



LUMMI INDIAN BUSINESS COUNCIL

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January 15, 2013

Colonel Bruce A. Estok, District Engineer
US Army Corps of Engineers - Seattle District
PO Box 3755
Seattle, WA 98124

SUBJECT: Scoping Comments: Proposed Gateway Pacific Terminal Bulk Dry Goods Shipping Facility (Ref. No. NWS-2008-260) and the Custer Spur Rail Expansion (Ref. No. NWS-2011-325) Projects

Dear Colonel Estok,

As you know, the Lummi Nation has a Treaty Right to hunt, fish, and gather throughout our Usual and Accustomed (U&A) grounds and stations and traditional areas. The proposed Gateway Pacific Terminal project (Ref. No. NWS-2008-260) and the inter-related Custer Spur Rail Expansion project (Ref. No. NWS-2011-325) are both within the Lummi Nation U&A and traditional areas. Both of these projects will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values. As a result, the Lummi Nation adopted a formal position to oppose the proposed projects during 2012.

We expect that our government-to-government consultation will continue regarding these two inter-related proposals. In addition to this government-to-government consultation, we are electing to participate in the current public scoping process. The comments included in this letter are provided as part of the public process related to determining the scope of the Environmental Impact Statement for the proposed projects at Cherry Point, Washington. These comments are not a complete reflection of all concerns and comments that may be expressed by the Lummi Nation as the evaluation of the proposed project continues. The Lummi Nation offers these comments as part of the public process and in no way waives any future opportunity to participate in government-to-government consultation regarding the proposed projects and the associated state or federal government issued permits.

As described in our October 17, 2011 letter, the Lummi Nation has a number of significant concerns about the two proposed projects. The purpose of this letter is to transmit the Lummi Nation scoping comments regarding the joint Environmental Impact Statement (EIS) that is being developed for both projects. In preparing the Lummi Nation's scoping comments, I

directed our staff to heed the following principles that have been passed along for generations by our elders:

1. "Everything is connected." As our elder's conveyed through our *Xwlemi'chosen* (aboriginal language) that delivers the prominence of our inherent rights; cultural and spiritual significances expressed by our ancestors for the land, water, and the environment which are all connected.
2. "We must manage our resources for the seventh generation of our people." Our unique heritage requires to us honor our past, present, and future generations. Thus, in our heart and mind we have managed our resources in this manner from time immemorial.
3. As a tribal government, we have adopted the critical goal that we must preserve, promote, and protect our *Schelangen* ("way of life").

Please contact me (360-384-2140) if you have any questions about the attached comments or to schedule a government-to-government meeting regarding this project.

Sincerely,



Tim Ballew II, Chair
Lummi Indian Business Council

cc: Elden Hillaire, Lummi Natural Resources Commission Chair
James Hillaire, Lummi Cultural Resources Protection Department Director
Merle Jefferson, Lummi Natural Resources Department Executive Director
Leroy Deardorff, Lummi Environmental Program Director
Dennis McLerran, EPA Region 10 Administrator
Jay Inslee, Washington State Governor
Jack Louws, Whatcom County Executive

Lummi Nation Scoping Comments
Proposed Gateway Pacific Terminal Bulk Dry Goods Shipping Facility (Ref. No. NWS-2008-260)
and the Custer Spur Rail Expansion (Ref. No. NWS-2011-325) Projects
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The marine waters, the nearshore and tidal waters, and the tidelands along all of the Cherry Point shoreline and the shorelines of nearby areas including the San Juan Islands are “usual and accustomed grounds and stations” (U&A) of the Lummi Nation. *United States v. Washington*, 384 F. Supp. 384, 360-1 (WD WA 1974). The proposed Gateway Pacific Terminal project (Ref. No. NWS-2008-260) and the inter-related Custer Spur Rail Expansion project (Ref. No. NWS-2011-325) will result in numerous and significant adverse impacts along with unavoidable and unacceptable interference with our treaty rights and irreversible and irretrievable damage to the spiritual values of the Lummi People and our ability to exercise our treaty rights throughout our U&A and traditional areas.

The Lummi Nation expects that the Corps of Engineers (Corps), as the lead agency for compliance with the National Environmental Policy Act (NEPA), and both the U.S. Environmental Protection Agency (EPA) and the U.S. Coast Guard, serving as cooperating agencies under NEPA, will fulfill their respective trust obligations to the Lummi Nation related to this proposed action. Similarly, the Lummi Nation expects that the Washington Department of Ecology will honor its obligations under the Centennial Accord and continue to consult with the Lummi Nation in a government-to-government manner.

In addition to this current scoping process, the Lummi Nation will continue its government-to-government consultation regarding these two inter-related proposals. The comments below are provided as part of the public process related to determining the scope of the Environmental Impact Statement for the proposed projects at Cherry Point, Washington. These comments are not a complete reflection of all concerns and comments that may be expressed by the Lummi Nation as the evaluation of the proposed project continues. The Lummi Nation offers these comments as part of the public process and in no way waives any future opportunity to participate in government-to-government consultation regarding the proposed projects and the associated state or federal government issued permits.

The Lummi Nation’s scoping comments for the joint Environmental Impact Statement (EIS) under development for the proposed Gateway Pacific Terminal project and the inter-related Custer Spur Rail Expansion project are intended to provide input on the following topics identified in the Notice of Intent to Prepare the Joint EIS that was published in the Federal Register (Vol. 77, No. 184) on September 21, 2012:

1. Reasonable Range of Alternatives
2. Potentially Affected Resources and Extent of Analysis of These Resources
3. Significant Unavoidable Adverse Impacts

Reasonable Range of Alternatives

In addition to evaluating the alternative identified by the project proponents in the manner summarized below, the EIS should also address at least the following alternative actions:

- a. No Action
- b. Establish a Historic/Cultural District
- c. Establish a Lummi Cemetery

No Action: The “No Action” alternative assumes that neither the export facility (i.e., rail yard, stockpile areas, conveyor systems, and trestle/wharf) nor the rail way expansion (additional support tracks and main tracks) are constructed or operated. Any rail way expansion and rail yard construction to support the import of crude oil to (or the export of refined product from) the BP and Phillips 66 petroleum oil refineries by rail would require a separate analysis.

Establish a Historic/Cultural District: The “Establish a Historic/Cultural District” alternative is similar to the “No Action” alternative but includes obtaining designation of the proposed project site on the National Register of Historic Places and preserving the site permanently as a cultural district for the Lummi People.

Establish a Lummi Cemetery: The “Establish a Lummi Cemetery” alternative is similar to the Historic/Cultural District alternative but includes obtaining designation of the proposed project site on the National Register of Historic Places and honoring it as a cemetery of the Lummi people.

Potentially Affected Resources; Extent of Analysis of These Resources; and Significant Unavoidable Adverse Impacts

Because of the interconnectedness of the natural world (i.e., “Everything is connected”), each of the potentially impacted resources should be evaluated at appropriate temporal and spatial scales. Federal impact assessments specifically require treatment of cumulative effects during EIS procedures.

Cumulative impacts result when the effects of an action are added to or interact with other effects in a particular place and within a particular time. It is the combination of these effects, and any resulting environmental degradation, that should be the focus of cumulative impact analysis. While impacts can be differentiated by direct, indirect, and cumulative, the concept of cumulative impacts takes into account all disturbances, since cumulative impacts result in the compounding of the effect of all actions over time. Thus, the cumulative impacts of an action can be viewed as the total effects on a resource, ecosystem, or human community of that action and all other activities

affecting that resource, no matter what entity (federal, non-federal or private) is taking the actions. (EPA 315-R-99).

An evaluation framework for an EIS that addresses cumulative impacts should include three temporal scales and four spatial/geographic scales of analysis. The three temporal scales that should be used to evaluate the two proposed and inter-related projects are the following:

- a. Pre-development along Cherry Point (Environmental Baseline)
- b. Current conditions
- c. Conditions if the proposed projects and other proposed projects in the region are built and fully operational

The characterization of affected fish and wildlife habitat and utilization of the surrounding marine waters in the EIS should be based on the more appropriate environmental baseline that existed on what is now the Heavy Impact Industrial Zone established by Whatcom County prior to the substantial anthropogenic impacts to this environment. The Lummi Nation is a fishing tribe and has used the waters and shorelines along Cherry Point since time immemorial. The Lummi Nation is one of the signatories to the Point Elliot Treaty of January 22, 1855 (12 Stat. 927) which was ratified by the United States Senate on March 8, 1859, Proclaimed April 11, 1859 and which reserves certain rights for the Lummi people including but not limited to “the right of taking fish at usual and accustomed grounds and stations” and “hunting and gathering roots and berries on open and unclaimed lands.” The decision of *United States v. Washington* (384 F. Supp. 312, 377 [W.D. Wash. 1974], *aff’d*, 520 F.2d 676 [9th Cir. 1975], *cert. Denied*, 423 U.S. 1086 [1976]) and subsequent court orders, as upheld by the United States Supreme Court, provide rules of engagement of the Lummi Nation and other co-managers relating to natural resources management.

Prior to and following the arrival of Euro-Americans, the shorelines of Cherry Point were used as fishing villages and the tidelands and waters of Georgia Strait were used to harvest fin- and shellfish for commercial, subsistence, and ceremonial purposes. Although the Lummi Nation still fishes the waters of Georgia Strait, the resources have been degraded by human activities and shoreline development has precluded the use of traditional hunting, fishing, and gathering sites along the shorelines. By adopting the degraded current conditions as an environmental baseline, the environmental impacts of the proposed alternatives are lessened. Addressing cumulative effects using the historic conditions as the environmental baseline will result in a more accurate assessment of the impacts of each alternative.

The evaluation framework and extent of the analyses should consider the following four geographic scales:

- a. Immediate Area (proposed project site and within 2.5 miles of the site)
- b. Local Area (between 2.5 and 40 miles of the proposed project site)
- c. Regional Area (between 40 and 150 miles of the proposed project site)
- d. Global Area (greater than 150 miles of the proposed project site)

With this evaluation framework, each of the potential impacts identified below should be analyzed at all three temporal scales (i.e., baseline, current conditions, and possible future conditions). The spatial/ geographic scale of the analysis will vary depending on the potential impact. For example, storm water quality impacts during the construction phase of the project should only be evaluated at the “Immediate Area” geographic scale. However, due to the inter-relatedness of the natural world, many of the other potential impacts should be evaluated at the Immediate, Local, Regional, and Global geographic scales.

The potential impacts if the proposed projects are constructed and that should be addressed in the EIS, the extent of the required analysis, and the unavoidable and unacceptable adverse impacts are summarized below. Although separated as distinct potential impacts in the presentation below, many of the potential impacts are inter-related. For example, fishing and commerce are inherent elements of Lummi culture but are identified separately below as potential project impacts rather than within the cultural properties/cultural resources impacts.

1 Potential Impact: Cultural Properties/Cultural Resources

1.1 Issue Definition/Rationale:

The Cherry Point area is known as *Xwe’chi’eXen* in the Lummi Language. The Lummi Nation’s Hereditary Chief Bill James described *Xwe’chi’eXen* as a revered place that is the home of the Ancient Ones. It is a landscape honored by the present day Lummi people and their ancestors since the beginning of time for its traditional, cultural, and spiritual significance, and the process is now underway to nominate *Xwe’chi’eXen* to the National Register of Historic Places. From the beginning of time the people who are now known as Lummi fished, hunted, gathered, lived, laughed, cried, died, and were buried at Cherry Point and the surrounding lands including the islands of Puget Sound. Many Lummi tribal members know their family history, can trace their family lines to Cherry Point, and say things like, “My grandmother was born there.”

As described in a report presented as testimony in the lawsuit *United States v. Washington*, 384 F. Supp. 384, 360-1 (WD WA 1974), the proposed project is located at a site that is mapped as an important reef net location for the Lummi People. The project site and the surrounding marine waters where vessels calling on the facility will transit are within the Lummi Nation’s primary fishing areas identified in *United States v. Washington*. In addition, there are numerous recorded archaeological sites within the proposed project footprint and there are likely many more archaeological sites within the proposed project footprint that have not been recorded.

The multiple cultural properties and significances concerning the *Chi’lang’e’lh* (Inherent Rights) of past, present, and future generations of Lummi People, and a partial list of potential traditional and cultural values, tangible and intangible impacts, and associations includes:

- Archaeological sites registered with the Washington State Department of Archaeology and Historic Preservation

- Burial sites on the Xwe'chi'eXen landscape which is identified as a cemetery by Washington State
- Isolate sites on the Xwe'chi'eXen landscape
- *Sxwo'le* (Reef net fishing area)
- Tidal fish trap sites
- Beach seine fishing sites
- Traditional medicine and other plant gathering sites
- Harvest of willow for reef-netting materials sites
- Underwater traditional cultural properties and archaeological resources (e.g., locations and stone anchors).

Because there are other known cultural sites along the shorelines of Puget Sound where vessel traffic associated with the facility will transit, and the transit of these vessels will generate additional waves and associated erosion forces, the geographic extent of the cultural properties/cultural resources analyses should include more than just the project site.

1.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Regional Area

Archaeological surveys and studies are typically only focused on tangible materials – traditional cultural properties are much more. Traditional cultural properties include, but are not limited to, tangible, intangible and spiritual aspects such as particular plants and animals, a sense of place, a particular view, smell, feeling, or association. Lummi traditional cultural properties exist at the proposed project site. Consequently, both an archaeological survey and a traditional cultural properties survey must be conducted in coordination with the Lummi Nation Tribal Historic Preservation Office (LNTHPO) by qualified archaeologists and cultural properties specialist. The evaluation of any impacts must consider the spiritual values of Xwe'chi'eXen (Cherry Point) and the tangible and intangible associations with Xwe'chi'eXen in a “Spiritual and Soul” study. The surveys should also address the impacts of increased vessel traffic on traditional cultural properties and underwater archaeological resources.

Like all of the potential project impacts, the analysis of impacts to cultural resources and traditional cultural properties should specifically consider environmental justice and cumulative effects.

1.3 Significant Unavoidable Adverse Impacts

Construction and operation of the proposed projects will disturb archaeological sites and traditional cultural properties associated with the Cherry Point area – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved. Operation of the proposed facilities would likely also impact cultural resources along the

shorelines of Puget Sound that will be affected by wave energy from additional ship and tug traffic.

2 Potential Impact: Fishing Interference

2.1 Issue Definition/Rationale:

The Lummi have fished in the marine and fresh waters of Puget Sound and Georgia Strait since time immemorial and have a Treaty Right to continue to hunt, fish, and gather throughout their U&A. If built and operated, the proposed project will preclude access to traditional fishing grounds with the construction of a wharf and trestle. Access to traditional fishing grounds will be further precluded when the wharf is occupied by the largest vessels on the ocean and any applicable exclusion zones required by the U.S. Department of Homeland Security. Access to intertidal bivalve harvest areas will also be reduced. The anchorages in the area will also be occupied more frequently and for longer durations, which will also preclude access to traditional fishing grounds that are actively fished. In addition, the transit of vessels and associated tug boats to and from the facility and adjacent industrial facilities will interfere with fishing operations in the area. Tribal fishing operations occur throughout the year and throughout the Lummi Nation's U&A for different species.

2.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Regional Area

Because construction of the wharf and trestle and increases in vessel traffic will impact the ability of tribal members to exercise treaty reserved fishing rights, the impacts of existing industry related vessel traffic and the potential impacts of more industry related vessel traffic must be analyzed. A vessel traffic safety study must address at least the following topics:

- Vessels considered in the study must include ships, tug boats, and barges and the Lummi fishing fleet (purse seiners, gill netters, skiffs, crab boats, diving vessels).
- Study must address impacts of vessel traffic on the tribal fishing fleet including gear loss, associated Homeland Security exclusion zones, and interference with fishing.
- Study must address increased risk of collision with tribal fishing vessels, vessels associated with the other industries along Cherry Point, and vessels from British Columbia, Canada.
- Study must identify and recommend safety procedures and equipment improvements that will reduce the risk of collision between vessels associated with the Cherry Point industries (existing and proposed), British Columbia, and the Lummi fishing fleet.
- Study must address increased risk of oil spills and hazardous materials within the Cherry Point Area and associated shipping lanes.
- Study must address increased use of general anchorage areas by vessels associated with the proposed project and all of the Cherry Point industries and March Point and the

associated impact on the ability of Lummi tribal members to exercise treaty fishing rights.

- Study must address cumulative effects of increased vessel traffic associated with Cherry Point industries, the Port of Vancouver, and other port developments along the British Columbia coastline.
- The Study report must include a section explicitly addressing vessel traffic impacts (including cumulative effects) on Lummi treaty rights to fish throughout the Lummi Nation's Usual and Accustomed grounds and stations.

In addition, impacts to bivalve harvest opportunities need to be addressed. Like all of the potential project impacts, the analysis of fishing interference should specifically consider environmental justice and cumulative effects.

2.3 Significant Unavoidable Adverse Impacts

Construction and operation of the proposed projects will preclude the ability and interfere with the ability of the Lummi People to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

3 Potential Impact: Increased Hazardous Material and Oil Spill Risk

3.1 Issue Definition/Rationale:

Large amounts of crude oil, petroleum products, and other hazardous materials are transported and stored throughout the Lummi U&A. These hazardous materials are transported by ships, pipelines, railroad, and trucks and are used, transferred, produced, and/or stored throughout the U&A area, particularly in the Whatcom County-designated Cherry Point Heavy Impact Industrial Zone, Anacortes, and marine and fresh waters located immediately adjacent to the Lummi Indian Reservation. Accidents, equipment failure, and human error have resulted in spills in the past and can reasonably be expected to result in spills of hazardous materials in the future. Spills of hazardous materials can have disastrous human and environmental consequences as many of these hazardous materials are toxic to people and animals if inhaled or contacted. Oil and chemical spills or releases to waters within or adjacent to the Lummi Nation U&A have the potential to destroy some of the most productive and valuable ecosystems in the world. Spills or releases of petroleum products, chemicals, or other hazardous materials to land can threaten public safety, public health, and the environment. Additional industrial development and operations in the Cherry Point Heavy Impact Industrial Zone will increase the risk of a hazardous material spill within the Lummi U&A and the likelihood that spilled materials will also directly impact the Lummi Indian Reservation tidelands and shorelines.

In addition to the proposed Gateway Pacific Terminal project, the proposed BNSF railway project will support the construction and operation of rail yards at the existing BP Cherry Point and the Phillips 66 petroleum oil refineries. Both of these rail yards and the associated increase in rail traffic with train cars loaded with crude oil and/or refined products increase the risks of hazardous material spills on land and into adjacent waters.

3.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Regional Area

Global Area

Although the Vessel Traffic Safety study should address the increased risk of a spill into marine waters, including spills of bunker fuel used to power the large cargo ships, the additional rail traffic, rail yards, substantial increases in the volume of material, and the additional handling of these materials during transfer operations within the proposed project sites and adjacent petroleum oil refinery facilities must also be evaluated.

The EIS should evaluate the increased risk and the potential effects of a small, medium, and large sized spills that discharge or release hazardous materials along transportation corridors (e.g., shipping lanes, transit lanes, railways along the marine shoreline, over fish bearing streams, and over tributaries that discharge to shellfish beds) and transfer points (e.g., anchorages during fueling or lightering operations, wharfs, the proposed new rail yards at the two existing petroleum oil refineries along Cherry Point).

Like all of the potential project impacts, the analysis of hazardous material and oil spills should specifically consider environmental justice and cumulative effects.

3.3 Significant Unavoidable Adverse Impacts

Hazardous material spills on and adjacent to the Reservation have a direct, serious, substantial effect on the political integrity, economic security, health, and welfare of the Lummi Nation, its members, and all persons present on the Reservation. Those activities that increase the frequency or severity of damages from hazardous material spills will eventually cause such damages. Construction and operation of the proposed projects will increase the risk of a hazardous material and/or oil spill that will preclude or substantially interfere with the ability of the Lummi People to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

4 Potential Impact: Water Supply/Nooksack River Instream Flows

4.1 Issue Definition/Rationale:

The proposed project will require a water supply for a number of purposes including sanitation, dust control, and fire suppression. The applicant proposes to purchase water pursuant to a contract with Public Utility District (PUD) No. 1 of Whatcom County, which obtains water from the Nooksack River. PUD No. 1 of Whatcom County has a water right for this withdrawal issued by the State of Washington. This state-based water right is junior to the federally-reserved water rights of the Lummi Nation to: (1) a sufficient quantity and quality of water to support a sustainable harvestable surplus of salmon and shellfish sufficient to support the Lummi “way of life” (*Schelangen*) and, (2) a sufficient quantity and quality of water to fulfill the purposes of the Lummi Indian Reservation as a permanent, economically viable homeland for the Lummi People.

During 1985, Washington State adopted minimum instream flows for the Nooksack River watershed (Chapter 173-501 Washington Administrative Code [WAC]) including for a location near the PUD No. 1 diversion facility. These minimum instream flows are currently not achieved from July 1 through October 15 at least 50 percent of the time. Starting in 1998, a local cooperative effort was initiated to revisit the 1985 flows established by Washington State. As part of this effort, Utah State University (USU) was contracted to re-evaluate instream flow needs for salmon throughout the watershed using the best available science. One of the quantification sites is near the same location as the 1985 work near the PUD diversion facility. Based on the USU work, the flows in the Nooksack River that occur about 50 percent of the time are less than what are needed by salmon from February 1 through April 30 and from July 1 through October 30.

Considering the depressed nature of Nooksack River salmon stocks including the listing of early-run Chinook salmon pursuant to the Endangered Species Act, tribal treaty rights to a sustainable, harvestable surplus of salmon, and the need for instream flows, additional withdrawals from the Nooksack River for this proposed project should not be allowed.

4.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Regional Area

The impact of the proposed withdrawal and out-of-basin transfer of Nooksack River water on instream flow levels must be evaluated. Like all of the potential project impacts, the analysis of water supply and in particular Nooksack River instream flows should specifically consider environmental justice and cumulative effects.

4.3 Significant Unavoidable Adverse Impacts

Construction and operation of the proposed projects will increase the withdrawals and out-of-basin transfer of Nooksack River water and preclude the ability and/or interfere with the ability of the Lummi People to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

5 Potential Impact: Forage Fish Habitat

5.1 Issue Definition/Rationale:

Forage fish such as Pacific herring (*Clupea pallasii*), surf smelt (*Hypomesus pretiosus*), Pacific sand lance (*Ammodytes hexapterus*), and northern anchovy (*Engraulis mordax*) perform a key role in the food web relied on by salmon, other fish species, and marine mammals which are in turn relied on by the Lummi Nation for ceremonial, subsistence, and commercial purposes. In addition, as described by Suttles (1951) and others, the Lummi Nation historically harvested herring and their eggs along Cherry Point. The Lummi Nation wants to re-establish this fishery.

Sea grass, kelp, and other aquatic vegetation are essential habitat for herring. In addition, a specific mix of sand and pebbles are needed by surf smelt and sand lance at specific tidal elevations along the beach to support the critical spawning element of their life cycles. Prop wash and wave energy that results from vessel traffic (i.e., ship, tug, barge) associated with the existing facilities and the proposed projects can reduce or eliminate spawning habitat for these forage fish species. Degrading or reducing spawning habitat can be expected to reduce the abundance and distribution of these forage fish species that are necessary for other species to survive and thrive and for the Lummi People to be able to preserve, promote, and protect our *Schelangen* (“way of life”).

5.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Regional Area

The impacts of the proposed project and existing industrial development (cumulative effects) on the copepods and larval fish relied on as a food source for herring, and the impacts of the proposed projects and existing industrial development on intertidal and shallow subtidal sea-grasses and marine algae where herring deposit their adhesive eggs, need to be evaluated. Similarly, the impacts of the proposed project and existing industrial piers on upper intertidal zones of mixed sand and gravel beaches utilized as spawning habitat by surf smelt and sand lance need to be evaluated to determine if the extent and location of the required mix of sand and pebbles has been affected by the existing industrial development and/or will be affected by the proposed projects. Noise impacts and artificial night lighting impacts associated with the

construction and operation of the proposed and existing facilities on forage fish behavior and reproduction also needs to be evaluated along with the impacts of fugitive coal dust and spilled coal on forage fish and associated forage fish habitat.

Like all of the potential project impacts, the analysis of impacts to forage fish should specifically consider environmental justice and cumulative effects.

5.3 Significant Unavoidable Adverse Impacts

Construction and operation of the proposed projects will interfere with the life cycles of forage fish and preclude the ability and/or interfere with the ability of the Lummi People to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

6 Potential Impact: Finfish and Shellfish Habitat

6.1 Issue Definition/Rationale:

The marine waters at the proposed project site and the surrounding marine waters are a primary harvest area for salmon, other finfish, and shellfish relied on by the Lummi Nation for ceremonial, subsistence, and commercial purposes. These species require specific habitat conditions to ensure a sustainable, harvestable surplus. These habitat conditions include quality water that is not contaminated with hazardous materials; abundant food sources; suitable temperature, dissolved oxygen, and salinity conditions; low turbidity; cover to escape predation; and stable substrate. Derelict gear also negatively impacts the habitat of finfish and shellfish.

6.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Regional Area

The impacts of the proposed project and existing industrial development (cumulative effects) on finfish and shellfish habitat need to be evaluated. This evaluation needs to include potential impacts of the proposed project and existing industrial development on the physical, chemical, and biological characteristics that are essential to supporting a harvestable surplus of finfish and shellfish from this primary harvest area. This evaluation should also include the impacts of physical disturbances associated with the construction and operation of the proposed facility such as noise, prop wash, artificial lighting, anchorage activities, and increases in derelict gear as well as the impacts of fugitive coal dust and spilled coal on finfish and shellfish habitat.

Like all of the potential project impacts, the analysis of impacts to forage fish should specifically consider environmental justice and cumulative effects.

6.3 Significant Unavoidable Adverse Impacts

Construction and operation of the proposed projects will degrade finfish and shellfish habitat within a primary harvest area relied on by the Lummi People to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

7 Potential Impact: Climate Change

7.1 Issue Definition/Rationale:

Greenhouse gases like water vapor, carbon dioxide, methane, nitrous oxide, and ozone absorb energy and slow or prevent the loss of heat from the Earth into space. These atmospheric gases increase when the emissions of these gases exceed the rate that they can be absorbed by the ocean or by terrestrial plants. Because the greenhouse gases slow or prevent heat from escaping back into space, the Earth becomes warmer, which is known as global warming. Because of the role of temperature and temperature differences over the Earth surface on climate, global warming causes changes in climate. According to the EPA, carbon dioxide (CO₂) is the primary greenhouse gas that is contributing to climate changes observed since the Industrial Revolution began in the mid-1700s. Atmospheric CO₂ concentrations have increased by approximately 40 percent since the Industrial Revolution. Although there are natural sources of CO₂ (e.g., volcanic eruptions), most of the carbon emitted to the atmosphere is due to the combustion of fossil fuels and deforestation.

According to the EPA, coal-fired power plants emit 1.3 times more carbon dioxide than the average petroleum oil-fired power plant and 2 times more carbon dioxide than an average natural gas-fired power plant. Further increases in CO₂ are expected to lead to higher sea levels, greater coastal flooding, more intense weather patterns/storms, retreat/melting of glaciers, and ocean acidification. If constructed, the proposed project will substantially increase the availability of coal on the global market, which can be expected to decrease the cost of coal. As the cost of coal decreases, economic incentives to develop alternative energy sources that have lower CO₂ emissions also decrease, which will continue the reliance on an energy source that has relatively high levels of CO₂ emissions.

Stream flow in the Nooksack River, particularly in the North and Middle Forks of the river, are supported by glacial melt and runoff during the summer months. As the glaciers continue to retreat, less runoff will be able to support stream flows during the low-flow summer months. These stream flows are needed to support a sustainable, harvestable surplus of salmon.

7.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Regional Area

Global Area

The EIS should evaluate the impacts of the increased availability of coal to global competitors of the United States that would occur as a result of this project on the development and reliance on alternative energy sources, climate change, and particularly how climate change will affect sea level rise and coastal flooding on the Lummi Indian Reservation and the sustainability of glaciers in the Nooksack River watershed.

Like all of the potential project impacts, the evaluation of climate change impacts should specifically consider environmental justice and cumulative effects.

7.3 Significant Unavoidable Adverse Impacts

The operation of the proposed projects will increase the export and the availability of coal for combustion. Existing and further increases in CO₂ are expected to lead to higher sea levels, greater coastal flooding, more intense weather patterns/ storms, ocean acidification, and the retreat and reduction in the size of glaciers. These results from increases in CO₂ emissions will disproportionately affect the Lummi Nation due to the reliance of the Lummi Nation on a harvestable surplus of seafood and the approximately 38 miles of marine shoreline on the Reservation.

Climate change due to the burning of fossil fuels, particularly coal, has a direct, serious, and substantial effect on the political integrity, economic security, health, and welfare of the Lummi Nation, its members, and all persons present on the Reservation. In addition to sea level rise and associated coastal flooding along the Reservation shorelines, the decrease in summer time stream flow due to the reduction or elimination of glaciers in the Nooksack River watershed will reduce the extent and availability of salmon habitat and preclude the ability and/or interfere with the ability of the Lummi People to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

8 Potential Impact: Carbon Balance/Ocean Acidification

8.1 Issue Definition/Rationale:

Ocean acidification occurs because CO₂ in the atmosphere is absorbed by the ocean. The more CO₂ levels in the atmosphere increase, the more CO₂ is absorbed by the ocean. The CO₂ absorbed by the ocean increases the acidity of ocean water which in turn reduces the availability of carbonate, which is the mineral used to form the shells and skeletons of many shellfish and corals and numerous smaller organisms that form the base of the food web relied on by higher organisms (e.g., forage fish, salmon, humans). In addition to salmon and other finfish that will be negatively impacted by ocean acidification and its negative effects on the smaller organisms that have a key role in their food web, the Lummi Nation members and the

tribal economy are dependent on the harvest of shellfish (e.g., Dungeness crab, oysters, mussels, clams, scallops, geoducks, sea urchins, sea cucumbers). Ocean acidification could literally dissolve these resources that are depended on by the Lummi Nation and its members for ceremonial, subsistence, and commercial purposes.

According to the EPA, coal-fired power plants emit 1.3 times more carbon dioxide than the average petroleum oil-fired power plant and 2 times more carbon dioxide than an average natural gas-fired power plant. Promoting the burning of coal to generate energy will accelerate the rate that carbon dioxide is emitted into the atmosphere and will speed the rate that ocean acidification occurs.

8.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Regional Area

Global Area

The EIS should evaluate the impacts of the increased availability of coal to global competitors of the United States that would occur as a result of this project on the development and reliance on alternative energy sources, the carbon balance and ocean acidification.

Like all of the potential project impacts, evaluation of the proposed project impacts on the carbon balance and ocean acidification should specifically consider environmental justice and cumulative effects.

8.3 Significant Unavoidable Adverse Impacts

The operation of the proposed projects will increase the export and the availability of coal for combustion. The resultant increases in CO₂ emissions from this combustion will disproportionately affect the Lummi Nation due to the reliance of the Lummi Nation on seafood for its culture and economy.

Ocean acidification resulting from modifications to the carbon balance through the burning of fossil fuels, particularly coal, has a direct, serious, and substantial effect on the political integrity, economic security, health, and welfare of the Lummi Nation, its members, and all persons present on the Reservation. The resultant ocean acidification will preclude the ability and/or interfere with the ability of the Lummi People to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

9 Potential Impact: Acid Rain/Acid Deposition

9.1 Issue Definition/Rationale:

In addition to contributing to climate change and ocean acidification, when coal is burned, carbon dioxide, sulfur dioxide, nitrogen oxides, and mercury compounds are released. Emissions of sulfur dioxide and nitrogen oxides from the burning of fossil fuels such as coal react with water, oxygen, and other chemicals to form acidic compounds that fall from the atmosphere as “acid rain”.

As described by the EPA, acid deposition (aka “acid rain”) causes acidification of lakes and streams and contributes to the damage of trees and sensitive forest soils. Acid rain also accelerates the decay of building materials and paints, including irreplaceable totem poles that are part of the Lummi Nation’s cultural heritage.

9.2 Extent/Geographic Scale of Evaluation

Immediate Area
Local Area
Regional Area
Global Area

The EIS should evaluate the impacts of the increased availability of coal to global competitors of the United States that would occur as a result of this project on the development and reliance on alternative energy sources and on atmospheric deposition of acidic compounds (“acid rain”).

Like all of the potential project impacts, evaluation of the proposed project impacts on the carbon balance, ocean acidification, and acid rain should specifically consider environmental justice and cumulative effects.

9.3 Significant Unavoidable Adverse Impacts

The operation of the proposed projects will increase the export and the availability of coal for combustion. The resultant increases in sulfur dioxide and nitrogen oxides emissions from this combustion will affect the Lummi Nation due to the reliance of the Lummi Nation on seafood for its culture and economy.

Providing the conditions to generate acid rain through the burning of fossil fuels, particularly coal, has a direct, serious, and substantial effect on the political integrity, economic security, health, and welfare of the Lummi Nation, its members, and all persons present on the Reservation. Acid rain will preclude the ability and/or interfere with the ability of the Lummi People to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

10 Potential Impact: Economic Impacts – Market and Non-Market Goods and Services

10.1 Issue Definition/Rationale:

Although the proposed projects can be expected to create additional direct and indirect jobs associated with the construction and operations of the two projects, the projects may also result in job losses elsewhere and the loss of future jobs. Consequently, the economic impacts analysis should consider both the positive and negative potential impacts of the proposed project both on the Lummi Nation and neighboring communities. As an example, there are several potential ways that the proposed projects could reduce or eliminate existing Lummi tribal member jobs:

- Increased rail and shipping traffic will increase the risk of accidents, which could result in an oil or fuel spill that would damage or destroy fishing grounds and equipment
- Increased shipping traffic and associated tug boat operations will interfere with tribal member fishing, limit fishing opportunities, and cause gear loss. Lost gear would likely be impossible to replace during a short crab or sockeye opening. Lost gear could also become derelict gear which will continue to trap and kill fisheries resources that the tribe relies upon.
- Increased rail traffic associated with the proposed Gateway Pacific Terminal facility and two new rail yards to import crude oil to the two existing petroleum oil refineries could negatively affect the Silver Reef Hotel, Casino & Spa, future Reservation businesses that rely upon Slater Road access, and cost Reservation residents time and money as they wait at the railway crossing along Slater Road.

In addition to goods or services that are typically bought, sold, or traded, the Lummi economy is dependent on non-market goods and services including the integrity of the underlying ecosystems that support the generation and sustainability of these systems. For example, the Lummi Nation is reliant on clean air and water, healthy fish and wildlife populations, ceremonial and subsistence fishing, hunting and gathering, canoe journeys, beach access, natural areas and open, undeveloped lands in order to preserve, promote, and protect our *Schelangen* (“way of life”).

10.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Regional Area

Global Area

The economic impact analysis element of the EIS should evaluate both market and non-market goods and services. As described by Philcox (2007) an appropriate framework for aggregating the value of ecosystem goods and services (including non-market goods and services) is Total Economic Value (TEV). This analysis should include direct and indirect tax revenue and employment benefits of the proposed project but also the costs to society in general and the

Lummi Nation in particular associated with fishing interference, spills of hazardous materials, ocean acidification, acid rain, visibility impairment (due to sulfur dioxide and nitrogen oxide emissions), sea level rise and all of the other potential impacts associated with the proposed projects.

Like all of the potential project impacts, the analysis of economic impacts should specifically consider environmental justice and cumulative effects.

10.3 Significant Unavoidable Adverse Impacts

Elements of the proposed projects will preclude the ability and/or interfere with the ability of the Lummi People to exercise their treaty rights to fish throughout their U&A. – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

11 Potential Impact: Ballast Water (Water Quality and Invasive Species)

11.1 Issue Definition/Rationale:

Because as described the proposed project will be primarily an export facility, ships calling on the facility will need to discharge ballast water. This ballast water can originate from all over the world and carry plants, animals, bacteria, and pathogens ranging in size from microscopic to large plants and free-swimming fish. Non-native organisms and pathogens introduced through the discharge of ballast water from vessels calling on the proposed facility and/or existing facilities can significantly alter an ecosystem by competing with, preying upon, and/or displacing native or commercial species or invade and destroy the habitat that is critical to native species. The displacement of native species, the degradation of native habitats, and the spreading of disease can disrupt social and economic activities that the Lummi Nation and its members rely upon to preserve, promote, and protect our *Schelangen* (“way of life”).

11.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Regional Area

Global Area

The EIS must address ballast water management, report on the adequacy of ballast water management plans, include an assessment of compliance with current and anticipated state and federal regulations, and identify and require specific actions that should be taken to eliminate the threat posed by ballast water discharges.

Like all of the potential project impacts, the analysis of ballast water impacts should specifically consider environmental justice and cumulative effects.

11.3 Significant Unavoidable Adverse Impacts

The operation of the proposed projects will increase the potential discharge of contaminated ballast water. The discharge of aquatic nuisance species in ballast water will disproportionately affect the Lummi Nation due to the reliance of the Lummi Nation on seafood for its culture and economy.

The threat posed by ballast water has a direct, serious, and substantial effect on the political integrity, economic security, health, and welfare of the Lummi Nation, its members, and all persons present on the Reservation. The introduction of non-native organism can preclude the ability and/or interfere with the ability of the Lummi People to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

12 Potential Impact: Storm Water

12.1 Issue Definition/Rationale:

Conversion of the currently forested areas at the proposed project site to a rail yard and stockpile area can be expected to increase the quantity and decrease the quality of storm water that flows down gradient from the site and discharges to adjacent fresh or marine waters. In addition, storm water that comes into contact with the bulk goods that are imported or exported through the proposed terminal either on land (stockpile location) or on water (vessels, support vessels, and over-water structures at the proposed trestle/wharf) could also discharge to adjacent marine waters. Some of the bulk goods, coal for example, may be treated either at the mine or enroute with an anti-spontaneous combustion agent that will be conveyed by storm water to receiving waters.

The project proponent has identified numerous likely commodities that could be handled at the proposed facility that can result in nutrient loading or changes in pH in receiving water bodies.

12.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Storm Water Pollution Prevention Plans must ensure that storm water collection and water quality treatment and detention facilities do not result in discharges to receiving water bodies that exceed applicable water quality standards during both the construction and operation phases of the proposed projects.

Like all of the potential project impacts, the analysis of storm water impacts should specifically consider environmental justice and cumulative effects.

12.3 Significant Unavoidable Adverse Impacts

The construction and operation of the proposed projects will increase the potential discharge of contaminated storm water. The discharge of pollutants to the marine waters will disproportionately affect the Lummi Nation due to the reliance of the Lummi Nation on seafood for its culture and economy.

The threat posed by uncontrolled and untreated storm water has a direct, serious, and substantial effect on the political integrity, economic security, health, and welfare of the Lummi Nation, its members, and all persons present on the Reservation.

The introduction of nutrient rich storm water or storm water that is either alkaline or acidic can preclude the ability and/or interfere with the ability of the Lummi People to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

13 Potential Impact: Wetlands

13.1 Issue Definition/Rationale:

Wetlands have cultural and spiritual significance to Lummi tribal members and serve a number of important environmental and economic functions. Many plant and wildlife species found in wetlands have important cultural or spiritual roles and bring balance to the Lummi culture. The cultural significance and value of a wetland can range from the preservation of rare or endemic plant communities, aesthetics, open space, or to the protection of archaeological, geologic, or historic sites. In addition, surface and ground waters are environmentally and economically important to the Lummi Nation; the quantity and quality of wetlands affect the environmental quality and economic production of wetlands.

Wetlands provide numerous functions and benefits. The four basic hydrologic functions that wetlands provide are: ground water recharge/discharge, flood flow storage and associated reduction in peak discharge, maintaining base stream flow, and shoreline stabilization. Wetlands are also important for their role in maintaining water quality by providing temperature control; microbial control; and removal of sediment, nutrient, and toxicants from the water column. Wetlands provide habitat for most terrestrial and fresh water aquatic organisms. These organisms include fish, birds, amphibians, mammals, reptiles, plants, and arthropods. Wetlands can be critical in the long-term survival of threatened, endangered, and sensitive species.

13.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

All wetlands on the projects sites should be delineated, categorized, and function assessments completed. All work should be confirmed by an independent third party to ensure accuracy and completeness. All avoidance, minimization, and compensatory mitigation measures should be identified.

13.3 Significant Unavoidable Adverse Impacts

The construction and operation of the proposed projects will eliminate numerous wetlands and the cultural and ecological functions that they provide.

The elimination of wetlands by the two projects can preclude the ability and/or interfere with the ability of the Lummi People to collect culturally significant plants and animals and to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

14 Potential Impact: Geologic Process – Littoral Drift

14.1 Issue Definition/Rationale:

The Sandy Point peninsula on the Lummi Indian Reservation is an accretion shoreform that is a product of littoral drift (i.e., the movement of sediment along the shoreline). The sediment that formed the Sandy Point peninsula originated from feeder bluffs near Point Whitehorn and other feeder bluffs to the south extending through the proposed project site. Littoral drift is due to the action of breaking waves and currents along the shoreline. The construction and operation of the proposed wharf and trestle and associated vessel traffic can be expected to modify the wave angles, wave frequency, wave magnitudes, and potentially the currents along the shoreline. These modifications can in turn be expected to affect the littoral drift, which will affect the deposition rates and quality of beach sediments along the shoreline and on the Lummi Indian Reservation.

14.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

The impacts of the wharf, trestle, vessels moored at the facility, and vessel traffic on littoral drift must be evaluated.

Like all of the potential project impacts, the analysis of littoral drift impacts should specifically consider environmental justice and cumulative effects – including the effects of the existing piers along the shoreline.

14.3 Significant Unavoidable Adverse Impacts

The construction and operation of the proposed Georgia Pacific Terminal project will interfere with littoral drift processes. This interference could reduce or alter the amount and quality of

beach sediment which could negatively impact forage fish habitat and the deposition of sediment on the Lummi Indian Reservation. The reduction or alteration of littoral drift by the proposed project could diminish the supply of beach sediments to the Reservation shorelines and preclude the ability and/or interfere with the ability of the Lummi People to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

15 Potential Impact: Public Health and Safety

15.1 Issue Definition/Rationale:

Public health can be impacted by the proposed project and resultant increases in emissions associated with the combustion of coal; increased emissions from the additional train, truck, and ship/tug traffic associated with the proposed facilities; and any spills of hazardous materials associated with the proposed projects. Coal dust from the facility and from the transport of coal in open train cars may also cause health effects such as elevated rates of bronchitis and emphysema.

Public safety can be impacted by the project in many ways including increased wait times for emergency vehicles at train crossing locations (particularly Slater Road), collisions or allusions of vessel traffic associated with the existing and/or proposed industrial facilities with fishers on the water in relatively small vessels, damage to fishing vessels and injuries to crew members as a result of waves produced by passing ships, traffic accidents at rail crossings, and train derailments due to fugitive coal dust that accumulates in the ballast of rail tracks.

15.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Regional Area

The EIS should consider direct and indirect effects to public health and public safety associated with the construction and operation of the proposed projects and the emissions that result from the combustion of coal. Like all of the potential project impacts, the analysis of public health and safety impacts should specifically consider environmental justice and cumulative effects.

15.3 Significant Unavoidable Adverse Impacts

The operation of the proposed projects will increase the export and the availability of coal for combustion. The resultant increases in CO₂ emissions from this combustion will disproportionately affect the Lummi Nation due to the reliance of the Lummi Nation on seafood for its culture and economy.

Increased risk of hazardous material spills, climate change, ocean acidification, acid deposition, and other potential impacts of the proposed project have a direct, serious, and substantial effect on the political integrity, economic security, health, and welfare of the Lummi Nation, its members, and all persons present on the Reservation. These affects will preclude the ability and/or interfere with the ability of the Lummi People to exercise their treaty rights to fish throughout their U&A – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

16 Potential Impact: Environmental Justice

16.1 Issue Definition/Rationale:

Executive Order 12898 of February 11, 1994 requires federal agencies to achieve environmental justice by addressing “disproportionately high and adverse human health and environmental effects on minority and low-income populations.” The impacts of the project, both negative and positive, on minority and low-income populations must be analyzed. Environmental Justice issues include potential impacts on the physical and natural environment as well as social, cultural, and economic effects of the proposed project. Based on the 2010 Census, the Lummi tribal members comprise the largest low income, minority population in the area.

16.2 Extent/Geographic Scale of Evaluation

Immediate Area
Local Area
Regional Area
Global Area

The physical, natural, social, cultural, and economic impacts of each of the proposed alternatives on the Lummi people need to be specifically addressed.

16.3 Significant Unavoidable Adverse Impacts

The construction and operation of the proposed projects as described will have numerous adverse impacts on the Lummi Nation including impacts to: cultural properties/cultural resources, fishing, hazardous material and oil spill risk, instream flows in the Nooksack River, forage fish habitat, finfish and shellfish habitat, global warming, ocean acidification, acid rain, tribal economy, water quality degradation and the introduction of invasive species, storm water quantity and quality, wetlands, geologic processes, and public health and safety.

The adverse impacts of these two projects can preclude the ability and/or interfere with the ability of the Lummi People to exercise their treaty rights – these impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

17 Potential Impact: Cumulative Effects

17.1 Issue Definition/Rationale:

Cumulative effects are broadly defined as impacts that “result from the incremental impacts of an action when added to other past and reasonably foreseeable future actions” (40 CFR 1508.7). The cumulative impacts resulting from the proposed projects in relationship to other existing and proposed socio-economic activities in the area will negatively affect the ability of Lummi tribal members to exercise their treaty rights.

17.2 Extent/Geographic Scale of Evaluation

Immediate Area

Local Area

Regional Area

Global Area

The physical, natural, social, cultural, and economic impacts of each of the proposed alternatives on the Lummi people need to be compared to the environmental baseline (defined as the Cherry Point area prior to industrial development), current conditions, and reasonably foreseeable future developments and specifically addressed.

17.3 Significant Unavoidable Adverse Impacts

The construction and operation of the proposed projects as described, in addition to the existing industrial development along Cherry Point and nearby Vancouver, British Columbia and reasonably foreseeable future actions in these areas will have numerous adverse impacts on the Lummi Nation including impacts to: cultural properties/cultural resources, fishing, hazardous material and oil spill risk, instream flows in the Nooksack River, forage fish habitat, finfish and shellfish habitat, global warming, ocean acidification, acid rain, tribal economy, water quality degradation and the introduction of invasive species, storm water quantity and quality, wetlands, geologic processes, public health and safety, and environmental justice.

The cumulative adverse impacts of these two projects can preclude the ability and/or interfere with the ability of the Lummi People to exercise their treaty rights – these cumulative impacts will result in significant, unavoidable, and unacceptable interference with our treaty rights and irreversible and irretrievable damage to our spiritual values if the proposed projects are approved.

Citations:

Philcox, Neil. 2007. *Literature Review and Framework Analysis of Non-Market Goods and Services Provided by British Columbia's Ocean and marine Coastal Resources*. Prepared for Canada/British Columbia Oceans Coordinating Committee. March.

Suttles, W.P. 1951. *Economic Life of the Coast Salish of Haro and Rosario Straits*. Thesis, University of Washington.