

ENVIRONMENTAL ASSESSMENT  
**SAMISH INDIAN NATION**  
FEE-TO-TRUST / GAS STATION PROJECT

**MAY 2012**

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Appendix C	FEMA FIRM
Appendix D	Air Quality Data

# ***SECTION 1.0***

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*INTRODUCTION*

# SECTION 1.0

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## INTRODUCTION

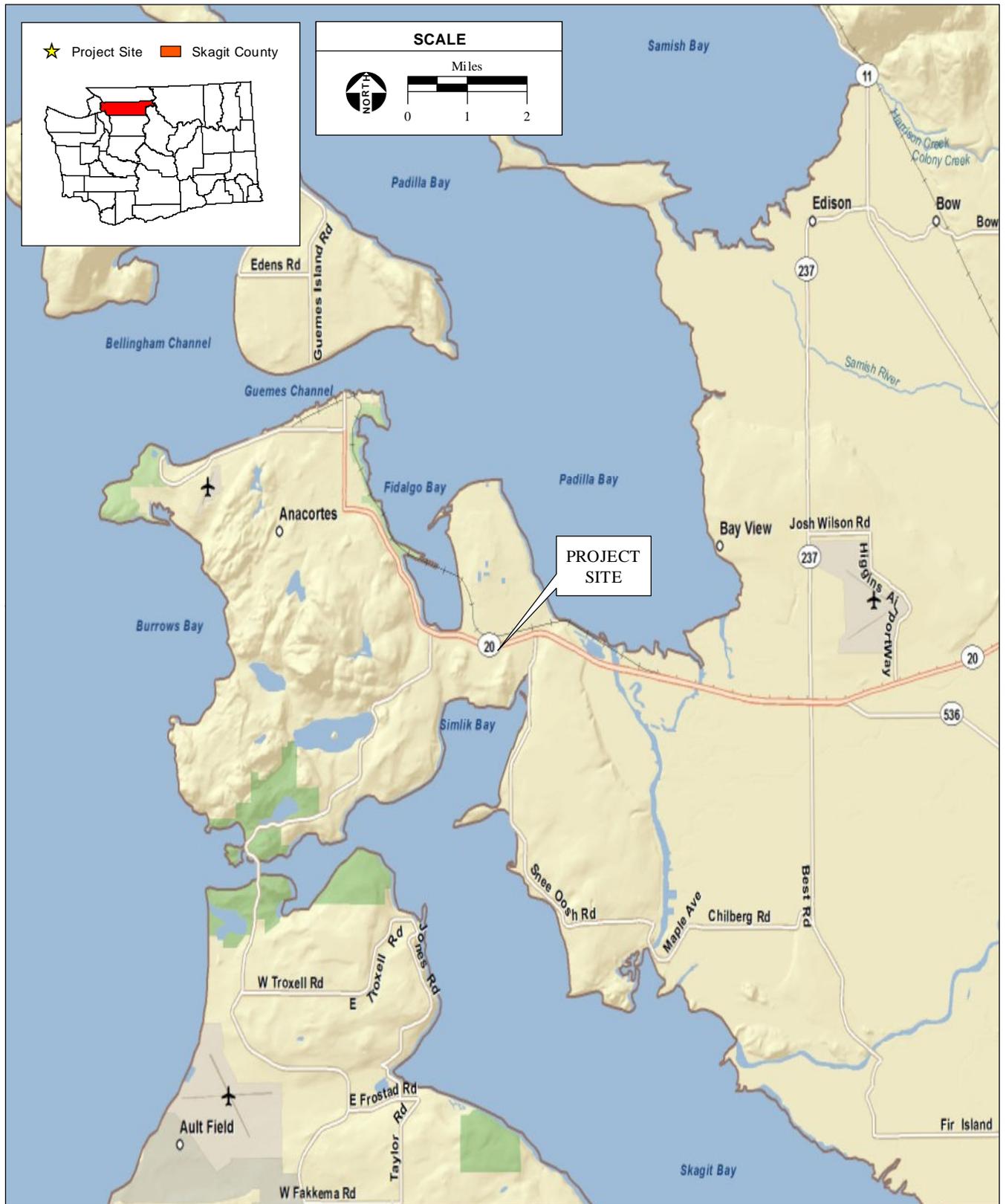
### 1.1 INTRODUCTION

This Environmental Assessment (EA) has been prepared for the U.S. Bureau of Indian Affairs (BIA) to support an application from the Samish Indian Nation (Samish Tribe) for land to be placed into federal trust (Proposed Action). The BIA is the federal agency charged with reviewing and approving tribal applications to take land into federal trust status. The project site, known as the “March’s Point Property,” consists of approximately 3.3 acres in the City of Anacortes, Skagit County, Washington. The fee-to-trust acquisition and subsequent development is intended to be used for a gas station and convenience store (Proposed Project). The BIA will use this EA to determine if the Proposed Action would result in an adverse effect to the environment.

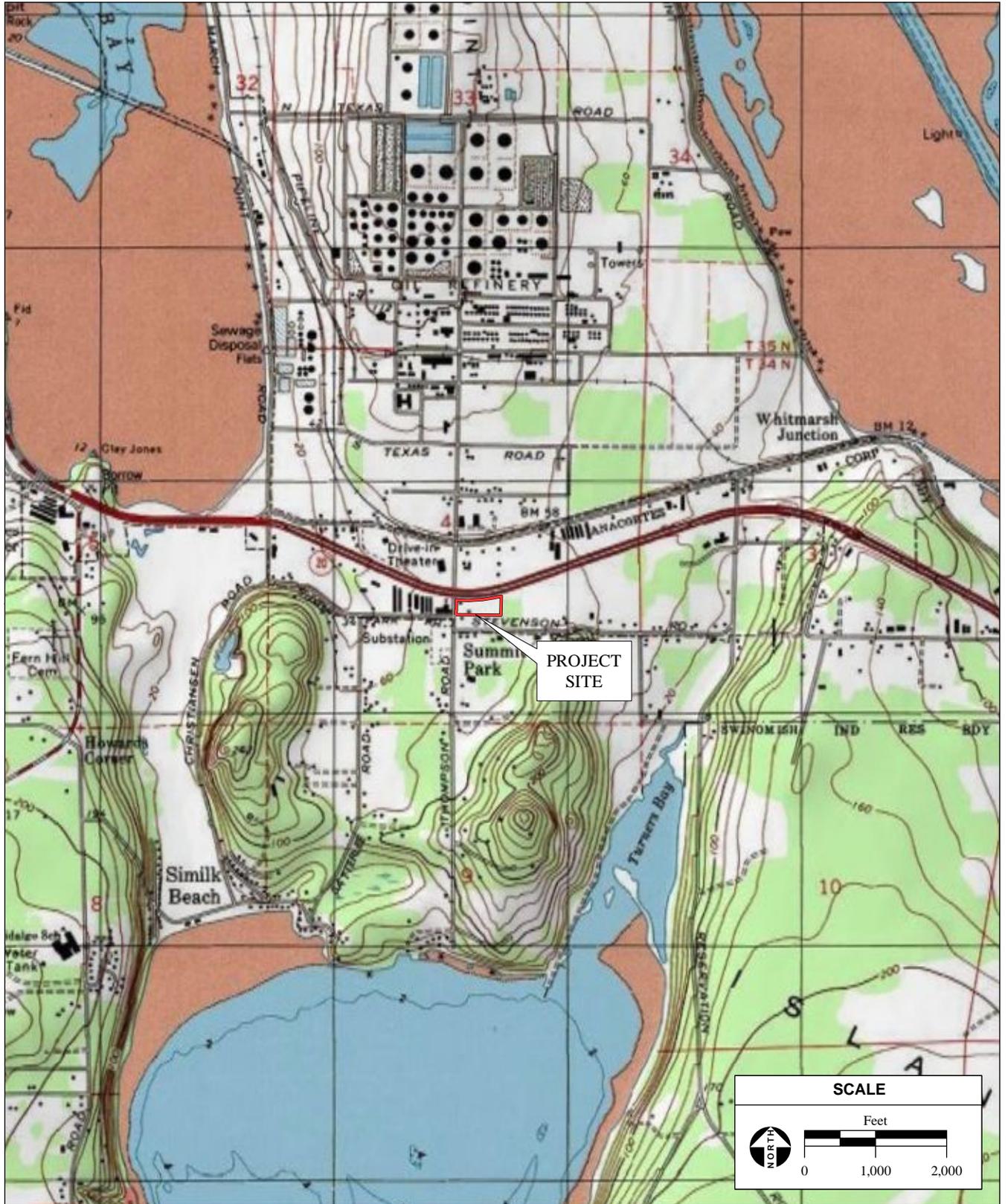
This document has been completed in accordance with the requirements set out in the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. §4321 et seq.); the Council on Environmental Quality (CEQ) Guidelines for Implementing NEPA; and the BIA NEPA handbook (59 IAM 3-H). This document provides a detailed description of the Proposed Action and analyses of the potential environmental consequences associated with development of this project. This document also includes a discussion of alternatives, impact avoidance, and mitigation measures. Consistent with the requirements of NEPA, the BIA will review and analyze the environmental consequences associated with the Proposed Action, and either determine that a Finding of No Significant Impact (FONSI) is appropriate, request additional analyses, or request that an Environmental Impact Statement (EIS) be prepared.

### 1.2 LOCATION AND SETTING

The proposed trust parcels addressed in this EA are located approximately four miles east of the downtown area of the City of Anacortes (City), Washington, adjacent to State Route 20 (SR-20), and east of Thompson Road. The Proposed Project is located in Section 4 of the “Anacortes, Washington” U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (quad) within Township 34 North and Range 2 East, Anacortes Baseline and Meridian. **Figure 1-1** shows the regional location and **Figure 1-2** shows the project site and vicinity. **Figure 1-3** presents an aerial photograph of the entire project site, which consists of three separate legal parcels totaling approximately 3.3 acres, all currently owned in fee by the Samish Tribe.



**Figure 1-1**  
Regional Location



SOURCE: "Anacortes North, WA" USGS 7.5 Minute Topographic Quadrangle, T34N, R2E, Section 4, Willamette Baseline & Meridian; AES, 2011

Samish Indian Nation Gas Station EA / 209532 ■

**Figure 1-2**  
Site and Vicinity



SOURCE: AEX Aerial Photograph, 5/15/2009; AES, 2011

Samish Indian Nation Gas Station EA / 209532 ■

**Figure 1-3**  
Aerial Parcel Map

The Skagit County Assessor Parcel Number (APN) and acreage for each parcel within the project site is shown in **Table 1-1** and **Figure 1-3**.

**TABLE 1-1**  
Assessor's Parcel Numbers and Acreage for Project Site Parcels

APN	Size (acres)
P19915	0.25
P19916	0.97
P120595	2.07
<b>Total</b>	<b>3.29</b>

Regional access is provided by SR-20, which runs in a general east-west direction and located immediately north of the site. Local access to the project from SR-20 is provided by Thompson Road, which is a two-lane City road that extends in a general north-south direction to the immediate west of the site<sup>1</sup>. Other roadways in the immediate vicinity include Stevenson Road, which is an east-west two lane residential road to the south of the project site (**Figure 1-3**). Stevenson Road intersects with Reservation Road, a north-south minor arterial, to the east of the site.

Land uses near the project site include an oil refinery, auto-oriented retail and commercial, light industry, agricultural uses, and undeveloped parcels. Flowers and bulbs grown in the nearby Skagit Valley are an important agricultural crop, as well as a regionally significant tourist attraction. The Washington State Department of Transportation (WSDOT) ferry docks in Anacortes are also an important tourist attraction and provide a regional access to the San Juan Islands. The Summit Park Bible Church is located immediately west of the site across Thompson Road. A Puget Sound Energy (PSE) electrical sub-station is located immediately west of the Thompson Road/Stevenson Road interchange. There are three single-family residences situated southeast of the Thompson Road/Stevenson Road intersection. The Swinomish Northern Lights Casino is located approximately two miles east of the site on SR-20. In addition to the casino, the Northern Lights facility also includes a gas station and newly constructed hotel.

The majority of the project site contains grasses and some scrub brush. The topography of the site is relatively level, with an elevation of approximately 80 feet above mean sea level.

### 1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION

The Samish Tribe proposes to take the 3.3 acres of land into trust to ensure the continued social and economic independence and well-being of its members. The proposed trust acquisition would allow the Samish Tribe to meet the following goals:

<sup>1</sup> Thompson Road is a County road south of the Stevenson Road intersection.

- Engage in diverse and self-sustaining economic development activities compatible with the existing setting along SR-20 in Skagit County; and
- Allow the Tribal Government to exercise sovereign authority over land that it owns, and protect and enhance the wellbeing of Tribal members and natural resources on those lands.

The Samish Tribe currently consists of 1,544 tribal members. Taking the project site into federal trust would help the Samish Tribe meet its long-term goals of increased tribal revenues, employment and managerial experience for Tribal members, and continued/enhanced economic self-sufficiency.

## **1.4 OVERVIEW OF THE ENVIRONMENTAL PROCESS**

This EA has been prepared to analyze and document the environmental consequences associated with: 1) the proposed transfer of 3.3 acres of land into federal trust status for the Samish Tribe, and 2) the anticipated development of a portion of the project site into a gas station and convenience store. The BIA will use this EA to determine if the Proposed Action results in significant impacts to the environment, and whether a FONSI can be issued or an EIS should be prepared.

This EA is intended to satisfy the environmental review process of 59 IAM 3-H, 40 CFR § 1501.3, and 40 CFR § 1508.9.

The EA is first released for a 30-day comment period. Comments will be considered by the BIA, and either a FONSI will be prepared, or additional environmental analysis will be conducted. After the NEPA process is complete, the BIA may issue a determination on the Samish Tribe's fee-to-trust application.

## **1.5 ENVIRONMENTAL ISSUES ADDRESSED**

In accordance with NEPA, and based on a review of the 3.3-acre project site, the following environmental issue areas are evaluated in this EA:

- Land Resources;
- Water Resources;
- Air Quality;
- Biological Resources;
- Cultural Resources;
- Socioeconomic Conditions/Environmental Justice;
- Transportation and Circulation;
- Land Use;
- Public Services;
- Noise;

- Hazardous Materials; and
- Visual Resources.

## 1.6 REGULATORY REQUIREMENTS AND APPROVALS

The Proposed Action may require the following direct and indirect federal approvals and actions:

- Transfer of the 3.3-acre site into Federal trust status for the Samish Tribe by the Secretary of the Interior.
- Compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (#WAR12000I).
- Consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Federal Endangered Species Act (FESA), if endangered species may be affected by the Proposed Action.
- Consultation with the State Historic Preservation Office (SHPO) under Section 106 of the National Historic Preservation Act (NHPA), if historic properties may be impacted by the project.
- Issuance of an encroachment permit for off-site utilities, if needed.

# **SECTION 2.0**

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*PROPOSED PROJECT AND ALTERNATIVES*

# SECTION 2.0

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## PROPOSED PROJECT AND ALTERNATIVES

This section describes the alternatives analyzed within this Environmental Assessment (EA). The project alternatives evaluated in the EA include:

- Alternative A – Placement of 3.3 acres into federal trust (Proposed Action) and the subsequent development of a 10,000 square foot (sf) gas station and convenience store retail development (Proposed Project);
- Alternative B - No-Action Alternative.

### 2.1 ALTERNATIVE A - PROPOSED ACTION

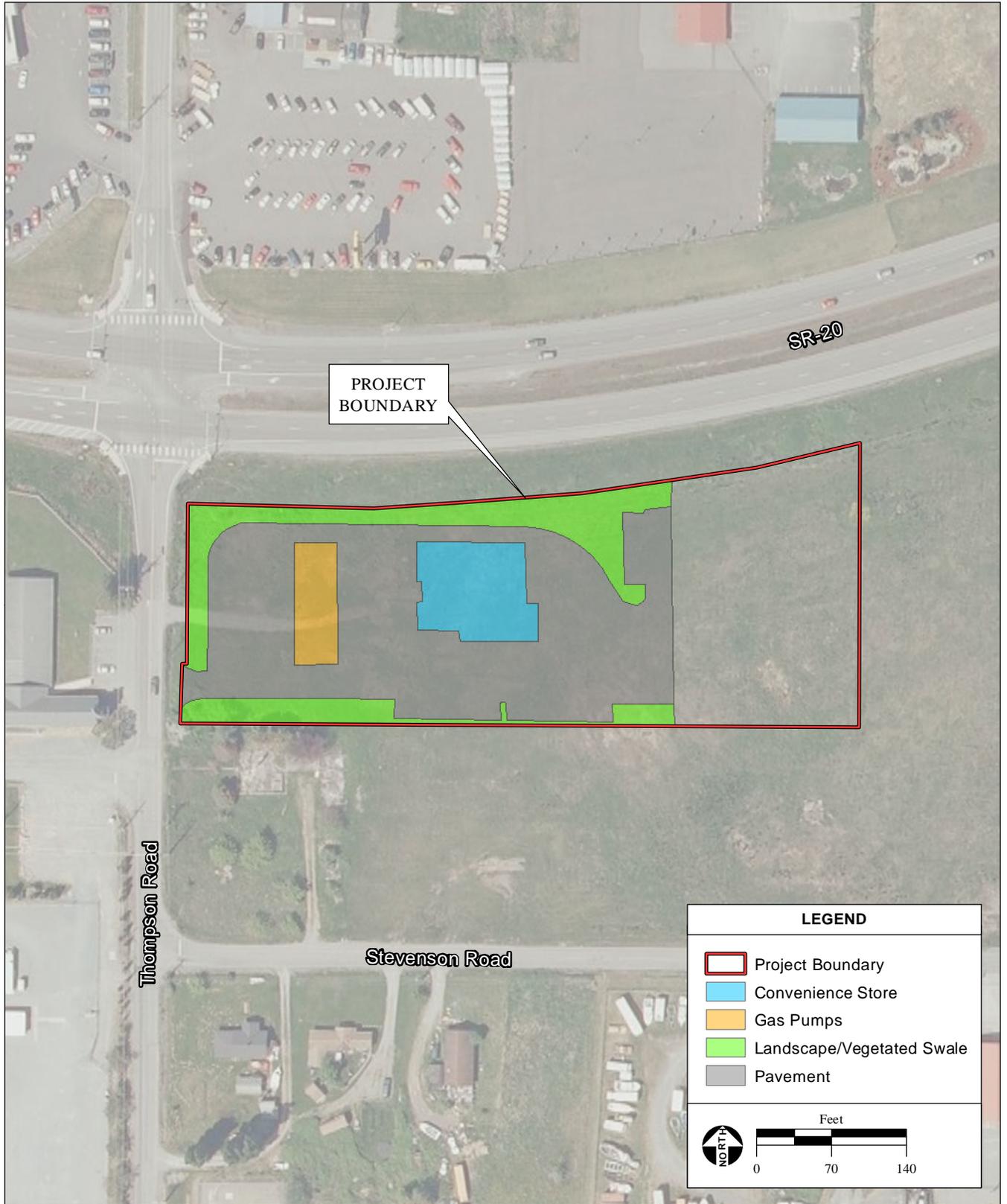
Alternative A consists of two main components: (1) placing three parcels that total approximately 3.3-acres (Skagit County Assessor’s Parcel Numbers (APNs) P19915, P19916, and P120595) into Federal trust, and (2) construction and operation of a gas station and convenience store. The development components of Alternative A are described in more detail below.

#### 2.1.1 LAND TRUST ACTION

Alternative A consists of the fee simple conveyance of the 3.3-acre project site into Federal trust status for the benefit of the Samish Indian Nation (Samish Tribe). The land transfer would be in accordance with procedures set forth in 25 CFR § 151.3. This trust action would shift civil regulatory jurisdiction over the three parcels from the State of Washington (State), Skagit County (County), and the City of Anacortes (City) to the Samish Tribe and the federal government.

#### 2.1.2 GAS STATION/CONVENIENCE STORE

As shown in **Figure 2-1**, Alternative A includes development and operation of a combination gas station and convenience store. This development component would be located in the western portion of the project site primarily within APNs P19916 and P120595. Development would include approximately 10,000 sf of retail uses within a single-story structure, a protective canopy, eight fueling pumps, and underground fuel tanks (**Table 2-1**). Separate underground fuel tanks would store different grades of fuel. Each of the eight underground fuel tanks would store up to 10,000 gallons of fuel.



**Figure 2-1**  
Proposed Site Plan

**TABLE 2-1**  
PROJECT COMPONENTS

Component	Approximate Square Footage
Convenience Store	10,000
Gas Station Canopy	2,000
Total	<b>12,000</b>
SOURCE: AES, 2012	

Access to the gas station/convenience store would be provided via one full access driveway along Thompson Road, the existing roadway to the immediate west of the project site. The access point would be located as far south on the site as feasible in order to improve traffic flow into and out of the site. No access to the gas station or convenience store would be available along State Route 20 (SR-20). Access from westbound SR-20 to the project site would be via the existing left turn lane and signalized intersection. Access from eastbound SR-20 would be by a signalized right-hand turn. Access across SR-20 on Thompson Road is currently available and controlled at a signalized intersection.

During operation, the gas station and convenience store would employ between 20 and 22 full-time equivalent employees (FTEs). The gas station/convenience store would operate 24-hours per day, seven days per week.

### 2.1.3 WATER SUPPLY

Estimated water demands for the Proposed Project would be approximately 5,250 gallons per day (gpd) for uses at the convenience store and gas station (**Table 2-2**). Domestic water supply for Alternative A would be provided through connection to the City water supply system. This City system currently serves the existing uses in the project site vicinity through a 24-inch pipeline along SR-20 and a 14-inch pipeline along Stevenson Road to the south. If warranted, upgraded internal connections to the city system would be developed within the project site. The existing water supply facilities are discussed in more detail in **Section 3.9.1**.

### 2.1.4 WASTEWATER TREATMENT AND DISPOSAL

It is estimated that patrons and employees of the Proposed Project would generate approximately 5,000 gpd of wastewater (**Table 2-2**). Wastewater would be accommodated through connection to the existing City wastewater system. Connection to the system would be provided via existing sewer lines. The nearest sewer line is at the intersection of Thompson Road and Summit Park Road immediately south of the site.

**TABLE 2-2**  
ESTIMATED WATER / WASTEWATER DEMANDS

Water Demands	Proposed Project
Base Flow <sup>1</sup>	5,250 gpd

Wastewater Flows	Proposed Project
Base Flow <sup>2</sup>	5,000 gpd

NOTES: <sup>1</sup> Water demands = wastewater flows/0.95.

<sup>2</sup> 10,000 sf development X 0.5 (gpd/sf)

SOURCE: AES, 2011

### 2.1.5 ROADWAY IMPROVEMENTS

Improvements to Thompson Road would be constructed at the site to allow development of the access driveway to the proposed facilities. Encroachment permits (if warranted) would be submitted to the City to construct suitable access to the project site.

### 2.1.6 DRAINAGE

Vegetated swales would be constructed along the northern and eastern portions of the project site to allow for stormwater retention and water quality improvements prior to discharge off-site. A stormwater retention basin would be constructed on the eastern portion of the project site to ensure that post-development runoff peaks from the project site would be equal to the existing conditions. On-site stormwater retention would also reduce potential downstream erosion and adverse effects to water quality. The stormwater facilities would be designed to comply with the City Municipal Code §13.36.110-5 regarding large parcel detention requirements.

### 2.1.7 PROJECT CONSTRUCTION

Construction of the gas station/convenience store and associated infrastructure improvements would begin after the 3.3-acre project site has been placed into federal trust. Construction would involve earthwork, placement of concrete foundations, steel and wood structural framing, masonry, electrical and mechanical work, and building finishing, among other construction trades. Construction of the Proposed Project would adhere to the standards equivalent to the International Building Code (IBC), 2009 Edition.

Underground storage tanks (USTs), piping, and fuel dispensers will be designed, built, installed, tested, and certified to prevent fuel leaks, as required by 40 CFR Part 280. Leak prevention measures required under 40 CFR Part 280 include corrosion resistant and double walled tanks and piping, inclusion of spill and overflow prevention equipment, and use of leak detection equipment.

Development is anticipated to begin in early 2013, with an anticipated six month construction schedule. A worksite safety plan would be prepared for construction.

### **2.1.8 PUBLIC SERVICES**

Public services would be provided to the Proposed Project in the same manner as those services are currently provided to other facilities in the area. Police and security services would be supplied primarily by local and federal law enforcement. The City of Anacortes Fire District (AFD) Station 1, located at 1016 13<sup>th</sup> Street in Anacortes, would provide primary fire protection and emergency medical services to the Proposed Project through development of a service agreement between the Samish Tribe and AFD. The County maintains a fire station approximately one mile east of the project site, as well as the Summit Park Volunteer Fire Station along Stevenson Road. The Samish Tribe also intends to negotiate a direct service agreement with the Summit Park Fire Station to supplement fire coverage provided by the City. Electric, telephone, and cable services would be extended to the site by local utility companies.

### **2.1.9 BEST MANAGEMENT PRACTICES**

Construction and operation of Alternative A would incorporate a variety of industry standard Best Management Practices (BMPs). In many cases, such as storm water pollution and prevention plans (SWPPP) prepared for National Pollutant Discharge Elimination System (NPDES) general construction permits, certain BMPs are requisite conditions of permit approval. **Chapter 5.0** presents select BMPs that have been specifically incorporated into the project design to avoid or minimize potential adverse effects resulting from the development of Alternative A.

## **2.2 ALTERNATIVE B - NO-ACTION ALTERNATIVE**

Under the No-Action Alternative, the 3.3-acre site would not be placed into trust for the benefit of the Samish Tribe and not be developed with the gas station and convenience store as identified under the Proposed Project. Jurisdiction of the project site would remain with the City. Ultimately, the 3.3-acre site could be developed by the Samish Tribe with the property owned in fee, or by a private purchaser, consistent with local zoning. However, for the purposes of the environmental analysis in this EA, it is assumed that the property would remain in its current undeveloped state and not developed.

## **2.3 COMPARISON OF THE PROPOSED PROJECT AND ALTERNATIVES**

Developing the Project Site for the proposed gas station/convenience store would convert 3.3 acres of vacant land to a commercial enterprise. Compared with the No-Action Alternative (Alternative B), impacts from developing the Proposed Project (Alternative A) would include temporary construction activities, increased impervious surface, loss of natural habitat, and increased human activities on the site. Selection of the Proposed Project would increase economic activity, and provide employment and income

opportunities for area residents. The Proposed Project would be consistent with the current and expected land uses in the area and would provide a service for the travelling public.

The Proposed Project meets the Samish Tribe's objectives of an enlarged land base and diversified economic development opportunities compatible with the existing setting of Skagit County along SR-20. While the No-Action alternative would not result in any of the environmental effects identified for the Proposed Project, this alternative would not meet the Samish Tribe's objectives of providing economic opportunities for Tribal members. Despite the proportionately greater overall effects on the environment of Alternative A, none of the identified impacts would be significant and unavoidable, following implementation of protective measures and mitigation recommended in this document.

## **2.4 ALTERNATIVES ELIMINATED FROM CONSIDERATION**

The intent of the analysis of alternatives in the EA is to present to decision-makers and the public a reasonable range of alternatives that are both feasible and sufficiently different from each other in critical aspects. Section 1502.14(a) of the CEQ's Regulations for implementing NEPA requires a discussion of alternatives that were eliminated from further study, and the reasons for their having been eliminated. The alternatives discussed herein were considered and rejected from further consideration because these alternatives were deemed infeasible or would not fulfill the stated purpose and need of the Proposed Action.

### **REDUCED INTENSITY DEVELOPMENT OF MARCH'S POINT**

The Tribe considered development of a smaller gas station/convenience store facility at the March's Point site, but rejected this from further consideration because a less intensive development would not fulfill the stated purpose and need of the Proposed Action which is to provide long-term economic development opportunities for the Tribe. Implementing a less intense development of the March's Point site would not substantially reduce any of the potential adverse environmental effects associated with developing the site.

### **OFF-SITE DEVELOPMENT OF CAMPBELL LAKE PROPERTY**

In an effort to present an additional off-site alternative to decision-makers and the public, other properties currently owned by the Samish Tribe were examined to determine their feasibility. The Campbell Lake Alternative consists of an alternative site for the development of a gas station/convenience store. The site comprises 80-acres located along SR-20 near Lunz Road, approximately 4.5 miles south of the March's Point site. The Samish Tribe considered the site because it is already in federal trust; however, the site was rejected from further consideration because of the rural/residential nature of the area, potential traffic safety considerations from vehicles entering and leaving the site, and low traffic volumes. The site

currently contains tribal housing units and undeveloped forest/open space that provides habitat for numerous biologically sensitive resources.

## **SECTION 3.0**

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### *DESCRIPTION OF AFFECTED ENVIRONMENT*

# SECTION 3.0

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## DESCRIPTION OF AFFECTED ENVIRONMENT

This section presents relevant information about existing resources and other values that may be affected by the Proposed Project and alternatives. In accordance with the National Environmental Policy Act (NEPA) and the Bureau of Indian Affairs (BIA) implementing guidelines (59 IAM 3-H), the existing conditions described herein provide the base line for determining the environmental effects identified in **Section 4.0**. Descriptions include the following resource and issue areas:

- Land Resources
- Water Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Socioeconomic Conditions / Environmental Justice
- Transportation and Circulation
- Land Use
- Public Services
- Noise
- Hazardous Materials
- Visual Resources

### 3.1 LAND RESOURCES

#### 3.1.1 GEOLOGICAL SETTING

The project site lies within the northern section of the Puget Trough physiographic province. This region is situated between the Cascade Range to the east and the Olympic mountains to the west. Oceanic crustal plates collide with the North American continent in this zone, with the oldest rocks occurring in the North Cascade Mountains to the east and the San Juan Islands in the west. The compression of these rocks along the Juan de Fuca Plate with the North American Plate approximately 37 million years ago resulted in a chain of volcanoes which has been erupting for the last 36 million years. More recently, the Cascade Range has emerged over the past 5 to 7 million years, including several mountains which are still volcanically active today (Lasmanis, 1991).

The State of Washington has a long history of volcanic activity and five volcanoes are situated within its borders. Mount Baker is the closest volcano to the project site; located approximately 40 miles to the

northeast. Mount Baker is the most glaciated of the Cascade Range volcanoes and contains more than 0.43 cubic miles of snow and ice. Crests of hydrothermally altered rock and cooled lava are visible above the glaciers and upper sides of the volcano. Although Mount Baker is considered volcanically active, it has not experienced frequent or explosive eruptions like some of the neighboring volcanoes. Mount Baker's most recent eruption was around 1870, although increased fumarolic activity and several small-volume debris avalanches were observed during the 1950's and 70's (WADNR, 2011).

Other major influences to the geology of Washington were the ice age eras beginning in more recent geologic history. The Puget Sound has repeatedly experienced advancing and retreating continental ice sheets, with the Fraser Glaciation being the most recent glacial period. Approximately 15,000 years ago the Cordilleran Ice Sheet covered the Puget Sound region with ice over 3,000 feet thick. This event occurred during the Vashon Glaciation, which was third phase of the Fraser Glaciation and is believed to have left the clearest imprint on the region (Baum, 2008). Ice from this glaciation began to retreat approximately 14,000 years ago and retreated north of the present-day U.S. - Canadian border within 3,000 years. Land within the Puget Sound region was left scoured upon retreat of the Cordilleran Ice Sheet. The newly exposed ground revealed numerous land formations created by the advancing and retreating glacier, including the Puget Sound basin, Hood Canal, recessional lakes, and hundreds of drumlin hills. Beach erosion and deposition, volcanic mudflow deposits, sea-level rise, and tectonic deformation are other geologic activities resulted from the Vashon Glaciation.

### **3.1.2 TOPOGRAPHY**

The project site, situated along the western terminus of the Skagit River Drainage Basin, is located along an inlet to Fidalgo Island with elevations ranging from 70 to 80 feet above mean sea level (amsl). Slopes on the project site generally range from 0 to 8 percent. The western Skagit Basin area is underlain primarily by glacially deposited Mesozoic sedimentary and volcanic rocks. Gently sloping topography is found within the surrounding City of Anacortes (City) with elevation ranging from sea level to 1,270 feet amsl at the summit of Mt. Erie to the west of the project site.

### **3.1.3 SEISMIC CONDITIONS**

The State of Washington is situated at a convergent continental margin, which is the collisional boundary between two tectonic plates. Within Washington, the Cascade Range is the foundation of an active volcanic arc associated with the under-thrusting of oceanic lithosphere beneath North America along the Cascadia subduction zone (Personius and Nelson, 2005). The Cascadia subduction zone, which is the convergent boundary between the North American continental plate and the Juan de Fuca oceanic plate, lies offshore of the coast of Washington. In addition to the eastward motion of the Juan de Fuca plate (at a rate greater than five millimeters per year), the northward-moving Pacific plate is pushing the Juan de Fuca plate north, causing complex seismic strain to accumulate and abruptly release in the form of earthquakes (Personius and Nelson, 2005).

The project site is located on the northern edge of the Puget Sound Fault Region. Faults within this region form a complex of approximately eleven interrelated seismogenic faults. These faults consist of zones of compound faulting at the boundaries of crustal uplifts and sedimentary basins. Seismic hazards associated with this region include subduction, intraslab, and shallow crustal earthquakes; all of which are capable of generating a magnitude of six or above (USGS, 2010).

### ***MOMENT MAGNITUDE***

The Puget Sound Fault Region contains both active and potentially active faults and is considered a region of moderate to high seismic activity. A *potentially active* fault is defined as a fault that has shown evidence of surface displacement during the Quaternary period (last 1.6 million years). Small to moderately large earthquakes can also occur on previously unrecognized faults. Earthquake risk is moderate in the areas surrounding the project site because of the close proximity to active faults with relatively low slip rates.

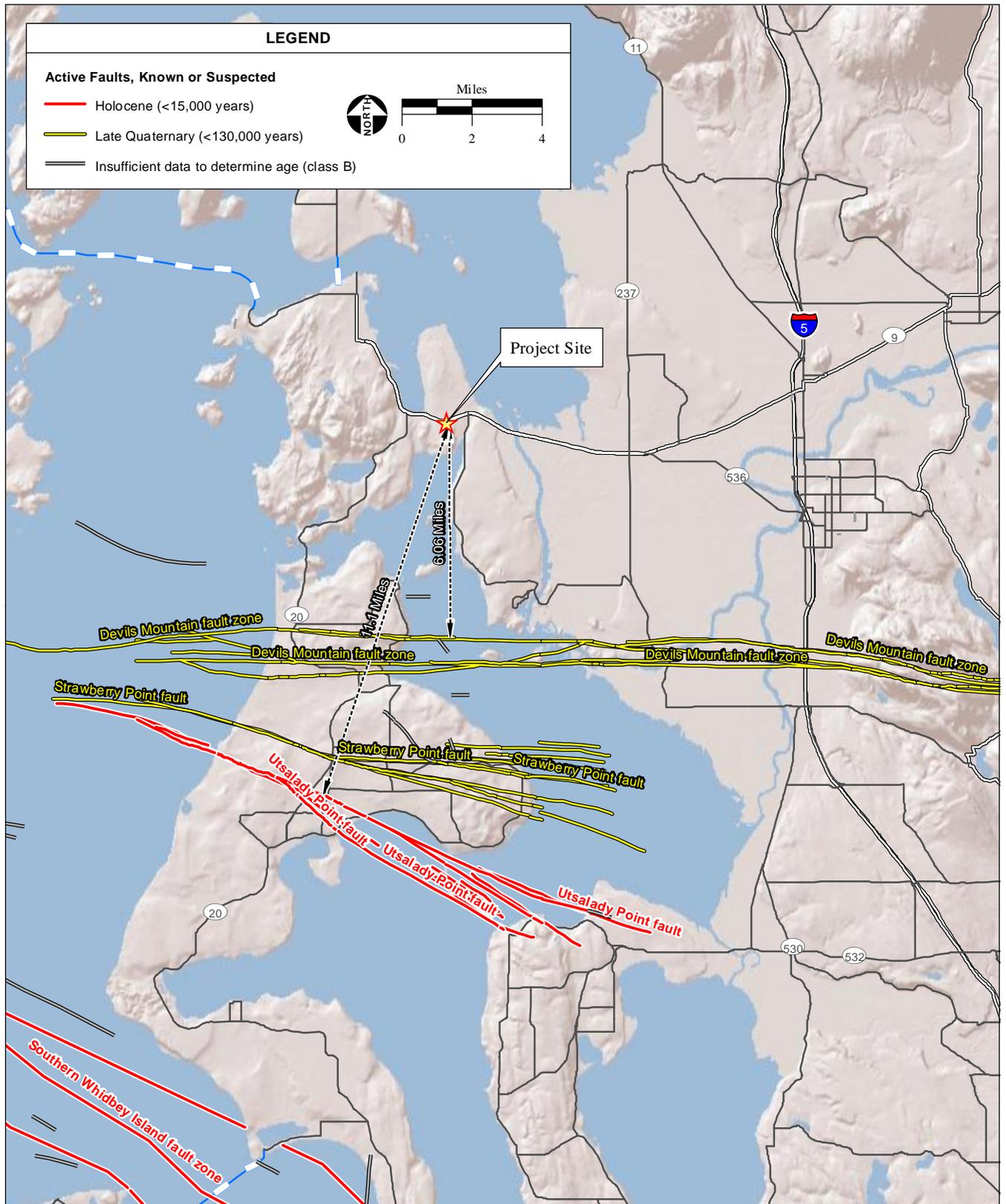
Moment magnitude is a relatively new scale to describe the size of an earthquake and replaces the Richter scale. Moment magnitude is based on a physical quantity, called moment, which can be determined either from the geometry of the fault plane or from the total energy recorded on a seismogram. It is dependent on the area of the fault, the amount of slip across the fault, and the rigidity of the rock. Moment magnitude provides a physically meaningful measure of the size of a faulting event (USGS, 2002). The maximum moment magnitude is an estimate of the size of a characteristic earthquake capable of occurring on a particular fault. Principal faults capable of producing significant ground shaking in the region, historical slip rates, maximum moment magnitudes, and distances from the site are listed in **Table 3-1** and **Figure 3-1**.

**TABLE 3-1**  
FAULTS IN THE VICINITY OF THE PROJECT SITE

<b>Fault Zone</b>	<b>Approximate Distance from Project Site</b>	<b>Slip Rate (mm/year)</b>	<b>Maximum Moment Magnitude</b>	<b>Activity</b>
Devils Mountain	6.5 miles south	0.2	7.5	Active
Strawberry point	9.3 miles south	0.6	6.7	Active
Utsalady Point	11.2 miles south	0.2	6.7	Active
Southern Whidbey Island	21 miles south	1.0	7.0	Active
Unnamed Fault	43.5 miles southwest	0.2	NR	Potentially Active
Seattle	48.5 miles south	1.0	6.5	Active
Little River	51.5 miles southwest	0.2	NR	Potentially Active

NOTES: Slip Rate = Long-term average total of fault movement including earthquake movement, slip, expressed in millimeters  
NR = Not reported on USGS databases.

SOURCE: USGS, 2009



SOURCE:USGS Earthquake Hazards Program, 2011; StreetMap World, 2010; AES, 2011

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**Figure 3-1**  
Regional Fault Map

### Devils Mountain Fault Zone

The Devils Mountain fault zone is the closest fault zone to the project site. The fault zone originates at the western base of the Cascade Range foothills and extends westward 76.4 miles to Vancouver Island. This north-dipping fault intersects with Darrington fault zone at its east end, and possibly merges with the Leech River and/or San Juan faults on Vancouver Island to the west. The central section of the Devils Mountain fault zone is located approximately 6.5 miles to the south of the project site. In the vicinity of the project site the fault is a left-lateral, oblique-slip fault with a transpressional structure. Although this fault is still considered active, seismic movement has not been recorded for this fault in recent history. The maximum moment magnitude expected on the Devils Mountain fault is 7.5 (**Table 3-1**) (USGS, 2009).

### Southern Whidbey Island Fault Zone

The Southern Whidbey Island (SWBI) Fault Zone possesses the greatest potential to cause strong seismic shaking at the project site. Located approximately 21 miles to the southwest is a region where the Cascade block to the northeast is floored by a diverse collection of pre-tertiary rock; and the Coast Range block to the southwest is floored by lower Eocene marine basaltic rocks from the Crescent Formation. The SWBI fault is a dextral strike-slip fault with inferred driving forces resulting from oblique convergence and clockwise rotation along the continental margin. The maximum moment magnitude from faults associated with the SWBI is expected to exceed 7.0 (**Table 3-1**) (USGS, 2009).

### 3.1.4 SOIL TYPES AND CHARACTERISTICS

The project site contains three soils formed in glacial drift from mixed rock sources (NRCS, 2011b). **Table 3-2** summarizes the characteristics for each soil type, while **Figure 3-2** shows the location of each soil type on the project site.

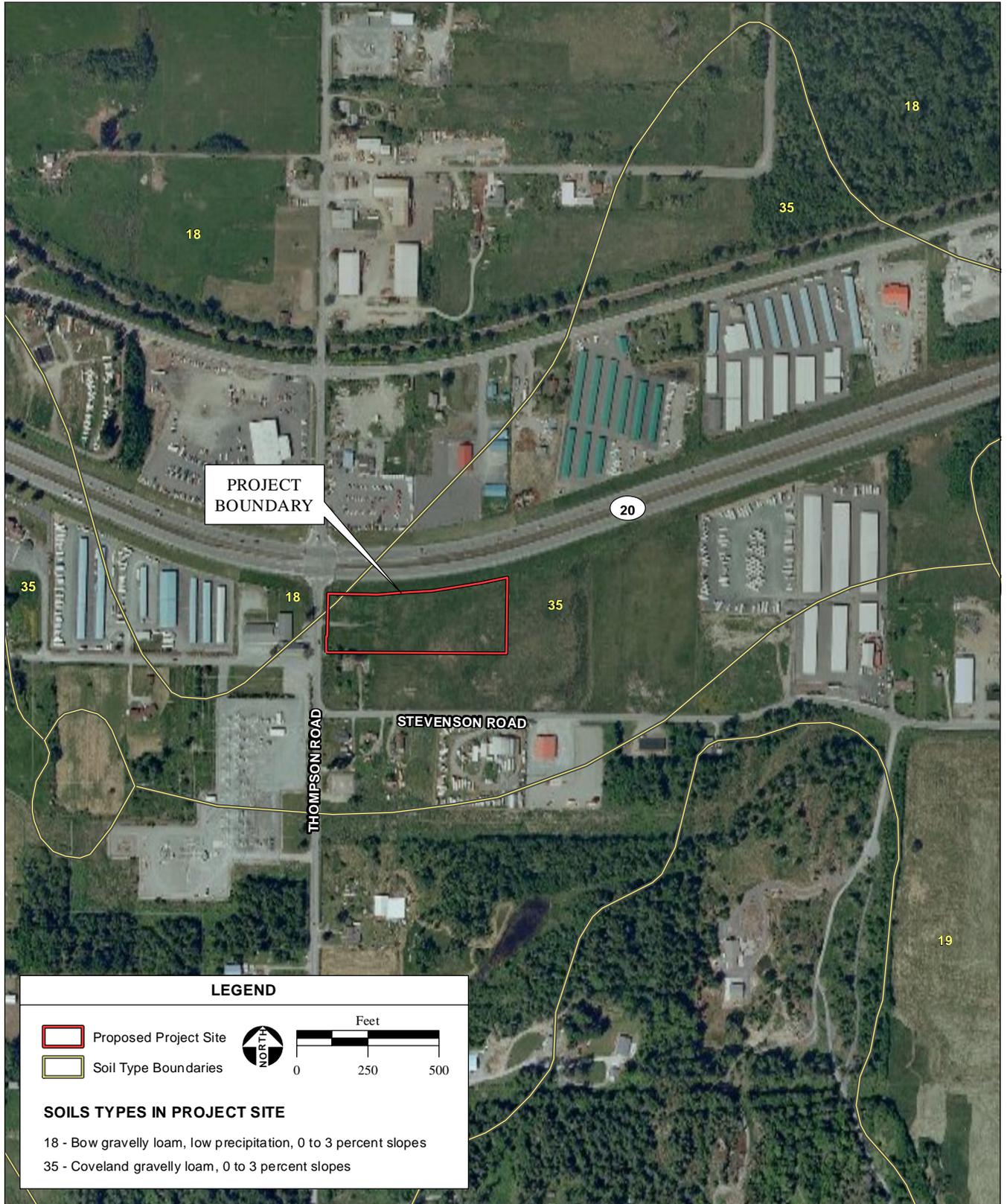
**TABLE 3-2**  
PROJECT SITE SOILS

Map Unit Symbol	Map Unit Name	Slope Range	Erosion Hazard	Percent of Project Site
18	Bow gravelly loam	0-3%	Slight to Moderate	0.6%
19	Bow gravelly loam	3-8%	Slight to Moderate	0.3%
35	Coveland gravelly loam	0-3%	Moderate	99.1%

SOURCE: NRCS Soil Survey, 2011b

Descriptions of the soil types are included below:

**Bow gravelly loams** are deep and relatively poorly drained soils derived from lacustrine material and volcanic ash. These soils are formed by gravelly glacial drift, where materials are tilled and deposited



SOURCE: USDA/NRCS Soil Surveys, 1998-2009; AEX Aerial Photograph, 5/15/2009; AES, 2011

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**Figure 3-2**  
Soils Map

along the path of advancing glaciers. Lacustrine is a material that is moved by water and deposited into fresh water lakes. Bow gravelly loams typically have low bulk density and levels of organic matter. Available water capacity tends to be high while permeability is generally low. Fertility of these soils is usually limited by a high water table that is close to the surface for most of the year (NRCS, 2011a).

**Coveland gravelly loams** are deep and poorly drained soils that are found throughout a majority of the project site. These soils are formed in glacial drift areas underlain by dense glaciomarine deposits. These deposits were formed on the prehistoric sea floor by glacial meltwater and debris flows from the surface of a glacier. Coveland gravelly loams are typically found in valley depressions and outwash plains where they have aquic conditions to the soil surface. High water tables during the winter months are common with these soils and usually result in frequent ponding from December to March (NRCS, 2011a).

## ***SOIL HAZARDS***

### ***Soil Erosion***

Soil erosion is the wearing and removal of soil materials from the ground surface and the transportation of these soil materials resulting in deposition elsewhere. Mechanisms of soil erosion include stormwater runoff and wind, as well as human activities, such as changes in drainage patterns and removal of vegetation. Factors that influence erosion include physical properties of the soil, topography (slope), and annual rainfall and peak intensity. The United States Department of Agriculture (USDA) rates the erosion potential of a map unit by taking all of the above into consideration. The ratings range from “slight” to “very severe” (NRCS, 2011b). The erosion ratings of the three soils within the project site are provided above in **Table 3-2**.

### ***Liquefaction***

Liquefaction involves soils that become highly saturated and lose their cohesive strength and subsequently act as a liquid, rather than as a solid mass. Soils comprised of sands and inland fill in areas with high groundwater tables or heavy rainfall are subject to liquefaction during intense seismic shaking events. The soils on the project site have a moderate percentage of silt and volcanic ash, making the area susceptible to liquefaction.

### ***Landslides***

Areas susceptible to landslides are comprised of weak soils on sloping terrain. Heavy rains or strong seismic shaking events can induce landslides. The project site is located within an area designated as having a low incidence of landslides, although old landslide and unstable areas are located in the vicinity of the project site (Ecology, 1979).

## **3.1.5 MINERAL RESOURCES**

A search of the USGS Mineral Resources Data System found no known mineral resources within the project site. There are several on-going mining activities and operations in the vicinity of the project site.

Mining activities are currently focused on sand and gravel surface mines for construction. Copper, gold, silver, and manganese have also been mined in lesser amounts west of project site.

## **3.2 WATER RESOURCES**

### **3.2.1 SURFACE WATER, DRAINAGE, AND FLOODING**

#### *Watersheds and Hydrology*

The project site is located within the Puget Sound hydrologic subregion as well as the Strait of Georgia cataloging unit (no. 17110002). The Puget Sound is classified as a fjord system of flooded glacial valleys with one major and one minor connection with the Strait of Juan de Fuca. The major connection is through Admiralty Inlet where approximately 98 percent of the total tidal exchange flows through; Deception Pass provides the other two percent of the tidal exchange. Deception Pass is situated approximately 5.5 miles southwest of the project site. A system of saltwater estuaries within Puget Sound is contained within three major basins supplied with water from the many tributaries of the Olympic and Cascade Mountain watersheds. These watersheds are highly seasonal with a peak monthly discharge rate of approximately 367,000 cubic feet per second (cfs), and a mean annual discharge rate of 41,000 cfs (Lincoln, 2000). The Puget Sound encompasses a water area of roughly 1,020 square miles.

The Strait of Georgia is located immediately northwest of the project site, adjoins to the Puget Sound, and separates Vancouver Island from Washington and the British Columbia mainland. It is approximately 150 miles in length and has a maximum width of 34 miles. Haro and Rosario Straits mark the southern terminus of the Strait of Georgia approximately 32 miles and 11.5 miles west of the site, respectively. The mainland coast is marked by many inlets for the Strait, including the Fraser River, which supplies roughly 80 percent of the freshwater flow. Mean depth within the Strait is approximately 510 feet with a maximum depth of 1,380 feet.

Annual rainfall in Skagit County ranges from 26 inches (Anacortes area) to more than 60 inches near the City of Concrete to the east (Skagit County, 2011). Most of the precipitation falls during the winter, and substantial snowfall is limited to higher elevations. Although very close to sea level, the City receives approximately 4.5 inches of snowfall annually.

Mount Baker, approximately 40 miles northeast of the project site, experiences much higher levels of precipitation due to its increased elevation. Most of this precipitation falls as snow during the winter months, with annual lows of 30 inches of snow/rain in the lowlands and as much as 140 inches annually at the summit.

#### *Drainage*

Runoff from the eastern portion of the project site flows in a northeastern direction into a manmade drainage ditch located on the adjacent Tribal-owned property. Runoff from the eastern portion eventually

flows into Padilla Bay. The central portion of the project site drains to the north where it enters a second manmade drainage ditch along State Route 20 (SR-20). This second ditch runs east-west and ties into the north-south ditch located on the adjacent site. Runoff from the western portion of the site drains into a manmade drainage ditch situated alongside Thompson Road. This ditch ties into the east-west ditch located along SR-20. Site runoff flows drain into an 18-inch off-site Washington State Department of Transportation (WSDOT) culvert that traverses north into an underground drainage structure located under the intersection of Thompson Road and SR-20. Stormwater from these drainages ultimately flows into Fidalgo Bay.

### ***Flooding***

Executive Order 11988 pertaining to floodplain management states that each federal agency shall “provide leadership and shall take action to reduce the risk of flood loss.” In order for the Bureau of Indian Affairs (BIA) to carry out its responsibility, the order requires determination whether a project is located within a floodplain and consideration of alternative project locations within a floodplain. If the project must reside on a floodplain, the agency must minimize any potential impacts. The Federal Emergency Management Agency (FEMA) is responsible for predicting the potential for flooding in most areas. FEMA routinely performs this function through the update and issuance of Flood Insurance Rate Maps (FIRMs), which depict various levels of predicted inundation.

FIRM map number 5301510225C shows that the project site contains a Zone C classification (**Appendix C - FEMA, 1985**). Zone C is designated for those lands which are located above 500 year floodplain and have a 0.2 percent chance of an annual flood.

### **3.2.2 GROUNDWATER**

Groundwater provides water supply for agricultural, municipal, and individual domestic water systems throughout Skagit County. Alluvial and recessional outwash aquifers are present throughout various regions of the Skagit River Valley. Aquifer thicknesses range from 200 to 450 feet in the Skagit River Valley and water is predominantly unconfined with exception to areas where the aquifer is exposed at land surface or not fully saturated by the surrounding aggregate. Precipitation is the main process of recharging the aquifers within the vicinity of the project site (USGS, 2009b).

Groundwater levels in the Lower Skagit River Basin have remained relatively stable over the past 30 years, with typical seasonal fluctuations, but no significant long-term trends (USGS, 2009b). Abundant rainfall (26 to over 60 inches per year) and snowmelt during the spring and summer generally recharge the basin to capacity each spring. During drought conditions, increased drawdown occurs during summer months with less recovery in winter months. Post-drought levels have historically rebounded to approximately the same as pre-drought conditions.

### 3.2.3 WATER QUALITY

#### *Surface Water Quality*

The Federal Clean Water Act (CWA), 33 U.S.C. Section 1301(a)(2), sets forth national goals that waters shall be “fishable, swimmable” (Section 101 (a)(2)). The CWA addresses point and non-point sources of pollution (Sections 402 and 319, respectively), both of which are controlled through the National Pollution Discharge Elimination System (NPDES). A NPDES general construction permit must be obtained in order to discharge pollutants into “Waters of the U.S.” In some states, the United States Environmental Protection Agency (EPA) has delegated permitting authority to a regional water quality agency, in this case the Washington State Department of Ecology (Ecology). However, the EPA retains authority to regulate discharges to waters on tribal lands, including the project site. The CWA also directs states to establish water quality standards for waterways in their jurisdiction and to review and update these standards every three years (Section 303(c)).

Section 303(d) of the CWA requires states to periodically prepare a list of all surface waters in their respective jurisdictions for which beneficial uses of the water – such as for drinking, recreation, aquatic habitat, and industrial use – are impaired by pollutants. These include water bodies that do not meet state surface water quality standards and are not expected to improve within the next two years. States establish a priority ranking of these impaired waters for purposes of developing water quality control plans that include Total Maximum Daily Loads (TMDLs). A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and includes an allocation for each of the pollutant’s sources. These water quality control plans describe how an impaired water body will meet water quality standards through the use of TMDLs.

The surface water quality standards for Washington include both narrative and numerical water quality objectives. The project site is positioned near the Fidalgo Bay portion of an area delineated by Ecology as the Lower Skagit-Samish Water Resource Inventory Area (WRIA 03). The water quality objectives for Fidalgo Bay and its surrounding areas are to protect the use designations, including aquatic life spawning and rearing habitat, primary contact recreational use, and a variety of water supply and miscellaneous uses (Ecology, 2011a). The water quality objectives are summarized below in **Table 3-3**.

The primary surface water bodies within the vicinity of the project site are the Lower Skagit River, Padilla Bay, and Fidalgo Bay. The Lower Skagit River is listed on the Washington 303(d) list as Class A, excellent waters. The south fork of the Skagit River was previously added to the 1996/1998 CWA Section 303(d) list of impaired water for elevated levels of fecal coliform, but has since been removed. Implementation of a nutrient management program, reduction of failing septic systems, and an updated wastewater treatment plant have reduced fecal coliform to levels within water quality standards (EPA, 2009).

**TABLE 3-3**  
**WASHINGTON STATE WATER QUALITY OBJECTIVES FOR WRIA 03**

Constituent	Water Quality Objective
Fecal Coliform	Fecal coliform organism levels must not exceed a geometric mean value of 100 colonies /100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained for calculating the geometric mean value exceeding 200 colonies /100 mL.
Dissolved Oxygen (DO)	For waters designated as aquatic life spawning and rearing habitat, the 1-Day minimum level for dissolved oxygen is 8.0 mg/L. When the D.O. is lower than 8.0 mg/L due to natural conditions, then human actions considered cumulatively may not cause the D.O. of that water body to decrease more than 0.2 mg/L.
Total Dissolved Gas	Total dissolved gas shall not exceed 110% of saturation at any point of sample collection.
Temperature	The 7-day average of the daily maximum (7-DADMax) temperatures shall not exceed 17.5°C (63.5°F). When the water body's temperature is warmer than 17.5°C (63.5°F) due to natural conditions, then human actions considered cumulatively may not cause the 7-DADMax temperature of that water body to increase more than 0.3°C (0.54°F).
pH	pH shall be within the range of 6.5 to 8.5 with a human-caused variation within the above range of less than 0.5 units.
Turbidity	Turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10% increase in turbidity when the background turbidity is more than 50 NTU.
Toxicity	Toxic substances shall not be introduced above natural background levels in waters of the state which have the potential either singularly or cumulatively to adversely affect characteristic water uses, cause acute or chronic toxicity to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the department.
Radioactive Substances	Deleterious concentrations of radioactive materials for all classes shall be as determined by the lowest practicable concentration attainable and in no case shall exceed: 1/12.5 of the values listed in WAC 246-221-290 or EPA Drinking Water Regulations for radionuclides.
Aesthetics	Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.

milliliters; mg/L = milligrams per liter; NTU = Nephelometric Turbidity Units  
 SOURCE: Ecology, 2011b

Padilla Bay stretches eight miles from north to south and is located approximately 1.2 miles northeast of the project site. The bay is designated for research and education through the National Estuarine Research Reserve System and is a primarily saltwater estuary at the terminus the Skagit River (NERRS, 2011). The Padilla Bay Reserve is jointly managed by the National Oceanic and Atmospheric Administration (NOAA) and the Washington State Department of Ecology (NERRS, 2011). The Skagit

River deposits large amounts of sediment into Padilla Bay, making it relatively shallow with several miles of mud flats during low tide events. Water quality within Padilla Bay is generally well within State standards. However, elevated turbidity and fecal coliform levels have been observed during heavy rain events. These elevated levels are characteristic of estuaries which receive drainages from nearby and livestock and agricultural properties (SST, 2009).

Approximately one mile northwest of the project site is the shallow embayment of Fidalgo Bay. This bay encompasses 1,575 acres of salt marshes, tide flats, mudflats, and sand and gravel beaches. The City marks the western boundary of Fidalgo Bay while March's Point extending north of the project site indicates the eastern extent of the bay. In April of 2008, 650 acres of the bay were signed in Aquatic Reserve status by the Washington State Department of Natural Resources. This designation entails a 90-year term and the implementation of restoration and research activities guided by its published management plans (Samish DNR, 2010).

In a 2005-2010 study conducted by the Samish Indian Nation's Department of Natural Resources (Samish DNR), various water quality indicators and pollutants were monitored over a five-year period in order to assess the water quality and possible sources of contaminants in Fidalgo Bay. Nearly all of the outfalls into the Bay experienced fecal coliform levels in violation of Washington State Water Quality Standards. The Samish DNR has been working alongside the Skagit County Health Department and Skagit Conservation District to assist landowners in developing mitigation strategies to reduce the concentrations of fecal coliform found in water on their properties which eventually flow in Fidalgo Bay. Other indicators, such as dissolved oxygen, pH, temperature, and nutrient levels were generally within the water quality standards of Washington State (Samish DNR, 2010).

### ***Groundwater Quality***

Groundwater is a secondary source of public drinking water for the City. Under the mandate of the Safe Drinking Water Act, the EPA sets legally enforceable National Primary Drinking Water Regulations (primary standards) that apply to public water systems within the State of Washington. These standards are established to protect human health by limiting the levels of contaminants in drinking water. The EPA also defines National Secondary Drinking Water Regulations (secondary standards) for contaminants that cause cosmetic and aesthetic effects, but not health effects. The EPA recommends that these secondary standards be met but does not require systems to comply with them. Both primary and secondary drinking water standards are expressed as either Maximum Contaminant Levels (MCLs), which define the highest level of a contaminant allowed in drinking water, or Maximum Contaminant Level Goals (MCLGs), which define the level of a contaminant below which there is no known or expected risk to health. During 2009 monitoring at the City's water treatment plant indicated that all MCLGs have been met (City of Anacortes, 2010a).

### 3.3 AIR QUALITY

#### 3.3.1 PROJECT AREA AND VICINITY

The project site lies under the jurisdictional area of the Northwest Clean Air Agency (NWCAA). The NWCAA regulates air quality through regulation of air pollutant emissions from stationary sources within Skagit County. However, the once the project site is taken into trust, air quality would be under the jurisdiction of the EPA.

The City enjoys a mild, marine climate due to its location on the inland waters of Puget Sound. The prevailing southwesterly flow of weather is interrupted by the Olympic Mountain Range creating a “rain shadow”. The City’s annual rainfall is approximately 26 inches and daytime temperatures averaging in the 40s during the winter and highs in the 70s in the summer.

#### 3.3.2 REGULATORY CONTEXT

##### *FEDERAL*

The Federal Clean Air Act (CAA) was enacted in 1970 and last amended in 1990 (42 USC §7401 et seq.) for the purposes of protecting and enhancing the quality of the nation’s air resources to benefit public health, welfare, and productivity. The CAA establishes a framework for national, state, and local air pollution control efforts. Basic components of the CAA and its amendments include national ambient air quality standards (NAAQS) for criteria air pollutants, requirements for state implementation plans (SIPs) to meet the NAAQS, motor vehicle emissions standards, stationary source emissions standards and permits, and enforcement provisions. The EPA is the federal agency responsible for establishing the NAAQS, overseeing state air programs as they relate to the CAA, approving SIPs, and setting emissions standards for mobile sources under federal jurisdiction.

##### *National Ambient Air Quality Standards*

The EPA, under authority of the CAA, developed primary and secondary NAAQS in 1971. The primary NAAQS protect the public health with an adequate margin of safety and the secondary standards protect the public welfare from known or anticipated adverse effects to aesthetics, crops, or architecture (42 USC §7409[b]). The EPA designated six pollutants of primary concern as criteria air pollutants (CAPs): carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), ozone, lead (Pb), and particulate matter (PM). The NAAQS are time-averaged maximum ambient air concentrations. For various CAPs, more than one time-averaged maximum concentration has been established by the EPA in order to address the typical exposures to the population from natural and anthropogenic sources in the environment. Concentrations above these time-averaged maximum concentrations are anticipated to cause adverse health effects to sensitive receptors (defined below). The violation criteria established by the EPA are based upon these time-averaged maximum concentrations specific to each CAP. For example, the NAAQS for ozone must be exceeded on more than three days in three consecutive years in order to constitute a violation. On the other hand, if the NAAQS for CO are exceeded on more than one

day in any given year, a violation has occurred. **Table 3-4** presents the violation criteria for the various averaging times of the NAAQS for each CAP. The EPA allows states the option to develop independent standards only if the standards are more stringent than the NAAQS. The State of Washington has selected to designate independent ambient air quality standards. These standards are not applicable to trust land or the Proposed Project itself.

**TABLE 3-4**  
NAAQS AND ASSOCIATED VIOLATION CRITERIA

Pollutants	Times	Primary		Violation Criteria
		ppm	$\mu\text{g}/\text{m}^3$	
Ozone	8 hours	0.75	157	The 3-year average of the annual 4 <sup>th</sup> highest daily 8-hour maximum is not to be above $0.075 \mu\text{g}/\text{m}^3$
Carbon Monoxide	8 hours	9	10,000	If exceeded on more than 1 day per year
	1 hour	35	40,000	If exceeded on more than 1 day per year
Nitrogen Dioxide	Annual average	0.053	-	Not to be above 0.053 ppm in a calendar year.
	1 hour	0.100	-	The 3-year average of the 98 <sup>th</sup> percentile of the daily maximum 1-hour average at each monitor is not above 0.100 ppm.
Sulfur Dioxide	Annual average	0.03	-	Not to be above 0.03 ppm in a calendar year.
	24 hours	0.14	-	If exceeded on more than 1 day per year
PM <sub>10</sub>	24 hours	-	150	Not to be above $150 \mu\text{g}/\text{m}^3$ on more than three days over three years with daily sampling
PM <sub>2.5</sub>	Annual arithmetic mean	N-	15	The 3-year average from a community-oriented monitor is not above $15 \mu\text{g}/\text{m}^3$ .
	24 hours	-	35	The 3-year average of the 98 <sup>th</sup> percentile for each population-oriented monitor within an area is not above $35 \mu\text{g}/\text{m}^3$ .
Lead	Rolling –Month Average	-	0.15	Not to be above $0.15 \mu\text{g}/\text{m}^3$ .
	Quarterly Average	-	1.5	-
SOURCE: EPA, 2011.				

### *Attainment Status*

To determine conformance with the NAAQS, states are responsible for providing ambient air monitoring data to the EPA. The EPA then determines, using the violation criteria, if the results of the monitoring data indicate compliance with the NAAQS. The EPA classifies areas in compliance with the NAAQS as being in "attainment". Areas that do not meet the NAAQS are classified as being in "nonattainment" by the EPA. The NWCAA (including Skagit County) has been determined to be in attainment or unclassifiable for all federal air quality standards and in attainment or unclassified for all air quality

standards. As shown in **Table 3-5**, Skagit County meets the federal standards or is unclassifiable for all pollutants.

**TABLE 3-5**  
SKAGIT COUNTY NAAQS ATTAINMENT STATUS

POLLUTANT	NAAQS
Ozone (8-hour)	Attainment
PM <sub>10</sub> (24-hour, annual)	Attainment
PM <sub>2.5</sub> (annual)	Attainment
Carbon Monoxide (8-hour, 1-hour)	Unclassifiable/Attainment
Nitrogen Dioxide (annual, 1-hour)	Unclassifiable/Attainment
Sulfur Dioxide (24-hour, 1-hour)	Unclassified
Lead (30-day average)	Unclassifiable/Attainment

SOURCE: Ecology, 2011.

### ***Federal Conformity***

The federal General Conformity Rule implements Section 176(c) of the CAA, and establishes minimum thresholds for reactive organic compounds (ROGs) and nitrogen oxides (NO<sub>x</sub>) (ozone precursors), particulate matter (PM), and other regulated constituents for non-attainment and maintenance areas.

Under the General Conformity Rule, the lead agency with respect to a federal action is required to demonstrate that the proposed federal action conforms to the applicable SIP before the action is taken. There are two phases to a demonstration of general conformity:

- 1) The Conformity Review process, which entails an initial review of the federal action to assess whether a full conformity determination is necessary, and
- 2) The Conformity Determination process, which requires that a proposed federal action be demonstrated to conform to the applicable SIP.

The Conformity Review requires the lead agency to compare estimated emissions to the applicable general conformity *de minimis* threshold(s). If the emission estimates from step one is below the applicable threshold(s), then a general conformity determination is not necessary and the full Conformity Determination is not required. If emission estimates are greater than *de minimis* levels, the lead agency must conduct a formal Conformity Determination. The NWCAA is in attainment or unclassifiable for all national ambient air quality standards.

The SIP for Washington is officially entitled *A Plan for the Implementation, Maintenance and Enforcement of National Ambient Air Quality Standards in the State of Washington* and is a number of documents that set forth the State's strategies for achieving federal air quality standards. The Code of Federal Regulations (CFR Title 40, Part 52, Subpart WW Section 52.2479) lists all of the items that are

included in the Washington SIP. Ecology is the air quality management agency for a geographic region of the state. In the case of northwest Washington, the NWCAA is responsible for enforcing federal, state, and local air pollution standards, as well as governing air pollutant emissions from new and existing sources. Ecology's role is to establish statewide standards and rules that the NWCAA must meet. Local agencies may adopt more stringent standards and rules if the local air quality requires such action. The NWCAA has the responsibility for regulating all outdoor air pollution sources within its jurisdiction, with the exception of automobiles, chemical paper and pulp mills, and aluminum reduction plants. Local air authorities prepare the SIP and submit them to Ecology for approval and forwarding to the EPA. As discussed above, the SIP for the State of Washington is not a single document, but a compilation of plans, programs, local air quality rules, and state and federal rules.

NWCAA and Ecology operate an air quality monitoring network that determines whether northeast Washington complies with the NAAQS. Additionally, the State of Washington has codified several of the NAAQS in the Washington Administrative Code (WAC) Title 173, Chapters 470, 474, and 475.

### ***SKAGIT COUNTY***

Air quality is not identified as a critical area under the Skagit County Comprehensive Plan. Skagit County seeks to maintain a high level of air quality by working with the NWCAA to minimize individual and industrial impacts on air quality. Skagit County contains transportation policies that reduce air pollution; encourage alternatives to outdoor burning; promote environmentally sound heating methods; and assure that industrial growth utilizes environmentally sound business processes.

## **3.3.3 CLIMATE CHANGE**

### ***FEDERAL***

#### ***Clean Air Act***

In 2007, the US Supreme Court ruled that the CAA authorizes the EPA to regulate CO<sub>2</sub> emissions from new motor vehicles (*Massachusetts et al. vs. Environmental Protection Agency et al.*). The Court did not mandate that EPA enact regulations to reduce GHG emissions, but found that the only instances where EPA could avoid taking action were if it found that GHGs do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHGs contribute to climate change. On December 15, 2009, EPA issued a final endangerment and cause finding (74 FR 66496), stating that high atmospheric levels of greenhouse gases "are the unambiguous result of human emissions, and are very likely the cause of the observed increase in average temperatures and other climatic changes." The EPA further found that "atmospheric concentrations of greenhouse gases endanger public health and welfare within the meaning of Section 202 of the Clean Air Act." The finding itself does not impose any requirements on industry or other entities.

### *National Environmental Policy Act*

Climate change is a global phenomenon attributable to the sum of all human activities and natural processes. In 1997, the Council on Environmental Quality (CEQ) circulated an internal draft memorandum (CEQ, 1997a) on how global climate change should be treated for the purposes of the National Environmental Policy Act (NEPA). The CEQ draft memorandum advised federal lead agencies to consider how proposed actions subject to NEPA would affect sources and sinks of green house gases (GHGs). During the same year, CEQ released guidance on the assessment of cumulative effects in NEPA documents (CEQ, 1997b). Consistent with the CEQ draft memorandum, climate change impacts were offered as one example of a cumulative effect.

The following are the most recent regulatory actions taken by the EPA:

- In response to the FY2008 [Consolidated Appropriations Act](#) (H.R. 2764; Public Law 110–161), EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule. Signed by the Administrator on September 22, 2009, the rule requires that suppliers of fossil fuels and industrial GHGs, manufacturers of vehicles and engines outside of the light duty sector, and facilities that emit 25,000 metric tons or more of GHGs per year to submit annual reports to EPA. The rule is intended to collect accurate and timely emissions data to guide future policy decisions on climate change.
- On September 30, 2009, EPA proposed new thresholds for GHG that define when CAA permits under the New Source Review and title V operating permits programs would be required.
- In February, 2010 the CEQ Chair released a memorandum, *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*. The memorandum provides guidance on how project-related GHG emission should be analyzed in NEPA documents. The Draft Guidance provides that a NEPA climate change analysis shall provide quantification and mitigation to reduce GHG emissions. The guidance also provides that 25,000 metric tons of GHG emissions per year may be a helpful guideline to assist lead agencies in making informed decisions on climate change impacts resulting from a project subject to NEPA. The guidance notes that the 25,000 metric tons is not a threshold for evaluating climate change on the project level.

### **STATE**

#### *Executive Order (EO) 07-02*

The Washington Climate Change Challenge, signed by the State Governor in February 2007, established goals for reducing greenhouse gas emissions, creating jobs and reducing fuels spending. It was the basis for creating the Climate Advisory Team to recommend ways to reduce greenhouse gas emissions. EO 07-02 also directed the state to assess steps required to prepare for the impacts of climate change on water supply, public health, agriculture, forestry and coastal areas.

*House Bill 2815*

House Bill 2815 (HB 2815) was passed in 2008 as part of the Governor's Climate Change Framework. HB 2815 is codified in Revised Code of Washington 70.235 (RCW 70.235). RCW 70.235 requires the following:

The state shall limit emissions of greenhouse gases to achieve the following emission reductions for Washington State:

- By 2020, reduce overall emissions of greenhouse gases in the state to 1990 levels;
- By 2035, reduce overall emissions of greenhouse gases in the state to twenty-five percent below 1990 levels;
- By 2050, the state will do its part to reach global climate stabilization levels by reducing overall emissions to fifty percent below 1990 levels, or seventy percent below the state's expected emissions that year.

*EO 09-05*

Governor Christine O. Gregoire signed Executive Order 09-05 (EO 09-05) *Washington's Leadership on Climate Change* on May 21, 2009. EO 09-05 directs Ecology to:

- Continue to work with six other Western states and four Canadian provinces in the Western Climate Initiative to develop a regional emissions reduction program design.
- Advise the federal government and Washington's congressional delegation on designing a national program that reflects state priorities.
- Work with companies that emit 25,000 metric tons or more each year to develop emission reduction strategies.
- Work with businesses and interested stakeholders to develop recommendations on emission benchmarks by industry to make sure 2020 reduction targets are met.
- Work with TransAlta to reduce emissions from the company's coal-fired power plant near Centralia by more than half.
- Work with Department of Natural Resources to develop forestry offset program and other financial incentives for the forestry and the forest products industry.
- Evaluate low-carbon fuel standard or alternative requirements to reduce carbon emissions from the transportation sector.
- Join with WSDOT, other West Coast states and the private sector to make alternative fuels, including electricity for plug-in vehicles, available along the West Coast highway and adjoining metropolitan centers.
- Working with the larger regional transportation councils, develop regional transportation plans that will increase transit options, and reduce greenhouse gas emissions.
- Address the impacts of climate change, including rising sea levels and the risks to water supplies.

### 3.3.4 SENSITIVE RECEPTORS

Sensitive receptors are generally defined as land uses that house or attract people who are susceptible to adverse effects from air pollution emissions and, as such, should be given special consideration when evaluating air quality impacts from projects. Sensitive receptors include facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent homes, parks and recreational facilities, and residential areas are examples of sensitive receptors.

Sensitive receptors in the area of potential construction are as follows: three off-site single-family residences located approximately 450 to 500 feet south of the proposed gas station/convenience store site across Stevenson Road. Additionally, there is a church located approximately 150 feet to the west of the site.

## 3.4 BIOLOGICAL RESOURCES

This section describes the regulatory setting, the methodology, and the existing biological resources that occur within the project site. The assessment of the existing biological resources is based upon the results of biological surveys, which were conducted to document the existing habitat types on-site and to assess the potential for occurrence and/or presence of federally listed species and/or their habitats. The following discussion of existing biological resources provides the basis from which potential environmental consequences were identified and measured.

### 3.4.1 REGULATORY SETTING

#### *Federal Endangered Species Act*

The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) implement the federal Endangered Species Act (FESA) of 1973 (16 USC Section 1531 *et seq.*). Under FESA, threatened and endangered species on the federal list and their habitats (50 CFR Subsection 17.11, 17.12) are protected from “take” (i.e., activities that harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect), as well as any attempt to engage in any such conduct, unless a Section 10 Permit is granted to an individual or a Section 7 consultation is conducted and the lead federal agency renders a Biological Opinion with incidental take provisions. Pursuant to the requirements of FESA, an agency reviewing a Proposed Project within its jurisdiction must determine whether any federally listed species may be present within the project site and vicinity and determine whether the Proposed Project would have a potentially significant impact upon such species. Under FESA, habitat loss is considered to be an impact to the species. In addition, the BIA is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC Section 1536[3], [4]). Therefore, project-related impacts to these species, or their habitats, would be considered significant and require mitigation.

Under the FESA, critical habitat may be designated by the Secretary of the Interior for any listed species. The term "critical habitat" for a threatened or endangered species refers to the following: specific areas within the geographical range of the species at the time it is listed that contain suitable habitat for the species, which may require special management considerations or protection; and specific areas outside the geographical range of the species at the time it is listed that contain suitable habitat for the species and is determined to be essential for the conservation of the species. Under Section 7 of FESA, all federal agencies (including USFWS and NMFS) are required to ensure that any action they authorize, fund, or carry out will not likely jeopardize the continued existence of a listed species or modify their critical habitat.

### ***Magnuson-Stevens Fishery Conservation and Management Act***

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) conserves and manages the fishery resources found off the coasts of the U.S., the anadromous species, and the Continental Shelf fishery resources of the U.S. The MSA includes conservation and management of highly migratory species through the implementation and enforcement of international fishery agreements. The National Oceanic and Atmospheric Administration's NMFS enforces the MSA and regulates commercial and recreational fishing and the management of fisheries resources. The Sustainable Fisheries Act of 1996 amended the MSA to include new fisheries conservation provisions by emphasizing the importance of fish habitat in regards to the overall productivity and sustainability of U.S. marine fisheries (Public Law 104-267). The revised MSA mandates identification and protection of essential fish habitat (EFH) for managed species during the review of projects conducted under federal permits that have the potential to affect such habitat. Federal agencies are required to consult with NMFS on all actions, proposed actions, authorized, funded, or undertaken by the agency, which may adversely affect EFH (MSA 305.b.2).

The project site occurs within the designated range of the following EFHs for Chinook salmon (*Oncorhynchus* (= *Salmo*) *tshawytscha*), Upper Columbia Spring-Run EFH, Snake River Fall-Run EFH, Snake River EFH, and Puget Sound EFH. The project site occurs within the designated range of the following EFH for bull trout (*Salvelinus confluentus*)-Coastal Puget Sound Distinct Population Segment.

### ***Migratory Bird Treaty Act***

Most bird species (especially those that are breeding, migrating, or of limited distribution) are protected under federal and/or state regulations. Under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Subsection 703-712), migratory bird species, their nests, and their eggs are protected from injury or death, and any project-related disturbances during the nesting cycle. As such, project-related disturbances must be reduced or eliminated during the nesting cycle.

### ***Bald and Golden Eagle Protection Act***

In 1940 the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) was enacted (and later amended) which prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald and golden eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Bald and Golden Eagle Protection Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

### ***Wetlands and Waters of the U.S.***

The U.S. Army Corps of Engineers (USACE) has primary federal responsibility for administering regulations that concern Waters of the U.S. (including wetlands), under Section 404 of the CWA. Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the U.S. The USACE requires that a permit be obtained if a project proposes the placement of structures within, over, or under navigable waters and/or discharging dredged or fill material into waters below the ordinary high-water mark (OHWM). The USACE has established a series of nationwide permits (NWP) that authorize certain activities in waters of the U.S.

## **3.4.2 METHODOLOGY**

### ***Preliminary Research and Data Gathering***

The USFWS determined, via phone conversation on October 19, 2009, that the federal USFWS list for Skagit County, Washington was sufficient for analyzing species within the project site. Background information on special status species and their habitat types was obtained from the following sources:

- USGS 7.5 minute Anacortes North, WA topographic quadrangle;
- Color aerial photography of the project site and vicinity (AES, 2007);
- Map of priority habitats and species documented in the vicinity of the project site (WDFW, 2011);
- Washington National Heritage Program (WNHP) list of rare plants in Skagit County (WNHP, 2010);
- USFWS critical habitat mapper (USFWS, 2011b);
- List of endangered and threatened species in Skagit County (USFWS, 2011a); and
- Delineation report of the project site and surrounding vicinity (AES, 2010).

An AES biologist conducted the biological surveys of the project site and vicinity on October 21 and 22, 2009, May 25 and 26, 2010, and September 22 and 23, 2010. The biological surveys consisted of walking transects in a north to south direction to evaluate biological communities and to document potential habitat for federally listed special status species with the potential to occur within the project site.

A complete list of all of the regionally occurring federally listed species reported in the scientific database queries was compiled for the project site (**Appendix A**). An analysis was conducted to determine which of these special status species have the potential to occur within the project site. The habitat requirements for each regionally occurring federally listed species were assessed and compared to the type and quality of habitats observed on-site during the biological surveys. Several regionally occurring federally listed species were eliminated due to the project site lacking suitable habitat or occurring outside of the known elevation and geographical ranges for the species.

### 3.4.3 ENVIRONMENTAL SETTING

City (#450176) monthly record climate data obtained in the vicinity of the project site documents an average maximum temperature of 58.6° Fahrenheit (F) and an average minimum temperature of 43.2°F. The climate data recorded an average total annual precipitation of 26.64 inches from 1892 through 2009 (WRCC, 2011). Topography within the project site consists of a relatively gradual slope with elevations ranging from approximately 70 to 80 feet above mean sea level.

### 3.4.4 RESULTS

This section summarizes the results of the field surveys that were conducted within the project site and provides further analysis of the data collected in the field.

#### *Habitat Types*

The project site is comprised of nonnative annual grassland and ruderal/disturbed areas. These habitat types are illustrated on **Figure 3-3** and are discussed in detail below. Representative photographs of the project site are illustrated on **Figure 3-4**. A comprehensive list of plants occurring within the project site is included in **Appendix A**.

#### **Nonnative Annual Grassland**

Nonnative annual grassland occurs throughout the majority of the project site (**Figure 3-4: Photograph 1**). The majority of the project site had been mowed prior to conducting the October 2009 and May 2010 biological surveys. Dominant vegetation observed in the nonnative annual grassland includes: orchard grass (*Dactylis glomerata*), velvet grass (*Holcus lanatus*), Johnsongrass (*Sorghum halipense*), red fescue (*Festuca rubra*), Robert geranium (*Geranium robertianum*) and blackberry (*Rubus* sp.). Ornamental landscape trees occur within the nonnative annual grassland in the southwestern corner of the project site (**Figure 3-4: Photograph 2**).

#### **Ruderal/Disturbed**

Ruderal/disturbed areas occur within the project site. These areas include dirt roads, graded driveways, remnant housing pads, and piles of metal and wood. Dominant vegetation observed within the ruderal/disturbed areas includes the same species noted in the nonnative annual grassland.



SOURCE: AEX Aerial Photograph, 9/15/2007; AES, 2011

Samish Indian Nation Gas Station EA / 209532 ■

**Figure 3-3**  
Habitat Types and Wetland Features



PHOTO 1: View northeast of nonnative annual grassland from central portion of the project site.



PHOTO 2: View southward of ruderal/disturbed areas from the western portion of the study area.

### ***Wildlife***

Wildlife species were noted by direct observation or sign such as tracks, scat, nests, or remains in the vicinity of the project site. Wildlife species observed foraging within the project site includes: song sparrow (*Melospiza melodia*) and red-tailed hawk (*Buteo jamaicensis*). Birds observed flying over the project site include: common loon (*Gavia immer*), double-crested cormorant (*Phalacrocorax auritus*), great blue heron (*Ardea herodias*), and turkey vulture (*Cathartes aura*). No bird nests were observed within the project site.

### ***Waters of the U.S.***

A delineation report was prepared for a study area that includes the project site (AES, 2010). There are no wetlands or waterways mapped within the project site.

### ***Federally Listed Special Status Species***

A separate biological letter report was prepared that evaluates for whether rare species documented within Skagit County occur within a study area that includes the project site (**Appendix A**; AES, 2011). For the purposes of this assessment, special status has been defined to include those species that are listed as endangered or threatened under the FESA (or formally proposed and/or candidates for listing). While other state listed species may have potential to occur within the project site and its vicinity (and have been included in the baseline research that was conducted for the project site), these species generally receive no specific protection on Tribal trust land and are not necessarily afforded protection by the FESA.

**Appendix A** provides a summary of regionally occurring federally listed special status species based on the USFWS (2011a) file data, the WNHP (2010) list, and the proximity of the project site to documented occurrences based on the priority habitat map (WDFW, 2011) and provides a rationale as to whether the species has the potential to occur within the project site based on the presence of each species or its habitat during the biological surveys. Federally listed species without the potential to occur within the project site are not discussed further. There are no federally listed special status species with the potential to occur within the project site. Birds protected under the MBTA are discussed further below.

### ***Migratory Birds***

Migratory birds and other birds of prey, protected under 50 CFR 10 of the MBTA, have the potential to nest in the ornamental landscape trees and forage within the nonnative annual grassland within the project site. The nesting season for raptors and other migratory birds occurs between March 1 and September 15. Several birds were observed foraging during the biological surveys of the project site. No birds were observed nesting during the biological surveys of the project site.

### Critical Habitat

The USFWS (2011a) list identifies critical habitat as occurring within Skagit County for marbled murrelet and northern spotted owl. The project site does not occur within designated critical habitat for these species (USFWS, 2011b). The project site does not occur within designated critical habitat and EFH for Chinook salmon and for bull trout as there is no hydrological connection to any of the tributaries identified within the EFHs because there are no waterways within the project site.

## 3.5 CULTURAL RESOURCES

An archaeological survey of the entire project site was conducted by AES in October 2009. The cultural resources study is bound under separate cover as **Confidential Appendix B** to this EA. The cultural resources study included a literature search, field survey, and Native American consultation to identify and evaluate any prehistoric and historic-period resources within or adjacent to the project site that may be impacted by the proposed undertaking. Following is a summary of applicable sections of the cultural resources study.

### 3.5.1 REGULATORY SETTING

#### *National Historic Preservation Act*

Section 106 of the National Historic Preservation Act (NHPA) as amended, and its implementing regulations found in 36 Code of Federal Regulations (CFR) Part 800, require federal agencies to identify cultural resources that may be affected by actions involving federal lands, funds, or permitting. The significance of the resources must be evaluated using established criteria outlined 36 CFR 60.4, as described below.

If a resource is determined to be a *historic property*, Section 106 of the NHPA requires that effects of the undertaking on the resource be determined. A historic property is defined as:

*“...any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion in the National Register of Historic Places, including artifacts, records, and material remains related to such a property.” (NHPA Sec. 301[5]).*

The criteria for listing on the National Register of Historic Places (NRHP), defined in 36 CFR 60.4, are as follows: *The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, association, and*

- A. That are associated with events that have made a significant contribution to the broad patterns of our history;
- B. That are associated with the lives of persons significant in our past;

- C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. That have yielded, or may be likely to yield, information important to prehistory or history.

Sites younger than 50 years, unless of exceptional importance, are not eligible for listing in the NRHP.

### ***National Environmental Policy Act***

NEPA requires that federal agencies take all practical measures to “preserve important historic, cultural, and natural aspects of our national heritage” (NHPA, Section 800.8(a)). NEPA’s mandate for considering the impacts of a federal project on important historic and cultural resources is similar to that of Section 106 of the NHPA, and the two processes are generally coordinated when applicable. Section 800.8(a) of NHPA’s implementing regulations provides guidance on coordination with NEPA.

### ***Antiquities Act***

Passed in 1906, the Antiquities Act prohibits the collection, destruction, injury, or excavation of “any historic or prehistoric ruin or monument, or any object of antiquity” that is situated on federal land without permission of the appropriate land management agency. The Antiquities Act also provides for the criminal prosecution, including fines and imprisonment, for individuals who commit one or more of the acts described above.

## **3.5.2 CULTURAL RESOURCES SETTING**

The following discussion of the cultural setting of the project area is condensed from the information presented in the cultural resources study, **Confidential Appendix B** of this document.

### ***Prehistoric Overview***

The Northwest Coast was first occupied by humans at the end of the Pleistocene when the glaciers receded between the period of 12,000 to 10,000 years before present (BP). Evidence for the earliest occupation of the region is found at archaeological sites on inland river terraces. Between the period of ca. 6,000 and 2,500 BP, people in the Northwest Coast expanded the types of resources procured. Additionally, technology advanced in tandem to account for processing and storing these types of resources. Evidence for procurement of marine resources appears and shell middens become common after 4,000 BP. The period of 2,500 BP and European contact (AD 1790) on the Northwest Coast represents fully developed cultures that appear much like those documented in the ethnographic record. These cultures were reliant on marine resources located closer to the coast, while further inland groups were dependent upon hunting, gathering, and freshwater fishing.

### ***Ethnography***

The project area is located within the traditional territory of the Samish Indian Nation (Nelson, 2006, Suttles, 1990). The Samish traditionally followed a semi-mobile life spending the winter in villages and separating into smaller groups during the summer months. Early accounts of the Samish indicate winter villages were present on the Fidalgo, Samish, and Guemes islands (Ruby and Brown, 1992, Samish Indian Nation, 2002). Summers were spent gathering resources, primarily fish and shellfish, at seasonal camps located on, but not limited to, Lopez, Cypress, Blakely and San Juan Islands.

Ethnographic accounts of the Samish provide data regarding their political and social organization. Several accounts indicate that villages were headed by informal chiefs. These leaders were wealthy men whose influence usually did not reach beyond the boundaries of their village. Regional organization among distinct groups provided support during times of conflict, but the evidence suggests this remained informal and intervillage organization did not exist on a formal level (Suttles 1990:464-465). Social stratification among the Samish was more formal than the political organization.

### ***History***

The fur trader Charles Barkley first discovered the Strait of Juan de Fuca in 1787. Within the next decade many Spanish explorers moved through the area; however, the Fraser River was not discovered until 1808 by fur trader Simon Fraser of the North West Company. At the time, it seemed the indigenous people had not yet encountered Europeans, although they had some metal objects likely obtained through diffusion of European material culture. In 1811, fur traders seeking beaver pelts established a fort on the mouth of the Columbia River, likely interacting with and influencing the nearby Samish groups.

In 1827 the Hudson's Bay Company established Fort Langley on the Fraser River, which instigated trade of materials, labor, and wives between the native and European people. Fort Victoria was established in 1843 and quickly became a center for Indian trade. Native people travelled from as far as Alaska to trade at Ft. Victoria (Suttles 1990:470-471).

The Treaty of Washington, signed in 1846, imposed new political boundaries upon the traditional groups of the Northwest Coast. The traditional territory of the larger Coast Salish, to which the Samish belong, was divided into Canada and the United States. The Samish ended up on the American side of the border. In 1858 gold was discovered on the Fraser River bringing an influx of Euro-American miners into the area. The same year the Oblate order of Christians established their base on Vancouver Island. They established two Oblate schools in the area and in the following years converted many native peoples into Christianity (Suttles, 1990: 471).

By the 1870s, local canneries employed men as fishermen, and women and children worked in the canning process. Agriculture was adopted and by 1880 successful farmers were present on many of the reserves (Suttles 1990:471).

In 1860, the first Euro-American homesteads were established at March's Point, just north of the project area. The area was first known by the name of Ship Harbor (Meany 1923:7). The first Euro-Americans made a life by farming fruit, hops, cauliflower seeds, and cabbage, as well as raising cattle. Enoch Compton, James Kavanaugh, William Munks, Charles and Robert Beale, William Bonner, Hiram March, Henry Barkhousen, and John and Almina Griffen were among the first white settlers to arrive in the area. Some settlers joined with native women, such as Henry Barkhousen, who married Julia, a daughter of Samish Chief Sehome and resided on March's Point, and James Kavanaugh, who married Tol Stola, the daughter of a Swinomish chief (City of Anacortes, 2004).

In the 1870s, Amos Bowman, a railroad engineer, moved into the area that today is the City of Anacortes. He established a post office, a wharf and a store, which were beginning of Anacortes. As a train engineer, it was his aspiration that Anacortes be the final west coast stop on the transcontinental railroad. Anacortes experienced a population boom in anticipation of the railroad. In 1889, the Seattle and Northern railway established several connector lines that brought train service between Seattle and the Canadian border. Railroad tracks were laid on the western shore of Fidalgo Bay, through the Weaverling Spit and onto a trestle that crossed to March's Point. In August 1890, trains began arriving at Anacortes, but the city was not chosen as the railroad terminus. Consequently, many people and businesses left and the area experienced an economic depression. In 1891, Anacortes was incorporated into a city, which Bowman named after his wife (City of Anacortes, 2004).

The industry in the area shifted to fishing and lumber after disappointment of the transcontinental railroad. During the early 1900s, fish-processing plants employed hundreds of area people, most of which closed by the 1960s. Only Trident Seafoods, Sugiyo and Seabear remain in business today. During the same time, Anacortes was the site of five sawmills and six shingle mills. Eventually, the logging industry in Anacortes would include wood mills, pulp mills and box mills. Today, the regional economy is dominated by tourism, technology firms and refineries owned by Shell and Texaco (City of Anacortes, 2004).

### **3.5.3 RESULTS OF CULTURAL STUDIES**

Documentation of cultural resources within the project site was achieved through review of pertinent anthropological literature, historic documents and maps, a records search at the Northwest Information Center (NWIC), Native American consultation, and a field examination of the project site by professional archaeologists.

#### ***Records and Literature Search***

As part of this study, a records search was conducted at the Washington State Department of Archaeology and Historic Preservation (DAHP), on October 20, 2009. The DAHP is the official state repository of archaeological and historic records and reports for all of Washington State, and is located in Olympia. Additional research was conducted using the files and literature maintained at AES.

The NWIC records search verified that archaeologists recorded no prehistoric cultural resources or historic properties within the Area of Potential Effect (APE). However, archaeologists have recorded two cultural resources within the 0.25-mi (0.40 km) records search of the APE.

### ***Native American Consultation***

A request was made to the Washington State Governor's Office of Indian Affairs (OIA) on September 6, 2011 to search its Sacred Lands Inventory File and to submit a list of local Native American contacts that might have information regarding the APE. BIA has begun consultation with area tribal representatives.

### ***Field Surveys***

AES conducted a reconnaissance survey of the property in April 2009. The reconnaissance survey consisted of the archaeologist walking 10 m (33 ft) linear transect intervals in a west to east direction starting at the southwestern most point of the APE. A GPS unit and a compass were used to record location data. Data were also recorded in notebooks and with photography.

## **3.5.4 PALEONTOLOGICAL SETTING**

Paleontological resources are defined as the traces or remains of prehistoric plants and animals. Such remains often appear as fossilized or petrified skeletal matter, imprints or endocasts, and reside in sedimentary rock layers. Fossils are important resources, due to their scientific and educational value.

This section presents documentation on reported paleontological deposits on the project site and surrounding region, as well as an analysis on the potential for unreported paleontological resources to be present on the project site.

### ***Regulatory Background***

The Antiquities Act of 1906 (PL 59-209; 16 United States Code 431 et seq.; 34 Stat. 225) calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal land. While neither the Antiquities Act nor its implementing regulations (found at 43 CFR 3) explicitly mention fossils or paleontology, the inclusion of "object[s] of antiquity" in the Antiquities Act has been interpreted by many federal agencies to extend to paleontological resources. As such, projects involving federal lands require permits for paleontological resource evaluation and mitigation efforts that involve excavation, collection, etc. Additional provisions appear in the Archaeological and Historic Data Preservation Act of 1974, as amended, for the survey, recovery, and preservation of significant scientific, prehistoric, historic, archaeological, or paleontological data, in such cases wherein this type of data might be otherwise destroyed or irrecoverably lost as a result of federal projects.

### ***Typologies and Formation Processes***

The processes involved in the preservation of paleontological resources result in several types of remains. It is noted that only a small percentage of ancient life forms and their traces have been exposed to conditions favorable to preservation. Factors affecting the persistence of paleontological resources vary between species, and broadly include geological formation processes, climate, soil and rock chemistry, and organism morphology. Paleontological resources are discussed here as fossil remains, although other types of remains occur elsewhere.

Fossils are the remains of plants and animals embedded in layers of rock, which have retained some degree of their original characteristics over a long period of time. Remains are buried under layers of sediment, which under building pressure become sedimentary rock. Paleontological remains can be those of organism structure, such as skeletal parts, shells, tree trunks, pollen, endocasts or imprints, or they can be remnants of activity, such as footprints or tunnels of burrowing organisms. Soft tissues are less frequently fossilized, because they usually decay before fossilization processes take place. Since fossil remains occur in sedimentary rock formations, they tend to persist unless the rock has undergone significant changes. Fossils, therefore, do not occur in metamorphic rock formations.

Fossils of considerable age may be subject to varying degrees of mineralization, at times resulting in the total replacement of original, organic matter by minerals. The agents of mineralization are most commonly comprised of calcium carbonates, such as calcite and aragonite, and silicates, such as quartz, opal and chalcedony. Less common materials are iron disulfides such as pyrite and marcasite; limonite; sulphates such as gypsum; phosphates such as calcium phosphate and vivianite; and glauconite. These minerals are typically transported in minute quantities by seeping water, with aggregation over time.

Plant fossils, shell fossils, pollen and microfossils are generally less rare than fossils of vertebrates. Thus, vertebrate fossils are considered significant. Invertebrate fossils are considered significant if they are scarce or diagnostic of date range, or if they constitute a segment of a unique paleoenvironmental framework. Paleontologists may additionally determine significance on a case-by case basis.

### ***Potential for Fossil Discovery***

The depositional environments of the sediments underlying the subject property are from glacial drift associated with the Skagit River drainage basin. Fossil occurrences are not usually common in these deposits because of the high probability of reworking and damage of any skeletal and plant material as it is transported and deposited.

In addition, indices of significant paleontological resources within the project site and immediate vicinity are absent in the sources consulted, and no such resources were observed in the course of surface reconnaissance surveys by AES in April, 2009. The geologic formation upon which the project site is located has not produced significant paleontological specimens of scientific consequence and is unlikely to do so in the future.

## 3.6 SOCIOECONOMIC CONDITIONS / ENVIRONMENTAL JUSTICE

### 3.6.1 SKAGIT COUNTY

#### *Demographics*

The project site lies within the far eastern City limits. In 2010, the City and the surrounding Skagit County had populations of 20,332 and 116,901 people respectively (U.S. Census Bureau 2010a). Between 2000 and 2010, the City saw a population increase of roughly 8.4 percent; Skagit County experienced a 13.5 percent rise in the same period.

#### *City of Anacortes*

The U.S. Census Bureau reported that in 2010 there were an estimated 10,577 housing units in the City, of which approximately 9,047 units were occupied and 14.5 percent remained vacant (U.S. Census Bureau, 2010a). Skagit County had an estimated 51,473 housing units in 2010, with a vacancy rate of 11.5 percent (U.S. Census Bureau, 2010a).

### 3.6.2 SAMISH INDIAN NATION

There are currently 1,544 members enrolled in the Samish Indian Nation; detailed statistical information for the Samish Indian Nation was obtained from the 2005 Bureau of Indian Affairs Population and Labor Force Report (Bureau of Indian Affairs, 2011). At the time of this writing, demographic information for the Tribe had not been updated to reflect the 2010 U.S. Census and detailed data from 2005 are the most current available for the Tribe. As shown in **Table 3-6**, there were a total of 1,112 members of the Samish Indian Nation in 2005. Of this total, 270 members were eligible for services on or near the Tribal services area. Of the eligible Tribal members, 76 were under the age of 16, 168 were between ages 16 and 64, and 26 were over age 64.

**TABLE 3-6**  
SAMISH INDIAN NATION POPULATION ESTIMATES

Tribe Population Factor	Members
Total Enrollment	1112
Service Population on or near Reservation	
Enrollment	270
Under age 16	76
Age 16-64	168
Age 65 and over	26
SOURCE: Bureau of Indian Affairs, 2005	

### 3.6.3 ECONOMY

Skagit County had an estimated median household income of \$62,814 in 2009, which was approximately 11 percent higher than the state average of \$56,548 the same year (U.S. Census Bureau, 2010b). Between 2005 and 2009, the average median household income for the City was \$57,288, also slightly above the state average (U.S. Census Bureau, 2005-2009).

### 3.6.4 EXISTING LOCAL COMPETITION

Three existing gas stations are located in the vicinity of the project site along the SR-20 corridor. Two gas station / convenience store facilities, the County Corner Mini Mart at 7601 SR-20 (approximately 1.19 miles west) and the Christianson Road Shell Station (approximately 0.58 mile west), are located to the west along SR-20. A third gas station, the Swinomish Chevron, is located within the Swinomish Indian Reservation, at 12939 Casino Drive, approximately 2.2 miles to the east.

### 3.6.5 ENVIRONMENTAL JUSTICE FOR MINORITY AND LOW INCOME POPULATIONS

Land uses surrounding the project site consist of industrial/commercial developments, single-family residential properties, riparian habitat, and agricultural lands.

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, as amended, which directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority, low-income, and Native American populations to the greatest extent practicable and permitted by law. “Low income” and “minority” are defined based on U.S. Census Bureau data and established poverty thresholds and are discussed further below.

The following six principles are provided as guidance for the analysis of environmental justice impacts under NEPA (CEQ, 1997c):

- Agencies should consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed action.
- Agencies should consider relevant public health data and industry data concerning the potential for multiple or cumulative exposure to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards.
- Agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action.

- Agencies should, as appropriate, acknowledge and seek to overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation, and should incorporate active outreach to affected groups.
- Agencies should assure meaningful community representation in the process.
- Agencies should seek tribal representation in the process.

According to the CEQ's *Environmental Justice Guidance Under the National Environmental Policy Act*, communities may be considered "minority" under the executive order if one of the following characteristics apply:

- The cumulative percentage of minorities within the affected environment is greater than 50 percent (primary method of analysis) or
- The cumulative percentage of minorities within the affected environment is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (secondary method of analysis).

In 2010, the population of the City was 20,332 persons. Racial/ethnic breakdown of minority populations during the same period is presented below (U.S. Census Bureau, 2010a):

- White: 18,715 people; 92.0 percent
- Native American or Alaska Native: 196 people; 1.0 percent
- Asian: 375 people; 1.8 percent
- African American: 124 people; 0.6 percent
- Native Hawaiian and Other Pacific Islander: 25 people; 0.1 percent
- Two or more races: 619 people; 3.0 percent
- Other: 278 people; 1.4 percent
- Hispanic (any race): 902 people; 4.4 percent

In 2010, the total population for Skagit County was 116,909 people, with the following racial/ ethnic breakdown (U.S. Census Bureau, 2010a):

- White: 97,448 people; 83.4 percent
- Black or African American: 774 people; 0.7 percent
- American Indian or Alaska Native: 2,516 people; 2.2 percent
- Asian: 2,080 people; 1.8 percent
- Native Hawaiian and Other Pacific Islander: 226 people; 0.1 percent
- Two or more races: 3,739 people; 3.2 percent
- Other: 10,118 people; 8.7 percent
- Hispanic (any race): 19,709 people; 16.9 percent

Based on these characteristics, neither the City nor Skagit County qualifies as having significant minority populations (greater than 50 percent of the total population). However, the minority participation in the Samish Tribal service population would likely be substantially different than the surrounding community and would, therefore, qualify as a minority population under the CEQ's secondary method of analysis.

Communities may be considered "low-income" under the executive order if one of the following characteristics applies:

- The median household income for a census tract is below the poverty line (primary method of analysis) or
- Other indications are present that indicate a low-income community is present within the census tract (secondary method of analysis).

U.S. Census data for the year 2009 estimated the average household size in Skagit County as 2.62 persons, which results in a federal poverty threshold of \$17,089 when conservatively rounded up to three persons (U.S. Census Bureau, 2010b). As identified above, the 2009 median household income in Skagit County was \$62,814 (U.S. Census Bureau, 2010b). Since the median household income level is \$45,725 above the poverty threshold, Skagit County is not defined as a low-income population according to the CEQ methods of analysis.

## **3.7 TRANSPORTATION AND CIRCULATION**

### **3.7.1 TRANSPORTATION NETWORKS**

This section describes the existing roadways and intersections in the vicinity of the project site.

#### **INTERSECTIONS**

Intersections surrounding the project site were analyzed within a 2011 Transportation Impact Study (TIA) produced for the proposed development of the Samish Casino on the property adjacent to the project site (Transportation Engineering Northwest, 2011). The transportation study evaluated the following four stop-controlled intersections in the vicinity of the project site:

- SR-20 at Thompson Road (Signalized)
- Summit Park Road/ Site Access Intersection at Thompson Road (Unsignalized)
- Stevenson Road at Thompson Road (Unsignalized)
- SR-20 and Reservation Road (Signalized)

All intersections were analyzed for the PM commute peak hour (5:00-6:00 PM).

## METHODOLOGY

### *Level of Service*

Level of Service (LOS) is a qualitative measure reflecting the traffic operation of the intersection, with LOS A representing best performance, and LOS F the worst. LOS describes the traffic conditions in terms of such factors as speed, travel time, delays, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. **Table 3-7** shows the corresponding average total delay per vehicle and a description of vehicular conditions at unsignalized intersections for each LOS category from A to F.

**TABLE 3-7**  
LEVEL OF SERVICE FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Average Total Delay (seconds/vehicle)	Traffic Condition
A	<10	No Delay
B	>10 – 15	Short Delay
C	>15 – 25	Moderate Delay
D	>25 – 35	Long Delay
E	>35 – 50	Very Long Delay
F	>50	Volume > Capacity

SOURCE: Highway Capacity Manual (HCM), 2000

### *Existing Intersection Traffic Volumes and Levels of Service*

**Table 3-8** summarizes the 2011 p.m. peak-hour LOS at each study intersection. The City designated LOS C as the minimum acceptable level of service on local roads (rural and residential) and LOS D as the minimum on all county connectors and collectors (Principal Arterials and streets within the Central Business District (City of Anacortes, 2007). SR-20 is a four lane divided state highway with limited access points. It has the highest capacity of 4,400 vehicles per hour and a speed limit of 55 miles per hour (MPH). The segment of SR-20 north of the project site currently functions at a Level of Service “C” or better. The City Transportation Plan 2017 and 2030 analyses indicated that this roadway segments would continue to function at a Level of Service “C” (City of Anacortes, 2007). All four study intersections operated at acceptable LOS during both the afternoon peak hours.

### *Existing Bicycle and Pedestrian System*

SR-20, Thompson Road, Summit Park Road, Stevenson Road and Reservation Road currently have no sidewalks to accommodate pedestrian activity. Further, no bike lanes are provided along these roads, which have relatively low traffic volumes. Due to the nature of the surrounding land uses, bicycle and pedestrian activity along both of these roadways are low.

**TABLE 3-8**  
PEAK-HOUR INTERSECTION LOS - 2011 WITHOUT PROJECT TRAFFIC CONDITIONS

	Intersection	Traffic Control	PM Peak Hour	
			Average Delay <sup>1</sup>	Level of Service
1.	SR-20 at Thompson Road	Stop Light	12	B
2.	Summit Park Road/Thompson Road	Stop Sign	9	A
3.	Stevenson Road at Thompson Road (westbound)	Stop Sign	9	A
	Stevenson Road at Thompson Road (southbound)	None	7	A
4.	SR-20 and Reservation Road	Stop Light	14	B

NOTES: <sup>1</sup>Average total delay in seconds/vehicle. **Bold** text denotes unacceptable LOS.  
SOURCE: Transportation Engineers Northwest, 2011

### *Transit Service*

The City participates in the Skagit Transit system (SKAT) and the area is presently served by Route 410. SKAT Route 410 extends from the March's Point park-and-ride one-half mile to the northeast of the project site, through downtown to both Washington State Ferry terminals. Transit service is available from 6:40 am to 7:25 pm Monday – Friday and from 8:00 am to 5:30 pm on Saturday. The March's Point park-and-ride provides the closest transit service access point.

## **3.8 LAND USE**

The project site is located within the city limits of the City, and is currently undeveloped. NEPA requires an assessment of a project's effect on adopted land use plans as well as plans that have been formally proposed and are being actively pursued by officials of the jurisdiction. Accordingly, adopted and proposed land use regulations are discussed below.

### **3.8.1 CITY OF ANACORTES COMPREHENSIVE PLAN**

The City of Anacortes Comprehensive Plan (Comprehensive Plan) includes goals and policies to guide the growth and economic development of the City. The Comprehensive Plan has been updated annually since 1995 and a thorough review was conducted in 2007. The Comprehensive Plan 2010 (City of Anacortes, 2010) is the most recently compiled version; however, several amendments have been made in 2011 which are also considered within this EA. As shown in **Figure 3-5**, the project site is zoned and designated as "Light Manufacturing (1)" (LM1), which is intended primarily to accommodate industrial type uses that do not need water access or proximity to the central business district or Commercial Avenue corridor. Under this designation permitted uses include auto, truck, motorcycle, and RV sales and service; parks and playgrounds, both public and private; retail sales when the goods are related to items being serviced on-site. Additional uses that are permitted upon approval by the planning

commission and city council include single family homes, grocery stores, marinas and associated uses, office buildings, and public and private recreational facilities (City of Anacortes Municipal Code Section 17.19).

### 3.8.2 SURROUNDING LAND USES

Land uses on the approximately 3.3-acre project site include nonnative annual grassland open space and ruderal/disturbed areas including dirt roads, graded driveways, remnant housing pads, and piles of metal and wood. Land uses surrounding the project site include car sales and service and an oil refinery to the north; a church, personal mini-storage facility, and electrical utility facilities to the west; a volunteer fire station and residences to the south; and open space and a mini-storage facility to the east. As shown in **Figure 3-5**, the properties immediately surrounding the project site are within the city limits and are zoned and designated as LM1. The lands to the south and southeast of the project are within the unincorporated portion of the County and are zoned and designated as “Industrial Forest – Natural Resource Lands” (IF-NRL), which is intended to ensure that forest lands of long-term commercial significance are conserved and managed to provide sustainability. Land uses along Stevenson Road east of the March’s Point Site include other retail trades, utilities, government services, mobile home storage, and low-density, rural residential.

### 3.8.3 AGRICULTURE

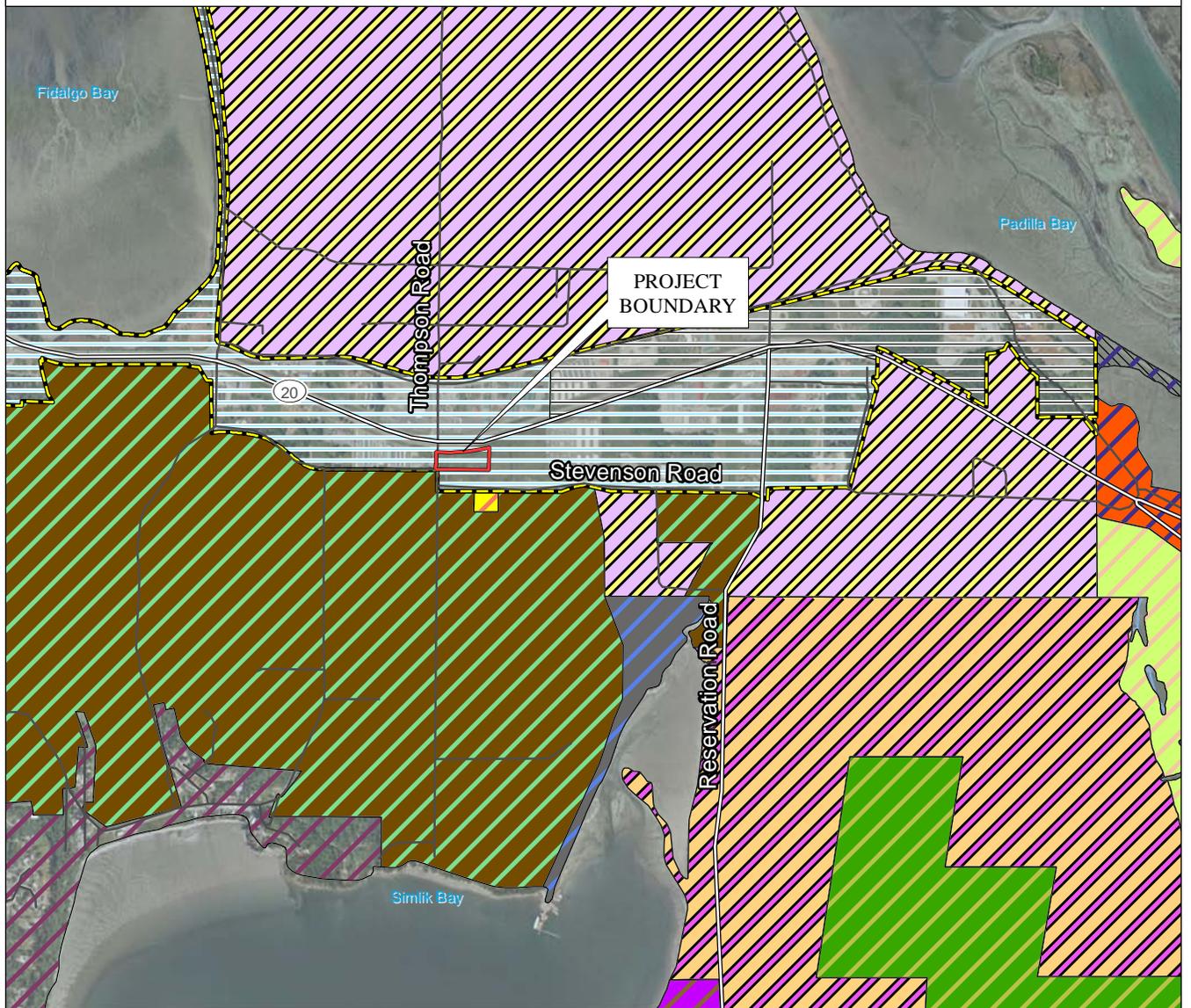
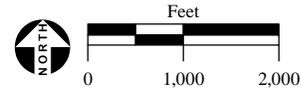
#### *Farmland Protection Policy Act*

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that federal programs are administered in a matter that is compatible with state and local units of government, and private programs and policies to protect farmland (7 U.S.C. § 4201).

The Natural Resource Conservation Service (NRCS) is responsible for the implementation of the FPPA and categorizes farmland in a number of ways. These categories include: prime farmland, farmland of statewide importance, and unique farmland. Prime farmland is considered to have the best possible features to sustain long-term productivity. Farmland of statewide importance includes farmland similar to prime farmland, but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Unique farmland is characterized by inferior soils and, depending on climate, generally needs irrigation.

The NRCS fulfills the directives of the Soil and Water Conservation Act (16 USC § 2001-2009) by identifying significant areas of concern for the protection of national resources. NRCS uses a land evaluation and site assessment (LESA) system to establish a Farmland Conversion Impact Rating (FCIR) score. The FCIR is completed on form AD-1006 (NRCS, 2011b). The FCIR form has two components: land evaluation, which rates soil quality up to 100 points, and the site assessment, which measures other factors that affect the property’s viability up to 160 points.

LAND USE AND ZONING DESIGNATIONS IN THE VICINITY OF THE PROJECT



SOURCE: Skagit County Comprehensive Plan, 2000; Aerial Express Aerial Photograph, 5/2009; AES, 2011

Samish Indian Nation Gas Station EA / 209532 ■

**Figure 3-5**  
Land Use and Zoning Designations

The total FCIR score is used as an indicator for the project's sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the allowable level; however, the FPPA does not require federal agencies to alter projects to avoid or minimize farmland conversion. Sites receiving a combined score of less than 160 (out of 260 possible points) do not require further evaluation. For sites with a combined score greater than 160 points, at least two other alternatives are required to be considered and the alternative with the lowest number of points selected unless there are other overriding considerations.

### ***Project Site Conditions***

The U.S. Department of Agriculture (USDA) performs a state-by-state census of agriculture every five years. The National Agriculture Statistical Service (NASS) collects census data from a list of all known potential agriculture operators. The census reports on various statistics relating to crop yields, farm acreage, and farm economics. According to the *2007 Census of Agricultural Crop Report*, a total of 108,541 acres in Skagit County were used for farming purposes. The average per-farm market value of agricultural products sold by the 1,215 farms in Skagit County in 2007 was approximately \$256,248 (NASS, 2007).

The NRCS characterizes the project site as being "Prime Farmland if drained" (NRCS, 2011b); however, there are currently no farming operations on the site or infrastructure that would support land cultivation.

## **3.9 PUBLIC SERVICES**

### **3.9.1 WATER SUPPLY**

Surface water is the main source of water supply for both local municipal and individual domestic water systems and contributes significantly to area irrigation practices (City of Anacortes, 2011). Treated water from the Skagit River supports a variety of uses including community water system conveyances for domestic, commercial, industrial, and agricultural water needs. Water demand from surrounding properties within the vicinity of the project site is met through conveyance of treated surface water from the City of Anacortes and Skagit Public Utilities District (SPUD) water systems. The project site is located on the border between the service areas of these two water systems.

#### ***City of Anacortes***

The City is a major regional water supplier which serves approximately 56,000 customers, including the Samish Tribe, the Swinomish Tribe, Shell Oil Refinery, Tesoro Oil Refinery, and neighboring communities. Water is sourced from the Skagit River and transferred to a filter station where it passes through several types of media before it receives a final injection of chlorine. High speed vertical pumps transport the finished treated water to various customers throughout Skagit County. The treatment plant has an estimated output of approximately 17 million gallons of potable water per day (MGD) (City of Anacortes, 2011a). The water treatment plant is currently undergoing an expansion project which will

increase the capacity of the plant to 42 MGD in order to meet the anticipated demand for the year 2030 (City of Anacortes, 2011). At present, there is an on-site connection to the City water service. City water mains in the area include a 24-inch water supply line located north of the project site across SR-20 and a 14-inch supply line to the south of the project site along Stevenson Road.

### ***Skagit Public Utilities District***

The Skagit Public Utilities District (SPUD) contains 150 public water systems within Skagit County. The SPUD controls nearly 600 miles of pipeline and 31 million gallons of storage volume. This water is provided by streams in the Cultus Mountain watershed that flow into the Skagit River where a diversion pump station transports water to the Judy Reservoir impoundment. The SPUD also purchases water from the City to maintain levels within the Judy Reservoir during peak system demands and drought conditions (SPUD, 2009). At present, there are no on-site connections to the SPUD water service.

## **3.9.2 WASTEWATER SERVICE**

Municipal wastewater service in the area of the project site is provided by either connection to the City Wastewater Treatment Plant (WWTP) or through individual private septic systems. The City owns and operates the WWTP which became operational in 1992 with both primary and secondary treatment capabilities. Wastewater is transported via 23 pump stations located across the City of Anacortes to the WWTP located on T Avenue. The nearest pump station to the Project Site is located approximately 0.2 miles to the north on Bartholomew Road. A NPDES permit (no. WA-002025-7) allows the WWTP to release treated water into the Guemes Channel via pipes located west of the Port of Anacortes Pier 2 (WWTP, 2009). Estimated peak capacity for the WWTP is 4.5 MGD, with average daily flows of around 1.92 MGD. The City has no plans for expanding the WWTP as excess treatment capacity is estimated to be sufficient for the foreseeable future (WWTP, 2009). The nearest sewer line is at the intersection of Thompson Road and Summit Park Road immediately south of the site.

## **3.9.3 SOLID WASTE**

The State Solid Waste Management, Reduction, and Recycling Act (SWMRRA; Chapter 70.95 of the Revised Code of Washington [RCW]) provides the purpose and authority for solid waste planning in the State of Washington and defines the role of counties and cities in solid waste management. The Comprehensive Solid Waste Management Plan (CSWMP) was developed by Skagit County in response to Chapter 70.95 of the RCW. The CSWMP addresses solid waste management throughout Skagit County and is the guiding document for the cities within the County in relation to their solid waste management practices (Skagit County, 2005).

The City Solid Waste Division operates a solid waste collection system consisting of a fleet of four front loading service trucks and one rear loading truck. The waste crew is staffed by four full-time employees who haul approximately 654 tons of refuse and perform 1,600 dumpster pickups per month (City of

Anacortes, 2011b). Residentially services also include pick-ups of 25,000 garbage cans and 950 pre-paid garbage bags each month.

Solid waste collected within the City is transported to the Skagit County Recycling and Transfer station where recyclables are processed and waste is transferred via rail to the Roosevelt Landfill in Klickitat County. Roosevelt Landfill is located off State Route 14 north of the town of Roosevelt, approximately 200 miles southeast of the Skagit County Transfer Station. The landfill currently has a current permitted capacity of 120 million tons and a 40 year expected trash receiving life.

### **3.9.4 ELECTRICITY, NATURAL GAS, AND TELECOMMUNICATIONS**

Puget Sound Energy (PSE) provides electricity to properties in the vicinity of the project site. PSE is the largest energy utility in the State of Washington and serves over one million electric customer and 750 thousand natural gas customers. Natural gas is provided to the area by Cascade Natural Gas (CNG), which operates and maintains facilities in the City, communities of Mt. Vernon and La Conner, and other communities within Skagit County. BP Gas also supplies natural gas near the project site via the Olympic Pipe Line Company with 16-inch gas lines located on the south side of Stevenson Road, approximately 360 feet south of the project site. Many private companies provide telephone, internet, and cable services to properties within the vicinity of the project site. Prominent companies offer a host of telecommunication services including Comcast, Clear, Wave Broadband, and AT&T.

### **3.9.5 LAW ENFORCEMENT**

Pursuant to RCW chapter 10.92, either federal or state law enforcement officers may exercise jurisdiction over tribal lands in the State of Washington. In order for the state to have jurisdiction on tribal lands, the sovereign tribal government and all local government law enforcement agencies that are to have jurisdiction on tribal lands must enter into an interlocal agreement pursuant to RCW chapter 39.34 (Washington, 2008). The Anacortes Police Department (APD) and the Skagit County Sheriff's Office currently exercise jurisdiction to the project site. In addition to patrol and coroner services, the Sheriff's Office maintains K-9 units, a SWAT Team, and a Crisis Response Team. The main sheriff station is located in Mt. Vernon.

The APD serves approximately 16,000 citizens in an area spanning roughly 15 square miles. Patrol and emergency response services are provided 24 hours a day, 7 days a week. There are currently 25 commissioned police officers and six non-commissioned support staff employed by the department (APD, 2011).

### **3.9.6 FIRE PROTECTION AND EMERGENCY MEDICAL**

The Anacortes Fire Department (AFD) provides fire suppression services to an area of 14 square miles including the project site. The AFD also provides advanced life support emergency medical services to 84 square miles, including the City and Fidalgo and Guemes Islands. Other services provided by the

AFD include public education, fire prevention, limited rescue delivery, and operations level hazardous material response (AFD, 2010).

The AFD has three stations with Station 3 being closest to the project site, located approximately 0.5 mile to the east. Station 3 is staffed 12-hrs a day by two firefighter/paramedics. Station 1, located 4.5 miles to the northwest, is the largest and houses the administrative staff along with two ambulances, a rescue vehicle, two pumper engines, a ladder engine, and a command vehicle. In 2010, the AFD staff consisted of three chief officers, 20 career firefighters, seven volunteer firefighters, and one administrative support person.

The Mt. Erie Volunteer Fire Department, also called the Skagit County Fire Protection District 11, is a class eight rural fire department covering an area of 15 square miles along the southern end of Fidalgo Island. The department is overseen by three commissioners and is staffed by 25 volunteer firefighters. Two fire stations are operated by the department, with Station 2 being the closest to the project site, located approximately three miles to the southwest. Station 2 houses two Class A fire engines, a brush engine, and also houses one engine owned by the Washington State Department of Natural Resources to allow for immediate response readiness to unexpected fires.

The Summit Park Volunteer Fire Department also has equipment stored at a station approximately 1,500 feet east of the site at 8652 Stevenson Road. Additionally, the Summit Park Fire Department operates a fire station at 9575 Padilla Road approximately 1 mile east of the site. Both of these stations are in Skagit County and would provide support to the AFD, if necessary, through mutual aid agreements.

### **3.9.7 PUBLIC SCHOOLS**

The project site is located within the Anacortes School District (ASD). ASD currently provides educational services to the project site and surrounding area through three elementary schools, one middle school, two high schools, as well as a pre-school and home education partnership. Schools in close proximity to the project site that are part of the ASD include the Fidalgo Elementary School, Anacortes Middle School, and Anacortes High School. During the 2010-2011 school-year, ASD had approximately 2,590 students, with an average pupil to teacher ratio of 24:1 (ASD, 2011).

### **3.9.8 PARKS AND RECREATION**

There are approximately 25 County operated parks, open space lands, sports fields, day use areas, and other recreational properties located throughout Skagit County. The Skagit County Parks and Recreation Department manages over 1,700 acres of park land (Skagit County, 2004). There were 21 full-time and two part-time works employed by the department in 2004. Services off by the County's Parks and Recreation Department also include soccer, baseball, and volleyball leagues.

The City has approximately 20 parks, community forest lands, and playgrounds. The City's Parks and Recreation Staff employs 14 individuals, with several administration and maintenance facilities located throughout Anacortes. Parks within the vicinity of the Project Site include the Tommy Thompson Parkway and the Alice Parchman Newman Park, both located approximately 2.5 miles northwest of the project site.

## **3.10 NOISE**

### **3.10.1 NOISE EXPOSURE AND COMMUNITY NOISE**

Noise is generally defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) which is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain.

Environmental noise is typically measured in A-weighted decibels (dBA). A dBA is a dB corrected for the variation in frequency response of the typical human ear at commonly encountered noise levels. In general, A-weighting of environmental sound consists of evaluating all of the frequencies of a sound, taking into account the fact that human hearing is less sensitive at low frequencies and extremely high frequencies than in the frequency mid-range.

An individual's noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given instant in time. However, community noise varies continuously over a period of time with respect to the contributing sound sources in the community noise environment. What makes community noise constantly variable throughout a day is the addition of short duration single event noise sources such as aircraft flyovers, vehicle pass-bys, sirens, etc., which are readily identifiable to the individual. These successive additions of sound to the community noise environment changes the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to appropriately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors such as equivalent noise level ( $L_{eq}$ ), day/night noise level ( $L_{dn}$ ), and Community Noise Equivalent Level (CNEL), which averages noise over a specified number of hours, generally 24-hours.

Construction noise is a common component of community noise. Construction noise is dominated by heavy equipment. In general, construction noise is intermittent and short-term in nature and generally occurs during the daytime hours.

#### ***Vibration***

The effects of groundborne vibrations typically cause only a nuisance to people, but buildings or structures may be damaged at extreme vibration levels. Although groundborne vibration can be felt

outdoors, it is typically an annoyance only indoors, where the associated effects of the building shaking can be notable. Groundborne noise is an effect of groundborne vibration and only occurs indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may consist of the rattling of windows or dishes on shelves.

Peak particle velocity (PPV) is often used to measure vibration. PPV is the maximum instantaneous peak (inches per second) of the vibration signal. Scientific studies have shown that human responses to vibration vary by the source of vibration, which is either continuous or transient. Continuous sources of vibration include construction, while transient sources include truck movements. Generally, the thresholds of perception and annoyance are higher for transient sources than for continuous sources. Structural damage can occur when PPV values are 0.5 inches per second or greater. Annoyance can occur at levels as low as 0.1 inches per second and become strongly perceptible at approximately 0.9 inches per second (Caltrans, 2004).

**Table 3-9** shows PPV vibration levels caused by representative construction equipment, as published by the Federal Transit Administration (FTA).

**TABLE 3-9**  
VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	PPV at 25 feet (inches/second)
Large bulldozer	0.089
Excavator	0.089
Compactor	0.170
Scaper	0.089
Loaded trucks	0.076
Small bulldozer	0.003

SOURCE: FTA, 2006.

### 3.10.2 REGULATORY SETTING

#### *FEDERAL NOISE ABATEMENT CRITERIA*

The Federal Highway Administration (FHWA) establishes noise abatement criteria (NAC) for various land uses that have been categorized based upon activity. Land uses are categorized on the basis of their sensitivity to noise as indicated in **Table 3-10**. The FHWA NAC is based on peak traffic hour noise levels.

Sensitive receptors with the potential to be impacted by the project alternatives include residential land uses; thus, Category B 67 dBA Leq noise standard would apply for the Proposed Project. Since the

FHWA and the City do not have noise standards for construction, for this analysis the activity criteria provided in **Table 3-10** will be used to evaluate impacts to the noise environment from construction activities.

### 3.10.3 SENSITIVE RECEPTORS

Some land uses are considered more sensitive to noise than others due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved.

**TABLE 3-10**  
FEDERAL NOISE ABATEMENT CRITERIA HOURLY A-WEIGHTED SOUND LEVEL DECIBELS (1)

Activity Category	Activity Criteria <sup>2</sup> Leq (h), dBA <sup>3</sup>	Evaluation Location	Activity Category Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B <sup>4</sup>	67	Exterior	Residential
C <sup>4</sup>	67	Exterior	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E <sup>4</sup>	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, shipyards, utilities (water resources, water treatment, electricity), and warehousing.
G	--	--	Undeveloped lands that are not permitted

<sup>1</sup> Either Leq(h) may be used on a project.

<sup>2</sup> Hourly A-weighted sound level, decibels (dBA).

<sup>3</sup> The leq() and l10(h) Activity Criteria values are for impacts determination only, and are not design standards for noise abatement measures.

<sup>4</sup> Includes undeveloped lands permitted for this activity category.

SOURCE: FHWA, 2010.

Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, and parks and other outdoor recreation areas generally are more sensitive to noise than commercial or industrial land uses. A sensitive receptor is defined as any living entity or aggregate of entities whose comfort, health, or well-being could be impaired or endangered by the existence of the criteria pollutant, whether it is emissions or noise, in the atmosphere.

Sensitive noise receptors in the vicinity of the project site include the three single-family residences located 450 to 500 feet south of the project site and the church located approximately 150 feet west of the Project Site.

### **3.10.4 EXISTING NOISE SOURCES**

The project site is adjacent to several existing noise sources. Traffic noise from SR-20 dominates the noise environment in the vicinity of the project site. Commercial activities such as diesel trucks, contribute to the existing ambient noise level in the area. There are no existing sources of vibration in the vicinity of the Proposed Project.

## **3.11 HAZARDOUS MATERIALS**

### ***EXISTING CONDITIONS***

A Phase I Environmental Site Assessment (Phase I ESA) was conducted for a study area that included the 3.3-acre project site to determine if any Recognized Environmental Conditions (RECs) exist (PBS&J, 2008). RECs refer to the presence or likely presence of conditions on a property that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products on the property or into the ground, groundwater, or surface water of the property. This includes hazardous substances and petroleum products. The Phase I ESA was prepared in accordance with the BIA Guidelines (602 DM Chapter 2) and the American Society for Testing and Materials (ASTM) Standard Practice E 1527-05. The Phase I ESA included site reconnaissance, review of federal and state regulatory agency records and databases, interviews with local officials and property owners and review of historical aerial photographs of the 3.3-acre project site. No RECs were recorded on the property.

The Texaco, Inc. site, approximately one-half mile from the subject property, was found during a review of regulatory agency database search (PBS&J, 2008). Based on the proximity to the subject property this site does not constitute a potential REC associated with the subject property.

The Venoil, LLC Anacortes site, located approximately one-third mile from the subject property, was found during a review of regulatory agency database search (PBS&J, 2008). Based on the proximity to the subject property this site does not constitute a potential REC associated with the subject property.

The Frontier Ford Anacortes facility is situated northwest of the subject property to the northwest. This facility has not stored hazardous waste since 2003 and there are no outstanding violations at the facility (EDR, 2008a). Soil at the site has been impacted by a release in 1992 related to underground storage tanks (USTs) (EDR 2008a). Groundwater has not been reported as impacted (Section 5.2). The status of this facility is reported as “Reported Cleaned Up” which indicates that the facility has reported that the release has been resolved but Ecology has not yet released the facility from further action (EDR 2008a). Based on the status of this facility and the lack of groundwater impacts, the Frontier Ford Anacortes facility does not constitute a potential REC associated with the subject property.

Based on the site reconnaissance of the project site, review of federal and state regulatory agency records and databases, interviews with property owners and review of historical aerial photographs, the Phase I ESA did not identify any RECs on the project site.

## **REGULATORY SETTINGS**

### ***FEDERAL***

At the federal level, the principal agency regulating the generation, transport and disposal of hazardous substances is the EPA, under the authority of RCRA. The EPA regulates hazardous substance sites under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). Applicable federal regulations are contained primarily in Titles 29, 40, and 49 Code of Federal Regulations (CFR).

The following represent federal laws and guidelines governing hazardous substances.

- Federal Water Pollution Control Act
- CAA
- Occupational Safety and Health Act (OSHA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA)
- Guidelines for Carcinogens and Biohazards
- Superfund Amendments and Reauthorization Act Title III (SARA)
- Resource Conservation and Recovery Act (RCRA)
- Safe Drinking Water Act
- Toxic Substances Control Act

The Samish Tribe would be required to conform to federal regulations under 40 CFR 280, Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (USTs). Systems subject to these requirements are exempt from other federal regulation, including 40 CFR 112 Oil Pollution Prevention, to eliminate redundancy and streamline paperwork.

40 CFR 280 includes requirements for tank installation, monitoring and reporting, corrective action, remediation and site cleanup, and tank closure and removal. The regulation cites industry standards for

tank design, integrity testing, repair, corrosion protection, release detection, and interstitial monitoring. The regulation is implemented at the federal level by the EPA. The implementing agency for the project site would be EPA Region 10.

### 3.12 VISUAL RESOURCES

The project site is currently undeveloped and contains grass and shrubs (**Figure 3-4**). The visual characteristics of the project site and surrounding areas are typical of semi-rural development along SR-20 within the City and Skagit County. Commercial/industrial development, rural residential units, and scattered retail uses are located along SR-20 and surrounding roads. The Summit Park Bible Church is located west of the site and PSE electric transmission substation is located to the southwest of the site.

Visual resources surrounding the project site include views of the Cascade Mountains to the east, including Mount Baker. Fidalgo Bay is also visible from the project site vicinity. Traffic volumes are low within the vicinity with the exception of the SR-20 corridor.

The City Comprehensive Plan designation for the project site is Light Manufacturing (LM1), which allows industrial type uses, as well as multi-family residential housing and parks. The property site is not located in the vicinity of a state or county designated scenic highway.

Following the transfer of the project site into federal trust, local General Plan designations and zoning regulations would no longer apply to the parcels. Although the Samish Tribe's plans for the land would not be consistent with a Light Manufacturing designation, the development would generally be in keeping with the surrounding land uses.

# ***SECTION 4.0***

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## ***ENVIRONMENTAL CONSEQUENCES***

# SECTION 4.0

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## ENVIRONMENTAL CONSEQUENCES

In this section, environmental consequences are described for Alternative A (Proposed Action) and Alternative B (No-Action). Areas that are analyzed include direct and indirect impacts to land resources, water resources, air quality, biological resources, cultural resources, socioeconomic conditions and environmental justice, transportation and circulation, land use, public services, noise, hazardous materials, and visual resources. The Council on Environmental Quality (CEQ) regulations state that direct impacts are those caused by the action and occur at the same time and place, while indirect impacts are caused by the action and occur later in time or further in distance, but are still reasonably foreseeable (CEQ 1508.8). Cumulative and growth-inducing effects of the Proposed Action are also assessed for each of these issue areas.

### 4.1 ALTERNATIVE A - PROPOSED PROJECT

#### 4.1.1 LAND RESOURCES

##### *SIGNIFICANCE CRITERIA*

Impacts to land resources would be significant if the project changes topography so that it is noticeable to the casual observer, or adversely and unavoidably affects drainage in the area. Seismic conditions would be significantly affected if the proposed project substantially increases the occurrence of seismic events or increases the risks from seismic events. Impacts to soils would be significant if the project significantly and unavoidably increases soil erosion. Mineral resources would be significantly affected if the project reduces the regional availability of commercial mineral resources or increases the cost of extracting mineral resources.

##### *TOPOGRAPHY*

No major changes to topography would result from construction of the proposed development or related infrastructure. Construction of the Proposed Project would require grading of a total of approximately 1.78 acres. Drainage patterns would be maintained as discussed in **Section 4.1.2**. Best Management Practices (BMPs) and mitigation measures related to land resources are included in **Section 5.1**. As the grading activities proposed during the construction stage would not create changes from the existing site topography, the implementation of the measures in **Section 5.1** would result in less than significant impacts to topography.

### ***SEISMIC CONDITIONS***

The projected earthquake magnitudes for the region indicate that the project site could potentially be exposed to future seismic shaking (USGS, 2009). Construction of the Proposed Project would adhere to the standards equivalent to the International Building Code (IBC), 2009 Edition, regarding seismic protection. Use of these IBC standards would allow ground shaking-related hazards to be managed from a geologic, geotechnical, and structural standpoint such that risks to the health or safety of workers or members of the public would be reduced. Therefore, impacts from potential seismic conditions would be less than significant.

### ***SOIL TYPES AND CHARACTERISTICS***

The soil types located within development areas on the project site are characterized by minimal slopes and slight erosion hazards. During construction of the development components, the exposure of soil increases the risk of erosion. With compliance with the BMPs required within the United States Environmental Protection Agency (EPA) National Pollution Discharge Elimination System (NPDES) General Construction Permit as described in **Section 2.1.9** and the implementation of mitigation measures within **Section 5.0**, the potential for erosion would be less than significant.

### ***MINERAL RESOURCES***

As stated in **Section 3.1.5**, there are no known mineral resources within the project area, and the project site is located outside regions where significant mineral resources are likely to occur. Construction of the Proposed Project would not result in the loss of mineral resources. No mitigation is warranted.

With implementation of the mitigation measures listed in **Section 5.1**, all potential impacts to land resources would be less than significant.

## **4.1.2 WATER RESOURCES**

### ***SIGNIFICANCE CRITERIA***

Impacts on water resources would be significant if runoff from the site causes local flooding or introduces additional contaminants to stormwater runoff that leaves the site. Groundwater impacts would be significant if the project adversely affects local water supply either by reducing the availability of potable water or increasing the demand for domestic water to the point where the existing water supply system would need to be expanded. Water quality would be significantly affected if wastewater or runoff generated by the project does not meet national water quality standards, including the Clean Water Act (CWA).

### ***SURFACE WATER, DRAINAGE, AND FLOODING***

The Proposed Project (**Figure 2-1**) would increase impervious surfaces on the project site by approximately 1.78-acres through construction of the gas station and convenience store. Increased impervious surfaces would result in increased peak flows and increased total discharge from the project site during wet weather events. If not properly managed, this could increase stormwater flows to area drainage systems and cause localized flooding. To reduce this impact, drainage would be directed through on-site vegetated swales to an on-site retention pond. Water from the retention pond would be directed off-site through an existing drainage ditch prior to entering the existing 18-inch Washington State Department of Transportation (WSDOT) stormwater culvert that conveys stormwater to the existing drainage structure under SR-20 (western/central portion). An additional discharge point would dissipate stormwater overland to the existing drainage ditch on the adjacent, tribal-owned property (eastern portion). No significant impacts related to drainage would occur.

All parcels on which buildings and associated infrastructure would be constructed are located outside the Federal Emergency Management Agency (FEMA)-designated 100-year flood zone (**Appendix C**). No significant impacts related to flooding would occur.

### ***WATER SUPPLY AND GROUNDWATER***

Water would be provided by connection to either an existing City water supply line that runs along Stevenson Road to the south of the site or by existing lines to the north of SR-20. Due to the modest size of development components under Alternative A and the planned tie-in to the City water distribution system, groundwater impacts from Alternative A would be less than significant. Mitigation measures in **Section 5.2** would further protect groundwater supply and reduce water demand.

### ***WASTEWATER TREATMENT AND DISPOSAL***

Wastewater would be treated and disposed of at the existing City wastewater treatment plant (WWTP), which is subject to an existing NPDES permit (NPDES Permit # WA-002025-7). Wastewater from the Proposed Project would be similar to that produced at other commercial enterprises in the City. No significant impacts to water quality would occur through the connection to WWTP due to approved treatment and discharge standards currently in place at the City WWTP.

### ***WATER QUALITY***

The Samish Tribe is required to adhere to the provisions of the federal CWA on trust property. To comply with these regulations and further reduce the effects of stormwater-associated pollutants, the Samish Tribe shall comply with the terms of the USEPA General Construction NPDES permit. This permit would include preparation and implementation of a site specific Stormwater Pollution Prevention Plan (SWPPP) and proper implementation of stormwater BMPs. With implementation of these NPDES

permit BMPs, development of on-site stormwater retention swales, and recommended mitigation measures described in **Section 5.2**, potential impacts to water quality would be less than significant. **Section 5.2** also describes measures to prevent fuel spills, overfills, and tank corrosion. These measures include appropriate site design, fuel transfer measures, overflow protection, corrosion performance standards, leak detention systems, and maintenance measures.

### 4.1.3 AIR QUALITY

#### *SIGNIFICANCE CRITERIA*

A significant impact to regional air quality would occur if the Proposed Project emits criteria air pollutants (CAPs) which exceed *de minimis* levels in a nonattainment or maintenance area.

A significant impact to climate change would occur if emissions from the Proposed Project exceed the Council on Environmental Quality (CEQ) reporting threshold.

#### *CONSTRUCTION EMISSIONS*

Construction would entail earthwork, fine grading, and construction using a mix of trucks, scrapers, and excavators. Effects on air quality during construction were evaluated by estimating the quantity of pollutants emitted over the duration of the construction period. Particulate matter is the primary pollutant of concern resulting from earth-moving activities.

Volatile organic compounds (VOC), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and carbon monoxide (CO) emissions from the construction would be produced primarily by diesel-fueled equipment use. The majority of these emissions would be generated by construction equipment and haul trips to the project site. Emissions from diesel-fueled trucks and construction equipment were calculated using EPA approved emission factors from 2007 Off-Road air quality model.

#### *CONSTRUCTION ANALYSIS*

Construction of the Proposed Project would emit PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, SO<sub>2</sub>, CO, VOC, GHGs, and Hazardous air pollutants (HAPs) primarily in the form of diesel particulate matter (DPM) from the use of construction equipment and grading activities. Emissions from construction equipment have the potential to increase the concentration of DPM in the close vicinity (within approximately 500 feet) of the construction site, if control measures are not implemented.

Construction is anticipated to begin in 2013 and last approximately 6 months. Construction is assumed to occur for 8-hours a day, 5 days a week. It is assumed that construction would consist of a 10,000 square foot convenience store with eight fuel pumps. The construction emission totals for the Proposed Project are shown in **Table 4-1**.

**TABLE 4-1**  
CONSTRUCTION EMISSIONS

Construction Activity	Criteria Pollutants					
	VOC	NO <sub>2</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
	Tons per Year					
<b>Proposed Project</b>						
Site Grading	0.06	0.78	0.29	0.11	0.05	0.05
Building	0.63	2.87	3.4	0.28	0.31	0.3
<b>Total Emissions</b>	<b>0.69</b>	<b>3.65</b>	<b>2.69</b>	<b>0.39</b>	<b>0.36</b>	<b>0.35</b>
Conformity De Minimus Levels	N/A	N/A	N/A	N/A	N/A	N/A
<i>Exceedance of Levels</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
SOURCE: Mobile6.2, 2003, AES, 2012.						

The project site is in a region of attainment for all criteria pollutants. Under the federal Clean Air Act (CAA) 40 CFR Part 93, if a region is in attainment for all criteria pollutants, then the region meets the NAAQS and there are no *de minimis levels* or “thresholds” for project emissions. Mitigation measures provided in **Section 5.3** would minimize construction related emissions of criteria pollutants and also reduce DPM emissions from construction equipment, avoiding potentially adverse effects to nearby sensitive receptors. Therefore, construction of the Proposed Project would not result in significant adverse effects associated with the regional air quality environment.

#### **OPERATIONAL EMISSIONS**

Emission factors in grams per vehicle miles traveled (g/vmt) were estimated for patron vehicles during January and July (winter and summer) and evaluated using EPA’s model MOBILE6.2 (EPA, 2003). MOBILE6.2 calculates emission factors for gasoline-fueled and diesel-fueled light-duty vehicles, trucks, heavy-duty vehicles, and motorcycles. The model accounts for progressively more stringent tailpipe emission standards over the vehicle model years evaluated. MOBILE6.2 model input data are site specific and the output data are provided in **Appendix D**.

#### **Mobile Source Emissions**

Emissions of PM<sub>10</sub>, NO<sub>x</sub>, SO<sub>2</sub>, CO, VOC, and CO<sub>2</sub> from vehicles traveling to, from, and within the project site were calculated. Calculations were based on emission factors derived from the EPA’s MOBILE6.2 air quality model (EPA, 2003), trip estimations developed using the ITE Trip Generation Manual, and estimated number of patrons. Emissions factors for SO<sub>2</sub> were derived from the EPA’s AP 42 and used to estimate project related SO<sub>2</sub> emissions (EPA, 1995).

#### **Stationary Source Emissions**

Natural gas would be used as fuel for hot water boilers, and water heaters. Based on facilities of similar size, annual gas usage for the Proposed Project is estimated at 2 million standard cubic feet (MMscf) of natural gas use. Emissions from fugitive gas vapor were calculated assuming 650,000 gallons of gas sold

per month. Emissions from natural gas combustion and fugitive gas vapor were calculated using emission factors from AP-42 (EPA, 1995).

### Operations Analysis

The Proposed Project would generate mobile emissions from patron, employee, and delivery vehicles, as well as stationary emissions from combustion of natural gas from equipment on the project site. Estimated mobile and stationary emissions from operation of the Proposed Project are provided in **Table 4-2**. Detailed calculations of vehicle and area emissions are included as **Appendix D**.

**TABLE 4-2**  
OPERATION EMISSIONS

Construction Activity	Criteria Pollutants (Tons per Year)					
	VOC	NO <sub>2</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Stationary	3.61	0	0.01	0	0.01	0
Mobile	1.9	2.7	33.8	0	0.1	0.1
Fugitive Gas Vapor	19.5	N/A	N/A	N/A	N/A	N/A
<b>Total Emissions</b>	<b>25.01</b>	<b>2.7</b>	<b>33.81</b>	<b>0</b>	<b>0.11</b>	<b>0.1</b>
Conformity De Minimus Levels	N/A	N/A	N/A	N/A	N/A	N/A
Exceedance of Levels	N/A	N/A	N/A	N/A	N/A	N/A

N/A = not applicable; de minimus level are not applicable due to attainment status (refer to **Section 3.4**).  
SOURCE: Mobile6.2, 2003.

The project site is in a region of attainment for all criteria pollutants. Under the federal CAA 40 CFR Part 93, if a region is in attainment for all criteria pollutants, then the region meets the NAAQS and there are no *de minimis levels* or “thresholds” for project emissions. Mitigation provided in **Section 5.3** would further reduce criteria air pollution emissions from operation of the Proposed Project. Therefore, operation of the Proposed Project would not result in significant adverse effects associated with the regional air quality environment.

### FEDERAL GENERAL CONFORMITY

The Proposed Project is located within the jurisdiction of the Northwest Clean Air Agency (Skagit County included); an area of attainment for all federal CAPs (refer to **Table 3-4**). Because the site is within a federal air quality attainment area, a general conformity determination is not warranted.

### Climate Change

The Proposed Project would emit greenhouse gases during construction and operation similar to other developments of similar size. Carbon dioxide (CO<sub>2</sub>) is the most prevalent greenhouse gases (GHG) and is

used as a measurement standard (CO<sub>2</sub> equivalent) for other GHG such as methane. The CEQ has issued draft guidance for evaluating project-level climate change impacts under NEPA and is currently in the process of finalizing their evaluation guidance. The CEQ NEPA Guidance requires that a project's GHG emissions be quantified and an analysis conducted, particularly if the project is projected to directly emit greater than 25,000 metric tons (MT) per year of CO<sub>2</sub>. The guidance suggests that 25,000 metric tons of Carbon Dioxide-equivalent provides a "useful indicator" for identifying when climate change analysis may prove "meaningful"; therefore, for this analysis a 25,000 MT threshold will be used.

Development of the Proposed Project would result in an increase in greenhouse gas emissions related to mobile sources (trips generated), area sources (components of the Proposed Project that directly emit GHGs), and indirect sources related to electricity, wastewater processing, and water transport.

#### *Methodology*

Two recent federal court decisions (*Massachusetts v. Environmental Protection Agency*, U.S., 1275 S.Ct. 1438, 1462 [2007] and *Center for Biological Diversity v. National Highway Safety Administration*, 508 F.3d 508 [9<sup>th</sup> Cir. 2007]), CEQ draft Guidance, and slowly increasing scientific consensus have resulted in general guidance regarding appropriate GHG analysis (**Section 3.4**).

The approach used herein involves a combination of quantitative and qualitative analysis focusing on the project's impact on federal and state efforts to reduce cumulative GHG emissions. The following analysis is consistent with the CEQ's *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*, released on February 18, 2010, which requires that a NEPA analysis of climate change quantify project-related GHG emissions and mitigate those emissions.

Global warming is a global issue that is not being caused by any single development project, but by global increases in atmospheric GHG concentrations. Thus, global warming is most effectively addressed on a global or regional level. Washington's global warming policies and legislation (most notably Executive Order 07-02 and SB 6001) are intended to be regional approaches to ensure that statewide emissions are reduced substantially in the future (to levels much lower than existing levels).

#### *Carbon Dioxide Equivalent*

Carbon dioxide equivalent (CO<sub>2</sub>e) is a method by which GHGs other than CO<sub>2</sub> are converted to a CO<sub>2</sub>-like emission value based on a heat-capturing ratio. As shown in **Table 4-3**, CO<sub>2</sub> is used as the base and is given a value of one. CH<sub>4</sub> has the ability to capture 21 times more heat than CO<sub>2</sub>; therefore, CH<sub>4</sub> is given a CO<sub>2</sub>e value of 21. Emissions are multiplied by the CO<sub>2</sub>e value to achieve one GHG emission value. By providing a common measurement, CO<sub>2</sub>e provides a means for presenting the relative overall effectiveness of emission reduction measures for various GHGs in reducing project contributions to global climate change.

**TABLE 4-3**  
GREENHOUSE GAS CO<sub>2</sub> EQUIVALENT

Gas	CO <sub>2</sub> e Value
CO <sub>2</sub>	1
CH <sub>4</sub>	21
N <sub>2</sub> O	310
HFCs/PFCs <sup>1</sup>	6,500
SF <sub>6</sub> <sup>1</sup>	23,900

NOTES: CO<sub>2</sub>e = Carbon dioxide equivalent

<sup>1</sup> High-global warming potential pollutants

CH<sub>4</sub> = methane, N<sub>2</sub>O = nitrous oxide

HFCs/PFCs = hydrofluorocarbons/perfluorocarbons

SF<sub>6</sub> = sulfur hexafluoride

SOURCE: IPCC, 2007, AES, 2012

### GHG Emission Estimates and Reduction Measures

EPA Mobile6.2 and OFFROAD 2007 emissions modeling software were used to estimate area, construction, and mobile emissions. CH<sub>4</sub> and N<sub>2</sub>O emissions from mobile sources were estimated using emission factors from the Local Government Operations Protocols (LGOP, 2008) and converted to CO<sub>2</sub>e. Indirect emissions, which include electricity use, water conveyance, and wastewater treatment, were estimated using LGOP emission factors. Construction emissions totaled an estimated 339 metric tons (MT) of CO<sub>2</sub>e. As shown in **Table 4-4**, Proposed Project would result in direct GHG emissions at 447 MT of CO<sub>2</sub>e per year in the first year and 108 MT thereafter, and indirect emissions of 1,894 MT of CO<sub>2</sub>e per year.

**TABLE 4-4**  
PROPOSED PROJECT-RELATED GHG EMISSIONS

Proposed Project	GHGs	CO <sub>2</sub> e Emissions (ST)	Conversion Factor (ST/MT)	GHG Emissions in CO <sub>2</sub> e (MT per year)
<b>Direct</b>				
Construction	CO <sub>2</sub>	225	0.91	339
Area	CO <sub>2</sub>			108
<i>Subtotal</i>				313
<b>Indirect</b>				
Mobile	CO <sub>2</sub>	1,693	0.91	1,541
Electricity Usage	CO <sub>2</sub>			346
Water Conveyance	CO <sub>2</sub> e			2
Solid Waste	CO <sub>2</sub> e			2
Wastewater Treatment	CO <sub>2</sub> e			3
<i>Subtotal</i>				1,894
<b>Total Project-Related GHG Emissions</b>				<b>2,341</b>

NOTES: ST = short tons; MT = metric tons; CO<sub>2</sub>e = carbon dioxide equivalent

SOURCE: OFFROAD, 2007, Mobile 6.2, 2003; LGOP, 2008.

Based on a review of the analysis of the Proposed Project, direct (construction and area source emissions) and indirect (mobile source emissions) GHG emissions would be well below the CEQ reporting standard of 25,000 MT per year. A less than significant climate change impact would result. Although impacts would be less than significant, **Section 5.3** prescribes mitigation measures to further reduce adverse effects to air quality.

#### **4.1.4 BIOLOGICAL RESOURCES**

##### ***SIGNIFICANCE CRITERIA***

A project would be considered to have a significant impact on biological resources if it:

- Has a substantial adverse effect on species with special status under the federal Endangered Species Act (FESA);
- Has a substantial adverse effect on habitat necessary for the future survival of such species, including areas designated as critical habitat by the U.S. Fish and Wildlife Service (USFWS) and areas designated as Essential Fish Habitat (EFH) by the National Marine Fisheries Service (NMFS);
- Results in a take of migratory bird species as defined by the Migratory Bird Treaty Act (MBTA) (16 USC §703-712) ; or
- Has a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (CWA) through direct removal, filling, hydrological interruption, or other means.

##### ***METHODOLOGY***

The analysis of potential impacts is based on the existing biological setting, which is discussed in **Section 3.4**. The evaluation of adverse effects to biological resources is based on a comprehensive examination of the existing project site and the anticipated extent of habitats, wetland features, and the presence/absence or potential occurrence of federally listed species that would be impacted by the proposed project.

##### ***ANTICIPATED IMPACTS TO BIOLOGICAL RESOURCES***

###### ***Habitats***

The Proposed Project would remove approximately 1.7 acres of nonnative annual grassland and approximately 0.089 acres of ruderal/disturbed areas. Neither of these habitat types are considered sensitive as the ruderal/disturbed areas have previously been modified and the nonnative annual grassland is actively managed through mowing. Therefore, the Proposed Project would not adversely affect sensitive habitats. No mitigation is required.

### ***Wetland Features***

A preliminary wetland delineation indicates that there are no wetlands or waters of the U.S. that occur within the project site (**Appendix A**). Therefore, no wetlands or waters of the U.S. would be adversely affected by the Proposed Project and no mitigation is required.

### ***Federally Listed Special Status Species***

As previously discussed in **Section 3.4**, the project site does not provide habitat for any federally listed plants or wildlife. A species list and informal USFWS consultation records are provided in **Appendix A**. The Proposed Project would not result in an adverse affect to federally listed plants or wildlife. No mitigation is required.

### ***Migratory Birds and Other Birds of Prey***

The project site provides potential nesting habitat for migratory birds and other birds of prey. If active nests are present in these areas, tree removal and other construction activities (including ground disturbance to nonnative annual grassland habitat) associated with development of the Proposed Project could adversely affect these species. During construction of the Proposed Project, actions that cause direct injury or death of a migratory bird, removal of an active nest with eggs or nestling during the breeding season, or any disturbance that results in nest abandonment or forced fledging of nestlings is considered take under the MBTA. Upon implementation of the mitigation measures identified in **Section 5.4**, potential adverse affects to nesting birds would be reduced to a less than significant level.

### ***Critical Habitat***

The project site occurs within the designated range of the following essential fish habitats (EFHs) for Chinook salmon (*Oncorhynchus* (=Salmo) *tshawytscha*), Upper Columbia Spring-Run EFH, Snake River Fall-Run EFH, Snake River EFH, and Puget Sound EFH. The project site occurs within the designated range of the following EFH for bull trout (*Salvelinus confluentus*) Coastal Puget Sound Distinct Population Segment. The project site occurs within designated critical habitat and EFH for these species; however, there is no hydrological connection to any of the tributaries identified within the EFHs because there are no waterways within the project site. Under the Magnuson-Stevens Fishery Conservation and Management Act, federal agencies are required to consult with the NMFS on all actions, proposed actions, authorized, funded, or undertaken by the agency, which may adversely affect EFH (MSA 305.b.2). However, because critical habitat includes the Pacific Ocean and tributaries that provide habitat and that no waterways occur within the project site, then the Proposed Project would not adversely affect critical habitat. No mitigation is required.

## 4.1.5 CULTURAL RESOURCES

### *SIGNIFICANCE CRITERIA*

For historic properties, a significant adverse impact would result if implementation of the undertaking resulted in one of the following effects to cultural resources that are listed, or eligible for listing, on the National Register of Historic Places (NRHP):

- Physical destruction of or damage to all or part of the resource.
- Alteration of a resource.
- Removal of the resource from its historic location.
- Change of the character of the resource's use or of physical features within the resource's setting that contribute to its historic significance.
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the resource's significant historic features;
- Neglect of a resource that causes its deterioration.
- Transfer, lease, or sale of the property.

### *ARCHAEOLOGICAL RESOURCES*

A literature review, records search, Native American consultation, and pedestrian surveys for the presence of cultural resources were conducted within the project site as part of the cultural resources study. No potentially significant cultural resources were identified as a result of those efforts. Therefore, no impacts to known historic properties would occur as a result of the undertaking and associated development.

There is always a possibility, however remote, that significant subsurface cultural resources may exist on the project site, as archaeological sites may be buried with no surface manifestation. In addition, there is a remote possibility that an unanticipated discovery of human remains could occur. Development proposed as a part of this undertaking may adversely affect previously unknown subsurface prehistoric or historic archaeological resources, including human remains. If archaeological features are discovered, this could be a potentially significant impact.

Mitigation measures for the protection and treatment of unanticipated discoveries of archaeological resources and/or human remains are presented in **Section 5.5**. Implementation of these mitigation measures would reduce potential impacts to cultural resources to a less than significant level.

### *PALEONTOLOGICAL RESOURCES*

With respect to paleontological resources, an impact would be considered significant if it directly or indirectly destroys such resources. As described in **Section 3.5.4**, indicators of paleontological resources within the project site are absent, and no such resources were observed by AES staff in the course of site reconnaissance visits in 2009. Geologic formations that underlie the project site have a low probability of containing paleontological resources. Therefore, no impacts are anticipated.

There is always the possibility, however slight, that previously unknown paleontological resources could be encountered during construction activities. Mitigation measures are presented in **Section 5.5** for the protection and preservation of unanticipated discoveries of paleontological resources. Implementation of these mitigation measures would reduce impacts to paleontological resources to a less than significant level.

#### 4.1.6 SOCIOECONOMIC CONDITIONS / ENVIRONMENTAL JUSTICE

##### *SIGNIFICANCE CRITERIA*

For the purposes of this EA, project effects are defined as significant if local tax revenues are reduced by one percent or more. The project would also generate significant economic impacts if local unemployment is increased by one percent or more. Additionally, the project is defined to have a significant effect if enrollment at local schools by more than one percent. Environmental justice impacts would be considered significant if the project divides a low-income or minority community, results in the loss of employment or housing opportunities, or increases pollution levels (air, water, and noise) to which they are subjected.

##### *SOCIOECONOMIC CONDITIONS*

Alternative A would remove three project parcels totaling approximately 3.3 acres from the County's property tax rolls, which would result in a loss of tax revenues. For the 2011 tax year, the property taxes for the three proposed trust parcels totaled \$6,788.47. Property taxes for individual parcels for the 2011 tax year are listed in **Table 4-5** below:

**TABLE 4-5**  
**Property Taxes (2011) for Proposed Trust Parcels**

APN	Acreage	Property Tax Collected
P19915	0.25	\$4.40
P19916	0.97	\$2,184.46
P120595	2.07	\$4,599.61

SOURCE: Skagit County Assessor's Office, 2011

In determining impacts to the County's tax base, the \$6,788.47 loss in property taxes is approximately 0.15% of the 2009 City tax revenues of \$4,582,811. This removal of tax revenues would not lead to any adverse physical effects, and therefore would not be significant under NEPA. No mitigation measures are warranted.

Because local residents are expected to work at the gas station/convenience store, there would be no significant net increase in new City or County residents and subsequent increased enrollment in local schools. Therefore, no adverse impacts to local school districts would occur, and no mitigation measures are warranted.

### ***ENVIRONMENTAL JUSTICE***

This environmental justice analysis was prepared using guidance from the CEQ for compliance with Executive Order (EO) 12898. The intent of this evaluation is to determine whether the Proposed Project would impose disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.

The project site is located in a semi-rural area with no low-income populations identified in the vicinity of the project site. Members of the Samish Tribe are a minority population; however, the Proposed Project would provide beneficial effects to members of the Samish Tribe. No minority populations would be subjected to disproportionately high or adverse human health or environmental impacts. The Proposed Project is not anticipated to create any adverse impacts with regard to environmental justice, and no mitigation measures are warranted.

### ***SUBSTITUTION EFFECT***

Potential substitution effects (the loss of customers at existing businesses to the new business) of a tribal gas station on existing gas station facilities is considered when attempting to determine the magnitude of the development impact on the economy. The magnitude of the substitution effect can generally be expected to vary greatly by specific location and according to a number of variables. That is, how much of the gas station's revenue comes at the expense of other business establishments in the area depends on how many and what type of other establishments are within the same market area, as well as other economic and psychological factors affecting the consumption decisions of local residents.

As noted in **Section 3.6.4**, three existing gas stations are located along the SR-20 corridor within a two mile radius of the project site. These stations provide service to local residences and travelers along the SR-20 roadway. Potential substitution effects would be counteracted by the local economic activity generated by these local residents and SR-20 travelers. Specifically, the large number of non-residents traveling SR-20 to and from the ferries located within the City of Anacortes would make up for some area residents choosing to visit the proposed gas station rather than other local establishments. Thus, it is not anticipated that significant quantifiable substitution effect would occur.

## **4.1.7 TRANSPORTATION AND CIRCULATION**

### ***SIGNIFICANCE CRITERIA***

Impacts to the transportation system would be significant if the project increases traffic volumes to the point where traffic exceeds the design capacity of the roadway after implementation of all feasible mitigation measures.

### ***VEHICLE TRANSPORTATION NETWORKS***

Current conditions at nearby roadways indicate excess capacity (**Table 3-8**). Based on Institute of Traffic Engineers (ITE) Land Use Code 945 for Gas/Service Station with Convenience market, the proposed gas station development would generate approximately 1,300 new vehicle trips per day (ITE, 2008). It is estimated that 107 vehicles would enter or exit the project site during the afternoon peak hour. Of these trips, 53 would be entering the project site and 54 would be leaving.

The gas station/convenience store is expected to capture business from vehicles already traveling through the area and is not expected to attract any new vehicles to the local roadways. Most of the vehicles accessing the gas station/convenience store are expected to come from SR-20; 40 percent eastbound and 40 percent westbound. The remaining 20 percent are anticipated to come from local roads via Thompson Road. After fueling, automobiles are expected to use Thompson Road to return to SR-20. Approximately 86 vehicles would use Thompson Road northbound to access SR-20 during the peak hour and an additional six would use Thompson to access Bartholomew Road to the north of SR-20. The total volume of traffic travelling northbound on Thompson Road at the intersection with SR-20 would, therefore, be approximately 91 vehicles during the afternoon peak. Although this is not expected to exceed the design capacity of the intersection, it would be a substantial increase in traffic over current, low-volume conditions. Future improvements at the SR-20 – Thompson Road intersection may be necessary to ensure adequate traffic flow. In order to avoid any potential conflicts with future development at the SR-20-Thompson Road intersection, the Samish Tribe may allocate a right-of-way along the entire length of the western boundary of the project site for this purpose (refer to **Section 5.7**). With implementation of this mitigation measure, impacts to area intersections and roadways would be less than significant.

### ***BICYCLE, PEDESTRIAN, AND TRANSIT NETWORKS***

The Proposed Project would not generate a large number of new pedestrian trips, bicycling activity, or transit riders along SR-20 or the other public roads in the area. The Proposed Project does include provision of a pedestrian sidewalk along site frontage of Thompson Road. This improvement is outlined in Mitigation Measures **Section 5.7**. Thus, no significant impacts are projected to these networks as a result of the Proposed Project.

## **4.1.8 LAND USE**

### ***SIGNIFICANCE CRITERIA***

Land use impacts would be significant if the Proposed Project is substantially different from the existing land uses in the area or is inconsistent with the surrounding land uses. Significant land use impacts would also occur if the Proposed Project converts farmland to other uses, as defined by the Farmland Protection Policy Act (FPPA).

**LAND USE**

The Proposed Project would result in construction and operation of a gas station and convenience store that would be consistent with the uses permitted or conditionally permitted within the City's zoning designation. In addition the Proposed Project would be compatible and consistent with the existing retail/commercial developments along the SR-20 corridor. Once the 3.3-acre site is brought into federal trust, the City land use goals and policies would no longer apply to the project site. Due to the compatible land uses proposed on the project site and the existing land uses surrounding the project site, the impact to land use would be less than significant. No mitigation is required.

**COASTAL ZONE**

The project site is located approximately 3,400 feet (0.644 miles) away from the southern end of Fidalgo Bay, the coastal waterbody closest to the site, and is outside of the Coastal Zone. There are no activities that would directly affect coastal resources. Mitigation measures included within **Section 5.2** for management of stormwater runoff would reduce potential water quality impacts to a less than significant level.

**AGRICULTURE**

In accordance with the FPPA, a Farmland Conversion Impact Rating (FCIR) form was completed during the environmental analysis of the project and submitted to the National Resource Conservation Service (NRCS). The project site received a total score of 75 points (NRCS, 2011c). As discussed in **Section 3.8.3**, sites receiving a combined score of less than 160 (out of 260 possible points) do not require further evaluation. Therefore, the impact to agriculture would be less than significant.

**4.1.9 PUBLIC SERVICES****SIGNIFICANCE CRITERIA**

Impacts to public services would be potentially significant if the additional demand from the Proposed Project requires public service providers to incur costs to expand their delivery systems. Impacts could, however, be reduced to less than significant levels through service agreements.

**WATER SUPPLY**

The Proposed Project would require an estimated water demand of approximately 5,250 gallons per day (gpd) (see **Table 2-2**). The Proposed Project would obtain water through an existing, unused, connection on the project site. The City water treatment plant is currently undergoing an expansion project, increasing the capacity of the plant from 17 million gallons per day (MGD) to 42 MGD in order to meet the anticipated demand for the year 2030 (City of Anacortes, 2011). City-wide water use in 2009 was 6,431 million gallons (City of Anacortes, 2010a). The minimal projected water use by the Proposed Project would not impact the City water system capacity. However, infrastructure improvements may be required as existing water service infrastructure is not sized to meet estimated project demands.

Development of this system upgrade would be subject to regulatory approval by the City. Therefore, a potentially significant impact would occur. Mitigation is included within **Section 5.9** to reduce this impact to a less than significant level.

#### ***WASTEWATER SERVICE***

It is estimated that approximately 5,000 gallons per day (gpd) of wastewater would be generated by the Proposed Project (see **Table 2-2**). Estimated wastewater generation rates were derived from the projected number of daily trips and average wastewater generation rates for similar projects (Canyon Hills, 2003). Wastewater would be sent to the City WWTP through connection to an existing sewer line located to the south of the project site in Thompson Road. Upon connection to the City sewer system, the Samish Tribe would pay current capital connection charges and monthly service fees. The City currently treats and disposes an average of 1.76 MGD at the existing WWTP. An existing NPDES discharge permit allows the City WWTP to treat and dispose 4.5 MGD. The minimal projected wastewater flows by the Proposed Project would not impact the City wastewater treatment system as capacity exists at the City WWTP. However a sewer connection would be required, as no connections are currently located on the project site. The development of this connection would require approval from the City. Therefore, a potentially significant impact would occur, and mitigation is included within **Section 5.9** to reduce this impact to a less than significant level.

#### ***SOLID WASTE***

Solid waste from construction may include paper, wood, glass, aluminum and plastics from packing materials; waste lumber; insulation; empty non-hazardous chemical containers; concrete; metal, including steel from welding/cutting operations; and electrical wiring. This solid waste would be typical in nature and would be collected by City Solid Waste Division service trucks.

As described in **Section 2.1.3**, the gas/station convenience store would have the equivalent of between 20 and 22 full-time employees (many of the sales associates would be part-time employees). Retail trade – food store facilities typically dispose of 2.9 tons of solid waste per employee per year (Calrecycle, 2009); therefore, the gas station/convenience store would generate approximately 63.8 tons of waste per year.

Solid waste would be sent to the Roosevelt Landfill in Klickitat County. Waste generated from Proposed Project would be less than 0.1 percent of the daily waste stream and would represent a negligible addition to the landfill. Therefore, construction and operation of the Proposed Project would not result in a significant effect to the solid waste stream.

#### ***ELECTRICITY, NATURAL GAS, AND TELECOMMUNICATIONS***

Electrical and telephone infrastructure facilities are currently located on and near the project site. The Tribe would coordinate with Puget Sound Energy (PSE) regarding the extension of services to the project site. No adverse utility service impacts would occur.

***LAW ENFORCEMENT***

Under Alternative A, the City of Anacortes Police Department (APD) would continue to provide services to the project site. The planned facilities would result in a negligible increase in demands on the APD due to the limited size and scope of the project. Calls for service would not be disproportionate to other small-scale developments in the City or County, and the Samish Tribe would continue to provide funding for services rendered by the APD on the Tribes trust properties. However, the Tribe does not currently have an agreement for law enforcement services to be provided at the project site. Thus, this impact would be significant and mitigation is provided in **Section 5.9**. Implementation of mitigation measures would reduce impacts to less than significant.

***FIRE PROTECTION AND EMERGENCY MEDICAL SERVICES***

Construction-related impacts include the potential fire threat associated with equipment and vehicles coming into contact with vegetated areas. Construction vehicles and equipment such as welders, torches, and grinders may accidentally spark and ignite vegetation or building materials. The increased risks of fire during the construction of the proposed facilities would be similar to that found at other construction sites and construction related impacts are considered potentially significant. With the implementation of the BMPs and mitigation measures described in **Section 5.9**, impacts would be less than significant during the construction phase of the Proposed Project.

Use of the site for commercial activities would create additional demand for fire protection, and could require more frequent responses from local fire-fighting agencies. The City of Anacortes Fire Department (AFD) would continue to provide services to the project site. However, the Tribe does not currently have an agreement to provide fire protection services to the project site. The Tribe has also expressed intent to negotiate a service agreement with the Summit Park Volunteer Fire Department. Thus, this impact would be significant and mitigation is provided in **Section 5.9**. Implementation of mitigation measures would reduce impacts to less than significant.

Increased emergency calls to 911 as a result of the Proposed Project may occasionally result in slight delays in response times or result in the need for ambulances to be dispatched from more distant locations. Because new demands would be minimal, the increased demand for emergency medical services would not create a significant impact.

***PUBLIC SCHOOLS***

Impacts to Anacortes School District as a result of the Proposed Project would be negligible because employees at the gas station/convenience store are expected to already live in the City or in nearby County areas. A less than significant impact to local public schools would result from development of the Proposed Project.

## ***PARKS AND RECREATION***

Effects to area parks would occur if the employees or patrons of the Proposed Project significantly increase the demand on local parks. As noted in **Section 3.9.8**, the nearest parks are 2.5 miles to the northwest of the project site. Due to the nature of the Proposed Project, it is not expected that patrons or employees of the Proposed Project would increase patronage of local parks. Therefore, a less than significant impact would occur.

### **4.1.10 NOISE**

#### ***SIGNIFICANCE CRITERIA***

An ambient noise level of 75 dBA, Leq is generally considered to be acceptable during construction (FHWA, 2006). The Federal Highway Administration (FHWA) Noise Abatement Criteria (NAC) provides an operational noise threshold of 67 dBA, Leq for projects locating near residential land uses.

#### ***CONSTRUCTION NOISE***

Grading and construction activities associated with the Proposed Project would be intermittent and temporary in nature. The closest sensitive receptors that would be exposed to noise during project construction are the three residences located approximately 450 to 500 feet south of the site. The Summit Park Bible Church is located approximately 150 feet west of the project site, but is unlikely to be significantly affected by construction noise because construction is unlikely to occur on Sundays when church services occur.

Construction noise levels at and near the project site would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. Construction-related material haul trips would raise ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used. **Table 4-6** shows typical noise levels 50 feet from the sources during different construction stages.

**TABLE 4-6**  
TYPICAL CONSTRUCTION NOISE LEVELS

<b>Construction Phase</b>	<b>Noise Level (dBA, L<sub>eq</sub>)</b>
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

NOTES: \* Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

L<sub>eq</sub>: the equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The L<sub>eq</sub> is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Assessment*, May 2006.

Stationary point sources of construction noise attenuate (lessen) at a rate of 6 to 6.0-9.0 dBA per doubling of distance from the source, depending on environmental conditions (i.e., atmospheric conditions, topography and type of ground surfaces, noise barriers, etc.). Given the topography of the land in the vicinity of the project site and the abundance of trees in the vicinity of the project site an 8.0 dBA attenuation factor is appropriate. The maximum construction noise would be 89 dBA at 50 feet and 71 dBA at 250 feet. Construction noise impacts would be temporary, intermittent, and would occur between the hours of 7 a.m. and 6 p.m. Construction of the Proposed Project would not exceed the FHWA significance threshold of 75 dBA, Leq; therefore, noise from construction activities would be less than significant.

#### ***OPERATION NOISE***

The level of traffic noise depends on three things: 1) the volume of the traffic, 2) the speed of the traffic, and 3) the number of trucks in the flow of the traffic. It is not anticipated that speed of traffic in the vicinity of the Project Site or the mix of trucks in the traffic would change during operation; however, with the implementation of the project the traffic volumes along local roadways would increase. A doubling of traffic would increase the ambient noise level by 3 dBA, which is barely audible (FHA 2010).

The primary source of noise in the area is generated by traffic along SR-20. Given the low-density nature of the project area and the proximity of the project to SR-20, it is assumed for this analysis that the existing ambient noise level in the vicinity of the Proposed Project is 60 dBA. The Proposed Project would result in an increase of a maximum of 107 new vehicles per peak hour on Thompson Road (refer to **Section 4.1.7**). Project traffic would not double the existing traffic in the area (including traffic along SR-20) and ambient noise levels would increase to approximately 63dBA. The Proposed Project would not increase the ambient noise level above the FHWA NAC threshold of 67 dBA. There would be a less than significant noise impact during operation of the Proposed Project.

### **4.1.11 HAZARDOUS MATERIALS**

#### ***SIGNIFICANCE CRITERIA***

The Proposed Project would result in significant impacts to hazardous materials if construction or operation introduces substantial quantities of new hazardous materials to the site or site vicinity, results in an accidental release of significant quantities of hazardous materials, or allows on-site hazardous materials to migrate off-site.

#### ***HAZARDOUS MATERIALS***

No existing hazardous materials have been identified on site or within a distance that would affect the Proposed Project (PBS&J, 2008).

During the construction period, it is possible that hazardous materials, such as solvents, paint, and adhesives would be brought, stored, and used on site. As with any liquid and solid, during handling and transfer from one container to another, the potential for an accidental release exists. Depending on the relative hazard of the material, if a spill were to occur of significant quantity, the accidental release could pose both a hazard to construction employees as well as to the environment. Construction BMPs required within the NPDES General Construction Permit limit and often eliminate the impact of such accidental releases. Since contact with stormwater during construction is the primary means of transporting these contaminants offsite, appropriate BMPs for this impact are included in the construction stormwater BMPs in **Section 5.2**. With the implementation of these BMPs and compliance with federal laws relating to the handling of hazardous materials, no adverse affects associated with the accidental release would occur during construction.

Although certain petroleum products are potentially hazardous under the ignitibility standard (flashpoint below 140 °F according to 40 CFR 261), they are exempt under many hazardous materials laws and are regulated under separate laws. The proposed gas station would be equipped with underground storage tanks filled with petroleum products including gasoline and possibly diesel fuel. There is a potential for releases from storage and dispensing equipment at the proposed gas station. Spills and overfills result mainly from bad filling practices. Also unprotected steel tanks and piping can corrode and release product thorough holes caused by corrosion of the metal tank or piping. Material released through spills, overfills and leaks has the potential to contaminate stormwater runoff, or enter the surrounding groundwater through direct spilling or leaking into the surrounding soil.

As stated in **Section 2.1.6**, the fuel storage tanks would comply with the provisions of 40 CFR Part 280, including Part 280.20 Performance Standards for new underground storage tank (UST) systems, which includes requirements for tank design, the installation and maintenance of leak detection and prevention systems, and spill and overfill controls to minimize the risk of release of petroleum into the environment. The standards are therefore protective of both public health and the environment (including soil and groundwater) through the prevention of accidental release which could lead to soil and groundwater contamination.

Mitigation measures to ensure proper operation of the gas station in compliance with 40 CFR 280 are listed in **Section 5.11**. Compliance with the provisions of 40 CFR Part 280 would ensure that the impacts to public safety and environmental quality from accidental release of petroleum products, fire, explosion, and vapor intrusion hazards are minimized. Therefore, no significant adverse effects associated with the operation of the gas station would occur.

## **4.1.12 VISUAL RESOURCES**

### ***SIGNIFICANCE CRITERIA***

Impacts related to visual resources would be considered significant if the Proposed Project were to substantially alter or interrupt locally important scenic vistas, introduce visual elements that would conflict with the City's Comprehensive Plan goals regarding scenic resources, or create sources of inappropriate or excessive glare or nighttime illumination.

### ***VISUAL RESOURCES***

Development of the project site would complement existing rural development and retail developments along the SR-20 corridor, although it would not comply with existing City zoning designations for the project site.

The Proposed Project would not interrupt or substantially alter local views, or create any sources of glare or excessive nighttime illumination. Development would generally conform to the visual resources goals outlined in the City's Comprehensive Plan, although once the property is taken into federal trust, City regulations and zoning would no longer apply. Visual impacts would be less than significant and no mitigation measures would be warranted.

## **4.2 ALTERNATIVE B - NO-ACTION**

### **4.2.1 LAND RESOURCES**

Under the No-Action Alternative, the land would not be taken into trust and the proposed Tribal commercial development would not be built. The site would remain undeveloped, and land resources would not be adversely impacted. Any future fee development of the project site would be required to meet City zoning and Comprehensive Plan guidelines.

### **4.2.2 WATER RESOURCES**

Under the No-Action Alternative, the proposed commercial uses would not be developed; therefore, no improvements to domestic water supply facilities on the project site would be necessary. No additional impervious surfaces would be created on the project site. No adverse impacts to water resources would occur under the No-Action Alternative.

### **4.2.3 AIR QUALITY**

Under the No-Action Alternative the site would remain undeveloped and none of the construction or operational air quality impacts identified for Alternative A would occur. The property could ultimately be developed, which would introduce a source of both direct (stationary source) and indirect (mobile source) emissions of CAPs; however, because any development would be required to comply with the City's

Comprehensive Plan and would incorporate protective measures and BMPs for air quality, these impacts would likely be less than significant.

#### **4.2.4 BIOLOGICAL RESOURCES**

Under the No-Action Alternative, no development would occur within the project site. As such, there would be no significant direct or indirect impacts to the biological resources within or in the vicinity of the project site.

#### **4.2.5 CULTURAL RESOURCES**

Under the No-Action Alternative the project site would not be placed in trust for the benefit of the Samish Tribe and no structures would be constructed. Therefore, there would be no adverse impacts to any unknown archaeological or paleontological resources on the site.

#### **4.2.6 SOCIOECONOMIC CONDITIONS/ ENVIRONMENTAL JUSTICE**

Under the No-Action Alternative, the Samish Tribe would not receive any of the benefits associated with development on the project site. The three parcels comprising the project site would not be brought into trust and would remain on the County's property tax rolls.

#### **4.2.7 TRANSPORTATION AND CIRCULATION**

Under the No-Action Alternative, there would be no tribal commercial development constructed on the project site, and consequently no increase in vehicular traffic on project area roadways. There would be no change in pedestrian, bicycle, or transit circumstances.

#### **4.2.8 LAND USE**

Under the No-Action Alternative, the project site would remain under City jurisdiction. No land use consistency or compatibility impacts would occur under this alternative.

#### **4.2.9 PUBLIC SERVICES**

The No-Action Alternative would not increase demands on public services. No new utility extensions would be required.

#### **4.2.10 NOISE**

Under the No-Action Alternative, the project site would remain undeveloped. Any future development of the project site would be required to meet City zoning and Comprehensive Plan guidelines. With regard

to noise, the project site would not be a source of construction or operational noise. No noise impacts would occur under the No-Action Alternative.

#### 4.2.11 HAZARDOUS MATERIALS

No development would occur under this alternative, and the project site would remain in its undeveloped state. No hazardous material impacts would occur under the No-Action Alternative.

#### 4.2.12 VISUAL RESOURCES

Under the No-Action Alternative, the project site would remain in its current undeveloped state. Any future development of the project site would be required to meet County design standards.

### 4.3 CUMULATIVE EFFECTS

Potential cumulative impacts for each environmental issue area are discussed below. Cumulative impacts are defined in 40 CFR §1508.7 as the impacts:

*... on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

In addition to the Proposed Project, the Samish Tribe is currently planning to transfer three parcels adjacent to the project site into federal trust and develop these parcels for a tribal casino. The proposed development would include up to 50,000 sq ft of space for gaming, dining, and support activities on the adjacent 11.4 acre site. As of the date of this EA, the Samish Tribe is preparing a NEPA Environmental Impact Statement to assess the potential environmental impacts of developing gaming. The Samish Casino is, therefore, a foreseeable development. The Swinomish Indian Tribal Community is currently constructing a lodge, restaurant, and meeting/convention facility addition to their existing Northern Lights Casino situated approximately two miles east of the Proposed Project. The Swinomish Northern Lights Casino facility currently includes a gas station included as one of the three existing gas stations in the vicinity of the March's Point Site, as discussed as a direct effect above in **Section 4.1.6**. Expansion of the Northern Lights Casino is included in the cumulative effects analysis. The City and County do not have any other proposed developments in the vicinity of the project site.

#### 4.3.1 LAND RESOURCES

Impacts to land resources from developing the Samish Casino on the adjacent parcels would be similar to those described above for the Gas Station project. The Proposed Project would incorporate measures to

ensure proper design for site conditions to eliminate impacts to land resources (topography, soils, seismicity, and mineral resources). No potential cumulative impacts would be relevant to this issue area.

### 4.3.2 WATER RESOURCES

Similar to the Proposed Project, the Samish Casino Project would be required to comply with the CWA as it relates to stormwater runoff on trust property. Compliance with USEPA stormwater pollution prevention requirements will prevent the proposed casino project, in combination with other developments, from causing cumulatively significant surface water quality related impacts.

Impacts to the groundwater basin would not be cumulatively significant, as the Proposed Project, in combination with other developments in the area, would have only a minor impact to the groundwater. Therefore, no cumulatively significant impact would occur.

### 4.3.3 AIR QUALITY

Construction of the Samish Casino is expected to occur after the development of the Proposed Project. Construction impacts would, therefore, be spaced over time and not result in any cumulative adverse effect.

Cumulative impacts to the air basin are addressed within the requirements of the CAA and the General Conformity Rule. Because Skagit County (NWCAA) is in attainment for all CAPs, the Proposed Project did not warrant a General Conformity determination. The Proposed Project is considered to conform to the applicable state implementation plan (SIP) due to emissions that are below the federal *de minimis* levels. Mitigation for potential cumulative impacts to air quality has been specified in **Section 5.0** and similar measures would be implemented for other development projects.

### 4.3.4 BIOLOGICAL RESOURCES

Potential impacts to biological resources on the project site and the site of the proposed Samish Casino, including migratory birds, will be reduced to a less than significant level through measures incorporated into project construction and design and mitigation (**Section 5.4**). Cumulative impacts to biological resources would be less than significant.

### 4.3.5 CULTURAL RESOURCES

Cumulative effects to cultural resources typically occur when sites that contain cultural features or artifacts are disturbed by development. As these resources are destroyed or displaced, important information is lost and connections to past events, people and culture is diminished. No significant cultural resources were identified within or adjacent to the project site. However, the records search and archival research indicate that the study area is in a region sensitive for both prehistoric/pre-contact

resources and historic-period resources. Based on this sensitivity, the Proposed Project or the Samish Casino Project may impact previously unknown archaeological resources, as these sites may be buried with no surface manifestation. Significant cumulative impacts to unknown cultural resources could occur if sites continued to be lost, damaged, or destroyed without appropriate recordation or data recovery. Mitigation for potential cumulative impacts to unknown cultural resources has been specified in **Section 5.5** and similar measures have been implemented for all local Tribal development. Continued implementation of these measures would ensure that cumulative impacts remain less than significant.

#### **4.3.6 SOCIOECONOMIC CONDITIONS / ENVIRONMENTAL JUSTICE**

The Proposed Project, when considered in combination with the Samish Casino Project, would provide a beneficial impact to the socioeconomic condition of the Samish Tribe. These developments would provide jobs and income for tribal members, as well as the financial resources to fund various tribal social service programs. The cumulative effect of these projects would have a positive beneficial effect on environmental justice for the tribe and its members. Each of the Samish Tribe's development projects would result in a beneficial effect for the recognized minority population of the Samish Tribe. Construction and operation of the Samish Casino and gas station/convenience store would generate employment and increase income in the local community. Operation of the casino would increase entertainment opportunities in the area and the gas station/convenience store would increase fueling options for the travelling public.

The Proposed Project is not expected to have any cumulative adverse effect on the nearby Swinomish Casino; however, developing a casino on the March's Point site would increase competition for the Swinomish Casino, including the lodge, restaurant, and meeting/convention facilities. The cumulative socioeconomic of the gas station project would be negligible, but the future Samish Casino project could affect the revenue that the Swinomish Indian Tribal Community is able to realize from its casino, including the recent expansion. Tribal gaming is a competitive market and participants are not guaranteed markets or market share. The Proposed Project, when considered in combination with other projects, would not lead to a significant adverse cumulative impact to socioeconomic conditions or environmental justice.

#### **4.3.7 TRANSPORTATION AND CIRCULATION**

##### ***VEHICLE TRANSPORTATION NETWORKS***

Combined with the traffic generated at the proposed Samish Casino, the gas station/convenience store would generate a potentially significant volume of traffic at and around the intersection of Thompson Road and SR-20. In addition to the mitigation measures proposed for the gas station/convenience store project, additional roadway and intersection improvements may be necessary to reduce casino-related traffic to a less than significant level. The improvements would be identified, funded, and implemented to avoid or minimize significant impacts to transportation resources. With implementation of mitigation

measures identified in this EA and any additional mitigation measures identified in the Samish Casino EIS, cumulative impacts to vehicle transportation networks would be less than significant.

#### ***BICYCLE, PEDESTRIAN, AND TRANSIT NETWORKS***

Due to the nature of development, the Samish Casino and other cumulative projects would not result in a significant increase in bicycling or transit rider activity. Additionally, these projects would not adversely affect pedestrian or bicycle networks in the project vicinity. No significant cumulative impacts would occur.

#### **4.3.8 LAND USE**

If taken into federal trust, the Proposed Project and the Samish Casino sites would not be subject to City jurisdiction regarding land uses. The proposed site and the Samish Casino site are currently zoned for industrial activities and developing the casino as proposed would be inconsistent with the zoning. However, this would not result in a significant cumulative effect on land resources because the use would be consistent with the other existing land uses along the SR-20 corridor that include gas stations, auto dealerships, storage facilities, light industrial uses, and a casino.

#### ***AGRICULTURE***

The retention or development of agricultural land is largely a policy consideration for governmental entities. Prime and unique agricultural lands are considered a limited and valuable resource. The Samish projects and other cumulative developments in the vicinity would not remove lands from current agricultural production or have any direct effect to agriculture; therefore, cumulatively significant impacts to agricultural land would not occur.

#### **4.3.9 PUBLIC SERVICES**

Public services for the Proposed Project, as well as the Samish Casino, would be accommodated by existing and planned public services. As development of other areas of the City and County continues, the combined need for public services may create a cumulative impact. However, all future projects on fee land in the region would be subject to approval by local governments, and would include provisions for public services. Although the analyses of the City's water and sewer systems have not been completed for the Samish Casino project, these systems appear to have sufficient capacity for the Samish Casino project. Additional analyses are necessary to affirm that the nearby water and sewer pipelines are adequate to accommodate the proposed Samish Casino project; if not, the Casino project would need to mitigate for the necessary upgrades. The Proposed Project would not result in significant cumulative impacts to public services.

### 4.3.10 NOISE

Traffic noise would dominate the noise environment in the area surrounding the project site during cumulative conditions, due primarily to traffic on the adjacent SR-20. The Proposed Project, in combination with the proposed Samish Casino, would cause a less than significant impact with regard to noise.

### 4.3.11 HAZARDOUS MATERIALS

There is the potential for impacts related to hazardous materials during construction of the Proposed Project as well as the Samish Casino Project on the adjacent parcels. Developments of similar scope would typically require implementation of mitigation measures similar to those listed in **Section 5.11** regarding hazardous materials storage and use. New developments on non-federal lands would be required to adhere to State and municipal regulations regarding the delivery, handling, and storage of hazardous materials, thereby reducing the risk to the public's health and welfare due to accidental exposure. Therefore, there are no significant cumulative hazardous materials impacts associated with the Proposed Project.

### 4.3.12 VISUAL RESOURCES

Development of the Proposed Project and the Samish Casino Project would be generally consistent with other development along SR-20, with no significant impacts to scenic views or features. Structures would be designed to complement the scenic resources of the City and County. Any future non-tribal development in the vicinity would be subject to City or County review and approval. Therefore, the Proposed Project, when considered in combination with other past and unknown future actions, would not lead to a significant cumulative impact to visual resources.

## 4.4 INDIRECT AND GROWTH-INDUCING EFFECTS

Under NEPA, indirect and growth-inducing effects of a Proposed Project must be analyzed (40 CFR §1508.8[b]). The CEQ Regulations define indirect effects as effects that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable.

Growth-inducing effects are defined as effects that foster economic or population growth, either directly or indirectly. Direct growth inducement could result, for example, if a project included the construction of a new residential development. Indirect growth inducement could result if a project established substantial new permanent employment opportunities (e.g., new commercial, industrial, or governmental enterprises) or if it removed obstacles to population growth (e.g., expansion of a wastewater treatment plant to increase the service availability). **Section 4.4.1** assesses the potential for direct and indirect growth-inducing effects caused by the alternatives. Other indirect effects are analyzed in previous sections by issue area.

#### 4.4.1 GROWTH-INDUCING EFFECTS

Growth inducement may constitute an adverse impact if the increased growth is not consistent with or accommodated by the land use and growth management plans and policies for the area affected. Local land use plans provide for development patterns and growth policies that allow for orderly development supported by adequate public services and utilities such as water supply, roadway infrastructure, sewer services, and solid waste disposal services. A project that would induce “disorderly” growth (i.e., would conflict with local land use plans) could indirectly cause adverse environmental or public service impacts.

A limited number of employment opportunities would be created through the operation of the on-site gas station/convenience store, and it is anticipated that the net direct local population growth resulting from the project would be negligible. Development of the gas station/convenience store is independent of and separate from development of the Samish Casino project. Neither project relies on the other, nor does the fate of one depend upon the other.

Analyses of the adequacy of local infrastructure and services are included in the discussion of environmental consequences for each proposed Alternative. No significant, unmitigatable impacts have been identified that would result from the Proposed Project. Utility infrastructure would not be significantly improved or expanded to increase service availability to any areas surrounding the project site. The domestic water supply would only serve Tribal development on the proposed trust property. Growth-inducing impacts would be less than significant for the proposed development alternatives.

# ***SECTION 5.0***

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## *MITIGATION MEASURES*

# SECTION 5.0

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## MITIGATION MEASURES

### 5.1 LAND RESOURCES

Implementation of the mitigation measures below would minimize potential impacts related to land resources. These measures are recommended for the Proposed Project (Alternative A).

- All site preparation and earthwork construction in the field shall be performed by licensed contractors.
- Suitability of earth and construction materials shall be determined by a licensed professional employing geotechnical/soils laboratory testing standards according to standard engineering practice.
- All grading plans, subsurface investigations, and slope stability and seismic design calculations as well as all foundation and building design parameters shall be produced under the supervision of appropriate licensed professionals.
- Prior to finalization of the grading and development plans for the property, design-level geotechnical specifications addressing the specific grading and development plans shall be developed. The specifications should include, but not be limited to, the following:
  - Site, building, and facility-specific grading recommendations regarding site preparation, clearing, and grubbing.
  - Select grading procedures, remedial grading procedures, material suitability, and compaction criteria.
  - Building-specific foundation design parameters.
  - Site-specific seismic design parameters.

### 5.2 WATER RESOURCES

Implementation of the protective measures described in **Section 2.1.9**, along with the recommended mitigation measures below, would minimize potential impacts to water resources related to the construction of Alternative A.

- A detailed grading and drainage plan shall be prepared by a licensed professional prior to site development. The grading and drainage plan shall include an accurate calculation of pre- and post-development runoff conditions.
- Areas outside of buildings and roads would be kept as permeable surfaces to the extent practicable; either as vegetation or high infiltration cover, such as mulch, gravel, or turf.

- Existing vegetation would be retained where possible.
- High water-demand plants would be minimized in landscaping plans. Native and drought-tolerant plant species (trees, shrubs, and ground cover) would be emphasized.
- Fertilizer and pesticide use would be minimized.
- The Tribe shall obtain a National Pollutant Discharge Elimination System permit (NPDES General Permit-WAR12000I) from the USEPA for construction site runoff during the construction phase in compliance with the Clean Water Act (CWA). A Storm Water Pollution and Prevention Plan (SWPPP) shall be prepared, implemented, and maintained throughout the construction phase of the development, consistent with General Permit requirements. The SWPPP would detail the BMPs to be implemented during construction and post-construction operation of the Proposed Project. The BMPs may include, but are not limited to, the following:
  - Straw wattle placement on cut and fill slopes.
  - Straw wattle check dam installation within drainage swales.
  - Covering disturbed areas with plastic, hydro-seed applications, or straw.
  - Construction entrance installation to reduce off-site sediment transport.
  - Revegetation following construction activities.
- Storm drains shall be equipped with silt and grease traps to remove oils, debris, and other pollutants. Storm drain inlets shall also be labeled “No Dumping-Drains to Rivers and Streams.”
- The parking lot shall be designed to allow stormwater runoff to be directed toward vegetative filter strips and detention swales to help control sediment.
- Vegetated detention swales and the stormwater retention pond shall be constructed according to the engineer’s recommendations and engineering specifications to mitigate for increased peak flows from impervious surfaces. The following recommendations from EPA Publication 832-F-99-006 (EPA, 1999) would be followed to the maximum extent feasible.
  - Swales would be constructed with the suggested ratio of 500 square feet of swale per acre of impervious surface.
  - Location of swales would include areas adjacent to parking areas, adjacent to roadways, and along property boundaries along a natural grade.
  - Swales would utilize a parabolic or trapezoidal cross-section with side slopes no steeper than 1:3.
  - Check dams would be used every 50 feet if slopes exceed 4 percent.
  - Maintenance activities would include periodic mowing (with grass kept above design flow depth), weed control, watering during drought, reseeding of bare areas, clearing of debris and blockages.
  - Accumulated sediment would be removed manually to avoid the transport of re-suspended sediments in periods of low flow and prevent damming effects from sand bars.
- Gasoline and diesel refueling/ dispensing sites will be contoured to drain into oil/water catchment basins.

- The gas station shall be designed and constructed in accordance with all federal regulations governing gasoline operations. Specific design, construction and operation practices shall include the following to prevent spills, overfills, and corrosion:
  - The gas station shall be equipped with catchment basins of sufficient size to contain small spills. As a minimum, the basin shall be large enough to contain what may spill when the delivery hose is uncoupled from the fill pipe. Any spilled fuel shall be removed and disposed of immediately.
  - Gas station attendants and delivery personnel shall follow industry standard filling practices such as American Institute recommended Practice 1007, “Loading and Unloading of MC306/DOT 406 Cargo Motor vehicles.” Filling practices shall include provisions that ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made; and that the transfer operation is monitored constantly to prevent overfilling and spilling.
  - Gasoline storage tanks shall be equipped with overfill protection such as automatic shutoff devices, overfill alarms or ball and float valves.
  - Gasoline storage tanks shall be constructed to meet federal corrosion performance standards.
  - Gasoline storage tanks shall be periodically inspected to ensure that the tank is structurally sound and free of corrosion or holes. Frequency of inspections shall be consistent with federal requirements.
  - The tanks shall be equipped with leak detection systems to provide early detection of leaks from the tanks and dispensing equipment.
  - Require low flow toilets, faucets, and other water-using appliances.

### 5.3 AIR QUALITY

The Tribe shall implement the following mitigation measures for Alternative A.

- Set a five-minute idling time limit for construction and commercial delivery vehicles.
- Require energy efficient designed building.
- Incorporate “Green Building” methodologies.
- Require the use of energy-efficient appliances.
- To the extent possible, require energy efficient lighting.
- Wet exposed surfaces to reduce and control dust.
- Limit exposed soils during construction to active areas only.

### 5.4 BIOLOGICAL RESOURCES

Implementation of the mitigation measures below would ensure that impacts to biological resources associated with Alternative A are less than significant.

- If construction begins during the nesting season for raptors and other migratory birds (between March 1 and September 15), a biologist whose qualifications are acceptable to the USFWS will conduct a preconstruction survey for active nests within 250 feet of the construction footprint no more than 14 days prior to commencement of construction activities. If no active nests are found, then no further mitigation is necessary.
- If any active nests are located in the vicinity of the construction footprint, a minimum 100-foot diameter buffer zone will be established around the nest. Appropriately-sized avoidance setbacks will be established by a qualified biologist. The size and scale of nesting bird avoidance setbacks is dependent upon the species of nesting bird observed and the habitat in which that the nest occurs. A biologist will also monitor nests weekly during construction to evaluate potential nesting disturbance caused by construction activities. The buffer zone will be maintained until the end of the breeding season or until the young have fledged. No construction activities will occur within 100 feet of a nest while young are still present in the nest. The biological monitor will have the authority to stop construction if construction results in evidence of disturbance to nesting birds or potential nest abandonment. The buffer zone markers may be removed when the biologist confirms that the nest(s) is no longer occupied and all young have fledged.

## 5.5 CULTURAL RESOURCES

The following mitigation measures shall be implemented to reduce the potential for significant construction-related impacts to previously unknown cultural resources, including archaeological sites, human remains, and/or paleontological resources:

- In the event that any prehistoric or historic cultural resources are discovered during ground-disturbing activities, all work within 50 feet of the resources shall be halted and a Samish tribal representative and BIA archaeologist shall be consulted to assess the significance of the find. If any find is determined to be significant by the qualified professionals, then appropriate agency and tribal representatives shall meet to determine the appropriate course of action.
- If human remains are encountered, work shall halt in the vicinity of the find and the Skagit County Coroner shall be notified immediately. Pursuant to 36 CFR Part 800.13 of NHPA: Post-Review Discoveries, and 43 C.F.R. § 10.4 (2006) of the Native American Graves Protection and Repatriation Act (NAGPRA): Inadvertent Discoveries, the Samish Indian Nation representative and BIA archaeologist will also be contacted immediately. No further ground disturbance shall occur in the vicinity of the find until the County Coroner, Tribal Official, and BIA archaeologist have examined the find and agreed on an appropriate course of action. If the remains are determined to be of Native American origin, the BIA representative shall notify the Washington State Department of Archaeology and Historic Preservation, as well as a Most Likely Descendant (MLD). The MLD is responsible for recommending the appropriate disposition of the remains and any grave goods.

## 5.6 SOCIOECONOMIC CONDITIONS/ ENVIRONMENTAL JUSTICE

No mitigation is warranted for Alternative A.

## 5.7 TRANSPORTATION AND CIRCULATION

Implementation of the following mitigation measures would reduce the potential for significant impacts to the transportation system and ensure adequate circulation.

- The Samish Tribe would allocate a 14 foot right-of-way along the entire length of the western boundary of the project site to accommodate future development of a right turn lane on Thompson Road.
- The Samish Tribe shall develop a 4 foot wide sidewalk along the entire length of the western boundary of the project site along Thompson Road.

## 5.8 LAND USE

No additional mitigation would be necessary for Alternative A. Measures to mitigate potential adverse effects to the coastal zone are described above in **Section 5.2**.

## 5.9 PUBLIC SERVICES

Implementation of the mitigation measures below would ensure that the construction and operation of Alternative A would have a less than significant impact on fire and emergency services.

- To minimize the risk of fire and the need for fire protection services during construction, any construction equipment that normally includes a spark arrester shall be equipped with a spark arrester in good working order. This includes, but is not limited to vehicles and heavy equipment.
- During construction, staging areas, welding areas, or areas slated for development using spark-producing equipment would be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor would keep these areas clear of combustible materials in order to maintain a firebreak.
- Require construction to reuse and recycle construction waste.
- Fire extinguishers shall be maintained onsite and inspected on a regular basis.
- An evacuation plan shall be developed for the proposed development in the event of a fire emergency.
- Structural fire protection would be provided through compliance with International Fire Code requirements for commercial structures. The Samish Tribe would ensure that appropriate water supply and pressure is available for emergency fire flows.
- The access driveway would be maintained to standards adequate for emergency vehicle access.

- For the gas station, the Samish Tribe would create and maintain a facility equipped with the latest early fire detection systems that ensure an initial response to any fire alarm (automatic, local, or report). This would rely on automatic sprinkler systems in the areas of the facility that are normally unoccupied, such as storerooms and mechanical areas.
- The Tribe shall enter into an agreement with the City of Anacortes to pay its fair share cost of system improvements and upgrades necessary to connect to the City of Anacortes water and wastewater conveyance systems.
- The Tribe shall enter into an agreement to reimburse the City of Anacortes Police Department and Fire Department for reasonable direct and indirect costs incurred in conjunction with providing law enforcement and fire protection services to the project site.

## 5.10 NOISE

No mitigation is warranted for Alternative A.

## 5.11 HAZARDOUS MATERIALS

The mitigation measures listed below are recommended to reduce potential impacts associated with construction and operation of Alternative A. Additional measures to mitigate potential adverse effects to water resources from spills or other releases of hazardous materials are described above.

- Potentially hazardous materials, including fuels, shall be stored away from drainages and secondary containment shall be provided for all hazardous materials during construction.
- Vehicles and equipment used during construction shall be provided proper and timely maintenance to reduce potential for mechanical breakdowns leading to a spill of materials into water bodies. Maintenance and fueling shall be conducted in an area that meets the criteria set forth in the spill prevention plan.
- The Samish Tribe shall conform to federal regulations under 40 CFR 280, Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (USTs). These leak prevention measures include methods such as corrosion resistant and double walled tanks and piping, inclusion of spill and overflow prevention equipment, and use of leak detection equipment.
- During excavation of the underground fuel storage tanks, surface water, debris, and chemicals (such as fuel, oil, hydraulic fluid, or solvents) would be prevented from entering the cavity by implementing BMPs, such as placing straw wattle on the edge of the cavity and completing tank installation in a timely manner.
- Because of the high ground water elevation at the site (approximately four feet below ground level), the underground fuel storage tanks should be anchored to mitigate the potential impact of buoyant forces causing damage that could allow fuel to leak.

## **5.12 VISUAL RESOURCES**

- Signage would comply with applicable local and highway standards.

## **SECTION 6.0**

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*CONSULTATION, COORDINATION, AND LIST OF PREPARERS*

## **SECTION 6.0**

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### **CONSULTATION, COORDINATION, AND LIST OF PREPARERS**

#### **6.1 FEDERAL AGENCIES CONSULTED**

##### **United States Department of Interior – Bureau of Indian Affairs**

Mr. Stanley Speaks, Regional Director, Northwest Regional Office

Dr. B.J. Howerton, MBA. Environmental Services Manager, Northwest Regional Office

##### **United States Fish and Wildlife Service**

Informal consultation, Seattle Office of U.S. Fish and Wildlife Service

#### **6.2 STATE AGENCIES CONSULTED**

##### **Washington State Department of Transportation, Mount Baker Area**

Roland Storme, WSDOT Mount Baker Area, Development Services Manager

##### **Washington State Department of Archaeology and Historic Preservation**

Allyson Brooks, Ph.D., State Historic Preservation Officer

#### **6.3 TRIBES CONSULTED**

##### **Samish Indian Tribe**

Tom Wooten, Tribal Chairman

Tim King, Vice Chairman

Dana Matthews, Secretary

Tamara Rogers, Treasurer

Shawn MacAvoy, Tribal Council

Gary D. Hatch, Tribal Council

Dave Blackinton, Tribal Council

Leslie Eastwood, General Manager

Sebnem Pura, Chief Operations Officer

Ted Gage, Planning Director

## **6.4 LOCAL AGENCIES CONSULTED**

### **Skagit County Public Works**

### **Skagit County Planning Department**

### **Skagit County Assessor's Office**

### **Skagit County Sheriff's Office**

### **Skagit County Fire District**

### **City of Anacortes Public Works**

Fred Buckenmeyer, Public Works Director

Terry Nemeth, Water Maintenance Supervisor

Paul A. Randall-Gutter, Engineering Division Manager

### **City of Anacortes Planning Department**

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### **City of Anacortes Police Department**

John Small, Patrol Captain

### **City of Anacortes Fire Department**

Jack Kennedy, Fire Marshal

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# **SECTION 7.0**

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# ***APPENDICES***

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# ***APPENDIX A***

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*BIOLOGICAL RESOURCES ASSESSMENT AND WETLAND  
DELINEATION REPORT*



1801 7th Street, Suite 100  
Sacramento, CA 95811  
<http://www.analyticalcorp.com>  
(916) 447-3479 • Fax (916) 447-1665

## TELEPHONE NOTES

**Project:** Samish Indian Nation Fee-to-Trust  
**Subject:** Threatened and Endangered Species  
**Date:** October 19, 2009  
**By:** Kelly Bayne  
**Contact:** USFWS Washington Office  
**Agencies:** USFWS  
**Phone #:** 360-753-9440

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Ms. Bayne inquired as to what federal list is sufficient to evaluate for federal listed species. The USFWS stated that the federal USFWS list for Skagit County, Washington was sufficient for analyzing species within the project site

**LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND  
CRITICAL HABITAT; CANDIDATE SPECIES; AND SPECIES OF CONCERN  
IN **SKAGIT COUNTY****

**AS PREPARED BY  
THE U.S. FISH AND WILDLIFE SERVICE  
WASHINGTON FISH AND WILDLIFE OFFICE**

**(Revised August 1, 2011)**

**LISTED**

Bull trout (*Salvelinus confluentus*) – Coastal-Puget Sound DPS

Canada lynx (*Lynx canadensis*)

Gray wolf (*Canis lupus*)

Grizzly bear (*Ursus arctos* = *U. a. horribilis*)

Marbled murrelet (*Brachyramphus marmoratus*)

Northern spotted owl (*Strix occidentalis caurina*)

Major concerns that should be addressed in your Biological Assessment of project impacts to listed species include:

1. Level of use of the project area by listed species.
2. Effect of the project on listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the project.
3. Impacts from project activities and implementation (e.g., increased noise levels, increased human activity and/or access, loss or degradation of habitat) that may result in disturbance to listed species and/or their avoidance of the project area.

**DESIGNATED**

Critical habitat for bull trout

Critical habitat for the marbled murrelet

Critical habitat for the northern spotted owl

**PROPOSED**

Dolly Varden (*Salvelinus malma*) due to similarity of appearance

## **CANDIDATE**

Fisher (*Martes pennanti*) – West Coast DPS  
North American wolverine (*Gulo gulo luteus*) – contiguous U.S. DPS  
Oregon spotted frog (*Rana pretiosa*) [historic]  
Whitebark pine (*Pinus albicaulis*)

## **SPECIES OF CONCERN**

Bald eagle (*Haliaeetus leucocephalus*)  
Cascades frog (*Rana cascadae*)  
Long-eared myotis (*Myotis evotis*)  
Long-legged myotis (*Myotis volans*)  
Northern goshawk (*Accipiter gentilis*)  
Olive-sided flycatcher (*Contopus cooperi*)  
Pacific lamprey (*Lampetra tridentata*)  
Pacific Townsend's big-eared bat (*Corynorhinus townsendii townsendii*)  
Peregrine falcon (*Falco peregrinus*)  
River lamprey (*Lampetra ayresi*)  
Tailed frog (*Ascaphus truei*)  
Western toad (*Bufo boreas*)  
*Meconella oregana* (white meconella)

**REGIONALLY OCCURRING FEDERALLY LISTED SPECIAL STATUS SPECIES**

SCIENTIFIC NAME COMMON NAME	FEDERAL STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION	POTENTIAL TO OCCUR ON-SITE
<b>Fish</b>					
<i>Salvelinus malma</i> Dolly varden	Proposed	Known in the U.S. from Washington and Arkansas (NatureServe, 2011).	Typically anadromous, but many populations are landlocked (Lee et al. 1980). These species migrate to spawning areas between May and December (Page and Burr, 1991). Anadromous individuals occur in coastal seas for 2 to 3 years and in deep runs and pools of creeks and small to large rivers. Some landlocked populations inhabit lakes and tributary streams (NatureServe, 2011).	Contact Agency	No. The project site does not provide habitat for this species.
<i>Salvelinus confluentus</i> Bull trout-Coastal Puget Sound Distinct Population Segment	Threatened/ Critical Habitat	Known from Idaho, Montana, Nevada, Oregon, and Washington (NatureServe, 2011).	Found in streams with riffles and deep pools, undercut banks and lots of large logs and rely on river, lake and ocean habitats that connect to headwater streams for annual spawning and feeding migrations (NatureServe, 2011).	Contact Agency	No. The project site does not provide habitat for this species. See text for discussion of Critical Habitat.
<i>Oncorhynchus (=Salmo) tshawytscha</i> Chinook salmon Upper Columbia Spring-Run EFH, Snake River Fall-Run EFH, Snake River EFH, and Puget Sound EFH	Endangered or Threatened/ Critical Habitat	From Upper Columbia spring-run ESU, found in all river reaches accessible to Chinook salmon in Columbia River tributaries upstream of the Rock Island Dam and downstream of Chief Joseph Dam in Washington (excluding the Okanogan River), the Columbia River from a straight line connecting the west end of the Clatsop jetty (south jetty, Oregon side) and the west end of the Peacock jetty (north jetty, Washington side) upstream to Chief Joseph Dam in Washington. From fallrun Chinook salmon in the mainstem Snake River ESU, found below Hells Canyon Dam, and in the Tucannon River, Grande Ronde River, Imnaha River, Salmon River, and Clearwater River. From Snake River spring/summer-run ESU, found in mainstem Snake River and the Tucannon River, Grande Ronde River, Imnaha River, and Salmon River subbasins. From Puget Sound ESU,	Spawning: streams with pool and riffle complexes. For successful breeding, require cold water (Moyle, 2002).	Contact Agency	No. The project site does not provide habitat for this species. The project site does not occur within designated Critical Habitat for this species.

SCIENTIFIC NAME COMMON NAME	FEDERAL STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION	POTENTIAL TO OCCUR ON-SITE
		found in rivers and streams flowing into Puget Sound.			
<b>Amphibians</b>					
<i>Rana pretiosa</i> Oregon spotted frog	Candidate	From southwest British Columbia south through Washington and Oregon (Californiaherps, 2011).	Found in aquatic environments mostly in mixed coniferous forests. Found near cool, quiet, permanent water sources; slow streams that meander through meadows, sluggish streams and rivers, marshes, springs, pools, edges of small lakes, and ponds from near sea level to 5,000 feet (Californiaherps, 2011).	February-October	No. The project site does not provide habitat for this species.
<b>Birds</b>					
<i>Strix occidentalis caurina</i> Northern spotted owl	Threatened/ Critical Habitat	Geographic range extends from British Columbia to northwestern California south to San Francisco. The breeding range includes the Cascade Range, North Coast Ranges, and the Sierra Nevada. Some breeding populations also occur in the Transverse Ranges and Peninsular Ranges NatureServe, 2011).	Resides in mixed conifer, redwood, and Douglas-fir habitats, from sea level up to approximately 2,300 meters. Prefers old-growth forests, but use of managed (previously logged) lands is not uncommon. Owls do not appear to use logged habitat until approximately 60 years after logging unless some larger trees or snags remain after logging. Nesting habitat is a tree or snag cavity, or the broken top of a large tree. Requires a nearby, permanent source of water. Foraging habitat consists of any forest habitat with sufficient prey (e.g. flying squirrels, mice, and voles) (NatureServe, 2011).	Year round	No. The project site does not provide habitat for this species. The project site does not occur within designated Critical Habitat for this species.
<i>Brachyramphus marmoratus</i> Marbled murrelet	Threatened/ Critical Habitat	Found from the western Aleutian Islands through coastal southern and southeastern Alaska, British Columbia, Washington, Oregon, and northern central California NatureServe, 2011).	Nests from May through early August in Washington. Outside of the breeding season, found in coastal areas, mainly in salt water within 2 km of shore, including bays and sounds. Nests in trees in terrestrial habitat including alpine, conifer forest, and Tundra (NatureServe, 2011).	Year round	No. The project site does not provide habitat for this species. The project site does not occur within designated Critical Habitat for this species.
<b>Mammals</b>					
<i>Canus lupus</i> Gray wolf	Endangered	Known from Arizona, Colorado, Illinois, Indiana, Iowa, Missouri, New Mexico, North Dakota, Ohio, Oregon, South Dakota, Utah, and Washington (NatureServe, 2011).	Found in temperate forests, mountains, tundra, taiga, and grasslands. Territory ranges from less 100 to 10,000s of square kilometers. Breeds from February to March. Gestates for two months. Pups remain in the den until they are 8 to 10 weeks old (NatureServe, 2011). Young and parents vacate the den when young are about 3 months old (Hoffmeister, 1986).	Year round	No. The project site does not provide habitat for this species.

SCIENTIFIC NAME COMMON NAME	FEDERAL STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION	POTENTIAL TO OCCUR ON-SITE
<i>Gulo gulo luteus</i> continuous U.S. Distinct Population Segment North American Wolverine	Candidate	Known from montane regions of Idaho, Montana, Washington and Wyoming (NatureServe, 2011).	Inhabit alpine and arctic tundra, boreal and mountain forests, which are primarily coniferous. Limited to mountains in the south, especially large wilderness areas from 400 to 4,300 meters (NatureServe, 2011).	Year round	No. The project site does not provide habitat for this species.
<i>Lynx canadensis</i> Canada lynx	Threatened	Known in the U.S. from Arkansas, Colorado, Idaho, Maine, Mississippi, Montana, Minnesota, North Dakota, New Hampshire, Oregon, Utah, Vermont, Washington, and Wyoming (NatureServe, 2011).	Found in boreal and montane regions dominated by coniferous or mixed forest with thick undergrowth. When inactive or birthing, occupies den typically in hollow tree, under stump, or in thick brush. Den sites tend to be in mature or old growth stands with a high density of logs (Koehler, 1990, Koehler and Brittell, 1990). Primary habitat components in the Pacific Northwest is foraging habitat (15 to 35-year-old lodgepole pine) to support snowshoe hare and provide hunting cover, denning sites (patches of greater than 200-year-old spruce and fir, generally less than 5 acres, and dispersal/travel cover (variable in vegetation composition and structure) (USFWS, 1993). Breeds in late winter-early spring in North America (NatureServe, 2011).	Year round	No. The project site does not provide habitat for this species.
<i>Martes pennanti</i> West Coast Distinct Population Segment Pacific fisher	Candidate	Distributed along the Sierra Nevada, Cascades and Klamath Mountains and in a few areas in the north Coast Ranges.	Found in intermediate to dense mature stands of trees (coniferous forests) and deciduous riparian habitats with a high percent canopy closure. Utilizes cavities in large trees, snags, logs, rock areas, or shelters provided by slash or brush piles.	Year Round	No. The project site does not provide habitat for this species.
<i>Ursus arctos (Ursus arctos horribilis)</i> Grizzly bear	Threatened	Known in the U.S. from Arkansas, Arizona, California, Colorado, Idaho, Kansas, Montana, Minnesota, North Dakota, Nebraska, New Mexico, Nevada, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming (NatureServe, 2011).	Found mostly in arctic tundra, alpine tundra, and subalpine mountain forests. Breeds in late spring and early summer. Young are born in winter. Adults are solitary except when breeding or caring for young (NatureServe, 2011).	Year round	No. The project site does not provide habitat for this species.
<b>Plants</b>					
<i>Castilleja levisecta</i> Golden paintbrush	Threatened	In Washington, occurs in the Puget Trough physiographic province (WNHP, 2010).	Perennial herb that occurs in open grasslands in the Puget Trough. The substrate is generally composed of glacial outwash or depositional material from 10 to 300 feet (WNHP, 2010).	April-July	No. The project site is outside the geographical range for this species.
<i>Meconella oregano</i> White meconella	Species of Concern	In Washington, occurs in the Eastern Cascades, Western Cascades, and Puget	Annual herb that occurs primarily in open grassland, sometimes within a mosaic of	March-April	No. The project site is outside the

SCIENTIFIC NAME COMMON NAME	FEDERAL STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION	POTENTIAL TO OCCUR ON-SITE
		Trough physiographic Provinces (WNHP, 2010).	forest/grassland on gradual to almost 100 percent slopes. 100 to 450 feet (WNHP, 2010).		geographical range for this species.
<i>Pinus albicaulis</i> Whitebark pine	Candidate	Found in two distinct sections; one following the British Columbia Coast Ranges, the Cascade Range, and the Sierra Nevada, and the other covering the Rocky Mountains from Wyoming to Alberta. In Washington, found in the northeastern Rocky Mountains (Bailey, 1975).	Gymnosperm that occurs in subalpine forest from 7,000 and 12,000 feet (Calflora, 2011).	Year round	No. The project site is outside the elevational range for this species.



## MEMORANDUM

To: Samish Indian Nation, City of Anacortes, Washington  
From: Kelly Bayne  
Date: 9/8/2011  
Re: Botanical Survey Results for the Samish Indian Nation-Thompson Site Property in the City of Anacortes, Washington

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## INTRODUCTION

Analytical Environmental Services (AES) prepared this technical memorandum (memo) to document the field verification results conducted to determine whether rare plants of Skagit County occur within the Samish Indian Nation (Tribe)-Thompson Site Property (property) located in the City of Anacortes, Washington. The City of Anacortes (City) adopted Biological Ordinance “17.70.320-Designation, Rating, and Mapping Wetlands” that designates wetlands in accordance with the Washington State Department of Ecology, Wetlands Identification and Delineation Manual, March 1997, Pub. No. 96-94. One criteria used to rate the wetlands designation is whether rare plants identified within Skagit County are present (WNHP, 2010). The City’s trail system map identifies a Category III wetland on the property (City of Anacortes, 2006). Focused botanical surveys were conducted to ensure that no rare plants occur within the subject property.

## PROJECT LOCATION

The approximately 14.84-acre property is located at the intersection of Thompson Road and SR-20 in the City of Anacortes, Skagit County, Washington. The property is situated in Township 34 North, Range 2 East, Section 4 of the Anacortes South, Washington, Willamette Meridian U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (quad). The centroid of the property is 48.459275° latitude, - 122.556575° longitude.

## METHODOLOGY

### *Preliminary Research*

Prior to conducting the biological and focused botanical surveys, AES obtained biological information for the property from the following sources: Anacortes South quad; color aerial photography of the property (AES, 2007); map of priority habitats and species documented in the vicinity of the property (WDFW, 2011); Washington National Heritage Program (WNHP) list of rare plants in Skagit County (WNHP, 2010); list of endangered and threatened species in Skagit County (USFWS, 2011a); and delineation report of the property and surrounding vicinity (AES, 2010). The WNHP (2010) list is provided in **Attachment 1**.

### ***Field Surveys and Analysis***

AES senior biologist Kelly Bayne, M.S. conducted general biological and focused botanical surveys and delineations on October 21 and 22, 2009 and May 25 and 26, 2010. Ms. Bayne and botanist Laura Burris conducted general biological and focused botanical surveys on September 22 and 23, 2010. The results of the delineation are documented in a separate report (AES, 2011). The botanical surveys consisted of walking transects in a north to south direction to evaluate biological communities, conducting floristic inventories, and documenting potential habitat for special status plants with the potential to occur on the property. Plants observed within the property are identified in **Attachment 2**.

## **RESULTS**

### ***Habitat Types***

Habitat types in the property include: nonnative annual grassland, riparian, snowberry (*Symphoricarpos albus*) patch, ruderal/disturbed areas, manmade ditch, and roadside ditch.

### ***Special Status Plant Species***

For the purposes of this assessment, special status plants have been defined to include those species that are:

- Listed as endangered or threatened under the federal Endangered Species Act (FESA) (or formally proposed for, or candidates for, listing);
- Listed as endangered or threatened under the Washington State ESA (or proposed for listing);
- Designated as sensitive under the state ESA; or
- Designated as review groups of potential concern under the state ESA.

**Table 1** provides a summary of habitat requirements and geographic distributions of rare plants documented in Skagit County (WNHP, 2010) and a rationale as to whether the plants have the potential to occur within the property. The project site geography and elevation were used to eliminate from further consideration plants that occur outside these ranges. Other listed plants were eliminated from further consideration during the field surveys based on the absence of suitable habitat required by the plants. Plants without the potential to occur within the property are not discussed further. In conclusion, the property does not provide habitat for any federally listed special status plants. The property does, however, provide habitat and occurs within the known geographic and elevation ranges for the following four state listed plants: pink fawn lily (*Erythronium revolutum*), branching montia (*Montia diffusa*), California buttercup (*Ranunculus californicus*), and soft-leaved willow (*Salix sessilifolia*). These plants are discussed in further detail below.

### ***Pink Fawn Lily (Erythronium revolutum)***

State Status: Sensitive

Other: Historic Record

Pink fawn lily prefers moist mineral soil in open or moderately shaded areas. This species blooms from April to May (WNHP, 2010). Although this species is known from Skagit, Clallam, Jefferson, Wahkiakum, Pacific, and Grays Harbor counties in Washington, the WNHP (2010) identifies this species as a historic record with the most recent sighting in Skagit County occurring prior to 1977.

**Table 1**  
Regionally Occurring Federally Listed Special Status Plants

SCIENTIFIC NAME COMMON NAME	FEDERAL/STATE STATUS/HISTORIC RECORD	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION	POTENTIAL TO OCCUR ON- SITE
<i>Anthoxanthum hirtum</i> common northern sweet grass	--/R1,H	In Washington, currently known from Chelan, Okanogan, and Skamania counties (WNHP, 2010).	Found on moist slopes, meadows, and stream banks from the foothills to sub-alpines from 325 to 4,420 feet (WNHP, 2010).	April through July	No. The property does not provide habitat for this species, is outside the known geographic and elevation ranges for this species, and was not observed during the May 25 and 26, 2010 focused botanical surveys conducted within the evident and identifiable blooming period for this species.
<i>Carex comosa</i> bristly sedge	--/S	In Washington, occurrences are scattered throughout the state (WNHP, 2010).	Found in marshes, lake shores, and wet meadows. Associated species may include <i>Carex utriculata</i> , <i>Potentilla palustris</i> , <i>Typha latifolia</i> , <i>Spiraea douglasii</i> , <i>Dulichium arundinaceum</i> , and <i>Phalaris arundinacea</i> from 50 to 2,000 feet (WNHP, 2010).	May through July.	No. The property does not provide habitat for this species, is outside the known elevation range for this species, and was not observed during the May 25 and 26, 2010 focused botanical surveys conducted within the evident and identifiable blooming period for this species.
<i>Carex magellanica</i> ssp. <i>irrigua</i> poor sedge	--/S	In Washington, known from Pend Oreille, Okanogan, Whatcom, Skagit, Chelan, and Stevens counties (WNHP, 2010).	Found in fens, bogs, shady wet meadows, shrub wetlands, and marshes, often growing in peat soil, at 1,640 to 7,000 feet (WNHP, 2010).	June to September	No. The property does not provide habitat for this species, is outside the known elevation range for this species, and was not observed during the September 22 and 23, 2010 focused botanical surveys conducted within the evident and identifiable blooming period for this species.
<i>Carex pauciflora</i> few-flowered sedge	--/S	In Washington, known from Whatcom, Snohomish, San Juan, King, Jefferson, Clallam, Mason, and Kittitas counties (WNHP, 2010).	Found in sphagnum bogs and acidic peat, usually on open mats, but also in partial conifer shade. In Washington, this species grows from 320 to 4,550 feet (WNHP, 2010).	Late May to early September	No. The property does not provide habitat for this species, is outside the known geographic and elevation ranges for this species, and was not observed during the May 25 and 26, 2010 focused botanical surveys conducted within the evident and identifiable blooming period for this species.
<i>Carex praeceptorum</i> teacher's sedge	--/R1	In Washington, known from Skagit, Pend Oreille, and Chelan counties (WNHP, 2010).	Found in sphagnum bogs and very wet shores around a lake, from 650 to 6,320 feet (WNHP, 2010).	June and August.	No. The property does not provide habitat for this species and is outside the known elevation range for this species.
<i>Carex stylosa</i> long styled sedge	--/S	In Washington, known from Clallam, Jefferson, Snohomish, Whatcom, and Skagit counties	Found in coastal regions, shallow marshes, gravelly loam, streambanks, and moist meadows. Occasionally found	June through September.	No. The property was not observed during the September 22 and 23, 2010 focused botanical surveys conducted

		(WNHP, 2010).	growing over hardened lava flow (WNHP, 2010).		within the evident and identifiable blooming period for this species.
<i>Castilleja levisecta</i> golden paintbrush	LT/SE, H	In Washington, known from the Puget Trough physiographic province (WNHP, 2010).	Perennial herb found in open grasslands with substrate composed of glacial outwash or depositional material, from 10 to 300 feet (WNHP, 2010).	April through July	No. The property provides habitat within the nonnative grassland, however, the property is outside the known geographic range for this species and was not observed during the May 25 and 26, 2010 focused botanical surveys conducted within the evident and identifiable blooming period for this species.
<i>Erythronium revolutum</i> pink fawn lily	--/S, H	In Washington, known from Skagit, Clallam, Jefferson, Wahkiakum, Pacific, and Grays Harbor counties (WNHP, 2010).	Prefers moist mineral soil in open or moderately shaded areas (WNHP, 2010).	April to May.	Yes. See text.
<i>Hypericum majus</i> Canadian St. John's wart	--/S	Known from Benton, Franklin, Skagit, and Spokane counties (WNHP, 2010).	Found along ponds, lakesides or other low, wet places. In Washington, usually associated with riparian habitats from 100 to 2,300 feet (WNHP, 2010).	July through September	No. The property does not provide habitat for this species, is outside of the known elevation range for this species, and was not observed during the September 22 and 23, 2010 focused botanical surveys conducted within the evident and identifiable blooming period for this species.
<i>Lobelia dortmanna</i> water lobelia	--/T	In Washington, scattered occurrences known from King County, north to Whatcom County, and west to Clallam County (WNHP, 2010).	Found in shallow water at the margins of lakes and ponds (WNHP, 2010).	June and lasting through August	No. The property does not provide habitat for this species.
<i>Loiseleuria procumbens</i> alpine azalea	--/T	In Washington, known from Skagit County (WNHP, 2010).	In Washington, found in alpine slopes from 6,100 to 6,550 feet (WNHP, 2010).	August.	No. The property does not provide habitat for this species and is outside of the known elevation range for this species.
<i>Luzula arcuata</i> ssp. <i>unalaschkensis</i> curved woodrush	--/S	In Washington, scattered, disjunct populations known from Pierce, Yakima, Okanogan, and Skagit counties (WNHP, 2010).	In Washington, found on a rocky exposed ridge at 7,080 feet and below a highly vegetated ridge crest between two snowfields on a volcanic boulder slope with flat pockets of sandy soil at 7,200 feet (WNHP, 2010).	August.	No. The property does not provide habitat for this species and is outside of the known elevation range for this species.
<i>Meconella oregano</i> white meconella	Species of Concern	In Washington, known from the Eastern Cascades, Western Cascades, and Puget Trough physiographic provinces (WNHP, 2010).	Annual herb found primarily in open grassland, sometimes within a mosaic of forest/grassland on gradual to almost 100 percent slopes from 100 to 450 feet (WNHP, 2010).	March to April	No. The property provides habitat within the nonnative grassland, however, the property is outside of the known elevation and geographic ranges for this species.

<i>Montia diffusa</i> branching montia	--/S	In Washington, known from Skamania, Snohomish, Clark, Kittitas, Skagit, and Clallam counties (WNHP, 2010).	Found in moist forests in the lowland and lower montane zones, and occasionally located in xeric soils or disturbed sites (WNHP, 2010).	April through July	Yes. See text.
<i>Pinus albicaulis</i> whitebark pine	Candidate	Found in two distinct sections; one following the British Columbia Coast Ranges, the Cascade Range, and the Sierra Nevada, and the other covering the Rocky Mountains from Wyoming to Alberta. In Washington, found in the northeastern Rocky Mountains (Bailey, 1975).	Gymnosperm found in subalpine forest from 7,000 and 12,000 feet (Calflora, 2011).	Year round	No. The property does not provide habitat for this species, is outside the elevation range for this species, and the species was not observed during any of the botanical surveys conducted within the evident and identifiable blooming period for this species.
<i>Potamogeton obtusifolius</i> blunt leaved pondweed	--/S, H	In Washington, known from Mason, Skagit, San Juan, and Jefferson counties (WNHP, 2010).	Found submerged on banks and in 3 to 9 feet (1-3.75 meters) of shallow water, from 100 to 513 feet (WNHP, 2010).	August.	No. The property does not provide habitat for this species and is outside the elevation range for this species.
<i>Ranunculus californicus</i> California buttercup	--/T, H	Known from southern Vancouver Island to southern California. Historically, known from San Juan and Skagit counties, Washington, however, two recent occurrences known from San Juan County (WNHP, 2010).	In Washington, found in open grassy areas, rocky slopes along the shore, and in rocky wooded areas from 15 to 50 feet (WNHP, 2010).	May to June.	Yes. See text.
<i>Salix sessilifolia</i> soft-leaved willow	--/S	In Washington, known from Cowlitz, Klickitat, Wahkiakum, Skagit, and Whatcom counties (WNHP, 2010).	In Washington, found lowland habitats including riparian forest, in dredge spoils, and on a silty bank at the upper edge of an intertidal zone (WNHP, 2010).	May through December	Yes. See text.
<i>Saxifraga rivularis</i> pygmy saxifrage	--/S	Known from British Columbia south to the Cascades and Olympics of Washington, and the Blue and Wallowa mountains (WNHP, 2010).	Found on damp cliffs, rock crevices, talus near snowbanks, alpine slopes, cracks, and shaded cliffs from 6,000 to 7,000 feet (WNHP, 2010).	July and August.	No. The property does not provide habitat for this species and is outside the elevation range for this species

Source: Washington National Heritage Program List of Rare Plants in Skagit County (November 2010)

#### Codes

H = Historic Record. Most recent sighting in the County is before 1977.

**State Status Codes**= State status of plant species is determined by the Washington Natural Heritage Program.

E = Endangered. In danger of becoming extinct or extirpated from Washington.

T = Threatened. Likely to become Endangered in Washington.

S = Sensitive. Vulnerable or declining and could become Endangered or Threatened in the state.

X = Possibly extinct or Extirpated from Washington.

R1 = Review group 1. Of potential concern but needs more field work to assign another rank.

R2 = Review group 2. Of potential concern but with unresolved taxonomic questions.

**Federal Status Codes** = Federal Status under the U.S. Endangered Species Act (ESA)

LE = Listed Endangered. In danger of extinction.

LT = Listed Threatened. Likely to become endangered.

PE = Proposed Endangered.

PT = Proposed Threatened.

C = Candidate species. Sufficient information exists to support listing as Endangered or

SC = Species of Concern.

The nonnative annual grassland within the property provides habitat for this species. This species was not observed during the May 25 and 26, 2010 focused botanical surveys conducted within the evident and identifiable blooming period for this species. This species does not occur within the property.

**Branching Montia (*Montia diffusa*)**

State Status: Sensitive

Other: None

Branching montia is found in moist forests in the lowland and lower montane zones, and occasionally located in xeric soils or disturbed sites. The blooming period for this species is from April through July. This species is known from Skamania, Snohomish, Clark, Kittitas, Skagit, and Clallam counties (WNHP, 2010).

The ruderal/disturbed areas within the property provide habitat for this species. This species was not observed during the May 25 and 26, 2010 focused botanical surveys conducted within the evident and identifiable blooming period for this species. This species does not occur within the property.

**California Buttercup (*Ranunculus californicus*)**

State Status: Threatened

Other: Historic Record

California buttercup is found in open grassy areas, rocky slopes along the shore, and in rocky wooded areas from 15 to 50 feet in Washington (WNHP, 2010). The blooming period for this species is from May to June. Although this species is known from southern Vancouver Island to southern California, the WNHP (2010) identifies this species as a historic record with the most recent sighting in Skagit County occurring prior to 1977.

The nonnative annual grassland within the property provides habitat for this species. This species was not observed during the May 25 and 26, 2010 focused botanical surveys conducted within the evident and identifiable blooming period for this species. This species does not occur within the property.

**Soft-Leaved Willow (*Salix sessifolia*)**

State Status: Sensitive

Other: None

Soft-leaved willow is found on lowland habitats including riparian forest, in dredge spoils, and on a silty bank at the upper edge of an intertidal zone. The blooming period for this species is from May through December. This species is known from Cowlitz, Klickitat, Wahkiakum, Skagit, and Whatcom counties (WNHP, 2010).

The riparian habitat within the property provides habitat for this species. This species was not observed during the October 21 and 22, 2009, May 25 and 26, 2010, and September 22 and 23, 2010 focused botanical surveys conducted within the evident and identifiable blooming period. This species does not occur within the property.

#### **CONCLUSION**

None of the potentially occurring special status species identified within the WNHP (2010) list occur within the property.

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Washington Department of Fish and Wildlife (WDFW), 2011. Priority Habitats and Species Report. PHS on the Web. Available at: <http://fortress.wa.gov/dfw/gispublic/prodphsontheweb/viewer.aspx?auth=EMvLIWNfcuxaR3IEBDrhKakmlOGA0m1Mi89DIPRNFeLmrHNluezLXQ==>. Accessed August 23, 2011.

# ATTACHMENTS

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# ATTACHMENT 1

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*WASHINGTON NATIONAL HERITAGE PROGRAM, PRIORITY HABITAT,  
AND U.S. FISH AND WILDLIFE LISTS*



[Return to Washington  
Natural Heritage Program](#)

**Washington  
Natural  
Heritage  
Program**

**Reference Desk**

Reference Desk	Location Search	Rare Plants	Rare Animals	Communities
GIS	Field Guides	Publications	Natural Heritage Plan	

**Washington Natural Heritage Information System  
List of Known Occurrences of Rare Plants in Washington  
November 2010  
Skagit County**

A key to status fields appears below. If a scientific name is underlined you may click on it to go to a field guide page (pdf format, average size 300 kb) for that taxon.

Scientific Name	Common Name	State Status	Federal Status	Historic Record
<a href="#">Anthoxanthum hirtum</a>	common northern sweet grass	R1		H
<a href="#">Carex comosa</a>	bristly sedge	S		
<a href="#">Carex magellanica ssp. irrigua</a>	poor sedge	S		
<a href="#">Carex pauciflora</a>	few-flowered sedge	S		
<a href="#">Carex praeceptorum</a>	Teacher's sedge	R1		
<a href="#">Carex stylosa</a>	long-styled sedge	S		
<a href="#">Castilleja levisecta</a>	golden paintbrush	E	LT	H
<a href="#">Erythronium revolutum</a>	pink fawn-lily	S		H
<a href="#">Hypericum majus</a>	Canadian St. John's-wort	S		
<a href="#">Lobelia dortmanna</a>	water lobelia	T		
<a href="#">Loiseleuria procumbens</a>	alpine azalea	T		
<a href="#">Luzula arcuata ssp. unalaschkensis</a>	curved woodrush	S		
<a href="#">Meconella oregana</a>	white meconella	T	SC	H
<a href="#">Montia diffusa</a>	branching montia	S		
<a href="#">Nuttallanthus texanus</a>	Texas toadflax	S		
<a href="#">Potamogeton obtusifolius</a>	blunt-leaved pondweed	S		H
<a href="#">Ranunculus californicus</a>	California buttercup	T		H
<a href="#">Salix sessilifolia</a>	soft-leaved willow	S		
<a href="#">Saxifraga rivularis</a>	pygmy saxifrage	S		

### Description of Codes

#### Historic Record:

H indicates most recent sighting in the county is before 1977.

#### State Status

**State Status** of plant species is determined by the Washington Natural Heritage Program. Factors considered include abundance, occurrence patterns, vulnerability, threats, existing protection, and taxonomic distinctness.

Values include:

E = Endangered. In danger of becoming extinct or extirpated from Washington.

T = Threatened. Likely to become Endangered in Washington.

S = Sensitive. Vulnerable or declining and could become Endangered or Threatened in the state.

X = Possibly extinct or Extirpated from Washington.

R1 = Review group 1. Of potential concern but needs more field work to assign another rank.

R2 = Review group 2. Of potential concern but with unresolved taxonomic questions.

### Federal Status

**Federal Status** under the U.S. Endangered Species Act(USESA) as published in the Federal Register:

LE = Listed Endangered. In danger of extinction.

LT = Listed Threatened. Likely to become endangered.

PE = Proposed Endangered.

PT = Proposed Threatened.

C = Candidate species. Sufficient information exists to support listing as Endangered or Threatened.

SC = Species of Concern. An unofficial status, the species appears to be in jeopardy, but insufficient information to support listing.

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Washington Natural Heritage Program - [www.dnr.wa.gov/ResearchScience/Topics/NaturalHeritage/Pages/amp\\_nh.aspx/](http://www.dnr.wa.gov/ResearchScience/Topics/NaturalHeritage/Pages/amp_nh.aspx/) [back to top](#)  
Washington Dept. of Natural Resources, PO Box 47016, Olympia, WA 98504-7016

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# ATTACHMENT 2

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*PLANTS OBSERVED WITHIN THE PROPERTY*

**PLANT SPECIES OBSERVED WITHIN THE PROPERTY**  
 October 21 and 22, 2009, May 25 and 26, 2010, and September 22 and 23, 2010

<b>Family</b>	<b>Scientific Name</b>	<b>Common Name</b>
<b>Aceraceae</b>	<i>Acer macrophyllum</i>	Big-leaf maple
<b>Apiaceae</b>	<i>Daucus carota</i>	Queen Anne's lace
	<i>Conium maculatum</i>	Poison hemlock
<b>Asteraceae</b>	<i>Carduus pycnocephalus</i>	Italian thistle
	<i>Cirsium arvense</i>	Canada thistle
	<i>Achillea millefolium</i>	Yarrow
	<i>Hypochaeris glabra</i>	Smooth cat's ear
	<i>Leucanthemum vulgare</i>	White daisy
	<i>Lactuca serriola</i>	Prickly lettuce
	<i>Aster subspicatus</i>	Douglas aster
	<i>Tanacetum bipinnatum</i>	Common tansy
<b>Betulaceae</b>	<i>Alnus rubra</i>	Red alder
<b>Boraginaceae</b>	<i>Myosotis laxa</i>	Small-flowered forget-me-not
<b>Brassicaceae</b>	<i>Brassica rapa</i> (=B. <i>campestris</i> )	Field mustard
	<i>Cardamine breweri</i>	Bitter cress
	<i>Erysimum</i> sp.	
	<i>Rorippa nasturtium-aquaticum</i>	Water cress
<b>Caprifoliaceae</b>	<i>Lonicera involucrata</i> var. <i>involucrata</i>	Honeysuckle
	<i>Symphoricarpos alba</i>	Common snowberry
<b>Caryophyllaceae</b>	<i>Cerastium arvense</i>	Field chickweed
<b>Chenopodiaceae</b>	<i>Atriplex patula</i>	Spear orache
<b>Convolvaceae</b>	<i>Calystegia sepium</i>	Hedge bindweed
<b>Cyperaceae</b>	<i>Carex praegracilis</i>	Clustered field sedge
	<i>Carex stipata</i>	Sawbeak sedge
	<i>Carex</i> ssp.	Sedge
<b>Dipsacaceae</b>	<i>Dipsacus sulvestris</i>	Teasel
<b>Dryopteridaceae</b>	<i>Polystichum munitum</i>	Sword fern
<b>Equisetaceae</b>	<i>Equisetum arvense</i>	Common horsetail
<b>Ericaceae</b>	<i>Gaultheria shallon</i>	Salal
	<i>Vaccinium parvifolium</i>	Red huckleberry
	<i>Arbutus menziesii</i>	Pacific madrone
<b>Fabaceae</b>	<i>Trifolium dubium</i>	Little hop clover
	<i>Trifolium pretense</i>	Red clover
	<i>Trifolium repens</i>	White clover
	<i>Trifolium hirtum</i>	Rose clover
	<i>Cytisus scoparius</i>	Scotch broom
	<i>Lathyrus latifolius</i>	Perennial pea
	<i>Medicago lupulina</i>	Black medic
<b>Gentianaceae</b>	<i>Centaurium erythraea</i>	Common centaurry
	<i>Centaurium umbellatum</i>	Centaurry
<b>Geraniaceae</b>	<i>Geranium dissectum</i>	Cranesbill
	<i>Geranium robertianum</i>	Robert's Geranium
	<i>Geranium molle</i>	Cranesbill
<b>Hippocastanaceae</b>	<i>Aesculus californica</i>	California buckeye
<b>Hypericaceae</b>	<i>Hypericum perforatum</i>	Klamathweed
<b>Juncaceae</b>	<i>Juncus balticus</i>	Baltic rush
	<i>Juncus bufonius</i>	Toad rush
	<i>Juncus effusus</i> ssp. <i>effusus</i>	Common rush
	<i>Juncus effusus</i> ssp. <i>pacificus</i>	Pacific rush

**PLANT SPECIES OBSERVED WITHIN THE PROPERTY**  
 October 21 and 22, 2009, May 25 and 26, 2010, and September 22 and 23, 2010

<b>Liliaceae</b>	<i>Stenanthium occidentale</i>	Western featherbells
<b>Onagraceae</b>	<i>Ludwigia palustris</i>	False loosestrife
	<i>Epilobium paniculatum</i>	Tall annual willow-herb
	<i>Epilobium ciliatum</i>	Common willow-herb
<b>Papaveraceae</b>	<i>Papaver nudicale</i>	Cultivated Iceland poppy
<b>Pinaceae</b>	<i>Picea sitchensis</i>	Sitka spruce
<b>Plantaginaceae</b>	<i>Plantago lanceolata</i>	English plantain
<b>Poaceae</b>	<i>Holcus lanatus</i>	Common velvet grass
	<i>Festuca rubra</i>	Red fescue
	<i>Festuca idahoensis</i>	Blue bunchgrass
	<i>Anthoxanthum odoratum</i>	Sweet vernalgrass
	<i>Dactylis glomerata</i>	Orchard grass
	<i>Distichlis spicata</i>	Saltgrass
	<i>Echinochloa crus-galli</i>	Barnyard grass
	<i>Aira caryophylla</i>	Silver European hairgrass
	<i>Agrostis capilaris</i>	Colonial bentgrass
	<i>Taeniatherum caput-medusae</i>	Medusa head
	<i>Bromus tectorum</i>	Cheat grass
	<i>Bromus hordeaceus</i>	Soft brome
	<i>Agrostis oregonensis</i>	Oregon bentgrass
	<i>Agrostis stolonifera</i>	Creeping bentgrass
	<i>Phalaris arundinacea</i>	Reed canary grass
<b>Polygonaceae</b>	<i>Rumex crispus</i>	Curly dock
	<i>Rumex acetosella</i>	Sheep sorrel
	<i>Rumex occidentalis</i>	western dock
<b>Polypodiaceae</b>	<i>Pteridium aquilinum</i>	Braken fern
<b>Portulacaceae</b>	<i>Claytonia perfoliata</i>	Miner's lettuce
<b>Ranunculaceae</b>	<i>Ranunculus</i> sp.	
	<i>Ranunculus occidentalis</i>	Buttercup
	<i>Ranunculus uncinatus</i>	Hook seeded buttercup
<b>Rosaceae</b>	<i>Crataegus</i> sp.	
	<i>Potentilla</i> sp.	
	<i>Rosa nutkana</i>	Nootka rose
	<i>Rubus ursinus</i>	California blackberry
	<i>Rubus discolor</i>	Himalayan blackberry
	<i>Amelanchier alnifolia</i>	Saskatoon serviceberry
	<i>Prunus emarginata</i>	
	<i>Rubus spectabilis</i>	Salmon berry
	<i>Rubus parviflorus</i>	Thimbleberry
	<i>Prunus ilicifolia</i> ssp. <i>ilicifolia</i>	Holly-leafed cherry
	<i>Rosa</i> sp.	
<b>Rubiaceae</b>	<i>Galium aparine</i>	Goose grass
<b>Scrophulariaceae</b>	<i>Veronica catenata</i>	Chain speedwell
	<i>Mimulus alsinoides</i>	Wingstem monkeyflower
	<i>Mimulus guttatus</i>	Yellow monkeyflower
	<i>Verbascum thapsus</i>	Common mullein
	<i>Veronica americana</i>	American brooklime
<b>Solanaceae</b>	<i>Solanum dulcamara</i>	Bittersweet nightshade



DELINEATION OF WATERS OF THE UNITED STATES  
**SAMISH INDIAN NATION - THOMPSON SITE**

**AUGUST 2011**

PREPARED FOR:

Samish Indian Nation  
P.O. Box 217  
2918 Commercial Avenue  
Anacortes, WA 98221



PREPARED BY:

Analytical Environmental Services  
1801 7th Street, Suite 100  
Sacramento, CA 95811



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## ATTACHMENTS

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Attachment 1	Wetland Delineation Data Sheets	
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# 1.0 INTRODUCTION

## 1.1 PROJECT OVERVIEW

This report presents the results of the delineation of waters of the U.S, as defined by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), for the Samish Indian Nation (Tribe)-Thompson Site Fee-To-Trust Project (proposed project) located in Skagit County, Washington. The purpose of the delineation was to identify whether wetlands and other waters of the U.S. occur within the proposed project study area (study area) and to rate the wetlands, if present. The jurisdictional delineation is considered preliminary until the USACE verifies the findings.

## 1.2 PROJECT APPLICANT AND AGENT

Applicant	Agent
Ted Gage Samish Indian Nation 2918 Commercial Avenue Anacortes, Washington 98221	Analytical Environmental Services 1801 7th Street, Suite 100 Sacramento, California 95811 Phone: (916) 447-3479 Fax: (916) 447-1665

## 1.3 PROJECT DESCRIPTION

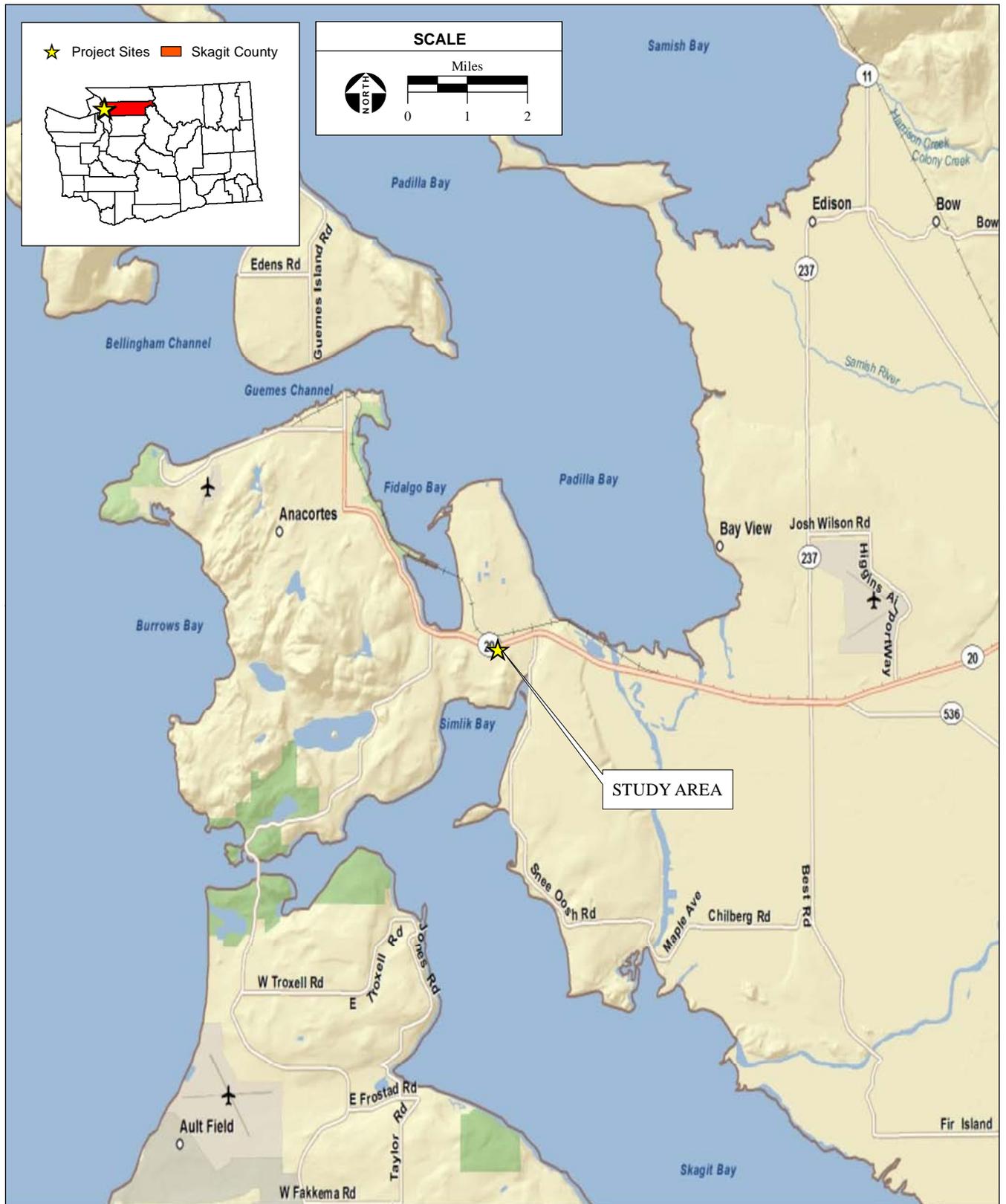
The Tribe proposes to transfer the study area into federal trust land and is anticipating possible development of the study area.

## 1.4 STUDY AREA DESCRIPTION AND LOCATION

The approximately 14.84-acre study area is located at the intersection of Thompson Road and SR-20 in the City of Anacortes, Skagit County, Washington (**Figure 1**). The study area is situated in Township 34 North, Range 2 East, Section 4 of the Anacortes South, Washington, Willamette Meridian U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (quad). The centroid of the study area is 48.459275° latitude, -122.556575° longitude. A topographic map and an aerial photograph of the study area are shown in **Figures 2** and **3**, respectively.

The study area is hydrologic unit code (HUC) Strait of Georgia number: 17110002. Topography within the study area consists of a relatively gradual slope with elevations ranging from approximately 70 to 84 feet above mean sea level.

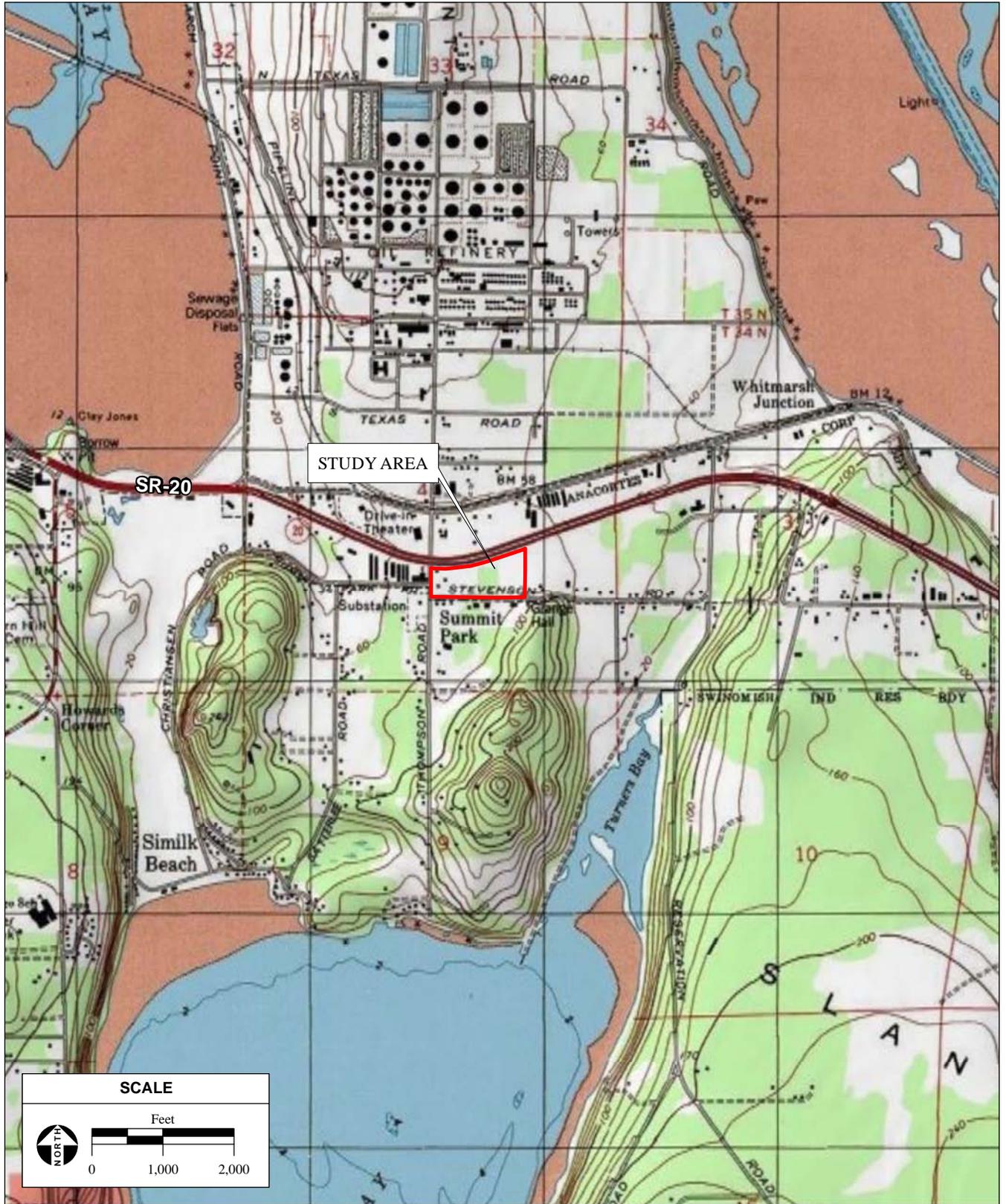
To access to the study area from Seattle, take Interstate 5 North for approximately 65 miles. Take the SR-20 exit toward Burlington/Anacortes and drive 0.4 miles. Turn left onto SR-20 West and drive 10.7 miles. Turn left onto Thompson Road. The northwestern boundary of the study area is located at the intersection of Thompson Road and SR-20.



SOURCE: ESRI Server Data, 2009; AES, 2011

Samish Indian Nation - Thompson Site Fee-To-Trust Delineation of Waters of the U.S. / 209532 ■

**Figure 1**  
Regional Location - Proposed & Alternative Project Sites



SOURCE: "Anacortes North, WA" T34N R2E, Section 4; AES, 2011

Samish Indian Nation - Thompson Site Fee-To-Trust Delineation of Waters of the U.S. / 209532 ■

**Figure 2**  
Site and Vicinity - Proposed & Alternative Project Sites



SOURCE: Aerial Express Aerial Photograph, 8/2009; AES, 2011 *Samish Indian Nation - Thompson Site Fee-To-Trust Delineation of Waters of the U.S. / 209532* ■

**Figure 3**  
Aerial Photograph - Proposed & Alternative Project Sites

## 2.0 REGULATORY BACKGROUND

Any person, firm, or agency planning to alter or work in navigable waters of the U.S., including the discharge of dredged or fill material, must first obtain authorization from the U.S. Army Corps of Engineers (USACE). Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act of 1899 prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from the USACE (33 U.S.C. 403). Section 301 of the Federal Water Pollution Control Act and Amendments of 1972 (“Clean Water Act” (CWA)) prohibit the discharge of pollutants, including dredged or fill material, into waters of the U.S. without a Section 404 permit from USACE (33 U.S.C. 1344).

Waters of the U.S. are defined as:

...all waters used in interstate or foreign commerce; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent and ephemeral streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, where the use, degradation, or destruction of which could affect interstate commerce; impoundments of these waters; tributaries of these waters; or wetlands adjacent to these waters (Section 404 of the CWA; 33 CFR Part 328).

The USACE considers defined beds and banks and presence of an ordinary high water mark occurring in part or all of the drainage is required for drainages to be considered potentially USACE jurisdictional waters of the U.S. when they lack one or more wetland field indicators (hydrophytic vegetation, hydric soil, or wetland hydrologic conditions).

The USACE (Federal Register, 1982), the Environmental Protection Agency (Federal Register 1985), the Shoreline Management Act and the Growth Management Act define wetlands as: *Those areas that are inundated or saturated by surface or ground water 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 generally include swamps, marshes, bogs, and similar areas. In addition, the Shoreline Management Act and the Growth Management Act definitions include: *Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway.*

The 1995 Washington State Legislature enacted a bill (SSB 5776) requiring the Department of Ecology to adopt a wetland delineation manual that *implements and is consistent with the 1987 manual in use on January 1, 1995 by the USACE and the U.S. Environmental Protection Agency.* This manual is intended to be used in implementing the Shoreline Management Act and other applicable state statutes. The manual is also to be used by local governments in implementing local regulations under the Growth Management Act.

The USACE and the Environmental Protection Agency issued the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* on May 30, 2007, to provide guidance based on the Supreme Court's decision regarding *Rapanos v. United States* and *Carabell v. United States* (USACE, 2007). The decision provides new standards that distinguishes between traditional navigable waters (TNWs), relatively permanent waters (RPWs), and non-relatively permanent waters (non-TNWs). Wetlands adjacent to non-TNWs are subject to CWA jurisdiction if: the water body is relatively permanent, or if a water body abuts a RPW, or if a water body, in combination with all wetlands adjacent to that water body, has a significant nexus with TNWs. The significant nexus standard will be based on evidence applicable to ecology, hydrology, and the influence of the water on the "chemical, physical, and biological integrity of downstream traditional navigable waters" (USACE, 2007). Isolated wetlands are not subject to CWA jurisdiction based on the Supreme Court's decision regarding Solid Waste Agency of Northern Cook County (SWAANC) (Guzy, 2001).

Roadside ditches are not considered waters of the U.S. when:

Roadside ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water are not considered waters of the U.S. because they are not tributaries or they do not have a significant nexus to downstream traditional navigable waters (Federal Register, 1983).

The City of Anacortes (City) biological ordinances have requirements for designating, rating, and mapping wetlands (17.70.320). The City designates wetlands as "those areas, designated in accordance with the *Washington State Department of Ecology, Wetlands Identification and Delineation Manual*, (1997; Pub. No. 96-94), that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation adapted for life in saturated soil conditions. All areas within the City meeting the wetland designation criteria, regardless of any formal identification, not otherwise excluded under Sections 17.70.300, 17.70.340, and 17.70.520 of the general plan, are hereby designated critical areas and are subject to the applicable provisions. The City rates wetlands according to the wetland rating system found in the *Washington State Wetland Rating System for Western Washington (Rating System)* (Hruby, 2004; or as revised by Ecology).

## 3.0 METHODOLOGY

### 3.1 WETLAND DETERMINATION METHODS

Wetlands were determined in accordance with the USACE *Wetland Delineation Manual* (Environmental Laboratory, 1987), the *Washington State Department of Ecology, Wetlands Identification and Delineation Manual* (1997), and the Rating System. Wetland data sheets were completed at representative locations to determine whether suspect features qualify as jurisdictional waters of the U.S. The data sheets are included in **Attachment 1**. Wetlands were determined based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology indicators.

## VEGETATION

Hydrophytic vegetation, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions. Hydrophytic vegetation indicators include: prevalence of hydrophytic vegetation (majority of dominant plant species are obligate or facultative wetland plants) as listed in the *National List of Plant Species that Occur in Wetlands: Northwest Region 9* (Reed, 1988); and morphological or physiological adaptations to saturated soil conditions. Plant species wetland indicator status is a rating that indicates the probability that a particular plant species will occur in a wetland. Indicator status categories are defined as follows (Reed, 1988):

- Obligate (OBL) – almost always occurs in wetlands (greater than 99 percent probability of occurring in wetlands);
- Facultative Wetland (FACW) – usually occurs in wetlands (67 to 99 percent probability of occurrence in wetlands);
- Facultative (FAC) – equally likely to occur in wetlands or non-wetlands (34 to 66 percent of occurrence in wetlands);
- Facultative Upland (FACU) – usually occurs in non-wetlands, but occasionally occurs in wetlands (one to 33 percent of occurrence in wetlands);
- Obligate Upland (UPL) – almost never occurs in wetlands (one percent probability of occurrence in wetlands). Plant species not listed are considered upland species.

## HYDRIC SOILS

Hydric soils include:

- All Histosols, except Folists; or soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Aquisalids, Pachic subgroups;
- Cumulic subgroups that are: (1) Somewhat poorly drained with a water table equal to 0 feet from the surface during the growing season, or (2) poorly drained or very poorly drained and have either: (a) a water table equal to 0 feet during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches, or for other soils, (b) a water table at less than or equal to 0.5 feet from the surface during the growing season if permeability is equal to or greater than 6 inches/hour in all layers within 20 inches, or (c) the water table is at less than or equal to one foot from the surface during the growing season if permeability is less than 6 inches/hour in any layer within 20 inches;
- Soils that are frequently ponded for a long or very long duration during the growing season; or
- Soils that are frequently flooded for a long or very long duration during the growing season.

Hydric soil indicators identified on the routine wetland determination data form include: histosols, histic epipedon, sulfidic odor, aquic moisture regime, reducing conditions, gleyed or low-chroma matrix, matrix chroma less than 2 with mottles, magnesium or iron concentrations, high organic content in surface layer of soils, organic streaking in sandy soils, or listed on national/local hydric soils list.

## WETLAND HYDROLOGY

Hydrology indicators identified on the routine wetland determination data form include: presence of water marks, sediment deposits, drainage patterns, drift lines, oxidized root channels less than 12 inches from the surface, and water-stained leaves.

## 3.2 WATERS OF THE U.S. DETERMINATION METHODS

For identification of water bodies other than wetlands that are subject to federal jurisdiction, 2 principle field characteristics were evaluated: 1) the presence of a channel; and 2) the presence of an ordinary high water mark. The ordinary high water mark is defined in 33 CFR Part 329.11, as the line on the shore established by the fluctuations of water, and indicated by a clear, natural line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, or the presence of litter and debris. Other characteristics that were noted, where possible, include: dominant plant species within the bed and banks; hydrological connection (direct, or indirect via another tributary) to a navigable waterway; waterbody with interstate commerce use(s), or other potential USACE-jurisdictional feature; designation as ephemeral, intermittent, or perennial drainage feature; and presence of adjacent jurisdictional wetlands or other sensitive resources, such as riparian habitat. USACE regulations (33 CFR Part 328) were consulted to make a determination of whether these water bodies constitute waters of the U.S.

## 3.3 DATA REVIEW

Prior to the initiation of the delineation, AES reviewed the following sources of information:

- Anacortes North, WA quad;
- Color aerial photography of the study area and vicinity (AEX, 2007);
- Soil survey maps and unit descriptions (NRCS, 2010a);
- Hydric soil information (NRCS, 2010b); and
- USFWS Wetlands Online Mapper (USFWS, 2010).

## 3.4 DELINEATION SURVEYS

AES biologist Kelly Bayne (nee Buja), M.S. conducted the delineations within the study area on October 21 and 22, 2009 and on May 25 and 26, 2010. Field surveys consisted of walking transects in a north to south direction to map habitat types, wetlands, and waterways within the study area. Data collection points were chosen at representative locations and detailed information on vegetation, soils, and hydrology were taken for each data point (**Attachment 1**). Data points were obtained by excavating soil pits to a depth of 18 inches or until an impermeable layer was reached. The *National List of Vascular Plant Species that Occur in Wetlands, Region 9* (Reed, 1988), was used to determine the status of observed plants as wetland indicator species. Soil pits were excavated to 18 inches unless hardpan or bedrock was reached and were examined for presence of hydric soil indicators. A standard Munsell® soil color chart was used to determine soil matrix and mottle colors.

### 3.4.1 MAPPING

Global Positioning System (GPS) technology, a Trimble Geo XT™ receiver, was used to locate and map preliminary boundaries of waters of the U.S. during the 2009 fieldwork. The geographic coordinate system used to reference the data was Universal Transverse Mercator (UTM–Zone 10), North American Datum (NAD83) in meters.

Environmental Systems Research Institute (ESRI) shape files were generated. Each feature or complex was assessed by setting up transects perpendicular to the suspect wetland/upland edges and by observing the mandatory wetland indicators at selected points along each transect as defined by the USACE

*Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Washington State Department of Ecology, Wetlands Identification and Delineation Manual* (1997). Potential wetland boundaries were mapped at a level of accuracy of less than one meter. Soil pit locations were documented using a GPS to identify where the soil data were obtained. Wetland polygons were overlaid on a topographic base map and aerial photograph. The ESRI data and GIS software were used to calculate the acreages and linear feet of habitat types and wetland features.

### 3.5 WETLANDS RATING SYSTEM FOR WESTERN WASHINGTON

Wetlands delineated in the study area were rated using the revised Rating System. The Rating System is designed to differentiate between wetlands based on specific attributes such as rarity, sensitivity to disturbance, the functions they provide, and whether the wetland can be replaced. The Rating System is based on the Hydrogeomorphic (HGM) classification system (as opposed to the Cowardin classification system). Characteristics of the classification system consider the site's water quality, hydrological, and habitat functions. The Rating System uses a standardized form (Version 2 – Updated July 2006) to rate and score an individual wetland site. Each wetland site is then assigned a category (I through IV) based on its rating form score.

**Category I Wetlands** are those that:

- Represent a unique or rare wetland type;
- Are more sensitive to disturbance than most wetlands;
- are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or
- Provide a high level of functions. These include relatively undisturbed estuarine wetlands larger than one acre; natural heritage wetlands (wetlands identified by scientists of the Washington Department of Natural Resources, Natural Heritage Program as high quality, relatively undisturbed wetlands, or wetlands that support State listed threatened, endangered, or sensitive plants; bogs; mature and old-growth forested wetlands over one acres in size; wetlands in coastal lagoons; and wetlands that perform many functions very well (wetlands scoring 70 points or more on the questions related to functions).

**Category II Wetlands** are difficult, though not impossible, to replace, and provide high levels of some functions. These include any estuarine wetland smaller than one acre, or those that are disturbed and larger than one acre; interdunal wetlands greater than one acre; and wetlands that perform functions well (score between 51 and 69 points on the questions related to functions).

**Category III Wetlands** are:

- Wetlands with a moderate level of functions (scores between 30-50 points) and
- Interdunal wetlands between 0.1 and one acre in size.

**Category IV Wetlands** have the lowest level of functions (scores less than 30 points) and are often heavily disturbed. These are wetlands that should be able to be replaced, and in some cases, be able to be improved.

## 4.0 ENVIRONMENTAL SETTING

### 4.1 CLIMATE

The Anacortes, Washington (#450176) monthly record climate data obtained in the vicinity of the study area documents an average maximum temperature of 58.6° Fahrenheit (F) and an average minimum temperature of 43.2°F from 1892 to 2009. The climate data recorded an average total annual precipitation of 26.64 inches from 1892 through 2009 (WRCC, 2010). The KWAANACO2 weather station located approximately 3 miles from the study area recorded a total annual precipitation of 26 inches between January and December 2009 (Weather Underground, Inc., 2010). Therefore, the average precipitation obtained for the 2009 water year is approximately 102 percent of the average total annual precipitation documented over 117 years.

### 4.2 SOIL TYPES

Mapped soil types in the study area were determined using the Web Soil Survey (NRCS, 2010a). Three soil types occur in the study area. The soil map is provided in **Figure 4** and descriptions are discussed below. **Table 1** identifies the soil types by series, map symbols, hydric characteristics, and estimated percentages occurring within the study area.

**TABLE 1**  
MAPPED SOIL TYPES

Soil Series	Map Symbol	Hydric	% of Study Area
Bow gravelly loam, low precipitation, 0 to 3 percent slopes	18	Yes	2.2
Bow gravelly loam, low precipitation, 3 to 8 percent slopes	19	Yes	2.4
Coveland gravelly loam, 0 to 3 percent slopes	35	Yes	95.4
<b>Total</b>			<b>100</b>

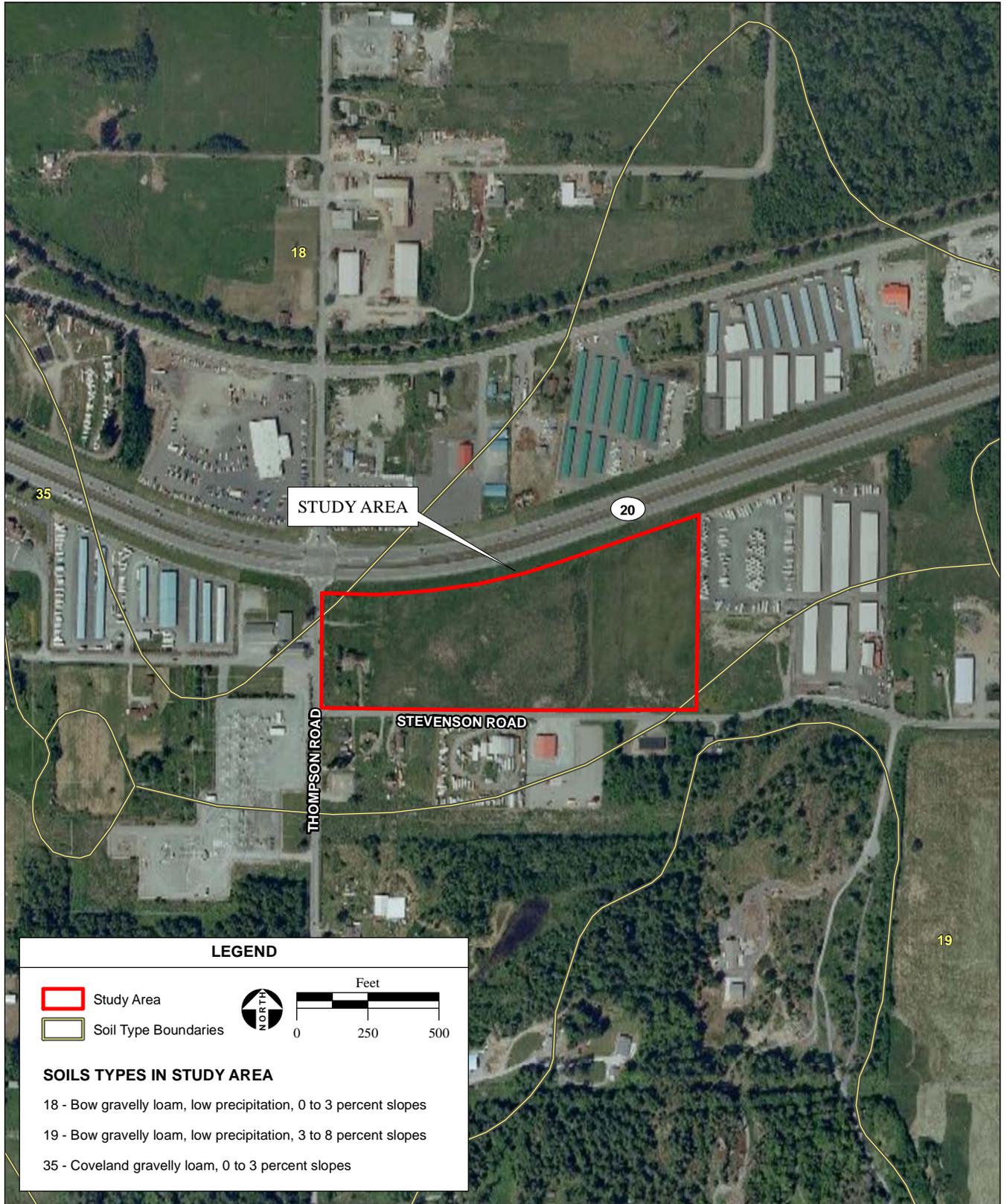
Source: NRCS, 2010a, b

#### **Bow gravelly loam, low precipitation, 0 to 3 percent slopes (18)**

This soil type is found on hillslopes and terraces derived from volcanic ash, glaciolacustrine deposits, and glacial drift parent material. Depth to water table is between 6 and 18 inches. Depth to restrictive layer is more than 80 inches. The soil type is somewhat poorly drained with a high available water capacity. The soil profile is typically gravelly loam from 0 to 8 inches, clay loam from 8 to 22 inches, and silty clay from 22 to 60 inches (NRCS, 2010a). This soil is classified as hydric (soil criteria 2A). Soil criteria 2A includes soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, or Andic, Cumulic, Pachic, or Vitrandic subgroups that are somewhat poorly drained with a water table equal to 0 feet from the surface during the growing season (NRCS, 2010b).

#### **Bow gravelly loam, low precipitation, 3 to 8 percent slopes (19)**

This soil type is found on hillslopes and terraces derived from volcanic ash, glaciolacustrine deposits, and glacial drift parent material. Depth to water table is between 6 and 18 inches. Depth to restrictive layer is more than 80 inches. The soil type is somewhat poorly drained with a high available water capacity. The soil profile is typically gravelly loam from 0 to 8 inches, clay loam from 8 to 22 inches, and silty clay from 22 to 60 inches (NRCS, 2010a). This soil is classified as hydric (soil criteria 2A) (NRCS, 2010b).



SOURCE: USDA/NRCS Soil Surveys, 1998-2009;  
 AEX Aerial Photograph, 5/2009; AES, 2011

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**Figure 4**  
 Soils Map

### **Coveland gravelly loam, 0 to 3 percent slopes (35)**

This soil type is found on swales derived from glaciolacustrine deposits parent material. Depth to water table is between 0 and 18 inches. Depth to restrictive layer is 10 to 20 inches to abrupt textural change. The soil type is somewhat poorly drained with a very low available water capacity. The soil profile is typically gravelly loam from 0 to 9 inches, very gravelly sandy loam from 9 to 14 inches, and silty clay from 14 to 60 inches (NRCS, 2010a). This soil is classified as hydric (soil criteria 2A) (NRCS, 2010b).

## **4.3 HABITAT TYPES**

Habitat types in the study area include: nonnative annual grassland, riparian, snowberry (*Symphoricarpos albus*) patch, ruderal/disturbed, manmade ditch, and roadside ditch. Dominant vegetation within each habitat type is discussed below. A habitat map is illustrated in **Figure 5**. Photographs of the habitat types are illustrated in **Figures 6** and **7**.

### **4.3.1 NONNATIVE ANNUAL GRASSLAND**

Nonnative annual grassland occurs throughout the majority of the study area (**Figure 6: Photograph 1**). The majority of the study area had been mowed prior to conducting the survey in November 2009 and May 2010. Dominant vegetation observed in the nonnative annual grassland includes: orchard grass (*Dactylis glomerata*), velvet grass (*Holcus lanatus*), Johnsongrass (*Sorghum halipense*), red fescue (*Festuca rubra*), and Robert geranium (*Geranium robertianum*). Ornamental landscape trees occur within the nonnative annual grassland on the western portion of the study area (**Figure 6: Photograph 2**).

### **4.3.2 RIPARIAN**

Riparian habitat occurs within the study area (**Figure 6: Photograph 4; Figure 7: Photographs 6** and **7**). Dominant vegetation observed in the riparian habitat includes: willow (*Salix* sp.), Oregon grape (*Berberis aquifolium*), American speedwell (*Veronica Americana*), chain speedwell (*Veronica catenata*), rose (*Rosa* sp.), and trailing blackberry (*Rubus ursinus*).

### **4.3.3 SNOWBERRY PATCH**

A snowberry patch occurs within the southeastern portion of the study area (**Figure 7: Photograph 8**). Dominant vegetation observed in the vicinity of the snowberry patch includes: snowberry, trailing blackberry, and red huckleberry (*Vaccinium parviflorum*).

### **4.3.4 MANMADE DRAINAGE DITCH**

One manmade drainage ditch (DCH 1) occurs within the study area (**Figure 7: Photographs 9** and **10**). Dominant vegetation observed in the vicinity of the manmade drainage ditch includes: chain speedwell, buttercup (*Ranunculus occidentalis*), miner's lettuce (*Claytonia perfoliata*), common sheep sorrel (*Rumex acetocella*), and monkeyflower (*Mimulus guttatus*).



**Figure 5**  
Habitat Types and Delineation of Potential Waters of the U.S.



PHOTO 1: View eastward of the nonnative annual grassland from the southwestern portion of the study area.



PHOTO 2: View northwestward of the ruderal/disturbed areas and the ornamental landscape trees within the native annual grassland of the western portion of the study area.



PHOTO 3: View southward of ruderal/disturbed areas from the western portion of the study area.



PHOTO 4: View northwestward of the riparian vegetation from the western portion of the study area.



PHOTO 5: View of a roadside drainage ditch (DCH 3) from the western portion of the study area.



PHOTO 6: View southward of a roadside ditch (DCH 3) and riparian vegetation from the northwestern portion of the study area.



PHOTO 7: View eastward of riparian vegetation surrounding a roadside ditch (DCH 2) from the southern boundary of the study area.



PHOTO 8: View northward of snowberry patch from the southeastern portion of the study area.



PHOTO 9: View westward of manmade drainage ditch (DCH 1) from northeast side of study area.



PHOTO 10: View southward of manmade drainage ditch (DCH 1) that flows south to north through the eastern portion of the study area.

### 4.3.5 ROADSIDE DITCH

Three roadside ditches (DCHs 2, 3, and 4) occur within the study area (**Figure 6: Photograph 5; Figure 7: Photographs 6 and 7**). Dominant vegetation observed in the vicinity of the roadside ditches includes: trailing blackberry, common sheep sorrel, velvet grass, Johnsongrass, and teasle (*Dipsacus* sp.).

### 4.3.6 RUDERAL/DISTURBED

Ruderal/disturbed areas occur throughout the study area (**Figure 6: Photographs 2 and 3**). These areas include dirt roads, graded driveways, remnant housing pads, and piles of metal and wood.

## 4.4 HYDROLOGY

### 4.4.1 REGIONAL AND LOCAL WATERSHED

The study area receives water from runoff from SR-20 through a roadside ditch (DCH 4) that flows south into the study area, and drains to the manmade drainage ditch (DCH 1). DCH 1 receives runoff from a roadside ditch (DCH 2) and from Stevenson Road through sheet flow. DCH 1 flows northward through the study area, then eastward until it exits the northeastern boundary of the study area. DCH 1 continues northward outside the eastern boundary of the study area, continues northeastward, drains northward through a culvert beneath SR-20 continues, and eventually drains to Fidalgo Bay. DCH 3 receives runoff from Thompson Road, drains northward, and exits the northwestern boundary of the study area. DCH 3 terminates where it loses its defined bed and banks just north of the northwestern boundary of the study area.

### 4.4.2 USFWS WETLANDS ONLINE MAPPER

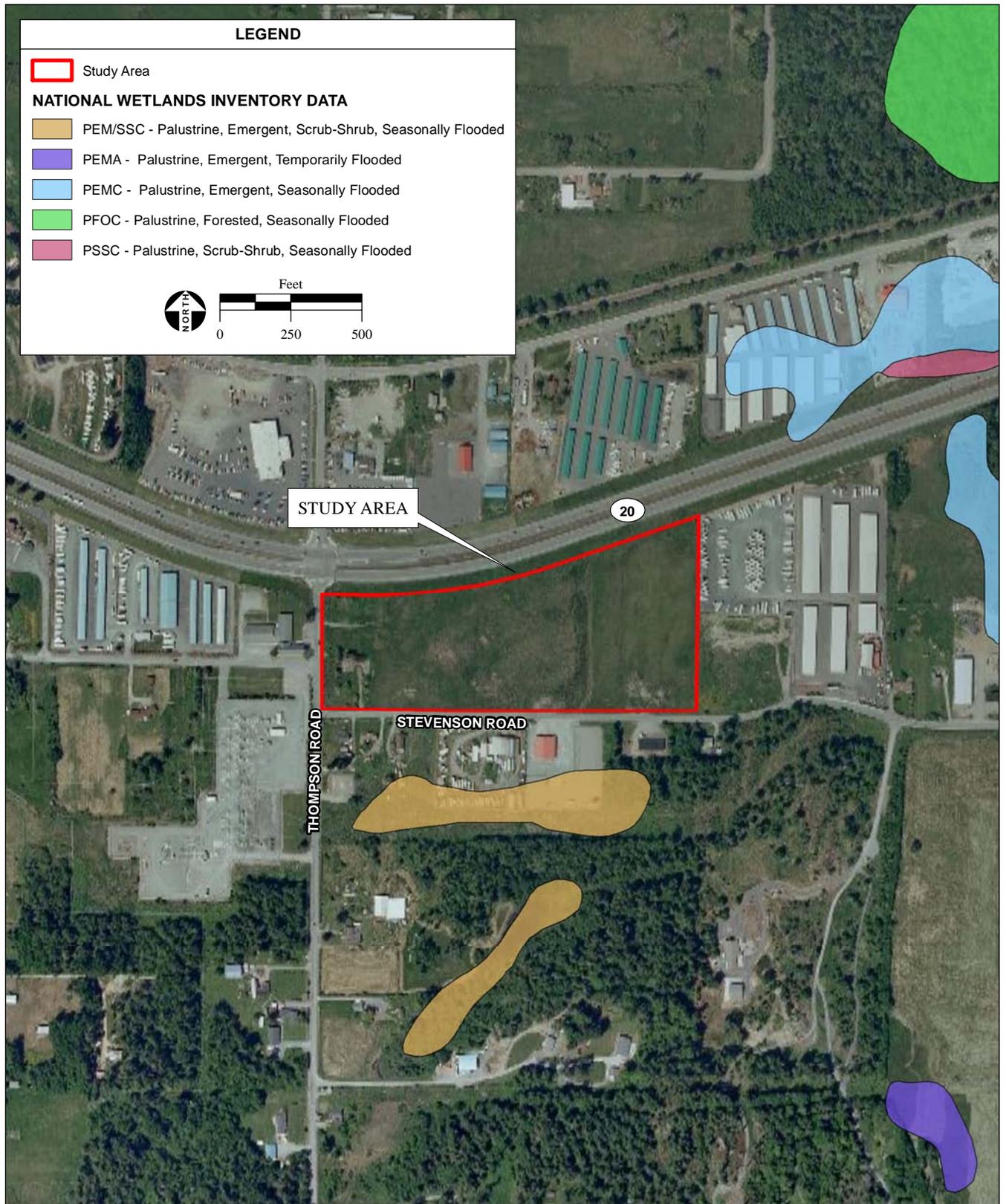
The USFWS Wetlands Online Mapper (2007) does not identify any wetland features within the study area. The USFWS Wetlands Online Mapper is shown in **Figure 8**.

## 5.0 DELINEATION RESULTS

Potential wetlands and other waters of the U.S. in the study area include one manmade drainage ditch and 3 roadside ditches. **Figure 5** illustrates the waterways mapped during the delineation of the study area.

### Manmade Drainage Ditch

A manmade drainage ditch (DCH 1) flows south to north through the eastern portion of the study area (**Figure 7: Photographs 9 and 10**). DCH 1 was constructed to transport runoff from Stevenson Road just outside the south side of the study area. DCH 1 exits the northeast side of the study area, continues northward, is culverted beneath SR-20, continues northward until eventually draining to Fidalgo Bay. Channel features observed along the bed and banks of the manmade drainage ditch include: defined bed and banks and distinct drainage patterns. Vegetation consists of 80 percent obligate, facultative wet, and/or facultative species and visual observation of plant species growing in areas of prolonged inundation/saturation. Wetland hydrology consists of oxidized roots, drainage patterns, and inundation. Hydric soil consists of iron concentrations and is listed on the NRCS hydric soils list (2010b).



SOURCE: USFWS, 1981; AEX Aerial Photograph, 5/2009; AES, 2011

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**Figure 8**  
National Wetlands Inventory - Study Area

## Roadside Ditch

Three roadside ditches occur within the study area (**Figure 6: Photograph 5; Figure 7: Photographs 6 and 7**). Channel features observed along the bed and banks of the roadside ditches include: defined bed and banks and distinct drainage patterns. Vegetation consists of 96 percent obligate, facultative wet, and/or facultative species. Wetland hydrology consists of presence of water in the soil pits, saturated soil, and distinct drainage patterns. Hydric soil consists of iron concentrations and is listed on the NRCS hydric soils list (2010b).

## 6.0 WETLAND RATING SYSTEM RESULTS

There are no wetlands within the project site. Therefore, the Rating System is not applicable to the study area. The City has mapped a wetland feature within the study area (City of Anacortes, 2006) (**Figure 9**). The City likely mapped the feature based on review of an aerial photograph. However, upon ground-truthing of the study area during the October 21 and 22, 2009 delineations, the AES biologist determined that the feature mapped by the City is actually a snowberry patch (**Figure 5**) (**Figure 7: Photograph 9**). The snowberry patch is a terrestrial habitat type that does not contain hydric indicators.

## 7.0 CONCLUSION

In accordance with the Shoreline Management Act and the Growth Management Act definitions, *Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990.* The roadside ditches and the manmade drainage ditch were dug in uplands. Although there is a hydrologic connection to Fildago Bay, a waters of the U.S., the nexus is not significant because these features are not of substantial biological, economic, water quality, or hydrologic importance to Fildago Bay. Therefore, these features are not likely considered jurisdictional waters of the U.S., and are not likely subject to Section 404 of the Clean Water Act. The results of this delineation are considered preliminary until the USACE and/or the Department of Ecology verify the findings.



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# ***ATTACHMENTS***



# ***ATTACHMENT 1***

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***DELINEATION DATA SHEETS***

**DATA FORM 1 (Revised)**  
**Routine Wetland Determination**  
**(WA State Wetland Delineation Manual or**  
**1987 Corps Wetland Delineation Manual)**

Project/Site: <u>Thompson Site</u> Applicant/owner: <u>Samish Indian Nation</u> Investigator(s): <u>Kelly Buta</u>	Date: <u>10/21/2009</u> <u>5/25/2010</u> County: <u>Skagit</u> State: <u>WA</u> S/T/R:
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> yes <input type="radio"/> no Is the site significantly disturbed (atypical situation)? <input type="radio"/> yes <input checked="" type="radio"/> no Is the area a potential Problem Area? <input type="radio"/> yes <input checked="" type="radio"/> no Explanation of atypical or problem area:	Community ID: Transect ID: Plot ID: <u>1</u>

**VEGETATION** (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
<u>Distichlis spicata</u>	<u>H</u>	<u>80</u>	<u>FACW</u>				
<u>Bromus hordeaceus</u>	<u>H</u>	<u>2</u>	<u>UPL</u>				
<u>Rumex acetosella</u>	<u>H</u>	<u>1</u>	<u>FACU</u>				

**HYDROPHYTIC VEGETATION INDICATORS:**

% of dominants OBL, FACW, & FAC 80/83 = 96%

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation	_____	Physiological/reproductive adaptations	_____
Morphological adaptations	_____	Wetland plant database	_____
Technical Literature	_____	Personal knowledge of regional plant communities	_____
		Other (explain)	_____

Hydrophytic vegetation present?  yes  no

Rationale for decision/Remarks:

**HYDROLOGY**

Is it the growing season?  yes  no 10/21/09

Based on: \_\_\_\_\_ soil temp (record temp \_\_\_\_\_)  
 other (explain)

Dept. of inundation: _____ inches	Water Marks: yes no	Sediment Deposits: yes no
Depth to free water in pit: <u>10</u> inches	Drift Lines: yes no	Drainage Patterns: <input checked="" type="radio"/> yes <input type="radio"/> no
Depth to saturated soil: <u>1</u> inches	Oxidized Root (live roots) Channels <12 in. yes no	Local Soil Survey: yes no
Check all that apply & explain below: Stream, Lake or gage data: _____ Aerial photographs: _____ Other: _____	Other (explain):	

Wetland hydrology present?  yes  no

Rationale for decision/Remarks:

**SOILS**

Map Unit Name Coveland gravelly loam, 0 to 3% slopes Drainage Class some what poorly drained  
 (Series & Phase)

Taxonomy (subgroup)

Field observations confirm Yes No mapped type?

**Profile Description**

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12		10 YR 5/2			loam	
12-13	3	10 YR 5/8	2.5 YR 5/3	20% abundant	clay	

**Hydric Soil Indicators:** (check all that apply)

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma (=1) matrix
- Matrix chroma ≤ 2 with mottles
- Mg or Fe Concretions
- High Organic Content in Surface Layer of Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on National/Local Hydric Soils List
- Other (explain in remarks)

Hydric soils present? yes no

Rationale for decision/Remarks:

**Wetland Determination** (circle)

Hydrophytic vegetation present? yes no  
 Hydric soils present? yes no  
 Wetland hydrology present? yes no  
 Is the sampling point within a wetland? yes no roadside ditch

Rationale/Remarks:

This feature is a manmade roadside ditch, 1' wide, 3' deep

NOTES:

**DATA FORM 1 (Revised)**  
**Routine Wetland Determination**  
**(WA State Wetland Delineation Manual or**  
**1987 Corps Wetland Delineation Manual)**

Project/Site: <u>Thompson Site</u>	Date: <u>10/21/2009</u> <u>5/25/2010</u>
Applicant/owner: <u>Samish Indian Nation</u>	County: <u>Skagit</u> State: <u>WA</u>
Investigator(s): <u>Kelly Buta</u>	S/T/R:
Do Normal Circumstances exist on the site? Is the site significantly disturbed (atypical situation)? Is the area a potential Problem Area? Explanation of atypical or problem area:	<input checked="" type="radio"/> yes <input type="radio"/> no <input type="radio"/> yes <input checked="" type="radio"/> no <input type="radio"/> yes <input checked="" type="radio"/> no
	Community ID: Transect ID: Plot ID: <u>2</u>

**VEGETATION** (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
<u><i>Aira caryophylla</i></u>	<u>H</u>	<u>15</u>	<u>UPL</u>				
<u><i>Elymus mollis</i></u>	<u>H</u>	<u>90</u>	<u>UPL</u>				
<u><i>Taraxacum officinale</i></u>	<u>H</u>	<u>5</u>	<u>UPL</u>				
<u><i>Bromus hordeaceus</i></u>	<u>H</u>	<u>5</u>	<u>UPL</u>				
<u><i>Bromus tectorum</i></u>	<u>H</u>	<u>5</u>	<u>UPL</u>				
<u><i>Poa lanccolata</i></u>	<u>H</u>	<u>5</u>	<u>FACU</u>				

**HYDROPHYTIC VEGETATION INDICATORS:**

% of dominants OBL, FACW, & FAC 0

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation	_____	Physiological/reproductive adaptations	_____
Morphological adaptations	_____	Wetland plant database	_____
Technical Literature	_____	Personal knowledge of regional plant communities	_____
		Other (explain)	_____

Hydrophytic vegetation present?    yes     no

Rationale for decision/Remarks:

Upland

**HYDROLOGY**

Is it the growing season?     yes     no    10/21/09

Based on: \_\_\_\_\_ soil temp (record temp \_\_\_\_\_)  
 other (explain)

Dept. of inundation: _____ inches	Water Marks:    yes    no	Sediment Deposits:    yes    no
Depth to free water in pit: _____ inches	Drift Lines:    yes    no	Drainage Patterns:    yes    no
Depth to saturated soil: _____ inches	Oxidized Root (live roots) Channels <12 in.    yes    no	Local Soil Survey:    yes    no
	FAC Neutral:    yes    no	Water-stained Leaves    yes    no

Check all that apply & explain below:

Stream, Lake or gage data: \_\_\_\_\_  
 Aerial photographs: \_\_\_\_\_    Other: \_\_\_\_\_

Wetland hydrology present?    yes     no

Rationale for decision/Remarks:

**SOILS**

Map Unit Name Carland gravelly loam, 0 to 3% slopes Drainage Class Somewhat poorly drained  
 (Series & Phase)

Field observations confirm  Yes  No  
 mapped type?

Taxonomy (subgroup) \_\_\_\_\_

**Profile Description**

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-2		7.5YR <sup>3/4</sup>			loam	
2-6		7.5YR <sup>3/4</sup>		cobbles		

**Hydric Soil Indicators:** (check all that apply)

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol                         | <input type="checkbox"/> Matrix chroma ≤ 2 with mottles                        |
| <input type="checkbox"/> Histic Epipedon                  | <input type="checkbox"/> Mg or Fe Concretions                                  |
| <input type="checkbox"/> Sulfidic Odor                    | <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils  |
| <input type="checkbox"/> Aquic Moisture Regime            | <input type="checkbox"/> Organic Streaking in Sandy Soils                      |
| <input type="checkbox"/> Reducing Conditions              | <input checked="" type="checkbox"/> Listed on National/Local Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma (=1) matrix | <input type="checkbox"/> Other (explain in remarks)                            |

Hydric soils present?            yes    no

Rationale for decision/Remarks:

*impenetrable after 6"*

**Wetland Determination** (circle)

Hydrophytic vegetation present?    yes     no  
 Hydric soils present?                     yes     no            Is the sampling point                    yes     no  
 Wetland hydrology present?          yes     no            within a wetland?

Rationale/Remarks:

NOTES:



**SOILS**

Map Unit Name *Cove land gravelly loam p-3% slope* Drainage Class *Somewhat poorly drained*  
 (Series & Phase)

Taxonomy (subgroup)

Field observations confirm  Yes No mapped type?

**Profile Description**

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-2		7.5YR <sup>3/4</sup>			loam	
2-10		7.5YR <sup>4/4</sup>			loam	

**Hydric Soil Indicators:** (check all that apply)

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol                         | <input type="checkbox"/> Matrix chroma ≤ 2 with mottles                        |
| <input type="checkbox"/> Histic Epipedon                  | <input type="checkbox"/> Mg or Fe Concretions                                  |
| <input type="checkbox"/> Sulfidic Odor                    | <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils  |
| <input type="checkbox"/> Aquic Moisture Regime            | <input type="checkbox"/> Organic Streaking in Sandy Soils                      |
| <input type="checkbox"/> Reducing Conditions              | <input checked="" type="checkbox"/> Listed on National/Local Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma (=1) matrix | <input type="checkbox"/> Other (explain in remarks)                            |

Hydric soils present?  yes  no

Rationale for decision/Remarks:

**Wetland Determination** (circle)

Hydrophytic vegetation present?  yes  no  
 Hydric soils present?  yes  no  
 Wetland hydrology present?  yes  no  
 Is the sampling point within a wetland?  yes  no

Rationale/Remarks:

*Upland*

NOTES:



**SOILS**

Map Unit Name *Core land gravelly loam, 0-3% slopes* Drainage Class *somewhat poorly drained*  
 (Series & Phase)

Field observations confirm  Yes No mapped type?

Taxonomy (subgroup)

**Profile Description**

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12		7.5YR3/4			loam	

**Hydric Soil Indicators:** (check all that apply)

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol                         | <input type="checkbox"/> Matrix chroma $\leq 2$ with mottles                   |
| <input type="checkbox"/> Histic Epipedon                  | <input type="checkbox"/> Mg or Fe Concretions                                  |
| <input type="checkbox"/> Sulfidic Odor                    | <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils  |
| <input type="checkbox"/> Aquic Moisture Regime            | <input type="checkbox"/> Organic Streaking in Sandy Soils                      |
| <input type="checkbox"/> Reducing Conditions              | <input checked="" type="checkbox"/> Listed on National/Local Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma (=1) matrix | <input type="checkbox"/> Other (explain in remarks)                            |

Hydric soils present?  yes  no

Rationale for decision/Remarks:

**Wetland Determination** (circle)

Hydrophytic vegetation present?      yes       no  
 Hydric soils present?                       yes      no      Is the sampling point                      yes       no  
 Wetland hydrology present?              yes       no                      within a wetland?

Rationale/Remarks:

*Upland*

NOTES:



**SOILS**

Map Unit Name *Cleveland gravelly loam, 0-3% slopes* Drainage Class *somewhat poorly drained*  
 (Series & Phase)

Field observations confirm  Yes No  
 mapped type?

Taxonomy (subgroup)

Profile Description						
Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-8		7.5YR 7/2	7.5YR 4/6	35 prominent	loam	
			7.5YR 3/1	3		

**Hydric Soil Indicators:** (check all that apply)

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol                         | <input type="checkbox"/> Matrix chroma ≤ 2 with mottles                        |
| <input type="checkbox"/> Histic Epipedon                  | <input type="checkbox"/> Mg or Fe Concretions                                  |
| <input type="checkbox"/> Sulfidic Odor                    | <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils  |
| <input type="checkbox"/> Aquic Moisture Regime            | <input type="checkbox"/> Organic Streaking in Sandy Soils                      |
| <input type="checkbox"/> Reducing Conditions              | <input checked="" type="checkbox"/> Listed on National/Local Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma (=1) matrix | <input type="checkbox"/> Other (explain in remarks)                            |

Hydric soils present?  yes no

Rationale for decision/Remarks:

*large boulders at 8" deep*

**Wetland Determination** (circle)

Hydrophytic vegetation present?    yes     no  
 Hydric soils present?     yes    no    Is the sampling point    yes      
 Wetland hydrology present?    yes        within a wetland?

Rationale/Remarks:

NOTES:

**DATA FORM 1 (Revised)**  
**Routine Wetland Determination**  
**(WA State Wetland Delineation Manual or**  
**1987 Corps Wetland Delineation Manual)**

Project/Site: <u>Thompson Site</u>	Date: <u>10/21/2009</u> <u>5/25/2010</u>
Applicant/owner: <u>Samish Indian Nation</u>	County: <u>Skagit</u>
Investigator(s): <u>Kelly Buja</u>	State: <u>WA</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> yes <input type="radio"/> no	Community ID:
Is the site significantly disturbed (atypical situation)? <input type="radio"/> yes <input checked="" type="radio"/> no	Transect ID:
Is the area a potential Problem Area? <input type="radio"/> yes <input checked="" type="radio"/> no	Plot ID: <u>8</u>
Explanation of atypical or problem area:	

**VEGETATION** (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
<u>Ranunculus occidentalis</u>	<u>herb</u>	<u>10</u>	<u>FAC</u>				
<u>Veronica catenata</u>	<u>H</u>	<u>5</u>	<u>OBL</u>				
<u>Claytonia perfoliata</u>	<u>H</u>	<u>3</u>	<u>FAC</u>				
<u>Mimulus guttatus</u>	<u>H</u>	<u>2</u>	<u>OBL</u>				
<u>Rumex acetosella</u>	<u>H</u>	<u>2</u>	<u>FACU</u>				

**HYDROPHYTIC VEGETATION INDICATORS:**

% of dominants OBL, FACW, & FAC 80%

Check all indicators that apply & explain below:

- |   |  |
|---|--|
| Visual observation of plant species growing in areas of prolonged inundation/saturation <input checked="" type="checkbox"/> | Physiological/reproductive adaptations _____           |
| Morphological adaptations _____   | Wetland plant database _____                           |
| Technical Literature _____  | Personal knowledge of regional plant communities _____ |
|   | Other (explain) _____                                  |

**Hydrophytic vegetation present?**  yes  no

Rationale for decision/Remarks:

**HYDROLOGY**

Is it the growing season? <input checked="" type="radio"/> yes <input type="radio"/> no <u>for 5/25/2010</u>	Water Marks: yes no	Sediment Deposits: yes no
Based on: _____ soil temp (record temp _____) <u>winter</u> other (explain)	Drift Lines: yes no	Drainage Patterns: <input checked="" type="radio"/> yes no
Dept. of inundation: <u>24</u> inches	Oxidized Root (live roots) Channels <12 in: <input checked="" type="radio"/> yes no	Local Soil Survey: yes no
Depth to free water in pit: _____ inches	FAC Neutral: yes no	Water-stained Leaves: yes no
Depth to saturated soil: _____ inches	Other (explain):	
Check all that apply & explain below: Stream, Lake or gage data: _____ Aerial photographs: _____ Other: _____		

**Wetland hydrology present?**  yes  no

Rationale for decision/Remarks:

**SOILS**

Map Unit Name Cave sand gravelly loam, 0 to 3% slopes Drainage Class somewhat poorly drained  
 (Series & Phase)

Taxonomy (subgroup) \_\_\_\_\_ Field observations confirm  Yes  No mapped type?

Profile Description						
Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12		10YR <sup>3/2</sup>	none		loam	
12-18		2.5YR <sup>5/3</sup>	10YR <sup>5/8</sup>	abundant 20%	clay	

**Hydric Soil Indicators:** (check all that apply)

<input type="checkbox"/> Histosol	<input type="checkbox"/> Matrix chroma ≤ 2 with mottles
<input type="checkbox"/> Histic Epipedon	<input checked="" type="checkbox"/> Mg or Fe Concretions
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Reducing Conditions	<input checked="" type="checkbox"/> Listed on National/Local Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma (=1) matrix	<input type="checkbox"/> Other (explain in remarks)

Hydric soils present?  yes  no

Rationale for decision/Remarks:

**Wetland Determination** (circle)

Hydrophytic vegetation present?	<input checked="" type="radio"/> yes <input type="radio"/> no	Is the sampling point within a wetland?	<input checked="" type="radio"/> yes <input type="radio"/> no
Hydric soils present?	<input checked="" type="radio"/> yes <input type="radio"/> no		
Wetland hydrology present?	<input checked="" type="radio"/> yes <input type="radio"/> no		

**Rationale/Remarks:**

This feature is a manmade drainage, 1" wide, 3 deep

NOTES:



**SOILS**

Map Unit Name Coveland gravelly loam, 0 to 3% slopes  
 (Series & Phase)

Drainage Class somewhat poorly drained

Taxonomy (subgroup)

Field observations confirm  Yes  No  
 mapped type?

**Profile Description**

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12		10YR 2/2			clay loam	

**Hydric Soil Indicators: (check all that apply)**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol                         | <input type="checkbox"/> Matrix chroma ≤ 2 with mottles                        |
| <input type="checkbox"/> Histic Epipedon                  | <input type="checkbox"/> Mg or Fe Concretions                                  |
| <input type="checkbox"/> Sulfidic Odor                    | <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils  |
| <input type="checkbox"/> Aquic Moisture Regime            | <input type="checkbox"/> Organic Streaking in Sandy Soils                      |
| <input type="checkbox"/> Reducing Conditions              | <input checked="" type="checkbox"/> Listed on National/Local Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma (=1) matrix | <input type="checkbox"/> Other (explain in remarks)                            |

Hydric soils present?      yes      no

Rationale for decision/Remarks:

impenetrable beyond 12"

**Wetland Determination (circle)**

Hydrophytic vegetation present?	yes	<input checked="" type="radio"/> no	Is the sampling point within a wetland?	yes	<input checked="" type="radio"/> no
Hydric soils present?	<input checked="" type="radio"/> yes	no			
Wetland hydrology present?	yes	<input checked="" type="radio"/> no			

**Rationale/Remarks:**

**NOTES:**



**SOILS**

Map Unit Name Cleveland gravelly loam, 0-390 slopes Drainage Class somewhat poorly drained  
 (Series & Phase)

Field observations confirm Yes No  
 mapped type?

Taxonomy (subgroup)

Profile Description						
Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)

**Hydric Soil Indicators:** (check all that apply)

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma (=1) matrix
- Matrix chroma ≤ 2 with mottles
- Mg or Fe Concretions
- High Organic Content in Surface Layer of Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on National/Local Hydric Soils List
- Other (explain in remarks)

Hydric soils present? yes no

Rationale for decision/Remarks:

**Wetland Determination** (circle)

Hydrophytic vegetation present?    yes    no  
 Hydric soils present?                    yes    no                    Is the sampling point                    yes    no  
 Wetland hydrology present?            yes    no                    within a wetland?

**Rationale/Remarks:**

this is a large snowberry patch. It is mapped as a wetland by the city of Anacortes. This is an upland.

**DATA FORM 1 (Revised)**  
**Routine Wetland Determination**  
**(WA State Wetland Delineation Manual or**  
**1987 Corps Wetland Delineation Manual)**

Project/Site: <i>Thompson Site</i> Applicant/owner: <i>Samish Indian Nation</i> Investigator(s): <i>Kelly Buta</i>	Date: <i>10/21/2009</i> <i>5/25/2010</i> County: <i>Skagit</i> State: <i>WA</i> S/T/R:
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> yes <input type="radio"/> no Is the site significantly disturbed (atypical situation)?      yes <input checked="" type="radio"/> no Is the area a potential Problem Area?      yes <input checked="" type="radio"/> no Explanation of atypical or problem area:	Community ID: Transect ID: Plot ID: <i>8</i>

**VEGETATION** (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
<i>Tuncia baltica</i>	<i>H</i>	<i>5</i>	<i>OBL</i>				
<i>Bromus horridus</i>	<i>H</i>	<i>15</i>	<i>UPL</i>				
<i>Slymus mollis</i>	<i>H</i>	<i>20</i>	<i>UPL</i>				
<i>Dactylis glomerata</i>		<i>30</i>	<i>UPL</i>				

**HYDROPHYTIC VEGETATION INDICATORS:**

% of dominants OBL, FACW, & FAC *5/70 = 7%*

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation	_____	Physiological/reproductive adaptations	_____
Morphological adaptations	_____	Wetland plant database	_____
Technical Literature	_____	Personal knowledge of regional plant communities	_____
		Other (explain)	_____

Hydrophytic vegetation present?      yes       no

Rationale for decision/Remarks:

**HYDROLOGY**

Is it the growing season?      yes <input type="radio"/> no	Water Marks:    yes <input type="radio"/> no on	Sediment Deposits:    yes <input type="radio"/> no
Based on: _____ soil temp (record temp _____) other (explain)	Drift Lines:      yes <input type="radio"/> no	Drainage Patterns:    yes <input type="radio"/> no
Dept. of inundation:      _____ inches	Oxidized Root (live roots) Channels <12 in.    yes <input type="radio"/> no	Local Soil Survey:    yes <input type="radio"/> no
Depth to free water in pit:      _____ inches Depth to saturated soil:      _____ inches	FAC Neutral:      yes <input type="radio"/> no	Water-stained Leaves    yes <input type="radio"/> no
Check all that apply & explain below: Stream, Lake or gage data:      _____ Aerial photographs:      _____      Other:	Other (explain):	

Wetland hydrology present?      yes       no

Rationale for decision/Remarks:

**SOILS**

Map Unit Name Cleveland gravelly loam, 0 to 5% slopes Drainage Class somewhat poorly drained  
 (Series & Phase) Field observations confirm Yes No  
 Taxonomy (subgroup) mapped type?

Profile Description						
Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-4		7.5YR3/1			loam, cobbles	
4-2		7.5YR4/1	7.5YR5/8	10 prominent		

**Hydric Soil Indicators:** (check all that apply)

<input type="checkbox"/> Histosol	<input type="checkbox"/> Matrix chroma ≤ 2 with mottles
<input type="checkbox"/> Histic Epipedon	<input checked="" type="checkbox"/> Mg or Fe Concretions
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Reducing Conditions	<input checked="" type="checkbox"/> Listed on National/Local Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma (=1) matrix	<input type="checkbox"/> Other (explain in remarks)

**Hydric soils present?** yes no  
 Rationale for decision/Remarks:  
impenetrable beyond 12"

**Wetland Determination** (circle)

Hydrophytic vegetation present?	yes	<u>no</u>	Is the sampling point within a wetland?	yes	<u>no</u>
Hydric soils present?	<u>yes</u>	no			
Wetland hydrology present?	yes	<u>no</u>			

**Rationale/Remarks:**

NOTES:

**DATA FORM 1 (Revised)**  
**Routine Wetland Determination**  
**(WA State Wetland Delineation Manual or**  
**1987 Corps Wetland Delineation Manual)**

Project/Site: <i>Thompson Site</i>	Date: <i>10/21/2009</i> <i>5/25/2010</i>
Applicant/owner: <i>Samish Indian Nation</i>	County: <i>Skagit</i> State: <i>WA</i> S/T/R:
Investigator(s): <i>Kelly Buta</i>	Community ID: Transect ID: Plot ID: <i>9</i>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Is the site significantly disturbed (atypical situation)? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Is the area a potential Problem Area? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Explanation of atypical or problem area:	

**VEGETATION** (For strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	Stratum	% cover	Indicator	Dominant Plant Species	Stratum	% cover	Indicator
<i>Bromus horridus</i>	<i>H</i>	<i>5</i>	<i>UPL</i>				
<i>Rubus discolor</i>	<i>H</i>	<i>10</i>	<i>FACU</i>				
<i>Cirsium vulgare</i>	<i>H</i>	<i>10</i>	<i>FACU</i>				

**HYDROPHYTIC VEGETATION INDICATORS:**

% of dominants OBL, FACW, & FAC *0*

Check all indicators that apply & explain below:

Visual observation of plant species growing in areas of prolonged inundation/saturation	_____	Physiological/reproductive adaptations	_____
Morphological adaptations	_____	Wetland plant database	_____
Technical Literature	_____	Personal knowledge of regional plant communities	_____
		Other (explain)	_____

Hydrophytic vegetation present?       yes       no

Rationale for decision/Remarks:

**HYDROLOGY**

Is it the growing season?  yes  no *5/25/10* *10/21/09*

Based on: _____ soil temp (record temp _____) other (explain)	Water Marks:    yes    no on	Sediment Deposits:    yes    no
Dept. of inundation: _____ inches	Drift Lincs:        yes    no	Drainage Patterns:    yes    no
Depth to free water in pit: _____ inches	Oxidized Root (live roots) Channels <12 in.    yes    no	Local Soil Survey:    yes    no
Depth to saturated soil: _____ inches	FAC Neutral:        yes    no	Water-stained Leaves    yes    no
Check all that apply & explain below: Stream, Lake or gage data: _____ Aerial photographs: _____      Other: _____	Other (explain):	

Wetland hydrology present?       yes       no

Rationale for decision/Remarks:

**SOILS**

Map Unit Name Coveland gravelly loam, 0-2% slope Drainage Class somewhat poorly drained  
 (Series & Phase)

Taxonomy (subgroup)

Field observations confirm  Yes No mapped type?

Profile Description						
Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12		10YR 3/2			loam	

**Hydric Soil Indicators:** (check all that apply)

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol                         | <input type="checkbox"/> Matrix chroma ≤ 2 with mottles                        |
| <input type="checkbox"/> Histic Epipedon                  | <input type="checkbox"/> Mg or Fe Concretions                                  |
| <input type="checkbox"/> Sulfidic Odor                    | <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils  |
| <input type="checkbox"/> Aquic Moisture Regime            | <input type="checkbox"/> Organic Streaking in Sandy Soils                      |
| <input type="checkbox"/> Reducing Conditions              | <input checked="" type="checkbox"/> Listed on National/Local Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma (=1) matrix | <input type="checkbox"/> Other (explain in remarks)                            |

Hydric soils present?  yes  no

Rationale for decision/Remarks:

**Wetland Determination** (circle)

Hydrophytic vegetation present?    yes     no  
 Hydric soils present?     yes     no    Is the sampling point within a wetland?    yes     no  
 Wetland hydrology present?    yes     no

Rationale/Remarks:

NOTES:

# ***APPENDIX B***

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*CULTURAL RESOURCES STUDY*  
*(CONFIDENTIAL DOCUMENT BOUND UNDER SEPARATE*  
*COVER)*



STATE OF WASHINGTON

**DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION**

1063 S. Capitol Way, Suite 106 • Olympia, Washington 98501  
Mailing address: PO Box 48343 • Olympia, Washington 98504-8343  
(360) 586-3065 • Fax Number (360) 586-3067 • Website: [www.dahp.wa.gov](http://www.dahp.wa.gov)

August 6, 2012

Mr. Chuck James  
Bureau of Indian Affairs  
911 NE 11<sup>th</sup> Avenue  
Portland, Oregon 97232

Re: 14.84 Samish Indian Nation Fee to Trust Project  
Log No.: 080212-11-BIA

Dear Mr. James;

Thank you for contacting our department. We have reviewed the copy of the professional archaeological survey report you provided for the proposed 14.84 Samish Indian Nation Fee to Trust Project at March Point, Anacortes, Skagit County, Washington.

We concur with your Determination of No Historic Properties Affected.

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity must stop, the area secured, and the concerned tribes and this office notified.

These comments are based on the information available at the time of this review and on the behalf of the State Historic Preservation Officer in conformance with Section 106 of the National Historic Preservation Act and its implementing regulations 36CFR800. Should additional information become available, our assessment may be revised. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

Robert G. Whitlam, Ph.D.  
State Archaeologist  
(360) 586-3080  
email: [rob.whitlam@dahp.wa.gov](mailto:rob.whitlam@dahp.wa.gov)

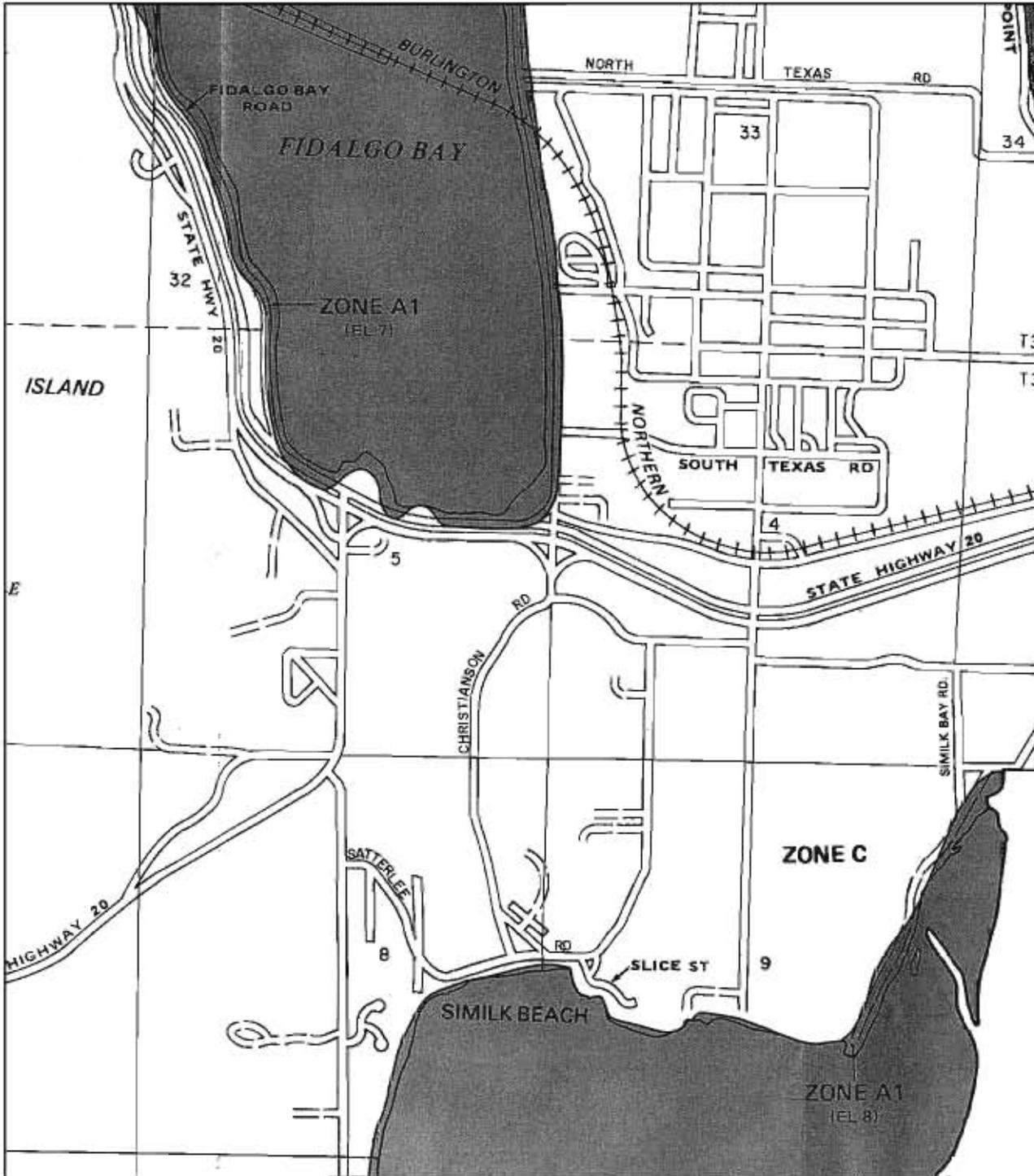
**CULTURAL RESOURCES REPORT  
BOUND SEPARATELY\***

**\* THE CULTURAL RESOURCE REPORT HAS BEEN BOUND SEPARATELY  
TO PROTECT POTENTIALLY SENSITIVE INFORMATION ABOUT THE  
LOCATION AND NATURE OF CULTURAL RESOURCES.**

# ***APPENDIX C***

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*FEMA FIRM*



APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

**FIRM**  
FLOOD INSURANCE RATE MAP

**SKAGIT COUNTY,  
WASHINGTON**  
(UNINCORPORATED AREAS)

PANEL 225 OF 550  
(SEE MAP INDEX FOR PANELS NOT PRINTED)

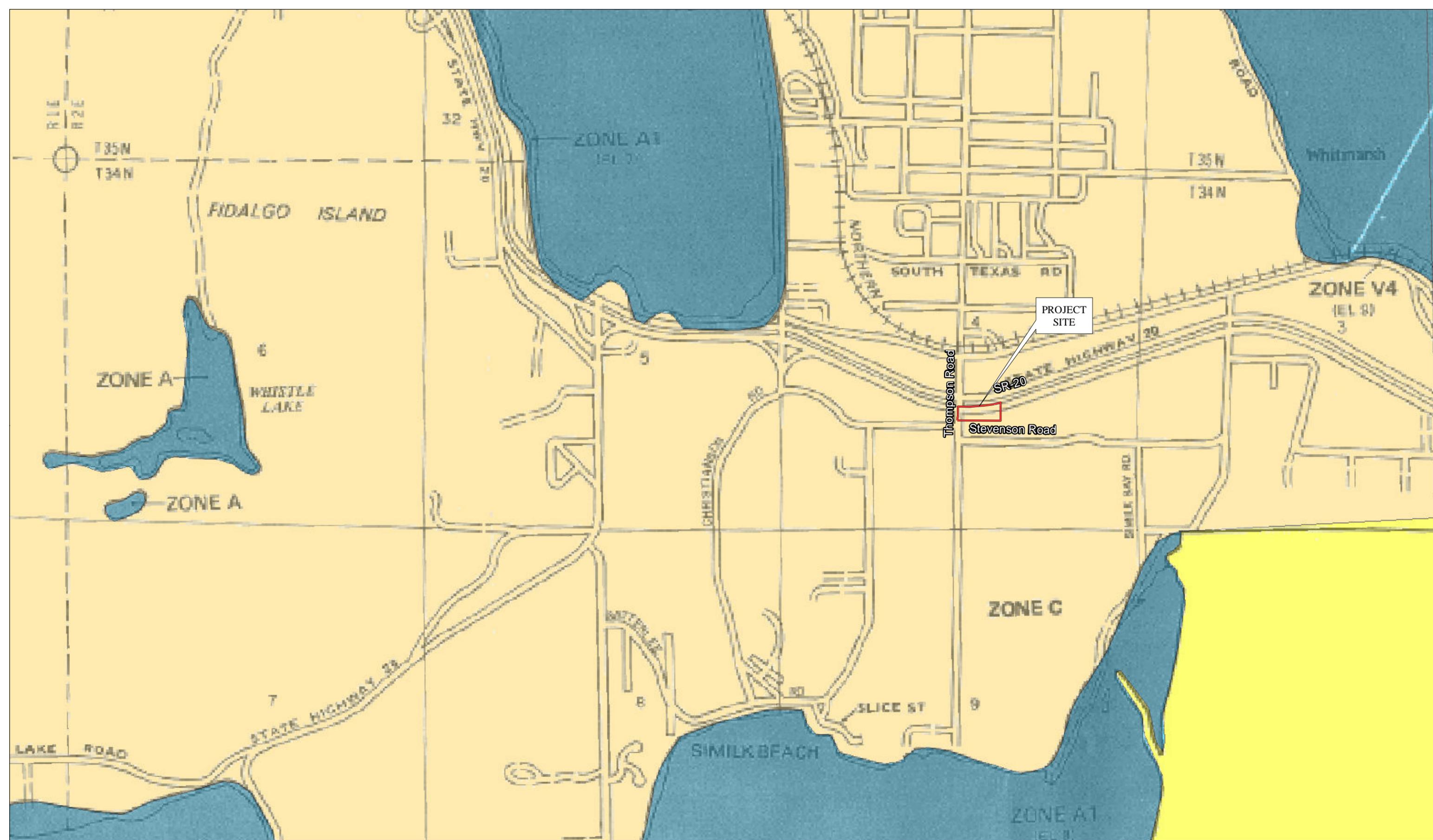
COMMUNITY-PANEL NUMBER  
530151 0225 C

EFFECTIVE DATE:  
JANUARY 3, 1985

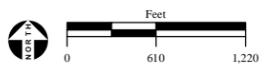


Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)



- Project Boundary
- A An area inundated by 100-year flooding, for which no BFEs have been determined.
- ANI An area that is located within a community or county that is not mapped on any published FIRM.
- X An area that is determined to be outside the 100- and 500-year floodplains.



# ***APPENDIX D***

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*AIR QUALITY DATA*



	Composite CO2 :	368.1	478.8	SAMs10.IN				
1413.9	177.4	558.70		622.3	515.5	911.0	314.0	599.2

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	Composite CO2 :	368.1	478.7	SAMw25.IN				
1414.3	177.4	557.42	622.1	515.2	911.3	314.0	599.3	

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**Table 1**

Percent Distribution, Patrons, and Vehicle Miles Travels per Year

Routes <sup>1</sup>	Market Areas	Trip Distribution <sup>1</sup>	Distance (miles)	Proposed Project	
				Patrons	VMT/Year
Highway 2 - West	Anacortes	0.40	5.0	189800	949,000
Highway 2 - East	Burlington, Sedro-Woolly	0.40	13.0	189800	1,644,933
Thomson Road - South	Similk Beach	0.05	4.0	23725	63,267
Thomson Road - North	Oil Refiner	0.15	2.0	71175	94,900
<b>Total VMT (miles)</b>					<b>2,752,100</b>

Source: AES, 2011

**Table 2****Mobile Operations Criteria Pollutant and GHG Emissions**

Speed (mph)	Freeway, Arterial, and Local
vmt/yr	2,752,100
Criteria Pollutant (tpy)	
Tons per Year	
NO <sub>x</sub>	2.7
VOC	1.9
SO <sub>2</sub>	0.0
CO	33.8
PM <sub>2.5</sub>	0.1
PM <sub>10</sub>	0.1
Greenhouse Gas	
CO <sub>2</sub>	1693.0

Criteria pollutant emissions were calculated using half summer/winter EF.  
Source: Mobile 6.2, 2003; AES, 2011.

**Table 3**  
Operational Emission Factors

<b>Season</b>	<b>Winter</b>	<b>Summer</b>
<b>Default Speeds</b>	<b>Freeway, Arterial, and Local<sup>1</sup></b>	<b>Freeway, Arterial, and Local<sup>1</sup></b>
<b>Criteria Pollutant</b>	<b>grams per mile</b>	
NO <sub>x</sub>	0.94	0.846
VOC	0.658	0.622
SO <sub>2</sub>	0.0078	0.0078
CO	13.853	8.436
PM <sub>2.5</sub>	0.0207	0.0201
PM <sub>10</sub>	0.0362	0.0356
<b>Greenhouse Gas</b>		
CO <sub>2</sub>	557.42	558.7

<sup>1</sup> Freeway, Arterial, and local speeds = 55, 40, and 25 miles per hour, respectively.

Source: Mobile6.2, 2003; AES, 2011

**Table 4**  
Fugitive Dust Emissions from Construction

<b>Alternatives</b>	<b>Proposed Project</b>
Area to be Graded (acres)	1.78
Grading Duration (day)	22
PM <sub>10</sub> Emission Factor (tons PM <sub>10</sub> /acre-day)	0.0191
<b>PM10 Emissions (tons/year)</b>	<b>0.002</b>
PM <sub>2.5</sub> Emission Factor (tons PM <sub>10</sub> /acre/day)	0.005
<b>PM<sub>2.5</sub> Emissions (tons/year)<sup>1</sup></b>	<b>0.00043</b>

Source: OFFROAD air quality model, 2007.

**Table 5**  
Proposed Project - Construction Emissions

Construction Equipment <sup>1</sup>	Horsepower <sup>2</sup>	Load Factor <sup>2</sup>	Hours in Use <sup>2</sup> (hours/day)	Emission Factors (g/bhp/hr) <sup>4</sup>						Emission (tons/year)						
				CO	VOC	NO <sub>2</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>3</sup>	CO	VOC	NO <sub>2</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>3</sup>	
<b>Year 2013 Site Grading</b>																
1 Bulldozer	352	0.59	8	1.38	0.36	4.76	0.74	0.33	0.32	0.06	0.01	0.19	0.03	0.01	0.01	
1 Motor Grader	174	0.575	8	1.36	0.35	7.43	0.74	0.33	0.32	0.03	0.01	0.14	0.01	0.01	0.01	
1 Water Truck	417	0.49	8	2.07	0.44	5.49	0.74	0.41	0.40	0.08	0.02	0.22	0.03	0.02	0.02	
2 Other Construction Equipment	190	0.62	8	1.55	0.38	5.00	0.74	0.35	0.34	0.07	0.02	0.23	0.03	0.02	0.02	
<b>Total Miles Traveled</b>				<b>Emission Factors (g/miles)</b>						<b>Emissions (tons/year)</b>						
Employee Trips <sup>3</sup>	2,640			17.946	0.735	1.156	0.0078	0.0371	0.0215	0.05222	0.00214	0.00336	0.00002	0.00011	0.00006	
Fugitive Dust										0.002 0.0004						
<b>Total Site Grading Emissions</b>										<b>0.29</b>	<b>0.06</b>	<b>0.78</b>	<b>0.11</b>	<b>0.05</b>	<b>0.05</b>	
<b>2013 Building</b>																
1 Concrete/Industrial Saw	84	0.73	8	8.50	1.00	5.80	0.13	0.16	0.15	0.44	0.05	0.30	0.01	0.01	0.01	
2 Rough Terrain Forklift	94	0.475	8	7.76	1.98	8.56	0.95	1.39	1.35	0.58	0.15	0.64	0.07	0.10	0.10	
1 Rubber Tire Loader	165	0.465	8	1.55	0.38	5.00	0.74	0.35	0.34	0.10	0.02	0.32	0.05	0.02	0.02	
1 Tractors/Loader/Backhoe	79	0.465	8	8.21	1.85	7.22	0.95	1.37	1.33	0.25	0.06	0.22	0.03	0.04	0.04	
<b>Total Miles Traveled</b>				<b>Emission Factors (g/miles)</b>						<b>Emissions (tons/year)</b>						
Employee Trips <sup>3</sup>	23,100			17.946	0.735	1.156	0.0078	0.0371	0.0215	0.46	0.02	0.03	0.00	0.00	0.00	
<b>Paving<sup>4</sup></b>																
1 Paver	132	0.59	8	8.5	1.0	5.8	0.17	0.16	0.15	0.09	0.01	0.06	0.00	0.00	0.00	
1 Paving Equipment	111	0.53	8	8.5	1.0	5.8	0.14	0.16	0.15	0.07	0.01	0.05	0.00	0.00	0.00	
1 Rollers	114	0.43	8	8.5	1.0	5.8	0.14	0.16	0.15	0.11	0.01	0.08	0.00	0.00	0.00	
<b>Architectural Coating</b>																
Coating											0.08					
<b>Total Building Emissions</b>										<b>2.09</b>	<b>0.41</b>	<b>1.69</b>	<b>0.16</b>	<b>0.18</b>	<b>0.18</b>	
<b>Total 2013 Construction Emission<sup>5</sup></b>										<b>2.38</b>	<b>0.47</b>	<b>2.47</b>	<b>0.27</b>	<b>0.24</b>	<b>0.23</b>	

Source: EPA, 2007; AES, 2011

<sup>1</sup> Construction equipment list from USEPA approved URBEMIS 2007 air model.

<sup>2</sup> Hours per normal work day.

<sup>3</sup> Based on 10 mile trip length and EMFAC, 2007 emission factors (grams/mile).

<sup>4</sup> Emission factors provided by EPA approved OFFROAD 2007, based on equipment age distribution in the U.S. in g/bhp/hr = grams per brake horsepower per hour

**Table 6**  
Proposed Project - Construction GHG Emissions

Construction Equipment <sup>1</sup>	Horsepower	Load Factor	Hours in Use <sup>2</sup> (hours/day)	Emission Factors	Emission	
				(g/bhp/hr) <sup>3</sup> CO2	(tons/year) CO2	
<b>Site Grading</b>						
1 Bulldozer	352.00	0.59	8.00	536.20	19.58	
1 Motor Grader	174.00	0.58	8.00	536.30	9.43	
1 Water Truck	417.00	0.49	8.00	536.00	19.25	
2 Other Construction Equipment	190.00	0.62	8.00	536.20	11.10	
	<b>Miles Traveled</b>			<b>Emission Factors (g/miles)</b>	<b>Emission (tons/year)</b>	
Employee Trips		2,640		552.80	1.46	
<b>Construction</b>						
1 Concrete/Industrial Saw	84.00	0.73	8.00	529.70	27.19	
2 Rough Terrain Forklift	94.00	0.48	8.00	690.80	51.63	
1 Rubber Tire Loader	165.00	0.47	8.00	536.20	34.43	
1 Tractors/Loader/Backhoe	79.00	0.47	8.00	691.10	21.25	
		<b>Miles Traveled</b>			<b>Emission Factors (g/miles)</b>	<b>Emission (tons/year)</b>
Employee Trips		23,100		552.80	12.77	
<b>Paving</b>						
1 Paver	132.00	0.59	8.00	520.30	5.36	
1 Paving Equipment	111.00	0.53	8.00	520.30	4.05	
1 Rollers	114.00	0.43	8.00	520.30	6.74	
<b>Total GHG Construction Emissions</b>					<b>224.24</b>	

Source: EPA, 2007; AES, 2011

<sup>1</sup> Construction equipment list from USEPA approved URBEMIS 2002 air model.

<sup>2</sup> Hours per normal work day.

<sup>3</sup> Emission factors provided by EPA approved NONROAD 2005.

**Table 7**  
Stationary Source Emissions

<b>Pollutant/GHG</b>	<b>MMscf/year</b>	<b>Emission Factors (lb/MMscf)</b>	<b>Conversion factor (lb/tons)</b>	<b>Emissions (tons)</b>
VOC (natural gas)	2	5.5	0.0005	0.01
VOC (fugitive gas vapor) <sup>1</sup>	120,000	5 lb/kgal	0.0005	3.60
NOx	2	0.64	0.0005	0.00
CO	2	11	0.0005	0.01
SO2	2	0.6	0.0005	0.00
PM10	2	5.7	0.0005	0.01
PM2.5	2	1.9	0.0005	0.00
<b>Greenhouse Gas</b>			<b>lb/MT</b>	<b>MT</b>
CO2	2	120,000	0.00045	108

lb = pounds; gal = gallons; MMBtu = British thermal units.

<sup>1</sup> gallons of cas pumped per month.

Source: AP-42, 1995; AES, 2011.