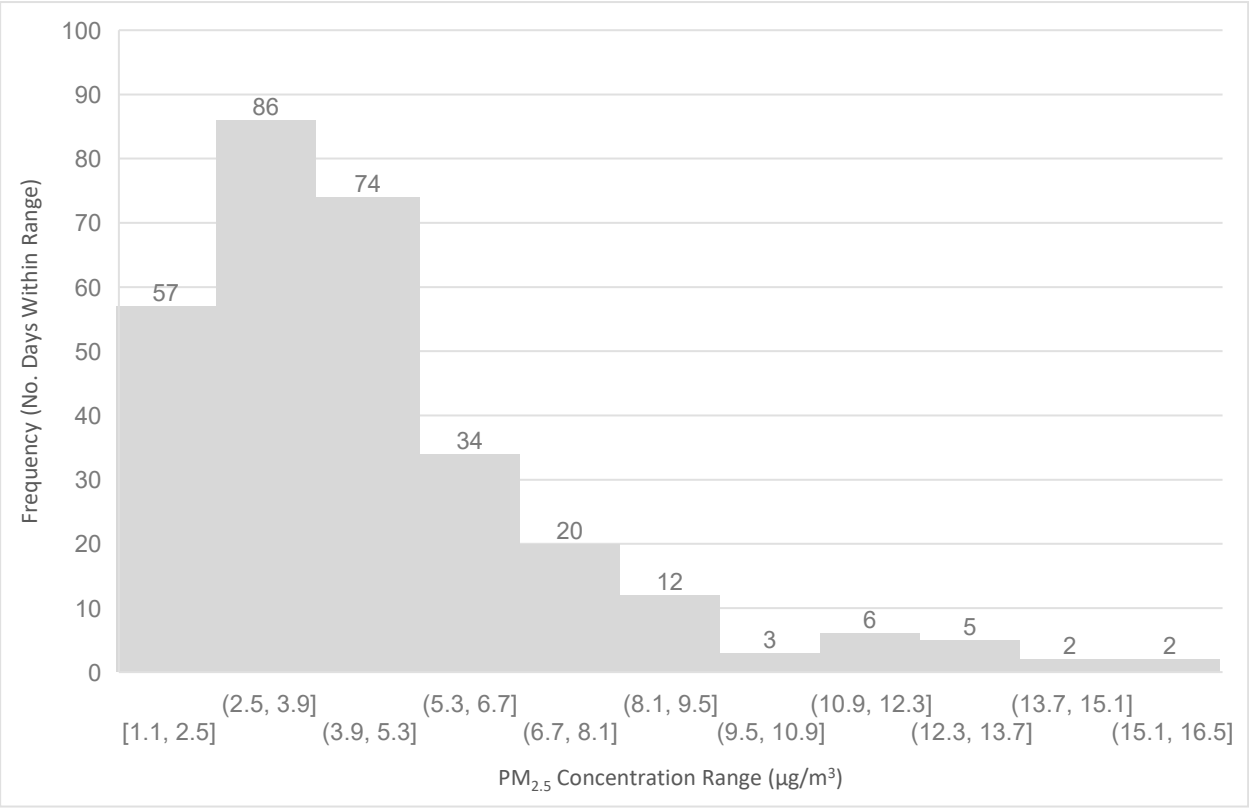
Because the station was only established in 2024, it did not contain sufficient background data to be used in the analysis. A review of the hourly monitoring data available from April 7, 2025 (first date of available data) through February 3, 2026 (last date of available data when downloaded) shows a maximum 24-hour average concentration of 16.3 micrograms per cubic meter ($\mu g/m^3$), which is substantially below the NAAQS of 35 $\mu g/m^3$.

Exhibit 3.3.1-2 shows the frequency of daily $PM_{2.5}$ concentration values from the SeaTac-Sunset Park monitoring station. To interpret the histogram chart, the bracketed values show a range of concentration values. For example, the first bracket shows the frequency of all concentration values between 1.1 $\mu g/m^3$and 2.5 $\mu g/m^3$ from the analyzed data; as shown, there were 57 data points that had concentration values within this range. The data shows that most concentrations are below 9.5 $\mu g/m^3$.

Annual averages are not provided because of incomplete annual data. It is also important to recognize that the presented 24-hour average values are not regulatory design values due to a lack of sufficient data, and the likely inclusion of data from exceptional events like wildfires or wood burning during winter.[6]

[6] Exceptional events are rare, uncontrollable occurrences—such as wildfire smoke—that are not reasonably preventable and can be excluded by USEPA from air quality design value calculations when they are demonstrated to have caused exceedances beyond normal anthropogenic conditions.

EXHIBIT 3.3.1-2: PM2.5 24-HOUR AVERAGE FREQUENCY – SEATAC-SUNSET PARK MONITORING STATION



Source: WSDE, 2026, Washington Air Quality Map. Hourly Data Report. Available for review at https://airqualitymap.ecology.wa.gov/. Accessed March 2, 2026.

3.3.2 Plants and Animals

Plants and animals is a SEPA element of the environment that can be evaluated in an EIS (WAC 197-11-444[1][d]). This section addresses that topic and incorporates by reference Section 3.3.2, Biological Resources, of the NEPA EA.

Biological resources are valued for their intrinsic, aesthetic, economic, and recreational qualities. Typical categories of biological resources include terrestrial and aquatic plant and animal species; game and non-game species; special status species (state or federally listed threatened or endangered species, or species of concern); and environmentally sensitive or critical habitats. Detailed information, including survey data, is provided in **Appendix D, Biological Resources**.

3.3.2.1 Regulatory Setting

TABLE 3.3.2-1: FEDERAL STATUTES, REGULATIONS, AND EXECUTIVE ORDERS RELATED TO BIOLOGICAL RESOURCES

Federal Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
Bald and Golden Eagle Protection Act (BGPA)	16 United States Code (U.S.C.) § 668 et seq. 50 CFR part 22	U.S. Fish and Wildlife Service (USFWS)	Protects bald and golden eagles from the unauthorized capture, purchase, or transportation of the birds, nests, or eggs.
Endangered Species Act (ESA)	16 U.S.C. §§ 1531-1544 50 CFR parts 17 and 402	USFWS; National Marine Fisheries Service (NMFS)	Requires federal agencies to seek to conserve threatened and endangered species. Section 7(a)(2) requires federal agencies, in consultation with the USFWS and / or NMFS, to ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.
Fish and Wildlife Coordination Act	16 U.S.C. §§ 661-667d	USFWS	Requires federal agencies to consult with the USFWS, NMFS (in some instances), and appropriate state fish and wildlife agencies regarding the conservation of wildlife resources when proposed federal projects may result in control or modification of the water of any stream or other water body.
Magnuson-Stevens Fishery Conservation and Management Act	16 U.S.C. § 1801 et seq. 50 CFR part 600	NMFS	Governs the conservation and management of ocean fishing, including essential fish habitat.
Marine Mammal Protection Act	16 U.S.C. § 1361 et seq. 50 CFR parts 18 and 216	NMFS, USFWS	Protects all marine mammals and prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas.

TABLE 3.3.2-1: FEDERAL STATUTES, REGULATIONS, AND EXECUTIVE ORDERS RELATED TO BIOLOGICAL RESOURCES (CONTINUED)

Federal Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
Migratory Bird Treaty Act (MBTA)	16 U.S.C. § 703 et seq.50 CFR part 21	USFWS	Protects migratory birds by prohibiting private parties (and federal agencies in certain judicial circuits) from intentionally taking, selling, or conducting other activities that would harm migratory birds, their eggs, or nests (such as removal of an active nest or nest tree), unless the USFWS authorizes such activities under a special permit.
Executive Order 13751, Safeguarding the Nation from the impacts of Invasive Species	81 Federal Register 88609, December 5, 2016	Not Applicable	Federal agencies must prevent the introduction, establishment, and spread of invasive species, as well as to eradicate and control populations of invasive species that are established.
Executive Order 13112, Invasive Species	64 Federal Register 6183, (February 8, 1999)	Not Applicable	Federal agencies whose actions may affect the status of invasive species are directed to use relevant programs and authorities, to the extent practicable and subject to available resources, to prevent the introduction of invasive species, and to provide for the restoration of native species and habitat conditions in ecosystems that have been invaded. Agencies are directed not to carry out actions that they believe are likely to cause or promote the introduction or spread of invasive species unless the benefits of such actions clearly outweigh the potential harm, and all feasible and prudent measures to minimize risk of harm are taken.
Wildlife Hazard Management Plan	*14 CFR Part §139.337(f)*	*FAA*	*Guides responsibilities, policies, resources, and procedures to reduce wildlife hazards specific to SEA*

Note: Table 3.3.2-1 is based on Table 3-4 of the NEPA Final EA. Information added for the SEPA EIS is *italicized*.

TABLE 3.3.2-2: STATE, LOCAL, AND PORT REGULATIONS AND POLICIES RELATED TO PLANTS AND ANIMALS

Washington State Law	Code Implementing or Supporting Regulation	Oversight Agency	Summary
Authority to Take Wildlife (Powers and Duties of WDFW)	RCW 77.12.240	Washington Department of Fish and Wildlife (WDFW)	Law authorizing the removal or killing of wildlife that is destroying or injuring property, or when it is necessary for wildlife management or research.
Construction Projects in State Waters / Hydraulic Code Rules for Hydraulic Project Approval (HPA) Permits	Chapter 77.55 RCW, Chapter 220-660 WAC	WDFW	Law pertaining to construction projects within the ordinary high water line in fresh waters of the state, including the need for fish screens, fishways, and fish passage. Hydraulic Code rules for HPA permits regulate projects constructed in or over waterbodies.
Critical Areas Ordinances	SeaTac Municipal Code (SMC) 15.7 Critical Areas	Port of Seattle within the AAA/City of SeaTac outside the AAA	City code adopted to designate and protect critical areas as defined by state law, including fish and wildlife habitat conservation areas, wetlands, and others. Critical areas compliance within the AAA, which is depicted in Appendix 3A to the ILA, is implemented by the Port as set out in the 2018 ILA between the Port and City of SeaTac. The City manages compliance outside the AAA.
Land Stewardship Plan	Port of Seattle Commission Resolution No. 3821	Port of Seattle	Applicable to Port-owned properties at SEA and surrounding area. Guides forest health and habitat connectivity enhancements, integrates capital project development, and prioritizes actions in accordance with Port's Equity Index and community engagement priorities. Formalizes requirements to replace trees that are cleared for operational safety and development needs at SEA.
Landscape Vision, Design Guidelines, and Standards	Port-Required Design Standards and Guidelines	Port of Seattle	Sets a conceptual vision, design guidance, and requirements / standards to provide direction for the landscaping at SEA and tree replacement standards for trees removed within the AAA.

3.3.2.2 Existing Conditions

NMFS defined an ESA-listed species study area specifically to assess impacts to ESA-listed species and habitat as part of Section 7 consultation, as shown in **Exhibit 3.3.2-1**. The ESA Study Area includes areas where NMFS indicated direct effects may occur from the construction of the NTPs and where indirect effects may occur from stormwater runoff. It includes most of the GSA and streams receiving stormwater from the GSA to the Puget Sound. The GSA was used to assess impacts to all other species.

Both study areas are composed primarily of developed areas (buildings and paved surfaces) with areas of vegetated habitats (managed strips adjacent to runways and taxiways, open fields and shrublands, forested areas, stormwater ponds, and wetlands). Vegetated habitats are actively managed to prevent flight corridor obstructions and wildlife hazards.

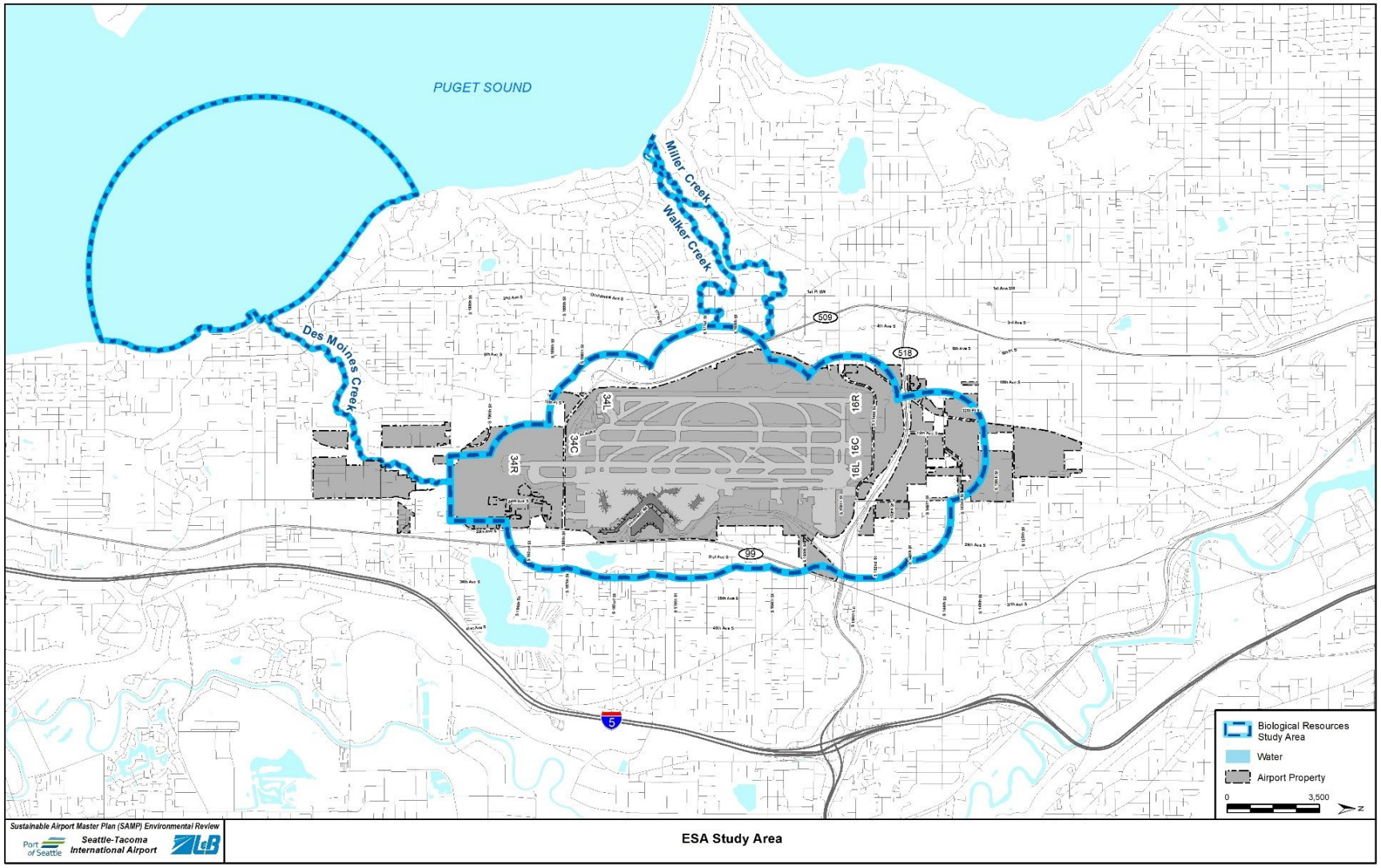
Fish and Wildlife

Common bird species present within the GSA include waterfowl (geese and ducks), gulls, pigeons, starlings, and raptors (hawks and owls). Common animals include coyotes, mice, rabbits, racoons, beavers, and several fish species.

The Airport has a comprehensive wildlife management program to make the Airport less attractive to wildlife that could interfere with flight operations, thus ensuring a safe environment for aviation and passengers. This program includes measures such as wildlife deterrent fencing around the perimeter of the airfield and a trapping and relocation program implemented by wildlife biologists. This approach balances wildlife protection and habitat requirements with aviation safety. The Port also works with local jurisdictions to establish an area extending 10,000 feet beyond SEA within which new development is reviewed for potential wildlife attractiveness that could impact aviation safety.

THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.2-1: ESA STUDY AREA



THIS PAGE INTENTIONALLY LEFT BLANK

Endangered Species Act (ESA)

Species lists from the USFWS and the NMFS were obtained for this review in November 2019, September 2021, August 2023, April 2024, and June 2025. These lists indicate that several ESA-listed species and designated critical habitat have the potential to occur within the ESA Study Area (see **Table 3.3.2-3)**.

TABLE 3.3.2-3: ESA-LISTED ANIMAL SPECIES AND DESIGNATED CRITICAL HABITAT

Species	Listing Status	Critical Habitat	Notes
North American Wolverine	Threatened 11/30/2023 88 Federal Register (FR) 83726	Not proposed in Washington (WA).	No suitable habitat for this species.
Marbled Murrelet – Washington, Oregon, and California	Threatened 10/01/1992 57 FR 45328	Designated 08/04/2016 81 FR 51348	No suitable habitat for this species.
Yellow-billed Cuckoo – Western U.S.	Threatened 11/03/2014 79 FR 59991	Not proposed in WA.	This species has been extirpated from WA and occurs as a periodic migrant.
Northwestern Pond Turtle	Proposed Threatened 10/03/2023 88 FR 68370	Not proposed in WA.	No suitable habitat for this species.
Bull Trout – Coastal-Puget Sound	Threatened 11/01/1999 64 FR 58910	Designated 10/18/2010 75 FR 63898	Documented to occur in the Puget Sound.
Chinook Salmon – Puget Sound	Threatened 06/28/2005 04/14/14 70 FR 37160	Designated 09/02/2005 70 FR 52630	Documented migration and foraging habitat present in Puget Sound. Documented in Miller Creek and (gradient accessible) in Walker Creek and Des Moines Creek.
Steelhead – Puget Sound	Threatened 04/14/2014 79 FR 20802	Designated 02/24/2016 81 FR 9252	Documented migration and foraging habitat present in the Puget Sound. Documented (gradient accessible) in Miller Creek, Walker Creek, and Des Moines Creek.
Yelloweye Rockfish – Puget Sound/Georgia Basin	Threatened 4/28/2010 75 FR 22276	Designated 11/3/2014 79 FR 68041	Planktonic eggs and larvae, post-settlement juvenile, and adult could occur in Puget Sound.
Bocaccio Rockfish – Puget Sound/Georgia Basin	Endangered 4/28/2010 75 FR 22276	Designated 11/3/2014 79 FR 68041	Planktonic eggs and larvae, post-settlement juvenile, and adult could occur in Puget Sound.

TABLE 3.3.2-3: ESA-LISTED ANIMAL SPECIES AND DESIGNATED CRITICAL HABITAT (CONTINUED)

Species	Listing Status	Critical Habitat	Notes
Southern Resident Killer Whale (SRKW)	Endangered 11/18/2005 70 FR 57565	Proposed 08/29/2021 84 FR 41668	SRKW migration and foraging habitat present in Puget Sound.
Humpback Whale – Central America and Western North Pacific	Endangered 12/02/1970 81 FR 62259	Designated 4/21/2021 86 FR 21082	This species is not likely found in the Study Area.
Southern Green Sturgeon	Threatened 04/07/2006 71 FR 17757	Designated 10/09/2009 50 CFR 226.219	No suitable habitat for this species.
Southern Pacific Eulachon	Threatened 03/18/2010 75 FR 13012	Designated 10/20/2011 76 FR 65323	No suitable habitat for this species.
Sunflower Sea Star	*Proposed Threatened* *03/16/2023* *88 FR 16212*	*No critical habitat has been designated for this species.*	*Documented to occur in Puget Sound, but rare south of Cape Flattery, WA*
Monarch Butterfly	Proposed Threatened 12/12/2024 88 FR 100662	No critical habitat has been designated for this species.	Milkweed is not native to King County. Limited potential for the monarch butterfly to be within Study Area.
Suckley's Cuckoo Bumble Bee	Proposed Endangered 12/17/2024 89 FR 102074	Critical habitat has not been proposed in Washington.	There is limited potential for Suckley's Cuckoo Bumble Bee to be within the Study Area.
Swamp / Marsh Sandwort	Endangered 08/03/1993 58 FR 41378	No critical habitat has been designated for this species.	No suitable habitat for this species.

Sources: NMFS (2019, 2021, 2023, 2024, 2025); USFWS (2019, 2021, 2023, 2024, 2025); National Oceanographic and Atmospheric Administration (NOAA) (2019, 2021, 2023, 2024, 2025).

Note: Table 3.3.2-3 is based on Table 3-5 of the NEPA Final EA. Updated information added for the SEPA EIS is *italicized*.

Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act

Most bird species in Washington State, except for introduced birds such as the European starling, rock doves (pigeons) and English house sparrows, are protected under the MBTA. **Table 3.3.2-4** provides a list of MBTA-protected species observed at SEA during annual wildlife hazard surveys conducted by the Port. The Port has documented bald eagle occurrences within the GSA. There are no known bald eagle nests or roosting sites within the GSA. The golden eagle is rare west of the Cascades and has not been observed in the GSA.

TABLE 3.3.2-4: MBTA-PROTECTED BIRD SPECIES WITHIN THE GSA

Species		
American bittern	Common goldeneye	Greater scaup
American coot	Common merganser	Greater white-fronted goose
American crow	Common nighthawk	Greater yellowlegs
American goldfinch	Common raven	Green heron
American kestrel	Common yellowthroat	Green-winged teal
American pipet	Cooper’s hawk	Hammond's flycatcher
American robin	Dark-eyed junco	Hairy woodpecker
American tree sparrow	Dickcissel	Hermit thrush
American wigeon	Double-crested cormorant	Herring gull
Anna’s hummingbird	Dowitcher	Hooded merganser
Bald eagle	Downy woodpecker	Horned grebe
Band-tailed pigeon	Dunlin	Horned lark
Bank swallow	Eared grebe	House finch
Barn owl	Evening grosbeak	House wren
Barn swallow	Fox sparrow	Killdeer
Barred owl	Gadwall	Lazuli bunting
Barrow’s goldeneye	Glaucous-winged gull	Least sandpiper
Belted kingfisher	Golden-crowned kinglet	Lesser nighthawk
Bewick’s wren	Golden-crowned sparrow	Lesser scaup
Black swift	Gray-cheeked thrush	Lincoln's sparrow
Black-capped chickadee	Great blue heron	Long-eared owl
Black-headed grosbeak	Great horned owl	MacGillivray’s warbler
Black-throated gray warbler	Greater scaup	Mallard
Blue-winged teal	Greater white-fronted goose	Marsh wren
Broad-winged hawk	Greater yellowlegs	Merlin
Brown creeper	Green heron	Mountain bluebird
Brown-headed cowbird	Green-winged teal	Mourning dove
Bufflehead	Hammond's flycatcher	Northern flicker
Bushtit	Hairy woodpecker	Northern harrier
Cackling goose	Hermit thrush	Northern pintail
California gull	Herring gull	Northern shoveler
California quail	Hooded merganser	Northern shrike
Canada goose	Horned grebe	Northwestern crow
Canvasback	Herring gull	Orange-crowned warbler

TABLE 3.3.2-4: MBTA-PROTECTED BIRD SPECIES WITHIN THE GSA (CONTINUED)

Species		
Caspian tern	Hooded merganser	Osprey
Cedar waxwing	Horned grebe	Ovenbird
Chestnut-backed chickadee	Evening grosbeak	Pacific golden plover
Chipping sparrow	Fox sparrow	Pacific slope flycatcher
Cliff swallow	Gadwall	Palm warbler
Glaucous-winged gull	Red-breasted nuthatch	Pectoral sandpiper
Golden-crowned kinglet	Red-breasted sapsucker	Peregrine falcon
Golden-crowned sparrow	Red-necked grebe	Pied-billed grebe
Gray-cheeked thrush	Red-necked phalarope	Pileated woodpecker
Great blue heron	Red-shouldered hawk	Pine siskin
Great horned owl	Red-tailed hawk	Purple martin
Red-breasted merganser	Spotted sandpiper	Western tanager
Red-winged blackbird	Spotted towhee	Western wood pewee
Ring-billed gull	Swainson’s hawk	Whimbrel
Ring-necked duck	Townsend’s warbler	White-crowned sparrow
Rough-legged hawk	Tree swallow	White-throated sparrow
Ruby-crowned kinglet	Tundra swan	White-throated swift
Ruddy duck	Turkey vulture	Willow flycatcher
Rufous hummingbird	Varied thrush	Wilson's snipe
Savannah sparrow	Vaux swift	Wilson’s warbler
Sharp-shinned hawk	Violet-green swallow	Winter wren
Short-eared owl	Warbling vireo	Wood duck
Snow bunting	Western grebe	Yellow-headed blackbird
Snow goose	Western gull	Yellow-rumped warbler
Snowy owl	Western meadowlark	Yellow warbler
Song sparrow	Western sandpiper	Western screech owl
Sora		

Source: Port annual surveys (2019 to present).

Note: Table 3.3.2-4 was Table 3-6 of the NEPA Final EA.

State Species of Concern

The Washington Threatened, Endangered, and Sensitive Species list includes species listed under the federal ESA and state listed endangered, threatened, or sensitive species. These species and their likelihood of occurrence in the GSA and ESA Study Area are listed in Table 3.3.2-5. Common loons spend the winter in almost all nearshore marine habitat and larger freshwater bodies of western Washington and are likely to occur in the Puget Sound portion of the ESA Study Area. No other state-listed or sensitive species, including two species that are "possible" to occur (Canadian St. John's-wort and flat-leaved bladderwort), are likely or known to occur in the GSA and, therefore, will not be discussed further in the SEPA EIS. The WDNR Natural Heritage Program has identified two different kinds of natural areas with the goal of conserving and restoring rare plant and animal species. These include Natural Area Preserves (NAPs) and Natural Resource Conservation Areas (NRCAs). No NAPs or NRCAs are located within the GSA and therefore will not be discussed further in the SEPA EIS.

TABLE 3.3.2-5: WASHINGTON STATE PROTECTED SPECIES NOT LISTED UNDER ESA AND LIKELIHOOD OF OCCURRENCE IN GSA

Species	State Status	Likely to Occur in GSA or ESA Study Area?	Basis
Birds			
Sandhill crane	Endangered	No	Seasonal distribution in WA is restricted to specific areas in Yakima and Klickitat counties.
Upland sandpiper	Endangered	No	Historical distribution is limited to eastern WA, likely extirpated from state.
Tufted puffin	Endangered	No	Distribution is limited to coastal marine habitats with rocky outcrops on the WA coast and Strait of Juan de Fuca.
Columbian sharp-tailed grouse	Endangered	No	Distribution is restricted to eastern WA.
American white pelican	Threatened	No	Distribution is restricted to eastern WA.
Ferruginous hawk	Threatened	No	Distribution restricted to southeastern WA.
Common loon	Sensitive	GSA: No ESA Study Area: Yes, likely to occur	Found in association with protected marine waters and large inland waterbodies. These habitats do not occur within the GSA but are present in the ESA Study Area.
Oregon vesper sparrow	Endangered	No	Status review in progress; ESA listing is probable. Two breeding populations are currently documented in WA, one each in Pierce and Thurston counties.

TABLE 3.3.2-5: WASHINGTON STATE PROTECTED SPECIES NOT LISTED UNDER ESA AND LIKELIHOOD OF OCCURRENCE IN GSA (CONTINUED)

Species	State Status	Likely to Occur in GSA or ESA Study Area?	Basis
Mammals			
Western gray squirrel	Threatened	No	Current distribution is limited to oak and mixed conifer woodlands in southern Puget Sound lowlands and eastern slopes of the Cascade Range. These habitats do not occur within the GSA or ESA Study Area.
Fisher	Endangered	No	Species distribution is limited to mature/old-growth coniferous forest. GSA does not provide suitable habitat.
Reptiles			
Northwestern pond turtle	Endangered	No	Current distribution in western WA is limited to two sites outside of the GSA and ESA Study Area[1].
Amphibians			
Northern leopard frog	Endangered	No	Distribution restricted to eastern WA.
Larch mountain salamander	Sensitive	No	Distribution is limited to alpine habitats in the Cascade Range.
Fish			
Pygmy whitefish	Sensitive	No	Found only in cold alpine streams and deep cold lakes. Suitable habitat does not occur in GSA or ESA Study Areas.
Margined sculpin	Sensitive	No	Current distribution in WA is restricted to cold water streams in southeast corner of state.
Olympic mudminnow	Sensitive	No	GSA and ESA Study area are outside of known species range and documented observations.
Invertebrates			
Mardon skipper	Endangered	No	Distribution is limited to native grass meadows in southern WA Cascade Range.

TABLE 3.3.2-5: WASHINGTON STATE PROTECTED SPECIES NOT LISTED UNDER ESA AND LIKELIHOOD OF OCCURRENCE IN GSA (CONTINUED)

Species	State Status	Likely to Occur in GSA or ESA Study Area?	Basis
Plants			
Triangular-lobed moonwort	Sensitive	No	Occurs in King County; distribution is limited to elevations above 2,100 feet.
Western moonwort	Sensitive	No	Occurs in King County; distribution is limited to elevations above 2,500 feet.
Alaska harebell	Sensitive	No	Occurs in King County; distribution is limited to elevations above 2,000 feet.
Few-flowered sedge	Sensitive	No	Occurs in King County; suitable habitat is present in GSA (Tub Lake) but species has not been documented.
Long-styled sedge	Sensitive	No	Occurs in King County; distribution is limited to elevations above 2,700 feet.
Clubmoss cassiope	Threatened	No	One documented occurrence in WA at elevations above 1,900 feet.
Golden chinquapin	Sensitive	No	Rare in WA; has not been documented in the GSA or ESA Study Area.
Spleenwort-leaved goldthread	Sensitive	No	Old-growth forest obligate; suitable habitat does not occur in GSA or ESA Study Area.
Treelike clubmoss	Sensitive	No	Occurs in King County; distribution is limited to elevations above 800 feet.
Black lily	Threatened	No	Occurs in King County in moist, open meadow habitat; suitable habitat does not occur in GSA or ESA Study Area.
Oregon golden aster	Sensitive	No	Occurs in King County in gravel bars adjacent to larger rivers; suitable habitat does not occur in GSA or ESA Study Area.
Canadian St. John's-wort	Sensitive	Possible	Occurs in King County. Wetland obligate species. Has not been documented in GSA or ESA Study Area, but suitable habitat is present.
Pacific pea	Endangered	No	Occurs in King County in prairie; suitable habitat does not occur in GSA or ESA Study Area.

TABLE 3.3.2-5: WASHINGTON STATE PROTECTED SPECIES NOT LISTED UNDER ESA AND LIKELIHOOD OF OCCURRENCE IN GSA (CONTINUED)

Species	State Status	Likely to Occur in GSA or ESA Study Area?	Basis
One-cone clubmoss	Sensitive	No	Habitat in WA is limited to North Cascades.
Choris' bog-orchid	Threatened	No	Occurs in King County at elevations above 2,500 feet. Does not occur in GSA or ESA Study Area.
Flat-leaved bladderwort	Sensitive	Possible	Occurs in King County. Wetland obligate species: has not been documented in GSA or ESA Study Area, but suitable habitat is present.

Sources: Information obtained from the following except where otherwise cited:
WDFW, 2021, Priority Habitats and Species Database. https://geodataservices.wdfw.wa.gov/hp/phs/, accessed September 23, 2021.

WDNR, 2021, Washington Natural Heritage Information System, List of Known Occurrences of Rare Plants, Mosses and Lichens in Washington. https://www.dnr.wa.gov/NHPlists, accessed August 17, 2023.

WDNR, 2021, Washington Natural Heritage Program, Field Guide to the Rare Plants of Washington. https://www.dnr.wa.gov/NHPfieldguide, accessed August 17, 2023.

1 Hallock L.A., A. McMillan, and G.J. Wiles, 2017, Periodic Status Review for the Western Pond Turtle in Washington. WDFW, Olympia, WA.

Notes: The WDFW Priority Habitat and Species list was reviewed in January 2026, and no updates were found to the relevant 2021 data. Table 3.3.2-5 was adapted from Table 3 in Appendix D, ESA and Sensitive Species Memorandum of the NEPA Final EA, to also include the ESA Study Area.

Common Plants and Animals

Vegetation in the GSA is dominated largely by managed grasses and ornamental landscaping around the Airport, residential and commercial areas, and highway corridors. Managed grasses are native and nonnative grasses that are regularly mowed to a short length. These grasses are prevalent along the Airport runways and within the Tyee Valley Golf Course, Washington Memorial Park Cemetery, and municipal parks throughout the study area.

Dominant tree species in the vicinity of Des Moines Creek and other areas classified as forest include Douglas-fir (*Pseudotsuga menziesii*), big-leaf maple (*Acer macrophyllum*), and red alder (*Alnus rubra*). Black cottonwood (*Populus balsamifera*) is also a common species. The majority of vegetation within the northern portion of the GSA is mixed vegetation composed of ornamental plants, native trees and shrubs. Common shrub species within the mixed vegetation cover type include Himalayan blackberry (*Rubus armeniacus*), salmonberry (*Rubus spectabilis*), and Indian plum (*Oemleria cerasiformis*). Vegetation types west of the runway and south of SR 518 along Miller Creek are wetland, mixed vegetation, and forest.

The vegetation communities and built environment within the GSA provide foraging, cover, breeding, and nesting habitat for wildlife. A large array of non-listed (e.g., common) wildlife uses the various habitats in the GSA. Many of the commonly observed species within the area are urban-adapted species of birds such as European starlings, American robin, pigeons, gulls, hawks, herons, swallows,

owls, geese, and ducks. Urban-adapted species commonly observed in the GSA also include mammals, such as coyote, mouse, squirrel, rabbit, raccoon, and opossum, and amphibians, such as snakes, frogs, and salamanders.

Migration Routes

The study area for ESA-listed species includes nearshore habitat in Puget Sound. Juvenile Chinook salmon, bull trout, and SRKW may use this habitat for migration purposes.

Most bird species in Washington are considered migratory and are protected under the MBTA, discussed above, and could occur in the GSA. Introduced species such as the European starling, rock dove (pigeon), and English house sparrow that are common in the GSA are not considered migratory.

3.3.3 Greenhouse Gas Emissions and Climate[7]

Greenhouse gas emissions and climate are included as elements of the environment that can be evaluated in an EIS (WAC 197-11-444[1][b][iii]). This section of the SEPA EIS covers climate and GHG emissions and incorporates by reference both Section 3.3.3 (Climate) of the NEPA Draft EA and Section 3.3.3 (Greenhouse Gas Emissions) of the NEPA Final EA. Details of the analysis are provided in Appendix C.

Greenhouse gases (GHGs) are gases that trap heat in the earth's atmosphere. GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFC), and perfluorocarbons. GHG emissions associated with aviation are principally in the form of CO_2 and are generated from the combustion of fossil fuels and emitted as by-products contained in engine exhausts. Other GHGs and climate-modifying pollutants associated with Airport operations (minor emissions compared to CO_2) include CH_4, N_2O, water vapor (H_2O), soot, and sulfates.

3.3.3.1 Regulatory Setting

After the publication of the NEPA Draft EA, Executive Order (EO) 13990, which was relied upon for the January 2023 CEQ draft GHG guidance, was revoked. In addition, CEQ revoked its regulations (40 CFR parts 1500-1508) implementing NEPA, 42 U.S.C. 4321 et seq., as amended, in response to EO 14154. As a result of these changes, references to climate and the qualitative climate evaluation in the NEPA Draft EA were removed from the NEPA Final EA. The NEPA Draft EA evaluation discussed the Port's level of preparedness with respect to the impacts of climate change, the extent to which the alternatives could be affected by future climate conditions, and whether the alternatives are consistent with national, state, and local climate goals. The federal regulation still applicable to the GHG and climate analysis is described below in **Table 3.3.3-1**. However, because the NEPA GHG analysis relied on the regulations and guidance at the time the Draft EA was published, they are included for reference in Table 3.3.3-1. Regulations and guidance that have been revoked are indicated as such in the table. Relevant state and local and regulations in are listed in **Table 3.3.3-2**.

[7] The SEPA EIS relies on the information and analysis that was in the NEPA Draft EA but removed from the NEPA Final EA.

TABLE 3.3.3-1: FEDERAL STATUTES AND REGULATIONS RELATED TO GHG

Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
Clean Air Act	42 U.S.C. §§ 7408, 7521, 7571, 7661 et seq. 40 CFR parts 85, 86, and 600 for surface vehicles part 60 for stationary power generation sources	USEPA	Prior to USEPA's recission of the 2009 Endangerment Finding, CAA regulated GHG emissions from on-road surface transportation vehicles and stationary power generation sources.
(Revoked) Executive Order 13653, Preparing the United States for the Impacts of Climate Change	78 Federal Register 66817 (November 6, 2013)	None	Requires agencies to integrate considerations of the challenges posed by climate change effects into their programs, policies, rules, and operations to ensure they continue to be effective.
(Revoked) Executive Order 13693, Planning for Federal Sustainability	80 Federal Register 15869 (March 25, 2015	None	Reaffirms the policy of the United States that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities. Sets sustainability goals for all agencies to promote energy conservation, efficiency, and management while reducing energy consumption and GHG emissions. Builds on the adaptation and resiliency goals in EO 13653 to ensure agency operations and facilities prepare for impacts of climate change. Revokes EO 13514.
(Revoked) National Environmental Policy Act (NEPA) Guidance on Consideration of Greenhouse Gas Emissions and Climate Change	88 Federal Register 1196 (January 9, 2023)	CEQ	This interim guidance assists agencies in analyzing GHG and climate change effects of their proposed actions under NEPA. This guidance provides federal agencies a common approach for assessing their proposed actions, while recognizing each agency's unique circumstances and authorities.

Note: Table 3.3.3-1 was Table 3-7 of the NEPA Final EA.

TABLE 3.3.3-2: STATE AND LOCAL REGULATIONS AND RESOLUTIONS RELATED TO GHG AND CLIMATE

Washington State Law	Statute, Implementing Regulation, or Resolution	Oversight Agency	Summary
GHG Emissions Limits	Chapter 70A.45 RCW	N/A	Establishes GHG reduction targets (RCW 70A.45.020) and limits for state agencies (RCW 70A.45.050). Directs state agencies to quantify GHG emissions and report on actions planned to meet GHG emission reduction targets.
Climate Commitment Act (CCA)	Chapter 70A.65 RCW Chapter 173-446 WAC	WSDE	Establishes a cap-and-invest program to cut GHG emissions from major polluters, while also funding the Integrated Climate Change Response Strategy. While aviation fuels are exempt, emissions from airport operations would fall under the CCA, but have not exceeded the regulatory threshold of 25,000 tonnes per year.
Clean Energy Transformation Act (CETA)	Chapter 19.405 RCW Chapter 194-40 WAC		Requires electric utilities in Washington State to transition to GHG-neutral sources of electric generation by 2030 and supply 100% renewable or non-emitting sources of electric generation by 2045.
Clean Fuel Standard	Chapter 70A.535 RCW Chapter 173-424 WAC	WSDE	Creates a market-based approach that requires producers of most transportation fuels to gradually reduce the carbon intensity of transportation fuels to 45% below 2017 levels by 2038. Applies primarily to on-road transportation fuels and exempts fuel for aircraft (except that producers of alternative jet fuel may opt-in to the program),

TABLE 3.3.3-2: STATE AND LOCAL REGULATIONS AND RESOLUTIONS RELATED TO GHG AND CLIMATE (CONTINUED)

Washington State Law	Statute, Implementing Regulation, or Resolution	Oversight Agency	Summary
Alternative Jet Fuel Statute	Laws of 2023, Ch. 232 (amending and adding new sections to chapters 70A.535 RCW, 43.330 RCW, 28B.30 RCW, 82.04 RCW, 82.15 RCW)	Various	A statute intending to promote the alternative jet fuel industry in Washington by using CCA funds to promote the industry, establishing a working group at Washington State University to further the development of alternative jet fuel, and create tax incentives for alternative jet fuel.
Clean Buildings Performance Standard	Laws of 2019, Ch. 285 Laws of 2025, Ch. 264 (amending sections of Chapter 19.27A RCW)	Washington Department of Commerce	Creating performance standards for buildings (which are the second largest source of GHG emissions in Washington), including many existing large non-residential buildings. Requires benchmarking the energy use in a building over time, implementing operations and maintenance program, and creating an energy management plan. By compliance dates, buildings must meet an energy performance metric by either: meeting an average energy use intensity; or, utilizing an "investment criteria" pathway.
Port of Seattle SEPA Ordinance	Commission Resolution 3650	Port of Seattle	Adopts the Port's SEPA policies including how climate change is evaluated in SEPA review.

3.3.3.2 Existing Conditions

Greenhouse Gases

This GHG analysis, which incorporates by reference the analysis completed for the Draft NEPA EA, considers GHG emissions inventories from three groups, referred to as Scope 1, 2, and 3 emissions. Scope 1 includes GHG emissions from sources owned or controlled by the Port at SEA, including Port-owned airfield vehicles, equipment, and stationary sources such as natural gas boilers and diesel generators. Scope 2 GHG emissions are those associated with the off-Airport generation of electricity purchased by the Port and consumed at SEA. Scope 3 includes GHG emissions caused by Airport operations that are not under the direct control of the Port, including sources like aircraft and motor vehicle emissions. For SEPA purposes, the analysis of Scope 1, 2, and 3 emissions covers the potential direct and indirect greenhouse gas emissions impacts.

State and Regional GHG Emissions

WSDE publishes an inventory of sources for GHGs statewide every 2 years. The inventory measures reductions in GHGs compared to the 1990 baseline. The current inventory includes data through 2021. WSDE will publish its next inventory in December 2026, which will include data through 2023. Pursuant to the current inventory, the state of Washington's GHG emissions were estimated at 96.1 million metric tons[8] of carbon dioxide equivalent (MT of CO_2e) in 2021. Emissions in 2021 increased from 2020 emissions (which were low due to the decrease in transportation emissions during the COVID pandemic) but remained below 2019 levels. Transportation uses were the largest contributor of statewide GHG emissions in 2021, with 38.2 million MT of CO2e. Of those transportation-related emissions, 5.6 million MT are attributed to aviation (which constitutes 6% of total statewide emissions). By comparison, U.S.-based GHG emissions were estimated at 6,341.2 million MT of CO_2e in 2022, of which aviation emissions were 3% of the total[9].

According to the GHG inventory for King County[10], the county-wide geographic GHG emissions in 2023 were 24.2 million MT of CO_2e. Total GHG emissions in 2023 decreased 8% compared to the 2019 inventory year and increased 4% compared to the 2007 baseline inventory year. Most of King County's GHG emissions came from transportation (44%) and buildings (43%), with smaller amounts from land use (6%), refrigerants (5%), and waste (2%). The largest sources of GHG emissions were on-road transportation, including vehicles such as cars, trucks, and transit buses (26%), natural gas use in buildings (20%), and electricity use in buildings (18%).

Since 2007, the largest contributions to increases in overall King County emissions are natural gas (+4%), aviation (+3%), forests and trees (+3%), and refrigerants (+2%). At the same time, the largest decreases in overall King County emissions are from electricity (-6%), on-road transportation (-1%), and solid waste disposal (-1%).

[8] WSDE, 2022, Washington State Greenhouse Gas Emissions Inventory: 1990–2019. Publication 22-02-054.
[9] USEPA, 2022, https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-greenhouse-gas-emissions-aircraft#.
[10] King County. 2025. King County Communitywide Geographic Greenhouse Gas Emissions. Prepared by Cascadia Consulting Group. November 2025. Available at: https://cdn.kingcounty.gov/-/media/king-county/depts/executive/climate-office/documents/greenhousegases/2023-communitywide-geographic-ghg-inventory-report.pdf

SEA Existing Condition GHG Emissions Inventories

The Port of Seattle conducts its own inventories of GHG emissions to track progress toward the Port's Century Agenda GHG reduction targets. Specifically, the Port has committed to accelerate Scope 1 and 2 reductions to "net zero or better by 2040" and Scope 3 reductions to "carbon neutral or better" by 2050. The Port prepares two GHG inventories on an annual basis: one for emissions associated with SEA and the other for maritime operations. The SEA inventory is published annually for the prior year and is publicly available from the Port's website.[11] It is verified by The Climate Registry (TCR) for Scope 1 and 2 and is additionally verified for all three scopes through the Airport Carbon Accreditation Program.

The Port tracks emissions and trends for Scope 1 and 2 emissions separately from Scope 3 emissions because Scope 1 and 2 emissions are from aspects of SEA over which the Port has more direct control. Airport operations make up most of the Port's Scope 1 and 2 GHG emissions, and SEA achieved a 41% reduction in these emissions from 2005 as of the 2024 GHG Inventory. These reductions in Scope 1 and 2 emissions in recent years are depicted in **Exhibit 3.3.3-1** below. The reductions are attributable to three main factors: the replacement of natural gas with renewable natural gas (RNG) in boilers, buildings served by Puget Sound Energy, and the SEA bus fleet; use of renewable diesel in Port-owned fleet vehicles and equipment; and purchase of PSE Green Direct wind electricity for buildings on the south end of SEA.

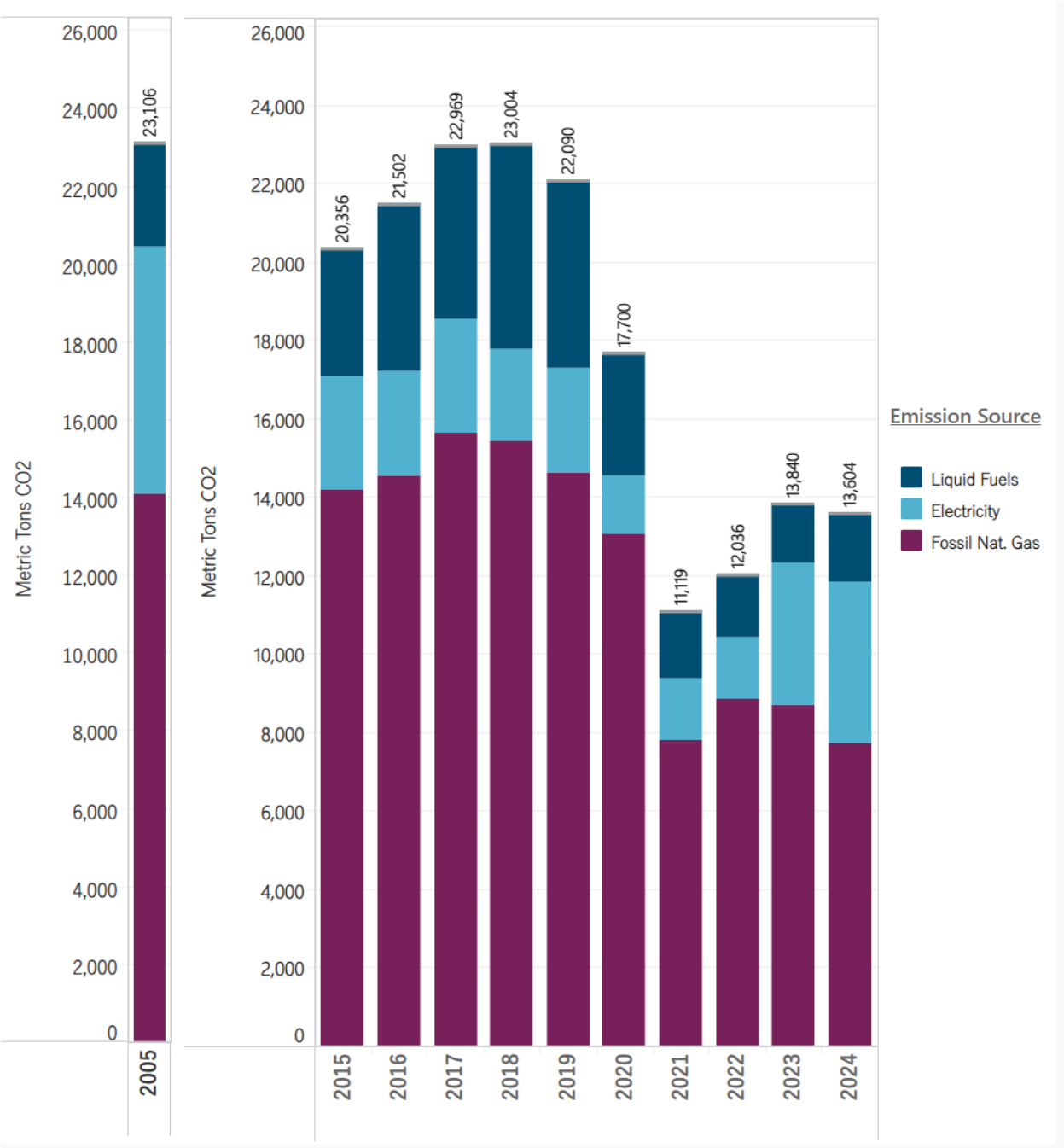
According to the Port's inventory, Scope 3 emissions for 2023 for SEA were 9% higher compared to the 2005 baseline. In general, Scope 3 emissions were increasing until 2020, when they dropped significantly due to the COVID-19 pandemic and the sharp decline in air travel. Since 2020, Scope 3 emissions have been steadily increasing again; however, as of 2023, those Scope 3 emissions remain below pre-pandemic levels. This is due to factors such as the increasing electrification of ground vehicles, including curbside and Transportation Network Company (TNC) fleets like Uber and Lyft, as well as improved use of the pre-conditioned air system, which has reduced emissions from aircraft auxiliary power units (APUs).

In addition to the Port's inventory, a GHG emissions inventory was conducted as part of the NEPA EA to provide an estimate of the annual rate (MT per year) of emissions attributable to Airport sources for the existing condition (**Table 3.3.3-3**). Of the six primary GHGs, only CO_2, CH_4 and N_2O would potentially be emitted directly or indirectly because of the Proposed Action and are included in this analysis.[12]

[11] https://www.portseattle.org/page/measuring-greenhouse-gas-emissions-port-seattle

[12] The other primary GHGs are fluorinated gases. Per USEPA, fluorinated gases are generally emitted as refrigerants and through industrial processes such as aluminum and semiconductor manufacturing. The other GHGs are not included because the Proposed Action does not include a potentially significant source of these GHGs. Additional information from the USEPA on fluorinated gases can be found at https://www.epa.gov/ghgemissions/overview-greenhouse-gases.

EXHIBIT 3.3.3-1: 2024 AND HISTORICAL AVIATION SCOPE 1 AND 2 GHG EMISSIONS



GHGs differ from each other in their ability to absorb energy and how long they stay in the atmosphere. Global Warming Potential (GWP) is a measure that allows comparison of the global warming impacts of different gases, over a set period of time, by converting each gas amount to a carbon dioxide equivalent (CO_2e). GWPs provide a common unit of measure, which allows for one emission estimate of these different gases. GWPs based on a 100-year period (GWP 100) provided in the FAA's *Aviation Emissions and Air Quality Handbook Version 3 Update 1* and based on the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report were used in this evaluation.[13]

TABLE 3.3.3-3: GHG EMISSIONS INVENTORY SUMMARY – EXISTING CONDITION (2022)

Emissions Source	Annual Emissions (MT CO_2e per year)
Scope 1	
Port-Owned Airfield Vehicles / Equipment	3,722
Natural Gas Boilers	16,844
Diesel Generators	281
Fuel Farm Tanks[1]	0
Total - Scope 1	20,846
Scope 2	
Port of Seattle Electricity Consumption	2,399
Total – Scope 2	2,399
Scope 3	
Aircraft (fuel dispensed)[2]	5,707,018
Tenant-Owned GSE	27,895
Tenant Electricity Consumption	330
Airside Deliveries	523
Roadways	395,406
Parking Facilities	6,623
Total - Scope 3	6,137,795
Total	6,161,040

[1] CO_2, CH_4, and N_2O, are by-products of fuel combustion. Per the FAA's *Aviation Emissions and Air Quality Handbook Version 3 Update 1*, the storage of fuel is a potential source of evaporative hydrocarbons but does not produce the type of hydrocarbons that contribute directly to global climate change.

[2] Based on FAA guidance, the estimated GHG emissions for aircraft operations, APUs, and aircraft engine ground run-ups were developed using the approximate fuel dispensed at the Airport.

Notes: Table 3.3.3-3 was Table 3-8 of the NEPA Final EA. Totals may not sum due to rounding. Zeros may not indicate an absolute zero value.

Source: Port of Seattle, L&B, 2024.

[13] There are also 20-year GWP values which prioritize gases with shorter lifetimes. For example, the GWP 20 value for methane is 86, according to IPCC, as compared to the GWP 100 value of 34. There is no difference between GWP 100 and GWP 20 for CO_2 and only a minor difference for nitrous oxides (GWP 100 is 298 and GWP 20 is 268). It is acknowledged that GHG emissions, especially for methane, would be higher using the GWP 20 instead of the GWP 100. However, methane emissions represent a small fraction of the total GHG emissions at SEA, as shown in Appendix C. This analysis used FAA guidance specifically provided in the FAA's *Aviation Emissions and Air Quality Handbook Version 3 Update 1* to determine potential GHG emissions.

It is important to note that the dominant contributing source of emissions shown in the table above is emissions from jet fuel dispensed and combusted throughout the full flights, which totals 5,707,018 MT CO_2e. This metric tracks emissions from aircraft for the entirety of their flight. The Port has no control over these full-flight emissions. Emissions within the Airport's ownership and control (Scope 1 and 2) total 23,245 MT CO_2e. Even this tally of Scope 1 and 2 emissions tends to overstate those emissions; by comparison, the Port's inventory for the same year shows 12,035 MT CO_2e per year in 2022 for scope 1 and 2 emissions. The main difference between the verified emissions from the Port's inventory and those shown in Table 3.3.3-3 is that the natural gas sources are currently mitigated with the use of renewable natural gas (50% in the central boilers and 100% in the bus fleet), and all diesel fleet vehicles use renewable diesel. Those measures are not reflected in the assumptions used for Table 3.3.3-3. Thus, the table tends to overstate the emissions attributable to the airport, which is a more conservative approach for SEPA purposes.

The figures used in Table 3.3.3-3 also differ slightly from figures reported in the Port's Inventory in other ways. The "Aircraft (fuel dispensed)" totals shown in the table differ only slightly from the Port's published 2022 "fuel dispensed" emissions due to different emission factors provided by EPA, for a total of 5.7 to 5.8 million MT CO_2e per year.

For roadway emissions, the Port's inventory shows the existing conditions of 199,220 MT CO_2e as compared to the emissions of 395,406 MT CO_2e shown in Table 3.3.3-3. The main reason for this difference is that the number used in the table tends to overstate the emissions for a more conservative approach, while the Port's inventory reflects a more accurate and lower set of emissions. Specifically, the Port has strong contractual mechanisms to require high MPG and electric vehicles in taxis and TNCs serving the airport. Additionally, the Port uses King County vehicle registration data to assign vehicle miles per gallon to curbside and parking lot travelers. Thus, the figures for roadway emissions shown in Table 3.3.3-3 tend to overstate the emissions, resulting in a more conservative estimate.

Climate Change and Climate Adaption

Overall, climate projections indicate that extreme heat, heavy precipitation, deficiencies in precipitation, and reduced air quality from wildfire events will pose the greatest risks to the Airport and the NTPs, with each threat expected to intensify in frequency, duration, and severity over time. These evolving conditions have important implications for infrastructure resilience, worker safety, and long-term operational reliability. Proactively addressing these key threats through design, planning, and adaptive management strategies is essential to the performance of the NTPs under future climate conditions.

Table 3.3.3-4 provides the historical condition and observed and future trends for each climate threat.

TABLE 3.3.3-4 CLIMATE THREATS IN THE SEATTLE REGION

Threat	Historical Condition	Observed Trends	Future Trends
Deficiency in Precipitation	Seattle has historically benefitted from reliable precipitation and snowpack supporting water supply and hydropower.	Summer precipitation has begun decreasing, with increasing instances of drought and reduced snowpack affecting seasonal water availability.(1)	Continued decreases in summer precipitation, increased drought frequency, reduced snowpack, and greater stress on water supply and hydropower reliability.(2)
Extreme Cold	Seattle's maritime climate typically has moderate winter temperatures, though historical records show occasional prolonged cold and snow events.	Overall warming trend, but periodic extreme cold events still occur due to Arctic air interactions.	Warmer average winters, but continued risk of episodic extreme cold events and occasional severe winter storms.(3)
Extreme Heat	Historically mild summers, with relatively few extreme heat events.	Average summer temperatures have increased (~1.5 degrees F since 1950); notable extreme events such as the 2021 heat dome; increasing heatwave frequency.	Significant warming (projected +6.3 degrees F summer maximum); higher frequency and duration of heatwaves; increased risks to human health, infrastructure, and operations.(2)
Heavy Precipitation	Seasonal rainfall patterns with known flood-prone areas, including coastal and urban flooding.	Increasing intensity and frequency of heavy rainfall events; more precipitation falling as rain rather than snow.	More intense and frequent extreme precipitation events; especially in winter; increased flood risk and strain on drainage systems; heaviest 24-hour rain events will intensify by 22% on average, by the 2080s.(1)
Heavy Snow, Ice, and Sleet	Moderate snowfall (avg. ~6 inches annually) with occasional large events; established airport response systems.	Episodic large snow events still occur (e.g., 2019), though overall variability remains high.	Potential for less frequent but still impactful snow/ice events; continued need for preparedness despite overall warming trends.(4)
High Winds	Regular winter wind events, with typical gusts of 40-45 mph and occasional severe events exceeding 90 mph.(5)	High wind events remain common, typically associated with winter storm systems.	Likely continuation of strong wind events, potentially increasing in intensity with stronger storm systems.

TABLE 3.3.3-4 CLIMATE THREATS IN THE SEATTLE REGION (CONTINUED)

Threat	Historical Condition	Observed Trends	Future Trends
Wildfire	Historically, there has been lower wildfire risk in western Washington compared to eastern regions. Air quality has been impacted by smoke in the past.	Increasing wildfire frequency and intensity statewide due to warming temperatures and drier conditions. Increasing number of poor air quality days resulting from longer smoke seasons.	Longer fire seasons, increased frequency and area burned; moderate increases in western Washington risk, though still lower than eastern regions.(2) More wildfire smoke events worsening air quality.(1)

Notes

(1) Cascadia Consulting Group, (2023). Climate Vulnerability Assessment. Retrieved from https://www.seattle.gov/documents/departments/opcd/seattleplan/seattleclimatevulnerabilityassessmentjuly2023.pdf

(2) Climate Impacts Group, (2022). Biophysical Climate Risks and Economic Impacts for Washington State. Retrieved from https://cig.uw.edu/publications/biophysical-climate-risks-and-economic-impacts-for-washington-state/

(3) Seattle Office of Emergency Management, (2014). Seattle Vulnerability Analysis - Snow, Ice, and Extreme Cold. Retrieved from https://www.seattle.gov/documents/Departments/Emergency/PlansOEM/SHIVA/2014-04-23_SnowIceandExtremeCold.pdf

(4) Port of Seattle (N.D.). Winter Operations and Snow Removal at SEA Airport. Retrieved from https://www.portseattle.org/page/winter-operations-and-snow-removal-sea-airport

(5) King County, (2020). King County Regional Hazard Mitigation Plan 2020-2025. Retrieved from https://mrsc.org/getmedia/f5109483-ee3d-4e1e-b840-7704f50d77cf/k5rhmp.pdf

3.3.4 Earth

Earth is a SEPA element of the environment that can be evaluated in an EIS (WAC 197-11-444[1][a]). This section describes geology, soils, topography, and geologic hazard areas in the GSA. Geologic hazard areas include areas that have steep slopes or are otherwise prone to erosion/accretion, landslides, or seismic activity.

This SEPA EIS considered existing information to identify geologic and soil conditions and hazard areas within the GSA, including:

- Final Seattle-Tacoma International Airport Comprehensive Development Plan SEPA Environmental Review and NEPA Environmental Assessment[14]
- Preliminary design documentation available for Westside Maintenance Campus (S07) and North Airport Expressway Relocation (southbound lanes (L01)[15]
- King County and City of SeaTac GIS mapping identifying geologic hazard areas

3.3.4.1 Regulatory Setting

The FAA's NEPA EA did not include an analysis of earth-related resources because FAA Order 1050.1F[16], under which the EA was prepared, does not require evaluation of this topic. **Table 3.3.4-1** describes relevant state and local regulations regarding geology, soils, topography, and hazard areas.

TABLE 3.3.4-1: STATE AND LOCAL REGULATIONS RELATED TO EARTH

Regulation or Policy	Code Implementing or Supporting Regulation	Oversight Agency	Summary
Local Critical Area Ordinance	Chapter 36.70(A) RCW; Growth Management Act	Port of Seattle within the AAA/City of SeaTac outside the AAA	Protects environmentally sensitive areas and manages the risk of development in geologically hazardous areas such as steep slopes.
Washington State Building Code	Chapter 19.27 RCW, Chapter 51-50 WAC Title 13 SMC Port of Seattle Resolutions adopting applicable code	Port of Seattle within the AAA/City of SeaTac outside the AAA	Adopts the requirements of applicable building codes.
Seismic Building Code	Chapter 70.86 RCW	Port of Seattle	Protects public health, safety, and welfare by ensuring structures can withstand earthquake forces.

[14] Port of Seattle 2007. Port of Seattle. 2007. Final Seattle-Tacoma International Airport Comprehensive Development Plan, POS SEPA No. 07-09, Environmental Review NEPA Environmental Assessment. Prepared by CH2MHill.
[15] Preliminary design documentation is not available for the other SAMP NTPs as of publication of this Draft EIS.
[16] The NEPA EA was prepared according to FAA Order 1050.1F, which has since been replaced by Order 1050.1G.

TABLE 3.3.4-1: STATE AND LOCAL REGULATIONS RELATED TO EARTH (CONTINUED)

Regulation or Policy	Code Implementing or Supporting Regulation	Oversight Agency	Summary
Seismic Measures for Class 1 Facilities	WAC 173-180-330; WAC 173-180-340	WSDE	Requires seismic protection measures for all oil storage tanks and transfer pipelines regulated under WAC 173−180 built after June 2023 to meet certain seismic and building code regulations.

3.3.4.2 Existing Conditions

Geology

SEA is located within the Puget Sound Lowland, a north-south trending structural and topographic depression bordered on the west by the Olympic Mountains and on the east by the Cascade Mountains. This area is underlain by volcanic and sedimentary bedrock that is covered by glacial and nonglacial sediments. These sediments were left behind by glaciers that advanced through the area as many as five times within the last two million years.[17] Most of the landforms in the area have their origin in the advance and retreat of the Vashon Glacier as it cut meltwater channels and deposited sediments in low-lying areas.[18] The surface geology of the Airport area has been modified by extensive grading and filling during construction of the original airfield and subsequent expansions. Fill of variable thickness overlies native deposits over most of the Airport.

Soils

Exhibit 3.3.4-1 shows general soil types in the GSA. Native soils in the study area belong to the Alderwood soil association,[19] which consists of moderately well-drained soils that have dense, very slowly permeable glacial till at depths ranging from 20 to 40 inches. However, in many areas, native soils have been excavated and covered by fill as the Airport property and the surrounding area have been developed. Alderwood soils have a perched water table ranging from 18 to 36 inches at times from January to March most years.[20]

Topography

SEA is located along a north-south trending ridge, with elevations decreasing to the west towards Puget Sound. This ridge is dissected by several swales and gullies, which have been partially filled as

[17] DNR, 2025, Puget Lowland. Available for review at: https://dnr.wa.gov/washington-geological-survey/explore-popular-geology/geologic-provinces-washington/puget-lowland.
[18] USGS, 1965, Stratigraphy and Chronology of Late Interglacial and Early Vashon Glacial Time in the Seattle Area, Washington. Available for review at: https://pubs.usgs.gov/bul/1194o/report.pdf.
[19] USDA, Soil Conservation Service, 1973. Soil Survey, King County Area, Washington. Available for review at: https://archive.org/details/usda-soil-survey-of-king-county-area-washington-1973, accessed July 24, 2025.
[20] Hipple, K.W., 2011, Washington Soil Atlas. Available for review at: Washington Soil Atlas.

part of the extensive grading performed during initial construction of the airfield and subsequent expansions.

Elevations east of the airport range from about 325 to 450 feet above mean sea level (MSL). Elevations just west of the airport range from about 250 to 400 feet above MSL. North and south of the airport, elevations generally range from 125 to 400 feet above MSL. From north to south, elevation at the main runways ranges from about 420 to 340 feet above MSL.[21]

The elevation of the runway system (the highest point of the Airport) is about 400 feet above MSL and drops to sea level approximately 2 miles to the west. Slopes along the east side of the Airport are generally moderate. Slopes north and south of the Airport are slightly steeper. The steepest slopes in the area generally occur at the runway embankments.

Geologic Hazards

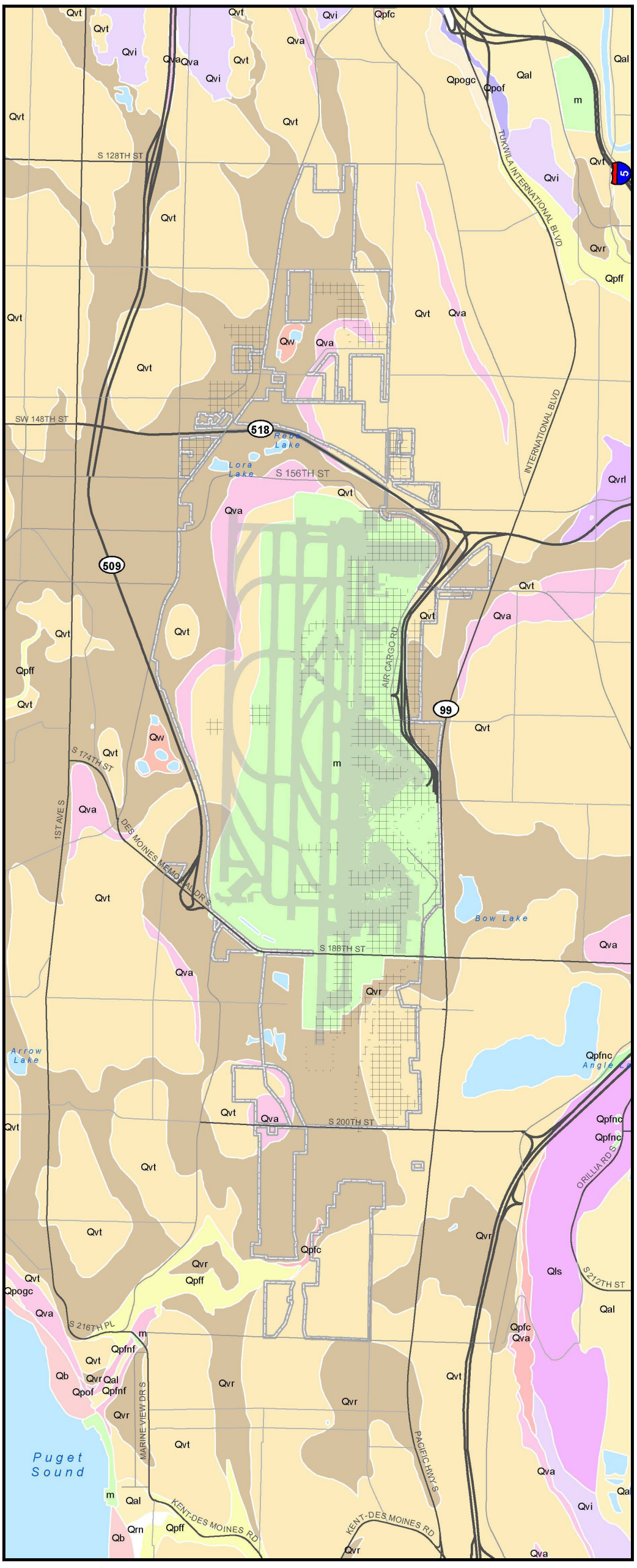
Erosion/Accretion

As previously noted, the Airport has been modified by extensive grading and filling over the years. Steep slopes of greater than 40% exist at the edge of embankments — for instance, on the west side of the Airport parallel to Runway 16R/34L. The engineered embankments were designed to resist erosion. Portions of the Port-owned properties north of SR 518 have also been identified by the City of SeaTac as having steep slopes.[22]

[21] Port of Seattle, 2007, Final Seattle-Tacoma International Airport Comprehensive Development Plan, POS SEPA No. 07-09, Environmental Review NEPA Environmental Assessment. Prepared by CH2M Hill.

[22] City of SeaTac, 2021, Steep Slopes Map. Available for review at: SeaTac Steep Slopes map. Accessed 11/4/25.

EXHIBIT 3.3.4-1: SURFACE GEOLOGY



NONGLACIAL DEPOSITS

- m — Modified land (Holocene)
- Qw — Wetland deposits (Holocene)
- Qb — Beach deposits (Holocene)
- Qls — Landside deposits (Holocene)
- Qal — Alluvium (Holocene)

YOUNGER GLACIAL DEPOSITS

- Qvr — Recessional outwash deposits
- Qvrl — Recessional lacustrine deposits
- Qvi — Ice-contact deposit
- Qvt — Till
- Qva — Advance outwash deposits

OLDER GLACIAL AND NONGLACIAL DEPOSITS

- Qpf_c — Coarse-grained deposits
- $Qpfn_c$ — Coarse-grained nonglacial deposits
- Qpf_f — Fine-grained deposits
- $Qpfn_f$ — Fine-grained nonglacial deposits
- Qpo_f — Fine-grained deposits
- $Qpog_c$ — Coarse-grained deposits

Airport Property

2010 and 2024 Project Footprint

N

0 1,250 2,500 5,000 Feet

Source: Booth, D. B., and Waldron H. H., 2004, Geologic map of the Des Moines 7.5-minute quadrangle, King County Washington: U.S. Geological Survey Miscellaneous Scientific Investigations map 2855, scale 1:24,000.

THIS PAGE INTENTIONALLY LEFT BLANK

Landslides

In landslide-sensitive areas, unstable or potentially unstable conditions increase the risk of a slope failure. There are no areas within the GSA classified as a landslide hazard.[23]

Seismic Hazards

The GSA is in a moderately active seismic area that has been subjected to numerous earthquakes of low to moderate strength and occasionally to strong shocks during the brief 170-year seismic record in the Pacific Northwest. Some of the largest historical earthquakes in the Puget Sound lowland include the magnitude 7.1 Olympia earthquake of April 13, 1949, the magnitude 6.5 Seattle-Tacoma earthquake of April 29, 1965, and the magnitude 6.8 Nisqually earthquake of February 28, 2001. Geologic evidence indicates that a magnitude 9 earthquake on the Cascadia Subduction Zone occurred approximately three hundred years ago. This zone extends from northern California to the north end of Vancouver Island, where the Juan de Fuca tectonic plate is being subducted by the North American tectonic plate.

3.3.5 Recreation

Recreation is a SEPA element of the environment (WAC 197-11-444[2][b][v]) that can be evaluated in an EIS. The NEPA Final EA evaluated recreational facilities as part of an analysis under Section 4(f) of the U.S. Department of Transportation Act (USDOT), a regulation specific to USDOT agencies (including the FAA) that does not apply to SEPA analysis. Section 4(f) properties include parks and recreational areas of national, state, or local significance that are publicly owned and open to the public; publicly owned wildlife and waterfowl refuges of national, state, or local significance that are open to the public; and historic sites of national, state, or local significance in public or private ownership, regardless of whether they are open to the public.

This section of the SEPA EIS addresses parks and recreational facilities and incorporates by reference the portions of the NEPA EA Section 4(f) affected environment analysis (Section 3.3.5) that describe those facilities. Historic and cultural resources are addressed in Section 3.3.8 of this EIS. The terms “Section 4(f)” and “Section 4(f) resources” have been updated to “recreation” and “recreational resources” for the purposes of the SEPA analysis.

The NEPA EA also evaluated the potential for recreational properties protected under Section 6(f) of the Land and Water Conservation Fund (LWCF) Act to be affected by the Proposed Action. No Section 6(f) properties were identified, and compliance with Section 6(f) is not addressed further in this SEPA EIS.

[23] King County, 2023, Landslide Hazard Map. Available for review at: https://your.kingcounty.gov/dnrp/library/water-and-land/flooding/local-hazard-mitigation-plan-update/landslide-hazard-map.pdf.
DNR, n.d., Natural Hazards—Geology Portal. Available for review at: https://geologyportal.dnr.wa.gov/#natural_hazards. Accessed February 2. 2026.

3.3.5.1 Regulatory Setting

Table 3.3.5-1 identifies the federal statutes and implementing regulations applicable to recreation resources, along with the responsible oversight agencies and a summary of key provisions.

TABLE 3.3.5-1: FEDERAL STATUTES AND REGULATIONS RELATED TO RECREATION

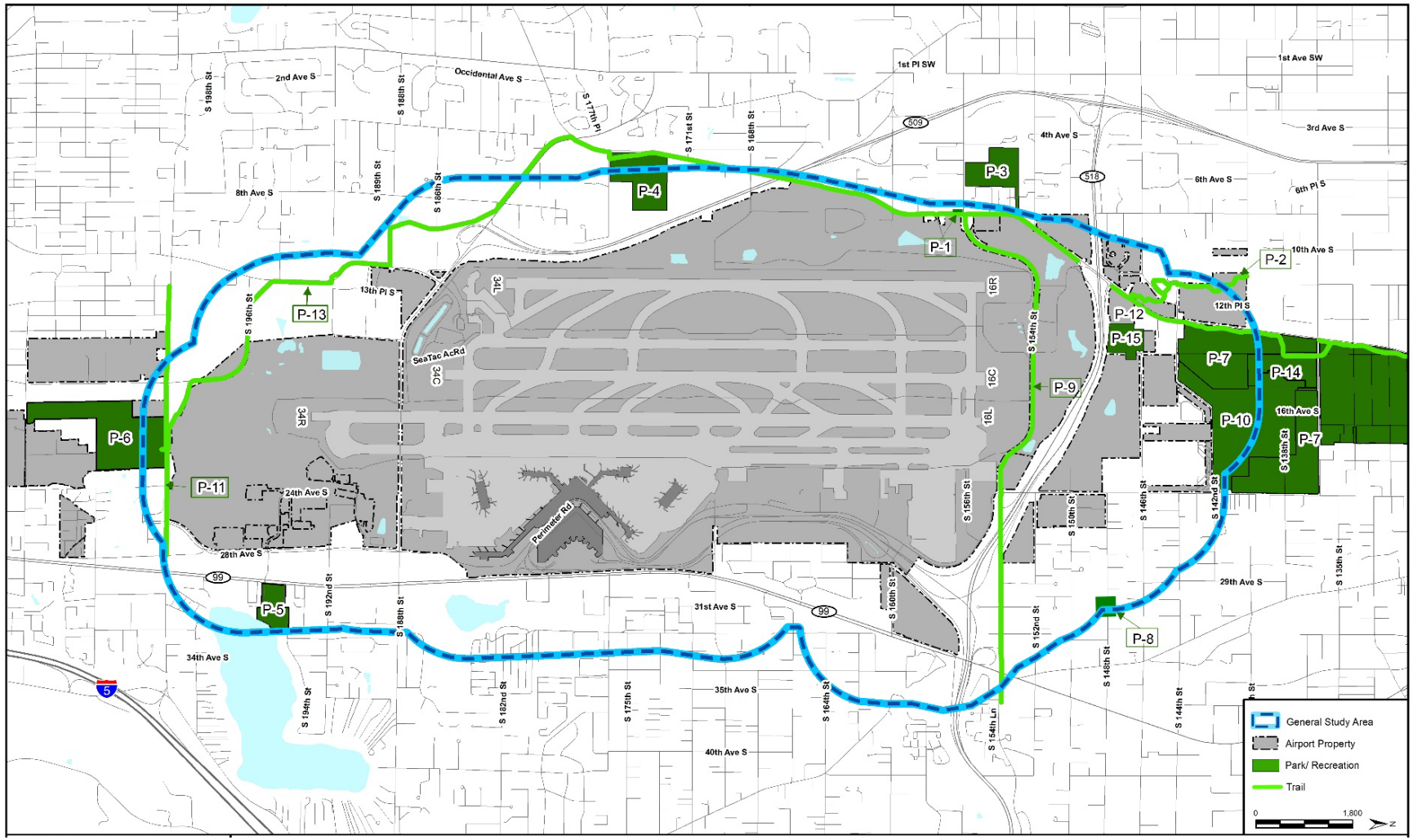
Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
Land and Water Conservation Fund Act of 1965	16 U.S.C. §§ 4601-4 et seq. 36 CFR part 59 et seq.	DOI	Section 6(f) provides funds for buying or developing public use recreational lands through grants to local and state governments. Section 6(f)(3) prevents conversion of lands purchased or developed with LWCF Act funds to non-recreation uses, unless the Secretary of the DOI, through the National Park Service (NPS), approves the conversion.
U.S. Department of Transportation Act – Section 4(f)	49 U.S.C. § 303 23 CFR part 774 et seq.	USDOT	Protects certain properties from use unless the relevant USDOT agency (e.g., the FAA) determines there is no feasible and prudent alternative and a project includes all possible planning to minimize harm.
Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA–LU) – Section 6009	49 U.S.C. § 303 23 CFR part 774 et seq.	USDOT	Amended Section 4(f) to simplify the process and approval of projects that have de minimis impacts on 4(f) properties.

Notes: Table 3.3.5-1 was Table 3-10 of the NEPA Final EA. There are no relevant or applicable state or local statutes or regulations pertaining to recreation in the GSA.

3.3.5.2 Existing Conditions

The identification of recreational resources focused on areas they could be physically impacted or where noise would substantially affect the use of a resource within the GSA. The identification of areas potentially impacted by noise was based on the information in Sections 3.3.11 and 4.3.10 (Noise) and Sections 3.3.13 and 4.3.12 (Transportation) of this EIS. The recreational resources within the GSA are depicted on **Exhibit 3.3.5-1** and include publicly owned parks and recreation areas.

EXHIBIT 3.3.5-1: PARKS AND RECREATION AREAS IN THE GSA



THIS PAGE INTENTIONALLY LEFT BLANK

Public Parks and Recreation Areas

Public parks and recreation areas include properties that are publicly owned (by any local, state, or federal agency), open and available to the public, and used primarily for the purpose of park or recreational activities. Public parks and recreation areas located within the GSA are listed in **Table 3.3.5-2** and shown on Exhibit 3.3.5-1.

TABLE 3.3.5-2: PARKS AND RECREATION AREAS LOCATED WITHIN THE GSA

Map ID	Name	Owner
P-1	Des Moines Memorial Park	City of Burien
P-2	Miller Creek Trail	City of Burien
P-3	Moshier Memorial Park	City of Burien
P-4	Walker Creek Wetland	City of Burien
P-5	Angle Lake Park	City of SeaTac
P-6	Des Moines Creek Park - SeaTac	City of SeaTac
P-7	North SeaTac Park[1]	Port of Seattle
P-8	Riverton Heights Park	City of SeaTac
P-9	S. 156th Way Trail	City of SeaTac
P-10	Leased Port of Seattle Property (Rugby)	Port of Seattle
P-11	S. 200th Street Shared Use Path	City of SeaTac
P-12	Westside Trail	City of SeaTac
P-13	Lake to Sound Trail	King County Parks and Recreation
P-14	Leased Port of Seattle Property (Sunset Playfield)	King County Parks and Recreation
P-15	Leased Port of Seattle Property (Ball Fields)	Port of Seattle

Note: Table 3.3.5-2 was Table 3-11 in the NEPA Final EA.

[1] North SeaTac Park extends onto Port-owned property under an existing lease agreement that provides for its use as a park until January 21, 2045.

Source: King County GIS data, City of Burien, Port of Seattle.

3.3.6 Agricultural Crops

Agricultural crops are a SEPA element of the environment that can be evaluated in an EIS (WAC 197-11-444[2][b][vii]); therefore, the FAA's Final NEPA EA review of farmlands (Section 3.3.6) is incorporated by reference. Farmlands are defined as those agricultural areas considered important and protected by federal, state, and local regulations. Important farmlands include all pasturelands, croplands, and forests considered to be prime, unique, or of statewide or local importance. The Proposed Action and alternatives would occur entirely on Port-owned land that is currently zoned for airport purposes. No farmlands or agricultural crops are present within the GSA and, therefore, no further discussion of farmlands or agricultural crops is included in this SEPA EIS.

3.3.7 Hazardous Materials, Solid Waste, and Spill Prevention

Hazardous materials, including "Risk of explosion" and "Releases or potential releases to the environment affecting public health, such as toxic or hazardous materials," are included as SEPA elements of the environment that can be evaluated in an EIS (WAC 197-11-444[2][a]). Similarly, a SEPA EIS can evaluate solid waste (WAC 197-11-444[2][d]). This SEPA EIS covers those topics

together in this chapter and incorporates by reference Section 3.3.7 (Hazardous Materials, Solid Waste, and Pollution Prevention) of the NEPA EA.

Hazardous materials are any substance or material that has been determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce. The term hazardous materials includes both hazardous wastes and hazardous substances, as well as petroleum and natural gas substances and materials. Solid waste is defined by Washington's Solid Waste Management — Reduction and Recycling Act (Chapter 70A.205 RCW) as all putrescible and non-putrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, and recyclable materials. Pollution prevention describes methods used to avoid, prevent, or reduce pollutant discharges or emissions. **Appendix F**, **Hazardous Materials and Solid Waste,** contains additional information on the regulatory setting, surveys completed, recycling, and pollution prevention.

3.3.7.1 Regulatory Setting

TABLE 3.3.7-1: FEDERAL STATUTES AND REGULATIONS RELATED TO HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
Resource Conservation and Recovery Act (RCRA)	42 U.S.C. §§ 6901-6992k 40 CFR parts 240-299	USEPA	Establishes guidelines for hazardous waste and non-hazardous solid waste management activities in the U.S. Regulates the generation, storage, treatment, and disposal of waste.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)(as amended by the Superfund Amendments Reauthorization Act of 1986 and the Community Environmental Response Facilitation Act of 1992)	42 U.S.C. §§ 9601-9675 40 CFR parts 300, 311, 355, 370, and 373	USEPA	Establishes joint and several liability for those parties responsible for hazardous substance releases to pay cleanup costs and establishes a trust fund to finance cleanup costs in situations in which no responsible party could be identified. Enables the creation of the National Priorities List (NPL), a list of sites with known releases or threatened releases of hazardous substances in the U.S. and its territories used to guide the USEPA in determining which sites warrant further investigation.
Pollution Prevention Act	42 U.S.C. §§ 13101-13109	USEPA	Requires pollution prevention and source reduction control so that wastes would have less effect on the environment while in use and after disposal.

Note: Table 3.3.7-1 was Table 3-12 in the NEPA Final EA.

TABLE 3.3.7-2: STATE AND LOCAL REGULATIONS RELATED TO HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

Washington State Law	Code Implementing Regulation or Supporting Regulation	Oversight Agency	Summary
Water Quality Standards for Groundwaters of the State of Washington	Chapter 173-200 WAC	WSDE	Prohibits degradation, sets strict numeric criteria for contaminants (e.g., arsenic, benzene) and requires pollution reduction.
Dangerous Waste Regulations	Chapter 173-303 WAC	WSDE	Waste generators are responsible for identifying, labeling, storing, and properly disposing of hazardous materials. Key requirements include designating waste, determining generator status (small, medium, large), and submitting annual reports.
Model Toxics Control Act (MTCA)	Chapter 173-340 WAC	WSDE	Governs the cleanup and prevention of contaminated sites that can threaten people's health and the environment. MTCA's main purpose is "to raise sufficient funds to clean up all hazardous waste sites and to prevent the creation of future hazards due to improper disposal of toxic wastes into the state's lands and waters." (RCW 70.105D.010).
Underground Storage Tank Regulations	Chapter 173-360 WAC	WSDE	Mandates strict compliance for systems with greater than 110 gallons holding petroleum or hazardous substances. Key requirements include three-year inspections, certified operator training, robust leak detection, and spill/overfill prevention.
Oil Spill Contingency Plan	Chapters 173-182 WAC	WSDE	Establishes oil spill contingency plan requirements, drill and equipment verification requirements, standards for response teams, and record keeping and compliance information.
Facility Oil Handling Standards	Chapter 173-180 WAC	WSDE	Establishes standards for safe oil transfer to meet the state legislature's goal of zero spills.
Labor and Industries Safety Standards for Construction Work	Chapter 296-155 WAC	Department of Labor and Industries	Core safety standards include fall protection, a written Accident Prevention Program, provision of personal protective equipment, daily safety meetings, and rigorous training for hazards like silica, electrical, and excavation.

TABLE 3.3.7-2: STATE AND LOCAL REGULATIONS RELATED TO HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION (CONTINUED)

Washington State Law	Code Implementing Regulation or Supporting Regulation	Oversight Agency	Summary
Contractor Demolition Requirements concerning asbestos	Chapter 49.26 RCW	Puget Sound Clean Air Agency (PSCAA)	Requires site surveys for asbestos before any construction, renovation, or demolition project. Sets standards for notification, disposal, and work practices.
Solid Waste Management—Reduction and Recycling	Chapter 70A.205 RCW	WSDE	Mandates comprehensive solid waste planning, recycling, and proper disposal to protect public health.

3.3.7.2 Existing Conditions

The known hazardous material sites in the GSA are depicted on **Exhibit 3.3.7-1**. The sites were identified based on a review of the WSDE mapping tool *What's in My Neighborhood* and Port records.

Hazardous Materials

Current activities at SEA that generate or involve the use of hazardous materials include aircraft fueling; maintenance of aircraft, GSE, motor vehicles, buildings, and Airport grounds; various Port maintenance shop operations; and construction activities. Many tenants use hazardous materials and generate hazardous waste. These wastes are disposed of by the tenants, and the Port does not take ownership of tenants' hazardous waste. SEA is considered a federal Small Quantity Generator by the USEPA and a State of Washington Medium Quantity Generator, generating 19,891 pounds of hazardous waste in 2022.[24]

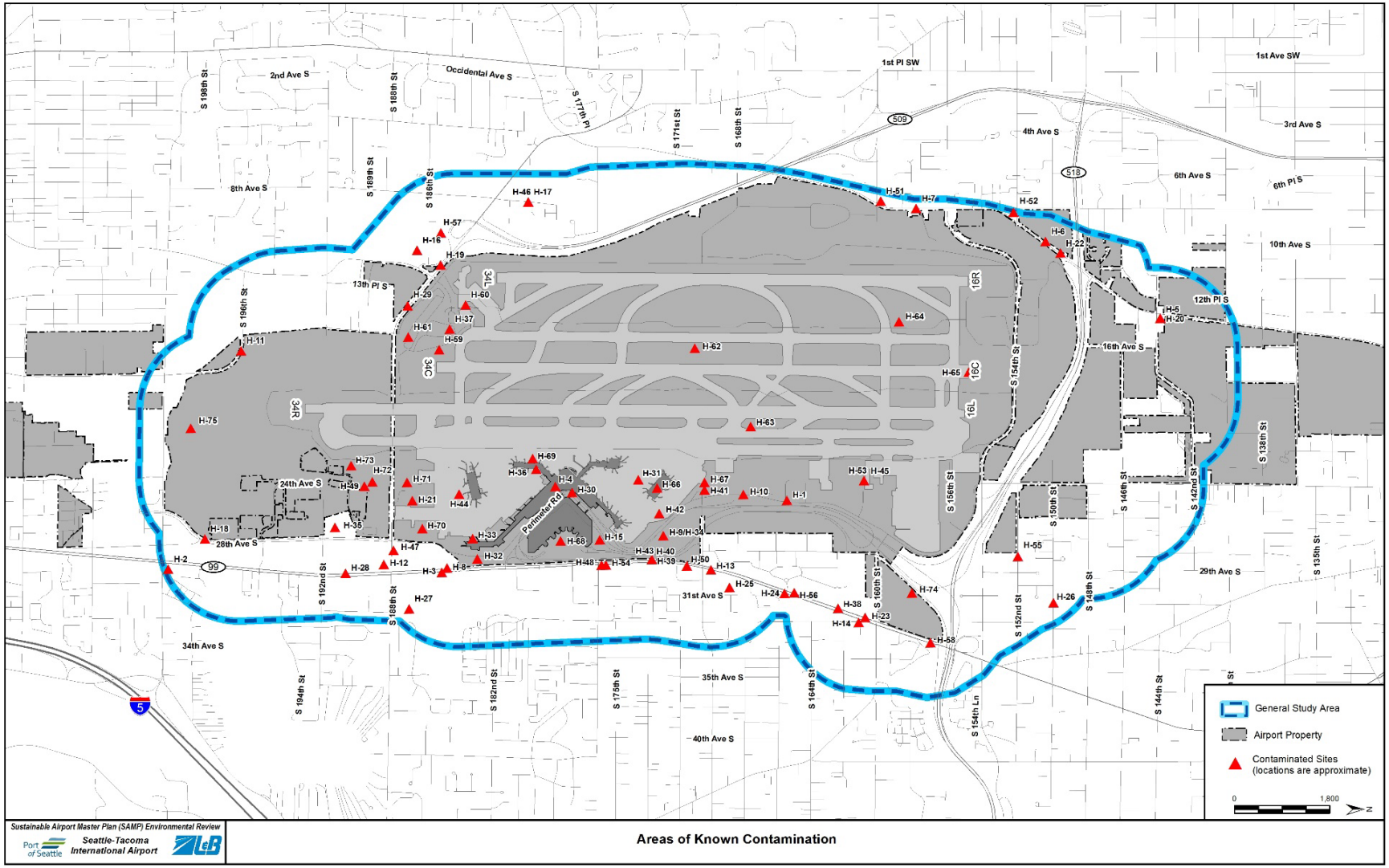
Based on a review of the WSDE's *What's in My Neighborhood* mapping tool, there have been 58 documented incidents of contamination within the GSA requiring further action. These sites are listed in **Table 3.3.7-3** (Sites H-1 through H-58) and depicted on **Exhibit 3.3.7-1**. Twenty-two of these incidents occurred on SEA property. SEA property sites are indicated in **bold** text in the table. The Port is not responsible for the sites that are not located on SEA property.

SEA also has potential for other contaminants such as per- and polyfluoroalkyl substances (PFAS). PFAS are in several materials used by industry and consumers and include perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), among more than 7,800 chemicals. At the Airport, these substances are primarily found in aqueous film-forming foam (AFFF), a Class B firefighting foam used to fight aviation and other chemical fires.

A review of the Port's records indicates a total of 16 areas where AFFF has been deployed for an incident, used for training purposes, stored, or identified in water sampling (see **Exhibit 3.3.7-1** and **Table 3.3.7-3**; Sites H-59 through H-75).

[24] Data provided by the Port, February 27, 2023.

EXHIBIT 3.3.7-1: AREAS OF KNOWN CONTAMINATION



THIS PAGE INTENTIONALLY LEFT BLANK

SEA is also located in an area that may have been contaminated with heavy metals, including arsenic and lead, due to air emissions from the former Asarco smelter in north Tacoma. The smelter was closed in 1985. Most of the Airport is within an area where surface soils are identified as having an arsenic concentration of between 20 and 40 parts per million (ppm). The southern portion of the Airport is in an area with arsenic concentrations of between 40.1 ppm and 100 ppm. In most areas, arsenic and lead pose only a very small long-term health risk. [25]

The NPL is the list of sites of national priority among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the USEPA in determining which sites warrant further investigation. No NPL-listed sites are located within the GSA.

TABLE 3.3.7-3: DOCUMENTED INCIDENTS OF HAZARDOUS MATERIALS CONTAMINATION IN THE GSA

Map ID	Name	Address / Location	Site Status	Cleanup Type
H-1	**Airborne Express**	**2580 S. 166th Street, Seattle, Washington, 98158**	**Cleanup Started**	**Independent Action**
H-2	British Petroleum (BP) 11255	19924 International Blvd, Seattle, Washington, 98188	Cleanup Started	Independent Action
H-3	Budget Rent a Car of WA & OR Pacific HWY	18445 International Blvd, Seattle, Washington, 98188	Cleanup Started	Independent Action
H-4	**Budget Rent a Car of WA / OR**	**17801 International Blvd, Seattle, Washington, 98158**	**Cleanup Started**	**Independent Action**
H-5	Burien Fuel	14260 Des Moines Memorial Drive S., Seattle, Washington, 98168	Cleanup Started	Independent Action
H-6	Charley's Shell	15041 Des Moines Memorial Drive S., Seattle, Washington, 98148	Cleanup Started	Independent Action
H-7	Chevron Crombies	15804 Des Moines Memorial Drive S., Seattle, Washington, 98148	Cleanup Started	Independent Action
H-8	Chevron Station 92259	18514 Pacific Hwy S., Seattle, Washington, 98188	Cleanup Started	Independent Action
H-9	**Continental Olympic United Fuel Farm**	**Air Cargo Rd, Seattle, Washington, 98158**	**Cleanup Completed under Participation Agreement conditions**	**Independent Action**
H-10	**Delta Air Lines Seattle**	**16745 Air Cargo Rd, Seattle, Washington, 98158**	**Cleanup Started**	**Independent Action**
H-11	Des Moines Creek Regional Detention Facility	S. 196th St & 18th Ave S., Seattle, Washington, 98148	Cleanup Started	Independent Action

[25] WSDE, n.d., Dirt Alert, accessed February 24, 2026. Available for review at: https://ecology.wa.gov/arsenic-in-soil-database), accessed February 24, 2026.

TABLE 3.3.7-3: DOCUMENTED INCIDENTS OF HAZARDOUS MATERIALS CONTAMINATION (CONTINUED)

Map ID	Name	Address / Location	Site Status	Cleanup Type
H-12	Exxon 73287	2841 S. 188th Street, Seattle, Washington, 98188	Cleanup Started	PLIA Petroleum Technical Assistance Program
H-13	Exxon 79047	16850 International Blvd, Seattle, Washington, 98188	Cleanup Started	Independent Action
H-14	Gordon Tang Co Inc	16020 32nd Avenue S., Seattle, Washington, 98188	Cleanup Started	Independent Action
H-15	**Hertz Avis National Fuel Facility QTA**	**SEA**	**Cleanup Started**	**Independent Action**
H-16	Hertz Corp	18625 Des Moines Memorial Drive S., Seattle, Washington, 98148	Cleanup Started	Independent Action
H-17	Highline SD Maintenance Yard	17910 8th Avenue S., Seattle, Washington, 98148	Cleanup Started	Independent Action
H-18	Highline Water District	19863 28th Avenue S., Seattle, Washington, 98188	Cleanup Started	Independent Action
H-19	Jim's Detail Shop	98148-1919, Seattle, Washington	Cleanup Started	Independent Action
H-20	Joe’s Inc.	14260 Des Moines Memorial Drive S., Seattle, Washington, 98168	Cleanup Started	Independent Action
H-21	**Lockheed Air Terminal**	**SEA**	**Cleanup Started**	**Independent Action**
H-22	**Lora Lake Apartments**	**15001 Des Moines Memorial Drive S., Seattle, Washington, 98148**	**Cleanup Completed. Port is currently monitoring**	**WSDE-supervised or conducted**
H-23	Loudon Real Estate	16015 International Blvd, Seattle, Washington, 98188	Awaiting Cleanup	Independent Action
H-24	M & M Finishers Inc	16600 Pacific Hwy S., Seattle, Washington, 98188	Cleanup Started	Voluntary Cleanup Program
H-25	Master Park	16826 International Blvd, Seattle, Washington, 98188	Awaiting Cleanup	No Process
H-26	Minchew Property	3025 S.150th Street, Seattle, Washington, 98188	Awaiting Cleanup	Independent Action
H-27	Red Lion Hotel SeaTac	18740 International Blvd, Seattle, Washington, 98188	Cleanup Started	Independent Action

TABLE 3.3.7-3: DOCUMENTED INCIDENTS OF HAZARDOUS MATERIALS CONTAMINATION (CONTINUED)

Map ID	Name	Address / Location	Site Status	Cleanup Type
H-28	Retail Building	19023 Pacific Hwy S., Seattle, Washington, 98188	Cleanup Started	Independent Action
H-29	SAFCO Environmental Corp	1255 S.188th Street, Seattle, Washington, 98148	Cleanup Started	Independent Action
H-30	**SEA**	**SEA**	**Cleanup Started**	**WSDE-supervised or conducted**
H-31	**SEA NW Baggage Tunnel**	**SEA**	**Cleanup Started**	**Independent Action**
H-32	**SEA NW Fuel Farm**	**SEA**	**Awaiting Cleanup**	**Independent Action**
H-33	**SEA Pan Am Fuel Farm**	**SEA**	**Cleanup Started**	**Independent Action**
H-34	**SEA United Fuel Farm**	**SEA**	**N/A. See H-9**	**N/A. See H-9**
H-35	Sea-Tac Alaska Airlines BLDG-1995	2651 S.192nd Street, Seattle, Washington, 98188	Cleanup Started	Independent Action
H-36	**SEA Concourse B Gate B2**	**SEA**	**Cleanup Started**	**Independent Action**
H-37	**Sea-Tac Crawford Aviation**	**SEA**	**Cleanup Started**	**Independent Action**
H-38	SeaTac Development	16025 International Blvd, Seattle, Washington, 98188	Cleanup Started	WSDE-supervised or conducted
H-39	**SEA Pan Am Hangar**	**17205 Pacific Hwy S., Seattle, Washington, 98188**	**Cleanup Started**	**Independent Action**
H-40	**SEA Pan Am Tanks 10A-10D**	**17205 Pacific Hwy S., Seattle, Washington, 98188**	**Cleanup Started**	**Independent Action**
H-41	**SEA NW Air Bulk Fuel**	**SEA**	**Cleanup Started**	**Independent Action**
H-42	**SEA NW Airlines Front Hangar**	**SEA**	**Cleanup Started**	**Independent Action**
H-43	SEA Pan Am Av Gas Tanks	17205 Pacific Hwy S., Seattle, Washington, 98188	Cleanup Started	Independent Action

TABLE 3.3.7-3: DOCUMENTED INCIDENTS OF HAZARDOUS MATERIALS CONTAMINATION (CONTINUED)

Map ID	Name	Address / Location	Site Status	Cleanup Type
H-44	**SEA South Satellite / NW Air**	**SEA**	**Cleanup Started**	**Independent Action**
H-45	**SEA United Tank Removal**	**2230 S.161st Street, Seattle, Washington, 98158**	**Cleanup Started**	**Independent Action**
H-46	Seattle School Highline Maintenance	17910 8th Avenue S., Seattle, Washington, 98148	Cleanup Started	Independent Action
H-47	Shell at Sea-Tac	2806 S.188th Street, Seattle, Washington, 98188	Cleanup Started	Independent Action
H-48	Sound Transit Parcel A1 109	17600 International Blvd, Seattle, Washington, 98188	Cleanup Started	Independent Action
H-49	**Swissport Fueling**	**2350 S. 190th Street, Seattle, Washington, 98188**	**Cleanup Started**	**Independent Action**
H-50	Tac Sea Motel	17024 Pacific Hwy S., Seattle, Washington, 98188	Cleanup Complete -O&M / Monitoring	WSDE-supervised or conducted
H-51	Willie's Texaco	15939 Des Moines Memorial Drive S., Seattle, Washington, 98148	Awaiting Cleanup	Independent Action
H-52	Tucker Upholstery	15217 Des Moines Memorial Drive S., Seattle, Washington, 98148	Cleanup Started	PLIA Petroleum Technical Assistance Program
H-53	**United Airlines Sea-Tac Intl Airport**	**2230 S. 161st Street, Seattle, Washington, 98158**	**Closed under VCP**	**N/A**
H-54	UNOCAL 4871	17606 International Blvd, Seattle, Washington, 98188	Cleanup Started	Independent Action
H-55	Victoria Town Homes	2805 S.152nd Street, Seattle, Washington, 98188	Cleanup Started	Voluntary Cleanup Program
H-56	Washington Memorial Park	16445 Pacific Hwy S., Seattle, Washington, 98188	Cleanup Started	Independent Action
H-57	Washington Department of Transportation Foreman A1 Towing	SR509 and 18451 12th Avenue S.	Cleanup Started	Independent Action
H-58	WSP Tukwila	15666 Pacific Hwy S., Seattle, Washington, 98188	Cleanup Started	Independent Action

TABLE 3.3.7-3: DOCUMENTED INCIDENTS OF HAZARDOUS MATERIALS CONTAMINATION (CONTINUED)

Map ID	Name	Address / Location	Site Status	Cleanup Type
H-59	**AFFF Testing and Training Location**	**Southern portion of Airfield, between Runway 34L and Runway 34 C**	**N/A**	**N/A**
H-60	**AFFF Testing and Training Location**	**Southern portion of Airfield, between Runway 34L and Runway 34C**	**N/A**	**N/A**
H-61	**Annual (Summer) Testing / Training**	**Southern portion of Airfield, near industrial wastewater system (IWS) Lagoon 1**	**N/A**	**N/A**
H-62	**Small Aircraft Fire / AFFF Release**	**Central Airfield near Taxiway T**	**N/A**	**N/A**
H-63	**Aircraft Engine Fire / AFFF Release**	**Central Airfield on Taxiway B**	**N/A**	**N/A**
H-64	**Cargo Aircraft Crash/AFFF Release**	**Intersection of Taxiway E and Taxiway T**	**N/A**	**N/A**
H-65	**Grass Fire / AFFF Release**	**Northern portion of Airfield near end of Runway 16C**	**N/A**	**N/A**
H-66	**North Satellite Terminal AFFF Storage**	**North Satellite Terminal**	**N/A**	**N/A**
H-67	**ARFF Station AFFF Storage and Testing / Training**	**ARFF Station**	**N/A**	**N/A**
H-68	**Small Plane Crash/AFFF Release**	**Near Main Terminal Parking Garage**	**N/A**	**N/A**
H-69	**B-Terminal Airplane Crash / AFFF Release**	**Main Terminal, Concourse B**	**N/A**	**N/A**
H-70	**AFFF in Hangar Fire Suppression System**	**Delta Airlines Hangar**	**N/A**	**N/A**
H-71	**AFFF in Hangar Fire Suppression System**	**Alaska Airlines Hangar**	**N/A**	**N/A**

TABLE 3.3.7-3: DOCUMENTED INCIDENTS OF HAZARDOUS MATERIALS CONTAMINATION (CONTINUED)

Map ID	Name	Address / Location	Site Status	Cleanup Type
H-72	**AFFF Accidental Release**	**Airport Fuel Farm**	**N/A**	**N/A**
H-73	**AFFF Storage for Fuel Farm**	**Airport Fuel Farm**	**N/A**	**N/A**
H-74	AFFF in QTA Fire Suppression System	Rental Car Facility	N/A	N/A
H-75*	**Tyee Well**	**2152 S. 200th Street**	**PFAS detected at levels exceeding State Action Level**	**Well removed from service**

Notes: **Bold** font = site is located on SEA property. Table 3.3.7-3 was Table 3-13 of the NEPA Final EA.
N/A: Information is not available or not applicable.
Independent actions: contamination cleanup is done independently without a legal agreement.
WSDE-supervised cleanup: contamination cleanup is done under an agreed order of consent decree.
Voluntary Cleanup Program (VCP): under the VCP, people who independently cleanup a contaminated site may request fee-based services from the WSDE, including technical assistance and written opinions on whether requirements have been met.
No Process: Sites not under WSDE or federal oversight, not enrolled in the VCP, and where no independent action has been taken.
PLIA Petroleum Technical Assistance Program: this state program provides qualifying petroleum sites with consultation and opinion under the authority of Chapter 70A.330 RCW and the MTCA, Chapter 70A.305 RCW and Chapter 173-340 WAC.
* https://doh.wa.gov/data-and-statistical-reports/washington-tracking-network-wtn/pfas/dashboard, accessed February 11, 2024.
Source: Washington Department of Ecology, What's in My Neighborhood Tool. https://apps.ecology.wa.gov/neighborhood/, accessed February 2023. WSDE data was supplemented with current Port of Seattle data where applicable.

Risk of Explosion

As with any airport, some activities at SEA require materials that can pose a potential for risk of explosions. These include fuel storage/handling and maintenance activities that use flammable solvents and cleaning agents. The Port regulates these tenant activities through its Schedule of Rules and Regulations.[26] In that document, Section 3, Fire Regulations, outlines the specific requirements for use and storage of flammable materials. Fire inspections are conducted regularly by the Port Fire Department.

Solid Waste

SEA uses a centralized waste collection system divided between terminal and support areas and airfield areas. The collection and disposal of solid waste at SEA in 2022 is summarized in **Table 3.3.7-4**. Municipal solid wastes (MSW or garbage) collected in publicly and non-publicly accessible terminal and support areas are transported to central collection sites on SEA, where MSW vendors who are under

[26] Port of Seattle, 2015, Schedule of Rules and Regulations No. 5. Seattle-Tacoma International Airport, Effective February 12, 2015.

contract with the Port collect them for offsite disposal. Flight kitchens, some cargo operators, and airline maintenance hangars manage their waste separately from the Airport system.

TABLE 3.3.7-4: SOLID WASTE SUMMARY (2022) IN TONNAGE

Material	Vendor	Fate	Destination	Terminal	Airfield
Garbage (MSW)	Recology (contract held by City of SeaTac)	Landfilled	Cedar Hills Regional Landfill (CHRL)[1]	4,291	2,525
Mixed Recycling	Recology	Recycled	Recology Materials Recovery Facility – South Seattle, WA	2,097	129
Food + Compostables	Cedar Grove Composting	Composted	Cedar Grove compost facility in Maple Valley, WA	1,070	N/A
Used Cooking Oil	Mahoney Environmental	Converted to Biodiesel	Mahoney Biodiesel Facility in Seattle	43	N/A
Glass	Recology	Recycled	Recology Materials Recovery Facility – South Seattle, WA	20	N/A
Scrap Metal	Young's Salvage	Recycled	Various local metal recycling facilities	55	N/A
Plastic Film	Recology	Recycled / Landfilled	Recology Materials Recovery Facility – South Seattle, WA / CHRL	N/A	N/A
Donated Food	Des Moines Area Food Bank	Donated	Des Moines Area Food Bank and neighboring communities	16	N/A
Checkpoint/Terminal Liquids	Zone 1-3 Custodial Vendors	Diverted	Drained to Sanitary Sewer	158	N/A
Plastic Water Bottle Prevention	Estimated via liquid refill station use	Prevented	N/A	24	N/A
Other materials (lamps, ballasts, e-scrap, used oil & antifreeze, batteries, tires, paper reduction)	Various vendors	Recycled & Prevented	Various local recycling facilities	28	N/A
Construction Waste – In Terminal	Recology	Recycled	Various King County certified Construction Waste Recycling facilities	61	N/A
Biohazardous	Trilogy	Autoclaved, Landfilled	Covanta Waste to Energy in Brooks, OR; Autoclave / Landfill in California or Utah	1	N/A
Regulated Waste (International)	Stericycle	Autoclaved, Landfilled	Covanta WTE Brooks, OR	75	N/A

Note: Table 3.3.7-4 was Table 3-14 of the NEPA Final EA.

[1] In November 2022, the County identified a preferred alternative for landfill development. This development is estimated to increase the CHRL life until early 2038. https://kingcounty.gov/en/dept/dnrp/waste-services/garbage-recycling-compost/solid-waste-facilities/cedar-hills-development, accessed February 11, 2024.
Source: Data provided by Port, 2023.

Note: Table 3.3.7-4 was Table 3-13 in the NEPA Final EA.

Each centralized waste collection site has at minimum one compactor for comingled recyclables and one compactor for garbage. Additional containers for compostable material, used cooking oil, scrap metal, construction debris, and garbage are located at various terminal loading docks and remote

collection sites. Multiple service providers haul garbage, recyclables, compostable waste, and other wastes from compactors, drop boxes, and dumpsters in the Port's central waste collection sites.

Spill Prevention, Planning, and Response

SEA maintains a Spill Prevention, Control, and Countermeasure (SPCC) Plan[27] in compliance with USEPA regulations (40 CFR Part 112) to manage potential petroleum, fuel, and hazardous material releases. This plan includes spill prevention measures, containment strategies, regular inspection protocols for storage tanks and equipment, and personnel training. It covers fuel storage, ground support equipment, and other potential pollutant sources. The plan is part of the Airport's broader environmental management to prevent, control, and remediate contamination from its operations.

Port tenants that use petroleum, fuel, and hazardous materials above threshold levels are also required to comply with applicable local, state, and federal regulations, including the development and implementation of individual SPCC plans for their own operations. These plans include identification of areas used for oil storage or transfer, a description of containment and diversionary structures and equipment, discharge potential and drainage controls, countermeasures to address spills, responses, and cleanup activities, a list of emergency contracts, and state and federal discharge reporting requirements.

Section 3.3.15, Water Resources, includes a discussion of SEA's stormwater drainage system (SDS) and IWS. As an additional defense, these separate systems (which operate independently of each other) are designed to capture and treat spills before they reach receiving waters.

3.3.8 Historic and Cultural Preservation

Historic and cultural preservation is included as a SEPA element of the environment that can be evaluated in an EIS (WAC 197-11-444[2][b][vi]). In the NEPA EA, FAA evaluated historic and cultural resources in accordance with Section 106 of the National Historic Preservation Act (NHPA), which applies to the undertakings of federal agencies. This SEPA EIS incorporates by reference Section 3.3.8 (Historic, Architectural, Archaeological, and Cultural Resources) of the NEPA EA.

Historical, architectural, archaeological, and cultural resources encompass a range of sites, properties, and physical resources relating to human activities, society, and cultural institutions. Such resources include past and present expressions of human culture and history in the physical environment, such as prehistoric and historic archaeological sites, structures, objects, and districts, which are considered important to a culture or community. **Appendix G, Historic Resources,** contains additional information including surveys completed and correspondence.

[27] Port of Seattle, 2019 (revised 2025), Seattle-Tacoma International Airport Spill Prevention, Control and Countermeasure Plan. Prepared for the Port of Seattle by Gresham Smith.

3.3.8.1 Regulatory Setting

TABLE 3.3.8-1: FEDERAL STATUTES, REGULATIONS, AND EXECUTIVE ORDERS RELATED TO HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
National Historic Preservation Act	54 U.S.C. § 300101 et seq. 36 CFR part 800 (Section 106 process); part 60 (National Register of Historic Places [NRHP]); part 62.1 (National Natural Landmarks); part 65 (National Historic Landmarks); part 68 (standards); part 73 (World Heritage Program); part 78 (waiver of federal agency Section 110 responsibilities); part 79 (curation)	NPS; Advisory Council on Historic Preservation (ACHP); SHPO (State Historic Preservation Officer); Tribal Historic Preservation Officer (THPO)	Establishes the ACHP, an independent agency, and the NRHP within the NPS. Section 106 of the NHPA requires federal agencies to consider the effects of their undertaking (or action) on properties listed in or eligible for listing in the NRHP. Within the State of Washington, the Washington Department of Archaeology and Historic Preservation (DAHP) administers the NRHP program under the direction of the SHPO.
Executive Order 13175, Consultation and Coordination with Indian Tribal Governments	65 Federal Register 67249 (November 9, 2000)	Not Applicable	Requires federal agencies to have an accountable tribal consultation process that ensures timely and meaningful input from Indian Tribes on the development of federal policies that have tribal implications. Directs executive departments and agencies to engage in government-to-government relations with Native American tribal governments in a knowledgeable, sensitive manner.

Note: Table 3.3.8-1 was Table 3-15 of the Final NEPA EA.

TABLE 3.3.8-2: STATE AND LOCAL REGULATIONS AND POLICIES RELATED TO HISTORIC AND CULTURAL RESOURCES

Washington State Law	Code Implementing or Supporting Regulation	Oversight Agency	Summary
State Governor Executive Order 21-02	Not Applicable	DAHP	Requires state agencies using capital funds to consult with DAHP and tribes regarding potential impacts on cultural resources.
Abandoned and Historic Cemeteries Act	Chapter 68.60 RCW	DAHP	Protects, preserves, and manages cemeteries that are neglected, abandoned, or hold historical significance. Prohibits the damaging of graves, establishes guidelines for maintaining these sites, and allows organizations to care for them, with penalties for violations.
Indian Graves and Records Act	Chapter 27.44 RCW	DAHP	Protects Native American burial grounds, cairns, and glyptic / painted records on both public and private land from disturbance, desecration, or unauthorized removal. Mandates the respectful handling of remains, makes knowingly disturbing or selling artifacts from graves a felony, and requires reporting accidental discoveries to DAHP.
Archaeological Sites and Resources Act	Chapter 27.53 RCW	DAHP	Makes it unlawful to knowingly damage, excavate, or remove archaeological resources (prehistoric or historic) on public or private land without a permit from DAHP.
Archaeology and Historic Preservation	RCW 27.34.200	DAHP	Declares it in the public interest to designate, preserve, protect, enhance, and perpetuate structures, sites, districts, buildings, and objects of historic, archaeological, architectural, and cultural significance.

3.3.8.2 Existing Conditions

The SEPA EIS analysis adopts by reference the Area of Potential Effects (APE) identified by the FAA that received DAHP concurrence. An APE is “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties” (36 CFR § 800.16(d)). The APE encompasses the areas where ground disturbing activities are anticipated to be located and for areas that may be affected by a change in visual character or setting (see **Exhibit 3.3.8-1**).

Definition of the Undertaking

An undertaking, as defined in 36 CFR 800.16(y), is a project funded in whole or in part under the jurisdiction of a federal agency. This includes projects carried out by or on behalf of a federal agency; those carried out with federal financial assistance; those requiring a federal permit, license or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency.

Section 163 of the FAA Reauthorization Act of 2018 and Section 743 of the FAA Reauthorization Act of 2024 limited FAA's ALP approval authority and land use approval authority. Only some of the Proposed Action's development components are subject to FAA's approval and / or funding. Therefore, the undertaking was slightly different from the Proposed Action. The undertaking did not include L04 – Main Terminal North GT Lot and S01 – Fuel Farm Expansion. The FAA determined that it did not have approval authority for these two NTPs and that they were not related to any of the NTPs that the FAA does have authority over. Therefore, these projects were not included as part of the undertaking. However, they are subject to review for historic and cultural resources under SEPA. Although they were not included in FAA's undertaking, these two projects are within the APE, and the studies described below evaluated their locations to identify the potential for historic and cultural resources.

Study Completed

Stell Environmental Enterprises, Inc (Stell) completed a cultural resource survey of the APE in February 2021. Stell documented four archaeological sites and 12 historic properties. None of the historic properties or archaeological sites were determined to be eligible for listing on the NRHP. Fieldwork Studio LLC (Fieldwork) completed a focused reconnaissance survey of off-site properties near C02 and C03 in December 2023. None of the properties documented were determined to be eligible for listing on the NRHP. Fieldwork also completed an evaluation of the Washington Memorial Park Cemetery in March 2024. The Cemetery was determined not eligible for listing on the NRHP. These studies are included in Appendix G.

THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.8-1: AREA OF POTENTIAL EFFECTS

THIS PAGE INTENTIONALLY LEFT BLANK

3.3.9 Land and Shoreline Use

Land and shoreline use—including the relationship of the Proposed Action to existing land use plans and to estimated population, housing, recreation, historic and cultural preservation, and agricultural crops— is included as a SEPA element of the environment that can be evaluated in an EIS (WAC 197-11-444[2][b]). This section of the SEPA EIS covers the Proposed Action's relationship to existing land use plans and to estimated population and incorporates by reference Sections 3.3.4 (Coastal Resources) and 3.3.9 (Land Use) of the NEPA EA. Housing would not be affected by the Proposed Action and is not addressed further. Recreation, agricultural crops, and historic and cultural preservation are addressed in Sections 3.3.5, 3.3.6, and 3.3.8, respectively, of this SEPA EIS. Section 3.3.11, Noise and Noise-Compatible Land Use, contains a detailed list of sensitive land uses near the Airport that could be affected by aircraft noise.

Aviation-related land use planning is integral to safe, sustainable Airport operations. Ensuring compatibility with nearby land uses requires an analysis of how the Airport functions within the community and how the community can be impacted by the Airport. This section includes the analysis of the consistency of the Proposed Action with existing land use planning in surrounding jurisdictions.

Washington's Growth Management Act (GMA) directs local jurisdictions to develop comprehensive plans and development regulations to guide their growth. The GMA's goals include encouraging growth in urban areas, reducing sprawl, encouraging efficient multimodal transportation systems, and planning for and accommodating affordable housing, among others.

Washington's Shoreline Management Act (SMA) requires local jurisdictions with shorelines to develop and implement Shoreline Master Programs (SMPs). This additional layer of land use planning works to help protect this sensitive environment.

3.3.9.1 Regulatory Setting

Land Use

TABLE 3.3.9-1: FEDERAL STATUTES AND REGULATIONS RELATED TO LAND USE

Statute	US Code Implementing Regulation	Oversight Agency	Summary
Airport and Airway Improvement Act of 1982, and subsequent amendments	49 U.S.C. § 47107(a)(10)	FAA	AIP funding for an airport development project may not be approved unless the Secretary of Transportation receives written assurance satisfactory to the Secretary that appropriate action, including the adoption of zoning laws, has been or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including the landing and take-off of aircraft.
Airport Improvement Program (AIP)	49 U.S.C. § 47106(a)(1)	FAA	AIP funding for an airport development project may not be approved unless the Secretary of Transportation is satisfied that a project is consistent with plans (existing at the time a project is approved) of public agencies for development of the area in which the airport is located.
Airport Safety, Protection of Environment, Criteria for Municipal Solid Waste Landfills	40 CFR § 258.10	USEPA	Addresses restrictions on municipal solid waste landfills relative to airports.

Note: Table 3.3.9-1 was Table 3-16 of the NEPA Final EA.

TABLE 3.3.9-2: STATE, LOCAL, AND PORT REGULATIONS AND POLICIES RELATED TO LAND USE

Regulation or Policy	Code Implementing Regulation	Oversight Agency	Summary
Growth Management Act	Chapter 36.70A RCW	Washington State Department of Commerce (WSDC)	Requires local jurisdictions to develop and implement comprehensive plans and development regulations to guide growth.
Port of Seattle / City of SeaTac Interlocal Agreement	Not Applicable	Port of Seattle within the AAA/City of SeaTac outside the AAA	Among other topics, this agreement established a cooperative system for land use management of Port-owned property located within the City of SeaTac.
Local Comprehensive Plans			
Envision SeaTac 2044	Adopted pursuant to Ordinance No. 24-1022	SeaTac	Establishes goals, policies, and strategies to guide SeaTac's growth until 2044.
Burien 2044 Comprehensive Plan	Adopted pursuant to Ordinance No. 868	Burien	Establishes the city's vision to be "a prosperous, equitable, sustainable, resilient, innovative, and safe community …" capable of addressing the city's projected growth of 19,000 new residents and 4,770 jobs between 2024 and 2044.
Imagine Des Moines 2044	Adopted pursuant to Ordinance No. 1828	Des Moines	Described as "the City's official policy guide that defines – through goals, policies and implementation strategies – how Des Moines should best accommodate forecasted household and job growth, manage traffic, and provide open space and recreational opportunities and other vital services."

TABLE 3.3.9-2: STATE, LOCAL, AND PORT REGULATIONS AND POLICIES RELATED TO LAND USE (CONTINUED)

Regulation or Policy	Code Implementing Regulation	Oversight Agency	Summary
Tukwila 2024 – 2044 Comprehensive Plan	Adopted pursuant to Ordinance No. 2741	Tukwila	Described as a "long-term guiding document or 'blueprint' that explains the community's values and priorities to guide growth and development."
Local Zoning Codes			
SeaTac Burien Des Moines Tukwila	SMC Title 15 BMC Title 19 DMMC Title 18 TMC Title 18	Local Jurisdiction	Zoning codes are laws that divide land into districts and set rules for how the various districts can be developed. Zoning compliance within the AAA, which encircles the runways, is implemented by the Port as set out in the 2018 ILA between the Port and City of SeaTac. The City manages compliance outside the AAA.

Sources: City of SeaTac Comprehensive Plan web page: https://www.seatacwa.gov/government/comprehensive-plan;
City of Burien Comprehensive Plan web page: https://www.burienwa.gov/residents/burien_s_vision/comprehensive_plan;
City of Des Moines, Comprehensive Plan web page: https://www.desmoineswa.gov/departments/planning_and_building/plan_development/comprehensive_plan;
City of Tukwila, Comprehensive Plan web page: https://www.tukwilawa.gov/departments/community-development/comprehensive-plan/.
Note: SMC = SeaTac Municipal Code; BMC = Burien Municipal Code; DMMC = Des Moines Municipal Code; TMC = Tukwila Municipal Code

Shoreline Use and Coastal Resources

Coastal resources are federally protected under the Coastal Zone Management Act (CZMA). The CZMA requires that "each federal agency activity within or outside the coastal zone that affects any land or water use, or natural resource of the coastal zone shall be carried out in a manner which is consistent, to the maximum extent practicable, with the enforceable policies of approved state management programs."[28] The CZMA applies to all natural resources occurring within coastal waters and their adjacent shorelands. Coastal resources include islands, transitional and intertidal areas, salt marshes, wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as fish and wildlife and their respective habitats within the coastlines of the Atlantic and Pacific oceans, the Great Lakes, and the Gulf of Mexico.

[28] 15 CFR Part 930, Federal Consistency with Approved Coastal Management Programs.

For federal authorizations listed in the Washington CZMP, a federal agency cannot issue a permit or approval unless WSDE agrees that the project is consistent with Washington's enforceable policies. The FAA went through this process as part of its determinations (see **Appendix E, Coastal Resources**). The Port is responsible to review projects that will require a federal license or permit for compliance with the CZMP's enforceable policies and prepare a federal Consistency Certification during the permit process. Washington State complies with the CZMA though its implementation of the SMA. Development along shorelines in Washington State is regulated by the SMA and the corresponding SMPs adopted by local jurisdictions under the SMA's authority.

Washington's SMA requires that all Washington counties and towns and cities with shorelines prepare and implement SMPs. The SMA is intended to protect shoreline resources, including land, vegetation, wildlife, and habitat, against adverse environmental impacts. Areas under SMA jurisdiction include the Pacific Ocean shoreline and the shorelines of Puget Sound, the Strait of Juan de Fuca, rivers, and streams and lakes above a certain size. Work in a shoreline requires specific permit approval, which can include a substantial development permit. These permits are regulated through the local jurisdiction's SMP.

TABLE 3.3.9-3: FEDERAL STATUTES AND REGULATIONS RELATED TO THE PROTECTION OF COASTAL RESOURCES

Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
Coastal Zone Management Act	16 U.S.C. §§ 1451-1466 15 CFR part 930, subparts C and D 15 CFR part 923	NOAA; Appropriate State Agency	Provides for management of the nation's coastal resources, including the Great Lakes.

Notes: Table 3.3.9-3 was Table 3-9 of the NEPA Final EA. NOAA = National Oceanographic and Atmospheric Administration

TABLE 3.3.9-4: STATE AND LOCAL REGULATIONS RELATED TO SHORELINE USE

Regulation or Policy	Code Implementing Regulation	Oversight Agency	Summary
Shoreline Management Act	Chapter 90.58 RCW	WSDE	Requires local jurisdictions with shorelines to develop and implement SMPs. Washington complies with the CZMA through the SMA.
Shoreline Master Program	Title 18.05 SMC	City of SeaTac	Applies to approximately 2 miles of shoreline along Angle Lake.

3.3.9.2 Existing Conditions

The land use analysis focused on the areas within the GSA where the Proposed Action or alternatives may create impacts that are incompatible with existing or future planned land uses. The analysis considered the City of SeaTac and those jurisdictions within the GSA (see **Exhibit 3.3.9-1**).

Existing Land Use

The predominant existing land use within the GSA is commercial / industrial. Land uses surrounding the Airport property include parkland, residential, industrial, and commercial.

Planned and Future Land Use

General land use within each jurisdiction is established through a comprehensive plan and applied through zoning regulations. Zoning provides an indication of possible future land use and does not always reflect the current land use. Zoning directly adjacent to Port-owned property is predominantly commercial along the east; park and residential to the north; mixed use to the south; and mixed commercial, industrial, and residential to the west (see **Exhibit 3.3.9-1**).

The Growth Management Act (RCW 36.70.547[29]) requires every county, city, and town in which a general aviation airport, that is operated for the benefit of the general public, is located to, through its comprehensive plan and development regulations, discourage the siting of incompatible uses adjacent to such general aviation airport. Thus, local plans and land use regulations have been developed by adjacent jurisdictions to discourage uses incompatible with Airport operations.

Local comprehensive plans, local redevelopment plans, regional transportation plans, and other agreements from the jurisdictions within the GSA were collected for the EIS to understand planned and future land uses. These included the following:

- Port and City of SeaTac ILA (2018)
- Envision SeaTac 2044 (December 10, 2024)
- Imagine Des Moines 2044 (September 25, 2025)
- Burien 2044 Comprehensive Plan (October 28, 2024)
- Tukwila 2024 – 2044 Comprehensive Plan (December 16, 2024)
- Puget Sound Regional Council (PSRC) Vision 2050 (adopted in October 2020)

Information on each plan / agreement is provided in **Appendix H, Land Use**. Each of the city comprehensive plans have been updated since publication of the Final EA and have been reviewed for the SEPA EIS.

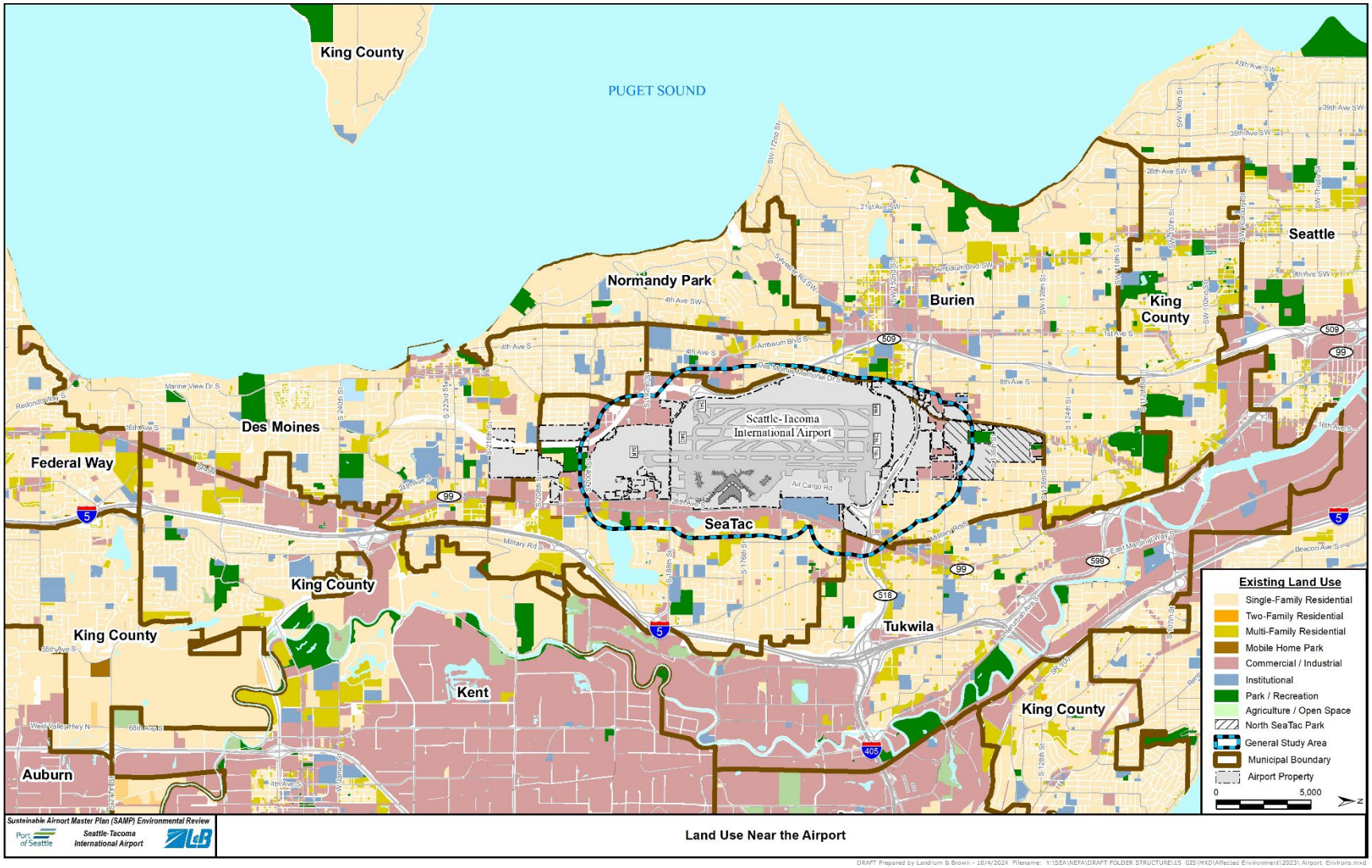
Existing Shoreline Use and Coastal Resources

The CZMA applies to states having an approved Coastal Zone Management (CZM) plan. Proposed federal actions within the CZM boundary must work to achieve consistency with the applicable CZM plan. The WSDE administers Washington's CZM Program (CZMP). SEA is located within the CZM boundary. The City of SeaTac administers the SMP, which applies only to the shoreline of Angle Lake.[30]

[29] https://app.leg.wa.gov/RCW/default.aspx?cite=36.70.547

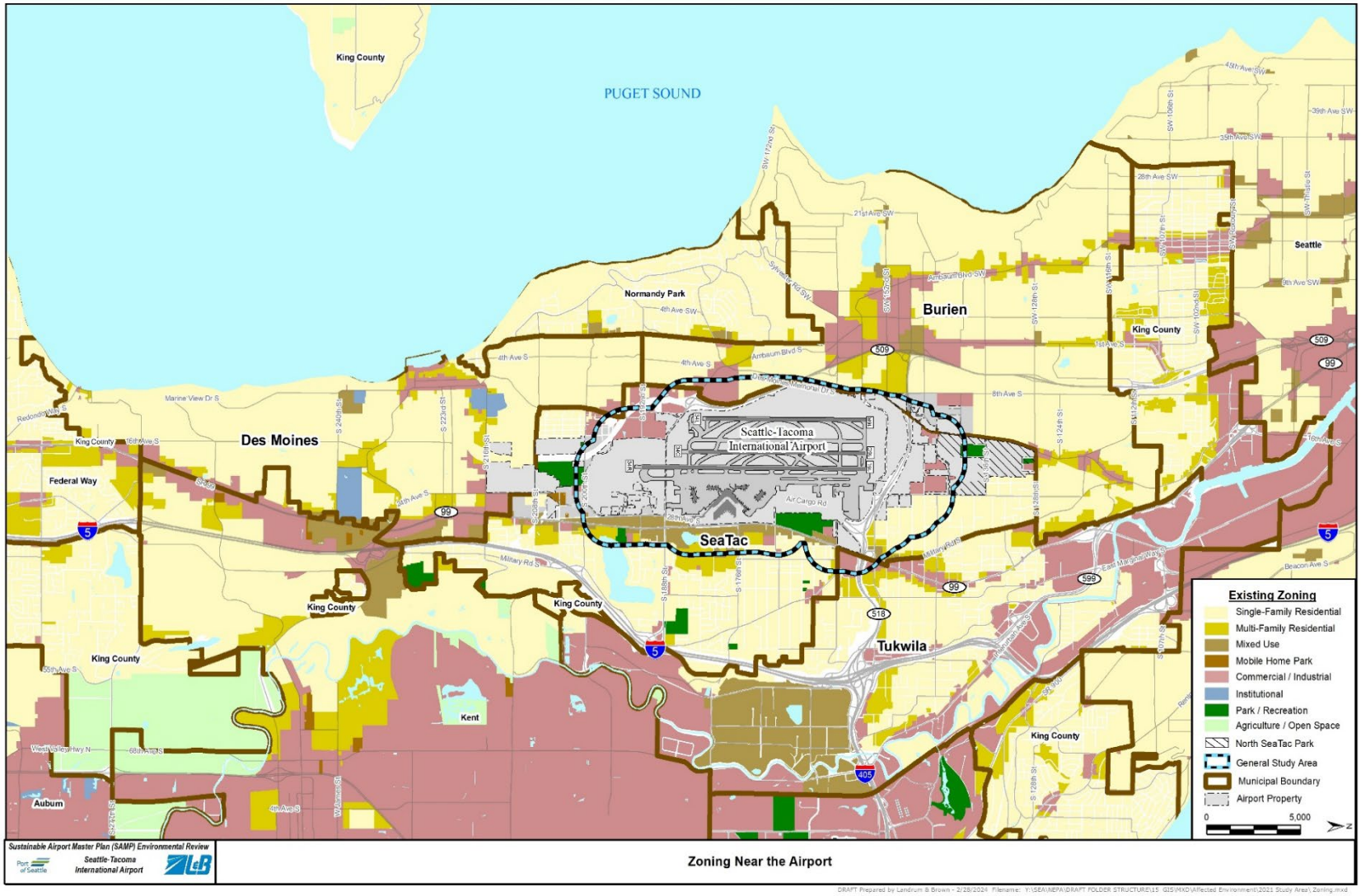
[30] City of SeaTac, 2019, City of SeaTac's Shoreline Master Program. Available for review at: https://www.seatacwa.gov/home/showpublisheddocument/29110/637323058721370000.

EXHIBIT 3.3.9-1: LAND USE NEAR THE AIRPORT



THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.9-2: ZONING NEAR THE AIRPORT



THIS PAGE INTENTIONALLY LEFT BLANK

3.3.10 Energy and Natural Resources

Energy and natural resources are included as SEPA elements of the environment that can be evaluated in an EIS (WAC 197-11-444[1][e]). This SEPA EIS incorporates by reference Section 3.3.10 (Natural Resources and Energy Supply) of the NEPA EA.

This impact category evaluates a project's consumption of natural resources (such as asphalt, aggregate, wood, etc.) and use of energy supplies (such as coal for electricity; natural gas for heating; and fuel for aircraft, or other ground vehicles) from construction, operation, and / or maintenance of the Proposed Action or alternative(s).

3.3.10.1 Regulatory Setting

Chapter 19.27A RCW establishes energy efficiency requirements for commercial and residential buildings, with the goal of achieving a 70% statewide reduction in annual net energy consumption from 2006 levels by 2031. Washington's Clean Fuel Standard (Chapter 70A.535 RCW) requires fuel suppliers to gradually reduce the carbon intensity of transportation fuels to 45% below 2017 levels by 2038.

There are no special-purpose federal laws or requirements for natural resources or energy supply that apply to the NTPs.

3.3.10.2 Existing Conditions

SEA uses energy in the form of electricity, natural gas, and fuel for airplanes and ground support equipment and also for heating and cooling of Airport facilities. Information on current consumption of energy is based on Port records. Information on available energy and resource supply is based on information from the U.S. Energy Administration, WDNR, and building industry sources. Overall, the Seattle-Tacoma area is a well-developed urban area with adequate access to natural resources for facility operations, aircraft operations, and construction projects. Under normal operating circumstances, SEA has access to utilities and fuel, and these energy sources are currently not in short supply in the area.[31]

Electricity and Natural Gas

Energy demands from the operation of Airport facilities are met through the consumption of electricity, natural gas, and liquid fuels. The Bonneville Power Administration (BPA), Puget Sound Energy (PSE) and Seattle City Light (SCL) provide electricity, and PSE and Cost Management Services provide natural gas. Electricity is the primary source of energy used for lighting and cooling of the SEA facilities, including the terminal building. On the airfield, runway and taxiway lighting, aircraft ground power, and various navigational systems use electricity. BPA provides power and transmission services to SEA, which operates as the electric utility within the fence line of the Airport property. This accounts for over 90% of the electricity used at SEA. PSE and SCL serve smaller retail loads outside the Main Terminal, such as the bus maintenance facility, distribution center, cargo buildings, airfield lighting, and similar smaller uses.

Natural gas provides heat, steam, and hot water to the SEA facilities. The boilers in SEA's main heating plant use natural gas as the primary energy source, with diesel as a backup source when the natural

[31] United States Energy Information Administration, Washington State profile and energy estimates. www.eia.gov/state/analysis, accessed July 12, 2023.

gas supply is interrupted. The Port also uses natural gas to fuel certain vehicles used at SEA, including its Rental Car Facility and employee shuttle buses.

Table 3.3.10-1 and **Table 3.3.10-2** show the electricity and natural gas usage at SEA in selected years from 2010 to 2022.

TABLE 3.3.10-1: ELECTRICITY CONSUMPTION (MEGAWATT HOUR)

Year	Total BPA Electricity Consumption (non-tenant)	Tenant BPA Electricity Consumption	Total SCL Electricity Consumption	Total PSE Electricity Consumption
2010	114,000	31,000	1,600	700
2015	115,000	32,000	1,600	1,900
2019	118,000	28,000	2,100	2,300
2022	117,000	26,376	2,100	2,207

Notes: Table 3.3.10-1 was Table 3-17 in the NEPA Final EA. Numbers are rounded to the nearest 100.
Source: Data provided by the Port of Seattle.

TABLE 3.3.10-2: NATURAL GAS CONSUMPTION (THERMS)

Year	Total Central Plant Natural Gas Consumption	Total CNG Fueling Station Natural Gas Consumption	Total Other Buildings Natural Gas Consumption	Renewable Natural Gas (started 10/2020)
2010	2,700,000	0	115,000	0
2015	2,550,000	500,000	115,000	0
2019	2,500,000	560,000	200,000	0
2022	2,980,291	447,000	190,434	50% of the total natural gas is renewable; 100% of CNG in buses

Notes: Table 3.3.10-2 was Table 3-18 in the NEPA Final EA Numbers are rounded to the nearest 100.
1 therm = a unit of heat equivalent to 100,000 British Thermal Units.
CNG = Compressed Natural Gas
Source: Data provided by the Port of Seattle.

Renewable Natural Gas (RNG)

The Port has a contract for RNG supply that began in October 2020 to replace approximately 50% of the existing fossil gas usage in the boilers and all of the supply at its CNG fueling station. RNG is a natural gas produced by the decomposition of organic matter. The term “renewable” is used to describe this gas because it is derived from waste that is continuously produced by present-day activities, such as landfills, wastewater treatment plants, and food and animal waste digesters. These waste sources naturally produce a potent GHG – methane – as they decompose, so RNG production captures methane that would otherwise escape into the atmosphere. The captured gas is purified to remove components such as water, carbon dioxide, and hydrogen sulfide.

Fuel Consumption

Jet A fuel is delivered via the BP Olympic Pipeline. The total volume of Jet A supplied to aircraft at SEA in 2022 was 595,696,138 gallons. The BP Olympic Pipeline is near capacity with delivery of its existing

fuel products, and during summer peak operations at SEA there are often challenges with having enough jet fuel in storage tanks to meet minimum storage levels per the Fuel Consortium's standards / policies. The Fuel Consortium (an airline group) and BP Olympic Pipeline coordinate additional jet fuel deliveries outside the normal schedule as needed.

The Port maintains a diesel and renewable diesel supply contract for vehicles and generators with SeaPort Petroleum, which comes from Targa Sound Terminal in Tacoma. Individual airlines have their own supplies for diesel. However, some of the Port's diesel supply is used for airline equipment. The total amount used by SEA vehicles and generators in 2022 was 44,257 gallons of fossil diesel, and 29,029 gallons of renewable diesel. The Port estimates that the airlines, caterers, etc. use about 400,000 additional gallons of diesel in their GSE per year. Biodiesel is not used at SEA.

The Port has a gasoline supply contract with SeaPort Petroleum. In 2022, 124,140 gallons of gasoline was delivered for SEA use. The airlines purchase gasoline separately. Volumes used by airlines are difficult to estimate commercially, but it is reasonable to assume that airlines, caterers, and other SEA businesses use about 400,000 additional gallons of gasoline per year.

Other Natural Resources

Other natural resources used at SEA include dirt for fill material, concrete, asphalt, water, wood, and gravel. These resources are available in the Puget Sound region, and there are multiple providers of such resources in the vicinity of SEA.[32] According to natural resource mapping of the area, no scarce or unusual resources are present within the GSA.[33]

3.3.11 Noise and Noise-Compatible Land Use

Noise is included as a SEPA element of the environment that can be evaluated in an EIS (WAC 197-11-444[2][a]) as part of the environmental health analysis. Noise impacts on schools are included as part of the public services and utilities analysis (WAC 197-11-444[2][d]). This SEPA EIS covers those topics together in this chapter and incorporates by reference Section 3.3.11 (Noise and Noise-Compatible Land Use) of the NEPA EA.

Sound is a physical phenomenon consisting of pressure fluctuations that travel through a medium, such as air, and are sensed by the human ear. Noise is considered an unwanted sound that can disturb routine activities and can cause annoyance. Aviation noise primarily results from the operation of fixed and rotary-wing aircraft, such as departures, arrivals, overflights, taxiing, and engine run-ups. Refer to **Appendix J, Noise and Noise-Compatible Land Use** for more detailed information on noise and the noise analysis.

[32] WACA (Washington Aggregates and Concrete Association) Member Directory. www.washingtonconcrete.org/member-list-public, accessed August 9, 2023.

[33] WDNR. Coal, metallic, and mineral resources map of Washington. https://www.dnr.wa.gov/programs-and-services/geology/energy-mining-and-minerals/coal-metallic-and-mineral-resources#major-metallic-minerals-in-washington, accessed August 9, 2023.

3.3.11.1 Regulatory Setting

TABLE 3.3.11-1: FEDERAL STATUTES AND REGULATIONS RELATED TO NOISE AND NOISE-COMPATIBLE LAND USE

Statute	US Code Implementing Regulation	Oversight Agency	Summary
Airport and Airway Improvement Act of 1982	49 U.S.C. § 47101 et seq.	FAA	Authorizes funding for noise mitigation and noise compatibility planning and projects, and establishes certain requirements related to noise-compatible land use for federally funded airport development projects.
Aviation Safety and Noise Abatement Act of 1979	49 U.S.C. § 47501 et seq. 14 CFR part 150	FAA	Directs the FAA to establish, by regulation, a single system for measuring noise and determining the exposure of people to noise; and time of occurrence; and to identify land uses normally compatible with various noise exposures.

Note: Table 3.3.11-1 was Table 3-20 in the NEPA Final EA.

Potential impacts from airport noise, relative to the land uses surrounding an airport, are determined by modeling and mapping the Day-Night Noise Level (DNL). DNL is a uniform metric adopted by the FAA pursuant to the Aviation Safety and Noise Abatement Act of 1979 (ASNA) for evaluating aviation noise exposure. It provides a measure of a person's cumulative exposure to sound over a 24-hour period. DNL considers both the amount of noise from each aircraft operation and the total number of operations flying throughout the day. It applies an additional 10dB weighting for nighttime flights (between 10 p.m. and 7 a.m.) to represent the added intrusiveness of noise that occurs during sleeping hours. The DNL is the FAA's required noise metric for the assessment of aircraft noise and was adopted through 14 CFR Part 150 to meet the provisions of the ASNA.

FAA Order 1050.1F requires the use of the latest version of FAA's Aviation Environmental Design Tool (AEDT).[34] FAA Order 1050.1F also identifies 65 DNL as the required metric to determine if there is a significant impact. The FAA uses the 14 CFR Part 150, *Airport Noise Compatibility Planning*, land use compatibility guidelines, and standards set out in Appendix A to Part 150 to assess noise compatibility. Below 65 DNL, all land uses are determined to be compatible with airport noise.

Generally, noise exposure is regulated by local governments in Washington. WSDE has established maximum environmental noise levels (WAC 173-60 and Chapter 70A.20 RCW) for different residential, commercial, and industrial zones. These rules apply primarily to ground-based noise sources. If a local jurisdiction does not have its own noise ordinance, it can use WSDE's rules. Enforcement is the responsibility of the local government. **Table 3.3.11-2** summarizes these local regulations.

[34] FAA, 2023, AEDT, Version 3f (latest version when modeling was completed). https://aedt.faa.gov/3f_information.aspx.

TABLE 3.3.11-2: STATE AND LOCAL REGULATIONS RELATED TO NOISE

Regulation or Policy	Code Implementing or Supporting Regulation	Oversight Agency	Summary
State Noise Control	Chapter 70A.20 RCW	WSDE	Establishes Washington State's framework for noise control and empowers WSDE to set and enforce maximum noise levels.
Sound Level Measurement Procedures	Chapter 173-58 WAC	WSDE	Establishes standard procedures for measuring sound levels of sources regulated by WSDE, including, but not limited to, environmental noise, motor racing vehicles, construction, float planes, and railroads.
Maximum Environmental Noise Levels	Chapter 173-60 WAC	WSDE	Establishes the maximum noise levels allowed in different environments and Environmental Designations for Noise Abatement (EDNA) standards as measured at the property line.
Local Noise Ordinance	SeaTac Municipal Code § 8.05.360	City of SeaTac	Establishes limits on noise, including sounds emanating from construction sites. Construction noise is limited to the hours of 7 a.m. to 10 p.m. on weekdays and 9 a.m. to 10 p.m. on weekends.
Construction Noise Code	Burien Municipal Code, Chapter 15.10	City of Burien	Limits construction noise to the hours of 7 a.m. to 7 p.m. on weekdays and 9 a.m. to 5 p.m. on weekends.
Construction Noise Code	Des Moines Municipal Code Chapter 7.16	City of Des Moines	States that construction activities should typically occur between 7 a.m. and 10 p.m. on weekdays, with noise mitigation plans often required for significant projects.

Aircraft noise is exempt from regulation by local agencies and WSDE. Federal law does not allow direct local control of aircraft in flight, and FAA has the primary responsibility of addressing aircraft noise. State and local regulations focus on land use compatibility and building codes near airports. For example, the City of SeaTac Sound Transmission Code (SMC § 13.240.010) requires specific building standards for noise reduction in areas near SEA. It applies to new construction and major renovations of homes, schools, hospitals, and other sensitive uses within the area

covered by the noise remedy program.

RCW 53.54 authorizes port districts serving more than 900 scheduled jet aircraft flights per day to implement noise abatement programs. These programs can include property acquisition, sound insulation, and other measures to reduce noise impacts. The Port has implemented a Sound Insulation and Noise Compatibility Program with FAA approval for more than 40 years (since 1985).

3.3.11.2 Existing Conditions

Aircraft Noise Modeling Methods and Input

The FAA was conducting a review of its noise policies, but the process is now on hold due to the passage of the FAA Reauthorization Act of 2024 by Congress. Pursuant to Section 792 of the Act, the FAA is required to form an Aircraft Noise Advisory Committee (ANAC). The ANAC will advise the FAA on issues facing the aviation community that are related to aircraft noise exposure and existing FAA noise policies and regulations. To follow this direction from Congress, the FAA has revised the Noise Policy Review approach and timelines to allow the ANAC to complete its work and issue its report before FAA

makes any decisions on possible noise policy updates (e.g., use of DNL as the primary noise metric and DNL 65 dB as the threshold for determining significant impact). The FAA intends to complete the Noise Policy Review once the ANAC has submitted a report to the FAA with any recommended policy changes. Until the review is completed, DNL will continue to be the official metric for modeling aviation noise exposure, and DNL 65 dB will continue to be the threshold used for assessing whether a particular land use is compatible with the modeled noise exposure identified by the AEDT and significant noise impacts in environmental reviews. To calculate DNL noise exposure levels for SEA, the Port gathered the categories of information required for input into AEDT. These inputs included the number of operations by aircraft type, the number of operations by time of day, runway layout, runway end use, flight track location, flight track use, engine run-up (testing) locations, engine run-up activity, and departure trip length. The noise analysis conducted considered the area where the predominant arrival and departure flight tracks occur, as well as less routinely flown flight tracks.

Existing Condition Noise Contour

Exhibit 3.3.11-1 graphically depicts the average-annual noise contour for the Existing (2022) Condition. The 65 DNL noise contour of the Existing (2022) Condition encompasses 8.8 total square miles within the cities of Burien, Des Moines, and SeaTac, and unincorporated King County. The 65 DNL contour extends approximately 3.4 miles to the north and 2.8 miles south of SEA. The area within the contour to the north and south is made up of a mix of residential, commercial, and industrial land uses.

Noise-Compatible Land Use

Based on FAA's Land Use Compatibility Guidelines (Appendix A to Part 150), 65 DNL is the exterior noise level where noise sensitive land uses (residences, places of worship, schools, libraries, and nursing homes) are not compatible with aircraft noise absent noise mitigation measures. All land uses with noise levels below 65 DNL are considered compatible with airport noise.

Summaries of the residential population and housing units exposed to noise levels exceeding 65 DNL for the Existing (2022) Condition noise contour are provided in **Table 3.3.11-3**.[35] A total of 6,216 housing units are located within the 65+ DNL noise contour. Since 1985, the Port has provided sound insulation for over 9,400 qualifying residences within the 65 DNL contour.[36] A list of noise sensitive facilities within the 65+ DNL Noise Contour for the Existing (2022) Condition are listed in **Table 3.3.11-4**. There are nine schools (five have been sound insulated and one additional school is in the process of being sound insulated), 19 places of worship, three nursing homes, and two libraries within the 65+ DNL noise contour.

[35] The analysis was completed for the NEPA EA, and the Port has continued to provide sound insulation to eligible properties. The Port is currently working on a Part 150 Study Update, which is using the same model and data used in the NEPA EA and SEPA EIS analysis. The Part 150 Study Update data has not been approved by the FAA as of April 2026. Once approved, the Port will provide updated numbers of housing units within the 65 DNL noise contour.

[36] The Port has previously sound insulated housing units within previous Noise Remedy Boundaries, which are different boundaries from the current 65 DNL.

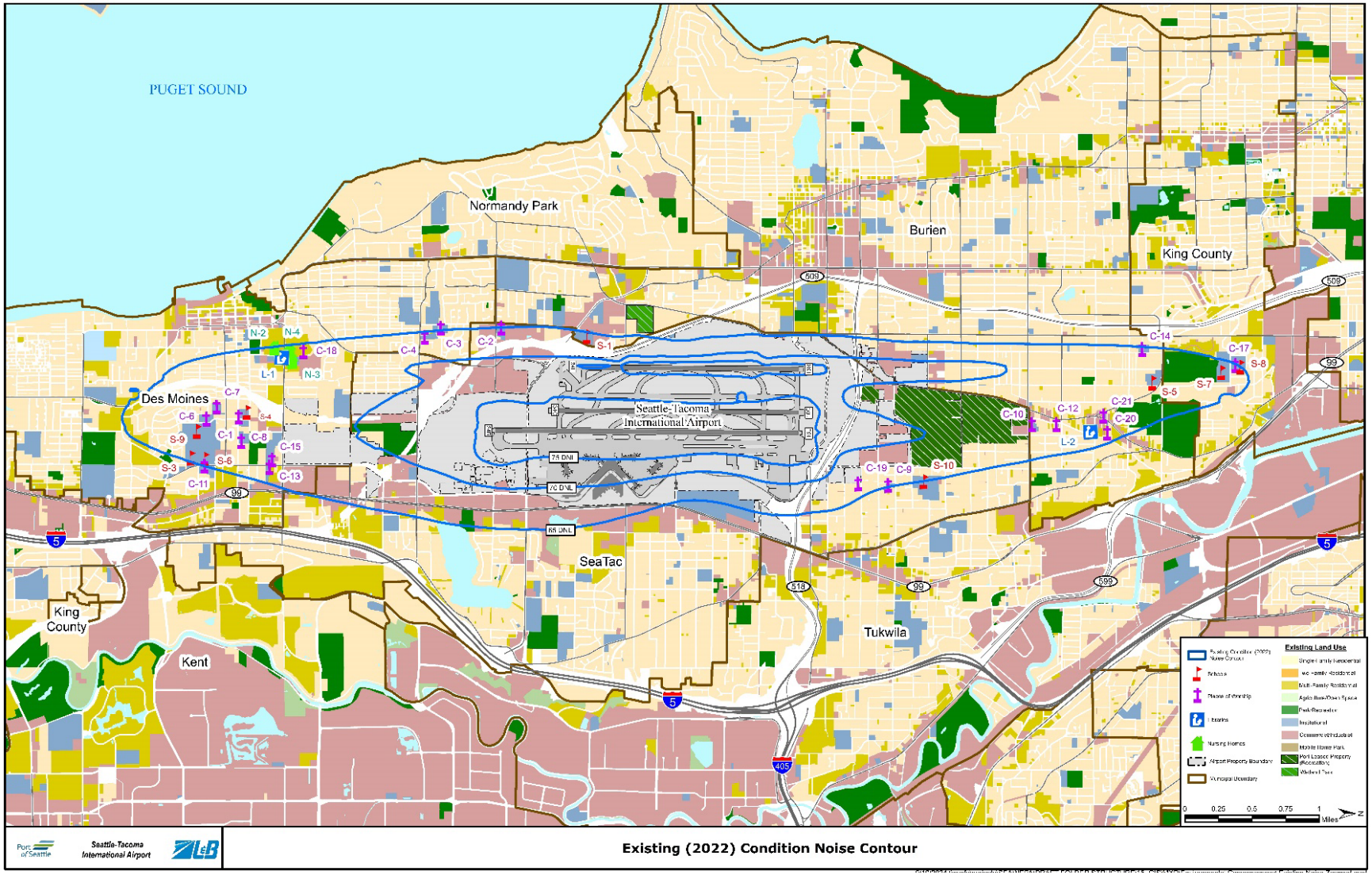
TABLE 3.3.11-3: NON-COMPATIBLE LAND USE HOUSING AND POPULATION BY CONTOUR BAND – EXISTING CONDITION

Mitigation Status / Land Use	DNL 65-70 dB	DNL 70-75 dB	DNL 65+ dB
Sound Insulation Completed			
Single-Family	3,100	93	3,193
Multi-Family	349	0	349
Mobile Home	0	0	0
Subtotal	3,449	93	3,542
Not Sound Insulated			
Single-Family	649	13	662
Multi-Family	1,887	0	1,887
Mobile Home	119	6	125
Subtotal	2,655	19	2,674
Total Housing Units	**6,104**	**112**	**6,216**
Total Estimated Population	**13,754**	**307**	**14,061**

Notes: Table 3.3.11-3 was Table 3-21 in the NEPA Final EA. The Port has previously sound insulated housing units within previous Noise Remedy Boundaries, which are different boundaries from the current 65DNL. Population numbers are estimates based on the 2020 United States Census average household size per number of housing units.
Source: Port of Seattle, Landrum & Brown, 2024.

THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.11-1: EXISTING (2022) CONDITION NOISE CONTOUR



THIS PAGE INTENTIONALLY LEFT BLANK

TABLE 3.3.11-4: NOISE SENSITIVE FACILITIES IN THE EXISTING (2022) CONDITION 65+ DNL NOISE CONTOUR

Map ID	Type of Facility	Name	Sound Insulation Status
S-1	School	Puget Sound Skills Center	Eligible
S-3	School	Midway Elementary School	Sound Insulated
S-4	School	Mount Rainier High School	Sound Insulated
S-5	School	Southern Heights Elementary School (Closed)	Sound Insulated
S-6	School	Pacific Middle School	Sound Insulated
S-7	School	Beverly Park Elementary School	Eligible
S-8	School	Our Lady of Lourdes School	Eligible
S-9	School	St. Philomena Catholic School	Sound Insulated
S-10	School	Glacier Middle School	Sound Insulated
C-1	Place of Worship	Saint Philomena Catholic Church	Sound Insulated
C-2	Place of Worship	Prince of Peace Lutheran Church	Eligible
C-3	Place of Worship	Samoan Christian Fellowship	Not Eligible
C-4	Place of Worship	Normandy Christian Church	Sound Insulated
C-6	Place of Worship	Hope Church	Sound Insulated
C-7	Place of Worship	Gospel Russian Baptist Church	Eligible
C-8	Place of Worship	The Mountain Church	Sound Insulated
C-9	Place of Worship	Riverton Heights Baptist Church	Eligible
C-10	Place of Worship	Boulevard Park Presbyterian	Eligible
C-11	Place of Worship	Midway Community Covenant Church	Eligible
C-12	Place of Worship	Apostolic Bible Church of Jesus Christ	Eligible
C-13	Place of Worship	Highline 7th Day Adventist Church	Not Eligible
C-14	Place of Worship	Glen Acres Church of Christ	Eligible
C-15	Place of Worship	Kingdom Hall of Jehovah’s Witnesses	Not Eligible
C-17	Place of Worship	Our Lady of Lourdes Church	Eligible
C-18	Place of Worship	Pacific Northwest United Methodist	Eligible
C-19	Place of Worship	Wat Buddharam Buddhist Temple	Eligible
C-20	Place of Worship	Hanuman Nagri Temple	Not Eligible
C-21	Place of Worship	Way of Salvation Church	Eligible
L-1	Library	Des Moines Library	Eligible
L-2	Library	Boulevard Park Library	Eligible
N-2	Nursing Home	Wesley Homes Terrace	Not Eligible
N-3	Nursing Home	Wesley Homes Health Center	Not Eligible
N-4	Nursing Home	Wesley Homes Gardens and Bungalows	Eligible

Notes: Table 3.3.11-4 is based on Table 3-22 in the NEPA Final EA and was modified for the SEPA EIS to add sound insulation status
Source: Port of Seattle, Landrum & Brown analysis

3.3.12 Socioeconomics and Environmental Justice

Socioeconomics and environmental justice were evaluated in the NEPA EA,[37] and the Port has determined that they will be helpful in evaluating the Proposed Action. These topics have therefore been carried forward into this SEPA EIS. The Port also conducted additional environmental justice analysis for the SEPA EIS. This section incorporates by reference Section 3.3.12 of the NEPA Draft EA. Additionally, the NEPA EA considered impacts on Children's Health and Safety Risks. The Port has included that documentation in **Appendix K, Socioeconomics, Environmental Justice, and Children's Health**.

This section identifies existing conditions in the GSA for socioeconomics and environmental justice. These topics are not specifically identified as SEPA elements of the environment under WAC 197-11-444. The regulations state that "socioeconomic" is not used in the statute and analysis of aspects of socioeconomics is not required. However, WAC 197-11-440(8) gives agencies the option to include additional analysis.

3.3.12.1 Socioeconomics

A socioeconomic analysis evaluates how aspects of the human environment such as population, employment, housing, and public services might be affected by the Proposed Action and alternatives. Population, employment, and housing are discussed below. Public services are addressed in Section 3.3.16, Public Services and Utilities.

Regulatory Setting

TABLE 3.3.12-1: FEDERAL STATUTES AND REGULATIONS RELATED TO SOCIOECONOMIC IMPACTS

Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970	42 U.S.C. § 61 et seq. 49 CFR part 24	Federal Highway Administration (FHWA)	The Act contains provisions that must be followed if acquisition of real property or displacement of people would occur as a result of implementing the selected alternative.

Note: Table 3.3.12-1 was Table 3-23 of the NEPA Final EA.

Existing Conditions

This analysis relies on data from the 21 census block groups that are wholly or partially within the GSA (see **Exhibit 3.3.12-1**) or the 135 census blocks that are wholly or partially within the GSA (see **Exhibit 3.3.12-2**), depending on the availability of data being analyzed. The analysis relies on the smallest geographic area for which current demographic and economic data was available for each category of data. However, it is important to note that portions of these census block groups and blocks fall outside of the GSA. The following sections describe population, employment, income, housing, and access to public transportation and services within the entire census block group and / or block.

[37] Environmental justice (EJ) was evaluated in the NEPA Draft EA but was removed from the Final EA to reflect federal regulatory changes. This SEPA EIS includes the Draft EA EJ analysis, augmented by additional SEPA-specific analysis. See Section 3.3.12.2 for more information.

Economic Activity and Income

SEA is an important driver for the economy near the Airport, in King County, and in Washington State. In 2023,[38] SEA's on-site activities directly supported 21,190 jobs and $1.7 billion in total compensation. Off-site, the economic benefit of SEA includes businesses serving passengers (such as restaurants and hotels), companies supplying goods and services to SEA, and employee income being spent outside of SEA. In total, the regional economic impact of SEA resulted in approximately $33.4 billion in business revenue, 174,950 jobs (representing over $5.4 billion in direct earnings), and more than $342 million in state and local taxes. Business and occupation taxes totaled $161 million, sales and use taxes revenues were valued at $158 million, while other taxes totaled $22 million in 2023 (**Table 3.3.12-2)**.[39]

TABLE 3.3.12-2: ECONOMIC EFFECT OF THE AIRPORT (2023)

Economic Indicator	Total
Direct Jobs	94,510
Indirect Jobs	25,140
Induced Jobs	55,300
Total Jobs	174,950
Direct Total Compensation (in millions)	$5,400.3
Indirect Total Compensation (in millions)	$1,700.0
Induced Total Compensation (in millions)	$3,401.3
Total Compensation (in millions)	$10,501.7
Direct Business Output (in millions)	$17,380.5
Indirect Business Output (in millions)	$5,709.6
Induced Business Output (in millions)	$10,281.1
Total Business Output (in millions)	$33,371.3

Notes: Table 3.3.12-2 is based on Table 3-24 of the NEPA Final EA. The data has been updated from 2017 to 2023 for the SEPA EIS. Direct impacts are activities directly on Airport property. Indirect impacts are business-to-business transactions tied to on-site activities. Induced impacts are worker income expenditures across other parts of the economy.
Source: The Northwest Seaport Alliance, Port of Tacoma, and Port of Seattle Economic Impact Analysis, July 2, 2025.

Overall, per capita income and median household income (MHI) for the GSA were below levels reported for King County and the State of Washington in 2024 (**Table 3.3.12-3**).[40]

TABLE 3.3.12-3: INCOME DATA IN 2024

	GSA	King County	State of Washington
Per Capita Income	$39,089	$74,100	$53,744
MHI	$84,863	$124,746	$98,141

Note: Table 3.3.12-3 is based on Table 3-25 of the NEPA Final EA. The data has been updated from 2021 to 2024 for the SEPA EIS.

Source: United States Census American Community Survey, 1-Year Estimates, Tables B17021, B19013, and B19301 (2024).

[38] The most recent year for which full economic statistics were available.
[39] The Northwest Seaport Alliance, Port of Tacoma, and Port of Seattle Economic Impact Analysis, July 2, 2025.
[40] The most recent year for which GSA income was available.

Employment

Overall, the unemployment trends for the GSA and King County are similar to those of the state as a whole (**Table 3.3.12-4)**.

TABLE 3.3.12-4: UNEMPLOYMENT RATES

Year	GSA	King County	State of Washington
2021	6.3%	5.7%	5.8%
2022	5.3%	3.6%	4.1%
2023	6.4%	4.3%	5.5%
2024	6.0%	4.8%	4.9%

Notes: Table 3.3.12-4 is based on Table 3-26 of the NEPA Final EA. The data has been updated to show the years 2021 through 2024. Rate represents unemployment rate in civilian labor force, over 16 years of age.

Source: United States Census American Community Survey 1 and 5-Year Estimates, Table B23025 (2021-2024).

Population and Housing

The populations of the GSA, King County, and the State of Washington are shown in **Table 3.3.12-5**. In general, the GSA contains higher levels of children and lower levels of elderly populations than King County or the State of Washington. Because the census blocks extend beyond the actual GSA, the census estimates of population totals for the GSA are higher than the actual number of people that reside within the GSA.

TABLE 3.3.12-5: POPULATION DATA IN 2024

	GSA	King County	State of Washington
Population	18,718[1]	2,287,171	7,816,116
Children (under 18 years of age)	22.2%[2]	19.5%	21.4%
Elderly Population (over 65 years)	13.9%[2]	14.0%	16.6%

Notes: Table 3.3.12-5 is based on Table 3-27 of the NEPA Final EA. The data has been updated from 2021 to 2024 for the SEPA EIS.

1) This value refers to the Census blocks that are touched by the GSA.

2) This % value refers to the Census block groups that are touched by the GSA.

Sources: United States Census Bureau American Community Survey, 5-year estimates, Table B01001 (2024), United States 2020 Decennial Census Redistricting Data. Table P1.

Based on population forecasts prepared by the PSRC, the population of King County is expected to continue to grow, as indicated in **Table 3.3.12-6**.

TABLE 3.3.12-6: POPULATION FORECASTS

Area	2025	2030	2035	2040
King County	2,397,486	2,526,407	2,654,692	2,782,579

Note: Table 3.3.12-6 was Table 3-28 of the NEPA Final EA.

Source: PSRC Land Use Vision - Implemented Targets County Summaries 2023.

Housing data for King County, and the State of Washington is provided in **Table 3.3.12-7**. Similar data was not available for the GSA.

TABLE 3.3.12-7: HOUSING DATA (2024)

Area	Total Housing Units	Vacancy Rate	Median Home Value[1]
King County	1,033,522	6.1%	$885,200
State of Washington	3,400,980	6.8%	$602,200

Notes: Table 3.3.12-7 is based on Table 3-29 of the NEPA Final EA. The data has been updated from 2021 to 2024 for the SEPA EIS.

1) Reported value for owner-occupied units.

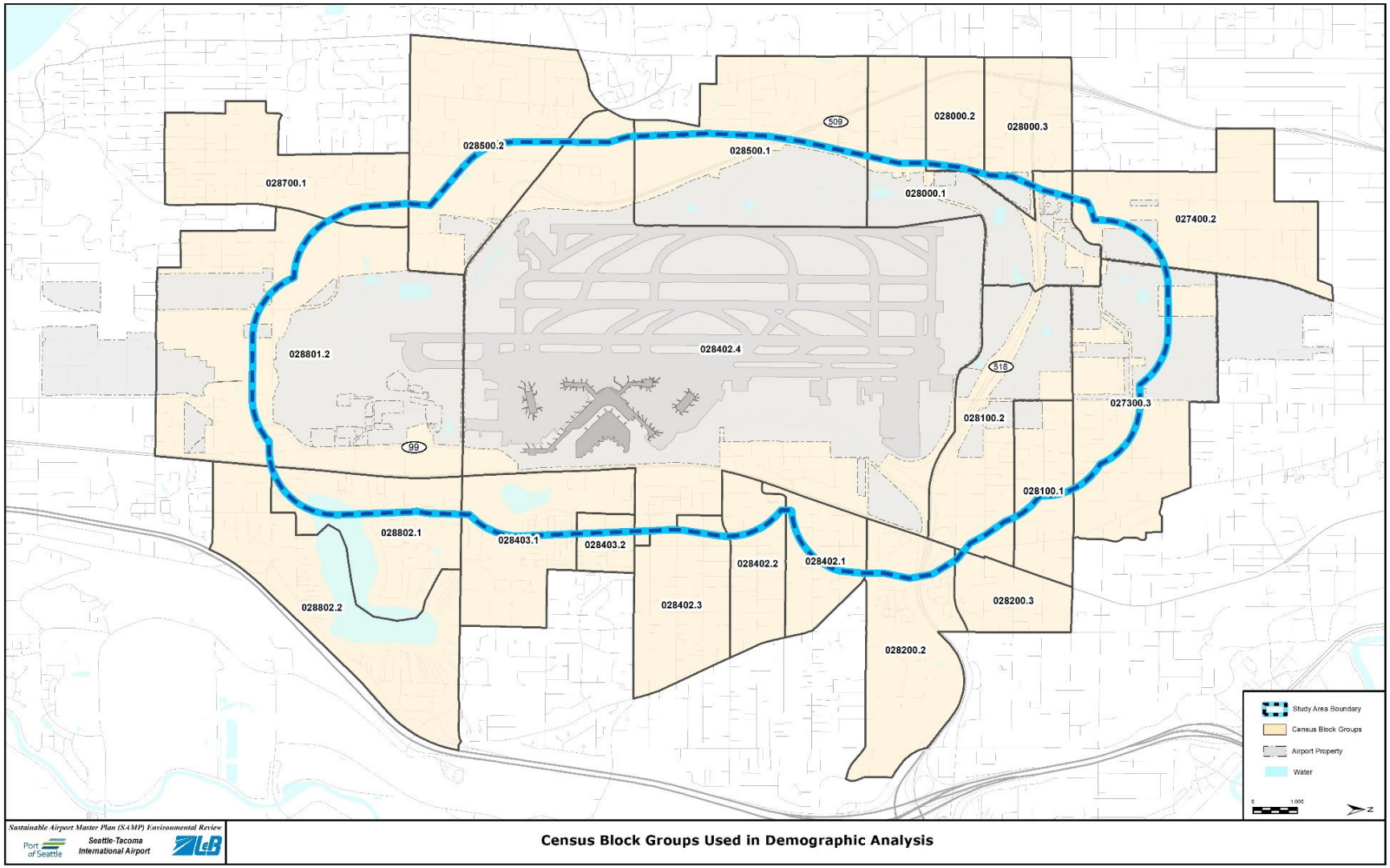
Source: United States Census Bureau American Community Survey, 1-year estimates, Table CP04 (2024).

Public Services

Residents of communities in the GSA have access to a wide range of public services. Public services include such facilities as educational institutions (public and private), medical services, emergency response services, and ground transportation / transit. See Section 3.3.16 for further discussion of public services available in the GSA.

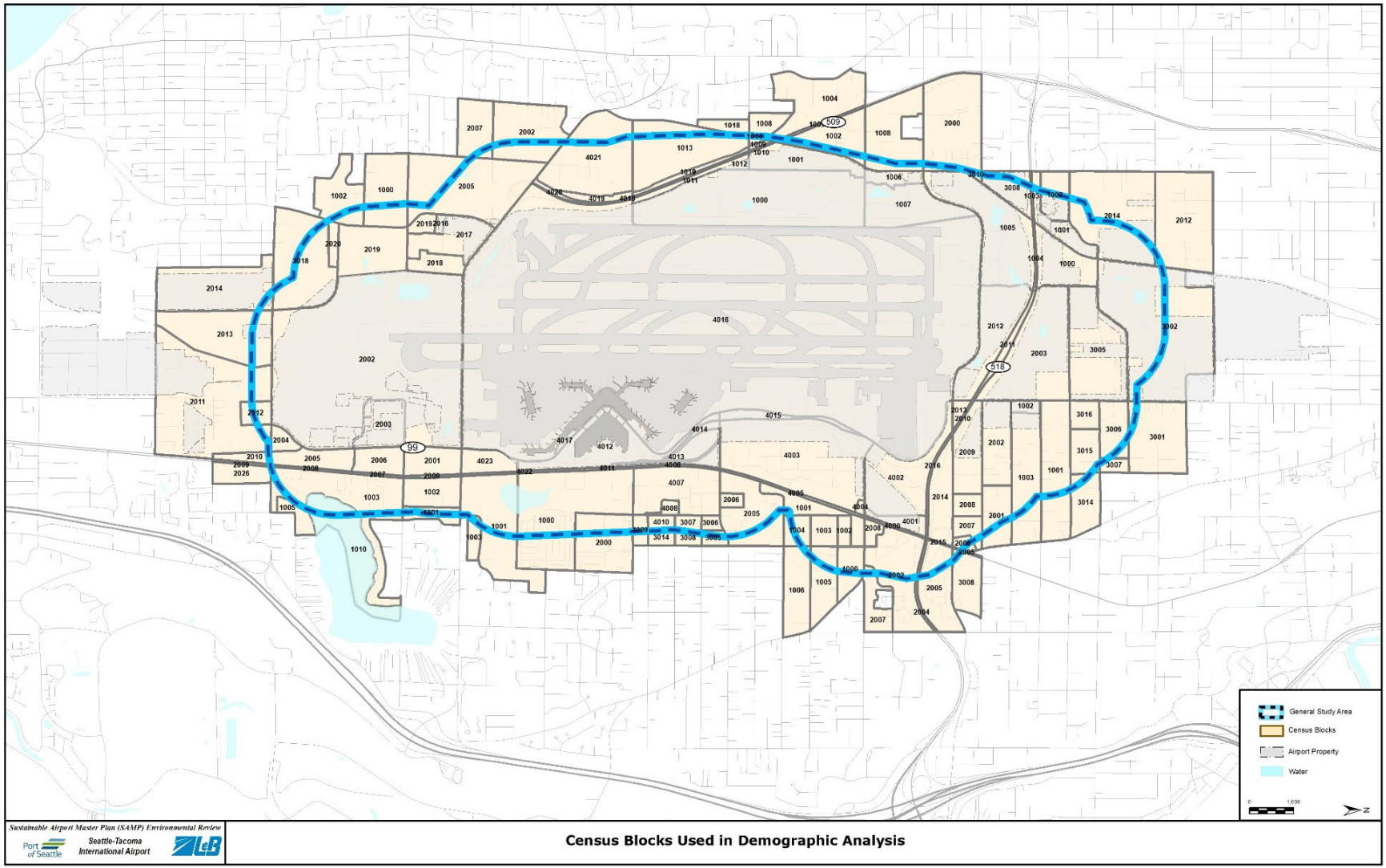
THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.12-1: CENSUS BLOCK GROUPS USED IN DEMOGRAPHIC ANALYSIS



THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.12-2: CENSUS BLOCKS USED IN DEMOGRAPHIC ANALYSIS



THIS PAGE INTENTIONALLY LEFT BLANK

Educational Facilities

King County is divided into 12 school districts. Only the Highline School District is within the GSA (**Table 3.3.12-8)**. The locations of educational facilities are depicted on **Exhibit 3.3.12-3**.

TABLE 3.3.12-8: EDUCATIONAL FACILITIES LOCATED WITHIN THE GSA

Map ID	School / Facility	School District
S-1	Puget Sound Skills Center	Highline
S-2	Choice Academy	Highline

Note: Table 3.3.12-8 was Table 3-30 of the NEPA Final EA.

Sources: King County GIS data; Landrum & Brown analysis.

Emergency Services

Various state, county, regional, and local emergency services are provided within the GSA (**Table 3.3.12-9)**. The locations of emergency service facilities are depicted on **Exhibit 3.3.12-4**. There are no medical facilities within the GSA.

TABLE 3.3.12-9: EMERGENCY SERVICES WITHIN THE GSA

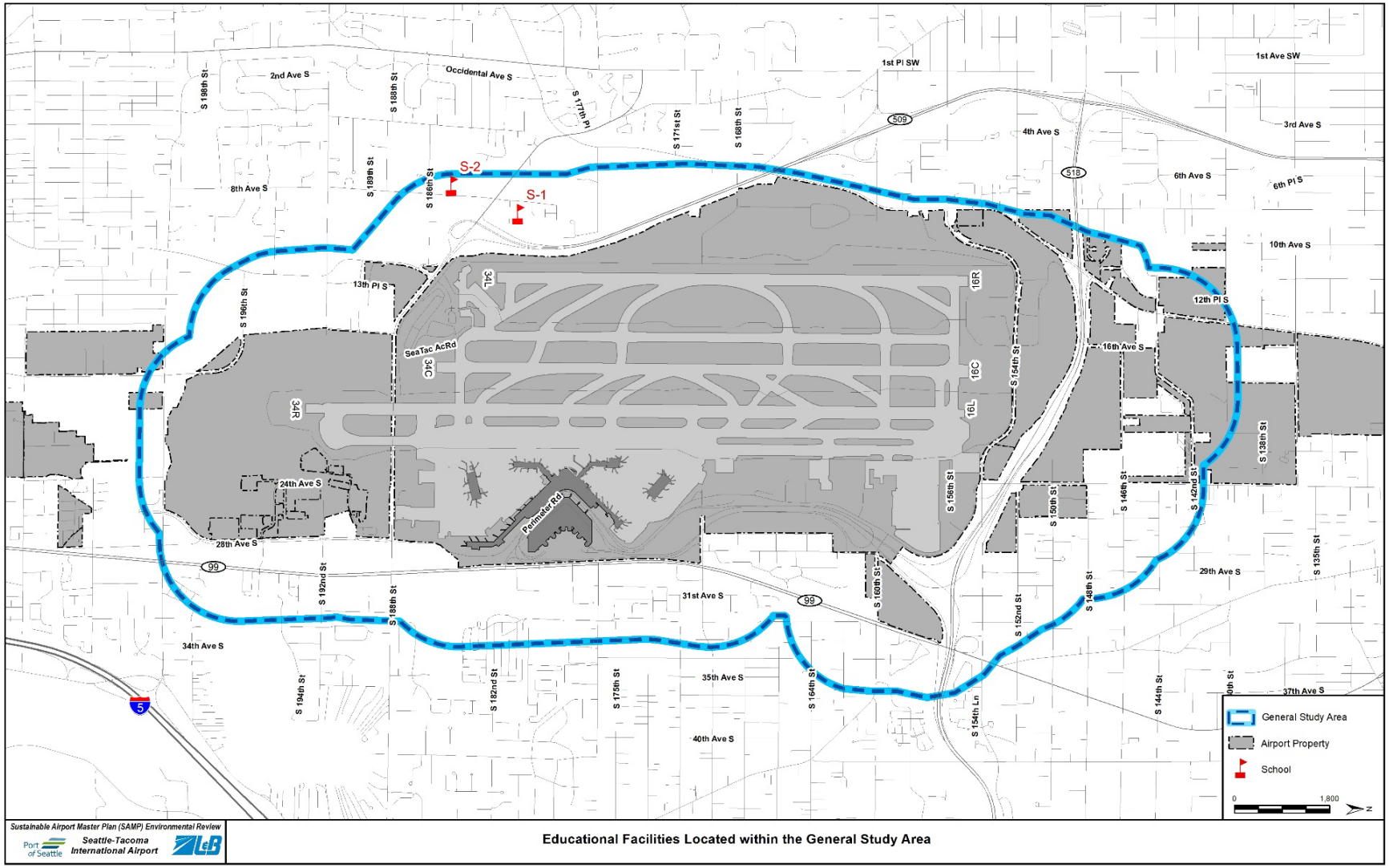
Map ID	Public Service / Facility	Authority
PD-1	Port of Seattle Police	Port of Seattle
PD-2	Washington State Police, District 2 – Seattle South Detachment	State of Washington
F-1	Port of Seattle – Airport Rescue and Fire Fighting	Port of Seattle
F-2	Port of Seattle – Interim Fire Station	Port of Seattle

Notes: Table 3.3.12-9 was Table 3-31 of the NEPA Final EA.

Sources: King County GIS data; Landrum & Brown, 2023.

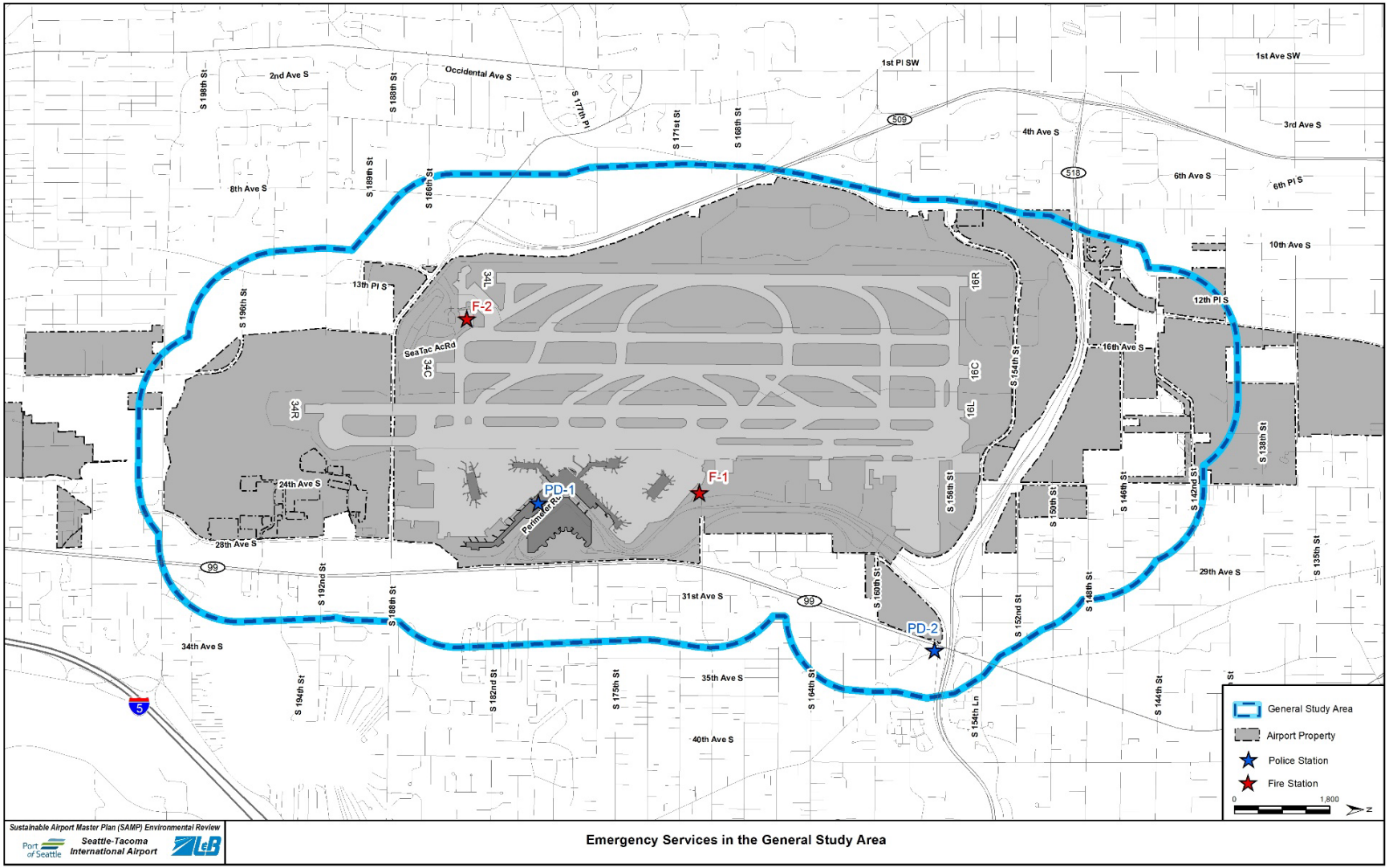
THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.12-3: EMERGENCY FACILITIES LOCATED WITHIN THE GSA



THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.12-4: EMERGENCY SERVICES LOCATED WITHIN THE GSA



THIS PAGE INTENTIONALLY LEFT BLANK

3.3.12.2 Environmental Justice

The term "environmental justice," as used in this SEPA EIS, refers to the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Until January 2025, the analysis of environmental justice was required under NEPA in accordance with several federal EOs[41], and guidance for environmental justice analysis was provided by USEPA and other federal agencies. The NEPA Draft EA, published in October 2024, included an environmental justice analysis consistent with these requirements.

In January 2025, the two major federal executive orders pertaining to environmental justice were revoked; agency regulations and guidance implementing those orders were subsequently canceled. As a result, FAA removed the environmental justice analysis from the SAMP NTP Final EA. However, the Port has determined that this SEPA EIS will include the environmental justice analysis completed for the NEPA Draft EA, together with additional analysis in this SEPA EIS.

Regulatory Setting

As noted above, since the publication of the Draft EA, EOs 12898, 13985, 14091, and 14096 were revoked on January 20, 2025. On January 21, 2025, President Trump issued EO 14173, *Ending Illegal Discrimination and Restoring Merit-Based Opportunity*. In addition, CEQ revoked its regulations (40 CFR parts 1500-1508) implementing NEPA, 42 U.S.C. 4321 *et seq*., as amended, in response to EO 14154. Consequently, it is no longer a legal requirement or the policy of the federal government to conduct environmental justice analyses. However, because the NEPA environmental justice analysis relied on the regulations and guidance at the time the Draft EA was published, they are included for reference in **Table 3.3.12-10**. Regulations and guidance that have been revoked are indicated as such in the table.

TABLE 3.3.12-10: FEDERAL STATUTES, EXECUTIVE ORDERS, AND OTHER GUIDANCE RELATED TO ENVIRONMENTAL JUSTICE

Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
Title VI of the Civil Rights Act of 1964, as amended	42 U.S.C. §§ 2000d-2000d-7 28 CFR § 42.401	U.S. Department of Justice (DOJ)	Title VI of the Civil Right Act of 1964 states that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." Title VI explicitly prohibits any discrimination in federally funded programs and projects, including those sponsored by the FAA.

[41] EOs 12898, 13985, 14091, and 14096.

TABLE 3.3.12-10: STATUTES, EXECUTIVE ORDERS, AND OTHER GUIDANCE RELATED TO ENVIRONMENTAL JUSTICE (CONTINUED)

Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
(Revoked) EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations	59 FR 7629 (February 11, 1994) Revoked on January 20, 2025	USEPA	Required federal agencies to incorporate environmental justice into their programs, policies and activities.
(Revoked) EO 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All	88 FR 25251 (April 26, 2023) Revoked on January 20, 2025	Not Applicable	Pursued a whole-of-government approach to environmental justice. This order supplemented the foundational efforts of Executive Order 12898 to address environmental justice.
(Revoked) EO 13985, Advancing Racial Equity and Support for Underserved Communities Through the Federal Government	86 FR 7009 (January 25, 2021) Revoked on January 20, 2025	Not Applicable	Charged the federal government to pursue a comprehensive approach to advancing equity for all, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality.
(Revoked) EO 14091, Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government	88 FR 10825 (February 22, 2023) Revoked on January 20, 2025	Not Applicable	Charged the federal government with advancing equity for all, including communities that have long been underserved, and addressing systemic racism in our nation's policies and programs.
(Revoked) USDOT Order 5610.2(c), Environmental Justice in Minority and Low-Income Populations	77 FR 27534 (May 10, 2012) Revoked January 20, 2025	USDOT	Established principles for integrating environmental justice into current policies and practices.
Promising Practices for EJ Methodologies in NEPA Reviews, Report of the Federal Interagency Working Group on Environmental Justice & NEPA Committee (March 2016)	Not Applicable	Federal Interagency Working Group on Environmental Justice & NEPA Committee	Compilation of methodologies gleaned from previous federal agency practices concerning the interface of environmental justice considerations through the NEPA processes.

Note: Table 3.3.12-10 was Table 3-32 of the NEPA Draft EA.

SEPA includes elements of the environment related to human and environmental health that can be considered in an EIS. These include air quality, public water supplies, noise, and releases or potential releases to the environment affecting public health (WAC 197-11-444). SEPA (Chapter 43.21C RCW) and the SEPA Rules (Chapter 197-11 WAC) do not mandate the analysis of impacts to people in specific demographic categories, such as low-income and minority populations. However, WAC 197-11-440(8) gives agencies the option to include additional analysis. Further, the WSDE SEPA

Handbook[42] includes the following guidance related to the consideration of environmental justice in SEPA documents:

> While there is no specific requirement to conduct an environmental justice analysis, Ecology recommends consideration be given to communities that may already be experiencing higher environmental burdens (proximity to pollution sources, cleanup sites, industrial facilities, poor air quality, etc.). These communities often bear a disproportionate environmental burden and may have fewer resources to offset effects, which can lead to health disparities and lower quality of life.
>
> Consider how the proposal might impact overburdened and more vulnerable communities and steps that could be taken to reduce or avoid additional environmental impacts, including mitigation and project design changes. Your agency may have specific policies on how to consider impacts and engage with overburdened communities and vulnerable populations. This helps to ensure the data are used to raise awareness and create more opportunities for impacted communities to influence decisions that may affect their lives.
>
> This analysis can be included in the environmental health section of the analysis, as a separate section or included in the cumulative impacts analysis. The environmental justice analysis should be a separate analysis from Tribal impacts although the two may need to be cross referenced. (SEPA Handbook, pp. 58-59)

Existing Conditions

NEPA Draft EA Environmental Justice Analysis

The NEPA environmental justice analysis used the study area specific to the resource category being evaluated. All relevant and available socioeconomic and population data for the study area and reference area were collected. In addition to being used to determine the percentages of environmental justice populations (defined as minority or low-income populations) within each area, the data was compiled and analyzed to identify potential concentrations of minority or low-income communities, or any other environmental justice resources, such as community centers, churches, or areas of cultural significance. King County was used as the reference area because the Airport is located in King County. See Appendix K for more information on the sources and process used to identify environmental justice populations. Definitions of minority and low-income are provided in **Table 3.3.12-11**. Note that these definitions are based on USDOT Order 5610.2(c), which has since been revoked.

[42] WSDE, 2025, SEPA Handbook. Available for review at: https://apps.ecology.wa.gov/publications/documents/2506009.pdf.

TABLE 3.3.12-11: DEFINITION OF MINORITY PERSON, MINORITY POPULATION, AND LOW-INCOME POPULATION

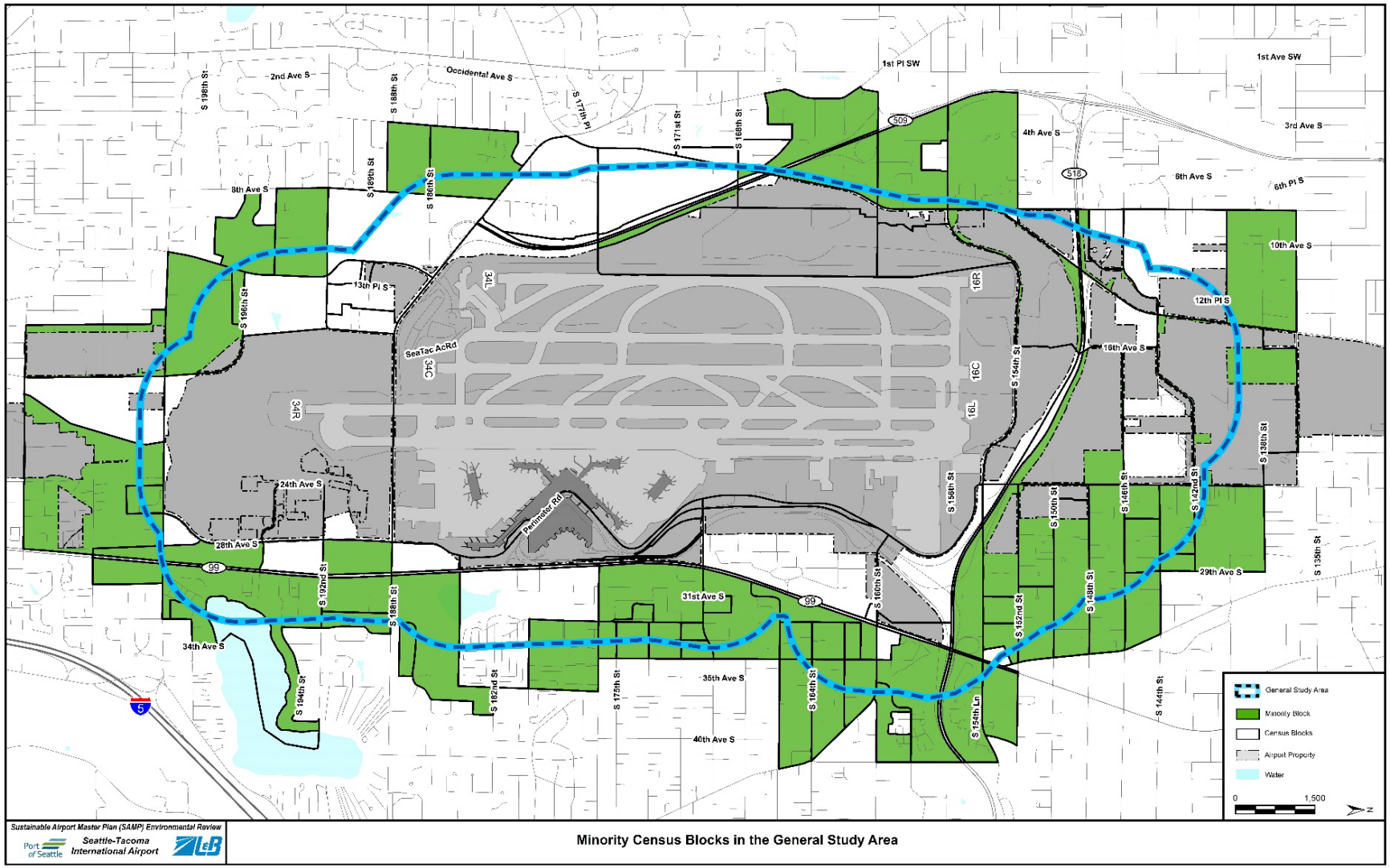
Term	Definition
Minority Person	Pursuant to USDOT Order 5610.2(c), minority person is defined as a person who is any of the following: 1. Black (a person having origins in any of the black racial groups of Africa); 2. Hispanic or Latino (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); 3. Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent); 4. American Indian and Alaskan Native (a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition;); or 5. Native Hawaiian and other Pacific Islanders (people having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands).
Minority Population	Any readily identifiable group of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed / transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed USDOT program, policy or activity.
Low-Income Person	Pursuant to USDOT Order 5610.2(c), low-income person is defined as a person whose MHI is at or below the Department of Health and Human Services poverty guidelines.

Note: Table 3.3.12-11 was Table 3-33 of the NEPA Draft EA.

Promising Practices for EJ Methodologies in NEPA Reviews outlines two different approaches for the identification of minority populations, by conducting either 1) a No Threshold analysis or 2) both the Fifty Percent analysis and the Meaningfully Greater analysis. The Fifty Percent analysis and the Meaningfully Greater analysis were utilized to identify minority populations within each study area. The demographics of the communities in the study area are diverse and do not require use of the No Threshold Approach to avoid overlooking a minority population within the study area.

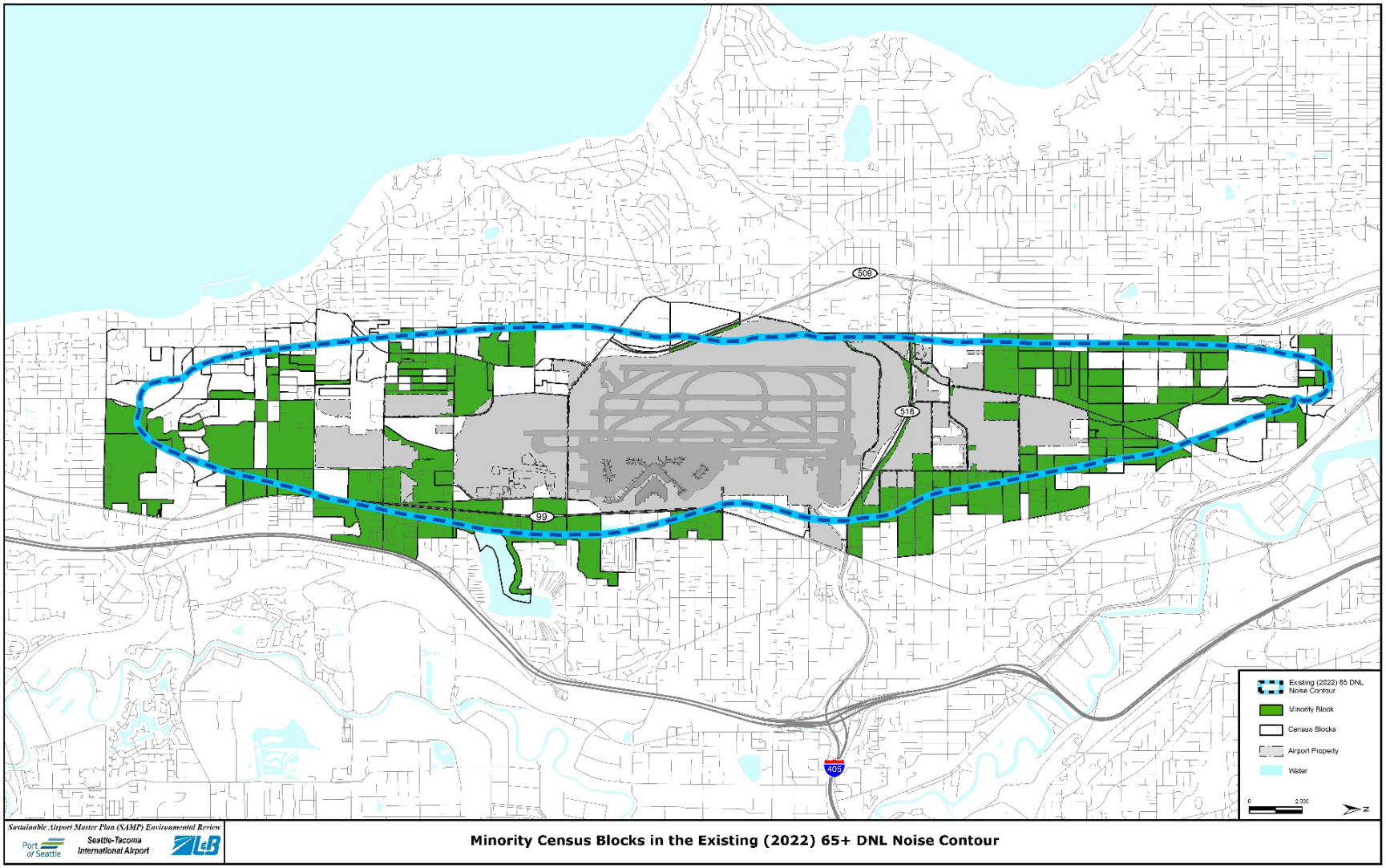
All of the minority population census blocks identified within the GSA, within the GSA the Existing (2022) 65+ DNL noise exposure area, and the Surface Transportation Study Area (STSA) are depicted on **Exhibit 3.3.12-5**, **Exhibit 3.3.12-6**, and **Exhibit 3.3.12-7**.

EXHIBIT 3.3.12-5: MINORITY CENSUS BLOCKS IN THE GENERAL STUDY AREA



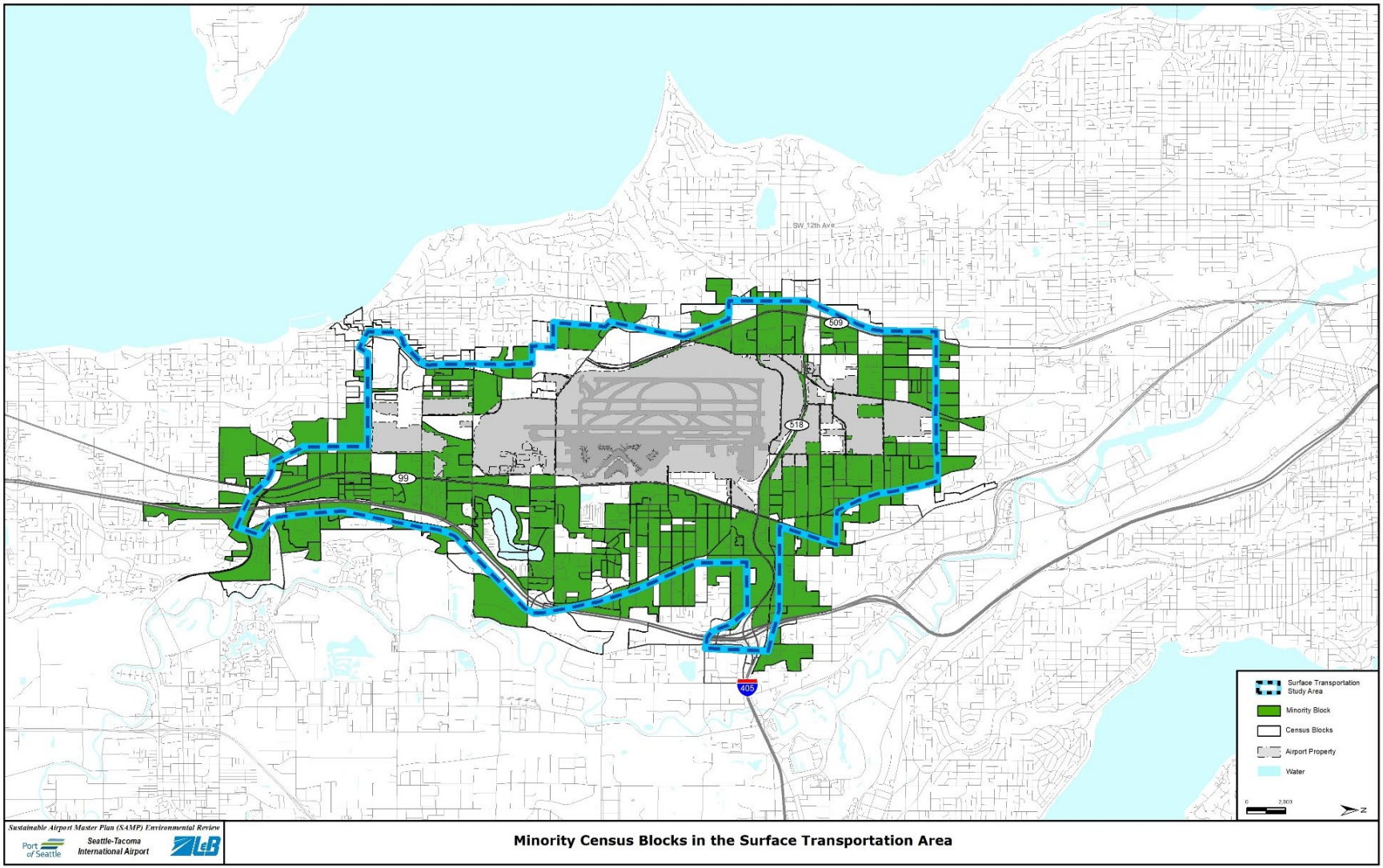
THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.12-6: MINORITY CENSUS BLOCKS IN THE EXISTING (2022) 65+ DNL NOISE CONTOUR



THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.12-7: MINORITY CENSUS BLOCKS IN THE STSA



THIS PAGE INTENTIONALLY LEFT BLANK

Promising Practices for EJ Methodologies in NEPA Reviews outlines two different approaches for the identification of low-income populations, by conducting either 1) the Alternative Criteria analysis or 2) the Low-Income Threshold Criteria analysis. The Alternative Criteria analysis was used for the NEPA EA because it is based on defined thresholds, with less reliance on relationships to reference communities that vary greatly from the GSA. Under the Alternative Criteria analysis approach, reference communities are still provided, but for context only. All of the low-income environmental justice population block groups identified are depicted on **Exhibit 3.3.12-8, Exhibit 3.3.12-9,** and **Exhibit 3.3.12-10**.

The Port conducted a wide range of outreach and engagement activities that supported the environmental justice analysis. These activities can be found in the engagement summary. The purpose of these discussions was to provide a background and summary of the Proposed Action, gain input on the location of environmental justice communities and impact methodologies, and ensure that the concerns of underrepresented communities were considered in the analysis.

SEPA Environmental Justice Analysis

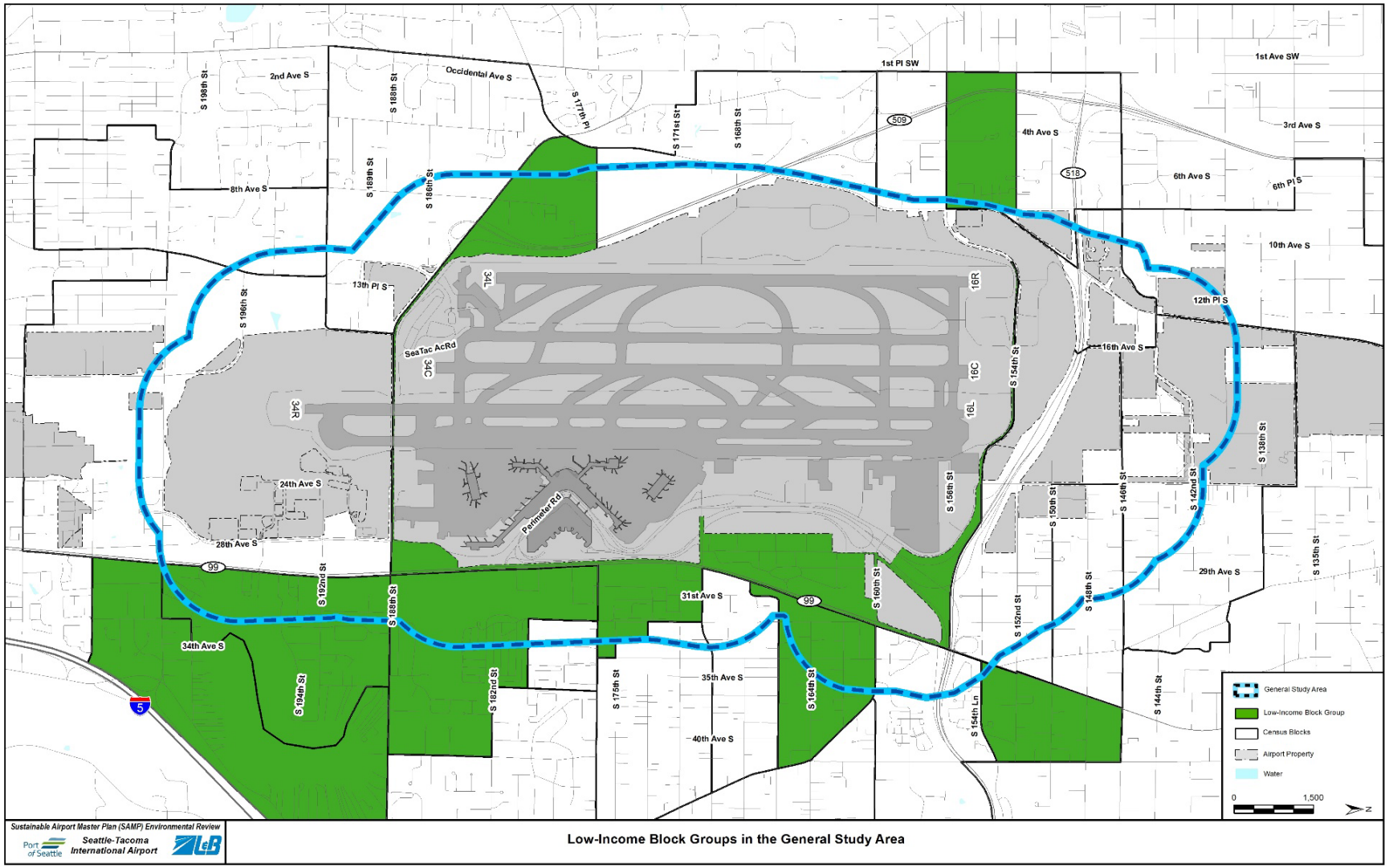
The SEPA environmental justice analysis used demographic, socioeconomic, and environmental data drawn from the Washington Department of Health (WADOH) Environmental Health Disparities Map (EHD map) and the Port of Seattle's Equity Index to identify SEPA environmental justice populations and risk factors. The EHD map was developed to identify statewide environmental health needs and is used to identify communities that are subject to threats or vulnerabilities (factors utilized in the mapping tool) that may affect their risk. The Port of Seattle's Equity Index is a tool for the Port to understand the degree to which different communities experience pollution burdens and social inequities.

The SEPA environmental justice analysis used the study area specific to the resource categories being evaluated. Four different study areas were used:

1. GSA: The study area used for most elements of the environment in the EIS analysis; applies to the majority of resource categories (e.g., socioeconomics, hazardous materials, public services and utilities).
2. Noise Study Area: The area within the 65 dB contour for the Proposed Action in 2037.
3. Surface Transportation Study Area (STSA): This area includes the existing and future intersections modeled for the traffic analysis performed for the SAMP NTPs. The transportation study area extends beyond the GSA.
4. Air Dispersion Analysis Receptor Locations: This area encompasses all the receptors used to determine the peak ambient air pollutant impacts associated with the No Build Alternative and the Action Alternatives. The SEA property line receptors and community receptors around SEA were included in the analysis.

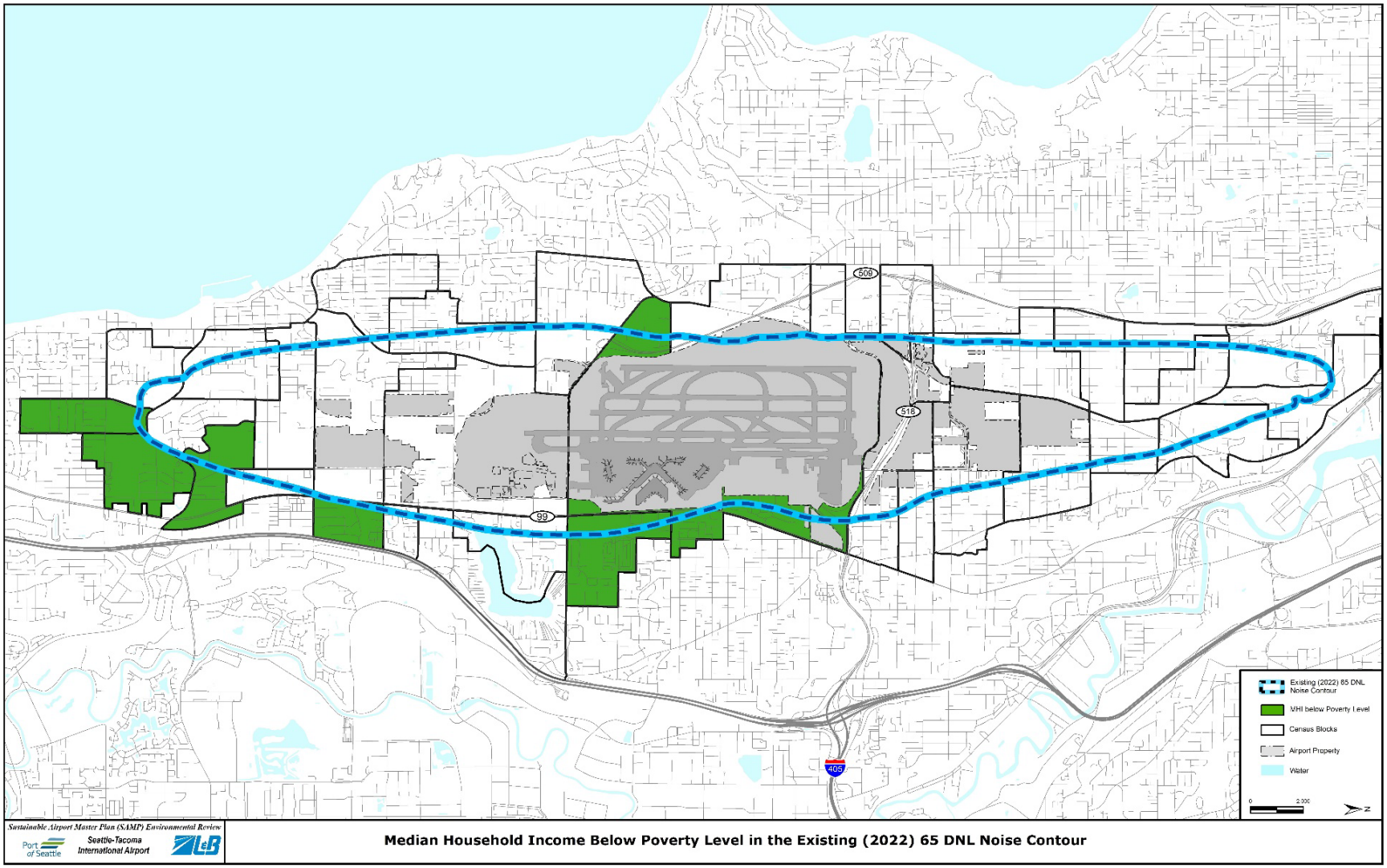
THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.12-8: LOW-INCOME BLOCK GROUPS IN THE GENERAL STUDY AREA



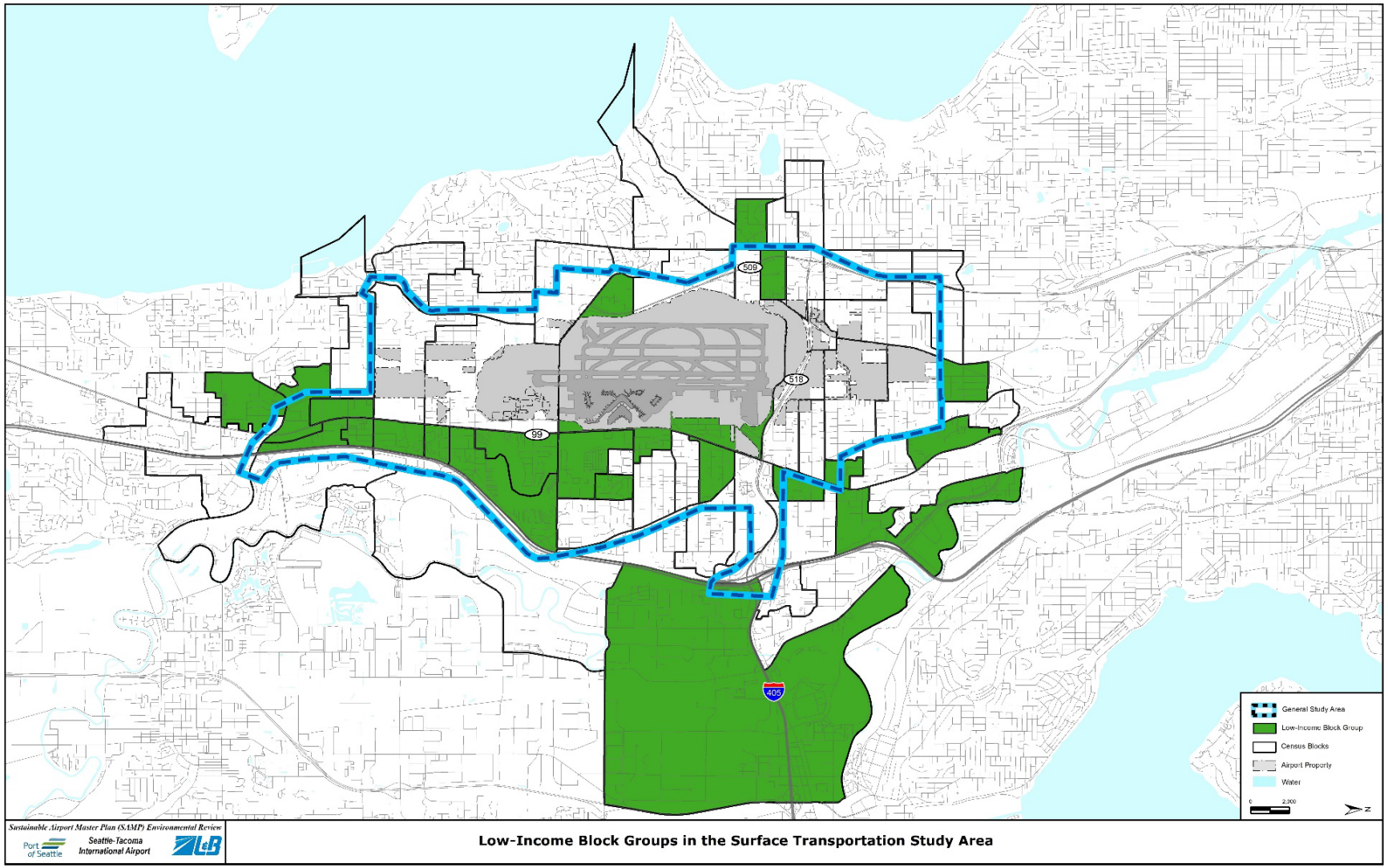
THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.12-9: LOW-INCOME BLOCK GROUPS IN THE EXISTING (2022) 65+ DNL NOISE CONTOUR



THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.12-10: LOW-INCOME BLOCK GROUPS IN THE STSA



THIS PAGE INTENTIONALLY LEFT BLANK

The EHD map provides a numerical ranking of census tracts to identify areas that are considered at risk of disparate environmental harms. The ranking is developed using multiple factors: Environmental Exposures, Environmental Effects, Sensitive Populations, and Socioeconomic Factors. The EHD map designates census tracts with an overall rank of 9 or 10 in as “highly impacted,” and the State Environmental Justice Council recommends using scores of 7+ to identify geographies for outreach. The SEPA analysis considered any census tract with a rank of 7 or higher in any category to be an environmental justice population.

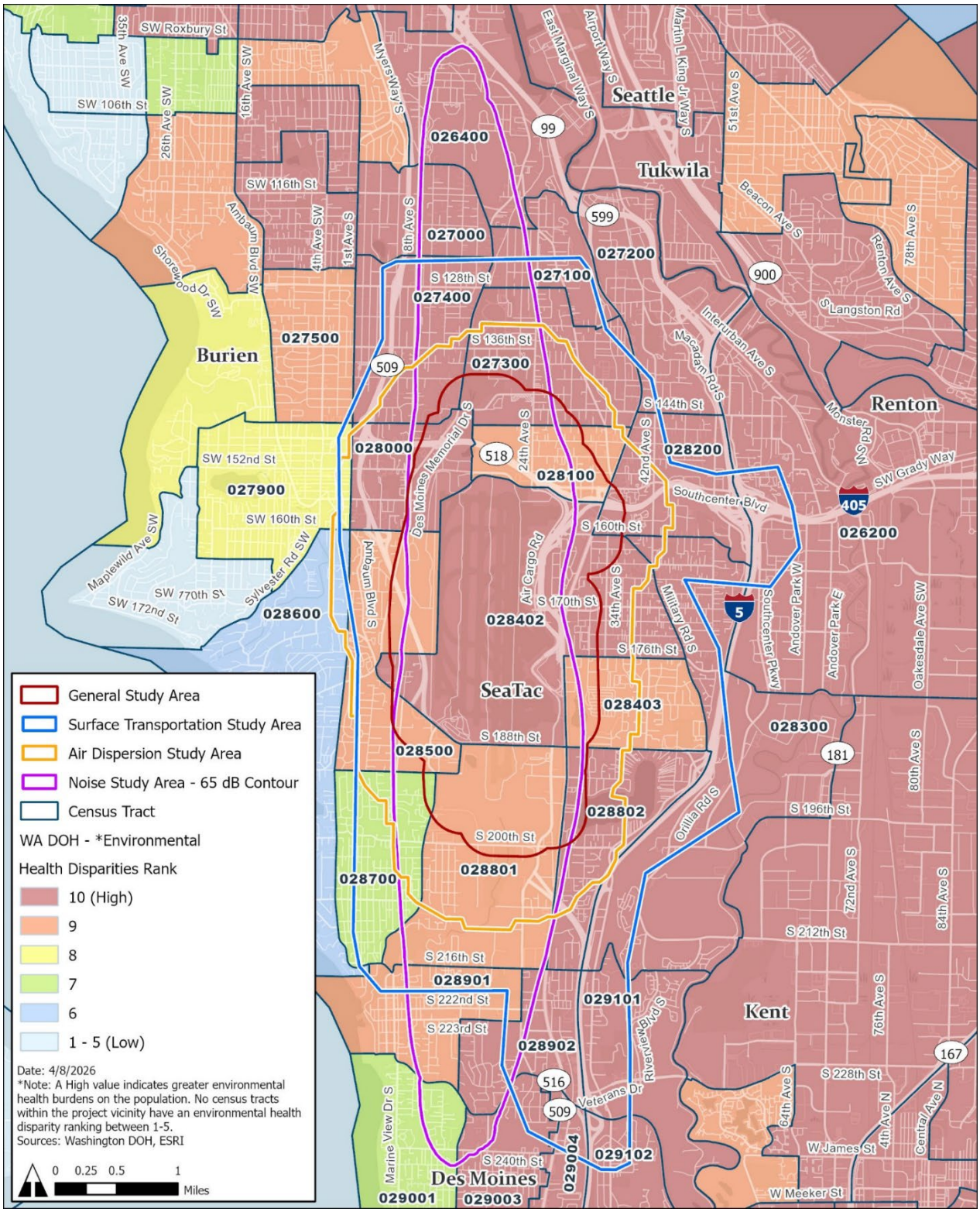
The Port’s Equity Index mapping was also used to identify additional indicators of vulnerability Similar to the EHD map, the Equity Index mapping ranks census tracts in terms of environmental health and social indicators in five categories: Demographics, Economy, Livability, Accessibility, and Environment. Communities with the least access to opportunities and resources are ranked very low (lighter colors), while communities with the most access to opportunities and resources are ranked very high (darker colors).

Exhibit 3.3.12-11 shows the WADOH EHD map data for the study areas described above. The majority of the census tracts in each of the different study areas have scores of 9 or 10 on the WADOH index. Two areas on the western and southern edge of the transportation and noise study areas are scored 7 on the WADOH index, indicating sensitivity to environmental harms but lower environmental disparities than the rest of the study area.

Exhibit 3.3.12-12 shows the same study areas with the Port of Seattle Equity Index data. Scores in the GSA, noise, and air dispersion study areas are identified as low or very low on the index, while some areas on the western and southern part of the transportation study area rank as moderate.

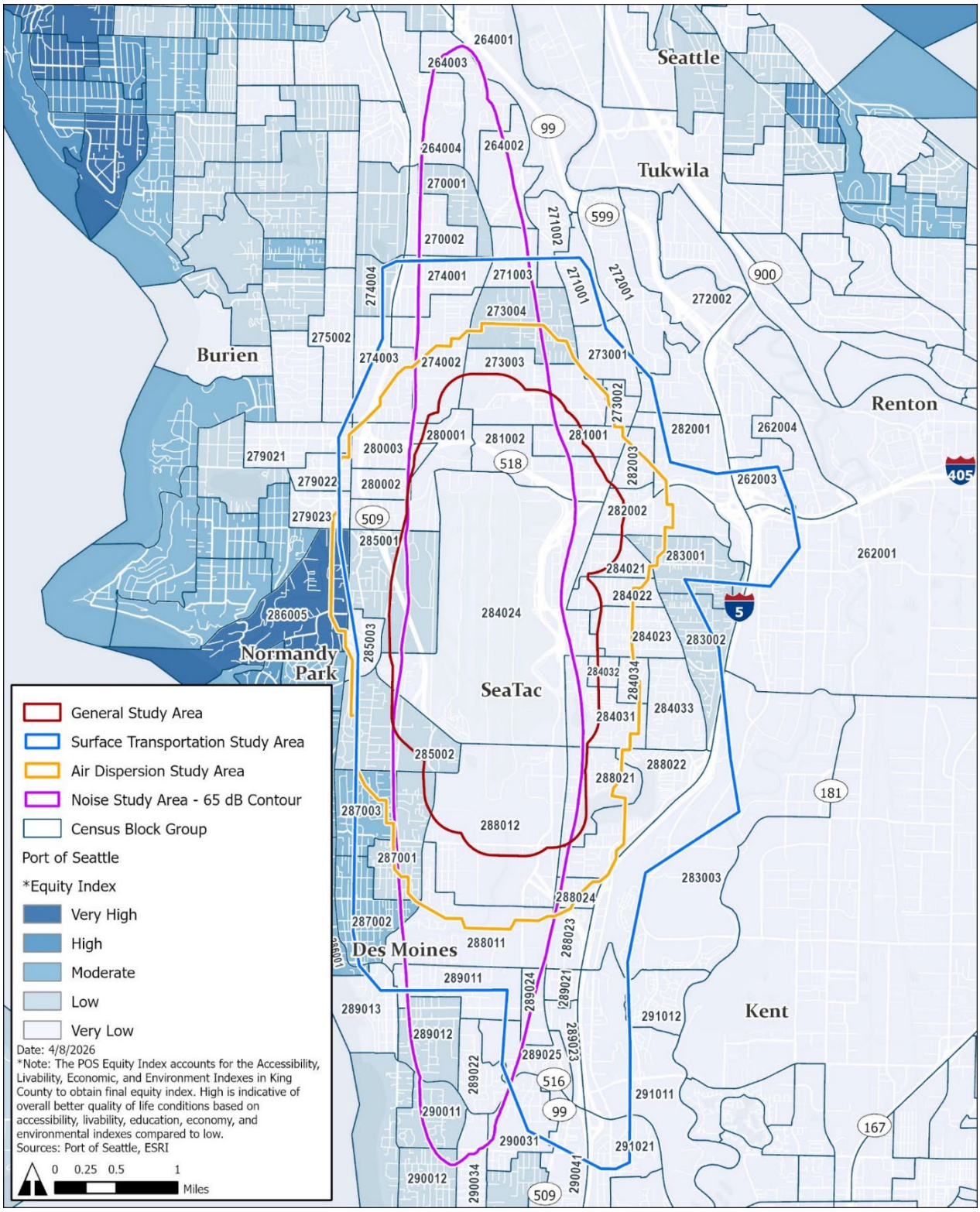
THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.12-11. WASHINGTON DEPARTMENT OF HEALTH DISPARITIES INDEX SCORES AND THE STUDY AREAS CONSIDERED IN THE SEPA ENVIRONMENTAL JUSTICE ANALYSIS



THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.12-12: PORT OF SEATTLE EQUITY INDEX SCORES AND THE STUDY AREAS CONSIDERED IN THE SEPA ENVIRONMENTAL JUSTICE ANALYSIS



THIS PAGE INTENTIONALLY LEFT BLANK

3.3.13 Surface Transportation

Surface transportation, including transportation systems; vehicular traffic; waterborne, rail, and air traffic; movement / circulation of people or goods; and traffic hazards are SEPA elements of the environment that can be evaluated in an EIS under WAC 197-11-444(2)(c). . Surface transportation was also evaluated in the NEPA EA. This SEPA EIS incorporates by reference Section 3.3.13, Surface Transportation, of the NEPA EA and provides additional information on rail traffic; transit, parking, and nonmotorized facilities; and traffic hazards.

Surface transportation refers to the movement of vehicles throughout a roadway and highway network. This network includes primary roads (interstates, highways, and major arterials designed to move traffic but not necessarily to provide access to adjacent areas) and secondary roads (minor arterials and collectors that provide access to residential, commercial, and industrial areas). The capacity of transportation networks and quality of circulation is described in terms of average daily traffic volumes and / or LOS. **Appendix L, Surface Transportation,** provides more detail on transportation, traffic volumes, and transportation options.

3.3.13.1 Regulatory Setting

Traffic analyses are guided by policies and standards set by the Washington State Department of Transportation (WSDOT) and local jurisdictions surrounding the Airport (Burien, Des Moines, SeaTac, and Tukwila). Transportation impacts are also addressed by the 2018 ILA between the Port and City of SeaTac. The Proposed Action is also subject to the rules and regulations of the Port, which oversees public parking facilities, Airport operations, and commercial vehicle trips at the Airport.

3.3.13.2 Existing Conditions

Surface Transportation/Traffic

The surface transportation study focused on 108 traffic intersections where direct or indirect traffic impacts may occur as a result of implementing the Action Alternatives. The establishment of the Surface Transportation Study Area (STSA) considered the following:

- Major signalized intersections and minor intersections along travel routes to and from the Airport within the GSA.
- Primary and secondary routes of travel between the NTPs and origins / destinations outside the GSA.
- Locations and traffic movements of concern from public and agency feedback received during the scoping process.
- The Traffic Impact Analysis procedures described in the WSDOT Design Manual Chapter 320 – Traffic Analysis.

Each intersection analyzed was assigned a number and is shown on **Exhibit 3.3.13-1**. The analysis also considered future planned transportation projects that could affect future traffic conditions at SEA.

The Synchro 11® software was used to analyze 108 intersections within the STSA for the PM peak hour to document baseline traffic conditions.[43] Synchro 11® is the industry standard for traffic analyses and is used by most local traffic agencies. The analysis measured average vehicle delay (in seconds) and

[43] The PM peak scenario captures the commuter peak which is typically the highest total volume hour of the day at SEA. The Airport may have different peak hours than the commuter peak hour, but the commuter peak hour was modeled to best capture potential impacts.

LOS at each intersection. The intersection LOS was ranked from A to F, with A representing a free flow condition, and F representing a high level of congestion and breakdown in traffic flow.

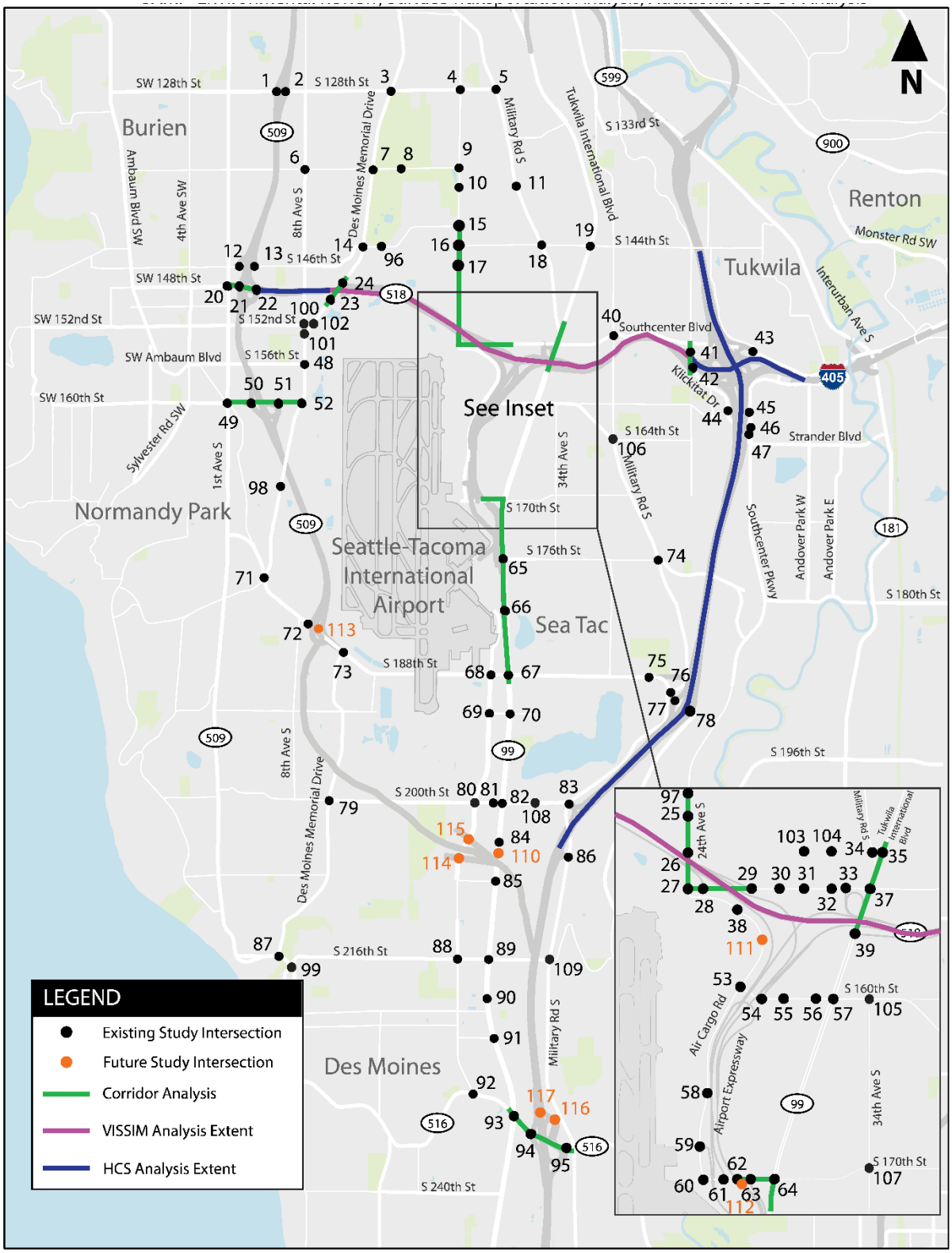
Data for the Existing Condition analysis was primarily collected from turning movement counts collected in Fall 2022 and Spring 2023 as well as WSDOT permanent counter data. Analysis models from the WSDOT led SR 518 Corridor Planning Study were utilized as well as base models that were then updated with current channelization, intersection control, and signal timings. Supplemental information such as signal timings and traffic counts were also collected from the Port of Seattle, King County, WSDOT, and the cities of Tukwila and SeaTac.

The study compared intersection LOS results to mobility standards adopted by local jurisdictions and agencies to identify intersections that do not meet current mobility standards. Of the 108 existing study intersections analyzed, 102 meet jurisdictional mobility standards (LOS). The six existing intersections that do not meet current mobility standards are:

- #23 – SR 518 Eastbound Ramps / Des Moines Memorial Drive (LOS F)
- #33 – SR 518 Westbound Off-Ramp Loop / S.154th Street (LOS E)
- #50 – SR 509 Southbound Ramps / S.W. 160th Street (LOS F)
- #83 – Military Rd. S. / Southbound I-5 Ramps / S. 200th Street (LOS E)
- #93 – Pacific Hwy S. / SR 516/Kent-Des Moines Road S. (LOS F, Critical v / c 1.24)
- #101 – 8th Ave S. / Des Moines Memorial Drive (LOS F)

Corridor and freeway analyses were performed at the request of WSDOT for information purposes. This information is included in Appendix L.

EXHIBIT 3.3.13-1: ROADWAY INTERSECTIONS ANALYZED



Note: Intersection labels are not sequential because they are a subset of the larger group of intersections used in the traffic study.

THIS PAGE INTENTIONALLY LEFT BLANK

Rail

There are several options for rail travel in the GSA and nearby areas in western Washington. Sound Transit's Link light rail system provides service on the 1 Line from Lynnwood south to Federal Way, with a station at SEA as well as nearby stations at Tukwila International Boulevard to the north and Angle Lake to the south. Sounder trains, which use heavy rail tracks, run from Everett in Snohomish County to Lakewood in Pierce County; the closest station to SEA is located in Tukwila. Transit service is discussed in more detail in the following section.

The Amtrak Cascades line runs from Vancouver, British Columbia (BC), to Eugene, OR; the closest stop to SEA is in downtown Seattle. The Amtrak Cascades service operates more than 4,000 trains annually, with daily stops in 18 cities.[44] Daily round trip train service includes:

- Twelve daily trains between Seattle and Portland (six round trips).
- Four daily trains between Seattle and Vancouver, BC, Canada (two round trips).
- Four daily trains between Portland and Eugene (two round trips).
- Connecting buses.

Transit, Parking, and Nonmotorized Facilities

Transit

King County Metro (local) and Sound Transit (regional) provide transit service to and from the Airport. **Table 3.3.13-1:** lists transit that serves the Airport. Sound Transit bus routes pick up and drop off on the Lower Drive while King County Metro routes pick up and drop off on SR 99 / International Boulevard, near the Sound Transit light rail station.

The Sound Transit Link light rail station is located east of and adjacent to the northeast corner of the main garage. As noted above, the Link light rail line extends further south past the Airport to Federal Way.

[44] Amtrak. 2025. Train Status and Schedules. Available for review at https://amtrakcascades.com/train-status-and-schedules/ accessed December 1, 2025.

TABLE 3.3.13-1 TRANSIT SERVICE SUMMARY

Route	Airport Station Location	Route Start/End Points	Weekday Buses/Day	Hours of Operation
Bus Service				
Metro Route 124	Tukwila Station	Downtown Seattle / Tukwila Station	137	5 a.m. – 2:40 a.m.
Metro Route 128	Tukwila Station	West Seattle / Southcenter	103	6 a.m. – 12:30 a.m.
Metro Route 156	International Blvd.	Highline Community College / Southcenter	70	5 a.m. – 11:30 a.m.
Metro Route 161	International Blvd., Air Cargo Road	Kent Station / Burien Transit Center	100	4:45 a.m. – 3:30 a.m.
Rapid Ride A	International Blvd.	Federal Way Transit Center/Tukwila Station	213	4:30 a.m. – 12:05 a.m.
Rapid Ride F	Tukwila Station	Burien Transit Center / The Landing	162	4:45 a.m. – 12 a.m.
Sound Transit 560	Lower Drive Station	West Seattle / Bellevue	66	5 a.m. – 11:15 a.m.
Sound Transit 570[1]	Lower Drive Station	Downtown Seattle / Tukwila Station	9	12 a.m. – 4 a.m.
Sound Transit 574	Lower Drive Station	Lakewood / SEA	78	4:33 a.m. – 1:41 a.m.
Link Light Rail				
Line 1	SeaTac Airport	Lynnwood / Federal Way Station	Every 6 to 15 minutes	5 a.m. – 1 a.m.

Note: (1) Sound Transit 570 is a pilot program that began service on March 28, 2026. Buses run every 30 minutes.

Taxis, Limousines, and Shuttles

Currently, taxis, limousines, and shuttles pick up passengers on Level 3 of the main garage. Taxis are allocated 70 staging spaces at the north end of Level 3.

Taxis and limousines are also provided with a ground transportation hold lot by the Airport. This 2.5-acre lot is located on the south side of S. 160th Street opposite the consolidated rental car facility. The ground transportation providers currently use this facility for queuing and rest service time.

There are three app-based rideshare providers at the Airport: Uber, Lyft and Wingz. Pickup is on the third floor of the airport parking garage. Premium Uber rides like Uber Black, Select, SUV, or XL meet at the baggage claim-level door the passenger selects.

Parking

On-Airport Parking Facilities

The terminal parking garage provides approximately 12,100 parking stalls for public parking. In addition to the parking garage, the Port maintains a 1,620-stall on-airport lot north of S. 170th Street. This lot is leased and operated as the Doug Fox parking lot, with shuttle service provided on a regular basis.

The Port also provides approximately 200 spaces for a cell phone parking lot just south of S. 170th Street, between the northbound and southbound lanes of the North Airport Expressway. The lot provides a free, temporary waiting area for drivers picking up passengers.

Employee Parking

Terminal-employee parking is provided in the main garage on Floor 1 and the north employee parking Lot (NEPL). The main garage allocates approximately 600 spaces, while the NEPL has an allocated capacity of 4,120 spaces. The Port provides shuttle service to and from the NEPL via a route along Air Cargo Road to the parking garage service tunnel. The route provides two stops along Air Cargo Road and two other stops at each end of the service tunnel adjacent to main garage floor 1.

Parking is also provided on individual tenant leaseholds in the north and south air cargo areas, general aviation area, S. 28th Avenue logistics area, Swissport Fueling (tank farm), Delta and Alaska hangars, and several other small locations. The toll plaza area adjacent to the main garage also contains spaces for limited over-height parking and landside operations staff.

Nonmotorized Facilities

Passengers and employees arriving on foot or by bicycle can use pathways at two existing intersections to safely access the Airport terminal:

- **S. 176th Street and International Boulevard**. An elevator and stairs at the Sound Transit pickup and drop-off facility at the northeast corner of the intersection leads to a pedestrian bridge that accesses the light rail station and northeast corner of the Airport parking garage on level 4. A designated walkway along the interior perimeter of the parking garage leads to several pedestrian bridges accessing the mezzanine level of the terminal. Pedestrian counts at the intersection indicated that 105 pedestrians crossed the intersection during the PM commuter peak hour. King County Metro Routes 161 and A Line serve northbound and southbound stops on the north side of intersection. Sound Transit routes 560 and 574 serve the northbound stop only.
- **S. 182nd Street and International Boulevard**. A sidewalk on the southwest corner of the intersection runs along the south side of the terminal curb exit lanes and leads to the same destination as the pathway for the first intersection. Pedestrian counts at the intersection indicated 146 pedestrians crossing the street during the PM commuter peak hour. Additionally, King County Metro's Routes 156, 161, and A Line as well as Sound Transit's Route 574 serve a southbound stop on International Boulevard approximately 230 feet south of the intersection, with pedestrian facilities connecting the stop to the main terminal.

The Port of Seattle and SeaTac are planning for a future pedestrian connection to the Airport from the intersection of S. 188th Street and 28th Avenue S. Pedestrian access is currently prohibited on 28th Avenue S. north of S. 188th Street.

Traffic Safety

The safety analysis reviewed collision data for the STSA from the WSDOT crash database for the years 2018-2022. Collision rates for intersections and local road segments were calculated using existing traffic volumes collected in 2022 matching the existing year from the NEPA traffic analysis. The analysis shows there were 22 intersections with a collision rate above 1.0 collisions per million entering vehicles (MEV). Additionally, 17 road segments in the STSA were identified in local jurisdictions' Comprehensive Plans or Safety Action Plans as being high-injury or priority safety segments.

The existing collision data shows there were five fatal collisions and 36 serious injury collisions reported at the study intersections in the 5 years of collision data reviewed. These collisions accounted for approximately 1.7% of all reported collisions. Property damage only (PDO) collisions accounted for approximately 64.2% of all reported collisions. At-angle collisions were the most common intersection collision type, accounting for approximately 48.1% of collisions. The data also showed that pedestrian and bicyclist collisions accounted for approximately 3.2% of all reported collisions.

Along the road segments evaluated as being high-injury or high-priority, there were 19 fatal collisions and 89 serious injury collisions reported in the 5 years of collision data reviewed, accounting for approximately 3.1% of all reported collisions. Similar to the intersection results, PDO collisions accounted for approximately 62.5% of all reported collisions, and at-angle collisions were also the most common type at 39.6% of reported collisions. Pedestrian and bicyclist collisions combined accounted for approximately 4.4% of all reported collisions.

Appendix L includes additional information on traffic safety in the STSA.

3.3.14 Aesthetics, Light and Glare

Aesthetics and light and glare are SEPA elements of the environment that can be evaluated in an EIS (WAC 197-11-444[2][b][iii] and [2][b][iv]). This SEPA EIS covers these topics in this section and incorporates by reference Section 3.3.14 (Visual Effects) of the NEPA EA.

Visual effects deal broadly with the extent to which the Proposed Action, or alternative(s) would either:

1. Produce light emissions that create annoyance or interfere with activities; or
2. Contrast with, or detract from, the visual resources and / or the visual character of the existing environment.

For clarity and uniformity, visual effects are broken into two categories:

1. Visual Resources and Visual Character (Aesthetics) and
2. Light Emission Effects.

3.3.14.1 Regulatory Setting

Although there are no special-purpose laws or requirements for visual effects or light emissions, the analysis must consider other special-purpose laws and requirements that may be relevant, such as Section 106 of the NHPA for impacts to historic resources, the ESA for impacts to light-sensitive species, and applicable state and local regulations, policies, and zoning.

As described in Appendix H, the Port's ILA with the City of SeaTac regulates land uses differently based on whether the land is within the AAA; within the AAA but adjacent to public right-of-way, public property owned by another agency, or privately owned property (Edge Properties); or outside the AAA. Each category of land use has its own specific requirements related to lighting and visual screening.

3.3.14.2 Existing Conditions

Information used in the visual effects analysis includes aerial mapping and visual reconnaissance of the GSA to characterize the current visual environment, mapping of existing and proposed future light sources at SEA, and viewshed photos obtained from publicly available sources (Google Earth Street View).

The analysis focused on the areas within the GSA that would offer views of one or more elements of the Proposed Action or alternatives, including light emissions. Much of the southern and western portions of the GSA sit below the elevation of SEA, limiting direct line of sight to runways, taxiways, terminals, and other facilities. The terrain of the eastern portion of the GSA increases above the level of SEA, providing limited views of the existing passenger terminal, parking garage, and airfield. The northern portion of the GSA includes Port-owned properties such as the North Employee Parking Lot (NEPL) and several vacant parcels of land. There are residential areas northeast of the Airport, but existing vegetation and roads (including SR 518 and 24th Avenue S.) largely block the line of sight to existing SEA facilities. Representative photos from different vantage points surrounding SEA are provided in **Exhibit 3.3.14-1**.

THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.14-1: ADJACENT VIEWSHEDS

Source: Google Earth Street View Imagery, accessed February 2023 (images from 8/2022 to 11/2022).

THIS PAGE INTENTIONALLY LEFT BLANK

Aesthetics

The facilities at SEA are in an urban setting. SEA's three parallel north-south runways occupy an area that is over one-half-mile wide and two miles long. SEA's support facilities (which include a control tower, the Main Terminal, satellite terminals, multistory parking garage, cargo warehouses, aircraft maintenance structures, and a dedicated freeway providing access to the terminal) occupy an area located on the east side of the runways measuring approximately 0.4 mile wide by 2.5 miles long.

SEA is immediately adjacent to major state highways (SR 509, SR 518, SR 99), and the area around it has the highly developed character of a mature suburban community The most intense development occurs in the corridor along SR 99, which lies immediately to the east of SEA property. The east side of this major arterial is lined with commercial uses, including several multi-story hotels. The one anomaly in this corridor is Washington Memorial Park, an approximately 60-acre cemetery located north of the Main Terminal, between SEA and SR 99. Immediately to the east of the commercial corridor along SR 99, there are multi-family dwellings that transition to neighborhoods of single-family homes further to the east. At the northern and southern ends of the runways, in areas that had once been developed with single-family homes, many residences have been removed, creating open areas with a partially developed character. Of these areas, North SeaTac Park , is available for recreational use. The area to the south of SEA includes a former golf course that is currently undeveloped.

Light Emissions

SEA has various types of lighting on the airfield and landside facilities. Lighting that emanates from the airfield includes runway, apron, and navigational lighting such as, hold position lights, stop-bar lights, and runway and taxiway signage. Airfield lighting is located along taxiways and ramps for guidance during periods of low visibility to assist aircraft movement on the airfield. Aircraft lighting sources, such as landing lights, position and navigation lights, beacon lights, and vehicle lighting are other types of light sources on the airfield. Lights for landside facilities include fixtures associated with buildings, roadways, and parking facilities. SEA is in a highly developed area comprised of other light sources that contribute to the overall light emissions in the area, including highways, hotels, off-Airport parking facilities, and commercial uses.

Residential neighborhoods, which are sensitive to light emissions, are present in all directions of SEA. However, the closest residential area to the Proposed Action is north of SR 518, along S. 150th Street and S. 152nd Street. This area is immediately adjacent to proposed cargo development. There are also residential areas east of International Boulevard / SR 99 in an area of rising terrain from SEA's Main Terminal area.

3.3.15 Water Resources

Water (including surface water movement, quantity, and quality; runoff and absorption; floods; groundwater movement, quantity, and quality; and public water supplies) is included as a SEPA element of the environment that can be evaluated in an EIS (WAC 197-11-444[1][c]). This section incorporates by reference Section 3.3.15, Water Resources, from the NEPA EA.

Water resources are surface waters and groundwater that are vital to society; they are important in providing drinking water and in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. Surface water, groundwater, floodplains, and wetlands do not function as separate and isolated components of the watershed, but rather as a single, integrated natural system. Disruption of any one part of this system can have consequences to the functioning of the entire system. See **Appendix M, Water Resources,** for details on water resources including surveys and analysis.

3.3.15.1 Regulatory Setting

TABLE 3.3.15-1: FEDERAL STATUTES, REGULATIONS, EXECUTIVE ORDERS, AND OTHER REQUIREMENTS RELATED TO THE PROTECTION OF WETLANDS, SURFACE WATER, GROUNDWATER, AND FLOODPLAINS

Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
Clean Water Act (CWA)	33 U.S.C. §§ 1251-1387 33 CFR parts 320-332 40 CFR parts 230-233	USACE; USEPA	The CWA establishes the basic structure for regulating the discharge of pollutants into waters of the United States, which include wetlands. The two primary sections of the CWA relating to wetland impacts and permitting are Section 404 and Section 401. Section 404 establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Section 401 requires a Water Quality Certificate for a project to ensure it does not violate state or Tribal water quality standards. Section 401 certifications are generally issued by the state or tribe with jurisdictional authority. Also, Section 402 establishes the NPDES permit program.
USDOT Order 5660.1A, Preservation of the Nation's Wetlands	Not Applicable	USDOT	Implements guidelines set forth in EO 11990. Transportation facilities should be planned, constructed, and operated to assure the protection and enhancement of wetlands to fullest extent practicable.
USDOT Order 5650.2, Floodplain Management Protection	Not Applicable	USDOT	Implements the guidelines set forth in EO 11988, Floodplain Management. USDOT agencies should ensure proper consideration is given to avoid and mitigate adverse floodplain impacts in agency actions, planning programs, and budget requests.
Fish and Wildlife Coordination Act	16 U.S.C. §§ 661-667d	USFWS	Requires federal agencies to consult with the USFWS, NMFS (in some instances), and appropriate state fish and wildlife agencies regarding the conservation of wildlife resources when proposed federal or applicant projects may result in control or modification of the water of any stream or other water body (including wetlands).

TABLE 3.3.15-1: FEDERAL STATUTES, REGULATIONS, EXECUTIVE ORDERS, AND OTHER REQUIREMENTS RELATED TO THE PROTECTION OF WETLANDS, SURFACE WATER, GROUNDWATER, AND FLOODPLAINS (CONTINUED)

Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
Executive Order 11990, Protection of Wetlands	42 Federal Register 26961 (May 24, 1977)	USDOT	Requires federal agencies to "avoid to the extent possible the long and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative." The stated purpose of this EO is to "minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands."
Executive Order 11988, Floodplain Management	42 Federal Register 26951 (May 25, 1977)	USDOT	Requires federal agencies to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of 100-year floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.
Safe Drinking Water Act	42 U.S.C. §§ 300(f)-300j-26 40 CFR parts 141-149	USEPA	Prohibits federal agencies from funding actions that would contaminate an USEPA-designated sole source aquifer or its recharge area.

Note: Table 3.3.15-1 was Table 3-34 of the NEPA Final EA.

TABLE 3.3.15-2: STATE AND LOCAL REGULATIONS RELATED TO THE PROTECTION OF WETLANDS, SURFACE WATER, GROUNDWATER, AND FLOODPLAINS

Washington State Law	Code Implementing Regulation	Oversight Agency	Summary
Water Pollution Control Act	Chapter 90.48 RCW	WSDE	State statute prohibits the discharge of pollutants into waters of the state unless authorized. Also mandates that all underground water be protected. Requires the use of all known, available, and reasonable methods of prevention, control, and treatment (AKART) to prevent and control the pollution of the waters of the state of Washington.
Water Quality Standards for Surface Waters of the State of Washington	Chapter 173-201A WAC	WSDE	Identifies and mandates water quality standards pertaining to surface waters of the state.
Water Quality Standards for Groundwaters of the State of Washington	Chapter 173-200 WAC	WSDE	Identifies and mandates groundwater quality standards to maintain the highest quality of the state's groundwater and to protect existing and future beneficial uses of the groundwater.
Protection of drinking water sources as mandated by the federal Safe Water Drinking Act	RCW 43.20.050	Washington Department of Health (WADOH)	Designates WADOH as lead agency for assuring safe and reliable public drinking water supplies in cooperation with local health departments and water purveyors. Also requires the establishment of wellhead protection areas.
Local critical areas ordinances	SMC Chapters 15.700 and 18.10 Sections 6.2 (Critical Areas) and 6.3 (Surface Water Management) of Port of Seattle / SeaTac ILA	Port of Seattle within the AAA/City of SeaTac outside the AAA.	Local critical area ordinances provide cities and counties with a mechanism to classify, designate, and regulate areas deemed necessary to provide adequate recharge and protection to aquifers used as sources of potable (drinking) water. WAC 365-190-100 identifies requirements for local jurisdictions to determine classification and designation of Critical Aquifer Recharge Areas (CARAs). The ILA also addresses critical areas and surface water.

Section 3.3.16 lists regulations regarding water consumption.

3.3.15.2 Existing Conditions

Water resources inventories and delineations were conducted for the portions of the GSA where direct impacts associated with the alternatives may occur, while also considering the tributary streams draining these areas and receiving waters potentially affected by stormwater runoff.

Wetlands

Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are among the most productive ecosystems in the world and provide important functions such as fish and wildlife habitat, floodwater storage, and water filtration.

Wetland delineations in the study area occurred between September 25, 2019, and December 6, 2019. Biologists revisited the study area in March 13 and 25, 2020, and again in January 2024, to investigate wetland hydrology. A wetland and waters verification to confirm boundaries, wetland quality, and function was completed in January 2024. Thirty-one wetlands were identified in the GSA, totaling approximately 68 acres (**Exhibits 3.3.15-2** through **3.3.15-5)**. Additional wetlands surrounding SEA are under restrictive covenants and therefore cannot be impacted. These restrictive covenants apply to previous wetland mitigation areas and include the Miller Creek Buffer Mitigation Area, Des Moines Nursery Mitigation Area, and the Des Moines Regional Detention Facility Mitigation Area.

Surface Waters

Streams and Ditches

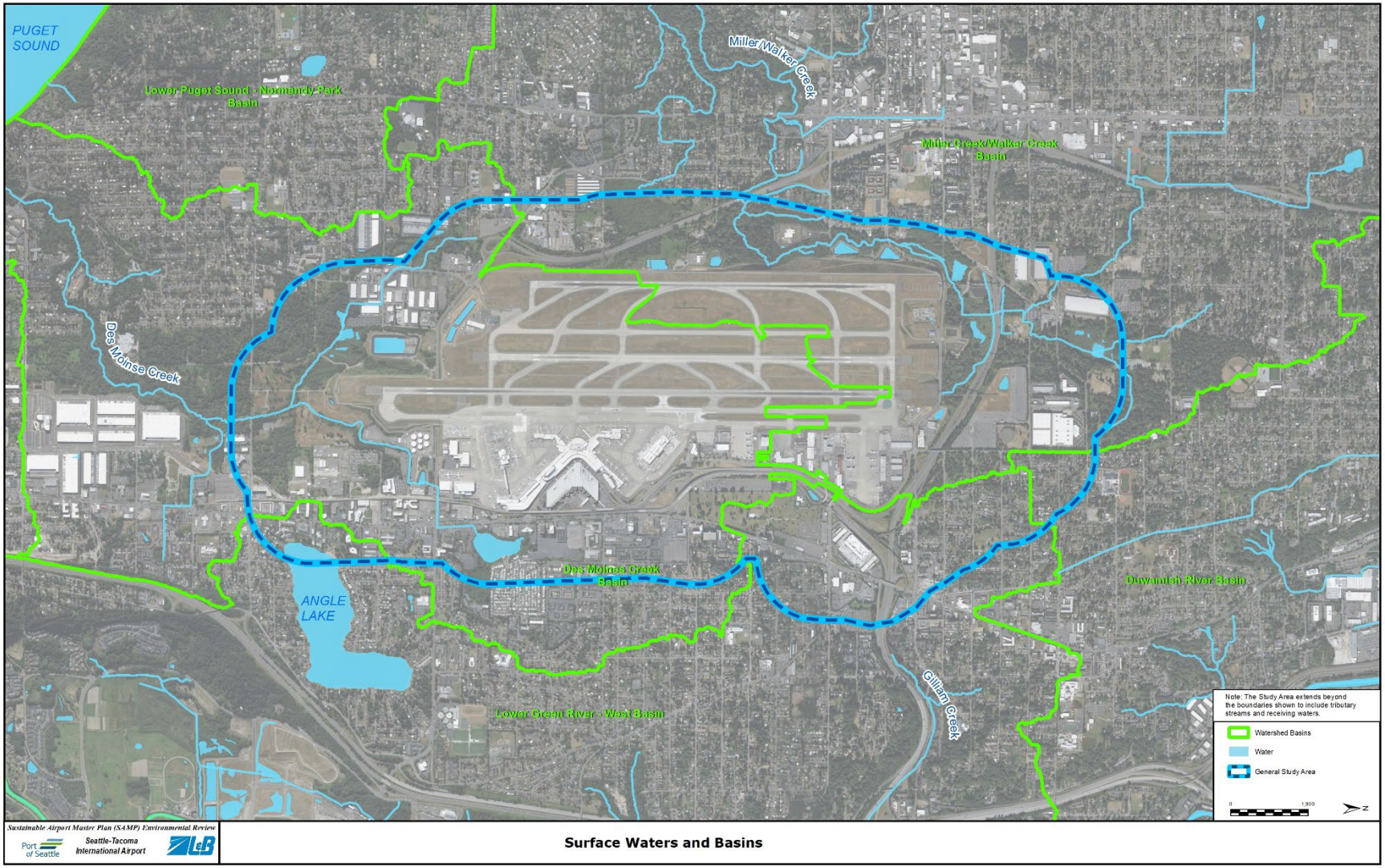
There are five streams and seven ditches (tributaries) considered potentially jurisdictional by the USACE within the GSA (shown on Exhibits 3.3.15-1 through 3.15-5).

Drainage Basins

The GSA is in King County, within the nearshore sub-watershed of Washington's Water Resource Inventory Area 9. It contains portions of the Miller Creek / Walker Creek, Gilliam Creek / Lower Green River, and Des Moines Creek drainage basins. The drainage basins and other prominent water features are depicted on Exhibit 3.3.15-1.

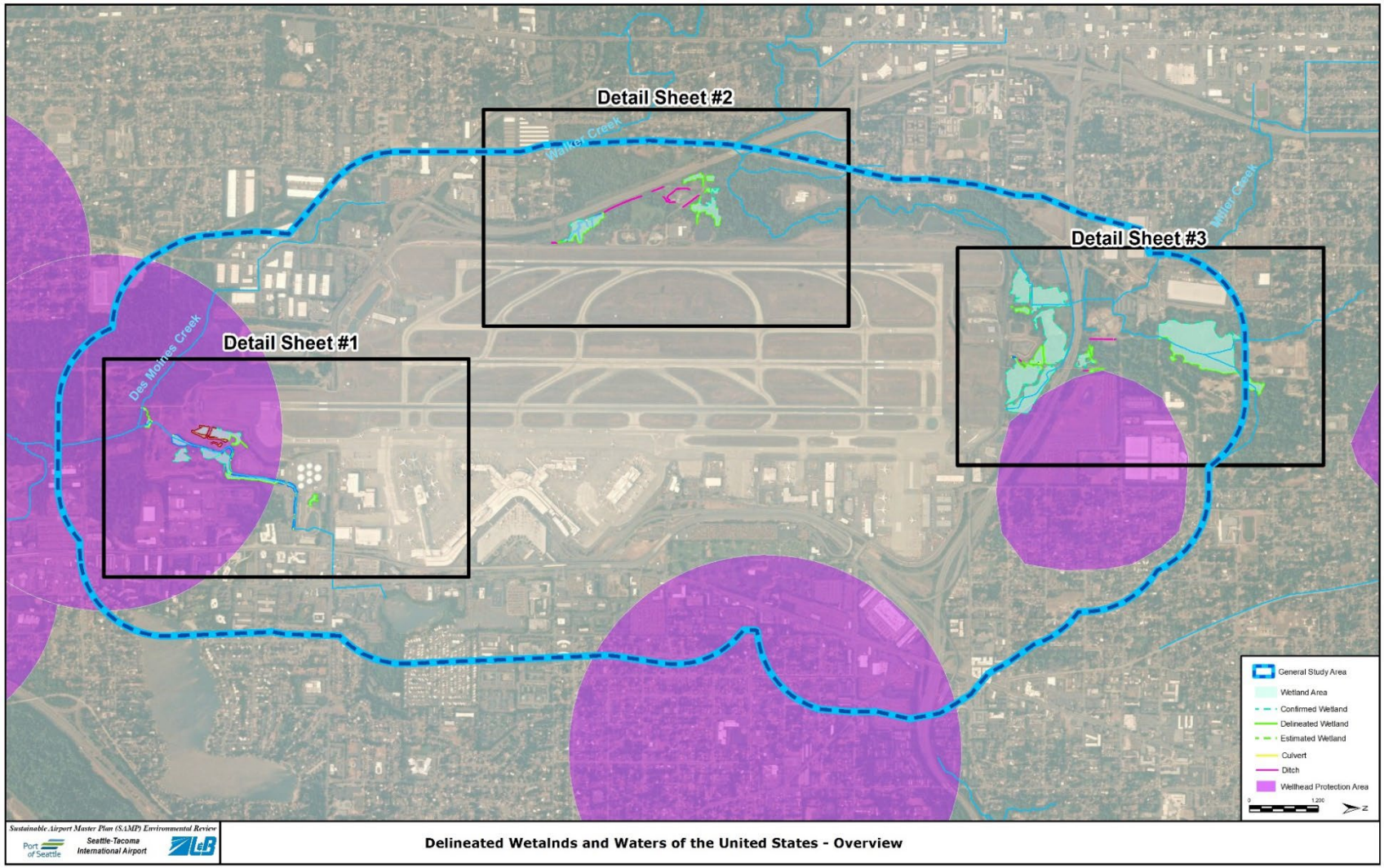
THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.15-1: SURFACE WATERS AND BASINS



THIS PAGE INTENTIONALLY LEFT BLANK

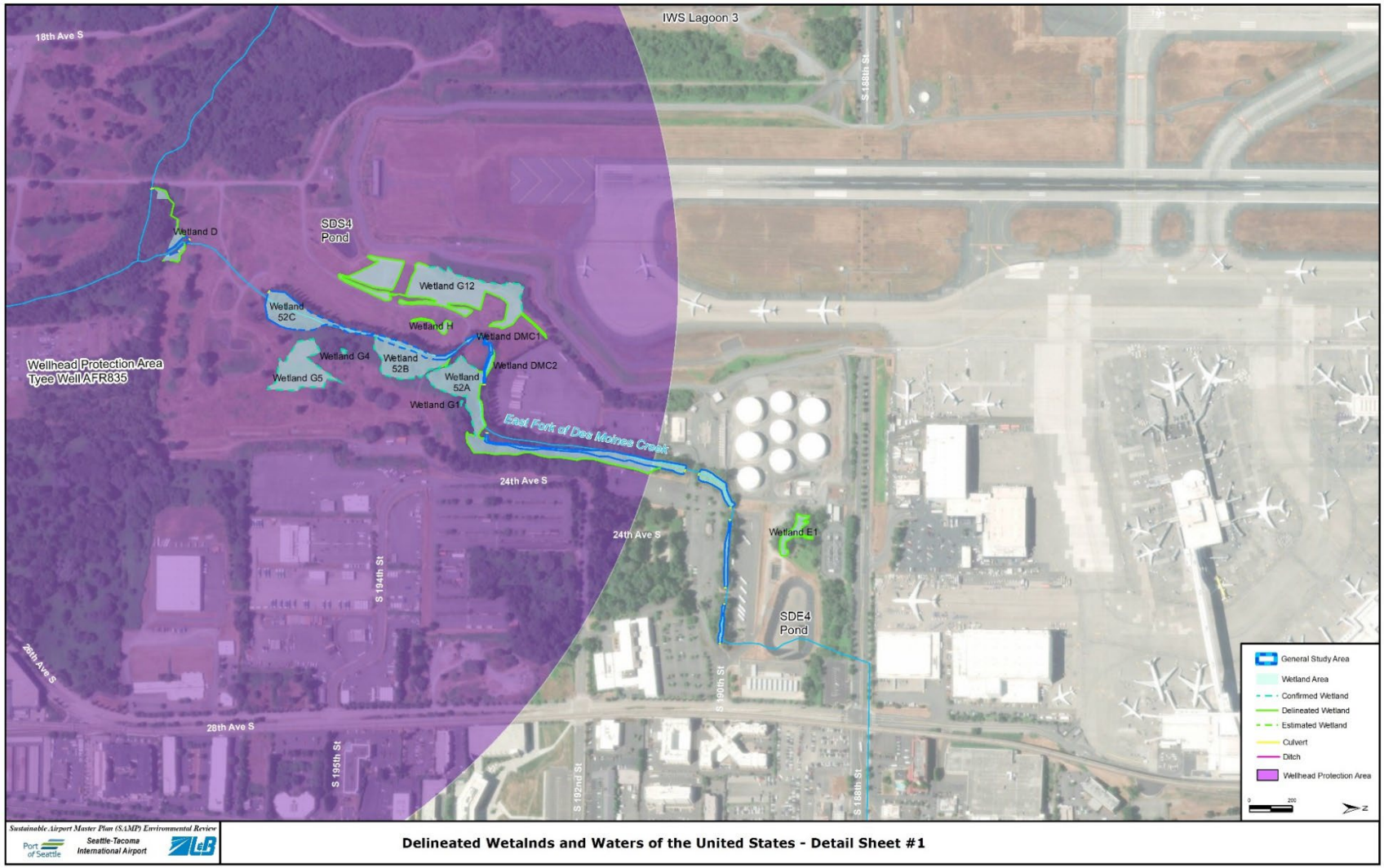
EXHIBIT 3.3.15-2: DELINEATED WETLANDS AND WATERS OF THE UNITED STATES – OVERVIEW



Note: Formal delineation of wetland boundaries was completed only in areas where impacts would occur. Estimated boundaries were identified for certain stream and wetland features outside the study area that are not anticipated to be impacted or subject to regulatory compliance. Previously delineated wetland boundaries were confirmed or revised as appropriate.

THIS PAGE INTENTIONALLY LEFT BLANK

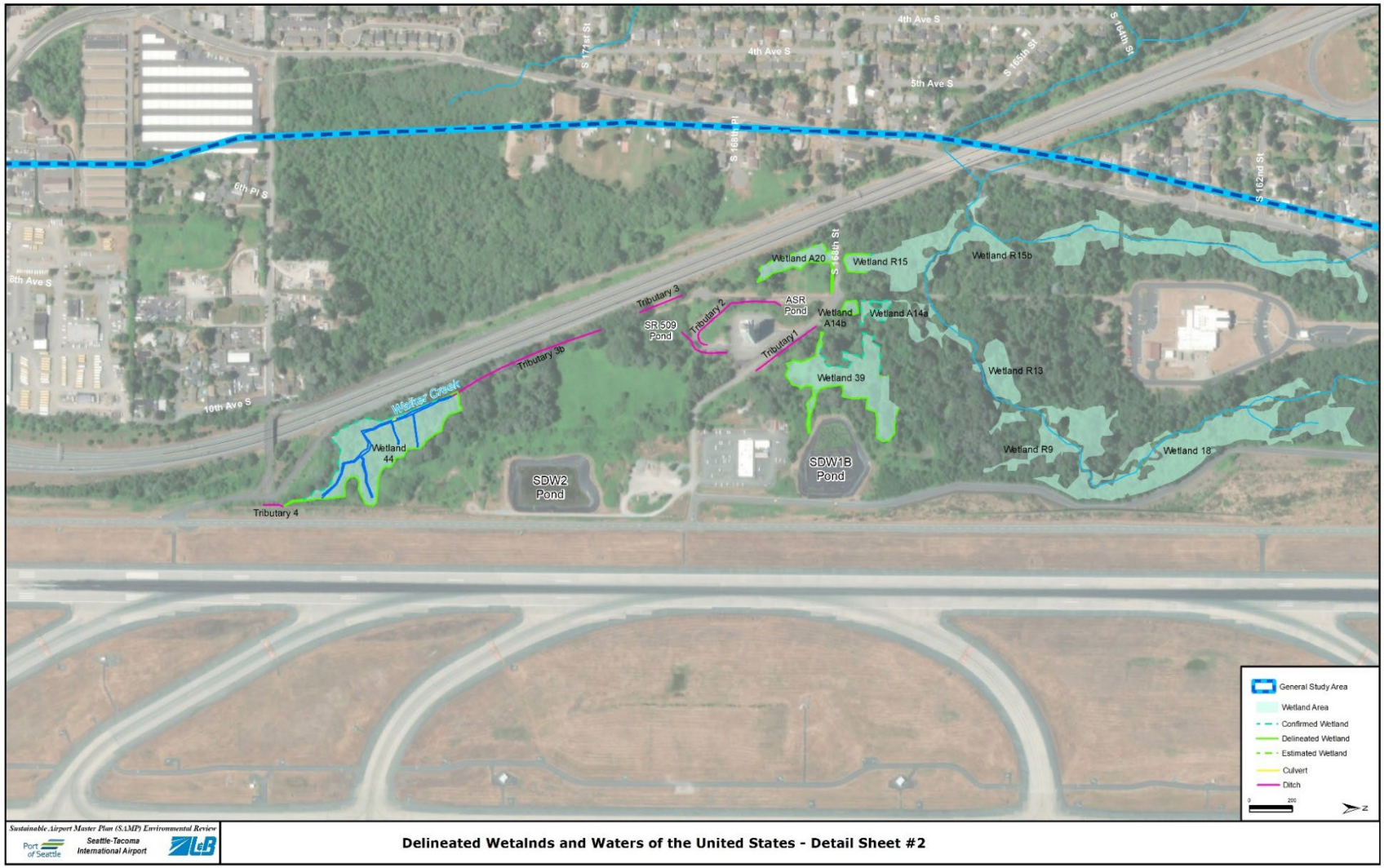
EXHIBIT 3.3.15-3: DELINEATED WETLANDS AND WATERS OF THE UNITED STATES – DETAIL SHEET #1



Note: Formal delineation of wetland boundaries was completed only in areas where impacts would occur. Estimated boundaries were identified for certain stream and wetland features outside the study area that are not anticipated to be impacted or subject to regulatory compliance. Previously delineated wetland boundaries were confirmed or revised as appropriate.

THIS PAGE INTENTIONALLY LEFT BLANK

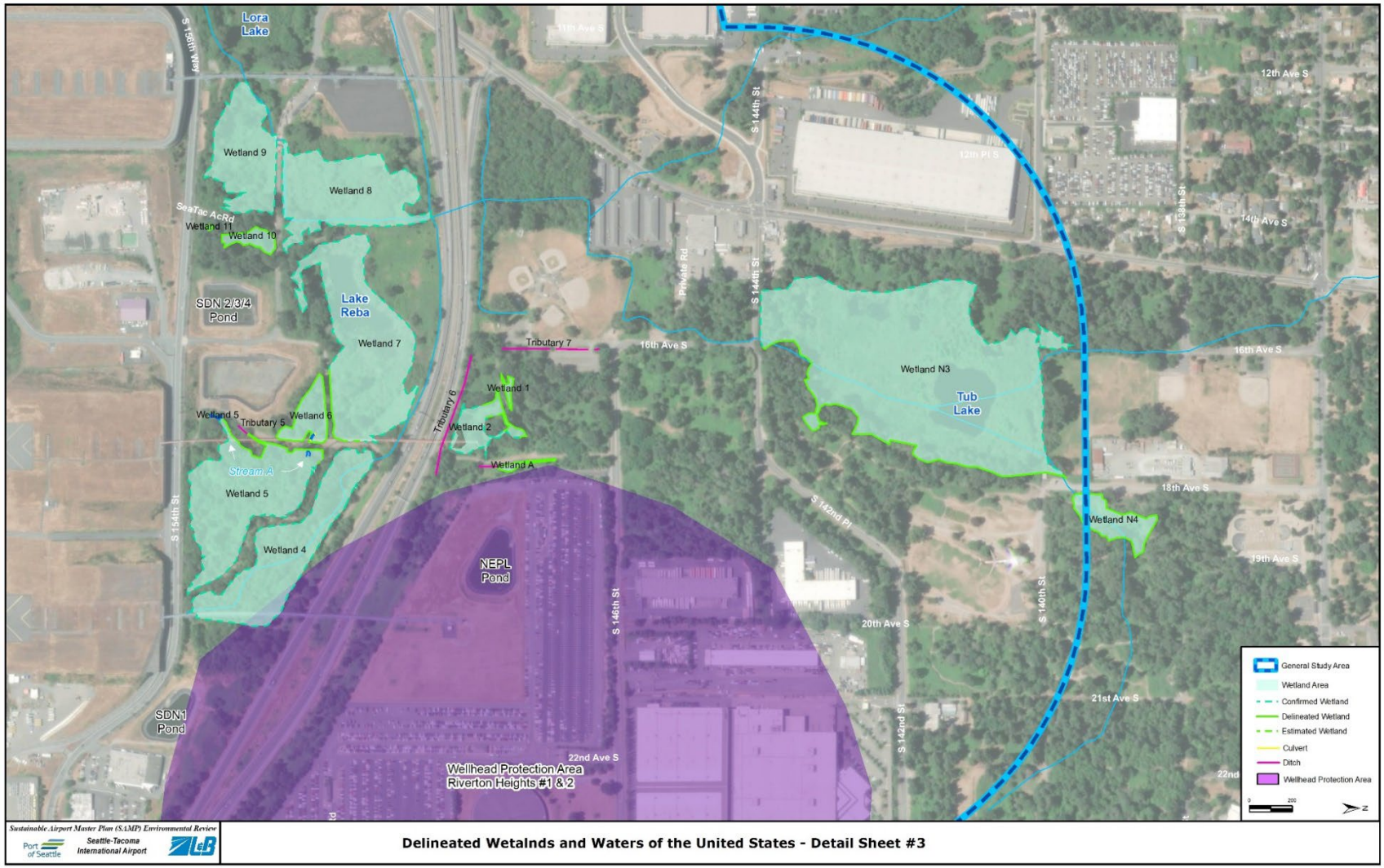
EXHIBIT 3.3.15-4: DELINEATED WETLANDS AND WATERS OF THE UNITED STATES – DETAIL SHEET #2



Note: Formal delineation of wetland boundaries was completed only in areas where impacts would occur. Estimated boundaries were identified for certain stream and wetland features outside the study area that are not anticipated to be impacted or subject to regulatory compliance. Previously delineated wetland boundaries were confirmed or revised as appropriate.

THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT 3.3.15-5: DELINEATED WETLANDS AND WATERS OF THE UNITED STATES – DETAIL SHEET #3



Note: Formal delineation of wetland boundaries was completed only in areas where impacts would occur. Estimated boundaries were identified for certain stream and wetland features outside the study area that are not anticipated to be impacted or subject to regulatory compliance. Previously delineated wetland boundaries were confirmed or revised as appropriate.

THIS PAGE INTENTIONALLY LEFT BLANK

Stormwater Management

SEA's SDS and IWS are separate systems that operate independently of each other. The SDS collects stormwater from approximately 1,200 acres. The stormwater drainage is treated by using stormwater ponds, grass swales, and other passive stormwater treatment methods[45] before being conveyed to Lake Reba to the north, Miller Creek to the north and west, Gilliam Creek[46] to the northeast, the Northwest Ponds and Des Moines Creek to the south, and Walker Creek to the west. Lower Walker Creek, lower Miller Creek, a portion of Gilliam Creek, Des Moines Creek are listed on WSDE's 303d list of impaired waterways.

The IWS collects stormwater from the approximately 375 acres where industrial activities are conducted, primarily in the area surrounding the Main Terminal and cargo complex.[47] As part of the IWS system, the Port operates and maintains an industrial wastewater treatment plant to treat stormwater associated with industrial activities from aircraft fueling and maintenance operations as well as wastewater from other Airport related operations such as deicing. Stormwater runoff with high biochemical oxygen demand (BOD)[48] is discharged to King County South Treatment Plant for secondary treatment under an Industrial Waste Discharge Permit through King County (Permit No. 7810-03).[49] Elevated BOD levels are typically associated with stormwater runoff that contains aircraft deicer fluid. The IWS is also permitted to discharge low-BOD stormwater runoff to the Puget Sound via an outfall shared with the Midway Sewer District.

Airport Stormwater Permits

SEA has operated under a NPDES permit since 1980; the current permit (Permit No. WA-0024651) is valid until August 31, 2026. This permit is reissued every five years. This permit established effluent limits from SEA's SDS and IWS. It requires monitoring and reporting of discharges as well as other provisions to track impacts to water quality and ensure compliance with established limits.

As required by the NPDES permit, SEA maintains a Stormwater Pollution Prevention Plans (SWPPP), which was updated in December 2022.[50] The SWPPP meets the requirements of the WSDE's Storm Water Management Manual for Western Washington.

SEA's individual NPDES permit regulates management of all industrial and construction stormwater within the Airport Operations Area (AOA) as defined by the Port and City of SeaTac ILA. Port-owned property and related industrial activities not covered by the SEA permit are regulated via multiple mechanisms including the WSDE general NPDES permits, Port and City of SeaTac ILA, and respective jurisdiction NPDES permits.

[45] Seattle-Tacoma International Airport Stormwater Management Manual, 2017, page 1-8.

[46] The Port is authorized to discharge stormwater associated with construction activities and construction dewatering to Gilliam Creek as part of their NPDES permit. The Airport does not have non-construction stormwater discharge to Gilliam Creek regulated by the NPDES permit. Construction activities related to the NTPs are not expected to result in discharges to Gilliam Creek. Therefore, Gilliam Creek is not addressed further in this document.

[47] Port of Seattle, Sustainability Planning and Management Strategy, Technical Memorandum No. 8 Final, May 2018. Available for review at: https://www.portseattle.org/plans/sustainable-airport-master-plan-samp.

[48] BOD represents the amount of dissolved oxygen needed for bacteria or other microorganism to decompose the organic matter that is present.

[49] https://www.portseattle.org/programs/airport-iwtp-effluent-discharge-rate

[50] https://www.portseattle.org/file-documents/swppp-2022

City of SeaTac Stormwater Permits

The City SeaTac maintains a comprehensive Stormwater Management Program (SWMP) to meet requirements associated with their NPDES Phase II Municipal Stormwater Permit. The City's SWMP is updated annually, and includes stormwater planning, public education and outreach, methods to detect and eliminate illicit discharges, standards for controlling stormwater runoff, and operations and maintenance guidelines for these facilities. As part of the ILA, the City of SeaTac and the Port have defined an Airport Stormwater Utility Boundary that includes most Airport parcels south of SR 518. Areas inside this boundary are subject to the Port's SWPPP. Development on Port property that is outside this boundary is subject to the requirements of the City's SWMP.

Floodplains

Floodplains are valued for their natural flood and erosion control, enhancement of biological productivity, and socioeconomic benefits and functions. Current 100-year and 500-year floodplain information for the area surrounding SEA was compiled from the most recent Flood Insurance Rate Maps (FIRMs) published by the Federal Emergency Management Agency (FEMA).

As is shown in **Exhibit 3.3.15-6,** 100-year and 500-year floodplains within the GSA are located west and north of Runway 16R and are associated with Miller Creek. These floodplains are partially on Port-owned property in the vicinity of the proposed employee parking structure (L07), westside maintenance campus (S07), and CRDC (S10).

Groundwater

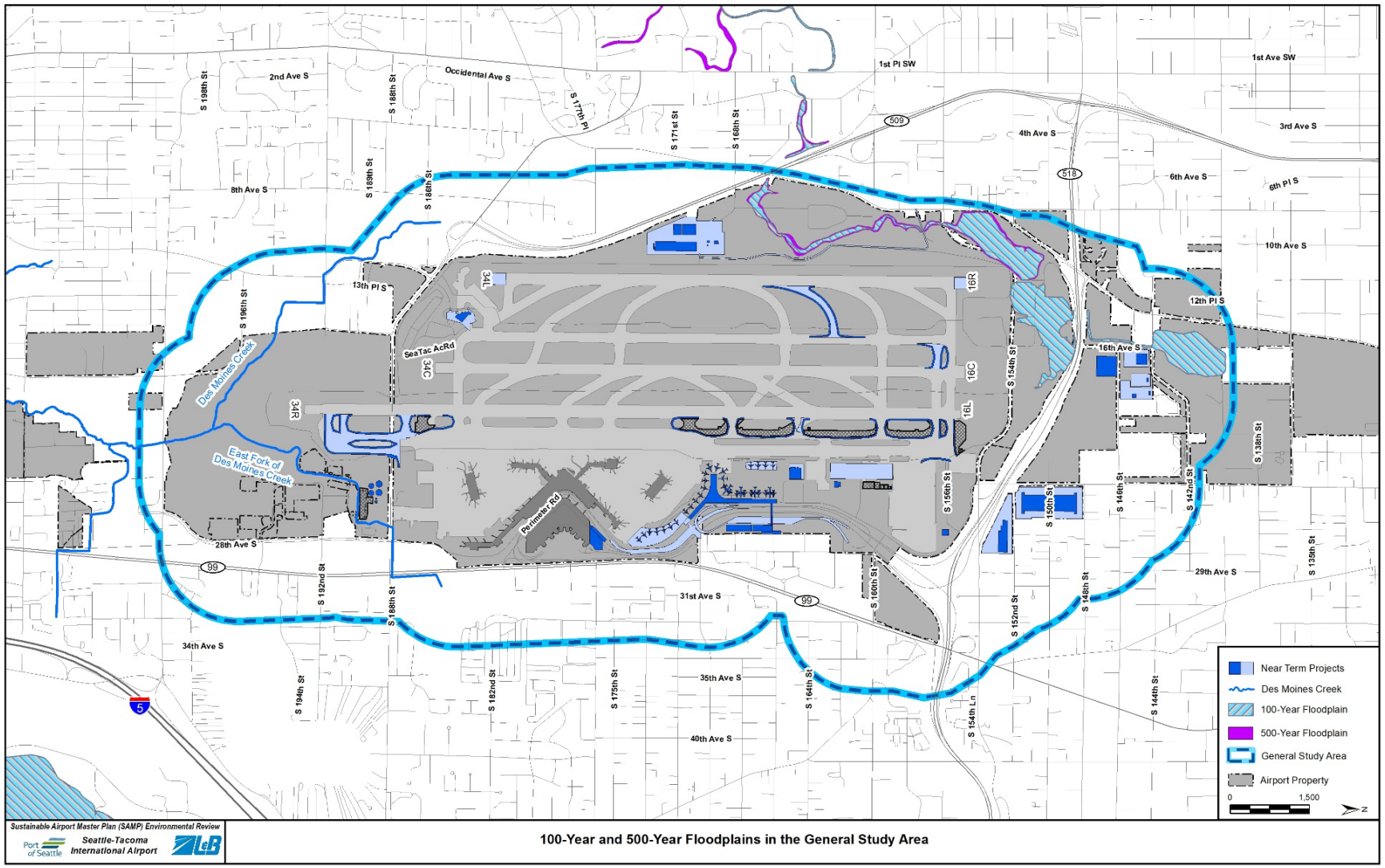
The GSA is located within the South King County Groundwater Management Area (GWMA), which encompasses approximately 260 square miles, mostly within the Green-Duwamish Watershed. Groundwater is the primary source of municipal and potable water used in the South King County GWMA.[51] Several regional aquifers underlie the GSA, the shallowest of which is about 50 to 60 feet beneath ground surface near the SEA terminal.

Portions of three Wellhead Protection Areas (WHPA) are located within the GSA (see Exhibit 3.3.15-2). In Washington State, the Department of Health administers the state Wellhead Protection Program to prevent contamination of groundwater used for drinking water. The Highline Water District has two wells within the GSA. The Tyee well is on Port property approximately one-half mile south of the airfield; this well is not currently in use. PFAS have been detected in the Tyee Well at levels exceeding the State Action Level; therefore, this well was removed from service. The McMicken Heights well, which came online in 2012, is to the east of the Airport. The well water is filtered, treated, and tested before it is blended with water from Seattle Public Utilities (SPU) and sent to the Water District customers.

SPU has two wells within the GSA. Riverton Heights #1 and #2 are part of a well field in the Highline Aquifer. While nearly all of SPU's raw drinking water comes from its two municipal watersheds, it has access to groundwater from Riverton Heights for seasonal and emergency use. These WHPAs are shown on Exhibit 3.3.15-2, Exhibit 3.3.15-3, and Exhibit 3.3.15-5.

[51] South King County Ground Water Management Plan, 2003, https://your.kingcounty.gov/dnrp/library/2003/kcr2205-2003v1.pdf

EXHIBIT 3.3.15-6: 100-YEAR AND 500-YEAR FLOODPLAINS WITHIN THE GSA



Source: FIRM panels (all effective 8/19/2020): 53033C0954G, 53033C0955G, 53033C0960G, 53033C0962G, 53033C0966G

THIS PAGE INTENTIONALLY LEFT BLANK

3.3.16 Public Services and Utilities

Public services and utilities are included as SEPA elements of the environment that can be evaluated in an EIS. (WAC 197-11-444[2][d]). Aspects of this topic were evaluated in several sections of the NEPA EA, including the discussion of water supply in Section 3.3.10.2 and the discussion of emergency services in Section 3.3.12.1. This SEPA EIS incorporates by reference the applicable portions of the NEPA EA and provides additional information on emergency services, water utilities, and sewer utilities.

Some of the subcategories included under public services and utilities in WAC 197-11-444 are evaluated in other sections of this SEPA EIS. Electrical utilities are discussed in Section 3.3.10, Energy and Natural Resources. Table 3.3.16-1 lists the subcategories and the location of the analysis in the SEPA EIS.

TABLE 3.3.16-1: LOCATION OF PUBLIC SERVICES AND UTILITIES ANALYSIS

SEPA Element of the Environment	EIS Section Number	EIS Section Title
Fire and Police (Emergency Services)	3.3.12	Socioeconomic and Environmental Justice (location of facilities)
	3.3.16	Public Services and Utilities (description of services)
Schools	3.3.11	Noise and Noise-Compatible Land Use
Parks or Other Recreational Facilities	3.3.5	Recreation
Water / Stormwater	3.3.15	Water Resources (stormwater management)
	3.3.16	Public Services and Utilities (water utilities)
Sewer / Solid Waste	3.3.16	Public Services and Utilities (sewer utilities)
	3.3.7	Hazardous Materials, Solid Waste, and Pollution Prevention (solid waste)

3.3.16.1 Regulatory Setting

All applicable statutes governing utilities apply to each utility serving the Airport. Seattle Public Utilities supplies water. Sewer service is provided by the Midway, Valley View, and Southwest Suburban sewer districts.

The water system within SEA is operated by the Port. As a Group A Public Water System, it must operate in accordance with specific federal and state regulations. **Table 3.3.16-2** lists the applicable federal regulations and **Table 3.3.16-3** lists state and local requirements.

TABLE 3.3.16-2: FEDERAL STATUTES, REGULATIONS, AND EXECUTIVE ORDERS RELATED TO PUBLIC SERVICES AND UTILITIES

Statute	U.S. Code Implementing Regulation	Oversight Agency	Summary
Safe Water Drinking Act	Public Law 93-523	USEPA	Establishes minimum national drinking water standards to protect public water systems from contaminants, authorizing the EPA to set national health-based standards.
Clean Water Act	33 U.S.C. §§ 1251-1387 33 CFR parts 320-332 40 CFR parts 230-233	USEPA	Sets forth regulations and requirements for restoration and maintenance of the integrity of the nation's waters in terms of physical, chemical, and biological characteristics and security considerations.

TABLE 3.3.16-3: STATE AND LOCAL REGULATIONS RELATED TO PUBLIC SERVICES AND UTILITIES

Washington State Law	Code Implementing or Supporting Regulation	Oversight Agency	Summary
Fire Departments – Performance Measures	Chapter 53.56 RCW	Port of Seattle	States that it is the responsibility of port districts to set standards for the reporting and accountability of fire departments and to specify performance measures.
Police officers – appointment authorized-jurisdiction	RCW 53.08.280	Port of Seattle	Give the Port the authority to appoint police officers with full police powers.
Group A Public Water Supplies	Chapter 246-290 WAC	WDOH	Defines the regulatory requirements to protect the health of consumers using public drinking water supplies. Requires the system purveyor (in this case, the Port) to maintain a Water System Plan.
On-Site Sewage Systems	Chapter 246-272A WAC	WDOH	Regulates the location, design, installation, operation, maintenance, and monitoring of on-site sewage systems.

3.3.16.2 Existing Conditions

Information on existing conditions in the GSA for public services and utilities was obtained through Port records and publicly available information from other service providers.

Emergency Services

Fire

The Port of Seattle Fire Department is an aircraft rescue firefighting department located at SEA. In addition to aircraft rescue, the department performs typical firefighting activities including responding to structure fires, providing emergency medical services, and contending with hazardous materials situations.

The Fire Suppression Division is composed of personnel and apparatus designated to respond to various types of emergencies and calls for service at SEA. The division is separated into four shifts, each staffed by one battalion chief serving as the shift commander, two captains, and a minimum of 14 firefighters. Apparatus consists of a 4,500-gallon ARFF truck with a high-reach extendable turret, 3,000-gallon ARFF trucks, fire engines, medical aid / rescue vehicles, a hazardous materials response unit, a medical support / disaster unit, a foam resupply vehicle, and the command vehicle. The Port Fire Department responds to over 6,000 alarms yearly, including aircraft emergencies, medical responses, structure fires, and hazardous materials releases.

The Port Fire Department has primary responsibility for providing fire and emergency services on Port-owned property occupied by aviation-related uses. Burien Fire District 2, the City of SeaTac Fire Department, and South King County Fire and Rescue (Des Moines) provide fire and emergency services within their boundaries and to Port-owned properties within city boundaries that are developed with non-aviation-related uses. Through mutual aid agreements, the four jurisdictions cooperate to provide fire and emergency services to all properties within the three service areas, regardless of ownership and development type.

Police

The Port of Seattle Police Department provides the primary law enforcement service to SEA and the Port's Maritime properties. In 2023, there were a total of 122 commissioned and 49 non-commissioned personnel. The SEA Airport Division includes a bomb disposal unit, an explosives detection canine unit, and traffic support specialists.[52]

The Port police are the primary first responders for all reported crimes and incidents within their jurisdiction. The main types of calls are burglar alarms, suspicious vehicles, trespassers, and vehicle collisions.

The department also has civilian staff members. Non-commissioned personnel include 911 communications specialists who receive and coordinate all calls for service for both the Port of Seattle Fire and Police Departments.

[52] Port of Seattle Police. 2023. 2023 Annual Report. Available for review at: https://www.portseattle.org/sites/default/files/2025-06/POSPDAnnualReport2023.pdf

The cities of SeaTac and Burien contract for police services through the King County Sheriff's Department. In general, city and Port police respond to calls within their own jurisdictions. In the event of an unusual or major event, they provide mutual aid outside their jurisdictions.

Water Utility

The Port owns and operates the water system at SEA, which provides drinking water and fire protection water to the Airport and associated facilities. Water is supplied to SEA and surrounding areas by Seattle Public Utilities' Cedar River Pipeline No. 4. The water distribution system for the Airport supplies an area of approximately 3,400 acres. The main components of the system are a water booster pump station located adjacent to Air Cargo Road at S. 161st Street, a 2-million gallon water storage tank located east of the booster pump across the NAE on Host Road, and a looped distribution system including a 24-inch water main along Air Cargo Road.

Properties north of the Airport proposed for development are served by four water districts: King County Water Districts 20 and 125, Highline Water District, and SPU. All of these districts receive water from SPU but maintain their own infrastructure. King County Water District 20 serves areas in Burien. Water District 125 serves areas within SeaTac and Burien. The Highline Water District supplies water to the properties south of S. 188th Street. SPU and the Highline Water District operate groundwater extraction / injection wells in the area (see Section 3.3.15). Approximately 80% of the Highline Water District water supply is surface water provided by Seattle Public Utilities, and 20% is provided by district-owned wells.

Table 3.3.16-4 shows the primary water consumption at SEA from 2016 to 2022.

TABLE 3.3.16-4: WATER CONSUMPTION

Year	Water Consumption (CCF[1])	Water Consumption (Gallons)
2016	325,860	243,760,225
2017	328,440	245,690,199
2018	361,551	270,458,106
2019	367,451	274,871,299
2022	516,450(2)	386,304,600

Note: Table 3.3.16-3 was Table 3-19 in the NEPA Final EA

(1) CCF = centrum cubic feet (or 100 cubic feet).

(2) The increase in consumption in 2022 was due to a water leak that has been corrected.

Source: Data provided by the Port from Seattle Public Utilities account numbers 0982930000, 4789950000, and 5789950000.

Sewer Utility

The Port of Seattle owns and operates the sewage collection system at SEA and discharges to three adjacent sewer districts for treatment. Midway Sewer District receives the majority of the sanitary sewage collected at the Airport, including flows from the main terminal. Valley View Sewer District receives sewage collected from the northeast corner of the Airport. Southwest Suburban Sewer District receives flows from the north and west portions of the Airport.