

Millennium Bulk Terminals—Longview Health Impact Assessment Steering Committee Meeting Summary December 12, 2016

INTRODUCTION

The Millennium Bulk Terminals—Longview (MBTL) Health Impact Assessment (HIA) Steering Committee (Committee) met on Monday, December 12, 2016, from 1:00 p.m. to 3:00 p.m. in the Cowlitz County Training Center (The Boat House).

The following members of the Committee were in attendance. Eight members of the public also attended.

- Neil Agren, Cowlitz 2 Fire & Rescue
- Stella Anderson, RN, Resident
- Octavio Camba, Lower Columbia College
- Dian Cooper, Family Health Center
- Sandra Davis, Resident
- Bryce Divine, Longview Commercial Fishing
- Gary Fredricks, Washington State University Extension Longview, Co-Chair
- Steve Kutz, RN, MPH, Cowlitz Indian Tribe
- Bob Little, Highlands Neighborhood, Co-Chair
- Kathleen Patton, Faith Community
- Ted Sprague, Cowlitz Economic Development Council
- Mike Wallin, Councilmember, City of Longview

The following Committee members were unable to attend this meeting.

- Mary Jane Melink, Councilmember, City of Longview, and Co-Chair, The Health Care Foundation
- Jason Lundquist, International Longshore and Warehouse Union, Local 21

The following participants from Cowlitz County and the Washington State Department of Health (HIA co-lead agencies) also attended.

- Rad Cunningham, Epidemiologist, Washington State Department of Health, Healthy Community Design
- Nick Fazio, Assistant Long Range Planner, Cowlitz County Department of Building & Planning
- Michael O'Neill, Healthy Communities Lead, Cowlitz County Health & Human Services
- Jennifer Vines, MD, Cowlitz County Health Officer, Cowlitz County Health & Human Services



The following persons also attended to support the HIA co-lead agencies.

- Ed Carr, ICF Senior Technical Specialist
- Colleen Lingappaiah, ICF Senior NEPA/SEPA/CEQA Project Manager
- Darren Muldoon, ICF Senior Planner/Project Manager
- Laura Zanetto, ICF Associate
- Jen Colbert, BergerABAM Public Involvement Specialist

WELCOME AND ANNOUNCEMENTS

Mr. Fazio welcomed everyone and reviewed the ground rules for the meeting, reminding attendees it was a Committee work session. He noted that members of the public could observe and provide comments during the 15-minute comment period at the end of the meeting or submit written comments on the comment forms provided.

The Committee reviewed and accepted the agenda. Mr. Fazio reviewed the guidance for accessing the Committee's SharePoint site. The Committee discussed and approved an additional meeting to be held on Monday, December 19, 2016.

The Committee tabled the review and approval of the November 28, 2016 meeting summary until the December 19 meeting to allow additional review time.

DISCUSSION REGARDING EPA COMMENT LETTER ON THE NEPA DEIS

Mr. Fazio discussed the letter recently sent by the U.S. Environmental Protection Agency (EPA) to the U.S. Army Corps of Engineers (Corps) concerning the National Environmental Policy Act (NEPA) Draft Environmental Impact Statement (DEIS) for the Millennium Bulk Terminals—Longview project. The Corps' environmental review under NEPA is required by federal law. Mr. Fazio shared the following information with the Committee.

- The Corps is currently reviewing public comments on its NEPA DEIS. The NEPA Final EIS is expected to be released in mid-2017.
- The DEIS that the Committee has been using as a reference for the HIA process is the State Environmental Policy Act (SEPA) DEIS. The SEPA DEIS was published based on the requirements of SEPA and at the direction of the SEPA co-lead agencies, while the NEPA environmental review process is based on the distinct requirements of NEPA and under the direction of the Corps. In EPA's letter to the Corps, they advise that "The State DEIS is therefore instructive for evaluating the Corps' effects analysis." This is a reflection of the thorough analysis represented in the SEPA DEIS.
- The HIA will continue on its current timeline.

The following questions were posed after the discussion.

- Ms. Davis shared that she had read the SEPA DEIS is flawed and incomplete. Mr. Fazio responded that EPA provided a comment addressing this claim, which can be viewed on the MBTL website: <http://www.millenniumbulkeiswa.gov/sepa-comment-archive.html>.
- Mr. Kutz shared his concern about air quality near the MBTL terminal and the substantial increase of pollution. He said there is a need for further analysis for areas around the terminal and suggests a NEPA review be completed. Mr. Fazio responded that review of the NEPA DEIS has already been completed. EPA had commented on the lack of rigor in the NEPA analysis.
- Mr. Divine said he understood the scope of analysis for the NEPA document was focused primarily on the MBTL site. Mr. Fazio concurred and added the NEPA DEIS also focused on Cowlitz County.
- Ms. Patton commented she believes EPA said the NEPA DEIS was inadequate and gave it the lowest possible rating. Mr. Fazio concurred and explained the Corps will be responding to comments received on the NEPA DEIS and will be preparing the Final EIS. The Corps may or may not be compelled to complete new analyses during the NEPA review.

ICF'S ROLE IN RESEARCH AND DOCUMENT PREPARATION

In an effort to be transparent, Mr. Fazio discussed the process for preparing the HIA document. The HIA process is led by the Committee. Mr. Cunningham will advise a team of consultants identified by ICF in performing research, analysis, and writing of the HIA.

- Ms. Cooper asked if there was a conflict of interest. Mr. Fazio responded there are no conflicts of interest. ICF is a third-party reviewer as presented at the November 28 meeting. ICF is directly under contract with Cowlitz County and the Washington State Department of Ecology (Ecology). During scoping, the co-lead agencies completed a rigorous Request for Proposal (RFP) process, assuring there would be no conflict of interest with the consultant team selected.
- Mr. Kutz said he is concerned with cumulative effects and wants to understand how the City or County analyzes data to account for cumulative effects. Mr. Fazio suggested discussing this topic later in the meeting during the discussion on research topics. Mr. O'Neill advised that this topic was covered during Ms. Fox's Air Quality presentation at the November 28 meeting.
- Ms. Davis asked what toxins are in the air now and who is emitting them in Cowlitz County? Mr. Fazio responded there are air quality monitoring sites within Cowlitz County; the website link to view this data is included in the summary for the November 28 meeting.
- Mr. Divine shared that KapStone Longview's paper mill and box plant monitors its emissions and reports these emissions to Ecology. He thinks Ecology has a pretty good handle on emissions from the mills and other local sources of pollution.

PRESENTATION ON COAL DUST: SANDRA DAVIS, STEERING COMMITTEE MEMBER

Ms. Davis shared an overview of an abstract taken from a presentation to the PRB Coal Users Group at its annual meeting in 2005, *PRB Coal Degradation – Causes And Cures* <http://www.coalcombustion.com/pdf/PresentationsPDFs/PRBCoalDegradation.pdf>. She highlighted images on page 6 of the report, illustrating the degradation of coal particles over 6 days. She shared her concerns about the lack of containing coal dust during the transportation of coal (train transport, unloading, conveyor movement, pilling, and shipping) and the practicality of the sprinkler system to contain the fine powdery coal dust. She said with our now extreme weather patterns and windstorms, as was predicted here in October, her opinion is that Longview's probability of being exposed to coal dust is high since the sprinkler systems will not be able to keep the dust down. She passed around a photo of the Westshore Coal Terminal in Roberts Bank, B.C. during such a windstorm.

PRESENTATION OF THE MILLENNIUM BULK TERMINALS—LONGVIEW SEPA DEIS: DARREN MULDOON AND ED CARR, ICF

Mr. Muldoon and Mr. Carr provided an overview of the MBTL SEPA DEIS (Attachment A). The Applicant's (Millennium Bulk Terminals—Longview) only involvement was a review of the description of the proposed terminal operations to ensure accuracy. The following questions and discussion followed the presentation.

- Ms. Patton commented that people don't experience noise at average noise levels, rather at peak noise levels. It's not just locomotive horn noises that are of concern. There are many other noises involved with increased rail traffic.
- Mr. Cunningham asked what standards were used when studying noise. Mr. Muldoon responded that Federal Railroad Administration methods were used.
- Ms. Anderson asked if trains would run during nighttime hours. Mr. Muldoon confirmed the terminal would operate 24 hours per day; therefore, trains would operate during nighttime hours.
- Dr. Vines asked how mitigation actions were determined. Mr. Muldoon replied that ICF and the SEPA co-lead agencies (Cowlitz County and Ecology) collaborated on the mitigation measures. ICF provided options for mitigation and the co-lead agencies identified potential measures to mitigate adverse impacts in the DEIS. The mitigation measures in the DEIS could be refined based on comments received on the DEIS.
- Ms. Cooper asked if the noise impact totals presented in the DEIS included impacts on nearby businesses and employees. Mr. Muldoon responded that they did not, as commercial properties are not considered sensitive to noise per the methods used for the analysis. Only noise-sensitive land uses, including residences, based on the Federal Railroad

Administration guidelines, were analyzed. Mr. O'Neill suggested the Committee review maps presented in the DEIS indicating the different study areas.

- Ms. Davis shared a concern about the Cowlitz Rail Bridge becoming inadequate and asked who would pay for building another rail bridge. Mr. Muldoon replied that the rail bridge is privately owned and any improvements would be completed at the owner's discretion.
- Ms. Davis shared concern that the DEIS mentioned recreational fishermen would not be affected. Her husband fishes every year on a very popular hog line in front of the MBTL site. Mr. Muldoon responded that the analysis was not site-specific, but looked at the Columbia River in the study area.
- Mr. Kutz asked what the current background concentrations for air pollution are and how impacts from the MBTL project was assessed. Mr. Carr responded that combined operations from the terminal, vessels, and locomotives are not expected to exceed national air quality standards. An air quality model was used that considered all trains, material handling, and conveyance to ships. The model calculates the amount of coal dust that travels through the atmosphere and when, where, and how much deposits to the ground or water. The model uses hourly meteorological data as input and simulates the impacts over 3 years to determine maximum impact. Background particulate matter (PM) 2.5 air quality monitoring data is available for Kelso, which was used in the analysis.
- Mr. Kutz asked what are the health impacts of small particles that accumulate when falling during coal transport and handling? Mr. Carr responded that those impacts were not looked at in the DEIS. Mr. Wallin asked why they were not looked at. Mr. Carr replied that analysis considered the amount emitted and rate of particle deposition but did not assess if the particles accumulate.
- Mr. Kutz asked if the plume of coal dust emissions from the MBTL project had been mapped. Mr. Carr responded the coal dust deposition was illustrated in the DEIS showing deposition amounts within an approximate 5-mile radius from the project area.
- Mr. Divine asked if coal dust is considered a pollutant. Mr. Carr responded that coal dust itself is not a pollutant, but the particles contained within the dust may be, depending on their size.

REVIEW AND FINALIZATION OF HIA RESEARCH QUESTIONS

Mr. Cunningham and Mr. O'Neill have been refining the HIA research questions. The questions will be sent to the Committee prior to the December 19 meeting for review and sharing with peers for feedback.

QUESTIONS ON RESEARCH PROCESS

- Ms. Davis asked if the Committee would hear from experts after the assessment period. Mr. Fazio responded that it is up to the Committee to decide and whether they feel it would help with the HIA process. Ms. Davis asked if Ms. Alice Sutter had been contacted. Mr. Fazio replied that she had not; it will be up to the Committee to determine if additional experts should be added to the agenda.
- Mr. Fredricks stated that he would like the Committee to focus on the research questions.
- Mr. Little commented that many of the questions the Committee has been asking have not changed in the past 2 months. He suggested the Committee focus on finalizing the research questions. He then asked how the increased rail noise would affect people with hearing aids.
- Ms. Anderson asked how increased rail noise would affect patients in the hospital. Ms. Cooper said she could attest there is already plenty of noise within the hospital setting. Mr. Kutz commented the hospital is not located near the railroad tracks.
- Mr. Fredricks stated the HIA and the Committee should not get distracted by various groups that could be affected, but rather, focus on the community as a whole.
- Mr. Fazio asked the Committee to review the distributed research questions and provide him with any feedback to meet the goal of finalizing the questions at the December 19 Committee meeting.
- Mr. Cunningham asked the Committee to begin thinking about how they would like information presented in the HIA document. Ms. Davis stated her preference would be to have an outline form. Ms. Patton stated her preference would be for the HIA to be modeled after the Oakland HIA. Mr. Camba requested a limited number of acronyms and that the language be approachable.
- Mr. O'Neill asked the Committee to review the list of questions and converse with peers to gather additional feedback.

PUBLIC COMMENT

Meeting attendees gave five oral comments at the end of the meeting during the public comment period; Attachment B includes a transcript of each comment.

ACTION ITEMS

At the close of the meeting, the County and State representatives agreed to do the following.

- Provide an updated list of HIA research questions to the Committee by Wednesday, December 14.

Committee members were asked to complete the following before the December 19 Committee meeting.

- Review the list of HIA research questions and gather feedback from the community.
- Begin thinking about their preference for the organization of the HIA document.
- Review the draft summary of the November 28 Committee meeting.
- Review the draft summary of today's (December 12) Committee meeting.

In addition, the Committee co-chairs will coordinate with Mr. Fazio to create the agenda for the December 19 meeting.

SCHEDULE OF UPCOMING STEERING COMMITTEE MEETINGS

- Monday, December 19, 2016, 1:00 p.m. to 3:00 p.m., Cowlitz County Training Center
(The Boat House)

ATTACHMENTS

Attachment A: Overview of the MBTL SEPA DEIS Presentation
Attachment B: Public Comments

Attachment A
**Overview of the MBTL SEPA DEIS presented at the
December 12, 2016, Health Impact Assessment Steering
Committee Meeting**

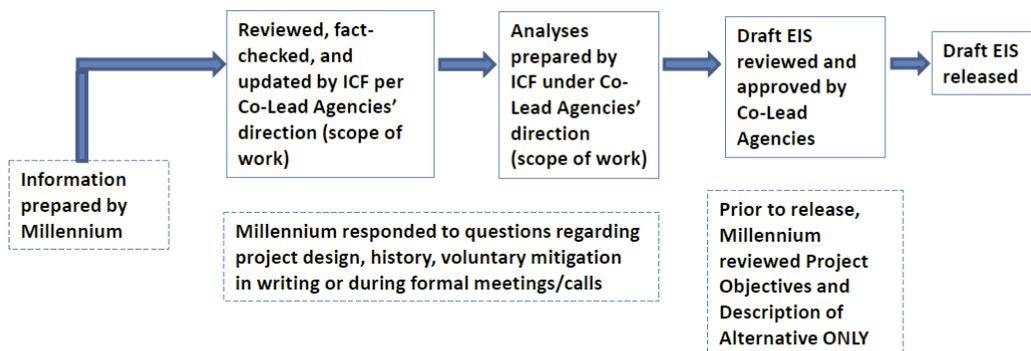
Overview of the Millennium Bulk Terminals—Longview State Environmental Policy Act (SEPA) Draft Environmental Impact Statement (Draft EIS)

December 12, 2016

Darren Muldoon and Ed Carr, ICF



Preparation of SEPA Draft EIS



MILLENNIUM Bulk Terminals - Longview
HIA Health Impact Assessment

Publication of SEPA Draft EIS

- **Cowlitz County and the Washington State Department of Ecology published the Draft EIS on April 29, 2016**
- **The Draft EIS contains three volumes:**
 - **Volume I: Draft EIS**
 - **Volume II: Draft EIS Appendices**
 - **Volume III: Technical Reports**
- **The Final EIS will respond to comments on the Draft EIS and will be published in late April 2017**



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HIA Health Impact Assessment

Draft EIS General Structure

- **Summary**
- **Chapter 1: Introduction**
- **Chapter 2: Project Objectives, Proposed Action, and Alternatives**
- **Chapter 3: Built Environment**
- **Chapter 4: Natural Environment**
- **Chapter 5: Operations**
- **Chapter 6: Cumulative Impacts**
- **Chapter 7: Public Involvement and Agency Coordination**
- **Chapter 8: Required Plans, Permits, and Approvals**



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Draft EIS Resource Areas

Built Environment	Natural Environment	Operations
Land and Shoreline Use	Geology and Soils	Rail Transportation
Social and Community Resources	Surface Water and Floodplains	Rail Safety
Aesthetics, Light, and Glare	Wetlands	Vehicle Transportation
Cultural Resources	Groundwater	Vessel Transportation
Tribal Resources	Water Quality	Noise and Vibration
Hazardous Materials	Vegetation	Air Quality
	Fish	Coal Dust
	Wildlife	Greenhouse Gas Emissions and Climate Change
	Energy and Natural Resources	




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Rail Transportation and Safety

- **Proposed Action**
 - An average of 8 loaded and 8 empty trains per day would use rail lines in Washington State.
- **Impacts**
 - Without improvements, terminal-related trains and existing trains would exceed capacity of the spur line at full terminal operations.
 - The predicted train incident frequency would increase on the spur line and BNSF main line because more trains would be operating.
- **Potential Mitigation**
 - Before each stage of operations that would increase daily rail traffic, Millennium would coordinate with the rail companies and prepare associated documentation.




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Vehicle Transportation

- **Impacts**
 - In a 24-hour period (for an average driver), no public vehicle crossings on the spur line would have long delays.
 - If a terminal-related train traveled during rush hour, 4 public vehicle crossings on the spur line would have long delays: Industrial Way, Oregon Way, California Way, and 3rd Avenue.
 - In a 24-hour period, vehicle delay would increase 10% at the crossings on the spur line, which could affect emergency service, but would depend on if an emergency vehicle would need to cross the rail line.
- **Potential Mitigation**
 - Before each stage of operations that would increase the number of trains, Millennium would notify local agencies and prepare documentation of notification.



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HIA Health Impact Assessment

Vessel Transportation

- **Proposed Action**
 - The terminal would load approximately 840 vessels per year (1,680 one-way transits on the Columbia River).
- **Impacts**
 - Increased vessel activity on the Columbia River would increase the risk of a vessel incident, such as a collision, grounding, or bunker oil spill.
 - Recreational users would account for terminal-related vessels operating in the navigation channel, similar to existing vessel traffic.
- **Potential Mitigation**
 - Millennium would attend Lower Columbia River Harbor Safety Committee meetings.



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HIA Health Impact Assessment

Noise

- **Impacts**
 - Noise levels from terminal operations would exceed applicable noise level standards at one residence (on Mt. Solo Road across from the terminal).
 - Noise from trains servicing the terminal would increase average noise levels, primarily from horns sounded for public safety at grade crossings. Noise impacts would occur at approximately 289 residences near the spur line.
- **Potential Mitigation**
 - Millennium would monitor noise levels during terminal operations at two nearby residences and reduce noise if noise levels exceed applicable standards.
 - Millennium would fund the conversion of the 3rd Avenue and California Way crossings to a "Quiet Zone" per the federal process. Quiet crossings do not require train horns to be sounded.



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HIA Health Impact Assessment

Air Quality

- **Impacts**
 - Combined operations from the terminal, vessels, and locomotives not expected to exceed national air quality standards.
 - Measureable increases in PM-10 and nitrogen dioxide would occur near the terminal, but would not be sufficient to exceed air quality standards.
 - Impact of coal exported through Millennium on Washington as burned in Asia was evaluated for sulfur dioxide and mercury, air pollutants that can be transported very long distance (across the Pacific), and found:
 - Sulfur dioxide is converted to sulfate over these distances; the Millennium fraction of Asian-sourced sulfate concentration would be less than 0.3%.
 - Mercury deposition would be less than 0.4% of the total Asian-sourced mercury deposition.
- **Potential Mitigation**
 - None proposed.



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HIA Health Impact Assessment

Coal Dust

- **Impacts**
 - **At the terminal:** Coal dust deposition and coal dust suspended in the air would have a minimal increase and would not result in an impact.
 - **Within 100 feet of the BNSF main line:** coal dust suspended in the air could increase PM-2.5 by 20% over current background concentrations, but would not result in an impact.
 - **Within 100 feet of the BNSF main line:** Coal dust deposition could result in nuisance levels that may cause visible soiling to window sills and outdoor furniture and other property.
- **Potential Mitigation**
 - BNSF would continue operation of the surfactant reapplication facility in Pasco, WA.
 - Millennium would monitor coal dust from terminal operations.
 - Millennium would establish a reporting process for coal dust complaints in Cowlitz County.



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HIA Health Impact Assessment

Questions?



Attachment B
**Public Comments Received at the December 12, 2016,
Health Impact Assessment Steering Committee Meeting**

Five oral comments were received during the public comment period at the end of the December 12, 2016, Health Impact Assessment Steering Committee meeting. Below is a transcription of the five oral comments heard during the public comment period followed by attachments submitted.

1. **Nicole DiGerlando, Highlands Neighborhood, Longview, Washington** – *I teach English at Lower Columbia College and live in the Highlands neighborhood. My house is in the red area mapped in the SEPA document. I don't think there is a thorough understanding of the noise impact. As an English teacher instruct my students to conduct thorough research. The DEIS doesn't include input from an audiologist or sound expert. It doesn't address how the noise is going to impact people. It doesn't cover sleep disturbances that can impact young children's learning capabilities that are already impacted by poverty. The noise receptors and averaging noises in the DEIS are insufficient. There is also wayside noise that the DEIS did not covered sufficiently.*
2. **Amber DiGerlando, Highlands Neighborhood, Longview, Washington** – *I spoke to you at the last meeting. There are other people residing in the high impact zone area. Noise impacts should be considered for people that work outside such as the Walmart Garden Center, Public House, and Skippers restaurant where people eat outside. These are not addressed anywhere in the DEIS. The DEIS only took into account one residential zone, not the trailer park or modular housing. People work indoors and outdoors such as loggers. The DEIS should take the OSHA noise standards into consideration.*
3. **Diane Dick, Longview, Washington** – *Economic benefits in the form of jobs and taxes have been acknowledged as important to individual and community health, and the Millennium coal terminal project will provide economic benefits to the community. However, it is equally important to examine what jobs and business activity might be lost with the resulting loss of health from economic adversities caused by the same project. What costs will the community incur from needed infrastructure improvements and increased public services? Do the benefits outweigh the losses?*

Weyerhaeuser's EIS scoping comments state "The MBTL project construction and operation, as described in the February 2012 JARPA package, suggest the potential for significant adverse impacts to the Weyerhaeuser manufacturing activities." The comments detail specific concerns about railroad traffic, fugitive emissions of coal dust contaminating raw materials and finished products, including good packaging, and the use of diesel-fueled locomotives contributing criteria and hazardous air pollutant emissions into the Longview airshed and consuming finite air pollution capacity in the airshed.

The City of Longview's comments on the USACE draft EIS recommends to "Analyze the impacts to existing businesses such as Pacific Fibre and Simpson Lumber. It appears that impacts to such entities from queuing are understated." The City also recognizes the financial burden of the coal terminal project saying, "MBT should commit to financially supporting the improvements identified in the SR 432 corridor study prepared by CWCOG and WSDOT."

Whether it's loss of property values for homeowners and decreased taxing district valuations, or impeding the business activities of current thriving job supporting industries, the negative economic impacts of the MBT coal terminal are part of the equation in understanding whether this project adds up to benefit our community. Thank you.

4. **John Steppert, Longview, Washington** – *The proposed Millennium facility not only poses an environmental issue; it not only poses a health impact issue; it also poses a justice issue. The proposed facility, because of its proximity, will impact disproportionately the Highlands*

Neighborhood, one of the poorest, most poverty stricken districts in our state – that makes it a justice issue. It will impact disproportionately an area in our community that has the highest rate of unemployment, drug use, and debilitating medical conditions such as lung cancer and diabetes. That makes this a justice issue. Because of its proximity to the proposed facility, the Highlands area will experience disproportionately higher levels of pollution and poorer air quality. That makes this a justice issue. 47% of the homes in the Highlands have children living there. It is the highest for any neighborhood in the city. This means that children living in the Highlands are more vulnerable, more susceptible, more at risk, for missed days at school, and increased visits to the ED or doctor, or more likely to not see a medical provider because of lack of good healthcare insurance. That makes this a justice issue. The Environmental Protection Agency’s recent letter to the Corps, says in part, “...there (will) be substantial predicted air pollution increases at and near the terminal...” The question I would leave for you is this. Why would we put the children of the Highlands further at risk, when they are already vulnerable by close proximity to industrial pollution? Who will pay the price for compromised health, now and into the future, for our most vulnerable, our children? – Further justice issues and concerns. It is our responsibility to protect the health of our children from the impact of coal dust, diesel pollution, and from toxins like mercury, lead, and arsenic. I urge you to let the Health Impact Assessment reflect the issues of injustice this facility poses to public health for people living in the Highlands. Thank you.

5. **Regna Merritt, Oregon & Washington Physicians for Social Responsibility** – 1) *There are going to be multiple adverse impacts to our health. Many of them are not going to be able to be mitigated. What is missing in the presentation is all the comments from tribes and agencies. I suggest that the Committee gets the other half of the picture. Read the DEIS comments. 2) What is in the DEIS talks about the standards. The role of the HIA will be seeing who will be impacted in the community. These are the questions you should ask. 3) Economic Impacts – There is data on the economic impacts of lead exposure and increased costs of healthcare and increased cost in teaching kids that are impaired by lead and need additional assistance. The following attachments should be considered.*

What are the negative economic impacts associated with increased risk to the health and safety of Cowlitz County residents and others along the transportation corridor? Who will pay? These questions must be addressed in the HIA.

For example, in WA, more than 600,000 people have asthma. Nearly 120,000 of these are children. Exposure to diesel emissions and coal dust will increase the health challenges faced by WA families.

- According to the WA Dept of Health (2016) More than 5,000 people with asthma are hospitalized each year.
- Nearly 100 people die each year of asthma.
- The US Centers for Disease Control identified WA's asthma prevalence as among the highest in the country, and steadily increasing.
- In 2010, hospitals charged about \$73 million for asthma related hospitalizations.

Cowlitz County groups at risk from unhealthy air, as identified in a 2015 report (State of the Air 2015) by the American Lung Association, include:

- Pediatric Asthma: 1,622
- Adult Asthma: 7,772
- COPD: 4,777
- Cardiovascular Disease: 7,233
- Diabetes: 7,551
- Children under 18: 23,600
- Adults 65 and over: 17,974
- Poverty Estimate: 15,944

So we must consider and include these questions in the HIA:

- How many increased asthma attacks, ER visits, and hospitalizations will result, including current and projected populations, and including under temperature inversion conditions? What is the economic cost? Who pays for the costs?
- How many increased strokes will result, including current and projected populations, and including under temperature inversion conditions? What is the economic cost? Who pays for the costs?

- How many increased myocardial infarctions (heart attacks) will result, including current and projected populations, and including under temperature inversion conditions? What is the economic cost? Who pays for the costs?
- How many COPD exacerbations will result, including current and projected populations, and including under temperature inversion conditions? What is the economic cost? Who pays for the costs?
- How much cancer will result, including current and projected populations? What is the economic cost? Who pays for the costs?
- How much acrolein, acetaldehyde, formaldehyde, heavy metals (including but not limited to mercury, lead, and arsenic), 1,3-Butadiene, polycyclic aromatic hydrocarbons, or other toxins will be deposited cumulatively? This should be analyzed in a cumulative fashion, (i.e. additive) over the next 50 years (the operating life of the terminal).
- What are the effects of chronic exposure of the above compounds on: Neonatal and childhood development? Blood and lymphatic systems? Respiratory system? Cardiovascular system? Reproduction? Cancer? What are the economic costs of these? Who pays the cost?
- What is the cost of cleanup of the cumulative environmental contaminants? Who pays the cost?

COAL DUST

1. How much accumulation will result after 10 years 20 years, 30 years 50 years of transport and coal dump storage (the operating life of the terminal)?
2. How many children and adults can be expected to have increased risk of asthma and other respiratory diseases, including current and projected populations?
3. How many coal train derailments can be expected along the rail corridor and near the terminal per year of operation of the proposed export terminal?
4. What will be the effect of contamination from coal dust and spills on farmland along the rail corridor?
5. What will be the effect of contamination from coal dust and spills on grazing animals used for human consumption?
6. What will be the effect of contamination from coal dust and spills on fresh water supplies for humans and animals?
7. What are the economic impacts of contamination from coal dust and spills on marine habitat for fish and other seafood?

NOISE

- o Considering the noise and vibration, multiple awakenings and resultant fatigue, how many people may potentially have increased blood pressure, or elevated stress hormones, including current and projected populations?

- What is the total economic cost of increased blood pressure, elevated stress hormones? Who pays for the economic costs?
- Considering the noise and vibration, multiple awakenings and resultant fatigue, how many arrhythmias, or heart attacks could potentially result from the increased noise, including current and projected populations? What is the total economic cost of the arrhythmias, or heart attacks? Who pays for the economic costs?
- Considering the noise and vibration, multiple awakenings and resultant fatigue, how many strokes could potentially result from the increased noise,
 - including current and projected populations? What is the total economic cost of the strokes? Who pays for the economic costs?
- Considering the noise and vibration, multiple awakenings and resultant fatigue, how much increased mental disease may result from associated stress, including but not limited to: depression, mental instability, neurosis, hysteria, and psychosis, including current and projected populations? What is the potential economic cost of the increased mental disease? Who pays for the economic costs?
- What is the potential impact of noise, vibration, multiple awakenings, and fatigue on childhood learning? On childhood test scores? What is the

total economic cost of the learning impairment?
Who pays for the economic costs?

- What is the potential impact of noise, vibration, multiple awakenings, and fatigue on workplace performance? What is the total economic cost of the impaired workplace performance? Who pays for the economic costs?
- How many increased traffic accidents may result from fatigue- associated sleep disturbance, including current and projected populations? What is the total economic cost of the accidents? Cost in terms of human morbidity? Who pays for the costs?