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Gateway Pacific Terminal EIS Co-Lead agencies
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Co-Lead agencies,
As a fishery biologist who spent the last 42 years studying and managing salmon and steelhead in Oregon, I have serious concerns about the Gateway Terminal/Cooper Spur proposal for increased exports of coal through the Pacific Northwest to Asia. I am hereby providing suggestions for what should be covered in the scope of the EIS for the proposed project after first providing you information on my background.

For my 1973 Master's Thesis at Oregon State University (OSU Department of Fisheries and Wildlife), I studied the effects of methyl mercury on coho salmon smolts, particularly the impairment of their ability to adapt to sea water after exposure to methyl mercury in freshwater. I then spent 2 years working for Oregon Department of Fish and Wildlife (ODFW) studying similar impacts from cadmium and zinc with funding from the US Environmental Protection Agency (1973 – 75). I next spent over 15 years studying impacts and making recommendations for temperature and flow releases from US Army Corps of Engineer dams on the Rogue River Basin where runs of spring and fall Chinook, coho, summer and winter steelhead, and sea-run cutthroat trout exist. During this time I also helped ODFW prepare a document on how the agency could reduce its greenhouse gas emissions to reduce risks of global climate disruption (a multi-agency effort coordinated by the Oregon Dept. of Energy), and participated in an effort coordinated by the US Fish and Wildlife Service to identify fish and wildlife indicators of global climate disruption. My final 12 years with ODFW were spent in the Fish Division headquarters on management of salmon harvest regulations, hatchery programs, habitat restoration, threatened population recovery, and multi-agency coordination for the implementation of the Oregon Plan for Salmon and Watersheds. Since retirement I have remained engaged in salmonid and broader ecological issues through membership on the Pinniped/Fishery Interaction Task Force related to sea lion predation on salmonids in the Lower Columbia River, the Advisory Committee to the joint ODFW/OSU Oregon Hatchery Research Center (OHRC), as Co-chair of the Cascades Presbytery Eco-Justice Team, and as President of the Oregon Chapter of the American Fisheries Society during 2005-06, among other endeavors. In the latter capacity, I recruited Governor Kitzhaber as a the plenary speaker at our 2005 Annual Meeting, along with Dr. Nate Mantua of the University of Washington's Climate Impacts Group, who made a presentation on potential impacts of climate disruption on Oregon salmonids. For the Cascades Presbytery Eco-Justice Team, I recruited Dr. Burke Hales of OSU's Oceanography Department to make a presentation in 2010 on effects of atmospheric CO^2 on ocean acidification and its impacts on Oregon oyster culture, and recruited Dr. James Coakley of OSU to make a presentation in 2010 on the science of climate change/disruption and potential global impacts. For the OHRC, I recruited Kathy Dello, Associate Director of the Oregon Climate Change Research Institute at OSU, to make a presentation to the Advisory Committee last March on potential climate change impacts on Oregon. So my suggestions for the scope of the EIS are based on a strong background in science fields relevant to this proposed project.

I have tried to group my comments by "topic areas" listed on your comment form. The topics are so interrelated, as is all of the human and natural world, that it is difficult to group the comments, but I've tried to list your comment form "topic areas" in my groupings.

Global Warming and Ocean Acidification ("Other" Human environment and Natural environment topic in broadest sense): First and foremost, and by law, the EIS must address "interdependent systems" that transcend geographic boundaries, such as the proposed project's contribution to global warming and ocean acidification. As the only purpose of coal transport and export is to link coal mining to coal combustion, the environmental impacts of coal mining in the Powder River Basin and coal combustion in Asia should be thoroughly studied and considered. There is little doubt that the project would exacerbate global warming and the resultant global climate disruption as well as ocean acidification from increased atmospheric CO^2 associated with a large increase in quantities of coal being combusted, as well as the combustion of fossil fuels to mine and transport the coal. President Obama in his inauguration speech today provided clear direction when he stated "We will respond to the threat of climate change, knowing that the failure to do so would betray our children and future generations. Some may still deny the overwhelming judgment of science, but none can avoid the devastating impact of raging fires, and crippling drought, and more powerful storms. The path towards sustainable energy sources will be long and sometimes difficult. But America cannot resist this transition; we must lead it."

Global warming and ocean acidification are enormous issues facing anyone alive past about the year 2040 due to cumulative impacts of greenhouse gasses in the atmosphere from burning coal and other fossil fuels, as well as the delayed impacts of these gasses. Just looking at the Oregon coast alone, we are experiencing current impacts and increasing risks to ports, other infrastructure, and private property due to a continuation and acceleration of sea level rise and peak size of winter storm waves. And specifically regarding the increase in atmospheric CO^2 that combustion of coal shipped to Asia will cause, we are already experiencing impacts of ocean acidification on marine organisms that need to incorporate calcium in their shells to survive and grow. Commercial oyster growing operations in Oregon and Washington have been affected most so far. The EIS must recognize that upwelled ocean water causing ocean acidification is largely a delayed effect: the upwelled water has been exposed to atmospheric CO^2 several decades earlier. Atmospheric CO^2 levels have risen sharply in recent decades, and water that will be upwelled by NW winds in future summers will very probably have higher CO^2 levels and lower pH than in the last decade. The EIS must address this delayed response. The rate of change in climate predicted by current climate models exceeds the rate at which many species of plants and animals can adapt, and even the rate at which humans are likely to be able to modify infrastructure, agriculture, and culture to adapt. The potential increase in these rates and impacts attributable to the proposed increase in coal exports must be thoroughly addressed in the EIS.

Air Quality Degradation (Human and Natural environment): The EIS must address many serious air quality impacts on Oregon's people and ecology from coal dust and from diesel fumes generated during loading, unloading, and transport to and from proposed coal terminals.

The EIS must include scientifically credible information on the amount of coal dust and coal spillage from rail cars, barges, and terminal/transfer sites, and how much these will affect air quality for people,

agricultural crops and livestock, wild plants, and wildlife species, both resident and migratory. The amount of coal found along the tracks on the Washington side of the Columbia River Gorge, and the anecdotal information on coal dust falling on vegetation and personal property with just the number of coal trains passing there annually at present are clear indications of the need for the EIS to address impacts from coal dust and coal spillage on transportation routes and at terminal/transfer sites. The cumulative impacts of train after train of coal must be addressed in the EIS.

Wildfire Risk (Human and Natural environment, Air quality, Water quality, Wetlands and streams, Wildlife and vegetation, and Fish topics): The EIS must assess the increased risk of wildfires and resultant smoke level in airsheds associated with coal dust and spillage building up along the tracks and subsequently ignited by sparks from train wheels. While living in Portland during the 1990's, I recall at least two fires ignited in brush by sparks from passing trains. It's a certainty such fires will happen along coal train routes, and be more severe than otherwise due to the highly combustible coal spilled along the tracks. The EIS must address the extent to which Global Climate Change models predict increased risk and severity of wildfires due to dryer and hotter conditions, as well as more severe lightning storms and winds (extreme fires associated with climate change have already been occurring, such as those in Russia and in Eastern Oregon in the last few years). The remoteness of wildfires from fire suppression equipment and crews along train routes must be addressed. Clearly, the EIS must assess the probability of fires and severity of impacts area-by-area along the routes.

Toxic Contaminant Risk (Human and Natural environment, Human Health, Water quality, Wetlands and streams, Wildlife and vegetation, Marine Species and Fish topics): The EIS must address the amount of coal and its specific contaminants likely to enter water. This includes both marine and fresh water, and both surface water and ground water. The sources will be rail cars, barges, and terminal/transfer sites. Based on this loss, the EIS must address how much this will affect water quality for people, agricultural crops and livestock, wild plants and animals, and fish species (especially those listed under Federal and State Threatened and Endangered Species laws), both marine and freshwater species, and bot resident and migratory species. Heavy metals contained in the coal are of particular concern, especially mercury. Mercury that enters streams will settle into sediments where it will be methylated by anaerobic bacteria. This may happen quickly or there may be years or even decades of delay before the methylated mercury enters fish and other aquatic organisms and does its damage throughout the food web, including human consumers of mercury contaminated fish and other aquatic species. I'm very familiar with warnings posted by ODFW in several waters of the State at this time to warn anglers of mercury contamination, some of which comes from mining activities dating as far back as 150 years. In California, there are serious risks from mercury in the migratory pathways of anadromous salmonids that are the result of mercury dumped in waterways far upriver while extracting gold from crushed ore during the gold rush days of the 1800s. Cumulative impacts to wildlife repeatedly exposed to contaminants such as mercury when animals revisit contaminated waters on seasonal migrations is a serious issue. Greatly delayed, cumulative, and long lasting impacts like these must be considered in the EIS.

Accidents at terminals and along train and barge routes will happen and will result in coal, diesel fuel, and other contaminants on the trains and barges entering the water. The EIS must do an adequate risk assessment of such accidents. Spills at terminals can and will happen, as evidenced by the recent one near Vancouver, British Columbia. Derailments and train wrecks of various sorts are a certainty, as are

barging accidents, especially at choke points above, below, and through dam locks and under bridges. The EIS must assess the highest risk locations for such accidents and the probability of the contaminants reaching surface or underground water.

The EIS must adequately assess the readiness plans for containing the inevitable train and barge wrecks and their spills, plans for rapid and thorough clean-up, and plans to monitor the spill sites for years, if not decades, afterward to assess delayed impacts on water quality. This is especially true for mercury and other heavy metals that will be leached from the spilled coal into the water, bottom sediments, and back into the water after chemical alteration occurs in the sediments.

The EIS must particularly address risks of coal and diesel impacts on water quality parameters that affect anadromous salmonids essential to meeting government obligations to historic Treaty Tribes in the Columbia Basin. It must also assess risks of coal and diesel impacts on water quality parameters that will affect sport and commercial fisheries downriver and throughout the migratory paths of these salmonids (which extend from California to Alaska, depending on species). Contaminant levels that do not have impacts on smolts in freshwater can affect their ability to adapt to sea water (I showed this to be true for mercury in coho salmon smolts as part of my MS thesis in fisheries). And contaminant levels in the smolts that do not affect them in freshwater may affect their growth and survival later during their ocean migration. The EIS must address these risks.

The EIS must address the risk of this proposal to the very large investment of funds and human effort over the last half century in trying to reduce impacts from other human activities on fisheries and Treaty Tribe obligations in the Pacific Northwest. Increasing the export of coal will only confound and compromise this effort and likely push some species beyond the edge of recovery and sustainability.

And the EIS cannot ignore the impacts of toxics blowing back to the Pacific Northwest from the burning of exported coal in Asia. It must address that toxics from present day burning of coal in Asia is detectable even in pristine lakes of high altitude wilderness, and detectable in wildlife. While in Alaska in 2005, I learned of the accumulation of such toxics in brown bears eating salmon that picked up toxics from Asia when the toxics settled in to ocean waters off Alaska. The EIS must address this issue in human populations of the Pacific Northwest, as well as fish and wildlife populations.

Direct Impacts of Trains on Wildlife (Natural environment and Wildlife): Increased train traffic will have negative impacts on wildlife, such as deer, antelope and elk. There must be some information available on the current rate of carcass counts that will allow predictions of future mortality per train added to the flow. And there are other mammalian, avian, and reptilian species besides deer, antelope and elk that will be struck and killed by coal trains. The EIS must estimate these probable impacts. In addition, the increased train traffic is likely to interrupt or change migration patterns of animals, and nesting and feeding activities near tracks. The consequences of such changes to predator-prey relationships, growth and survival must be addressed in the EIS. The resultant impacts on the popular sports of hunting and bird/wildlife viewing also need to be addressed.

Significance of Impacts: The EIS needs to address that the probable impacts of this proposed new shipping terminal and the large increase in coal transport and export through the Pacific Northwest will be very significant to people now, and especially in the future, as global climate change and ocean

acidification are exacerbated. More localized impacts will be significant to me personally because I love to travel, explore, photograph, ski, float rivers, fish and hunt, and restore my health and spirit in the remaining relatively natural areas of the Pacific Northwest. I see not one significant benefit to me in the proposed expansion of coal exports, and I see a lot of probable "costs". I see the probable "costs" to people living close to the transport routes and terminal as very significant and exceeding any short-term economic/job benefits, and I would not purchase any property near them or ever move there. The "foregone benefits" to property owners near transport routes and terminals as their property values drop when coal exports increase will be significant. The noise and odor from trains and other fossil fuel powered equipment, the traffic delays at rail crossings, and the risk of blockage of police, fire, and ambulance vehicles for unacceptable periods of time at rail crossings would be very significant if I lived in a community on a transport route. And I see the probable "costs" or impacts to future generations from increased atmospheric CO^2 alone as being extremely significant.

I want to also state that I feel it is an injustice to the people of Asia as well if we ship them fuel that we already recognize as very problematic to the human and natural environment to the extent that we have been attempting to avoid its use in the US for decades. I would hope that the EIS would incorporate the objection many of us have to such unethical business practices. As a follower of Christ's teachings and a member of a Presbytery Eco-Justice Team in Oregon, I strongly object to the unethical nature of failing to treat our global neighbors as ourselves, and shipping our problems to them.

Alternatives: The EIS must evaluate the alternatives of energy conservation and lower-impact energy sources compared with coal. People of the Pacific Northwest and the rest of the world have barely begun to conserve energy and there is a high probability that we can and will conserve more without much loss of quality of life as people begin to see the need. The increased frequency and severity of storms, droughts, wildfires, and floods in just the last year from anthropogenic causes of global warming are getting people's attention, and we are already responding with greater energy conservation. Many non-fossil fuel energy generation systems are under further and rapidly increasing development, including electrical energy from ocean wave action right out my window off the Oregon coast. There are many other ways to generate energy with lower impacts on the human and natural environment, and the EIS must address them.

Thank you for your consideration of my suggestions for the scope of the EIS. I am very concerned about the impacts of the proposed coal exports on the people and environment of not only the Pacific Northwest, and not only in the short term, but more globally and for many generations to come. I'm convinced that a properly researched and written EIS will clearly show the costs/impacts greatly outweigh the benefits.

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