WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Caring for
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March 30, 2012

U.S. Army Corps of Engineers
Mr. Steve Gagnon; steven.k.gagnon@usace.army.mil
PO Box 2946
Portland, OR 97208-2946

RE: Comments on Permit Application NWP-2012-56

Dear Mr. Gagnon:

Thank you for the opportunity to provide comment on permit application NWP-2012-56, a proposed project to install a new transloading facility for coal at the Port of Morrow, Oregon, along the Columbia River. The Department of Natural Resources (DNR) is steward of state-owned aquatic lands on behalf of the people of Washington. DNR manages aquatic lands for current and future citizens of the state to sustain long-term ecosystem and economic vitality, and to ensure access to the aquatic lands and the benefits derived from them.

As discussed below, DNR strongly recommends that an environmental impact statement (EIS) be prepared to analyze the proposed project. As part of this analysis, the EIS should identify any potential impacts to Washington state-owned aquatic lands as a result of the proposed project and its connected actions, including construction and long-term operation of the transloading facility, existence of the completed facility, all new activities on the Columbia River, and rail transport of coal through the State of Washington. The EIS also should address the adequacy of the proposed compensatory mitigation measures, as well as the proposed best management practices (BMPs) to contain coal dust throughout the coal transportation process.

Per the public notice, the proposed project would involve construction of a new transloading facility for bringing coal in from Montana and Wyoming by rail and transferring it to barges on the Columbia River at the Port of Morrow, Oregon. This facility would include nine dolphins, walkways, a fixed dock, and a conveyor system for loading coal along with enclosed warehouses in the uplands for coal storage. Approximately 140 permanent piles ranging from 14 to 24 inches in diameter and 110 temporary 16-inch diameter piles would be installed to complete the project. Over 15,000 square feet of new overwater structure would be constructed.

Upon completion of the project, coal would then be shipped down the Columbia to Port Westward and loaded onto ocean-going vessels to be shipped to Asia. Approximately 3.85 million tons of coal would be shipped through the facility each year, which translates to approximately 5 trains to Port of Morrow, 5.5 loaded barge tows from Port of Morrow to Port

Westward, and 1 ship to Asia per week. Once at maximum capacity, the facility would handle 8.8 million tons of coal, which translates to 11 trains, 12 loaded barge tows, and 3 ships to Asia per week.

While the proposed project would be located on the Oregon side of the Columbia River, the facility operations involving coal transfer have the potential to nonetheless harm the long-term ecological and economic vitality of Washington state-owned aquatic lands. For instance, shoreline stabilization measures and overwater structures of the new facility could contribute to the destruction or outright elimination of habitat upon which numerous Columbia River species depend. In addition, any coal dust or debris, runoff, or other pollution that results from the facility, operations, barge tows, ocean-going vessels, and trains could degrade water quality and contribute to contamination of more than 200 river miles of Washington state-owned aquatic lands. This contamination would be toxic to aquatic life including submerged aquatic vegetation, shellfish, and other aquatic natural resources for which DNR is responsible. Further, any discharged pollution could contain bacteria and pathogens that would threaten public health and impair recreational opportunities for the citizens of Washington.

Given the aforementioned potential impacts to Washington state-owned aquatic lands, DNR strongly recommends that an EIS be prepared that analyzes any potential impacts of the project, as well as the adequacy of the BMPs and mitigation measures proposed by the applicant. Further, DNR suggests that these impacts be analyzed cumulatively within the context of other similar coal transport projects that have been proposed recently in Washington and Oregon.

Washington DNR appreciates the opportunity to comment on the permit application and looks forward to further contributing to this process in the months ahead. If you have any questions, please contact Mr. Chris Lyons, policy analyst, at chris.lyons@dnr.wa.gov or 360-902-1090.

Sincerely,

Kristin Swenddal
Aquatic Resources Division Manager

cc: Chris Lyons, Aquatics Policy Analyst

January 22, 2013

GPT/BNSF Custer Spur EIS Co-Lead Agencies
c/o CH2MHILL
1100 112th Avenue NE, Suite 400
Bellevue, WA 98004

Dear Co-Lead Agencies:

Please accept these comments from the Washington Department of Natural Resources (DNR) regarding the scope of the Environmental Impact Statement (EIS) for the proposed Gateway Pacific Terminal/Custer Spur project at Cherry Point, Washington. DNR is the manager of over 3 million acres of state trust lands comprised of forest, range, commercial, and agricultural lands, and 2.6 million acres of state-owned aquatic lands. In addition, DNR administers the state Forest Practices Rules on more than 12.7 million acres of non-federal, public, and private lands.

DNR is committed to sustainably managing the state's resources, relying on sound science, and making transparent decisions in the public's interest and with the public's knowledge throughout the environmental review process. It is our goal to ensure DNR's management of state lands supports conservation and recovery of the health of Puget Sound. I have directed my staff to provide technical support to the co-lead agencies towards ensuring a robust, science-based and comprehensive environmental review process.

DNR is regarded as possessing special expertise under Washington state's environmental policy act rules, Chapter 197-11-920, Washington Administrative Code (WAC) related to the following areas: water resources and water quality of state-owned aquatic tidelands, shorelands, harbor areas, and beds of navigable waters; natural resources development; energy production, transmission, and consumption (geothermal, coal, and uranium); land use and management of state-owned or managed lands; recreation; and burning in forests. DNR is also an agency with jurisdiction for this project under Chapter 197-11-714(3), WAC. The proposed wharf and trestle would be located on state-owned owned aquatic lands, and a DNR lease will be required. DNR has designated the majority of the state-owned aquatic lands at Cherry Point as an environmental aquatic reserve to preserve, restore, and enhance its aquatic habitats and species. The Cherry Point Aquatic Reserve Management Plan (2010) serves as the guiding document for decision-making regarding the management and authorization of uses of the Cherry Point Aquatic Reserve.

The Custer Spur proposal would increase the number of tracks located on state trust lands at Elliott Yard. The existing DNR easement would need to be amended to address these modifications. The proponent will also need to submit a Forest Practice Application (FPA) prior

to any road building, timber harvest, clearing or other forest practice activities at the Gateway Pacific Terminal site.

DNR appreciates the opportunity to submit comments on the scope of the EIS, which are provided in the attachment to this letter. The attachment identifies project alternatives to the proposal that should be considered in the EIS. The comments that follow identify analyses for each element of the environment identified under Chapter197-11-444, WAC where DNR has identified probable, significant adverse impacts needing analysis in the EIS. For each issue of concern identified in this letter, DNR requests that the EIS identify the potentially affected resources, analyze the probable impacts to those resources, and identify measures to avoid, minimize and mitigate effects of the proposal. DNR may submit additional scoping comments as we increase our understanding of the proposal and its impacts.

Should you have any questions regarding this letter, please do not hesitate to contact my Deputy Supervisor, Megan Duffy, at (360) 902-1034.

Sincerely,

Peter Goldmark
Commissioner of Public Lands

PROJECT ALTERNATIVES

Pier Alignment and Design

The wharf and trestle area is proposed to be located in Cherry Point herring spawning habitat. Washington Department of Fish and Wildlife (WDFW) has previously identified an ecologically preferable location and alignment for the overwater structure 1,000 feet south of the proposed location, intended to reduce adverse impacts of the project to pre-spawning herring. The EIS should analyze the WDFW recommended alignment and other alignments, and assess the potential, adverse impacts and potential mitigation measures for each alternative. The EIS should include an alternative that is based upon a comprehensive analysis of herring migratory patterns from deep waters to the nearshore environment of the Cherry Point Aquatic Reserve. The design of this alternative should locate overwater structures to avoid disruption to these migratory patterns, either by the structure itself, or from the vessels calling in the proposed structure. Alternative overwater structure designs should also be evaluated to avoid and minimize impacts, such as decking material, artificial lighting, and other considerations.

Vessel Traffic

The project would generate a significant increase in traffic of large vessels at Cherry Point and through Puget Sound. A detailed vessel traffic analysis should be conducted using a robust model that relies on the most recent vessel tracking system data for all of the Salish Sea. The scope of the study should include all of the northern Salish Sea, including the projected increased traffic from shipping terminals in British Columbia, and evaluate multiple alternatives for reducing potential incidents, including routes, operations and traffic control.

Vessel Operations

The EIS should analyze alternative berthing times and seasonal restrictions to ensure that cargo vessel and tug operations do not adversely affect herring spawning behavior at Cherry Point.

Rail Corridor Expansion

Will the proposal require or likely result in an expansion of rail corridors beyond Custer Spur in order to transport the commodity materials to the Cherry Point terminal? If so, the EIS should analyze alternatives to the expansion of rail corridors along the Puget Sound shoreline that avoid impacts to nearshore habitat and water quality.

In evaluating alternatives, it is important to address the impact of bifurcation of state-managed lands due to corridor expansion on DNR's ability to manage these lands and avoid bifurcation to the greatest degree possible. What alternative alignments could prevent this bifurcation?

IMPACTS AT THE CHERRY POINT REACH

Natural Environment:

Earth

Sediment and Geomorphic Processes
The EIS should include a detailed analysis of the physical and geomorphological processes in the nearshore zone, focused on sediment transport processes, including potential redistribution or disruption of sediment flow by the overwater structure, potential changes in seasonal and overall net shore drift, and impacts to sediment input. The analysis should include spatially explicit mapping of sediment characteristics, beach geomorphology, bathymetry, and stability.

Waves and Prop Scour
The EIS should analyze adverse impacts of waves and prop scour generated by large vessels docking at the facility and tugs assisting with docking on sediment transport, bank erosion, and attached aquatic vegetation. How will the change in hydrodynamics from the in-water structures affect scour in the intertidal and shallow subtidal environments? How will waves, currents, and propeller wash change the sediment characteristics and hydrodynamic environment? How will aquatic vegetation and habitat for marine invertebrates be affected by changes in wave energy, sediment transport, or substrate? What is the likelihood that the project will require shoreline armoring in the future, due to operations, climate change, sea level rise, or other reasons, and how will impacts be mitigated?

The EIS should analyze the potential of wharf and pier construction or operations (including future maintenance, repair, and replacement) to disturb any contaminated sediments and how this will be mitigated.

Geologic Hazards
DNR has responsibility for obtaining, maintaining and distributing information and technical assistance regarding geologic hazards under the Geological Survey Act, Chapter 43.92, Revised Code of Washington (RCW). In addition to the objectives stated in Chapter 43.92.020 RCW, the geological survey must conduct and maintain an assessment of seismic, landslide, and tsunami hazards in Washington. This assessment must include the identification and mapping of volcanic, seismic, landslide, and tsunami hazards, an estimation of potential consequences, and the likelihood of occurrence. DNR recommends you analyze the potential for geologic hazards at the site using the following methodology:

a) Identify both shallow and deep-seated landslide hazards using DNR's GIS Statewide Landslide database and then create a site-specific geologic map. In areas with no existing landslide inventory, create a shallow landslide database using historic aerial imagery and other spatial data in a GIS.
b) Evaluate subaqueous landslide hazards using bathymetry or similar DEM data.
c) Identify potentially unstable slopes using DNR's Shalstab model or other comparable slope stability modeling program in a GIS.
d) Identify slope hazards associated with slope modification or vegetation removal at construction areas.

e) Evaluate earthquake hazards including earthquake-induced ground failures.
f) If dredging for port access, identify potential hazards to adjacent beaches and bluffs from loss of subaqueous buttressing, and
g) Identify tsunami inundation hazards from both local faults and a Cascadia subduction zone event, or through subaqueous or terrestrial landslides.

Plants and Animals

Baseline Study
The EIS should include a detailed baseline study of the area's biological resources, and analyze potential impacts, including, but not limited to: benthic habitats; shellfish resources; aquatic vegetation; forage fish spawning, pre-spawn holding areas, and forage fish migratory corridors; salmon; groundfish; marine mammals; and, seabird, seaduck, and shorebird communities. The project proponent should coordinate with DNR and WDFW regarding appropriate mapping methods for aquatic vegetation, geoduck and other shellfish resources, forage fish spawning areas, and benthic and epibenthic invertebrate abundance and distribution.

Shading
The EIS should analyze the amount of shading at each depth that will be generated by the overwater structure and moorage of vessels, including tugs and vessels that may perform maintenance on the conveyor belt or related to other wharf or trestle operations. What are the potential, adverse impacts of shading on marine resources, including, but not limited to: aquatic vegetation (including productivity), benthic habitats, forage fish pre-spawning and spawning behavior, and movement of juvenile salmonids, and how will they be avoided? How will shading be monitored over time to detect adverse impacts on aquatic vegetation (including eelgrass, kelp, and *Sargussum)* or fish species?

Construction
The EIS should analyze adverse impacts during construction of the wharf and trestle, and any future maintenance, repair, and replacement, from the presence of barges or other vessels used for construction. How will construction, design, and materials ensure avoidance of impacts to biological, chemical, and physical habitats, including, but not limited to: fish and wildlife, sediment transport, benthic habitats, and aquatic vegetation (including eelgrass, kelp, and *Sargussum*)? How will barge presence be limited in duration to mitigate adverse impacts, including shading, and noise?

The EIS should analyze the amount of noise likely to be generated during construction, future repair, maintenance, and replacement, and how the project will avoid impacts to herring, salmon, marine mammals, marbled murrelet, seabirds, and seaducks.

Operational Noise
The EIS should analyze the amount of noise that will likely be generated during operations by the loading and offloading of materials, transport through the conveyor system, docking and moorage of ships, and trucks, and other machinery at the terminal. What are the individual and cumulative impacts of noise generated from this project on herring pre-spawning and spawning

behavior, and other species, when considering industrial Cherry Point uses? How will these impacts be avoided? How will any changes in noise be monitored over time to assure there are no adverse impacts to herring? What options can be instituted to mitigate impacts?

Artificial Lighting
The EIS should analyze impacts of lighting proposed on the overwater structure and within 200 feet of the shoreline on herring, salmon, and other Cherry Point species. A study should be conducted to investigate the potential changes in species abundance and dominance resulting from increased prey access under artificial lighting and address ways to reduce or eliminate any identified impacts. How will any changes in lighting be monitored over time to assure there are no adverse impacts to herring or other species? Cumulative impacts should be modeled to determine what potential impacts, if any, one additional pier will have. Multiple options should be evaluated for avoiding or minimizing artificial light impacts, and recommendations should be included for adaptive management program to reduce long term effects of artificial light impacts.

Aquatic Vegetation
The EIS should analyze any potential for wharf and pier installation, operations, and future maintenance, repair, and replacement to scour sediments or disrupt or harm aquatic vegetation or other benthic habitats. How will impacts to aquatic vegetation damaged during construction or operations through displacement, shading, burial or scour be avoided?

A Joint Aquatic Resources Permit Application was submitted on April 6, 2011 that proposed compensation for up to 4,350 square feet of shading impacts to macroalgae. Is this compensation measure still proposed? Eelgrass is present at the site and will likely be disturbed. The proposed location of the macroalgae plots are too deep for eelgrass to grow. The project proposes to drop small to large cobble and small boulders on top of sandy substrate. The enhanced substrate is not conducive to eelgrass growth, and may increase the risk of attracting *Ulva*. The EIS should analyze compensation measures for aquatic vegetation based on recent surveys, and in coordination with DNR, WDFW, and permitting agencies. We encourage you to work with us when developing a monitoring plan that contains specific performance measures for any mitigated aquatic vegetation survival, complete with area, density and timeline of expected growth trajectory and a contingency plan in the event the mitigation does not succeed.

Biological Resources
The EIS should analyze how vessels, including barges, propose to navigate or dock on the landward sides of the wharf, and how adverse impacts of the proposed alignment and vessel operations on herring, salmon, marine mammals, aquatic vegetation, and other biological resources and species will be mitigated.

<u>Air</u>
The applicant estimates the proposal will generate up to 487 vessels to the Puget Sound area annually (not including the tugs to support them). These vessels will likely burn fuel that may contribute to localized air pollution or emission of greenhouse gases. This may result in pollutants entering surface waters through atmospheric deposition.

There is also the potential for localized ocean acidification to occur. Ocean acidification has the potential to cause significant ecological and economic losses for Washington. The EIS should analyze the impacts of engine exhaust from the cargo vessels and tugs in the Cherry Point vicinity and within the larger airshed on marine species, sediment and water quality, including ocean acidification. Opportunities to reduce carbon emissions at the site should be identified to minimize contributions to ocean acidification of state waters. What opportunities are available to maximize non-fossil fuel energy along the portions of the project located on state managed land?

Water

Hydrological Dynamics
The EIS should evaluate existing nearshore hydrological dynamics in the area. What is the potential of the overwater structure to disrupt water flow or other natural hydrological functions, to the beach and marine waters?

Point and Nonpoint Discharges
The EIS should analyze whether any stormwater, treated or untreated, point or nonpoint, or any other pollution sources, may enter marine waters as a result of the project. This includes stormwater that may be infiltrated in wetlands and seep to groundwater. How will adverse impacts be mitigated? The EIS should include an estimate of much rain is estimated to run off the wharf, trestle, and roadway, and the quality of the runoff. What are the potential, adverse impacts of untreated stormwater, including the roadway, from the wharf and pier on aquatic habitat and how will these impacts be avoided?

The EIS should include a characterization of the source, quality and quantity, and analysis of potential impacts of all stormwater runoff generated by the entire project that may enter state waters, whether treated or untreated. The EIS should analyze whether the conveyer belt and other overwater facilities will need to be cleaned or maintained and how any runoff from the conveyor belt will be prevented from entering marine waters.

The EIS should demonstrate how new point source discharge outfalls for stormwater will be designed to avoid or minimize individual and cumulative adverse impacts, which is required under the Cherry Point Aquatic Reserve Management Plan.

The EIS should analyze the increased risk of oil spills that may occur due to the increase in vessel traffic through Puget Sound.

Coal train cars are typically sprayed with surfactants to reduce coal loss. While the surfactant manufacturers claim that they are non-toxic to fish, there could be potential for non-lethal effects on fish-behavioral changes, or for deformities or other effects on fish. No shellfish data are available related to surfactants. Some surfactants, most notability Corexit, the surfactant used in the Gulf Oil spill, have been implicated in subsequent fish and shellfish deformities. The EIS should identify potential impacts of surfactants on fish and wildlife, including shellfish.

Cumulative Impacts
Stormwater and wastewater discharges can carry heavy metals and other pollutants that may be harmful to fish and wildlife. What is the individual impact, and what are the cumulative impacts of stormwater, other pollutants, and any other wastewater discharges generated by the project on marine waters, when considering all other stormwater and wastewater discharges in the Cherry Point vicinity? The EIS should include an ambient water toxicity study, using protocols accepted by Ecology and EPA to evaluate the cumulative effects of existing industrial wastewater and stormwater outfalls and groundwater seeps on near shore species survival and water quality. Caged mussel studies and/or harbor seal bioassays may be used as biological indicators of toxicity. Bioaccumulation of polycyclic hydrocarbons (PAH), pentacholorophenol (PCP), and heavy metals in caged mussels should also be conducted, and future PAH, PCB, and heavy metal concentrations should be modeled based on the various alternatives being considered.

Vessel Fueling and Pumpouts
The EIS should analyze where fueling of vessels will occur. What are the adverse impacts of any fueling activities? If the need for such a facility is identified in the future, how will potential, adverse impacts of spillage be avoided and mitigated? The EIS should analyze where vessels will pump out sewage and handle gray water. Is a sewage pumpout system proposed for the overwater structure? If so, how will potential spills be mitigated?

Coal Dust and other Commodity Material Drift
The EIS should analyze the amount of coal dust, large coal particles, or other commodity materials that may escape from the conveyor belt, the ship loader, or upland storage facilities, and the impacts of any escaped dust or materials on the aquatic environment. What is the potential for coal dust and other commodity particulates stored on the upland to enter marine waters indirectly by wind, surface water, or groundwater? What measures are in place to ensure the conveyor belt or loader does not malfunction, resulting in a spill outside the ship's internal containment facilities and into marine waters?

The EIS should analyze the potential for commodity materials to change the chemical environment of aquatic lands at Cherry Point, including pH. Some materials, such as inorganic sulfur like that found in coal, can react with chemicals in seawater to produce sulfuric acid, resulting in localized ocean acidification. In addition, coal particles may leach heavy metals into marine waters and sediments. The highest impacts here would be nearest the terminal. What might be the resultant impacts on fish and wildlife, and sediment quality? Studies have implicated coal in oxygen depletion. What is the potential for commodity materials to contribute to oxygen depletion or have a smothering effect on aquatic or upland habitats? What best management practices will be employed to collect dust and other commodity materials that may land on the facilities or vessels to prevent it from being washed or blown into the water or tracked onto the trestle? The EIS should describe measures to be instituted to prevent escape of coal dust, particles, and other materials into marine waters should a vessel collide with the overwater structure.

Ballast Water
The EIS should characterize all ballast water to be discharged into the marine environment, the adverse impacts of discharge, and how adverse impacts will be avoided. Will the ballast

monitoring standards of the Settlement Agreement be used? If not, how will ballast water quality be monitored to assure no adverse impacts to water quality over time?

Invasive Species
The EIS should analyze the potential for the project to introduce invasive species to the project site and Puget Sound and how will potential, adverse impacts be mitigated to prevent introduction. If an invasive species is found to occur on a vessel associated with the project, what actions will be implemented to prevent spread of the species into marine waters?

Stream Passage Structures
The rail line crosses over a stream at the Elliott Yard. The EIS should analyze the location and design of bridges and culverts needed for any new stream crossing. All structures should meet fish passage and hydraulic code requirements of the WDFW. Structures should be appropriately sized based of hydraulic calculations similar to those in the WDFW manual for 100-year flood plus debris events, regardless of fish presence. The project proponent should consult with WDFW and use appropriately sized round culverts on non-fish bearing streams and open bottom culverts or bridges for crossings on fish streams.

Built Environment

Environmental Health

Toxic Chemicals
The EIS should analyze the need for safeguards to prevent potential release of toxic chemicals associated with construction and future maintenance of cast-in-place concrete of the wharf and trestle. Will treated wood be used? What materials will be used for fenders? Some fender materials have the potential to leach PAHs or other toxic pollutants; please analyze how potential impacts will be avoided and minimized.

The project proposal will add to existing sidings at Elliot Yard. Historic siding locations have contributed to soil contamination due to petroleum and hazardous materials spills or leaks from short and long term sided trains and cars. The EIS should analyze the impacts to ground and surface water, soil and adjacent wetlands from the expansion of the Elliot Yard, and evaluate mitigation measures that reduce and prevent the potential for short and long term impacts to ground and surface water, soil, and wetlands from cumulative hazardous material buildup. We encourage the proponent to work with DNR to establish these measures to ensure they meet DNR requirements.

Land and Shoreline Use

Sea Level Rise
The EIS should analyze how many pilings will be installed and the construction methods, design, and materials to be used. How will the structure be designed to function at current and forecast sea levels based on most recent predictions from the ‘Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future’ (June 2012).

Transportation

Marine Vessels
The EIS should include a detailed vessel traffic analysis and assessment of traffic management needs. The analysis should provide information on vessel drift, ballast water management, frequency of entry, egress, and moorage time anticipated for the different types of vessels and sizes of vessels, and their potential impact on the marine environment (including aquatic natural resources). It should be based on a robust model that relies on the most recent United States Coast Guard vessel tracking system data for all of the Salish Sea, including existing or projected traffic from adjacent industrial facilities, the shipping terminals in BC, and nonindustrial vessels. The analysis should allow for comparison and aggregation with the BP vessel study. The scope of the study should include all of the northern Salish Sea, and not just the Cherry Point area. The study should evaluate multiple alternatives for reducing potential incidents.

The EIS should analyze the impacts of the increased vessel traffic, size of the vessels, and proposed vessel routes on fish and wildlife species and their habitats. The impacts of projected vessel traffic generated by the project on herring pre-spawning and spawning behavior should be analyzed. How will vessel operations be conducted during herring pre-spawning and spawning season to prevent impacts to herring? What are the cumulative impacts of projected vessel traffic generated by the project, and projected traffic for the region, on herring pre-spawning and spawning behavior, marine mammals, and other species? What are the impacts due to the increase in noise expected to occur within the Cherry Point area from increased vessel traffic approaching and leaving the facility? The EIS should also analyze the potential for vessel strikes to marine species in or adjacent to the Cherry Point Aquatic Reserve and how will they be avoided.

The EIS should analyze the potential for the project's proposed vessel operations to adversely impact or interfere with adjacent industrial operations, including facility access. If a vessel can't access one of the facilities and has to moor temporarily, how might this affect other industrial operations, vessels transiting through the Straits, or the risk of collision?

The EIS should analyze the potential for proposed vessel operations to interfere or tangle with crab pots and other fishing gear and result in an increase in derelict fish gear.

The greatly increased ship activity has the potential to impact sediment quality. Diesel burning by the ships can create greenhouse gases, PAHs and dioxins, which can contribute to localized ocean acidification as well as contaminate the sediments in the area through atmospheric deposition, especially if diesel fuel is burned while the container ships are idling while at the terminal. The EIS should analyze the cumulative impacts of engine exhaust from the cargo vessels and tugs, and upland machinery operations, and the potential for pollutants to enter Puget Sound and Pacific coast surface waters from atmospheric deposition, or from vessel machinery, or loading operations.

Historical and Cultural Preservation
The EIS should analyze impacts of construction and operations (including future maintenance, repair, and replacement) on cultural resources and tribal use. This analysis should be completed for the aquatic lands, the uplands areas subject to Forest Practices Permits, and the Elliott Yard easement area.

Recreation
What are the potential, adverse impacts of the project on existing public use and access, including recreational shellfish harvest? How will any impacts be mitigated?

Agricultural Crops
The EIS should analyze adverse impacts of the project on commercial shellfish harvest.

Natural Resources

Forests
As previously mentioned, the DNR Forest Practices Program is responsible for the implementation of the state's Forest Practices Act and rules (Chapter 76.09 RCW and Chapter 222, WAC). The rules provide the framework for the protection of public resources on all state and private forest land and are a responsibility of forest landowners, timber owners and operators when conducting forest practices activities. The project proponent will be required to obtain a forest practices permit for the conversion of forest to an industrial site

The DNR Urban and Community Forestry Program provides technical, educational, and financial assistance to encourage planting and maintenance and management of trees in the state's municipalities and counties and maximize the potential of tree and vegetative cover in improving the quality of the environment as codified in Chapter 76.15, RCW. DNR is the coordinator for the 2008 Evergreen Communities Act, which promotes healthy communities and urban forests. Urban forests have been identified as a valuable and potentially powerful tool to support economically viable and sustainable urban areas in Washington State (Dept. of Commerce, June 2009).

Additionally, DNR is coordinating the Urban Forestry Restoration Project (UFRP) to increase the health of urban forest in the Puget Sound Basin by providing funding to local governments to help restore ecosystem services through urban forest enhancements. Funding for the URFP is provided for in Engrossed Senate Bill 5127 (Capital Jobs Bill). Several communities in Whatcom County and the Puget Sound Basin receive assistance from DNR's urban and community forestry program and are participants in the ECA. Existing tracks bisect many of these communities and the proposed terminal site is considered a fragmented forest.

The project proponent should analyze or consider potential impacts to urban forests and ongoing restoration activities in Whatcom County and the Puget Sound Basin. Analysis of impacts should include, but should not be limited to: analyzing effects of permanent removal of urban and fragmented forests for new facilities and additional rail sidings; analyzing rail traffic increases along existing rail feeder tracks that may create fine particulates (dust)from the

shipping of bulk dry goods that may coat plant leaf area leading to a reduction of plant photosynthesis and respiration ability resulting in a decrease in urban forest health; analysis of forest health at the site and opportunities for improvement through restoration and enhancement activities.

Public Services and utilities
The existing rail system at Elliot Yard currently has 6 yard tracks and one mainline track within the easement area. The proposal would add one additional mainline and two yard tracks within the existing easement area for a total of 10 tracks. Total acreage in current permanent easement for "railroad purposes" is approximately 14.55 acres with a width of 240' and centerline length of 2648.73'. There is also a wetland mitigation easement connected to the SW portion of the railroad easement which is 2.6 acres (410' x 280').

The EIS should analyze whether the area of the easement would need to be increased to accommodate the construction, operation, and any future maintenance activities. This includes but is not limited to: all excavation of material, placement of construction materials and tracks, equipment movement and placement of equipment. The EIS should analyze how state resources, including wetlands and forests within and outside the easement area, will be protected. Will the project require re-configuring of existing wetlands? How will the wetlands mitigation easement be affected?

Fire Risk
The EIS should analyze additional wildlife risk for lands covered by DNR fire suppression responsibilities for the site location and along existing railways that will anticipate increased traffic. It is critical that all fire prevention laws and rules of the state be adhered to by construction contractors during facility clearing or construction, maintenance or use to prevent unnecessary risk to life and natural resources. The presence of additional rail sidings creates increased risk of wildfire through the use and maintenance of the siding. Chapter 76.04, RCW and Chapter 332-24, WAC provide contractor requirements regarding landowner and operator responsibilities related to fire prevention and fire hazard abatement. The EIS should identify all reasonable measures to prevent and minimize the start and spread of fire on to adjacent forested areas. Measures should include ensuring all vehicles carry a fire extinguisher of at least a 5 B/C rating and a serviceable shovel, following construction site safety operating procedures which should include compliance with the substantive requirements of Chapter 332-24-301, WAC (Industrial restrictions) and Chapter 332-24-405, WAC (Spark emitting requirements).

IMPACTS TO STATE MANAGED LANDS IN THE PUGET SOUND REGION

Natural Environment

Air
The EIS should analyze the adverse impacts of engine exhaust from the cargo vessels and tugs and its potential to enter Puget Sound and Pacific Coast surface waters from atmospheric deposition, including sediment quality, water quality, and localized ocean acidification. It should

also include analysis of the additional fossil fuels generated by the additional trains traveling over state managed lands and identify measures to reduce the project's carbon footprint.

Water
The EIS should evaluate the ways in which coal dust and other particulates may escape the train cars and enter Puget Sound surface waters, including wind, stormwater, and spills.

Plants and Animals
The EIS should analyze how the increase in traffic of large vessels may affect fish and wildlife, including migration, rearing, foraging, and spawning.

The existing rail system is located adjacent to the shoreline along much of Puget Sound, which is subject to frequent landslides. The EIS should analyze whether rail corridors may need to expand onto state-owned aquatic lands along other areas of Puget Sound to accommodate the project. If so, how much right-of-way onto state-owned aquatic lands is estimated to be required? What are the potential impacts of increasing the number of tracks on aquatic and uplands habitats managed by the State?

Built Environment

Environmental Health
The EIS should analyze the increased risk of oil spills that may occur due to the increase in vessel traffic through Puget Sound.

The EIS should analyze the potential impacts of increasing the number of tracks on aquatic and uplands habitats managed by the State along the existing rail corridor, or any alternative corridors that may be needed, including, but not limited to: habitat, cultural resources, water quality, and wetlands. Please refer to the previous comments regarding sidings and hazardous materials.

Please refer to the previous comments related to fire risk.

Natural Resources

Conservation Lands
DNR manages a statewide system of conservation lands, protecting some of the best remaining natural areas in Washington. These sites contribute to region-wide biodiversity conservation, while serving as baseline reference sites to guide the management of less pristine lands.
The EIS should analyze the potential impact on DNR Natural Resource Conservation Areas (NRCAs) and Natural Area Preserves along the rail corridor.

Please refer to the comments regarding the DNR Urban, Community, and Fragmented Forests program. The EIS should analyze impacts of forests that may be impacted due to expansion of the rail lines on state managed lands along the entire rail corridor.

IMPACTS TO STATE MANAGED LANDS STATEWIDE

Natural Environment

Earth
Please refer to the comments on geological hazards. Any expansion of rail lines over state managed lands should provide the recommended geological hazard analysis.

Plants and Animals

Rail Corridor Expansion
The existing rail system is located directly adjacent to the shoreline along the Columbia River, and other state managed rivers. The EIS should analyze how much right-of-way onto state-owned aquatic lands is estimated to be required to accommodate the increase in train traffic. What are the potential impacts?

What expansion of rail corridors is estimated to be needed on state-managed uplands throughout the state? How much right-of-way is estimated to be needed for each area? How will impacts to habitats be minimized and mitigated?

Stream Passage Structures
Please refer to the earlier comments regarding stream passage structures. Any new crossings on state managed lands will need to be consistent with WDFW requirements.

Habitat Conservation Plan
Washington's Trust Lands Habitat Conservation Plan (HCP) is an ecosystem-based forest management plan developed by DNR to provide habitat for species such as the Northern spotted owl, marbled murrelet, and riparian-dependent species such as salmon and bull trout. The HCP is a contract with the United State Fish and Wildlife Service (USFWS) and the National Ocean and Atmospheric Admiration (NOAA) providing protections for species listed as 'threatened' or 'endangered' under the federal Endangered Species Act (ESA). The HCP applies to 1.8 million acres of forested State Trust lands within the range of the Northern Spotted Owl. Under the HCP DNR was issued an Incidental Take Permit (ITP).

The EIS should analyze impacts on lands covered by DNR's HCP to demonstrate and document that the construction of a new facility near DNR managed lands and site expansion of existing facilities (railroad rights of way) on DNR managed lands will not adversely affect the agreement and the commitments made in the HCP, thereby affecting covered species. Additionally, it would be helpful for USFWS Section 10 representatives familiar with the upland HCP to be involved in any discussion with USFWS regarding DNR managed lands.

Water Quality
The EIS should analyze how much right-of-way onto state-owned aquatic lands is estimated to be required to accommodate the increase in trains? What are the potential impacts to water quality? Where relevant, the EIS should review existing studies from other parts of the country.

Natural Resources

Conservation Lands
The EIS should analyze the potential impact on DNR Natural Resource Conservation Areas Natural Area Preserves along the rail corridor. DNR can provide information on location of these upon request.

Biomass and Renewable Energy
Washington's forests have an abundant, renewable supply of woody biomass. Using some of this material for liquid transportation fuel, heating, and electrical power generation will play an important role in Washington's emerging green economy and help to address climate change. DNR's forest biomass initiative is occurring against a backdrop of existing state and federal policy direction, which act as guides to the emerging industry and signal opportunities for future expansion. The proposal states the new terminal would be used to ship dry bulk goods including coal.

The EIS should analyze the socio-economic impact to the Washington State biomass industry development of renewable fuel alternatives. The analysis should consider if increasing coal exports will delay the Washington state and regional biomass-to-fuel research and infrastructure investments in green technology and jobs, and if a new dry bulk terminal increases opportunities in infrastructure investments in green technology and jobs by providing a terminal to ship bulk dried biomass fuel pellets.

Built Environment

Environmental Health
Please refer to earlier comment related to siding locations. Any expansion of rail corridors on state managed lands to support the project should analyze the potential for soil contamination and include mitigation measures that reduce and prevent the potential for short and long term impacts to ground and surface water, soil, and wetlands from cumulative hazardous material buildup.

Land and Shoreline Use
How might the addition of 18 trains of 1.5 miles in length affect DNR's agricultural and commercial lessees' lands and the ability to get their commodities to the market?

What affect could increase in coal dust have on the health or productivity of forest and crops located on or directly adjacent to DNR managed lands?

Public Services and utilities

Fire Risk
Please refer to the previous comments regarding analysis of fire risks. Analysis and proposed mitigation measures should be undertaken that will anticipate increased traffic. Train cars carrying coal are not covered because of spontaneous combustion risks. The EIS should analyze

the potential increased risk of explosion and resulting wildfire from the addition of 18 trains per day through or adjacent to forest lands.

The trains may be up to 1.5 miles long, which could block street crossings. What is the potential impact of the increase and length of trains on DNR's ability to respond to wildfires?

Management of DNR Lands

What would be the impact of bifurcation of state-managed lands due to rail corridor expansion on DNR's ability to manage these lands? What alternative alignments could prevent this bifurcation?

Agricultural Crops

DNR manages approximately 1.1 million acres of agriculture land in the State. Commodities from these lands are typical with Washington grown products: tree fruit, grains, row crops, and cattle. In fiscal year 2011, $13 million in revenue was generated from the leasing of DNR manage agriculture lands. The lessees of these lands rely on transportation infrastructure such as highways and railways to move commodities to regional destinations or ports bound for international trade. The 2006 Statewide Rail Capacity and System Needs Study commissioned by the Washington State Transportation Commission identified several limiting factors regarding rail use and growth in the State. Specifically, the study highlights capacity issues on existing rail partly due to increases on Class I railroads in long-haul bulk and intermodal trains arriving from or departing to the mid-west and other states. According to the study, long-haul trains tend to be more profitable for rail companies and hence create an economic barrier for Class II short-haul trains that typically transport state grown agriculture goods and link to Class I railways. The report states: "The railroads are focusing on high-volume and long-haul services, but the state's industrial and agricultural shippers also need low volume and short-haul services".

The EIS should analyze impacts from increases in long-haul or intermodal trains to the proposed terminal and to the Washington State agriculture industries. Analysis should include, but not be limited to: socio-economic impacts to DNR agriculture revenues; potential for reduced crop productivity associated with coal dust particles; limits on access for purposes of managing DNR lands; reductions in the ability for producers to move goods to international ports due to increased congestion; and, opportunities to improve rail infrastructure. Mitigation measures should be identified.

The EIS should also analyze the impacts of coal dust on forests, agricultural crops, and other commercial uses of state managed lands throughout all rail corridors that would be used to move commodities going to the marine terminal. Studies have demonstrated significant amounts of coal dust may blow off coal train cars during transit.

October 1, 2013

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Re: Environmental Impact Statement Scoping Comment for Proposed Millennium Bulk Terminals at Longview, WA

I. Introductory Note: We are deeply concerned about the potential impact on public health and the environment from the proposed coal export terminal at Longview, WA and the transport of coal by rail from Wyoming's Powder River Basin across the United States and along the Columbia River.

In this comment we draw particular attention to one aspect of the potential impact of the proposed project: the effects of cadmium toxicity from coal and coal dust on aquatic life in general and on shellfish in particular. The dangers from some of the other heavy metals in coal and coal dust, such as lead, mercury, and arsenic are more widely known. Cadmium is found in coal and coal dust in smaller quantities than lead and mercury, but its toxicity is such that it may actually pose an even greater danger. Similarly, public attention might more easily focus on larger animals, such as salmon and marine mammals. But oysters, crabs, clams, and other shellfish have significant commercial and recreational value in Washington and Oregon, in addition to their intrinsic value as part of the Columbia River estuary's unique marine environment. This focus should not diminish concern for all potentially affected species, aquatic and terrestrial, since the ecosystems involved must be considered as integrated systems and shellfish comprise an important part of the food chain. Nor should it diminish concern for public health, since this too depends in myriad ways on environmental factors.

The "Scientific Background" section (below) is crafted to be accessible to non-experts, but we are asking for analysis in the environmental impact statement that meets the highest standard of

professional, scientific investigation. We have included excerpts from scientific publications in the "Numbered References" section; these are noted in the text of the background statement and provide examples of research that the EIS should take into account. Along with other references in the "Bibliography" section, they are intended to help show the extent and quality of current research world wide on the problem of cadmium toxicity. They should serve as a point of departure for the research that should be included in the EIS, rather than the sole base for it.

II. Scientific Background – Coal and Cadmium: Coal in general, and Powder River Basin coal in particular, contains numerous heavy metals that are toxic to humans and other creatures. These include, among others, lead, mercury, nickel, cadmium, selenium, manganese, antimony, and arsenic. Coal also contains the radioactive elements thorium and strontium.

Transporting coal by train or truck and creating stockpiles for shipping sends coal dust into the air, which diminishes air quality and subjects nearby populations to dust inhalation. Health effects from exposure to coal dust include increased asthma, wheezing and cough, especially in children and the elderly. A wide range of serious health problems accompanies exposure to the heavy metals present in coal dust. Coal dust may also be carcinogenic due to the presence of polycyclic aromatic hydrocarbons (PAH).

Each of these metals as well as the spectrum of carcinogenic polycyclic hydrocarbons presents hazards to many species including humans. As may be expected, there is more scientific literature on the effects of these contaminants on humans than on other species; however, by the precautionary principle, it is reasonable to extrapolate data from other organisms to humans and vice versa.

Based upon a literature examination, we believe we must be wary of additional cadmium introduction to natural ecosystems because of established adverse effects on both humans and wildlife. That is not to imply that the other metals and chemicals should not be matters of concern. For example, mercury is certainly a huge hazard also.

Several facts provide a platform for understanding the hazards of cadmium contamination of the environment. First, cadmium occurs in many soils and rocks. It is easily mobilized by various anthropogenic activities such as agriculture, forestry operations and mining. There can, therefore, be levels of cadmium present in soils, waters and sediments that provide a "background" of cadmium that may allow little leeway for added accumulation before toxic concentrations result. (E.g., Numbered Reference 1).

Second, certain organisms, such as shellfish, are able to actively sequester cadmium in their bodies due to the presence of a metal-binding protein. This "bioaccumulation" can greatly magnify the concentrations of cadmium in the environment by astounding factors as high as 40,000-fold. As a result, any organism that consumes these shellfish will obtain a dose of cadmium that is much greater than ambient environment levels. (E.g., Numbered References 2, 3, 4, 5, 6, 7, 8, 9, & 10).

Third, the human kidney also accumulates cadmium, leading to renal toxicity and, if not controlled, kidney failure. Women, especially those with low iron levels, as well as smokers of both sexes, are particularly at risk from cadmium toxicity. This has become a serious issue in European countries. Cadmium burdens have also been linked to osteoporosis and breast cancer. (E.g., Numbered References 11, 12, 13, 14, & 15).

Fourth, cadmium is toxic at part-per-billion concentrations to shellfish and is even more toxic to their juvenile forms. . (E.g., Numbered References 7 & 17).

Fifth, organisms at higher trophic levels that consume shellfish (as an example) can suffer adverse consequences from consumption of cadmium-containing tissues. This has been well documented for avian species. . (E.g., Numbered References 16 & 18).

Based on these facts from the scientific literature, we can predict that increased environmental cadmium burdens may cause: 1) increase in shellfish mortality; 2) decrease in shellfish reproduction and population levels; 3) increased cadmium burdens in shellfish tissue with resultant accumulation in wildlife with consequent adverse effects on terrestrial, freshwater, and marine wildlife populations; 4) increased cadmium burdens in shellfish with the potential of shutdown of recreational and commercial harvests and/or increased human body burdens with resultant kidney damage and other pathogenic effects.

Thus the externalized cost of coal has to include (among a panoply of other costs) the negative economic, ecological and human health effects (including healthcare costs) of cadmium toxicities.

III. Partial List of Specific Concerns to Be Addressed in the EIS: The scope of the EIS for the Millennium Bulk Terminals at Longview should address the concerns associated with cadmium contamination outlined above. It should also address the implications for specific species, sites, and environmental systems that can logically be drawn from the concerns outlined. The following list is not exhaustive; like the Scientific Background sketch, the excerpts in the Numbered References, and the Bibliography, it implies many additional, specific questions that should be addressed. Responsible assessment of the concerns articulated here, and the additional concerns implied by them, should draw on all relevant scientific research worldwide. It will almost certainly require new, site-specific research as well.

The EIS should, among many other things, do the following:

1. Determine existing background cadmium levels in all areas that will be subject to coal dust accumulation both in the vicinity of the proposed terminals at Longview, WA and along the rail route(s) from the Powder River Basin. This should include, though not be limited to, estuaries and watershed areas along the Columbia River, riparian areas, and land and marine areas vulnerable to wind-borne coal dust in the vicinity of the proposed terminal and along the rail route(s) from the Powder River Basin.

2. Determine future "background" accumulations of cadmium in all these areas that can be expected from current and planned and proposed future activities, including rail transport of coal along the route(s) to destinations other than the proposed terminal at Longview.
3. Determine existing and expected future background accumulations of cadmium in watersheds of river systems where migratory fish, including salmon and steelhead, will travel upriver from areas with cadmium accumulation, spawn, and die, thereby transporting cadmium contamination upriver into the watershed.
4. Determine existing and expected future background levels of cadmium in humans who will be exposed either directly or indirectly to cadmium accumulation due to the proposed project.
5. Determine existing and expected future background levels of cadmium in all aquatic and terrestrial species that will be subject to direct absorption from coal and coal dust from contaminated land or water, and/or absorption through consumption of cadmium bearing animal or plant organisms.
6. Determine rates of bioaccumulation of cadmium in both aquatic and terrestrial species that will consume and be consumed by other organisms as part of the food chain and the ecosystem.
7. Determine vulnerabilities to cadmium toxicity of all threatened and endangered species, both aquatic and terrestrial, that may be subjected to increased cadmium levels from coal and coal dust generated by the proposed project. Again, we refer to all aspects of the transport, storage, and handling of coal from the Powder River Basin to the proposed terminal at Longview, as well as its transport by sea from the proposed terminal.
8. Determine the economic impact of increased shellfish mortality resulting from increased cadmium levels in all areas affected by the transport, storage, and handling of coal and coal dust from the proposed project.
9. Include in calculations of the quantity and range of coal dust dispersal and accumulation the prevailing wind patterns along the rail routes and in the vicinity of Longview. This must include the seasonal strong winds from the east along the Columbia River Gorge, as well as the frequent, strong southwest winds common to the region.
10. Include in the calculation of the accumulations of cadmium the amount that will be carried back in the atmosphere from the sites where the coal will be burned.
11. Determine vulnerability to cadmium toxicity and rates of bioaccumulation in salmon that consume aquatic species that will be subject to increased cadmium levels in all areas affected by transport, storage, and handling of coal.
12. Determine capacity for bioaccumulation of cadmium in salmon that will be subjected to increased levels due to the transport, storage, and handling of coal and the impact on upriver species both aquatic and terrestrial that will consume these salmon after they have migrated upriver, spawned, and died. Since salmon provide the principal source of nutrition for plants and wildlife in Pacific Northwest watersheds, this implies virtually all wildlife in watersheds with runs of salmon and steelhead that may be subjected to cadmium toxicity from the proposed project.
13. Determine public health impacts resulting from human consumption of shellfish with increased cadmium levels.
14. Determine economic impact of increased cadmium levels for commercial, recreational, cultural, and tourism activities associated with oysters, crabs, and other shellfish. Evaluate this impact in the light of current and expected levels of bacteria contamination

and ocean acidification, factors already recognized as threatening shellfish populations and thus impacting the human activities associated with them.

15. Base calculations of cadmium accumulations on expected rates of coal and coal-dust dispersal from transport by train, storage and handling at the proposed terminal, and subsequent transport from the terminal by ship.
16. Base additional calculations on the amounts of coal and coal dust that will predictably escape due to mishaps caused by acts of nature and human error. These include, among other things, floods, earthquakes, train derailments and accidents, and shipping accidents. (We note there have been several train derailments with spilled coal in the national news in the time since the application for the terminals at Longview was submitted. There was also a major collision of a coal transport ship with the loading dock at the coal terminal in Vancouver, BC, with major damage to the dock and coal spilled into the water [cf. The Vancouver Sun 12/8/12]).
17. Determine public health impacts of increased cadmium levels in shellfish, salmon, and other fish among human populations that by individual choice or in keeping with cultural tradition depend more on these food sources than the average population. This may include some Native American tribes and communities.
18. Determine public health impacts from direct contact with coal dust and also from the introduction of cadmium and other heavy metals into the food chain, including fish and shellfish to be consumed by humans as well as agricultural products potentially contaminated by coal dust.
19. Determine public health impacts from direct contact with wind-borne coal dust, exposure through the food chain, and also the return of cadmium in the air from coal we export being burned in Asia. This analysis should include cadmium introduced into water supplies.
20. Include in the analysis cadmium and other heavy metals introduced into the environment by escapement of water used to cool coal piles and lessen the amount of dust picked up by wind.
21. Include in the analysis the coal dust blown off train cars by wind as they wait on sidings, especially in populated areas and also along shorelines. Based on siding locations and wind patterns, certain areas and communities could thus experience heavier than average exposure and accumulation. Returning train cars must also be counted, since they do not empty completely. This is true particularly in winter when the coal arriving from Wyoming is still frozen and tends to remain on the inside surfaces of the car when emptied.
22. Among potential health impacts, consider that cadmium has been associated with learning disabilities in children.
23. Measure the effects of cadmium accumulation on oyster farming in the context of increasing ocean acidification and bacterial contamination.
24. Analyze the above effects in the context of cumulative effects based upon total emissions of heavy metals not only from domestic emissions associated with this proposal but also with the atmospheric deposition burden of transport back to the U.S. from end use sites, and that also in terms of the cumulative deposition via atmospheric transport from increase in worldwide coal use.
25. The analysis must incorporate the project-specific and also cumulative effects on carbon dioxide emissions, not only on global warming-climate change, but also on OCEAN

ACIDITY increases. Increases in ocean acidity will not only adversely affect all shellfish and calcium-dependent species, but may well lead to increased release of toxic heavy metals from ocean sediments and bedrock.

26. A similar analysis must be undertaken with regard to near-shore and deep oceanic sediment absorbed anthropogenic pollutants that may be increasingly released as ocean acidity changes.
27. The *in toto* effect of all the above must be related to the survival and fecundity of all threatened and endangered species, state or federal that occur in the affected ecosystems which of course are worldwide. That analysis must also be extended to all species of commercial interest.
28. Assess the above impacts of cadmium toxicity associated with coal transport, storage, and handling in a comprehensive, programmatic environmental impact statement that includes all coal terminals proposed in the Pacific Northwest.

IV. Analysis: The EIS should draw on research already carried out by scientists in the US and abroad. The bibliography (below) offers examples of available studies that can serve as points of departure. The analysis should also initiate new research to fill gaps in current knowledge and to extend it. The potential impacts of cadmium toxicity are too serious, too far-reaching, and too long lasting for anything but a complete and honest, scientific analysis.

V. Mitigation: We believe the concept of "mitigation" for these impacts is misguided. Many potentially affected species are already under stress and suffering declining populations due to various forms of toxic pollution and environmental degradation. These include species familiar to people who live near the Pacific Coast -- oysters, orca whales, salmon (Chinook, chum, sockeye, and coho in different locations), as well dozens more on the state and federal threatened and endangered species lists: American white pelicans, brown pelicans, bull trout, steelhead (various locations), rockfish (several varieties), fishers, sea turtles (green, leatherback, loggerhead), whales (blue, fin, humpback, orca, North Pacific right, sei, and sperm), sandhill cranes, and sea otters, to name some. To risk further declines and potential extinction of these species by allowing a project which will surely result in increased introduction of toxic substances into the environment is simply unacceptable. The same applies to negative impacts on human health. The only reasonable approach is to speak of *guaranteed prevention*. Given the current, available means of transport, storage, and handling of coal and the established record of this activity, we believe that guaranteed prevention is not honestly possible. Any company or its representative that would offer such a guarantee could not possibly be doing so in good faith. The true costs involved in transporting, storing, handling, and using coal *safely and cleanly*, if this were even possible, would be simply too great for there to be any profit in it. We include in the true cost the so-called "external costs," which typically are borne by communities, the general public, and the environment rather than the coal industry. The potential cost to human health and the environment from the accumulation and toxicity of cadmium, along with that of other heavy metals, must be included in the assessment. If it is, we believe it will be obvious there is no satisfactory way the effects can be "mitigated."

VI. Alternatives: There are many alternatives to building a coal-export terminal at Longview, WA that will work much better to help the local and regional economies, create good jobs, protect public health, and preserve the unique environment along the Columbia River, and along the rail route from Wyoming to Washington state. Longview, Cowlitz County, and the state of Washington should stay on course with existing initiatives to lessen rather than increase pollution in the Columbia River, protect existing jobs associated with shellfish harvesting and fishing, stop our use of coal for generating electrical power, and support research and development of wind and solar energy.

VII. Numbered References: These excerpts from scientific research publications illustrate the sorts of available data that should be considered in the EIS. Along with the resources noted in the Bibliography, they should serve as points of departure for a complete study.

Reference 1. "Critical Soil Concentrations of Cadmium, Lead, and Mercury in View of Health Effects on Humans and Animals," deVries, et. al.: "Assessment of the risk of elevated soil metal concentrations requires appropriate critical limits for metal concentrations in soil in view of ecological and human toxicological risks. This chapter presents an overview of methodologies to derive critical total metal concentrations in soils for Cd, Pb, and Hg as relevant to health effects on animals and humans, taking into account the effect of soil properties. The approach is based on the use of nonlinear relationships for metals in soil, soil solution, plants, and soil invertebrates, including soil properties that affect metal availability in soil. Results indicate that the impact of soil properties on critical soil metal concentrations is mainly relevant for Cd because of significant soil-plant, soil-solution, and soil-worm relationships. Critical Cd levels in soil thus derived are sometimes lower than those related to ecotoxicological impacts on soil organisms/processes and plants, which is especially true for critical soil Cd concentrations in view of food quality criteria for wheat, drinking water quality, and acceptable daily intakes of worm-eating birds and mammals."

Reference 2. "**Exploring Spatial and Temporal Variations of Cadmium Concentrations in Pacific Oysters from British Columbia," Feng, CX., et. al. (Abstract):** "Oysters from the Pacific Northwest coast of British Columbia, Canada, contain high levels of cadmium, in some cases exceeding some international food safety guidelines."

Reference 3. "Cadmium in Shellfish: The British Columbia, Canada Experience…," Bendell LI. (Abstract): "Over 10 years ago, research scientists in the federal department of Fisheries and Oceans Canada (DFO) were alerted to the presence of high levels of cadmium, a toxic metal, in the Pacific oyster (Crassostrea gigas) cultured in British Columbia (BC), Canada waters. This mini-review summarizes the most recent published studies on levels of cadmium in shellfish from the Pacific Northwest (BC and Washington State)."

Reference 4. "Geochemical Survey and Metal Bioaccumulation of Three Bivalve Species," Baudrimont, M. et. al. (Abstract): "A 15-month experiment combining a geochemical survey of Cd, Cu, Zn and Hg with a bioaccumulation study for three filter-feeding

bivalve species (oysters, Crassostrea gigas; cockles, Cerastoderma edule; and clams, Ruditapes philippinarum) was conducted in a breeding basin of the Nord Medoc salt marshes connected to the Gironde estuary, which is affected by historic polymetallic pollution…. Although Cd bioaccumulation of oysters was lower in the basin than in the estuary during the same period (27,000 ng g(-1), dry weight and 40,000 ng g(-1), respectively) these values are largely above the new human consumption safety level (5000 ng g(-1), dw; European Community, 2002)."

Reference 5. "Cadmium Toxicity Among Wildlife in the Colorado Rocky Mountains," Larison, James R., et. al. (Abstract): "Our results suggest that cadmium toxicity may be more common among natural populations of vertebrates than has been appreciated to date and that cadmium toxicity may often go undetected or unrecognized. In addition, our research shows that ingestion of even trace quantities of cadmium can influence not only the physiology and health of individual organisms, but also the demographics and the distribution of species."

Reference 6. "Cadmium Toxicity to Three Species of Estuarine Invertebrates," Pesch, Gerald and Nelson E. Stwart (Abstract): "Three species of estuarine invertebrates, *Palaemonetes pugio* (grass shrimp), *Pagurus longicarpus* (hermit crab) and *Argopecten irradians* (bay scallop), were exposed to Cd in flowing seawater at concentrations of 0·06, 0·12, 0·25, 0·5 and 1·0 mg/litre. Incipient LC_{50} values of 0·53 and 0·07 mg/litre were estimated for bay scallop and hermit crab, respectively. The toxicity curve for grass shrimp had not stabilised, but the incipient LC_{50} value was estimated to fall within a range of 0·2 to 0·3 mg/litre. Short-term response, as measured by time to 50% mortality at the highest Cd concentration, was 10, 21 and 23 days for the bay scallop, hermit crab and grass shrimp, respectively. Scallop growth was inhibited at all exposure concentrations with a measured 42-day EC_{50} value of 0·078 mg/litre Cd. Byssal thread detachment precedes death in bay scallops. An EC_{50} value of 0·54 mg/litre Cd for byssal detachment was measured on day 8 of the bioassay before appreciable mortality. This compared favourably with the incipient LC_{50} value of 0·53 mg/litre Cd. Cadmium accumulation occurred at all concentrations in bay scallop and grass shrimp."

Reference 7. "**Acute Toxicity of Copper, Cadmium, and Zinc to Larvae of the Crab *Paragrapus quadridentatus* (H. Milne Edwards), and Implications for Water Quality Criteria," M Ahsanullah and GH Arnott** (Abstract): Acute toxicity tests were carried out on the larvae of *P. quadridentatus* and 96-h LC50 values of 0.17, 0.49, and 1.23 mg/l were determined for copper, cadmium, and zinc respectively. Potency ratios of the three metals were as follows: Cu/Cd 3.1, Cu/Zn 7.2, and Cd/Zn 2.4. Larvae were found to be nine times more sensitive to zinc and at least 29 times more sensitive to cadmium than were adults. The larval 96-h LC_{50} values multiplied by an application factor of 0.01 (as recommended in Victorian water quality criteria) results in derived 'safe' concentrations, which in the case of copper and zinc are below the stated 'minimal risk concentrations' of 10 and 20 μg/I respectively. In view of the known greater sensitivity of larvae of many taxa to heavy metal toxicity, the validity of using the same application factor for both adult and larval stages is questioned."

Reference 8. "Bioaccumulation of Cadmium in Marine Organisms," Frazier, JM. (Abstract): "A general review of cadmium concentrations in marine organisms and studies of cadmium bioaccumulation is presented. Factors which influence cadmium concentrations, such

as regional differences, seasonal fluctuations and salinity, are discussed and species which are likely to accumulate cadmium identified. Experimental studies designed to investigate the influence of some of these factors on cadmium bioaccumulation in a filter feeding bivalve mollusk, the American oyster (Crassostrea virginica), are presented. Field studies of seasonal dynamics of cadmium in oysters indicate patterns which may be correlated with seasonal physiological activity. The bioaccumulation of cadmium following input to estuarine systems by natural phenomena is observed. Cadmium concentrations in oysters collected from regions of different salinity suggest an inverse relationship between cadmium concentration and salinity. Laboratory experiments designed to investigate mechanisms of cadmium accumulation demonstrate that an inducible cadmium binding protein, similar to metallothiomein, is present in the American oyster."

Reference 9: "Bioaccumulation of Cadmium in Marine Organisms," Ray, S. (Abstract): "It has been established that, although Cd occurs in the marine environment in only trace concentrations, most marine organisms, especially molluscs and crustaceans, can accumulate it rapidly. Cadmium is not uniformly distributed in the body and selectively accumulates in specific organs like liver, kidney, gills, and exoskeleton. The concentrations in muscle tissues are several orders of magnitude lower. The disposition of Cd in the organisms in the laboratory studies generally parallels those in nature. A number of biotic factors like body size, maturity, sex, etc. influence bioaccumulation but extensive studies are still lacking. The chemical form of Cd in the environment is of prime importance in bioaccumulation by marine organisms. Salinity can affect the speciation of Cd, and bioaccumulation is affected by both temperature and salinity. The ultimate level of Cd in the organisms will depend not only on the biotic and abiotic factors but also on metabolism of the metal by the organisms.… Much of what is known about Cd bioaccumulation by marine organisms has come from laboratory studies and there are inherent dangers in trying to extrapolate the results to field situations. In spite of tremendous progress made over the years, the basic understanding of the bioaccumulation process is still very nebulous and will remain so until the uptake, storage, and elimination processes are fully understood."

Reference 10. "The Comparison of Heavy Metal Accumulation Ratios of Some Fish Species in Enne Dame Lake (Kütahya/Turkey)." Uysal, K., et. al. (Abstract): "The metal accumulation levels for muscle, skin, gill, liver and intestine tissues of some Cyprinidae species (Carassius carassius, Condrostoma nasus, Leuciscus cephalus and Alburnus alburnus) in Enne Dame Lake (Kütahya/Turkey), which is mostly fed by hot spring waters, were investigated.… . In all tissues and the species, while the bioaccumulation factors (BAFs) of Mn, Zn, Fe and Cu were remarkably high, the BAFs of Mg, Cr, Co, and B were also fairly low or none. Although the heavy metal accumulation levels for the muscle were generally lower than other tissues, there were some exceptions. Cd level in the muscle of C. carassius was higher than the permissible limit stated by Turkish legislation, FAO and WHO."

Reference 11. "Health Effects of Cadmium Exposure…," Järup, L. et. al. (Abstract): "The diet is the main source of cadmium exposure in the Swedish nonsmoking general population. … It has been shown that a high fiber diet and a diet rich in shellfish increase the dietary cadmium intake substantially. Cadmium concentrations in agricultural soil and wheat have increased continuously during the last century. At present, soil cadmium concentrations

increase by about 0.2% per year. Cadmium accumulates in the kidneys. Human kidney concentrations of cadmium have increased several fold during the last century…. In general, women have higher concentrations of cadmium in blood, urine, and kidney than men. The population groups at highest risk are probably smokers, women with low body iron stores, and people habitually eating a diet rich in cadmium. According to current knowledge, renal tubular damage is probably the critical health effect of cadmium exposure, both in the general population and in occupationally exposed workers. Tubular damage may develop at much lower levels than previously estimated, as shown in this report…. Even if the population average kidney concentration is relatively low for the general population, a certain proportion will have values exceeding the concentration where renal tubular damage can occur. It can be estimated that, at the present average daily intake of cadmium in Sweden, about 1% of women with low body iron stores and smokers may experience adverse renal effects related to cadmium. If the average daily intake of cadmium would increase to 30 micrograms/day, about 1% of the entire population would have cadmium-induced tubular damage. In risk groups, for example, women with low iron stores, the percentage would be higher, up to 5%. Both human and animal studies indicate that skeletal damage (osteoporosis) may be a critical effect of cadmium exposure."

Reference 12. "Current Status of Cadmium as an Environmental Health Problem," Järup, L., & A. Akesson. (Abstract). "Cadmium is a toxic metal occurring in the environment naturally and as a pollutant emanating from industrial and agricultural sources. Food is the main source of cadmium intake in the non-smoking population. The bioavailability, retention and toxicity are affected by several factors including nutritional status such as low iron status. Cadmium is efficiently retained in the kidney (half-time 10-30 years) and the concentration is proportional to that in urine (U-Cd). Cadmium is nephrotoxic, initially causing kidney tubular damage. Cadmium can also cause bone damage, either via a direct effect on bone tissue or indirectly as a result of renal dysfunction. After prolonged and/or high exposure the tubular injury may progress to glomerular damage with decreased glomerular filtration rate, and eventually to renal failure. Furthermore, recent data also suggest increased cancer risks and increased mortality in environmentally exposed populations. Dose-response assessment using a variety of early markers of kidney damage has identified U-Cd points of departure for early kidney effects between 0.5 and 3 microg Cd/g creatinine, similar to the points of departure for effects on bone. It can be anticipated that a considerable proportion of the non-smoking adult population has urinary cadmium concentrations of 0.5 microg/g creatinine or higher in non-exposed areas. For smokers this proportion is considerably higher. This implies no margin of safety between the point of departure and the exposure levels in the general population. Therefore, measures should be put in place to reduce exposure to a minimum, and the tolerably daily intake should be set in accordance with recent findings."

Reference 13. "Cadmium Exposure in the Population: From Health Risks to Strategies of Prevention," Nawrot, TS., et. al. (Abstract): "We focus on the recent evidence that elucidates our understanding about the effects of cadmium (Cd) on human health and their prevention. Recently, there has been substantial progress in the exploration of the shape of the Cd concentration-response function on osteoporosis and mortality. Environmental exposure to Cd increases total mortality in a continuous fashion without evidence of a threshold, independently of kidney function and other classical factors associated with mortality including age, gender, smoking and social economic status. Pooled hazard rates of two recent

environmental population based cohort studies revealed that for each doubling of urinary Cd concentration, the relative risk for mortality increases with 17% (95% CI 4.2-33.1%; $P < 0.0001$). Tubular kidney damage starts at urinary Cd concentrations ranging between 0.5 and 2 μg urinary Cd/g creatinine, and recent studies focusing on bone effects show increased risk of osteoporosis even at urinary Cd below 1 μg Cd/g creatinine. The non-smoking adult population has urinary Cd concentrations close to or higher than 0.5 μg Cd/g creatinine. To diminish the transfer of Cd from soil to plants for human consumption, the bioavailability of soil Cd for the plants should be reduced (external bioavailability) by maintaining agricultural and garden soils pH close to neutral (pH-H(2)O of 7.5; pH-KCL of 6.5). Reducing the systemic bioavailability of intestinal Cd can be best achieved by preserving a balanced iron status. The latter might especially be relevant in groups with a lower intake of iron, such as vegetarians, and women in reproductive phase of life. In exposed populations, house dust loaded with Cd is an additional relevant exposure route. In view of the insidious etiology of health effects associated with low dose exposure to Cd and the current European Cd intake which is close to the tolerable weekly intake, one should not underestimate the importance of the recent epidemiological evidence on Cd toxicity as to its medical and public health implications."

Reference 14. "Cadmium Linked to Breast Cancer, " Brown, Anthony": "Women with the highest levels of cadmium in their urine have more than a two-fold higher risk of breast cancer than women with the lowest levels, according to a new study. However, further studies are needed to determine if these elevated levels are a cause or effect of breast cancer. Although cadmium, a heavy metal, has been classified as a probable cancer-causing substance by the US Environmental Protection Agency, until now no human studies have investigated its link with breast cancer."

Reference 15. "Health Concerns of Consuming Cockles (Cerastoderma edule L.) from a Low Contaminated Coastal System," Figuera E., et. al. (Abstract): "Commercial and recreational harvesting of shellfish within the coastal systems is usually very extensive. Since these ecosystems are frequently subjected to contamination, namely from agricultural, urban and industrial activities, and shellfish generally display a high capacity to bioaccumulate metals, populations may be at risk in terms of toxic metal exposure as a consequence of the harvesting and ingestion of near shore coastal marine organisms."

Reference 16. "Sea Ducks and Aquaculture: the Cadmium Connection," Bendell LI. (Abstract): "Elevated concentrations of cadmium have been reported in the kidneys of sea ducks that forage along the Pacific Northwest, and cadmium has been postulated as a possible cause of population declines. The blue mussel (Mytilus spp.) which occurs in dense numbers on aquaculture structures and are a primary prey item for sea ducks also contain elevated cadmium concentrations. To determine if foraging on mussels associated with aquaculture structures could pose a toxicological risk to sea ducks, amounts of cadmium ingested per body weight per day by a representative sea duck species, the surf scoter (Melanitta perspicillata), were estimated and compared to the reported avian cadmium NOAEL (no observable adverse effect level) and LOAEL (lowest observable adverse effect level). Results indicate that in some locations within the Pacific Northwest, sea ducks could be exposed to toxicologically significant levels of cadmium associated with mussels foraged from aquaculture structures. This raises the possibility that such exposure could be contributing to observed population declines in these species."

Reference 17: "Toxicity of Cadmium to Six Species in Two Genera of Crayfish and the Effect of Cadmium on Molting Success," Wigginton, AJ, and Birge W J. (Abstract): "Nine acute (96-h) toxicity tests were conducted on six species of crayfish (Cambaridae). Six tests focused on adults, and three tests examined juveniles…. Crayfish sensitivity to Cd varied by a factor of nine among species tested as adults and by a factor of 17 among species tested as juveniles. Molting was a sensitive life stage for crayfish. Most individuals that molted shortly before or during exposure to Cd died, whereas all controls that molted in the adult assays survived. Because molting is a sensitive, recurring life-cycle event, molting individuals should be included in toxicological analysis despite some contrary recommendations."

Reference 18: "Cadmium Hazards to Fish, Wildlife, and Invertebrates…," Eisler, Ronald (Summary): "Cadmiuim contamination of the environment is especially severe in the vicinity of smelters and urban industrialized areas. There is no evidence that cadmium, a relatively rare heavy metal, is biologically essential or beneficial; on the contrary cadmium is a known teratogen and carcinogen, a probable mutagen, and has been implicated as the cause of severe deleterious effects on fish and wildlife. The freshwater biota is the most sensitive group; concentrations of 0.8 to 9.9 ug Cd/L (ppb) in water were lethal to several species of aquatic insects, crustaceans, and teleosts, and concentrations of 0.7 to 570 ppb were associated with sublethal effects such as decreased growth, inhibited reproduction, and population alterations…. Freshwater and marine aquatic organisms accumulated measurable amounts of cadmium from water containing Cd concentrations not previously considered hazardous to public health or to many species of aquatic life; i.e., 0.02 to 10 ppb. … It is now conservatively estimated that adverse effects on fish or wildlife are either pronounced or probable when cadmium concentrations exceed 3 ppb in fresh water, 4.5 ppb in saltwater, 100 ppb in the diet, or 100 g Cd/m^3 in air."

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"Cadmium in Shellfish: The British Columbia, Canada Experience--A Mini-Review." Bendell LI. *Toxicol Lett.* 2010 Sep 15; 198(1): 7-12. Epub 2010 Apr 24. Source: Department of Biological Sciences, Simon Fraser University, Burnaby, BC, Canada. PMID: 20417697.

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(Note: The Scientific Background, the Numbered References, and the Bibliography for this scoping comment were contributed by Paul F. Torrence, Professor of Chemistry Emeritus, Northern Arizona Universitiy, and formerly Chief of Biomedial Chemistry, National Institutes of Health (retired).)

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January 11, 2013

GPT/BNSF Custer Spur EIS Co-Lead Agencies
c/o CH2M Hill
1100-112th Avenue NE, Suite 400
Bellevue, WA 98004

RE: Gateway Pacific Terminal Environmental Impact Statement (EIS) Scoping Comments

Dear Co-Leads:

Thank you for providing the Washington State Department of Transportation (WSDOT) with this opportunity to comment on the scope of the Gateway Pacific Terminal (GPT) Environmental Impact Statement (EIS). WSDOT's responsibility to Washington's citizens is to provide a safe and efficient transportation system that supports our economy, communities and the environment. It is essential for my agency to ensure that proposed actions that can adversely impact this mission are carefully assessed to identify conflicts and necessary mitigation strategies.

With respect to the GPT proposal, WSDOT's comments focus on potential impacts from increased rail traffic to state highway and ferry systems, the state's freight rail system, and passenger rail service. In addition, our comments address impacts to SR 548 in Whatcom County.

As a general comment, it will be important for the EIS to evaluate the cumulative effects to the state's transportation system of this proposal in light of other similar proposals. Also, in addition to the specific transportation related impacts discussed below, it will be important to identify and evaluate potential economic benefits and impacts of the GPT project within the state in order to comprehensively understand project implications. WSDOT suggests that the EIS assess economic benefits and impacts of the GPT project to local and state economies.

Clarification of Train Traffic

GPT project documents estimate that full project build-out would add up to 18 trains (nine loaded + nine empty trains) within the state each day, including unit trains exceeding 8,000 feet in length. It is unclear whether all nine GPT-bound trains will be long unit trains, or whether some trains (*e.g.*, those carrying commodities other than coal) would be shorter. GPT would also be equipped to receive goods, and it is not clear how imports will be transported for distribution. The EIS should clarify whether all GPT-bound trains would be long unit trains, and analyze the transportation implications of imports received at the GPT site.

Site Transportation Impacts

WSDOT requests a Traffic Impact Analysis (TIA) be done to disclose the transportation construction impacts on the local and state highway systems and ongoing traffic impacts after the GPT is in full operation. The TIA typically includes:

- Vehicular trips (trip generation & distribution on the transportation network)
- Level of Service thresholds
- Channelization thresholds
- Safety thresholds

State Highway System

Actual train routes for GPT-related trains along Burlington Northern Santa Fe Railway (BNSF) main lines have not been specified; however, these comments are based on a scenario where GPT trains would travel along the following BNSF railroad subdivisions within Washington: Kootenai River, Spokane, Lakeside, Fallbridge, Seattle, Scenic, Bellingham, and Cherry Point. This assumption is intended to identify the locations of possible impacts to the state highway system if any of these routes are used. Other state highways may be impacted and should be similarly assessed if alternate routes are chosen by BNSF.

WSDOT has identified 12 state highway-railroad grade crossings along the above-listed routes between Spokane and the GPT site, as well as an additional 17 highway intersections and interchanges where operations may be impacted due to delays at nearby highway-railroad grade crossings. Many of these locations already experience some delays under existing train volumes and may not be able to adequately absorb additional delays without mitigation measures. A list of these locations is attached.

WSDOT requests that the EIS include an analysis of how these locations would be affected by the projected increase in rail traffic, or, if other railway routes are contemplated, how state highways situated along those routes would be affected. As indicated above, WSDOT is not only interested in impacts to state highway railroad grade crossings, but also how increased delays at railroad grade crossings situated near state highway intersections and interchanges may impact those state highways. This analysis should include impacts to:

- Levels of service at affected state highway intersections/interchanges;
- Vehicle delay and queuing at state highway grade crossings and state highways impacted by local agency grade crossings;
- Emergency response capabilities; and
- Highway-rail grade crossing safety (*i.e.,* whether modification of warning devices or grade separation might be warranted with the projected increase in rail traffic).

In light of the projected 28% growth to the state's population over the next decade[1], likely increases in traffic volumes along affected state highways should be factored into the assessment.

The EIS should identify and examine strategies to mitigate any adverse impacts from added GPT-related train traffic on state highways. This should include estimating the cost of implementing those strategies, determining whether public investment would be required, and examining alternate train routes (or combinations of routes) that may result in fewer or less severe impacts to the state highway system.

Washington State Ferries

The Washington State Ferries (WSF) system is an integral part of the state's intermodal transportation network and provides significant economic benefit to the region. The ability of WSF to effectively operate is dependent on available connections with state highways to facilitate on and off loading according to schedules based on transportation demand. The scope of the EIS should include WSF's operational capabilities at the Edmonds Ferry Terminal and marine traffic operations in the San Juan Straits as described below.

Edmonds Terminal

Edmonds Terminal is one of the busiest terminals in the WSF system with 23 daily sailings. It serves over four million passengers per year, many as daily commuters, and two million vehicles per year between Edmonds and Kingston. Significantly, the Edmonds ferry route also serves as a connector route to state truck freight economic corridors due to restrictions on truck traffic and hazardous loads within Seattle tunnels and downtown areas and the presence of agricultural processing centers on the Olympic Peninsula.

At Edmonds, the BNSF Scenic Subdivision tracks are located within 20 feet of the entrance to the Edmonds Terminal used by vehicles to access and unload from WSF vessels via SR-104. Operational challenges at Edmonds Terminal exist even today as a result of vehicle delays from current train volumes through the SR-104 railroad grade crossing. WSF has recently had to eliminate two sailings per day to maintain on-time ferry schedules in response to disruptions resulting from train related delays at the SR-104 crossing.

[1] Governor Chris Gregoire, 2013 Policy Brief - Building a Better Future: Investing in Washington's Transportation System, December 2012

The SR-104 railroad grade crossing is included on the attached list of potential impacts to state highways. In addition to analyzing the highway impacts at the SR-104 crossing specified in the preceding section titled "State Highway System", the EIS should include an analysis of the impacts of increased GPT-related train traffic to:

- Ferry schedules and operations at Edmonds Terminal, including how impacts to operations at the terminal would result in further impacts at intermodal connections;
- Vehicle waiting times, including impacts to freight transporters that depend on ferry services; and
- Emergency services (WSF vessels provide critical emergency service transportation for ambulances, especially when weather conditions prevent use of aircraft for certain service areas).

The EIS should examine the alternatives to mitigate any effects of increased train traffic, including cost and the feasibility of the mitigation proposed. Alternatives to consider include, but may not be limited to:

- Relocation of Edmonds Terminal to Point Edwards with a separated grade crossing;
- Grade separation at the current terminal site; and
- Train traffic restrictions during the busiest ferry travel times (*i.e.*, commute, recreational, and weekend traffic peaks).

Marine Traffic in San Juan Straits

GPT-bound marine vessels would sail to and from Cherry Point through either Rosario Straits or Haro Straits. In addition to other passenger vessel traffic that crosses these straits, WSF sails approximately 900 times per year across Haro Straits between Friday Harbor and Sidney, British Columbia, and approximately 12,000 times per year across Rosario Straits between Anacortes and the San Juan Islands. WSDOT understands that one of the commitments from the GPT project proponents is to complete a Vessel Traffic and Risk Assessment Study for these waters. The EIS should ensure that this study includes analysis of the following areas:

- The extent that probability of collisions between passenger vessels (both WSF and other passenger vessels) and cargo vessels would increase due to additional GPT-related marine traffic;
- Assessment of whether existing rapid/emergency response capabilities are adequate to effectively respond to a range of incidents, including high severity collisions (in terms of both human and environmental protection);
- Whether the GPT project would require additional safety and environmental protection measures; and
- The costs involved to adopt additional measures to mitigate risks related to safety and environmental protection - including an assessment of whether implementation would require public investment.

Freight System Impacts

The economic vitality of Washington requires a strong freight rail system capable of providing its ports, farms and businesses competitive access to North American as well as international markets.

According to Surface Transportation Board Waybill data, the Class I freight rail system in Washington transported 115.8 million tons of cargo in 2010. The GPT project will have an initial capacity of 28 million tons of coal and a maximum capacity of 54 million tons. This represents a potential increase in tonnage moving on the Washington freight rail system of 24% initially and 46% when the terminal is functioning at maximum capacity (in 2010 numbers).

The GPT project will increase freight rail jobs in Washington but may also increase the risk of capacity constraints and bottlenecks and inhibit rail system accessibility to some customers. WSDOT recommends that an evaluation of future capacity constraints, bottlenecks and rail system accessibility in Washington be included in the EIS. The EIS should include a detailed operations and capital needs assessment by BNSF to address future bottlenecks and capacity constraints. The assessment should be robust enough to address capacity needs when the GPT is operational at half-capacity (8-10 round trip trains) as well as at maximum capacity (18 round trip trains). Particular attention should be given to how the BNSF will ensure adequate accessibility to the rail system for future growth in agriculture, container and other general merchandise train traffic.

BNSF should address other potential operational changes that could impact capacity. These may include: directional running (*e.g.*, all westbound traffic uses the BNSF Fallbridge Subdivision), train fleeting (*i.e.*, running multiple trains in a single direction, reducing the need to plan train meets), expected impacts of Positive Train Control, mudslide mitigation and resiliency planning, increased speed limits, increased train lengths and the use of distributed power (*i.e.*, locomotives placed in the middle or at the end of trains).

As mentioned above, BNSF should provide a list of preferred capital improvements that address expected bottlenecks and other capital constraints. This list could include the following: new train passing sidings or siding extensions, additional sections of double or triple track, additional storage-in-transit or other yard track.

Finally, the assessment should cover all rail line segments in Washington that have the potential to be affected by the GPT project.

Amtrak Cascades Intercity Passenger Rail Service

The Pacific Northwest High Speed Rail Corridor is one of ten corridors designated by the U.S. Department of Transportation for high-speed intercity passenger rail service. The service has been an increasingly strong component of the Pacific Northwest's intermodal transportation system since the Amtrak Cascades' inaugural run in 1994. In its 19 years

of operation, the service has increased the number of daily trains to 11; extended its geographic reach from Eugene, Oregon to Vancouver, British Columbia; and grown the annual ridership from 180,209 in 1994 to nearly 850,000 in 2011.

The states of Washington and Oregon, Amtrak, and passengers pay for the Amtrak Cascades service. The United States and Canada pay for border security. The trains run on rail lines privately owned by BNSF and Union Pacific Railroad.

WSDOT has secured nearly $800 million in federal funding for a series of projects that will increase service reliability and add two Amtrak Cascades round trips between Seattle and Portland, for a total of six, by 2017. Although there has been much speculation regarding the potential for additional GPT rail traffic to adversely impact the agency's passenger rail program, WSDOT remains confident that BNSF will continue to meet current and scheduled passenger-rail service commitments that start in 2017 due to federal railroad infrastructure investments.

While WSDOT's agreements with BNSF ensure specific service outcomes for the funded improvements described above, we suggest that impacts to future passenger rail service beyond 2017 (delays, service interruptions, etc.) be identified and considered so that they can be avoided and/or mitigated by BNSF and other parties working to see successful, complementary freight and passenger uses of limited rail resources. Accordingly, the scope of the GPT EIS should address potential impacts to service planned for the future, as outlined in the 2006 *Long-Range Plan for Amtrak Cascades*. The plan identifies the following service improvements by 2023, not currently funded:

- Additional 7 roundtrips between Seattle and Portland, Oregon, for a total of 13
- Additional 2 roundtrips between Seattle and Vancouver, British Columbia, for a total of 4
- Total travel time of 5 hours, 22 minutes between Vancouver, B.C. and Portland, OR

SR 548 Impacts

Another potential area of concern regarding the GPT project is site specific work associated with the materials handling and storage yard at the BNSF Cherry Point spur. As currently proposed, it appears that the development of this site will impact an existing WSDOT wetland mitigation site, currently being used to fulfill compensatory wetland mitigation requirements. Furthermore, site and track improvements adjacent to the site are likely to affect localized flooding. Changes to the hydrology at this location could compromise adjacent SR 548 operations by increasing the likelihood of roadway flooding during extreme rain events.

The EIS should analyze GPT project impacts to the WSDOT wetland mitigation site and hydrologic impacts to SR 548, as well as identify appropriate mitigation to offset any impacts to these areas.

Thank you for the opportunity to comment on this proposal. We look forward to working with the NEPA lead agencies in addressing our comments in the EIS. Please contact me at (360) 705-7027 or Megan White at (360) 705-7480 if you have any questions or would like to discuss any of these comments.

Sincerely,

Stephen T. Reimmuth
Chief of Staff

SR:jaa
Attachment

cc: Jerry Lenzi, WSDOT
Megan White, WSDOT

Attachment to WSDOT EIS Scoping Comments on the Gateway Pacific Terminal Project

State highway railroad grade crossings and potentially impacted intersections/interchanges along possible GPT-bound train routes

BNSF Kootenai Subdivision
State highway grade crossings:

- SR 27 Pines Road (USDOT 066367E) – Spokane Valley

SR 290 closely parallels this rail line, creating the potential for delays at adjacent at-grade railroad crossings to impact SR 290 operations and levels of service. Crossings in this category include:[1]

- Idaho Road Spokane County (USDOT 066236B)
- McKinzie Road, Spokane County (USDOT 066239W)
- Harvard Road, Spokane Valley (USDOT 066240R)
- Barker Road, Spokane Valley (USDOT 066244T)
- Flora Road, Spokane Valley (USDOT 066245A)
- SR 27 Pines Road, Spokane Valley (USDOT 066367E)
- University Avenue, Spokane (USDOT 066371U)
- Park Road Spokane, (USDOT 066377K)

BNSF Spokane Subdivision
No state highway grade crossings identified

BNSF Lakeside Subdivision (Spokane to Pasco)
No state highway grade crossing identified

BNSF Fallbridge Subdivision (Pasco to Vancouver, WA)
There are no state highway grade crossings identified. However, portions of SR 14 closely parallel the rail line creating the potential for delays at adjacent at-grade railroad crossings to impact SR 14 operations and levels of service. In particular, increased vehicle delays at the Maple Street railroad grade crossing in Bingen, Washington (USDOT 090169V), which provides access to the Port of Klickitat, could back up traffic onto SR-14 and result in operational and/or safety-related impacts.

BNSF Seattle Subdivision (Vancouver, WA to Seattle)
State highway grade crossings

- SR 506 7th Street, Vader (USDOT 092484T)
- SR 505 Walnut Street, Winlock (USDOT 092493S)
- SR 516 Willis Street, Kent (USDOT 085640K)

BNSF Scenic Subdivision (Seattle to Everett)
State highway grade crossings

[1] Level of service and control delay/vehicle analysis for the intersections of these roadways with SR 290 (Existing/ 2030 No Action) was completed for the 2006 Bridging the Valley DCE, and is available upon request.

- SR-104 Main Street, Edmonds (USDOT 085445K) **Serving the WSF Edmonds Ferry Terminal*

BNSF Bellingham Subdivision (Everett to Canadian border)
State highway grade crossings

- SR 528 4th Ave, Marysville (USDOT 084640G)
- SR 531 172nd Street, Snohomish County (USDOT 084669E)
- SR 536 Kincaid Street, Mount Vernon (USDOT 084744N)
- SR 538 College Way, Mount Vernon (USDOT 084759D)
- SR 20 Avon Street, Burlington (USDOT 084766N)
- SR 548 Grandview Road, Whatcom County (USDOT 084841X)

This line segment runs parallel with Interstate 5, and intersects with local agency roadways nearby several I-5 interchanges. I-5 interchanges of concern and the corresponding at-grade crossings that may impact these interchanges include:

- I-5/ SR 528 4th Ave, Marysville (exit 199)
    - SR 528 4th Ave grade crossing (USDOT 084640G)

- I-5/88th Street NE, Marysville (exit 200)
    - 88th Street NE grade crossing (USDOT 084650M)

- I-5/116th Street NE, Marysville (exit 202)
    - 116th Street grade crossing (USDOT 084654P)

- I-5/SR 536/Kincaid Street, Mount Vernon (exit 226)
    - SR 536 Kincaid Street grade crossing (USDOT 084744N)

- I-5/SR 538 College Way and I-5 SR 538 (exit 227)
    - SR 538 College Way grade crossing (USDOT 084759D)

- I-5/Cook Road, Skagit County (exit 232)
    - Cook Road grade crossing (USDOT 084775M)

- I-5/ SR 532 Grandview Road, Whatcom County (exit 266)
    - SR 548 Grandview Road grade crossing (USDOT 084841X)

- I-5/Birch Bay-Lynden, Whatcom County (exit 270)
    - Birch Bay-Lynden grade crossing (USDOT 084845A) *the interchange is located north of the Cherry Point Spur turnout, but may be impacted depending on whether related train operations would impact the crossing.

BNSF Cherry Point Subdivision (mainline to GPT project site)
State highway grade crossings

- SR 548 Grandview Road, Whatcom County (USDOT 096133H)

DEPARTMENT OF
ARCHAEOLOGY &
HISTORIC PRESERVATION
Protect the Past. Shape the Future

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

July 17, 2013

Mr. Chris Jenkins
Regulatory Branch
Seattle District, Corps of Engineers
PO Box 3755
Seattle, Washington 98124-3755

Re: Gateway Pacific Terminal Project
Log No: 092611-10-COE-S

Dear Mr. Jenkins:

Thank you for contacting our Department regarding the definition of the Area of Potential Effect (APE) for the proposed Gateway Pacific Terminal at Cherry Point, Whatcom County, Washington.

We understand your identification of the Area of Potential Effect to only include the actual terminal facility itself and the associated mitigation areas which include the entire 1,500 acre Project area at Cherry Point.

We respectively **disagree** and believe there are clearly identifiable and reasonable foreseeable effects of the Gateway Pacific Terminal Project that indicate a greatly expanded APE which would include rail routes and seaward carriers.

A reasonably foreseeable effect, that requires an expanded APE, includes effects from the increased rail traffic, and coal cars. The scope of this project, and the associated train traffic, pose unique issues when developing the necessary cultural resource studies.

The APE must include a consideration of the potential impact of the rail portion of the undertaking upon National Register listed or eligible historic districts, Main Street program communities, and those jurisdictions with local historic preservation programs (i.e. Certified Local Governments). Local preservation programs may have locally designated historic properties along the routes and the potential socioeconomic impacts to these resources should be part of the APE. Therefore, the APE must include all communities bisected or traversed by the rail routes in Washington. Please see the attached Figure that documents the location of Historic Districts, Main Street Program Communities, and Certified Local Governments.

Additional considerations that should be within an expanded APE include construction of additional track right of way and spurs, direct and indirect effects of train traffic including vibration to historic structures, noise and traffic upon historic districts, and the impact to archaeological and historic properties due to derailments. Please see the attached Figure 1 that documents the location of archaeological sites and districts along the rail routes.

Another consideration for an expanded APE is the potential impacts from the Rail Safety Improvement Act of 2008. This Act mandates the requirement for Positive Train Control Technology (PTC) for high volume freight traffic with toxic hazardous materials. The needed infrastructure along the rail lines is a reasonably foreseeable effect of this project and should be included in the APE. There will also be substantial coordination with federal agencies who oversee changes and upgrades to the rail lines. Will there be a lead federal agency for this undertaking or will all agencies conduct separate Section 106 consultations for this project?

Panamax and Cape-sized dry bulk carriers along the Washington Coast and entering Puget Sound are clearly a reasonable and foreseeable effect of the project that should create a seaward boundary of the APE. The increased vessel traffic, associated wakes, waves, and shoreline erosion of these vessels and the increased risk of accidents, oil spills, and damage all need to be considered.

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).

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,

Allyson Brooks, Ph.D.
State Historic Preservation Officer

Archaeological Sites, National Register properties, and Local Historic Preservation Programs on Rail Line Corridors

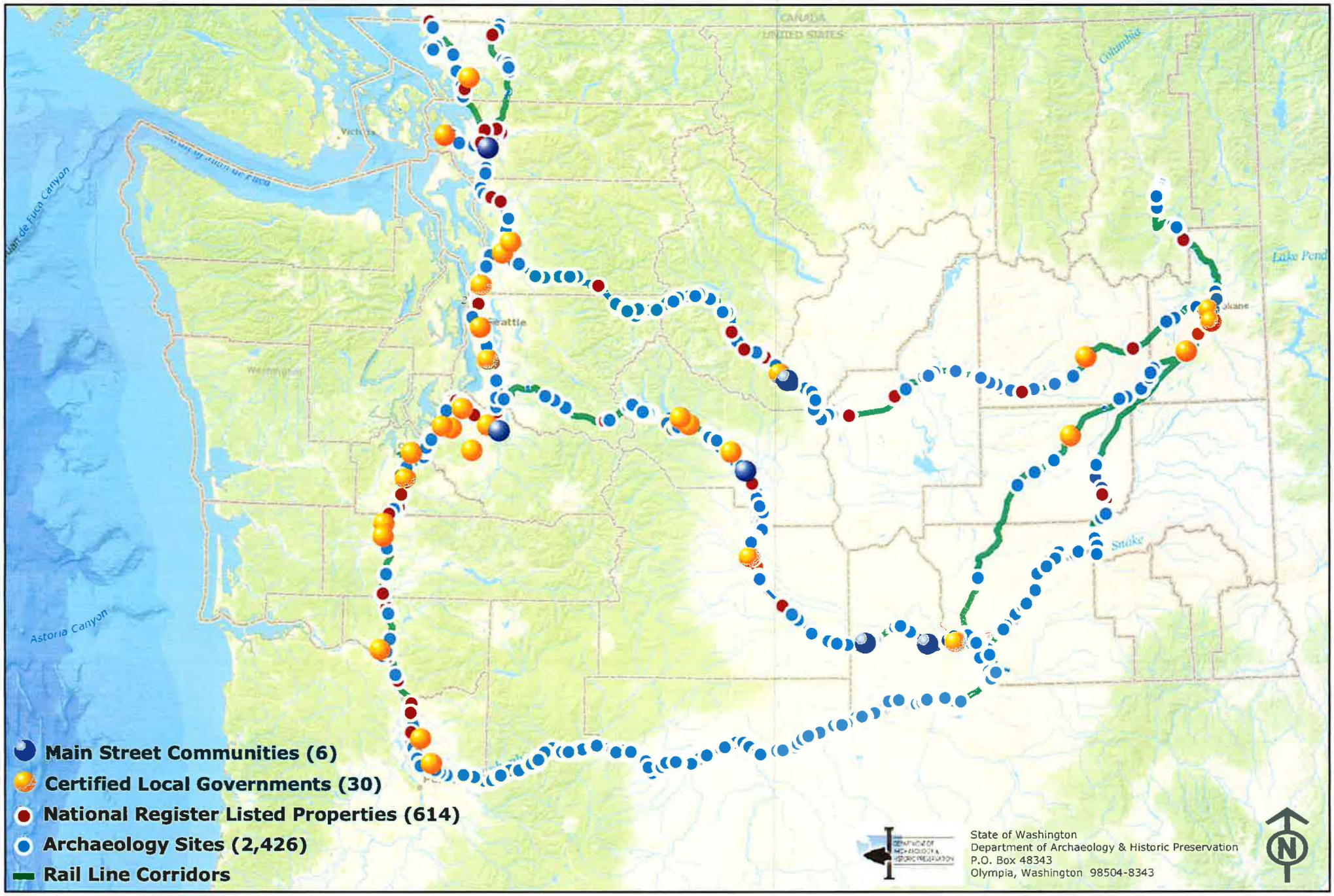

Figure 1