

Millennium Bulk Terminals—Longview Health Impact Assessment Steering Committee Meeting Summary November 28, 2016

INTRODUCTION

The Millennium Bulk Terminals—Longview (MBTL) Health Impact Assessment (HIA) Steering Committee (Committee) met on Monday, November 28, 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. Eleven members of the public also attended.

- Neil Agren, Cowlitz 2 Fire & Rescue
- Stella Anderson, RN, Resident
- Octavio Camba, Lower Columbia College
- Sandra Davis, Resident
- Bryce Divine, Longview Commercial Fishing
- Gary Fredricks, Washington State University Extension Longview, Co-Chair
- Bob Little, Highlands Neighborhood, Co-Chair
- Mary Jane Melink, Councilmember, City of Longview, and The Health Care Foundation, Co-Chair
- Kathleen Patton, Faith Community
- Mike Wallin, Councilmember, City of Longview

The following Committee members were unable to attend this meeting.

- Dian Cooper, Family Health Center
- Steve Kutz, RN, MPH, Cowlitz Indian Tribe
- Jason Lundquist, International Longshore and Warehouse Union, Local 21
- Ted Sprague, Cowlitz Economic Development Council

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.

- Linda Amato, AICP, ICF, Millennium Bulk Terminals-Longview NEPA/SEPA EIS Project Manager
- Julie Fox, Environmental Epidemiology Section, Outdoor Air Quality, Washington State Department of Health

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. Ms. Davis brought up a concern that a topic she submitted to Mr. Fazio had not been included on the agenda. Mr. Fazio explained that he and the co-chairs thought the agenda was full and wanted the Committee to discuss her presentation during a future Committee meeting.

Ms. Patton suggested Committee members be permitted to share evidence-based material via email, followed by a 3-minute summary presentation. The Committee concurred. Mr. Fazio will send Ms. Davis's document out to the Committee and include her presentation on the December 12 agenda. In the future, Committee members wishing to be included on the agenda will send Mr. Fazio a request, and he will share it with the co-chairs for their approval.

The Committee reviewed and approved the November 14, 2016 meeting summary. The meeting summary is available on the HIA website: <http://www.millenniumbulkeiswa.gov/hia-documentation.html>.

The Committee discussed and approved an additional meeting to be held December 19, 2016.

PRESENTATION ON THE EIS PROCESS: LINDA AMATO, ICF, MILLENNIUM BULK TERMINALS-LONGVIEW NEPA/SEPA EIS PROJECT MANAGER

Ms. Amato provided a presentation (Attachment A) clarifying the relationship between ICF Cowlitz County and its co-lead agencies (U.S. Army Corps of Engineers and the Washington State Department of Ecology), and Millennium, LLC. Following the presentation, Ms. Patton asked what ICF and AICP stood for. Ms. Amato responded that ICF is not an acronym; it is the name of the environmental consulting firm for whom she works. AICP is an acronym for the American Institute of Certified Planners.

PRESENTATION ON AIR QUALITY: JULIE FOX, ENVIRONMENTAL EPIDEMIOLOGY SECTION, OUTDOOR AIR QUALITY, WASHINGTON STATE DEPARTMENT OF HEALTH

Ms. Fox presented on air quality and, more specifically, on the health effects associated with diesel exhaust and coal dust, in both coal mines (which does not pertain to the Millennium project) and in rail cars. (Attachment B). The following questions and discussion followed the presentation.

- Dr. Vines asked for clarification of the statement, “There is no personal exposure limit for coal dust.” Ms. Fox confirmed that a personal exposure limit for coal dust has not been established for environmental coal exposure versus coal mine particulates (which is governed by the Occupational Safety and Health Administration [OSHA]).
- Mr. Divine commented there are other metals of concern in coal, such as arsenic and mercury. He asked if there is a material safety data sheet (MSDS) for the surfactant used on coal. Ms. Fox replied that she would follow up regarding the MSDS. Ms. Amato confirmed this information is located in the SEPA EIS.
- Ms. Patton asked if coal dust in the air settles. Ms. Fox replied that, while it decays, many different factors, such as weather, can alter that process. Ms. Amato confirmed some of this information is located in the SEPA EIS.
- Ms. Davis asked if coal dust particles cause acid rain. Ms. Fox was uncertain.
- Ms. Melink asked if there are air monitors in Cowlitz County. Ms. Fox responded that there are air monitors in the County that can be viewed at <https://fortress.wa.gov/ecy/enwiwa>.
- Dr. Vines asked if the National Ambient Air Quality Standards (NAAQS) are health-based. Ms. Fox replied that the primary standards are health-based.

PRESENTATION ON COWLITZ COUNTY BASELINE HEALTH: DR. JENNIFER VINES, COWLITZ COUNTY HEALTH OFFICER, COWLITZ COUNTY HEALTH AND HUMAN SERVICES

Dr. Vines presented an overview of current health conditions in Cowlitz County (Attachment C). Following her presentation, Ms. Melink asked what percentage of the population of Cowlitz County lives in the mapped area of opportunity on slide 6. Mr. O’Neill responded the map shows a combination of census tracts from Longview and Kelso. He estimated that roughly 20,000 people live there. He will confirm this number and respond with an accurate answer.

WORKSHOP

The Committee broke into two work groups, and Mr. O’Neill and Mr. Fazio led the groups in a review and further discussion of health questions summarized from the November 14 Steering Committee meeting. The outcomes of the workshop are included in Attachment D. From this organized list, specific questions will be generated for Mr. Cunningham to research.

PUBLIC COMMENT

Meeting attendees gave five oral comments at the end of the meeting during the public comment period; Attachment E includes a transcript of each comment. Additional written comments submitted by the public are also included in Attachment E.

ACTION ITEMS

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

- Post the following item to the HIA website:
 - Summary of the November 14 Steering Committee meeting
- Distribute Ms. Davis's report and include a 3-minute time period on the December 12 Steering Committee meeting agenda for her to give her presentation.
- Provide an MSDS for the surfactant used on coal, if available.
- Confirm the population total of the area indicated on slide 6 of Dr. Vines's presentation.
- Use the outcomes of today's workshop to organize HIA topics and identify questions to be researched for the HIA.
- Schedule presenters for the upcoming December 12 Steering Committee meeting.

Committee members were asked to complete the following before the December 12, Steering Committee meeting.

- Review the draft summary of today's Steering Committee meeting (November 28).

In addition, the Committee co-chairs will coordinate with Mr. Fazio to create the agenda for the December 12 meeting.

SCHEDULE OF UPCOMING STEERING COMMITTEE MEETINGS

- Monday, December 12, 2016, 1:00 p.m. to 3:00 p.m., Cowlitz County Training Center (The Boat House)
- Monday, December 19, 2016, 1:00 p.m. to 3:00 p.m., Cowlitz County Training Center (The Boat House)

ATTACHMENTS

Attachment A: EIS Process Presentation

Attachment B: Air Quality Presentation

Attachment C: Cowlitz County Baseline Health Presentation

Attachment D: Draft Research Questions

Attachment E: Public Comments

Attachment A
**EIS Process presented at the November 28, 2016, Health
Impact Assessment Steering Committee Meeting**

Millennium Bulk Terminals—Longview Management and Preparation of the SEPA and NEPA EISs

November 28, 2016

Linda Amato, AICP
ICF, Seattle



Contract

- Request for Proposal (RFP) issued by Cowlitz County for a “Third Party Consultant” in late 2012
- Proposals submitted in January 2013
- Consultant teams interviewed by Cowlitz County, Washington State Department of Ecology, and U.S. Army Corps of Engineers (Co-Lead Agencies)
- Scopes of work, schedules, and costs prepared by ICF and Co-Lead Agencies
- ICF invoices the County, Millennium (MBTL) pays ICF fees



MILLENNIUM Bulk Terminals - Longview
HIA Health Impact Assessment

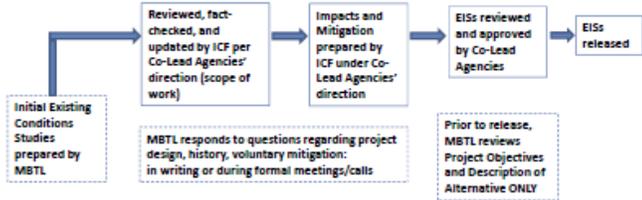
Relationships

- Lines of Communications agreement signed by ICF and the Co-Lead Agencies
- ICF contracts directly with Cowlitz County
- ICF receives joint direction from the County and Ecology for SEPA analyses and preparation of EIS
- ICF receives direction from the Corps (with County oversight) for NEPA analyses and preparation of EIS
- ICF team members NOT permitted to speak or interact with MBTL or their consultants without permission from the County, Ecology, or the Corps



MILLENNIUM Bulk Terminals - Longview
HIA Health Impact Assessment

Overview: Preparation of SEPA and NEPA EISs



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graph LR; A[Initial Existing Conditions Studies prepared by MBTL] --> B[Reviewed, fact-checked, and updated by ICF per Co-Lead Agencies' direction (scope of work)]; B --> C[Impacts and Mitigation prepared by ICF under Co-Lead Agencies' direction]; C --> D[EISs reviewed and approved by Co-Lead Agencies]; D --> E[EISs released];
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Initial Existing Conditions Studies prepared by MBTL

Reviewed, fact-checked, and updated by ICF per Co-Lead Agencies' direction (scope of work)

Impacts and Mitigation prepared by ICF under Co-Lead Agencies' direction

EISs reviewed and approved by Co-Lead Agencies

EISs released

MBTL responds to questions regarding project design, history, voluntary mitigation: in writing or during formal meetings/calls

Prior to release, MBTL reviews Project Objectives and Description of Alternative ONLY



MILLENNIUM Bulk Terminals - Longview
HIA Health Impact Assessment

Questions?



Attachment B
**Air Quality presented at the November 28, 2016, Health
Impact Assessment Steering Committee Meeting**



Diesel Exhaust, Coal Dust & Health

Julie Fox, PhD, MHS

PUBLIC HEALTH
ALWAYS WORKING FOR A SAFER AND
HEALTHIER COMMUNITY



Air Pollution

Diesel Exhaust

Coal Dust

- Health Effects
- Composition
- Exposure
- Regulations



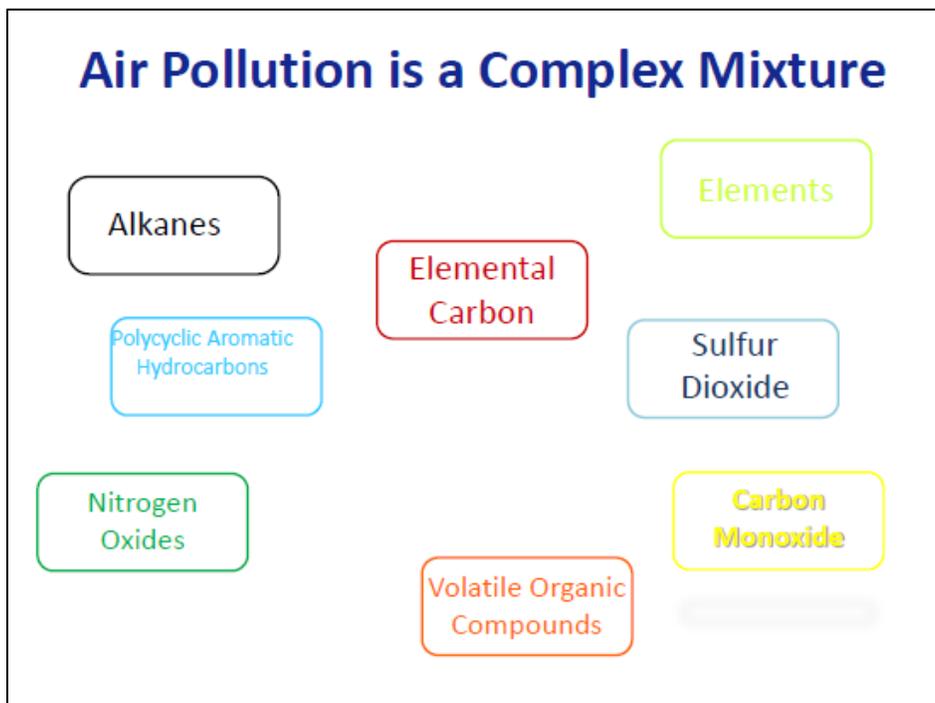
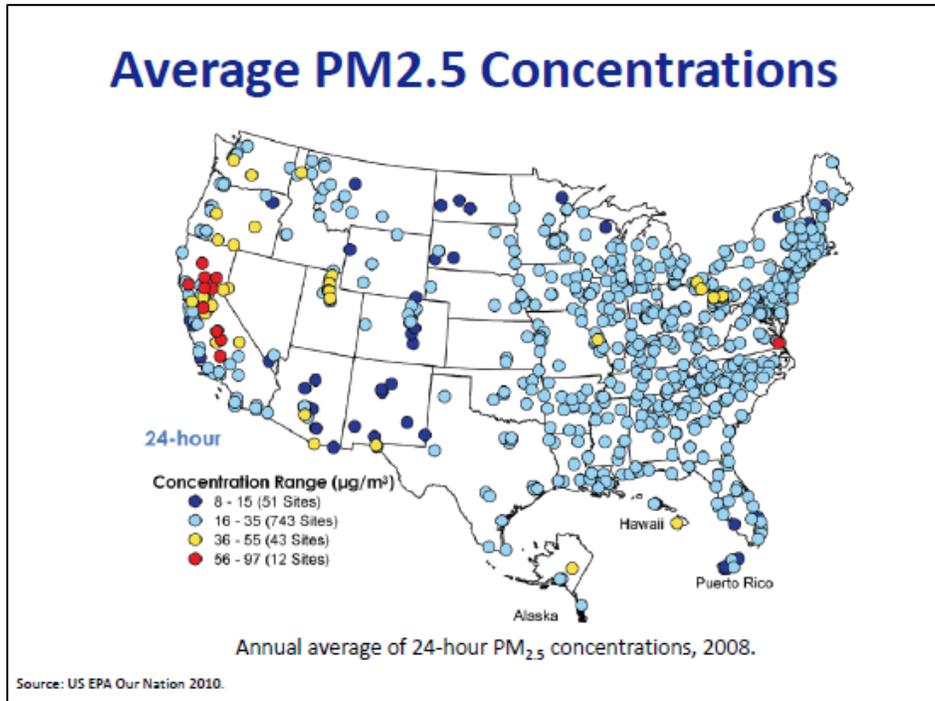
Established Health Effects (short list)		
Diesel Exhaust/ TRAP	General Air Pollution	Coal Dust
Respiratory Effects		
<ul style="list-style-type: none"> • Asthma 	<ul style="list-style-type: none"> • Asthma • COPD 	<ul style="list-style-type: none"> • Lung Function Deficits • COPD • Coal Workers' Pneumoconiosis • Progressive Massive Fibrosis
Cardiovascular Effects		
<ul style="list-style-type: none"> • Heart Disease 	<ul style="list-style-type: none"> • Heart Disease • Stroke 	
Cancer (IARC)		
<ul style="list-style-type: none"> • Lung Cancer 	<ul style="list-style-type: none"> • Lung Cancer 	
<small>Sources: CDC 2014, IARC, NIOSH Coal 2011.</small>		

Sensitive Groups

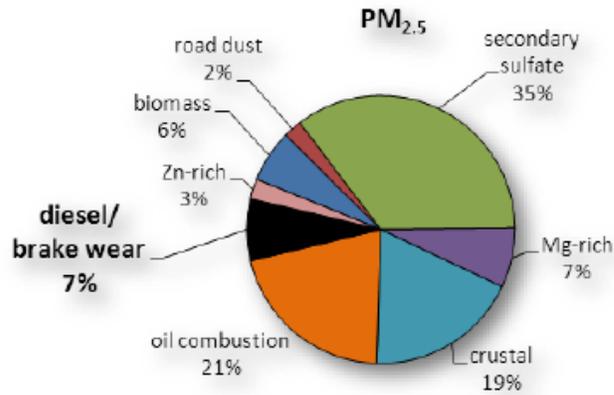
- **Children**
 - Higher breathing rate
 - More time outdoors
- **Elderly**
 - Slower elimination of pollutants
- **Pregnant women**
 - Development
 - Transfer of pollutants
- **People with Pre-Existing Conditions**
 - Exacerbation of effects







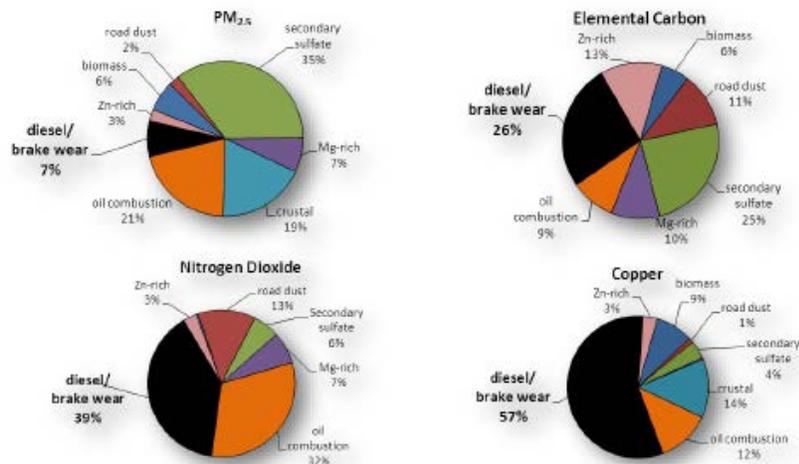
Source Apportionment in Baltimore



Source: Vedal 2013.



Source Apportionment in Baltimore

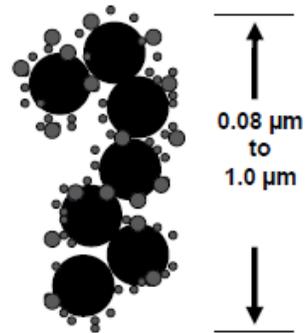


Source: Vedal 2013.



Diesel Exhaust Particles

- Mostly ultrafine particles (<0.1 μm)
- Agglomerates
- Carbon core
- Hydrocarbon, sulfate coating

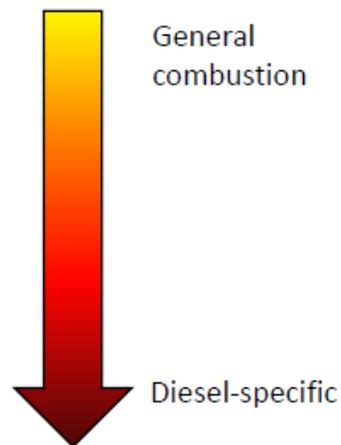


Markers of Diesel Exhaust

Fine particulate matter ($\text{PM}_{2.5}$)

Oxides of nitrogen

Elemental carbon



Carbon Measurement

- Main component of diesel exhaust particles
- Proxy for diesel exhaust
 - Other sources: wood smoke, gasoline exhaust
- Active sampling or direct reading



Types of Carbon Measurements

- Organic Carbon
 - Combined hydrocarbons
 - Mostly volatile
- Elemental Carbon
 - *Not* organic carbon or carbonate carbon
 - Non-volatile
 - Basically Graphite
 - Measured by thermal/optical measurements
- Black Carbon
 - Light absorbing carbon
 - Mainly due to elemental carbon
- Total Carbon
 - Elemental + Organic Carbon

Sources: Schauer JEAEE 2003, Weingartner AeroSci 2003.



Coal Dust

- Composition varies even within a mine
- Mostly carbon
- Minerals present
 - Clays
 - Sulfide ores
 - Quartz (crystalline silica)
- Dust in mines predominantly thoracic size
 - ~70% <10 µm (thoracic)
 - ~20% <4 µm (respirable)
 - ~10% <1 µm (inhalable) –mostly from diesel exhaust

Source: IARC Monograph #68, 1997.



Diesel Exhaust Concentrations

Population	EC Conc (µg/m ³)	EC Conc (mg/m ³)	Ref
Mining:			
Underground	27-637	0.03 – 0.6	1
Surface	4-23	0.004 – 0.02	1
Heavy Goods Vehicles:			
Mechanics	4-39	0.004 – 0.04	1
Drivers	1-22	0.001 – 0.02	1
Railroad Train Crews	4-20	0.004 – 0.02	1
Firefighters	~10-20	~0.01 - 0.02	1
General Population:			
Living in a Highly Polluted City	2-6	0.002 – 0.006	2
Average in US	0.8	0.0008	3

Sources: 1) IARC Monograph 105, 2012. 2) Silverman JNCI 2012. 3) Vermeulen EHP 2013.

Coal Dust Concentrations

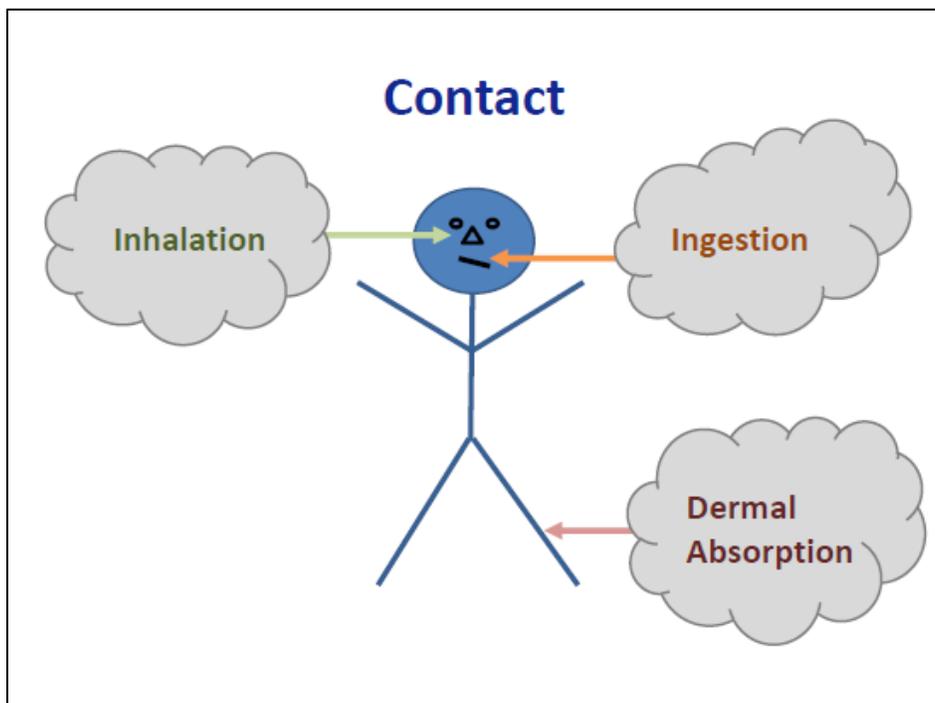
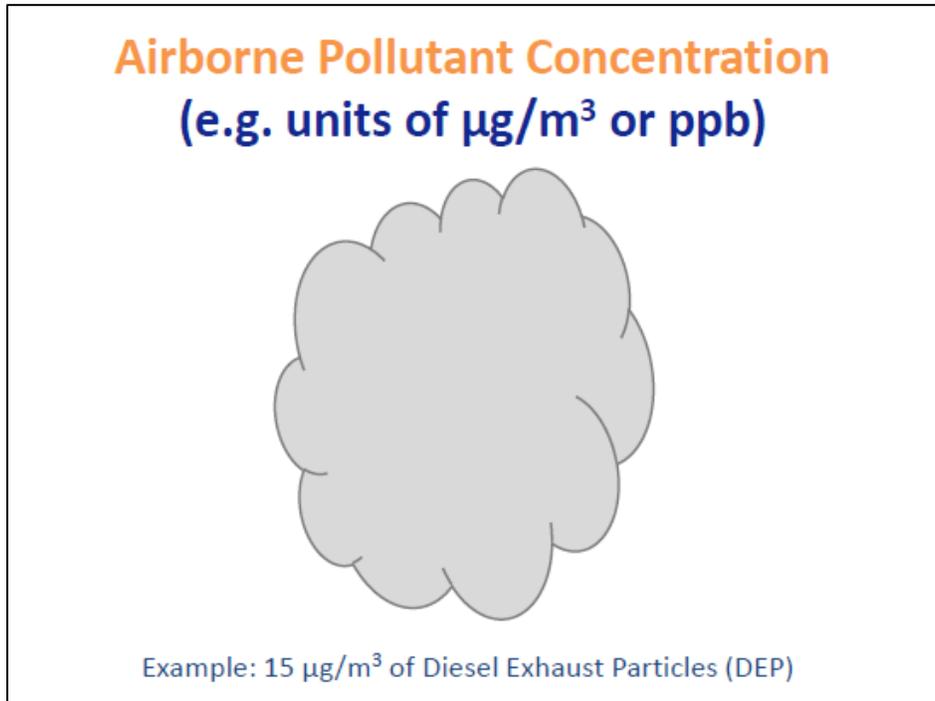
Population	Coal Dust Conc, Respirable Mixed Dust Fraction (mg/m ³)
Jobs at coal face (cutting machine operators, continuous miner operators)	6-10
Jobs away from coal face (supply men, brattice men, motor men)	1-2
Surface jobs at underground mines	1.5 (average)
Enclosed coal handling area	0.15-1.17
Open coal handling area	0.12-0.54

Source: IARC Mono #68, 1997

Regulations

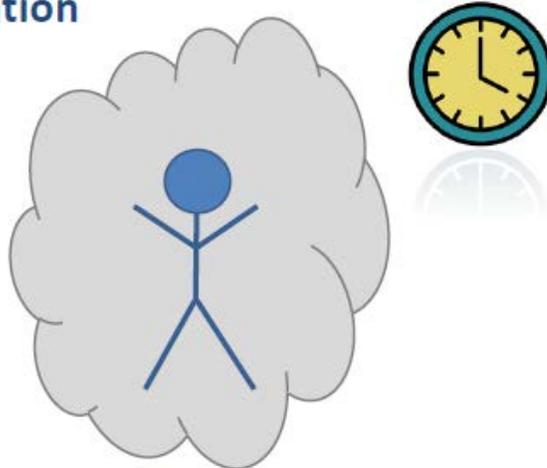
Occupational Exposure Limits	Environmental Air Quality Standards
<ul style="list-style-type: none"> • Only Adults • Working <ul style="list-style-type: none"> – Generally healthier • 40 years of exposure • Exposure during working hours <ul style="list-style-type: none"> – 8-12 hours day 	<ul style="list-style-type: none"> • Total population <ul style="list-style-type: none"> – Children – Adults – Elderly – Sick/Susceptible • Lifetime exposures





Exposure:

Contact with a pollutant for a specified duration



Example: 15 $\mu\text{g}/\text{m}^3$ of DEP as an 8-hr time-weighted average

Diesel Exhaust Occupational Standards

OSHA

- No PEL for diesel exhaust specifically
- PEL's for components of DE
 - Examples:

Carbon Monoxide (CO)	50 ppm
Nitric Oxide (NO)	25 ppm
Nitrogen Dioxide (NO ₂)	5 ppm (ceiling)

NIOSH

- Diesel exhaust a "potential occupational carcinogen"
- No recommended exposure limit



Locomotive and Marine Diesel Engines Environmental Standards

EPA

- Declaration: Diesel exhaust “likely to be carcinogenic to humans”
 - Criteria Air Pollutants
 - Particulate Matter
 - Sulfur dioxide
 - Ozone
 - Nitrogen dioxide
 - Carbon Monoxide
 - Lead
- } Components of diesel exhaust
- Diesel fuel requirements: less sulfur content (2008)
 - Emissions standards that vary by age of engine
 - Aftertreatment technology required on new engines

Sources: EPA Diesel Engine 2008; EPA Diesel Fuel 2012.



Coal Dust Occupational Standards

MSHA

- PEL for Respirable Coal Dust (Aug 2016)
 - 1.5 mg/m³ at underground and surface mines
 - 0.5 mg/m³ intake air underground and part 90 miners

OSHA

- PEL for Respirable Coal Dust <5% SiO₂
 - 2.4 mg/m³
- PEL for Respirable Coal Dust >5% SiO₂
 - 10 mg/m³ / [% SiO₂ + 2]

Sources: MSHA 2016; NIOSH Pocket Guide 2016.



Coal Dust Environmental Standards

EPA

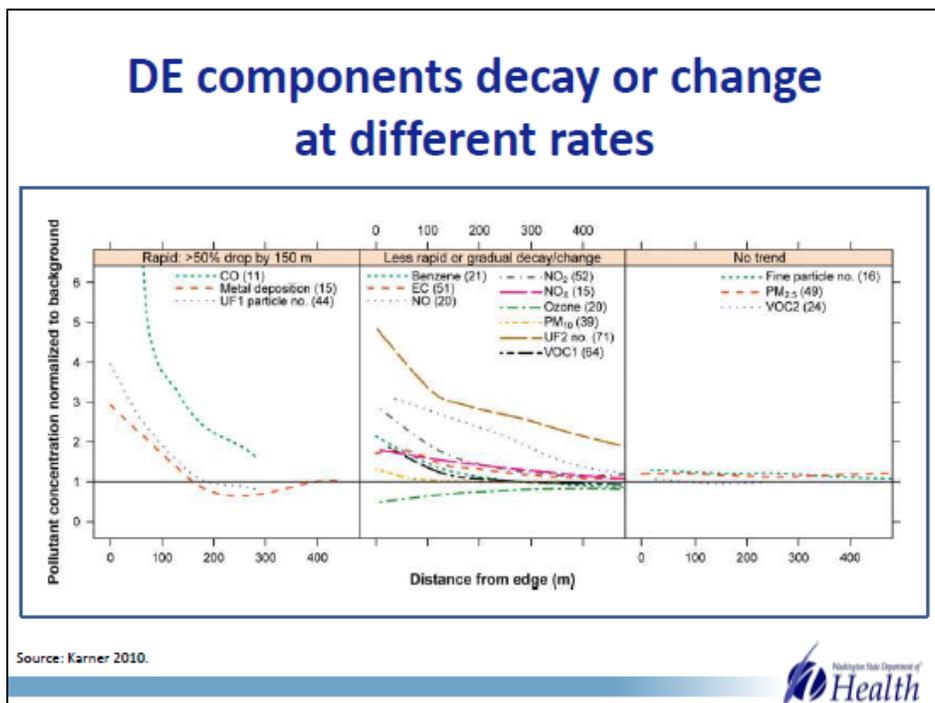
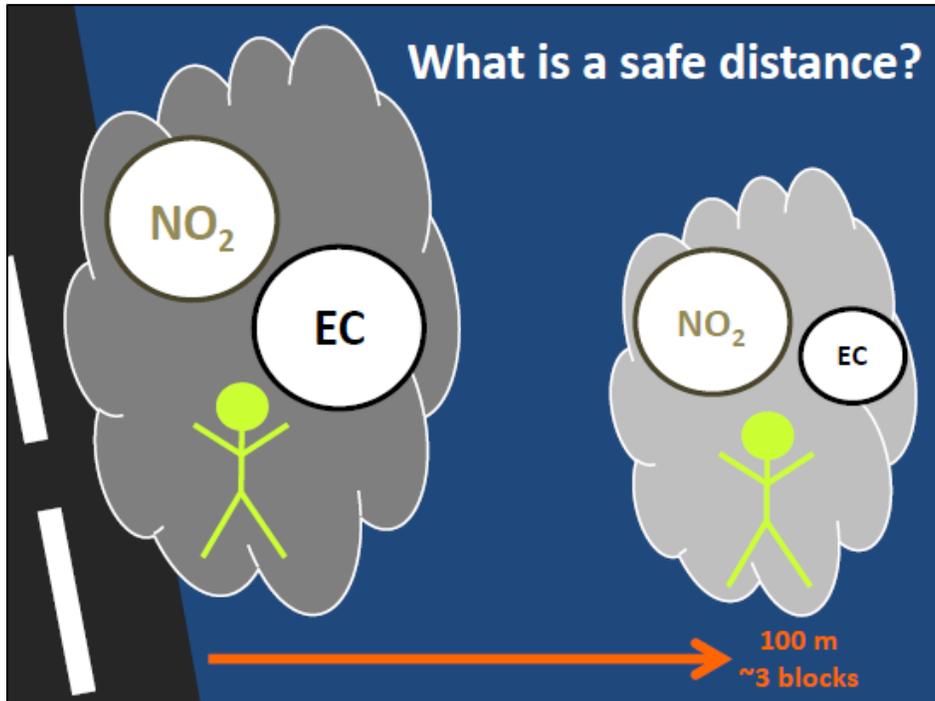
- No PEL
- Rules for fugitive dust emissions



Nat'l Ambient Air Quality Standards

Pollutant	Primary/ Secondary	Averaging Time	Level	Form	
Carbon Monoxide	Primary	8 hours	9 ppm	Not to be exceeded more than once per year	
		1 hour	35 ppm		
Nitrogen Dioxide	Primary	1 hour	100 ppb	98th percentile of 1-hr daily max conc averaged over 3 years	
	Primary & Secondary	1 year	53 ppb	Annual mean	
Particle Pollution	PM _{2.5}	Primary	12 µg/m ³	Annual mean, averaged over 3 years	
		Secondary	15 µg/m ³	Annual mean, averaged over 3 years	
	PM ₁₀	Primary & Secondary	24 hours	35 µg/m ³	98th percentile, averaged over 3 year
		Primary & Secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide	Primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum conc, averaged over 3 years	
	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year	
Lead	Primary & Secondary	Rolling 3 month average	0.15 µg/m ³	Not to be exceeded	
Ozone	Primary & Secondary	8 hours	0.07 ppm	Annual fourth-highest daily maximum 8-hr conc, averaged over 3 years	

Source: EPA NAAQS 2016.



Safe distances from emission of diesel exhaust and coal?

- Diesel Exhaust
 - Decreases to near background levels within 500-600 ft of roadway (EPA 2014)
 - Mostly highly effected exposure zone within 300-500 ft of roadway (HEI)
(150 m ~ 490 ft)

Sources: EPA Near Roadway 2014, HEI 2010.



Thank you.

Julie Fox

Ambient Air Environmental Epidemiologist

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Thanks also to my colleagues Sheryl Magzamen, Jill Schulte and Nancy Beaudet who helped prepare several of these slides during previous work at the University of Washington.



References

- Boehmer TK. "Residential Proximity to Major Highways — United States, 2010" Morbidity and Mortality Weekly Report. Nov 22, 2013.
<http://www.cdc.gov/mmwr/preview/mmwrhtml/su6203a8.htm>
- Centers for Disease Control and Prevention. "Public Health Issues: Air Quality" Last updated: Nov 24, 2014; Accessed Nov 2016. http://www.cdc.gov/air/air_health.htm
- Davis ME et al. " Modeling Particle Exposure in US Trucking Terminals" Env Sci & Tech. 2006: 40 (13).
- Health Effects Institute (HEI). "Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposures and Health Effects." Executive Summary. Jan 2010.
https://www.healtheffects.org/system/files/SR17TrafficReview_Exec_Summary.pdf
- International Agency for Research on Cancer (IARC). "Silica, Some Silicates, Coal Dust and Para-Aramid Fibrils" Monograph 68, 1997.
- International Agency for Research on Cancer (IARC). "Diesel and gasoline engine exhausts and some nitroarenes" Monograph 105, 2012.
- Karner AA et al. "Near-Roadway Air Quality: Synthesizing the Findings from Real-World Data" Env Sci & Tech. 2010: 44 (14).



References (2)

- Mining Safety and Health Administration. "Respirable Dust Rule: A Historic Step Forward in the Effort to End Black Lung Disease" Sept 28, 2016. Website accessed: 10/25/16.
<https://www.msha.gov/news-media/special-initiatives/2016/09/28/respirable-dust-rule-historic-step-forward-effort-end>
- National Institute for Occupational Safety and Health (Pocket Guide). "NIOSH Pocket Guide to Chemical Hazards: Coal Dust" Last Updated: April 11, 2016.
<https://www.cdc.gov/niosh/npg/npgd0144.html>
- National Institute for Occupational Safety and Health (Coal). "Coal Mine Dust Exposures and Associated Health Outcomes" Current Intelligence Bulletin #64. 2011
- Puget Sound Clean Air Agency (PSCAA) "Seattle and Tacoma Air Toxics Evaluation" Oct 29, 2010.
www.pscleanair.org/library/.../ExSummary2010air_toxics_study.pdf
- Schauer JJ et al. "Evaluation of elemental carbon as a marker for diesel particulate matter" J of Exp Analysis and Env Epi. 2003: 13.
- Silverman DT. "The Diesel Exhaust in Miners Study: A Nested Case-Control Study of Lung Cancer and Diesel Exhaust" J Nat'l Cancer Inst. 2012: 104 (11).



References (3)

US EPA (Biodiesel) "A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions" 2010.
<http://www.epa.gov/oms/models/analysis/biodsl/p02001.pdf>

US EPA (Diesel) "Diesel Exhaust in the United States" 2003.
<http://www.epa.gov/cleandiesel/documents/420f03022.pdf>

US EPA (Diesel Engines) "EPA Finalizes More Stringent Emissions Standards for Locomotives and Marine Compression-Ignition Engines" March 2008, Accessed Nov 2016.
<https://nepis.epa.gov/Exe/ZyPDF.cgi/P100094D.PDF?Dockey=P100094D.PDF>

US EPA (Diesel Fuel) "EPA Finalizes Modifications to the Transmix Provisions Under the Diesel Sulfur Program" Dec 2012, Accessed Nov 2016.
<https://nepis.epa.gov/Exe/ZyPDF.cgi/P100FGRS.PDF?Dockey=P100FGRS.PDF>

US EPA (Retrofit) "Technologies Diesel Retrofit Devices." Accessed 3/10/15.
<http://www.epa.gov/cleandiesel/technologies/retrofits.htm>

US EPA (Our Nation) "Our Nation's Air Report: Status and Trends through 2008" Feb 2010.
<http://epa.gov/airtrends/2010/report/fullreport.pdf>



References (4)

US EPA (NAAQS). "National Ambient Air Quality Standards Table" Last Updated: Sept 16, 2016.
<https://www.epa.gov/criteria-air-pollutants/naaqs-table>

US EPA (Near Roadway) "Near Roadway Air Pollution and Health: Frequently Asked Questions" Aug 2014. <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100NFFD.PDF?Dockey=P100NFFD.PDF>

Vedal S et al. Section 1. NPACT epidemiologic study of components of fine particulate matter and cardiovascular disease in the MESA and WHI-OS cohorts. In: National Particle Component Toxicity (NPACT) Initiative Report on Cardiovascular Effects. Research Report 178. Health Effects Institute, Boston, MA. 2013.

Vermeulen R et al. "The Diesel Exhaust in Miners Study: IV. Estimating Historical Exposures to Diesel Exhaust in Underground Non-metal Mining Facilities" *Annals Occ Hygiene*. 2010: 54 (7).

Vermeulen R et al. "Exposure-Response Estimates for Diesel Engine Exhaust and Lung Cancer Mortality Based on Data from Three Occupational Cohorts" *Env Health Persp*. 2013: 122 (2).

Weingartner E et al. "Absorption of light by soot particles: determination of the absorption coefficient by means of aethalometers. *J Aero Sci*. 2003: 34.

Zielinska B et al. "Emission Rates and Comparative Chemical Composition from Selected In-Use Diesel and Gasoline-Fueled Vehicles" *J Air & Waste Manage Assoc*. 2004: 54.



Attachment C
**Cowlitz County Baseline Health presented at the
November 28, 2016, Health Impact Assessment Steering
Committee Meeting**

Reviewing Baseline Population Health Data

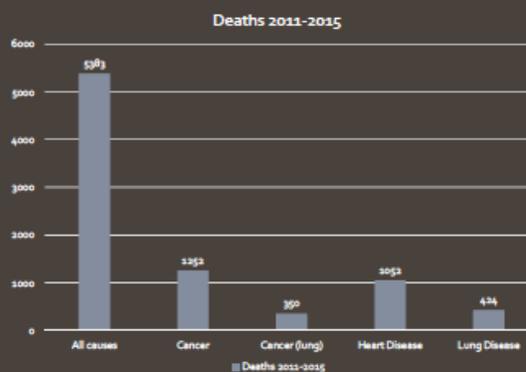
Cowlitz County Health & Human Services

Dr. Jennifer Vines, MD, MPH, Health Officer 11/28/2016

County Population Overview

Population	Age		Race & Ethnicity	
	Population	Age Group	Race & Ethnicity	Percentage
County	104,280	Less than 5 years	White	85.8%
Castle Rock	2,475	5 to 17	Hispanic	7.8%
Kalama	2,500	18 to 24	Asian	1.4%
Kelso	11,950	25 to 64	Native American	1.3%
Longview	37,130	65 and older	Black	0.6%
Woodland (part)	5,760		Native Hawaiian/Pacific Islander	0.2%

Leading Causes of Death in Cowlitz County



	% of Adults (18+)
Lifetime Asthma	20%*
Current Asthma	13%
Obesity	35%*
Current Smoker	24%*
Physical Inactivity	22%
Three or more Adverse Childhood Experiences	45%*

*significantly higher than the state of WA

- Unemployment is higher than average in the focus area at 21%
- 67% of households are renters
- 1 in 5 households do not have access to a vehicle
- 68% of renters and 40% of owners are severely cost burdened for their housing expenses
- Only 17% of housing units have been constructed since 1980
- 77% of owner occupied units are valued below \$150,000
- About 20% of the young adults (under 35 years of age) and children in Cowlitz County live in this focus area
- Rate of birth is almost twice the county average

Attachment D
**Draft Research Questions Developed during a
Workshop by the Steering Committee for the Health
Impact Assessment**

During the November 28 Steering Committee meeting, the Steering Committee (Committee) divided into two workgroups to review select topics for potential inclusion in the Health Impact Assessment (HIA). The following is a list of questions the Committee discussed during the meeting when reviewing the list of HIA topics.

Group One

Air Quality

The Committee felt that most questions were good and capture the spirit of what the Committee wants to know. Some potential changes include the following.

- What do we know about the quantity of coal dust that will be deposited? Are the numbers in the Draft Environmental Impact Statement (Draft EIS) accurate? If they are, how can we incorporate that information in the HIA?
- Is it possible for us to communicate the true value of the numbers? What does that “very large” amount of coal dust mean regarding exposure?
- When the coal dust is deposited, will it blow away or get washed into our water system by rain?

Air Quality/Coal Dust Mitigation

The Committee expressed a desire to talk about “then what?”, i.e., mitigation. How can the Committee communicate its ideas for mitigation in the HIA? Does the Committee even want to address mitigation? It was recommended that maybe this topic is addressed in a Findings and Recommendations section of the HIA, after the Committee reconvenes. The Committee may want to defer mitigation recommendations to future project managers facing similar community health impacts.

- What mitigation measures might be possible?
- What mitigation measures currently exist to help remove or prevent coal dust deposition?
- What behaviors can we change to avoid or minimize exposure?
- Do the vacuums they use in the Gorge really work? What is done with the vacuum contents?

River Traffic, Congestion, and Economy

The Committee felt that the effects on the Columbia River were lost in the meta-questions.

- How can we evaluate the river economy in its broadest sense and the intersection between the river economy, health, and the MBTL project?
- What do we know about increased pollution because of river traffic congestion? Are there other health effects that we need to think about?
- Can we lump river congestion into a larger question about congestion in general? Can we talk more directly about all types of congestion (rail, road, and river) and the health effects congestion carries?
- How many ships can feasibly travel up and down the river?
- Did the important issue of rail capacity get lost in the meta-questions?

River Recreation and Safety

The Committee developed the following questions related to river recreation and safety.

- Will drownings increase because of increased river traffic and more specifically ship wakes?
- How will small vessels and swimmers be affected?
- Is the health of Cowlitz County at risk because residents will have decreased recreational opportunities?

Kalama and Woodland

The Committee suggested the meta-questions did not sufficiently analyze other Cowlitz County communities.

- Rail tracks in Kalama are very close to the town. Kalama and Woodland should be included in discussions about air quality, etc. Will the Kalama and Woodland populations be exposed to different exposure rates compared to the Highlands in Longview because of the built environment, geography, wind patterns etc.?
- There are a lot of farmers in Woodland, but what about farmers and growers in other areas of Cowlitz County? Will we be eating imported food from other farming communities along the rail tracks, either within or outside of Washington State?

Group Two

Air Quality

- What impacts will coal dust and diesel exhaust from trains and emissions from vehicles due to increased congestion have on the health of Longview residents and sensitive populations (such as asthmatics, elderly, pregnant, smokers, those with respiratory conditions, and youth)?
- What are the short- and long-term health impacts of diesel exhaust and coal dust exposure?
- What neighborhoods and community resources will be affected based on proximity and prevailing winds?

Economy

- How will the project affect the number and types of jobs in Longview in the long term, and how does that affect the health of those employed and the community as a whole? How does that compare to alternative uses for the MBTL site?
- How will this affect local taxes and will that affect health?
- What economic, social, or environmental accountability does Millennium have to the community when it closes? Does that accountability hold even if there is bankruptcy?

Community

- What do we know about the impacts of projects like this one on other communities (including health effects and mental health, economy, housing value, rent, etc.)?
- What will the impact be on recreational and active transportation activities, such as walking, biking, and taking the bus in Cowlitz County?

- What will be the impact on emergency response times, commute times, and congestion?
- What are the potential impacts of climate change on Cowlitz County residents, their health, and the linkage to increased carbon dioxide from this project?
- What will be the health impacts of noise and vibration?
- Will there be impacts on potable water or toxicants in fish?
- Will there be impacts on farmland or residential gardens?

Additional Questions

The following additional questions were raised during the November 28 Steering Committee.

- What is the existing composition of air pollutants?
- For surfactants that would be applied to coal trains destined for the project site, are there any materials that could pose a risk to human health and in what quantities would they be found?
- What are potential safety impacts for workers on the project site and for increased rail and river traffic (e.g., what is the increased risk of an accident and what would happen if one occurred)?
- Do we need more information about specific components of coal dust?

Attachment E
**Public Comments Received at the November 28, 2016,
Health Impact Assessment Steering Committee Meeting**

Five comments were received during the public comment period at the end of the November 28, 2016, Health Impact Assessment Steering Committee meeting. Below is a transcription of the five oral comments heard during the public comment period.

Verbal Comments

1. **Susan Lee Schwartz, Longview, Washington** – *I am asking you to include in your HIA: the impacts of the Millennium project on the health care costs of Washingtonians and residents of Cowlitz County. Reading form College of the Environment, University of Washington, Section 12 “How will climate change affect human health in Washington?”*

“Climate change is expected to affect both the physical and mental health of Washington’s residents by altering the frequency, duration, or intensity of climate-related hazards to which individuals and communities are exposed. In some cases, climate change may also lead to the introduction of new risks.

Health impacts stem from a wide range of projected climate change impacts. Human health in Washington State is likely to be affected by projected increases in extreme heat events, flooding, sea level rise, drought, and forest fires; increased allergen production and summer air pollution; and changes in the types, distribution, and transmission of infectious diseases and fungal diseases.

Some populations are more vulnerable to health impacts. Vulnerable populations include those over age 65, children, poor and socially isolated individuals, the mentally ill, outdoor laborers, and those with cardiac or underlying health problems.”

I also ask that you look into what it does to people with dry eyes. Climate change will effect both the physical and mental.

2. **Amber DiGerlando, Highlands Neighborhood, Longview, Washington** – *Look at Figure 6.5 in the noise impact of the study. I live next to the green line where the speed will increase from 10 mph to 20 mph. Please study noise and the impact to REM sleep. The noise will increase with the additional 16 trains per day. The study only discusses whistle related noise. There is much more noise. As trains go around the turn they make a crashing and squealing sound. This causes all the dogs in the neighborhood to bark – more noises. Some of the conductors blow their whistles for 40 seconds, much longer than they should. We’ve clocked it. Trains then stop blast there engines to clean the diesel particulates out. This process is very loud with screams and whistles. The noise is only going to increase. This export project is not exempt to the laws. The increased noise impacts 229 residences.*
3. **Mary Lyons, Longview, Washington** – *The SEPA DEIS released earlier this year stated that “Day-to-day rail operations could release contaminants to water resources immediately adjacent to the rail line, resulting in the potential for water quality impairment from increased rail transportation.” (Summary at S-24.) That means multiple unidentified sources of drinking water could be impaired. The RIA should identify by name and location those domestic and municipal water systems that could be harmed by a derailment and spill of coal trains and/or coal vessel fire and fuel spill. How many people are served by these systems? Who will pay for monitoring and cleanup when and if municipal drinking water sources are fouled? The RIA should identify potential individual and cumulative impacts from a spill of bunker oil, emissions of coal dust, and exposure to diesel PM 365 days each year for 50 years at and near the terminal. These impacts can degrade the quality of drinking water for residents of Longview and Cowlitz County. Groundwater in the study area is confirmed to have benzene and petroleum/gasoline contamination above cleanup levels. (DEIS 3.6-13) The RIA should identify potential effects of*

pre-operation wicking and compression on the movement of surface water or on the movement of legacy pollutants like benzene and arsenic. The RIA should disclose the potential impacts of heavy pumping of MBT's private wells during the dry season (for purposes of dust suppression) on the City of Longview's wells. The RIA should identify the contaminants and pollutants which will flow into the Columbia River as treated wastewater, untreated surface water or as overflow from storms. That water could include diesel pollution, toxic coal dust, fuel spills, asbestos, lead, and arsenic from demolition projects. Leaks and spills from associated barges, tugs, Panamax-class, and Handymax-class vessels can foul the water that recharges the drinking water aquifer. The HIA should identify who will likely pay for damages if the drinking water sources for the City of Longview are contaminated with pollutants as a result of this project and must be temporarily or permanently replaced. Thank you.

4. **Diane Dick, Longview, Washington** – *Air must be protected. I laud your efforts to preserve the irreplaceable health of our community by making sure we welcome only industry which does not degrade our environment. Under state law RCW Chapter 70.94, the Washington Clean Air Act, it states, “It is declared to be the public policy to preserve, protect, and enhance the air quality for current and future generations. Air is an essential resource that must be protected from harmful levels of pollution. Improving air quality is a matter of statewide concern and is in the public interest.” Also, “It is further the intent of this chapter to protect the public welfare, to preserve visibility, to protect scenic, aesthetic, historic, and cultural values, and to prevent air pollution problems that interfere with the enjoyment of life, property, or natural attractions.” Under definitions, “‘Air pollution’ is presence in the outdoor atmosphere of one or more air contaminants in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interfere with enjoyment of life and property.” Please note the law does not mean that air pollution is permitted if it falls within a maximum allowable level. The public is to be protected from air pollution which unreasonably interferes with the enjoyment of life and property. Also note that under RCW 70.94.370(4) any person has the right to maintain at any time appropriate action for relief against any air pollution, without limitation by any recommendation of the state board or of any local or regional air pollution program. Thank you.*

5. **John Steppert, Longview, Washington** – *There are 39 counties in the State of Washington, and Cowlitz County ranks 31st in overall health outcomes, wellbeing, and the quality of life. Cowlitz County has a higher percentage than our state for causes of death related to cancer, heart disease, COPD, and diabetes. Our county has a higher percentage than the state for adults with asthma, and Washington State’s asthma rate is higher than the national average. There may be a correlation here with poor air quality. Our county also ranks higher than the state for premature deaths, ages 50 and up. Cowlitz County also has a higher percentage of families living in poverty than the state and nation. My question is this. Since our overall health outcomes are not good, do we want to make it even worse by entertaining 16 air polluting open coal trains a day, along with diesel locomotives, and huge Panamax transport ships, also polluting the air. Or are we willing to let the HIA reflect that we will not support a company that exploits our citizens by putting business interests above public health. Thank you.*