



November 18, 2013

Via Website Comment Form <http://millenniumbulkeiswa.gov/submit-comments.html>

Millennium Bulk Terminals EIS

c/o ICF International

710 Second Avenue, Suite 550

Seattle, WA 98104

Re: Scoping Comments on Proposed Millennium Bulk Terminals
Longview (MBTL)

To Whom It May Concern:

Thank you for the opportunity to comment on the proposed Millennium Bulk Terminals Longview (MBTL) project. This is the second of two formal comment letters Oregon Physicians for Social Responsibility (Oregon PSR) will submit during the scoping process.

Oregon Physicians for Social Responsibility, guided by the values and expertise of medicine and public health, works to protect human life from the gravest threats to health and survival by striving to end the nuclear threat, advance environmental health and promote peace.

We are opposed to the MBTL project based on our interpretation of the Precautionary Principle. According to the Toxics Reduction Strategy of the City of Portland and Multnomah County (April 2006), "the Precautionary Principle is a paradigm that suggests taking precautionary measures when an activity raises threats of serious or irreversible harm, even if some of the cause-and-effect relationships

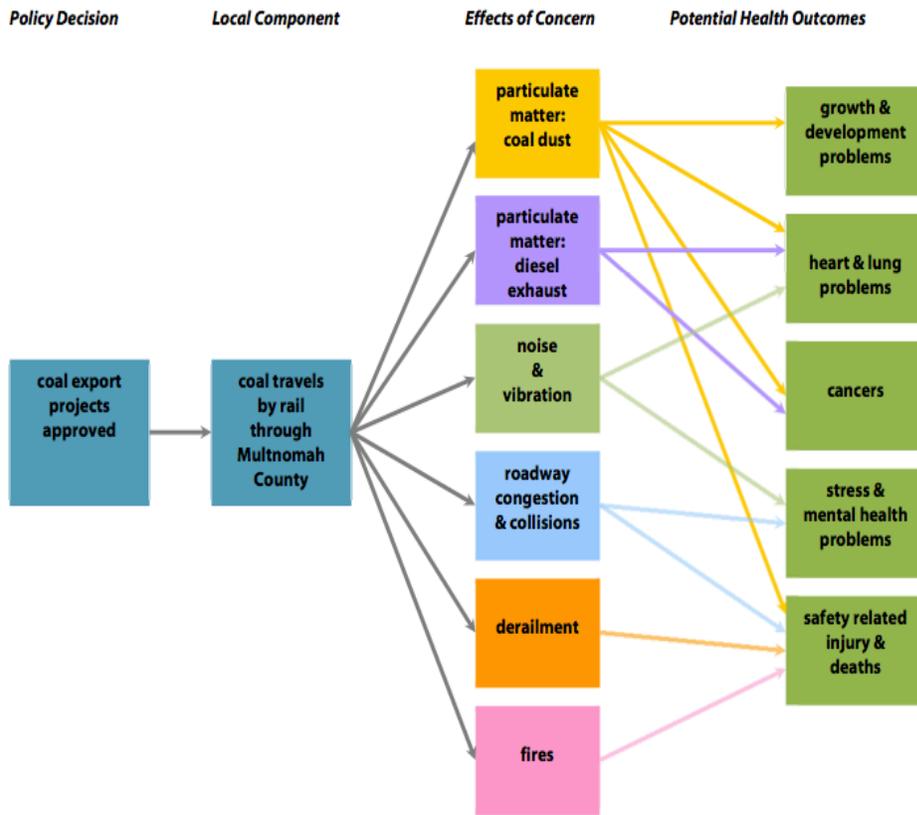
are not fully established (UN, 1992; Wingspread, 1998). Such a precautionary approach involves several key components: establishing goals, seeking out and evaluating alternatives, community right-to-know reporting, full cost accounting, and developing more participatory and transparent decision-making methods.” We believe that multiple activities associated with the proposed MBLT raise serious threats of serious and irreversible harm, even if some of the cause-and-effect relationships are not fully established.

Need for Region-Wide EIS and HIA(s)

If co-lead agencies are not prepared to deny the application based on the Precautionary Principle or for other reasons, including the harmful impacts that MBTL could have on sovereign nations and their treaty-reserved rights and resources, Oregon PSR holds that it is the legal and moral responsibility of co-lead agencies to perform a programmatic, regional Environmental Impact Statement (EIS), a regional Health Impact Assessment (HIA), and a site-specific HIA that examines cumulative impacts – direct and indirect – of MBLT. The regional HIA should include a public scoping process involving all communities affected by mining, transportation and combustion of the coal proposed for MBTL.

The image below, which describes only the relationship between policy decisions related to the transportation of coal and potential health outcomes, demonstrates the many complex relationships which must be identified and reviewed in these HIAs. Note that “this figure does not reflect the possible cumulative or synergistic impacts of these health outcomes on individual and community-based health.” Indeed, a comprehensive HIA for the proposed MBTL should include possible cumulative or synergistic impacts of these health outcomes on individual and community-based health.

Figure 1: Relationships between coal transportation by rail, environmental effects of concern, and health outcomes



This figure does not reflect the possible cumulative or synergistic impacts of these health outcomes on individual and community-level health.

Values of an HIA

We request the incorporation of values, as described below, into a regional HIA and a site-specific HIA for MBTL.

The Values of Health Impact Assessment

From the International Association of Impact Assessment (Quigley, 2006)

Democracy – emphasizing the right of people to participate in the formulation and decisions of proposals that affect their life, both directly and through elected decision makers. In adhering to this value, the HIA method should involve and engage the public, and inform and influence decision makers. A distinction should be made between those who take risks voluntarily and those who are exposed to risks involuntarily (World Health Organization, 2001).

Equity – emphasizing the desire to reduce inequity that results from avoidable differences in the health determinants and/or health status within and between different population groups. In adhering to this value, HIA should consider the distribution of health impacts across the population, paying specific attention to vulnerable groups and recommend ways to improve the proposed development for affected groups.

Sustainable development – emphasizing that development meets the needs of the present generation without compromising the ability of future generations to meet their own needs. In adhering to this value, the HIA method should judge short- and long-term impacts of a proposal and provide those judgments within a time frame to inform decision makers. Good health is the basis of resilience in the human communities that support development.

Ethical use of evidence – emphasizing that transparent and rigorous processes are used to synthesize and interpret the evidence, that the best available evidence from different disciplines and methodologies is utilized, that all evidence is valued, and that recommendations are developed impartially. In adhering to this value, the HIA method should use evidence to judge impacts and inform recommendations; it should not set out to support or refute any proposal, and it should be rigorous and transparent.

Comprehensive approach to health – emphasizing that physical, mental, and social well-being is determined by a broad range of factors from all sectors of society (known as the wider determinants of health). In adhering to this value, the HIA method should be guided by the wider determinants of health.

Independent HIA Team

We understand that an independent, collaborative group from WSU, Oregon Public Health Institute and UW has commenced work on an HIA related to coal export facilities in the Pacific NW. We ask that you share with them (and the public) the scope of your HIA work once that has been determined and then incorporate their data and analyses into the draft EIS for MBTL.

Environmental Justice

We request that you perform HIA(s) that thoroughly examine how the mining, transportation and combustion of coal from MBTL could exacerbate the already disproportionate environmental burdens and health inequities experienced by environmental justice communities.

Coal Pollutants - General

Coal is the most toxic fossil fuel on this planet. Physicians for Social Responsibility found in 2009 that coal pollutants affect all major body organ systems and contribute to four of the five leading causes of mortality in the U.S.: heart disease, cancer, stroke, and lower respiratory disease.

Coal is described by Alan Lockwood, MD, as one of the 10 top killers in the United States. He has stated, “We will not find ‘exposure to burning coal’ listed as the cause of death on a single death certificate, but tens of thousands of deaths from asthma, chronic obstructive pulmonary disease, lung cancer, heart attacks, strokes, and other illnesses are clearly linked to coal-derived pollution.”

Please include in an HIA a review of the peer-reviewed literature cited in *The Silent Epidemic: Coal and the Hidden Threat to Health* by Dr. Alan Lockwood.

Outdoor Air Pollution and Particulate Matter

Please review and consider in a HIA this new information provided by the World Health Organization described in this press release (http://www.iarc.fr/en/media-centre/pr/2013/pdfs/pr221_E.pdf) and in the related article below:

The carcinogenicity of outdoor air pollution

Dana Loomis ^a, Yann Grosse ^a, Béatrice Lauby-Secretan ^a, Fatiha El Ghissassi ^a, Véronique Bouvard ^a, Lamia Benbrahim-Tallaa ^a, Neela Guha ^a, Robert Baan ^a, Heidi Mattock ^a, Kurt Straif ^a, on behalf of the International Agency for Research on Cancer Monograph Working Group IARC, Lyon, France

In October, 2013, 24 experts from 11 countries met at the International Agency for Research on Cancer (IARC), Lyon, France, to assess the carcinogenicity of outdoor air pollution. This assessment was the last in a series that began with specific combustion products and sources of air pollution and concluded with the complex mixture that contains all of them. The results of this most recent assessment will be published as volume 109 of the IARC Monographs.¹

Outdoor air pollution is a mixture of multiple pollutants originating from a myriad of natural and anthropogenic sources. Transport, power generation, industrial activity, biomass burning, and domestic heating and cooking are the predominant anthropogenic sources in many locations.² The mix of pollutants in outdoor air varies substantially over space and time, showing not only the diversity of sources, but the effect of atmospheric processes, including oxidation and weather. Diverse approaches are used to measure air pollution and some countries have established monitoring networks that typically record levels of regulated pollutants, such as respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), NO₂, SO₂, and O₃. PM_{2.5} is increasingly used as an indicator pollutant, with annual average concentrations ranging from less than 10 to more than 100 µg/m³ globally. Pollution levels in western Europe and North America have generally declined since the late 20th century, but they are increasing in some rapidly industrialising countries, notably in Asia. In many areas, WHO and national air quality guidelines for PM_{2.5} and other pollutants are routinely and substantially exceeded.³ Occupational exposures to outdoor air pollution, although not routinely monitored, are also of concern for certain groups of workers, such as traffic police, drivers, and street vendors.

The IARC Working Group unanimously classified outdoor air pollution and particulate matter from outdoor air pollution as carcinogenic to humans (IARC Group 1), based on sufficient evidence of carcinogenicity in humans and experimental animals and strong mechanistic evidence.

The findings regarding the carcinogenicity of outdoor air pollution as a mixture, and of particulate matter specifically, are remarkably consistent in epidemiological research, studies of cancer in experimental animals, and a wide range of studies of mechanisms related to cancer. Particularly, an increased risk of lung cancer was consistently observed in cohort and case-control studies including millions of people and many thousands of lung cancer cases from Europe, North America, and Asia. The largest and most informative studies were a pooled analysis of data from ten European countries and a large nationwide cohort study in the USA.^{4, 5} Many studies estimated quantitative levels of outdoor air pollutants, most often as mass concentration of particulate matter, and adjusted for a wide range of potential confounders including tobacco smoking. Increased risk associated with outdoor air pollution was also seen in studies restricted to never smokers.⁶ Positive exposure-response relations were consistently observed in studies that provided such data. Notably, virtually all of the studies were done in areas where annual average levels of PM_{2.5} range from about 10 to 30 µg/m³, which represents approximately the lower third of exposures worldwide. Nevertheless, increased risk of lung cancer was observed even in those areas where PM_{2.5} concentrations are less than the current health-based guidelines.⁴

There was limited epidemiological evidence for bladder cancer associated with various metrics of exposure to outdoor air pollution, including occupational and residential exposure to traffic or traffic emissions, in studies that were adjusted for tobacco smoking. However, most studies assessed exposure only by employment in occupations with potentially high exposure to outdoor air pollution, so the results did not weigh heavily in the evaluation.

The Working Group also reviewed evidence regarding the carcinogenicity of outdoor air pollution in experimental animals. As part of this process, the IARC's earlier evaluations of diesel engine exhaust and of emissions from the combustion of coal and wood were updated and confirmed. All of these agents can be present in outdoor air and were shown previously to cause benign and malignant lung tumours in mice or rats.

Only a few studies have assessed the occurrence of cancer in animals exposed directly to outdoor air pollution by inhalation. Studies of mice exposed to traffic-related outdoor air pollution in São Paulo, Brazil, showed an increase in the incidence of lung adenoma, and an increase in the incidence and tumour multiplicity of urethane-induced adenomas in a dose-dependent manner.⁷ Several studies in which mice were injected

subcutaneously with organic solvent-extracted material from particles collected from outdoor air pollution, showed increased incidence of injection-site tumours, including fibrosarcomas, and pulmonary adenoma or adenocarcinoma.^{8, 9}

The findings of carcinogenicity in humans and animals are strongly supported by a large, diverse body of evidence showing genetic and related effects in exposed humans and animals and a wide range of experimental systems. Studies of people exposed occupationally to outdoor air pollution have shown enhanced frequencies, relative to controls, of chromosome aberrations and micronuclei in lymphocytes.^{10, 11} Exposure to polluted outdoor air in occupational settings or urban and industrial areas is also associated with changes in the expression of genes involved in DNA damage and repair, inflammation, immune and oxidative stress response, as well as altered telomere length and epigenetic effects such as DNA methylation.¹¹ An increase of cytogenetic and DNA damage related to outdoor air pollution was associated with genetic polymorphisms, such as *GSTM1* null. Genetic damage, including somatic and germ-cell mutations, cytogenetic abnormalities, and DNA damage were also observed in mammals, birds, and plants exposed to outdoor air pollution.¹² Genotoxic effects have also been observed in studies of human and animal cell lines in vitro.

Additionally, extracts of particulate matter from outdoor air representing a wide range of locations, time periods, and atmospheric conditions induce mutations in bacteria. This mutagenic activity, covering more than five orders of magnitude per volume of air across locations, is quantitatively related to the concentration of atmospheric particulate matter. Thus, the Working Group concluded that there is strong evidence that real-world exposures to outdoor air pollution, in several species, are associated with increases in genetic damage, including cytogenetic abnormalities, mutations in both somatic and germ cells, and altered gene expression, which have been linked to increased cancer risk in humans.

The Lancet Oncology, Early Online Publication, 24 October 2013

Diesel Particulate Matter (DPM)

We believe there is ample evidence to connect components of DPM with adverse health effects in children and in reproductive aged women, including asthma and behavioral problems in children and reproductive problems and premature births in young women. We encourage you to consult with Dr. Susan Katz of Oregon PSR if you

do not have access to this peer-reviewed literature which should be reviewed as part of an HIA for MBTL.

Mercury

Mercury is a potent neurotoxin. We request that the co-lead agencies tap the expertise of the Washington Department of Health and other entities with great knowledge of the distribution and impacts of mercury pollution. Other resources we recommend are listed below.

The Centers for Disease Control and Prevention (CDC) reports 1 in 88 American children aged 8 years is now affected by an Autism Spectrum Disorder (ASD) (March 30, 2012, from surveillance year 2008). The prevalence of ASD in surveillance year 2002 was 1 in 150. A recent study released by the CDC reported 9.5% of U.S. children (aged 4-17 years) in 2007 had an Attention Deficit Hyperactivity Disorder (ADHD), per a parent report survey, representing a 22% increase from a parent report survey four years previously, in 2003, indicating 7.8% of children aged 4-17 years with ADHD (www.cdc.gov/Features/dsADHD/). A study "Trends in the Prevalence of Developmental Disabilities in U.S. Children, 1997-2008" revealed 7.66% of U.S. children had a learning disability during that time period, with a 5.5% increase in learning disabilities between the periods 1997-1999 and 2006-2008 (www.cdc.gov/Features/dsDev_Disabilities/). Further statistics from the CDC reveal that, for U.S. children aged 12-17 years in 2010, 9.3% have a learning disability and 11.6% have an Attention Deficit Hyperactivity Disorder (Dec. 2011). The rate of increase for this age group from previous years was not available.

National Institutes of Health (NIH) Journal Articles Linking Diesel Exhaust to Neurodevelopmental disorders:

Autism: <http://ehp.niehs.nih.gov/1206187/>

Brain Development: <http://ehp.niehs.nih.gov/1306528/>

ADHD <http://ehp.niehs.nih.gov/1205555/>

Learning Difficulty: <http://ehp.niehs.nih.gov/1205940/>

American College of Obstetrics and Gynecology and American Society for Reproductive Medicine,
Committee Opinion, Number 575, October 2013, www.acog.org

Articles about mercury (in coal dust) and neurodevelopment:

Cheuk, D., Wong, V., "Attention-Deficit Hyperactivity Disorder and blood mercury level: a case-control study in Chinese children, *Neuropediatrics* 2006: 37:234-240

Chen, C., "Methylmercury effects and exposures: Who is at risk?", *Environmental Health Perspectives (EHP)*, 2012, 120(6)

Grandjean, P., et al, "The Faroes Statement: Human health effects of developmental exposure to chemicals in our environment," *Basic and Clinical Pharmacology and Toxicology*; 2007, 10.1111; 1742, p 1-3

Karagas, M. et al, "Evidence on the human health effects of low-level methylmercury exposure," *Environmental Health Perspectives (EHP)*, 2012; 120(6); 799-806

Miodovnik, A., "Environmental neurotoxicants and developing brain," *Mt. Sinai Journal of Medicine* 2011, 78: 58-77

Landrigan, P., "A research strategy to discover the environmental causes of autism and neurodevelopmental disabilities (NDD)," *EHP*, 2012, 120(7)

Mahaffey, K., et al, "Adult women's blood mercury concentrations vary regionally in the United States: association with patterns of fish consumption (NHANES 1999-2004)," *EHP* 2009; 117:47-53.

National Scientific Council on the Developing Child (www.developingchild.net), "Early exposure to toxic substances damages brain architecture," Working Paper #4, Spring, 2006

Sexton et al, "Biomarker measurements of concurrent exposure to multiple environmental chemicals and chemical classes in children," *J of Toxicology and Environmental Health*, 2011, Part A, 74:927-942

Windham, G. et al, "Autism Spectrum Disorders in relation to distribution of hazardous air pollutants in the San Francisco Area," *EHP*, 2006, 114(9); 1438-1444

Drinking Water

Residents of Longview, WA. commenced drinking ground water in January of 2013. Their water source, and a treatment facility, is located near the proposed coal export facility, where coal will be exposed and stored outside on the ground.

What is the relationship between the hydrology/geology of the drinking water aquifer and the storage site?

What is the risk to drinking water from diesel emissions and potential spills at the terminal? At the dock(s)?

What is the relationship between surface water and groundwater that may be impacted by the MBTL facility and its operation 350 days per year?

Does the Columbia River communicate with ground water supplies that are the source of Longview's drinking water?

Should the existing source of water become contaminated, what is the back-up water supply for Longview?

Should the existing source of water become contaminated, how much will it cost to develop an alternative source of drinking water for residents of Longview? Who will pay?

Are alternative sources limited by the need for large amounts of water to reduce coal dust and decrease fire risk of enormous piles of coal?

What is the potential damage to multiple drinking water sources all along the transportation route associated with MBTL?

Noise

Please examine the relationship between noise generated by 8- 16 coal trains per day and hearing loss. What are potential impacts? Where will impacts be experienced? Who is most likely to suffer? What will the costs be? Who will bear these costs?

Climate Change

Many physicians, health professionals and public health advocates believe that climate change is a public health emergency and the largest threat to human health in this century.

Organizations calling for prompt reduction in carbon dioxide pollution include the American Medical Association, American Nurses Association, American Academy of Pediatrics, American Public Health Association, American Academy of Family Practitioners,

American Thoracic Society, American Lung Association, National Academy of Sciences, US Centers for Disease Control and Prevention, American Lung Association, World Health Organization, and Physicians for Social Responsibility.

The burning of coal handled by proposed NW export facilities alone could generate more than 200 million metric tons of carbon pollution each year.

Approval of this project and combined projects in the Pacific NW would exacerbate climate chaos with more extreme weather events and significant changes in hydrological cycles. Those changes can lead to grave health impacts ranging from disease and dislocation, loss of access to medication, and an increased incidence of disease, to starvation and even war.

Please identify the potential health impacts of climate change exacerbated by the mining, transportation and combustion of this coal. How will those impacts distributed? Which populations are most vulnerable? Who will bear the cost? Who will pay with their health, safety and sense of well-being?

Finally, we request that you incorporate by reference the following documents and/or comments:

- “Potential Health Impacts of Millennium Bulk Terminals Longview (MBTL) / Physicians Request a Comprehensive Health Impact Assessment (HIA) Be Included in the EIS. “

Please note that this comment was submitted by Oregon PSR on November 17, 2013 is supported by 158 Oregon and Washington physicians who voice concerns, and not opposition to, MBTL in the context of this document.

- “Washington Health Community Position Statement on Proposed Coal Exports”

Please note that this comment is supported by 54 concerned SW Washington health professionals.

- Statement of The Yakama Nation (November 18, 2013)

- Comments of The Yakama Nation (November 18, 2013)
- Statement of The Cowlitz Indian Tribe (September 9, 2013)
- Comments of Dr. Lee Ann Gekas (September 17, 2013)
- Comments of Dr. Maye Thompson (September 17, 2013)
- Comments of Dr. Theodora Tsongas (October 9, 2013)
- Comments of Margie Kircher, MS OTR (October 9, 2013)
- Comments of Diane Winn, RN (October 9, 2013)
- Comments of Alona Steinke, RN (October 9, 2013)
- Comments of Marilee Dea, RN (September 17, 2013)
- Comments of Dr. Andrea Voss-Andreaes (October 9, 2013)
- Comments of Dr. Patrick O'Herron (October 9, 2013)
- Comments of Dr. Martha Neuringer (October 9, 2013)
- Comments of Dr. Andy Harris (November 18, 2013)
- Comments of City of Milwaukie, Oregon (November 18, 2013)
- Comments of the City of Mosier, Oregon (November 18, 2013)
- Comments of the Mayor Kitty Piercy of Eugene, Oregon (November 8, 2013)
- Portland City Council Resolution 3659 (September 19, 2012)
- Portland City Council Resolution 36962 (October 4, 2012)
- Resolution of the City Council of the City of Beaverton 4182 (June 18, 2013)
- Resolution of the Metro Council No. 12-4367A (September 20, 2012)
- Comments of The Mazamas (November 18, 2013)
- Comments of Earthjustice submitted on behalf of Oregon Physicians for Social Responsibility and others. (November 16, 2013)

Thank you for consideration of these comments,

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