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Subject:	Gateway Park/Oakland Army Base Redevelopment Scoping Comments
Date:	Friday, December 06, 2013 7:42:42 PM
Attachments:	Scoping Comments Dec 6 2013 Final.pdf Exhibit A Port emails re coal export (Port 40-44).pdf Exhibit B OARB EIR Project Description.pdf Exhibit C Gateway Park existing conditions.pdf Exhibit D Amid Oil Boom, Petroleum Exports Surge.pdf Exhibit E 10-2012 AERMOD Modeling Morrow vfin.pdf image001.png

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Dear Mr. Lee, Honorable Members of the Oakland City Council and Honorable Commissioners of the Port of Oakland:

On behalf of Sierra Club, West Oakland Environmental Indicators Project and Communities For A Better Environment, I respectfully submit the attached scoping comments on the Gateway Park/Oakland Army Base Redevelopment/Reuse project. Please feel free to contact me with any questions about the attached.

Sincerely,

Suma Peesapati

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December 6, 2013

VIA ELECTRONIC MAIL

Peter Lee, Project Manager
Bay Area Toll Authority
101 Eighth Street
Oakland, CA 94607
Email: plee@mtc.ca.gov

Re: Scoping Comments Related to the Environmental Review of Gateway Park and Redevelopment of the former Oakland Army Base (SCH # 2013112003)

Dear Mr. Lee:

I. INTRODUCTION

I am writing on behalf of Sierra Club, West Oakland Environmental Indicators Project, and Communities for a Better Environment to ensure that the environmental review of the Bay Area Toll Authority's ("BATA") Gateway Park proposal complies with the basic mandates of the California Environmental Quality Act ("CEQA") and the National Environmental Policy Act ("NEPA"). Members of the undersigned groups live, work and recreate in and around the project area. Poorly planned and environmentally detrimental projects jeopardize the health and quality of life of these members.

It has come to our recent attention that one of the developers of the former Oakland Army Base seeks to export coal. *See* Exhibit A at Port 044 ("The company estimates it will handle 2 to 3 million tons of export coal annually… [T]he company would like to be able to fully load a Panamax ship to 75-80K tons. Rail access to the terminal is also important as it will result in additional congestion of approximately one additional train per day.") The prospect of exporting coal (or any other type of fossil fuel) out of the Oakland has never before been disclosed, analyzed or mitigated in the Oakland Army Base Redevelopment planning and permitting process. The significant traffic, safety, aesthetic, noise, recreational, and health, economic and environmental justice impacts of coal exports to park visitors and to the surrounding community are serious and undeniable. As Port staff itself acknowledges, the potential for coal exports out of the Oakland is a controversial issue that is likely to spark widespread concern in the Bay Area.[1] Given the public interest and serious environmental impacts associated with the export of coal, the undersigned groups look forward to the opportunity to comment on an environmental review document that fully addresses the issues discussed below.

[1] *See* Exhibit A at PORT 040 (where Port staff writes that coal exports "could pose substantial risk to our operations, certainly when you have winner of the Nobel Peace Prize laying down in front of trains in British Columbia to protest coal experts through Canada.")

II. LEGAL BACKGROUND

A. CEQA

CEQA has two basic purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. 14 Cal. Code Regs. ("CEQA Guidelines") § 15002(a)(1). The EIR is the "heart" of this requirement. *See No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 84. The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return." *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.

Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures. *See* CEQA Guidelines § 15002(a)(2) and (3). *See also Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564; *Laurel Heights Improvement Ass'n v. Regents of the University of California* (1988) 47 Cal.3d 376, 400).)

B. NEPA

NEPA is our "basic national charter for the protection of the environment." 40 C.F.R. § 1500.1. NEPA's fundamental purposes are to guarantee that: (1) agencies take a "hard look" at the environmental impacts of their actions by ensuring that they "will have available, and will carefully consider, detailed information concerning significant environmental impacts;" and (2) "the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). NEPA "emphasizes the importance of coherent and comprehensive up-front environmental analysis to ensure informed decision-making to the end that the agency will not act on incomplete information, only to regret its decision after it is too late to correct." *Center for Biological Diversity v. United States Forest Serv.*, 349 F.3d 1157, 1166 (9th Cir. 2003) (citation omitted).

To accomplish these purposes, NEPA requires all agencies of the federal government to prepare a "detailed statement" that discusses the environmental impacts of, and reasonable alternatives to, all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). This statement is commonly known as an environmental impact statement ("EIS"). *See* 40 C.F.R. Part 1502. An EIS must provide a "full and fair discussion of significant environmental impacts" of a proposed action, "supported by evidence that the agency has made the necessary environmental analyses." *Id*. § 1502.1. As the Ninth Circuit has stated, this consideration "must amount to a 'hard look' at the environmental effects." *Idaho Sporting Cong. v. Rittenhouse*, 305 F.3d 957, 963 (9th Cir. 2002).

An EIS must include an analysis of "direct effects," which are "caused by the action and occur at the same time and place," as well as "indirect effects which . . . are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8. An EIS must also consider the cumulative impacts of the proposed federal agency action together with past, present, and reasonably foreseeable future actions, including all federal and non-federal activities. 40 C.F.R. § 1508.7. As the Ninth Circuit has repeatedly emphasized, a cumulative impacts analysis "must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects." *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt*., 387 F.3d 989, 994 (9th Cir. 2004). Moreover, a cumulative impacts analysis must be timely, and it is "not appropriate to defer consideration of cumulative impacts to a future date when meaningful consideration can be given now." *Kern v. United States Bureau of Land Mgmt.*, 284 F.3d 1062, 1075 (9th Cir. 2002).

Furthermore, an EIS must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed project. 40 C.F.R. § 1502.14(a). Consideration of alternatives is "the heart of the environmental impact statement," because it compels agencies to "present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." *Id*. Because the statement of purpose and need for an agency action will determine the reasonable range of alternatives to be analyzed, an agency may not define the purpose and need too narrowly. *See City of Carmel-by-the Sea v. U.S. Dept. of Transp*., 123 F.3d 1142, 1155 (9th Cir. 1997) (holding that because the purpose and need of a project defines the range of alternatives, an agency "cannot define its objectives in unreasonably narrow terms").

III. THE SCOPE OF THE PROJECT INCLUDES THE ENTIRE OAKLAND ARMY REDEVELOPMENT AREA

A. The Project Description Must Be Revised to Include the Entire Project

An accurate, stable and finite project description is the *sine qua non* of an informative and legally adequate EIR. *See County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 192 [139 Cal.Rptr. 396, 401]. Without it, CEQA's objective of fostering public disclosure and informed environmental decision-making is stymied. As one analyst has noted:

> The adequacy of an EIR's project description is closely linked to the adequacy of the EIR's analysis of the project's environmental effects. If the description is inadequate because it fails to discuss the complete project, the environmental analysis will probably reflect the same mistake. (Kostka and Zischke, "Practice Under the California Environmental Quality Act," p. 474 (8/99 update).)

Here, the NOP's Project description is incomplete and inaccurate. While the NOP seeks to focus exclusively on the piece of the former Army Base that will be redeveloped into a park, the true scope of the project includes redevelopment of the entire Oakland Army Base. In fact,

the City of Oakland's previous Oakland Army Base Redevelopment EIR specifically includes the Gateway Park as part of the Oakland Army Base Redevelopment project. *See* Exhibit B at p. 3-31to p.3-32. Yet, the current NOP inexplicably fails to similarly include the entire redevelopment area in its project description.

The artificially constrained project description is not a theoretical concern in this case. Just adjacent to the "park project" lies a rail yard for trains carrying potentially dangerous substances such as coal or other fossil fuels. The improperly narrow project description further ignores the environmental impacts of those trains, including the aesthetic, noise, recreational, traffic, safety, and health impacts to park visitors, when those trains are in motion nearby and are being unloaded. The potential for fossil fuel exports out of the adjacent Port of Oakland raises a host of separate potential issues. In fact, a 2010 study of Gateway Park, commissioned by the lead and responsible agencies for the project, made the following apt observation:

> Redevelopment of surrounding parcels for commercial, industrial, Port and transportation uses, if not well coordinated, could create safety challenges for pedestrians and bicyclists, could block visual access to the water or to the desired Park access pathways, and could create unattractive back-door uses along the Park access pathways.

Gateway Park Area: Existing and Future Conditions, prepared by Perkins and Will (March 3, 2010), attached as Exhibit C, at p. 12. The environmental review documents cannot simply ignore these impacts by artificially constraining the project description.

Furthermore, the former Oakland Army Base has a long history of serious contamination that is the process of being cleaned-up under the jurisdiction of the California Department of Toxic Substances Control. The status of those clean-up efforts, including any potential lingering impacts associated with soil disturbance and contaminated groundwater at the *entire* Oakland Army Base site, must be considered part of this project. As BATA's own consultants warn:

- Implementation of the Gateway Park project would require additional sampling, modeling studies and remediation for hazardous materials in the project area;

- Several known hazardous materials sites are still undergoing cleanup with[in] ¼ mile of the project area. This could pose a risk to human health if clean[up] is ongoing during construction activities;

- Two investigations showed a list of sixteen hazardous material sites, six of which have been remediated and closed, three of which remain open for remediation and seven of which have an unknown status;

- It was recommended ***as part of the Oakland Army Base EIR*** that further investigation be conducted.

Exhibit C at 53-54 (emphasis added). Finally, given the existing environmental burdens in the West Oakland area and the fact that the park would have specific elements (i.e. playgrounds and museums) that are likely to attract a concentration of children, the environmental review process must consider environmental justice impacts and impacts to sensitive receptors. A full project description that covers the Oakland Army Base redevelopment area, as a whole, would help ensure that these issues are adequately disclosed, analyzed and mitigated as required by CEQA.

B. The Project Cannot Have Two Lead Agencies

The NOP's unduly narrow project description is the root of a second flaw in the environmental review – that is, shifting the "lead agency" role from the City of Oakland to BATA. Because the City of Oakland served as the "lead agency" for the development of other aspects of the Oakland Army Base redevelopment, it should serve as the lead agency for this aspect of the project as well. *See* CEQA Guidelines § 15050(a) (stating that if two or more agencies are involved in implementing or approving a proposed project, only one agency can be the lead agency).

C. The Lead Agency Cannot "Piecemeal" Its Review of the Oakland Army Base Redevelopment Project

CEQA mandates "that environmental considerations do not become submerged by chopping a large project into many little ones -- each with a minimal potential impact on the environment - which cumulatively may have disastrous consequences." *Bozung v. LAFCO,* (1975) 13 Cal.3d 263, 283-84; *City of Santee v. County of San Diego,* (1989) 214 Cal.App.3d 1438, 1452. Before undertaking a project, the lead agency must assess the environmental impacts of all reasonably foreseeable phases of a project. *See Laurel Heights, supra,* pp. 396-97 (EIR held inadequate for failure to assess impacts of second phase of pharmacy school's occupancy of a new medical research facility). A public agency may not segment a large project into two or more smaller projects in order to mask serious environmental consequences. As the Second District stated:

> The CEQA process is intended to be a careful examination, fully open to the public, of the environmental consequences of a given project, covering the entire project, from start to finish. . . the purpose of CEQA is not to generate paper, but to compel government at all levels to make decision with environmental consequences in mind.

Natural Resources Defense Council v. City of Los Angeles ("*NRDC v. LA*") (2002) 103 Cal.App.4th 268 (emphasis added).

By failing to consider all aspects and phases of the Oakland Army Base redevelopment, the NOP risks masking the combined environmental impacts of the Project. CEQA prohibits such a "piecemeal" approach. *See Kings County Farm Bureau v. City of Hanford* (1990) 221

Cal.App.3d 692, 720. It was precisely such piecemealing that was rejected by the court in *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus*, (1994) 27 Cal.App.4th 713. *In San Joaquin Raptor*, the court found that the EIR for a residential development project was deficient because it treated the associated infrastructure improvements, including a new wastewater treatment plant, as a separate project studied in a different EIR. The *San Joaquin Raptor* court found that this separation of the "sewer expansion" from the residential project improperly curtailed the project description, resulting in the "fallacy of division." *Id.* at 729-730. Just like the wastewater treatment plant in *San Joaquin Raptor*, the Gateway Park constitutes an essential element of the Oakland Army Base redevelopment project. *See* Exhibit B at p. 3-31to p.3-32. In fact, as the NOP itself states, "the idea for a new park at this location was conceived in the 1990s during planning for . . . reuse of the Oakland Army Base." NOP at 2.

IV. THE ENVIRONMENTAL REVIEW DOCUMENT MUST CONSIDER THE CUMULATIVE IMPACTS OF THIS PROJECT COMBINED WITH THE BROADER ARMY BASE REDEVELOPMENT, INCLUDING RAIL TRANSPORT

Even if BATA and the City of Oakland claim that the Gateway Park is somehow separate from the Oakland Army Base Redevelopment Project, which would be incorrect, analysis of the impacts of the broader Army Base redevelopment activity would nonetheless remain necessary as part of the EIR's cumulative analysis. An EIR must discuss significant "cumulative impacts." CEQA Guidelines § 15130(a). This requirement flows from CEQA Section 21083, which requires a finding that a project may have a significant effect on the environment if,

> the possible effects of a project are individually limited but cumulatively considerable. . . . 'Cumulatively considerable' means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Public Resources Code § 21083. As the court stated in *Communities for a Better Environment v. Cal. Resources Agency*, ("*CBE v. CRA*") (2002) 103 Cal.App.4th 98, 114:

> Cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact.

Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental

impacts." CEQA Guidelines § 15355(a). "[I]ndividual effects may be changes resulting from a single project or a number of separate projects." *Id.*

As set forth by the court in *CBE v. CRA*, 103 Cal.App.4th at 117:

> The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

A legally adequate "cumulative impacts analysis" views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable probable future projects whose impacts might compound or interrelate with those of the project at hand. "Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." CEQA Guidelines § 15355(b).

Mere conclusory statements are not sufficient to satisfy the cumulative impacts analysis requirement. *See Mountain Lion Coalition v. Fish & Game Comm'n* (1989) 214 Cal.App.3d 1043, 1047. A proper cumulative impact analysis must be supported by references to specific evidence. *Id.* As the court in *Mountain Lion Coalition* explained, "it is vitally important that an EIR avoid minimizing the cumulative impacts. Rather, it must reflect a conscientious effort to provide public agencies and the general public with adequate and relevant detailed information about them." *Id.* at 1051. "A cumulative impacts analysis which understates information concerning the severity and significance of cumulative impacts impedes meaningful public discussion and skews the decisionmaker's perspective concerning the environmental consequences of the project, the necessity for mitigation measures, and the appropriateness of project approval." *Id.*

To comply with CEQA, an EIR must contain either "a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency," or "a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact." CEQA Guidelines § 15130(b)(1); *San Joaquin Raptor/Wildlife Rescue Ctr. v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 740.

Similarly, under NEPA, an EIS must consider direct effects, indirect effects, and cumulative effects. "Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative." 40 C.F.R. § 1508.8.

V. THE OUTDATED AND INACCURATE EIR FOR THE OAKLAND ARMY BASE REDEVELOPMENT PROJECT MUST BE UPDATED TO ANALYZE, AMONG OTHER IMPACTS, RAIL TRAFFIC AND FOSSIL FUEL EXPORTS

As explained above, there are a number of legal requirements that mandate environmental review of the *entire* Oakland Army Base redevelopment project, rather than Gateway Park alone. The City of Oakland engaged in a previous environmental review of the Oakland Army Base redevelopment project in 2002, followed by an addendum in 2012. (SCH # 2001082058). However, new and significant information has emerged since those previous environmental reviews, rendering those documents outdated and inaccurate. Specifically, correspondence from the Port of Oakland documents plans to export coal from the Oakland Army Base Redevelopment project. (*See* Exhibit A.) The new proposal for overseas coal exports, including the impacts of transporting coal to California by rail from out-of-state, must be disclosed, analyzed and mitigated in this environmental process. In addition, given the recent and growing interest in exporting petroleum products from California,[2] the potential for fossil fuel exports, more generally, must be analyzed in the environmental review document for the project.

The lead agency in this case should not be tempted to rely on any of the outdated analysis in the Oakland Army Base Redevelopment EIR. This is because, as explained above, substantial changes to the project and new information (including the export of fossil fuels) require a fresh analysis of the project. Cal. Pub. Res. Code § 21166; CEQA Guidelines § 15162(c). This holds equally true of the outdated cumulative impact analysis in the 2002 Oakland Army Base Reuse EIR and its Addendum. *See Bakersfield Citizens v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1217.)

VI. A FULL EIS, RATHER THAN AN EA, IS REQUIRED FOR THE PROJECT UNDER NEPA

The NOP states, without any explanation, that an Environmental Assessment ("EA"), rather than an EIS, will be prepared for the proposed action. An EIS is required for the proposed action for at least two reasons. First, as explained above, significant changes to the Oakland Army Base Reuse and new information related to fossil fuel exports, render the previous environmental review of the reuse outdated, inaccurate, and unreliable. Similar to a lead agency's CEQA obligations, NEPA requires an agency to prepare a supplement to either a Draft or Final EIS if it makes substantial changes in the proposed action that is relevant to environmental concerns, or if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action of its impacts. 40 C.F.R. § 1502.9(c).

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[2] *See, e.g.*, Exhibit D (http://www.nationaljournal.com/new-energy-paradigm/amid-oil-boom-petroleum-exports-surge-20131017 (last visited on December 3, 2013)).

The December 2001 NEPA document for the Oakland Army Base Reuse project contains the following description of the proposed action: "The proposed action is the disposal of OARB land and facilities made available by its mandated closure. Reuse is treated as a secondary action, resulting from disposal." *Environmental Impact Statement for the Disposal and Reuse of the Oakland Army Base*, Prepared for the Military Traffic Management Command by the U.S. Army Corps of Engineers (December 2001) at ES-1.[3] This 2001 EIS nowhere mentions the potential for fossil fuel exports, which constitutes a fundamental change in the project.

Second, the specific impacts related to coal exports are significant and warrant a full EIS, as discussed more fully below. Finally, to the extent the Port of Oakland will be used to export any other type of fossil fuel, those impacts must also be addressed, as explained below. In short, the proposed action, and its related impacts, demand a supplemental EIS, rather than an EA.

VII. SPECIFIC POTENTIAL IMPACTS RELATED TO COAL EXPORTS

A. Climate Change Impacts

Very recently, United Nations' Intergovernmental Panel on Climate Change ("IPCC") released the fifth version of its frequently cited report reflecting the scientific consensus that unrestrained greenhouse gas emissions cause global warming. The fifth IPCC report confirms yet again that climate change is being caused by unrestrained carbon pollution from industrial activities. As summarized by the IPCC in an accompanying press release:

> **Warming in the climate system is unequivocal** and since 1950 many changes have been observed throughout the climate system that are unprecedented over decades to millennia. Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850… Thomas Stocker, the other Co-Chair of Working Group I said: "Continued emissions of greenhouse gases will cause further warming and changes in all components of the climate system. Limiting climate change will require **substantial and sustained reductions** of greenhouse gas emissions."[4]

Reacting to the reality of climate change, in 2006, Governor Schwarzenegger signed AB 32, a landmark law to control and reduce the emission of global warming gases in California along with the companion statute SB 1368, which prohibits California utilities from making long term investments in coal-based electricity generation. AB 32 requires both reporting of greenhouse gas emissions and their reduction on an ambitious time line, including a reduction of

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[3] Available at: http://gate1.baaqmd.gov/pdf/0267_Part1_Environmental_Impact_Statement_Oakland_Army_Base_2001.pdf (last visited on December 4, 2013).

[4] Available at: http://www.ipcc.ch/news_and_events/docs/ar5/press_release_ar5_wgi_en.pdf (last visited on December 6, 2013)(emphasis in original).

CO2 emissions to 1990 levels by 2020. Looking beyond 2020, Executive Order S-3-05 sets an emissions reduction target of 80 percent below 1990 levels by 2050. Exec. Order S-3-05. In adopting AB 32, the Legislature made the following specific findings:

> (a) Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.
>
> (b) Global warming will have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry. It will also increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state.
>
> (c) ***California has long been a national and international leader on energy conservation and environmental stewardship efforts***, including the areas of air quality protections, energy efficiency requirements, renewable energy standards, natural resource conservation, and greenhouse gas emission standards for passenger vehicles. ***The program established by this division will continue this tradition of environmental leadership by placing California at the forefront of national and international efforts to reduce emissions of greenhouse gases.***
>
> (d) ***National and international actions are necessary to fully address the issue of global warming. However, action taken by California to reduce emissions of greenhouse gases will have far-reaching effects by encouraging other states, the federal government, and other countries to act.***
>
> (e) ***By exercising a global leadership role,*** California will also position its economy, technology centers, financial institutions, and businesses to benefit from national and international efforts to reduce emissions of greenhouse gases. More importantly, investing in the development of innovative and pioneering technologies will assist California in achieving the 2020 statewide limit on emissions of greenhouse gases established by this division and will provide an opportunity for the state to take a global economic and technological leadership role in reducing emissions of greenhouse gases.

Cal. Health and Saf. Code § 38501 (a) – (e) (emphasis added). The extent of future warming depends on whether and how rapidly California and the rest of the world reduce greenhouse gas

emissions. Even under a low emissions scenario, which assumes rapid reductions in greenhouse gas pollution, California is projected to experience a host of impacts by the end of this century, including 30 – 60% loss of the Sierra snowpack, a 10 – 35% increase is the risk of wildfire, 1.5 times more critically dry years, and increases in ozone formation, smog, and air quality-related fatalities in the South Coast Air Basin. *California Climate Change Center, Our Changing Climate: Assessing the Risks to California* (2006)[5] at 15 (hereinafter "*Our Changing Climate 2006*"). Under a higher emissions scenario, projected impacts to California are staggering and include a 90% loss of the Sierra snowpack and 4 – 6 times as many heat-related deaths. *Id.*

Even more alarming, recent assessments have concluded earlier analyses understate future climate impacts. In its 2012 update to its assessment of climate change impacts to California, the California Climate Change Center, a collaboration of researchers assembled by the California Energy Commission, determined that sea level along the California coast could increase by 31-55 inches by the end of the century, 9-25 inches more than its 2006 estimate. Compare *California Climate Change Center, Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California* (2012)[6] at 9, , (hereinafter "*Our Changing Climate 2012*) *with Our Changing Climate 2006* at 15 (estimating 22-30 inches of sea level rise by the end of the century). The 2012 Assessment also concluded that as early as 2050, today's "100-year storm event" could strike annually as result of sea level rise. *Our Changing Climate 2012* at 9. Because the severity of these impacts will depend on society's ability to reduce greenhouse gas pollution, "the choices we make today greatly influence the climate our children and grandchildren inherit." *Our Changing Climate 2006* at 2. The export of coal from California is not only antithetical to the spirit and purpose of California's Global Warming Solutions Act, but would exacerbate the serious climate change impacts described above. *Id.* at § 38501 (a), (b).

Concentrations of CO2 in the atmosphere "are projected to continue increasing unless the major emitters take action to reduce emissions." *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 66,496, 66,539 (Dec. 15, 2009). The U.S. Environmental Protection Agency ("EPA") recognized the cumulative nature of both the climate change problem and the strategies needed to combat it:

> [N]o single greenhouse gas source category dominates on the global scale, and many (if not all) individual greenhouse gas source categories could appear small in comparison to the total, when, in fact, they could be very important contributors in terms of both absolute emissions or in comparison to other source categories, globally or within the United States. If the United States and the rest

[5] http://www.energy.ca.gov/2006publications/CEC- 500-2006-077/CEC-500-2006-077.PDF (last visited on December 5, 2013).

[6] http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC- 500-2012-007.pdf (last visited on December 5, 2013).

> of the world are to combat the risks associated with global climate change, contributors must do their part even if their contributions to the global problem, measured in terms of percentage, are smaller than typically encountered when tackling solely regional or local environmental issues.

Id. at 66,543. Consistent with this finding, the Ninth Circuit has rejected the argument that individual actions represent too minor of a contribution to the global problem to merit consideration under NEPA: "The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct. Any given rule setting a [vehicle fuel-efficiency] standard might have an 'individually minor' effect on the environment, but these rules are 'collectively significant actions taking place over a period of time.'" *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin*., 538 F.3d 1172, 1217 (9th Cir. 2008) (internal citations omitted). CEQA also calls for a careful review of impacts related to greenhouse gas emissions. CEQA Guidelines § 15064.4.

Both the United States and California have sought to meet the challenge of climate change with a variety of statutory and regulatory actions to reduce our reliance on fossil fuels and promote conservation and alternatives. At the federal level, EPA has responded with a formal finding that greenhouse gases endanger the public health and welfare, 74 Fed. Reg. 66,496 (Dec. 15, 2009), the first step in comprehensively regulating greenhouse gases under the federal Clean Air Act. EPA has already issued some regulations relating to reducing emissions from both mobile and stationary sources, including the June 2010 "tailoring rule" governing federal Clean Air Act requirements for greenhouse gas emissions from stationary sources, 75 Fed. Reg. 31,514 (June 3, 2010), passenger vehicle rules, *see, e.g.*, *2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards*, 77 Fed. Reg. 62,624 (Oct. 15, 2012), and proposed rules for power plants, see *Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources* 77 Fed. Reg. 22,392 (April 13, 2012).

In short, both the United States and California have made firm and clear commitments to address the causes of climate change and have committed to promote alternatives to projects that generate greenhouse gas emissions and mitigate those that cannot be avoided. The proposal to construct a coal export terminal with massive direct and indirect greenhouse gas emissions needs to be evaluated in light of those statutory and regulatory commitments.

1. An EIR/EIS for the Project Must Evaluate Direct, Indirect and Cumulative Climate Impacts

In a landmark 2008 case, the Ninth Circuit Court of Appeals found that a federal agency violated NEPA when it failed to prepare a full EIS on proposed corporate average fuel economy ("CAFÉ") standards for light trucks. *See Ctr. for Biological Diversity*, 538 F.3d 1172. There, the Ninth Circuit rejected the argument that individual actions represent too minor of a contribution to the global problem to merit consideration. Even more recently, the Ninth Circuit

again emphasized that '"reasonably foreseeable future actions need to be considered [under NEPA] even if they are not specific proposals.'" *N. Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1079 (9th Cir. 2011) (quoting EPA guidance document).

Several cases confirm that NEPA requires evaluation of indirect impacts of projects that facilitate movement of fossil fuels, including GHG emissions. For example, in *Mid-States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520 (8th Cir. 2003), the Eighth Circuit Court of Appeals invalidated an EIS for a rail construction project intended to supply coal from the Powder River Basin to power plants because it failed to analyze the emissions of burning the coal that would be transported by the rail line. The Court found that the project was likely to affect the country's long-term demand for coal and hence the impacts of coal burning should have been considered in the EIS. Similarly, in *Border Plant Working Grp. v. Dep't of Energy*, 260 F. Supp. 2d 997 (S.D. Cal. 2003), a federal district court invalidated a decision to approve transmission lines that would connect proposed power plants in Mexico to the U.S. power grid because indirect effects were not considered. The Court found that the decision violated NEPA because decision-makers failed to consider the impacts of the operation of the Mexican power plants—including impacts on air quality and climate—that were closely linked to the transmission lines. The Court found that the operation of the power plants were an "indirect effect" of the transmission line project because the two were causally linked. The Court specifically struck down the agency's decision that the project's impacts were too minimal to require preparation of an EIS. *Id.*

Similarly, CEQA defines a "project" as "an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and…that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies." (Cal. Pub. Res. Code § 21065 9(c).) The Guidelines augment this definition by providing that a "project" is "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment" and which is undertaken, supported, or approved by a public agency. (Guidelines, § 15378(a) [emphasis added].) The California Supreme Court has determined that "project" is "to be interpreted in such manner as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." *Friends of Mammoth v. Board of Supervisors of Mono County* (1972) 8 Cal. 3d 247, 259; *see also McQueen v. Board of Directors of the Mid-Peninsula Reg.'l Open Space Dist.* ("*McQueen*") (1988) 202 Cal. App. 3d 1136, 1143 ["'Project' is given a broad interpretation in order to maximize protection of the environment"].

ARB has recognized the need for specific analysis of greenhouse gases under CEQA:

> There is a strong need [] to aggressively address GHG emissions right now. The pollution we contribute to the atmosphere today will continue to have climate impacts for years, decades, and in some cases, millennia to come. And the longer we delay in addressing the problem, the more we risk being unable to meet our

> climate objective. CEQA provides a mechanism that is independent of AB 32 through which lead agencies can begin immediately to reduce the climate change-related impacts of the projects that come before them.

California Air Resources Board, *Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act* (Oct. 2008)[7] at 4.

The impacts of exporting coal are not limited to the climate impacts of its use in overseas power plants. A valid CEQA/NEPA analysis must also consider the climate and other air emissions of transporting these huge volumes of coal. For example, by one estimate, each trip of a fully loaded Panamax container ship to China, burns over 1100 tons of bunker fuel. Bunker fuel generates significant CO2 emissions and other much more potent greenhouse gases like nitrous oxides (N2O), methane, and black carbon. It also causes a variety of other toxic and harmful air emissions, including diesel particulates that are highly damaging to human health. These kinds of impacts are "indirect effects" of the decision to authorize the coal export facility and should be evaluated in an EIR/EIS, along with any appropriate mitigation.

The EIR/EIS must also include discussion of the impacts of mercury deposition that will be caused by the burning of this increased volume of coal. Coal burned in Asia is a major source of local mercury contamination. Mercury is a highly toxic pollutant that bioaccumulates and poses severe health hazards, especially to pregnant mothers and small children.

Transportation of coal over long distances via rail also has significant environmental impacts, including the fossil fuel consumption of moving large volumes of material hundreds or thousands of miles. Data also shows that open coal trains lose huge volumes of coal dust during transportation. Such discharges would add to air quality problems along the rail route. According to BNSF studies, 500 to 2,000 lbs. of coal can be lost in the form of dust for each rail car; coal trains are typically composed of at least 120 cars per train. In other studies, again according to BNSF, as much as three percent of the coal in each car (around 3,600 lbs. per car) can be lost in the form of dust. Hearing Transcript, July 29, 2010, *Ar. Elec. Coop. Ass'n – Petition for Declaratory Order*, Surface Transportation Board, Docket No. FD 35305, at 42:5 13. This is a huge volume of coal that could escape into the air and water. Moreover, as with the greenhouse gas impacts, this analysis must be viewed in the context of all existing and reasonably foreseeable similar impacts.

B. The EIR/EIS Must Consider All Impacts Caused By Construction and Operation Of the Project

[7] http://www.arb.ca.gov/cc/localgov/ceqa/meetings/102708/prelimdraftproposal102408.pdf (last visited on December 5, 2013).

Coal exports from the Oakland will affect people and places far beyond the immediate construction zone. Every community located along the rail line between the coal mines and the Port will be harmed, and people outside California will be affected by the climate impacts of mining, transporting, and ultimately burning this coal.
Affected rail communities might include Richmond, Sacramento, Bakersfield, Fresno, Merced, Modesto, Richmond, Stockton and Pittsburgh.[8] The EIR/EIS must, of course, analyze the impacts of construction and operations at and near the former Oakland Army Base, but it also must analyze the impacts of coal trains and coal use on a much broader scale. This includes the direct, indirect, and cumulative impacts of coal export on public health, public safety, economics, marine health, public investment, and climate change.

To be clear, EIR/EIS must examine the full direct, indirect, and cumulative impacts of the proposed project— from the mining of the coal in the Powder River Basin or Utah or Colorado, the transport of coal by rail through several states and hundreds of communities, the loading and shipping of coal via large ocean vessels, to the burning of the coal in Asia.

1. The Public Health Issues Raised by This Project Are Significant and Harmful.

The public health issues raised by a project of this size and extent include increased air pollution from coal dust (mercury, arsenic, lead and uranium), diesel pollution over different operational lifetime projections for the terminal, soil contamination by coal dust, and increased noise. The EIR/EIS should include a specific focus on children, the elderly, and other vulnerable members of the community. It should also consider cumulative and disproportionate impacts on communities already exposed to high levels of air and water pollution, particularly low income communities and communities of color. Any health impact analysis should take into account both the needs of communities potentially affected by the en-route trains and the site, as well as workers onsite who will be exposed at much higher levels.

a. The Project, Alone Or In Combination With Other Existing and Future Development, Will Cause Harmful Air Impacts

West Oakland already suffers from some of the unhealthiest air in the region. Air quality impacts and pollution from nitrogen dioxide ("NO2"), particulate matter, sulfur dioxide, sulfuric acid mist, heavy metals and coal dust must be analyzed. NO2 exposure can have a wide range of health impacts depending on the length of exposure and various other factors. Epidemiologic research establishes a plausible relationship between NO2 exposures and adverse health effects ranging from the onset of respiratory symptoms to hospital admission. 76 Fed. Reg. 57105 at 57304; Environmental Protection Agency, Integrated Science Assessment for Oxides of Nitrogen—Health Criteria (EPA/600/R-08/071), 5 -15.

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[8] *See, e.g,* Burlington Northern Santa Fe Rail Map, October 29, 2013, http://www.bnsf.com/customers/pdf/maps/coal_energy.pdf

Particulate matter ("PM") refers to a broad class of diverse substances that exist as discrete particles of varying size. 76 Fed. Reg. 57105 at 57302. Recent studies have found an increase in such particles that is higher from coal trains than other types of rail. Such particles are produced by a variety of anthropogenic and natural sources, though most fine particles are produced by anthropogenic combustion and transformations of gas emissions, like NOx, in the atmosphere. The composition of the particles can vary greatly and can remain in the atmosphere for weeks and disperse over thousands of miles. Depending on the size, these particles can be inhaled and penetrate the respiratory tract to cause significant adverse health effects. Coal dust contains many harmful components and causes health problems as people are exposed to fugitive coal dust from coal trains, coal storage piles, loading and unloading practices, emissions from dust control systems, and risk of explosion and fire from coal dust. *See The Fire Below: Spontaneous Combustion in Coal*, U.S. Dep't of Energy (May 1993). Coal is a volatile and easily combustible material—other coal terminals have faced huge fires that pollute the air and put emergency responders and terminal staff at risk. A recent study concluded that the spontaneous combustion of coal stocks, in addition to the "obvious safety hazard and the potential loss of valuable assets" constituted substantial sources of GHGs.[9] Although difficult to quantify, the study estimated that GHG emissions from spontaneous combustion of coal were likely below 3%.[10]

Neighborhoods living near existing coal export and barging terminals on the East Coast and Alaska document significant localized pollution, nuisance, and economic loss from coal dust. There is a considerable body of literature surrounding the risks of coal dust from facilities like this one that should be scrutinized carefully in the EIS. Ironically, much of this evidence was developed by BNSF in an effort to prevail in litigation against its efforts to require coal shippers to take additional measures to reduce dust losses.

Besides analyzing the potential detrimental effects on air quality that will arise from the export terminal itself, a valid NEPA analysis must also consider the negative impacts that will arise from the mining of the coal, the required transport of coal from its source in the Powder River Basin, or Utah or Colorado, to Oakland, the burning of the coal and the disposal of coal combustion waste. This process will affect air quality through a variety of manners. Mining of the coal and loading it onto trains creates significant particulate matter and NOx emissions from the explosives. The NOx emissions from the blasting is so significant that it creates visible clouds of pollution and forces warning signs to be placed near the mines. Transportation creates both the emissions from the diesel locomotives required to carry the coal, as well as the fugitive coal dust that will escape the freight cars along the way, as well as during loading and unloading on both ends of transport. These effects will have a significant impact on the ability of air

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[9] http://www.worldcoal.com/news/coal/articles/Quantifying_emissions_from_spontaneous_combustion_227.aspx#.UoFxFWXTnct (last visited on December 6, 2013).

[10] *Id.*

quality control regions through which the trains will pass to meet the National Ambient Air Quality Standards, which are set in order to protect public health. In fact, no matter which route the trains take from the Powder River Basin (or Utah or Colorado) to the export facility, they will pass through numerous non-attainment and maintenance areas for the criteria pollutants they will be emitting.

Further, a valid NEPA analysis must consider air pollution impacts that specifically accompany transporting and burning coal overseas. Each trip of a fully loaded Panamax container ship to China, for example, uses around 500 tons of bunker fuel per trip, generating both significant CO2 emissions in its own right as well as a N2O, NOx, SO2, sulfuric acid mist and a variety of other toxic and harmful air emissions, including diesel particulates that are highly damaging to human health, as well as black carbon, one of the most potent greenhouse pollutants in existence. T.C. Bond et al., *Bounding the role of black carbon in the climate system: A scientific assessment*, Journal of Geophysical Research: Atmospheres (online version Jan. 15, 2013). The climate impact of the coal dust must also be analyzed in-depth in the EIS, including the potential local and regional albedo change and warming impacts. Relatedly, the EIS must consider idling ship emissions of cargo vessels at the terminal; such emissions have been a significant source of toxic air pollution in other ports.

Exporting coal may also increase the air-quality impacts associated with its combustion. When coal is burned domestically, we can be reasonably certain of the pollution-control regulations to which it will be subject. However, there is no guarantee that equivalent regulations will be in place in the Asian countries where the exported coal will be sold and burned. As a result, the air pollution impacts of exporting American coal may be greater than if the coal were to be burned domestically. Yet these impacts will not stay in Asia. Airborne transport of soot, sulfur compounds, mercury, ozone, and other byproducts of coal combustion can travel across the Pacific Ocean and affect the health of western states' ecosystems and residents. *See* Eric de Place, *Northwest Coal Exports: Some common questions about economics, health, and pollution* (Nov. 2011) at 7. These kinds of impacts are "indirect effects" of the shipment of coal and should be evaluated in an EIS along with any appropriate mitigation. To complete the lifecycle analysis, the impacts from fugitive particular matter and heavy metals from the transport and disposal of coal combustion waste must also be considered.

In doing an analysis of air pollution impacts, the agencies should not be tempted to rely on the attainment status of the area alone. First, attainment designations do not tell us anything about air impacts that will happen in the future when a new source of pollution is added. In addition, at present, it is unclear that any part of this project's lifecycle will be subject to New Source Review permitting. Should this be the unfortunate case, a full analysis of the air impacts in the NEPA/CEQA process is all the more important.

Tools such as AERMOD are available and should be used to perform objective, qualitative analysis of air impacts. It is also critical in conducting modeling analysis to use reasonably conservative but realistic inputs into the model. For example, it would be easy, but

inaccurate, to assume the coal train travels at an average speed for its entire journey from the Powder River Basin (or Colorado or Utah) to Oakland. However, the reality, which should be reflected in the analysis, is that coal trains travel very slowly at certain points of their journey because of elevation increases or safety restrictions. In addition, additional locomotive engines are needed at certain points of the journey to make it over hills and the engines have to work harder, and thus produce more emissions, at those points. In addition, trains idle along the way for various reasons like crew changes and train re-configurations. Similarly, it would be easy, but inaccurate, to assume that by the time the coal terminal is operating, only ultra-low sulfur diesel will be used in the trains and ships. However, there are exceptions to the diesel regulations such as the provisions for using transmix diesel that has much higher sulfur content. Realistic assumptions of these factors need to be included in the analysis. Modeling must take these inputs into account to be realistic. For example, expert reports and modeling on air quality impacts from a proposed 8.8 million ton coal export facility in Oregon found that the proposed project "will cause very adverse air quality impacts in both Washington and Oregon." *See* AMI Environmental AERMOD Modeling of Air Quality Impacts of Proposed Morrow Project, Final Report, Oct. 2012 (attached as Exhibit E).

b. The Project Will Harm Water Resources

The EIS must consider effects to all surface and ground water resources within the project area. The EIS must consider all potential water quality impacts (e.g., increased sediment loads, possible spills, coal dust impacts, mercury deposition, changes to alluvial groundwater quality, degradation of drinking well water), and water quantity impacts (e.g., drawdown of aquifers, diversions or diminutions of surface flow, hydrologic changes affecting seeps and springs, drinking water impacts) of the project's construction and operation. The agencies should ensure that the EIR/EIS describes, in detail, the possible sources of all water needed for the railroad and associated mining activities, including water originating in any over-allocated water source. It should also look closely at the experience of water pollution at other coal terminals, the reality of which is generally far from the promises made by its proponents.

The agencies also must consider cumulative water resource impacts flowing from reasonably foreseeable coal mines in the Powder River Basin or in Utah or Colorado (e.g., disruption of hydrologic systems, pollution impacts), as well as impacts to water resources that would be expected from burning the coal and disposal of coal combustion waste, whether domestically or overseas. In addition to water availability considerations, the EIS must examine the project's potential impacts to water quality. Contamination of river and drinking water supplies can occur with diesel emissions and diesel spills both during project construction and during the ongoing operation of the project, which relies on continuous activity of trains. The TVA Kinston coal ash spill disaster is just one of many examples of coal combustion waste contaminating water. There are dozens and dozens of less dramatic water contamination examples from coal combustion waste pollution. In addition, drinking water supplies can become contaminated from coal dust and coal spills. Coal will be delivered in open top rail cars to the site. Regular movement of uncovered rail cars and the loading and unloading of these cars

cause the release of fugitive coal dust, which can further contaminate the water supplies. Construction and operation of the railroad may also result in water quality impacts in the way of increased sedimentation and other changes. In addition, the possibility of spills of coal and heavy bunker oil in the Bay after loading the coal onto ocean-going vessels must be analyzed. The EIS must assess these impacts and detail how federal, state, and local water quality standards will be met, monitored, and maintained.

c. Public Safety Will Be Jeopardized by Construction and Operation of the Project.

The impacts to public safety run the gamut from increased train traffic and vehicle accidents, increased derailments and concomitant emergency response, travel time delays at specific intersections (including the economic impacts of those delays, and impacts to/delay of emergency services (fire, police, EMT).

Threats from frequent long trains at rail crossings all along the route from the source of the coal to the export terminal in Oakland will mean delayed emergency medical service response times; and increased accidents, traumatic injury and death. Each fully loaded train is over a mile long, and this proposal would significantly increase the daily number of trains along the rail route. These trains will bisect multiple communities along the route, leading to significant traffic delays and potential safety issues at grade-crossings. The delay of only a few minutes for an emergency response vehicle can mean the difference between life and death for citizens in these rural communities. In addition, increased rail traffic will lead to increased collisions between passenger vehicles, pedestrians, and trains; there are approximately 3,000 vehicle collisions with coal trains each year already, and 900 pedestrian accidents. Daniel A. Lashof, et al., Natural Resources Defense Council, *Coal in a Changing Climate* (Feb. 2007).

In addition to the threat of delay, the EIS must review the threats associated with coal train derailments. There were over 18 derailments of coal trains in the United States in the summer of 2012. In 2013 alone, there have been over 90 coal train-related incidents in the U.S. that include derailments, spills and other dumping, 36 of which were derailments. There is a serious risk to human health from a huge increase in coal train traffic along the route to and from the source of the coal and near the Oakland export terminal.

Coal dust has also been shown to be a cause of rail bed instability and derailments, which can pose a significant public safety hazard. The Surface Transportation Board ("STB") found coal dust to be "a pernicious ballast foulant." Surface Transportation Board Decision, Arkansas Electric Cooperative Corporation – Petition for Declaratory Order, Docket No. FD 35305 (Mar. 3, 2011). The STB further acknowledged in its coal dust proceeding that the quantity of coal emitted by a train into the air, water and onto tracks is not insignificant. An average of 500 pounds of coal dust per rail car is lost during each trip. BNSF Railway, *Coal Dust Frequently Asked Questions* (2011). Each train is composed of 120 cars or more. *See* Hearing, July 29, 2010, Arkansas Electric Cooperative Association—Petition for Declaratory Order, Surface

Transportation Board, Docket No. FD 35305 at 42:5-13. The risk of train derailments is heightened on lines with heavy coal-train traffic. "Coal dust, even in small amounts, poses a real threat to the integrity of the ballast section and track stability." *Id*. at 46:18-20. Surface Transportation Board Hearing Transcript (STB Hearing Transcript), Re: Arkansas Electric Cooperative Corporation – Petition for Declaratory Order, Docket No. FD 35305 (July 29, 2010).

The EIS's analysis of coal dust should include a discussion of the efficacy of surfactants to control coal dust, potential impacts of the use of surfactants to control dust emissions, as well as consequences from not using surfactants. First, although use of surfactants in some contexts is common, their efficacy and safety for use on coal-carrying trains is unproven. The oft-claimed 85% control efficiency has been called "junk science" by coal shippers. Topping agents wear off along the route, are themselves pollutants, and can even possibly increase the amount of coal lost due to saltation. Phyllis Fox, *Fugitive Particulate Matter Emissions from Coal Train Staging at the Proposed Coyote Island Terminal*, July 19, 2013. Second, surfactants contain myriad undisclosed chemicals, many of whose biological and ecological effects have not yet been adequately studied. Surfactants could cause a number of potential harms, including: danger to human health during and after application; surface, groundwater, and soil contamination; air pollution; changes in hydrologic characteristics of the soils; and impacts on native flora and fauna populations. *See* Environmental Protection Agency, *Potential Environmental Impacts of Dust Suppressants: Avoiding Another Times Beach* § 3 (May 30-31, 2002). Third, while BNSF has a voluntary tariff encouraging the use of surfactants, STB proceedings evaluating that practice are ongoing. In the absence of binding regulation, many coal companies are electing not to apply any sort of topping agent. *See* Some shippers not complying with industry's coal dust tariff, *Platts Energy Week*, Nov. 3, 2011. As a result, the use of surfactants is not certain, and so the analysis of the impact of coal dust must consider scenarios both without and with any sort of surfactant use.

2. The Overall Economic Impacts of Coal Exports Are Likely Negative.

The EIS must further review the economic impacts of this project. Issues here include the impact of dramatic increases in coal train traffic on real estate values and damage to property from coal dust, diesel emissions, vibration, and noise. There are also serious concerns relating to the impact of an increase in coal rail traffic on other non-coal shippers of freight by rail, including ports and shippers of agricultural products. These same issues may dramatically affect passenger rail interests. These significant rail traffic increases are likely to create major impacts on communities affected by vehicle traffic problems related to delays at non-grade separated railway crossings, which will affect non-rail freight mobility, access to ports, retailers, tourist centers, and employers. On the marine side, there are likely to be significant economic impacts on marine dependent industries, such as commercial fisheries and shellfish growers, tourism, and other businesses.

a. The Project, Individually And In Combination With Other Proposed Coal Export Projects, Threaten Increases In Rail Traffic For A Single Commodity, With Major Impacts On Other Rail Users And Affected Communities..

The increased rail traffic associated with shipping unknown quantities of coal per year from Oakland could represent a huge increase in freight rail usage and would likely present significant conflicts with other users of the rail line, including freight and passenger shippers. It is critical that the EIS include a full analysis of the cumulative impacts from this proposal combined with other coal and fossil fuel export proposals in the region, including the capacity of the rail system to handle these increases without significant adverse impacts on other shippers, passenger rail users, and communities.

Unless mitigated with significant capacity additions, increases of coal train traffic is likely to present significant adverse impacts on other users of the rail line, including grain and fruit shippers, intermodal users, ports, industries, aircraft manufacturers and passenger rail—all of whom are critically dependent on timely and affordable access to the rail system. Existing state studies from the Northwest indicate that coal rail traffic is already having a significant negative impact on the ability of Washington State shippers to access markets where coal traffic from the Powder River Basin is dominating the rail lines; experts working for that State have concluded that "the high volume of coal trains moving east out of the Powder River Basin has made it virtually impossible to route time-sensitive intermodal trains moving from Pacific Northwest ports to central and southeast gateways such as Kansas City and Memphis through the near continuous flow of slow-moving coal trains. Adjusting to this, BNSF has shifted most intermodal traffic destined to locations south of Chicago to the Ports of Los Angeles and Long Beach." These reports also confirm that the railroad prioritizes unit trains, such as coal trains, over other shippers. The EIS should fully analyze the impacts on other types of shippers if inbound and outbound freight or passenger rail traffic is diverted or eliminated due to the competition with coal trains, such as agricultural products. Further, the EIS should look at impacts related to diversion of this freight rail traffic to other modes, including trucks and barges.

The EIS must also analyze impacts, mitigation measures and potential funding relating to the use of passenger rail on these same lines. The EIS must analyze how existing and expanded passenger rail uses will be impacted if freight traffic increases. The EIS should further consider existing and prospective public funding for rail capacity to purchase passenger rail service. The EIS should include all needed capacity improvements that will be required to address at least those areas where the planned coal train traffic will exceed the capacity of the existing system.

b. The Project Is Likely To Create Very Significant Impacts Relating to Rail Traffic In Dozens of Impacted Communities

Increases in freight rail traffic for coal export could result in significant adverse impacts on other traffic and freight mobility within affected communities. These traffic impacts cause direct economic losses to affected communities and businesses through interruptions of freight mobility, challenges for customers reaching businesses, and lost employee time. Air pollution impacts related to increased idling and congestion may also directly impact growth in affected communities. It is imperative that the EIS fully analyze these issues in all communities that are likely to be similarly affected along the entire corridor from the source of the coal to the Oakland export terminal.

The EIS must also look at necessary mitigation for these traffic and mobility concerns and the question of who will bear the costs of this mitigation. Under federal law, railroads are generally limited to paying no more than 5% of the costs of grade separated crossings. Typically, the railroad pays far less than that amount. Given that the costs of grade separated crossings to address these traffic issues are in the tens and hundreds of million dollars, the EIS must analyze any mitigation that is needed in response to the huge increases in coal train traffic associated with this project to ensure that the public does not pay for private benefits.

Right of way fires on the land of property owners along rail lines with coal trains are also a known safety and economic risk that must be analyzed. Last year, several coal-related fires occurred along a railway in North Dakota. Coal dust lodged in the ballast, and from constantly passing coal trains, kept the track fires smoldering for several days. As South Heart Fire Chief said, "When there is that much coal dust, there is not a lot we can do…you think you have it out…and then half-a-day later, it flares up once again."

Finally, it is particularly critical that the evaluation of rail impacts be placed in the context of cumulative effects from multiple projects, currently under consideration, that will dramatically raise the amount of train traffic in California. In addition to the other coal export terminals that will in part use the same lines as this one, there are numerous proposals to increase the amount of crude oil travelling by rail in California.[11] Together, these projects will add toxic and dangerous crude oil shipments to the already overcrowded rail lines. The EIS should evaluate the direct, indirect, and cumulative impacts of reasonably foreseeable projects, including crude oil, coal export, and liquefied natural gas terminals in California. This includes the cumulative impacts associated with rail traffic, vessel traffic, and associate pollution and public health impacts.

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[11] *See, e.g.*, http://www.reuters.com/article/2013/11/07/tesoro-rail-crude-idUSL2N0IS13N20131107 ("U.S. refiner Tesoro Corp has tripled the amount of North Dakota Bakken oil delivered by crude-only trains to its northern California refinery since the first such shipment in September") (last visited on December 6, 2013); http://www.mysanantonio.com/business/article/Moving-crude-by-rail-works-for-refiners-4547720.php("Valero hopes to have approval soon from local officials to ship North American crude by rail to its Benicia plant in Northern California and complete the project by year's end.") (last visited on December 6, 2013)

c. Coal Exports Threaten Nearby Property Valuations

Recent studies have indicated that the massive increases in coal train traffic induced by the proposed terminal may directly result in significant reductions in property values, affecting owners, other taxpayers, and affected communities. *See Increased Coal Train Traffic and Real Estate Values*, The Eastman Company (Oct. 30, 2012). The effect of freight railroad tracks and train activity on residential property values, Robert A. Simons, A. El Jaouhari (Summer 2004); *Examining the Spatial Distribution of Externalities: Freight Rail Traffic and Home Values in Los Angeles*, Futch, M. (Nov. 11, 2011). Given these findings elsewhere, it is clear that a substantial increase in rail traffic has important impacts that need to be assessed. The EIS should look at these issues along the entire rail corridor, using specific estimates of rail traffic associated with the project, as well as the cumulative impacts of other coal export facilities, oil and gas exports, and proposed crude-by-rail projects.

d. Impacts On Economies Dependent On the Marine Environment

There are likely to be significant adverse impacts and major risks posed to the San Francisco Bay aquatic ecosystem from this project. In addition to the impacts on ecosystems and to those who fish in the Bay for sport and food, these issues must be evaluated for the impacts and risks that they pose for marine related businesses and economies, including tourism and other related businesses. These businesses cumulatively provide significant amounts of revenue in positive economic impacts to the state and region. Impacts to other forms of recreation, e.g., boating, hiking, birding, should be closely analyzed.

e. Economic Uncertainty and Market Volatility Surrounding Coal Exports Must Be Considered In The EIS

Coal export facilities are speculative financial ventures. *See, e.g., Coal Export: A History of Failure for Western Ports*, VandenHeuvel, B. & E. de Place (Aug. 2011). Coal export terminals in Portland and Los Angeles were both shut down at significant taxpayer expense. One of the few terminals shipping thermal coal from the West Coast of the United States—located in Seward, Alaska—recently cutback operations and laid off workers citing adverse international market conditions.

Moreover, the EIS should examine the market uncertainty and volatility surrounding coal. Domestic demand for coal has fallen substantially since 2008, as U.S. electricity generators have turned to cleaner burning natural gas, renewable energy, and increased energy efficiency. The reasons for this change undoubtedly include the increasing environmental control costs for burning coal, as well as a growing recognition among companies and financial analysts that mining and burning coal to produce electricity is no longer a viable strategy to produce an acceptable return on investment. The EIS should analyze the extent to which these trends are being followed in the proposed export markets, including the trends to replace coal with renewables, efficiency, and natural gas for energy generation and the impacts on the long-term

prospects for this project. Potential domestic electricity pricing impacts to U.S. consumers from exporting coal should also be examined.

Simply put, since 2010, the global price for coal has collapsed and the putative justification for exporting to U.S. coal—a presumed insatiable demand for coal in China—has fallen apart. In fact, a June 2013 independent analysis, entitled *Asian Coal & Power: Less, Less, Less…The Beginning of the End of Coal* (Bernstein Research, 2013), flatly declared that China will cease importing coal in 2015 and may indeed become a net exporter once again. China's installation of clean, renewable energy, such as wind and solar, is booming.

The EIS should evaluate the risk that Oakland coal exports may join the other projects that have experienced economic failure, sometimes leaving significant clean-up liabilities, public expenditures, and unfulfilled expectations for local communities. The EIS should consider potential mitigation measures relating to these risks, including the need for the project proponents to post a bond or provide other security to ensure that communities and local governments are not left with the responsibility for site clean-up and other costs in the event of project failure.

3. The EIS Must Analyze Harm to Wildlife, Marine, and Aquatic Health.

The EIS must include an analysis of coal export-related impacts to biological, marine, and aquatic resources on both public and private lands and waters in the affected area, that is, in the area from the mining of the coal in the Powder River Basin (or Utah or Colorado), through the rail corridor to the project, through the loading and shipping of the coal through the San Francisco Bay and surrounding waters, to its final destination and combustion in Asia. Such resources include marine and terrestrial mammals, game and non-game resident and migratory bird species, raptors, songbirds, amphibians, reptiles, fisheries, aquatic invertebrates, wetlands, and vegetative communities. The agencies must ensure that up-to-date information on all potentially impacted flora and fauna is made available, so that adequate impact analyses can be completed. Habitat degradation, fragmentation, and loss must all be assessed, along with any resulting impacts to wildlife and marine species.

Stormwater is another critical concern, given the toxicity of the material being shipped, and the historic contamination of this brownfields site. The San Francisco Bay is already listed as impaired under the state's § 303(d) list, and under Ninth Circuit precedent, any additional discharge to such impaired water bodies is prohibited. Increased wildlife mortality from railroad and mining related activity (including, but not limited to, increased human conflicts, habitat loss, and increased hunting pressure) must also be discussed. Impacts to wildlife migration corridors must be evaluated.

Increased shipping traffic brings with it an increased risk of collisions, groundings, spills, discharges, and accidents during vessel fueling. For instance, the devastating Cosco Busan spill

in the Bay just a few years ago could become a more common occurrence.[12] Similarly, the potential for introduction of invasive species, including through ballast water, must be assessed, as tens of thousands of cubic meters of ballast water per visit will be discharged by the shipping vessels. Hull fouling presents a similar danger of invasive species introduction. All of these risks and impacts must be carefully scrutinized. And, it is particularly important for the agencies to evaluate increases in vessel traffic in the context of the cumulative impacts from multiple current and reasonably foreseeable fossil fuel-related projects.

VIII. THE EIS MUST ANALYZE A REASONABLE RANGE OF ALTERNATIVES, INCLUDING NO FOSSIL FUEL EXPORTS.

The range of alternatives "is the heart of the environmental impact statement." 40 C.F.R. § 1502.14. It is well understood that "NEPA requires that an agency 'rigorously explore and objectively evaluate all reasonable alternatives.'" *Utahns for Better Transp. v. Dep't of Transp*., 305 F.3d 1152,1168 (10th Cir. 2002) *quoting* 40 C.F.R. § 1502.14(a), modified on rehearing *Utahns for Better Transp. v. Dep't of Transp*., 319 F.3d 1207 (2003). The alternatives discussed should provide different choices from which decisionmakers and the public can make an informed choice after considering the environmental effects of the alternatives. *See Westlands Water Dist. v. U.S. Dep't of Interior*, 376 F.3d 853 (9th Cir. 2004). The range of alternatives should also "include reasonable alternatives not within the jurisdiction of the lead agency," and "include appropriate mitigation measures not already included in the proposed action or alternatives." 40 CFR § 1502.14. In addition to the need for thorough consideration of the impacts of permitting fossil fuel exports, the EIS must consider the option of not including fossil fuel exports out of Oakland.

XI. THE EIS MUST CONSIDER THE ENVIRONMENTAL JUSTICE IMPACTS OF FOSSIL FUEL EXPORTS

All federal agencies are encouraged to consider environmental justice in their NEPA analysis, evaluate disproportionate impacts, and identify alternative proposals that may mitigate these impacts. The fundamental policy of NEPA is to "encourage productive and enjoyable harmony between man and his environment." In considering how to evaluate progress in reaching these aspirational goals, the Council on Environmental Quality (CEQ) defined effects or impacts to include "ecological...aesthetic, historic, cultural, economic, social or health impacts, whether direct, indirect or cumulative."[13] Recognizing that these types of impacts

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[12] *See, e.g.*, http://www.fws.gov/contaminants/documents/coscobusan.pdf. The Cosco Busan cargo ship hit the Bay Bridge in heavy fog in 2007, resulting in the worst spill in the San Francisco Bay for 20 years, and significant fish and bird kills.

[13] CEQ, Environmental Justice: Guidance Under the National Environmental Policy Act, December 10, 1997, *available at* http://ceq.hss.doe.gov/nepa/regs/ej/justice.pdf.

might disproportionately affect different communities or groups of people, President Clinton issued Executive Order 12898 in 1994,[14] directing each federal agency to, among other things:

- "Make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations,"

- "Identify differential patterns of consumption of natural resources among minority populations and low-income populations,"

- Evaluate differential consumption patterns by identifying "populations with differential patterns of subsistence consumption of fish and wildlife," and

- "Collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence."

CEQ's Guidance for Environmental Justice under NEPA[15] called for agencies to consider specific elements when considering environmental justice issues:

- Agencies should consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed action, and if so whether there may be disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, or Indian tribes.

- Agencies should consider the potential for multiple or cumulative exposure to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards. Agencies should consider these multiple, or cumulative effects, even if certain effects are not within the control or subject to the discretion of the agency proposing the action.

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[14] "Federal actions to address environmental justice in minority populations and low-income populations," 59 Fed. Reg. 7629 (Executive Order 12898; February 11, 1994).

[15] CEQ, Environmental Justice: Guidance Under the National Environmental Policy Act, December 10, 1997, available at http://ceq.hss.doe.gov/nepa/regs/ej/justice.pdf.

- Agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action. These factors should include the physical sensitivity of the community or population to particular impacts; the effect of any disruption on the community structure associated with the proposed action; and the nature and degree of impact on the physical and social structure of the community.

- Agencies should be aware of the diverse constituencies within any particular community. Agencies should seek tribal representation in the process in a manner that is consistent with the government-to-government relationship between the United States and tribal governments, the federal government's trust responsibility to federally-recognized tribes, and any treaty rights.

The EIS must examine the environmental justice impacts flowing from this project. The local community in West Oakland has suffered a long history of disproportionate impacts from pollution. The potential export of fossil fuel will only serve to exacerbate the existing environmental justice concerns in the area. The EIS must also study the rail transportation of coal from its source, and the mining of the coal. Tribes along the rail route and in the area of increased mining may also be impacted by the proposed railroad and the increased mining associated with this project.

The EIS must include demographic information for West Oakland and along the rail lines that would ship coal to the terminal, as well as at the mine sites. These environmental justice issues further underscore the need for a full EIS that includes a health impact assessment of the project.

* * *

Thank you for your consideration of these scoping comments. As you are no doubt aware, there is likely to be an extraordinary level of public interest in the potential for fossil fuel exports out of the Oakland Army Base project and the Port of Oakland; the harmful impacts caused by the proposed coal exports will occur at the local, regional, and global scale; and the relevant federal and state laws emphasize a thorough, up-front review of all the environmental effects of proposed actions. We reiterate our request for a full EIS for the action under NEPA and that the project description be updated to reflect the whole of project, including the reuse of the entire Oakland Army base and that the impacts of fossil fuel exports to future Gateway Park visitors be fully disclosed analyzed and mitigated. We look forward to a Draft EIR/EIS that the full direct, indirect, and cumulative impacts of the proposed project from the mining of the coal at its source, the transport of coal by rail through several states and hundreds of communities, the loading and shipping of coal via large ocean vessels, to the combustion of the coal in Asia.

Sincerely,

Suma Peesapati, Staff Attorney
Earthjustice

On behalf of:

Sierra Club
West Oakland Environmental Indicators Project
Communities For A Better Environment

Cc: City of Oakland
Port of Oakland

From: Matthew Davis <mdavis@portoakland.com>
Sent: Wednesday, January 16, 2013 4:11 PM
To: Mark Erickson
Cc: Joanne Karchmer
Subject: RE: coal

Like you, I don't know if there is much utility in "advising" Phil at this stage. However, I think it is fair to say that: 1) I do not concur with his assessment; and 2) it could pose substantial risk to our operations, certainly when you have winners of the Nobel Peace Prize laying down in front of trains in British Columbia to protest coal exports through Canada.

At this early point I would let him advance this dialogue, although as any goods that are going to move through his state-funded bulk port will first have to pass through a state and federally funded rail development…….you can complete the rest of the sentence.

From: Mark Erickson
Sent: Wednesday, January 16, 2013 4:05 PM
To: Matthew Davis
Cc: Joanne Karchmer
Subject: Re: coal

Jean, Deb and I met with Phil and his team last Monday when they hosted UP and invited us along. Phil explicitly mentioned coal as one of their prospects. I'm not sure how real it is, but I, like you, was surprised to hear that he believes he has all the necessary approvals to move coal. Deb was concerned as well. Do we concur with his assessment? What risk does that pose for us as partner? I need to discuss further with Anne / legal regarding how broad their options are.

I have been hesitant to advise Phil in any capacity, really. As you know he has a knack for moving seemingly immovable impediments. I think he enjoys jumping into the lions den. I wonder what the City would do if substantial opposition came forward, as it may.
Mark

----- Reply message -----
From: "Matthew Davis" <mdavis@portoakland.com>
To: "Mark Erickson" <merickson@portoakland.com>
Cc: "Joanne Karchmer" <jkarchmer@portoakland.com>
Subject: coal
Date: Tue, Jan 15, 2013 4:45 pm

Mark,

Sorry if I misspoke a week or so ago during the briefing with Lynette Gibson McElhaney about any intentions that CCIG/OGRE might have about some of the materials they are trying to attract to the proposed Berth 7 bulk handling facility (i.e. "no coal"). While I know the development of these export commodities will be their burden to bear, if they are not already aware of some of the politics around coal exports they may want to familiarize themselves with some recent developments. I've attached a couple of links.

The first is a joint resolution passed by the CA state legislature last session asking for the Congress and the President to essentially restrict any new coal export handling facility along the West Coast (focused most intensely on some recent proposals in Oregon and Washington). This is a non-binding resolution, but the sentiment is pretty clear.

http://leginfo.ca.gov/pub/11-12/bill/asm/ab_0001-0050/ajr_35_bill_20120918_chaptered.html

Related to this bill is also a news article about the same developments up in WA that led in part to the Assembly resolution:

http://www.nytimes.com/2011/02/15/us/15coal.html?_r=0

Anyway, for what it's worth…this may not be the most productive business line for them to pursue….

Matt

Manager of Governmental Affairs
Port of Oakland
530 Water Street
Oakland, CA 94607
510-627-1430 (w)
510-715-8538 (m)
mdavis@portoakland.com

From: Chris Peterson <cpeterson@portoakland.com>
Sent: Friday, May 11, 2012 8:47 AM
To: James Kwon; Mark Erickson; Lawrence Dunnigan
Subject: RE: Confidential Coal Terminal Project

Understood James. They are talking about a state of the art facility that would completely contain any product, but there are issues with coal terminals based on entities like CARB, so it likely would create more headaches than revenue.

Chris Peterson
Chief Wharfinger
Port of Oakland
Off: 510-627-1308
Cell: 510-719-8024

-----Original Message-----
From: James Kwon
Sent: Thursday, May 10, 2012 11:19 PM
To: Mark Erickson; Lawrence Dunnigan
Cc: Chris Peterson
Subject: RE: Confidential Coal Terminal Project

We should evaluate all other options available on bulk business before any one commodity group is picked, especially if it happens to be 'coal'. Thanks!

From: Mark Erickson
Sent: Wednesday, May 09, 2012 11:42 AM
To: Lawrence Dunnigan
Cc: Chris Peterson; James Kwon
Subject: RE: Confidential Coal Terminal Project

I think we're on the same page Lawrence, sorry if I came off as smug:) Part of my frustration is that I haven't been able to spend as much time working on this as I'd like. I think you're right about coal however, that may not be the right target commodity for Oakland due to dust and global warming issues. Metro Ports had indicated that coal and iron ore were the two strongest commodities looking for USWC gateways. Talking with Chris Stotka yesterday though, it sounds like there is plenty of bulk demand right now.

Mark

From: Lawrence Dunnigan
Sent: Tuesday, May 08, 2012 9:33 PM
To: Mark Erickson
Cc: Chris Peterson; James Kwon
Subject: Re: Confidential Coal Terminal Project

Sure. If the incremental costs are not too significant it would be nice to have some general bulk terminal plans especially for APL/Roundhouse. I didn't mean to insinuate that we not take it seriously. I am just not so optimistic about this particular one, but worth exploring further. Coal will be more problematic than other types of bulk..

Best Regards,

Lawrence Dunnigan

Sent from my iPhone

On May 8, 2012, at 9:15 PM, "Mark Erickson" <MErickson@portoakland.com<mailto:MErickson@portoakland.com>> wrote:
To me, all this shows that we need to come up with a preliminary layout for a bulk operation at 33 and 62-63. Engineering just completed its consultant selection for OAB. Perhaps we could bring the 2nd place team on board to help us with a plan that we could shop around to stevedores, shipping lines, and cargo interests. Kinder Morgan mentioned today that the berth 7 investment will be over $100 million in the facility. We should take this pretty seriously.
Mark

Sent from my Verizon Wireless 4GLTE smartphone
----- Reply message -----
From: "Lawrence Dunnigan" <LDunnigan@portoakland.com<mailto:LDunnigan@portoakland.com>>
To: "Chris Peterson" <cpeterson@portoakland.com<mailto:cpeterson@portoakland.com>>, "Mark Erickson" <MErickson@portoakland.com<mailto:MErickson@portoakland.com>>
Cc: "James Kwon" <JKwon@portoakland.com<mailto:JKwon@portoakland.com>>
Subject: Confidential Coal Terminal Project
Date: Tue, May 8, 2012 7:25 pm

Chris,

Ricky did speak with him but I think there are many hurdles on this one, especially being coal. It can't hurt to speak with him further and hear him out but let's also keep in mind that Trapac may want to occupy Berth 33 sooner rather than later should the APL business land there. It seems that they (the coal company) are seeking -50ft depth so unfortunately the Roundhouse/APL terminal would not suffice.

Best regards,
Lawrence Dunnigan
Manager, Business Development & International Marketing Port of Oakland
530 Water Street, 6th Floor
Oakland, CA 94607
Tel. (510) 627-1834
www.portofoakland.com<http://www.portofoakland.com>

<image003.jpg>
Please consider the environment before printing this email.

From: Chris Peterson
Sent: Tuesday, May 08, 2012 3:35 PM
To: Lawrence Dunnigan; Mark Erickson
Cc: James Kwon
Subject: FW: Confidential Coal Terminal Project

Lawrence, I think Ricky and Jahan might have already talked to this guy, but he chatted with me for a bit yesterday and he'd like to sit down with us and discuss the potential of Berth 33 for a coal facility. I know getting rail to 33 is problematic, but it's not impossible, and this company is willing to make all the investment required to get this operation up and running. Take a look and lets discuss.

Chris Peterson
Chief Wharfinger
Port of Oakland
Off: 510-627-1308
Cell: 510-719-8024

From: KDS [mailto:kdswope@gmail.com]<mailto:[mailto:kdswope@gmail.com]>
Sent: Tuesday, May 08, 2012 3:27 PM
To: Chris Peterson
Subject: Confidential Coal Terminal Project

Chris:

It was indeed a pleasure speaking with you yesterday. I have attached some preliminary information regarding the client seeking to establish the West Coast port terminal. The company estimates it will handle 2 to 3 million tons of export coal annually. It is my understanding the company would like to be able to fully load a Panamax ship to 75-80K tons. Rail access to the terminal is also important as it will result in additional congestion of approximately one additional train per day.

As I mentioned, this client if fully-prepared to duplicate Koch Carbon LLC's award winning design in Pittsburgh, CA to help mitigate any possible environmental hurdles associated with building/operating such a coal terminal. That said, the client is in the position to lease the required land to build this terminal.

Please notify me of your satisfactory receipt of this email and attachment. Once you've had an opportunity to review the material I would like to arrange a site visit at your earliest convenience.

Regards,
Kevin Swope
702-524-8240

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This communication, together with any attachments hereto or links contained herein, is intended for the use of the intended recipient only and may contain information that is highly confidential and legally protected. If you are not the intended recipient, you are hereby notified that any review, disclosure, copying, dissemination, distribution or use of this communication is STRICTLY PROHIBITED. If you have received this communication in error, please notify the sender immediately by return email message, please delete all copies of the original communication, along with any attachments hereto or links herein, from your system and destroy any hard copies that may have been created.

3. DESCRIPTION

This chapter provides information regarding the proposed action, *i.e.*, approval and implementation of the Oakland Army Base (OARB) Area Redevelopment Plan, including the OARB Reuse Plan. Specifically, this chapter provides an overview of the proposed redevelopment program[1] and of key redevelopment entities; background about the Base closure, transfer and reuse planning process, as well as background about the redevelopment planning process; a statement of purpose, need, and objectives of redevelopment; and a description of the location and characteristics of the project area. This general and background information is followed by a description of redevelopment activities. The chapter concludes with information regarding required approvals, permits, and consultations that may rely on this Environmental Impact Report (EIR).

3.1 OVERVIEW

This section provides an overview of the study area, the proposed redevelopment, and key entities involved in redevelopment.

As illustrated by Figures 1-1 and 3-1, the OARB area redevelopment project area is located in the San Francisco Bay region, in the western portion of the City of Oakland, Alameda County.

3.1.1 The Study Area

The study area for this EIR primarily comprises the approximately 1,731-acre OARB Redevelopment Area as described in the Legal Description of the Project Area Boundaries attached to, and incorporated into the OARB Area Redevelopment Plan (Oakland Redevelopment Agency 2000). In addition, the study area for this EIR includes modifications and additions to the legal description of the Redevelopment Project Area boundaries to allow for thorough environmental review of all actions anticipated as a result of approval and implementation of the OARB Area Redevelopment Plan and OARB Reuse Plan. These differences, depicted on Figure 3-2, include the following:

- Inclusion of approximately 56 acres of submerged lands that are part of the OARB but not included in the legal description of the Redevelopment Area, and other submerged lands immediately southeast of the OARB and west of existing Berth 10.
- Modifications to the shoreline of the Oakland Inner and Middle harbors. These modifications were completed as part of the Port of Oakland's Vision 2000 Program, and occurred following adoption of the Redevelopment Area boundaries.

[1] The Redevelopment Plan describes a series of related actions, or a program, which constitutes a "project" under CEQA. The terms "program" and "project" are used interchangeable in this EIR.

insert

Figure 3-1 Regional Vicinity

Insert

Figure 3-2 OARB Redevelopment Project Area, Sub-Districts, and Area Landmarks

- Inclusion of land adjacent to the Union Pacific (UP) Intermodal railyard that is needed to fully implement rail improvements identified in the Reuse Plan.
- Other minor boundary adjustments (including both additions and subtractions of land) throughout the Redevelopment Area to accurately represent existing conditions and planned land uses.

In total, these differences represent a net increase of approximately 70 acres to the 1,731-acre Redevelopment Area. For ease of reference, this now approximately 1,800-acre redevelopment study area is referred to herein as the OARB area "redevelopment project area," or simply "project area."

3.1.2 The Redevelopment Program

The proposed action is the approval and implementation of the OARB Area Redevelopment Plan and OARB Reuse Plan to redevelop the project area. The core of the project area is the approximately 430-acre OARB (also herein "the Base"), which was slated for closure by the federal government in 1995. In total, redevelopment activities are planned for approximately 710 acres, and the EIR will examine the direct, indirect, and cumulative effects of that development to the extent activity-specific information is known about each of the proposed land uses. The purpose of redevelopment is to eliminate or alleviate blight—physical and economic liabilities—over the whole project area in the interest of the public health, safety, and general welfare of the people of both the blighted community and of the State of California. Build-out of the project area is expected to occur by 2020. As depicted by Figure 1-2, the project area is subdivided into three sub-districts:

1. The approximately 470-acre[2] ***OARB sub-district***. The OARB sub-district is further subdivided into two development areas, and a number of miscellaneous parcels:

    - the 228-acre City of Oakland's ***Gateway development area***, generally located in the northwest portion of the sub-district. The Gateway development area includes approximately 189 acres of the OARB and several miscellaneous parcels generally located outside of the OARB and north of Burma Road. These miscellaneous parcels are currently in mixed ownership, including the Port and Caltrans.

[2] In addition to approximately 14 miscellaneous acres, the OARB sub-district includes approximately 26 acres of OARB lands currently owned by the U.S. Army Reserves (Reserves). The property owned by the Reserves is located at two distinct areas: the 19-acre Subaru site is immediately above West Grand Avenue; the 7-acre Enclave comprises two smaller parcels grouped in the south central OARB. Redevelopment as proposed includes acquisition of these lands by the City (approximately 17 acres of the Subaru site) and the Port (approximately 2 acres of the Subaru site and the 7-acre Enclave). The Reserves has indicated its current facilities are substandard and relocation of their facilities is required to prevent impacts to morale, and to allow the units to conduct effective, realistic, and meaningful training to meet its readiness and mobilization missions (U.S. Army Reserves 2001). The City, Port and East Bay Municipal Utility District (EBMUD) are currently in negotiations to acquire these lands. (EBMUD plans to acquire an approximately 16-acre area known as the Heroic War Dead Site, which is outside of the project area, and not addressed in this EIR.)

- the 241-acre Port of Oakland's ***Port development area***, located in the west and southeast portions of the sub-district. The Port development area includes approximately 185 acres of land area from the OARB and an additional 56 acres of OARB submerged land.

2. The approximately 1,290-acre ***Maritime sub-district***, and

3. The approximately 41-acre ***16th/Wood sub-district***.

The project area was established by the City in 2000, when the City adopted a redevelopment plan to combat economic and physical blight that currently exists in western Oakland within the broad project area, and blight that could result from, or be exacerbated by, the closure of the OARB (*Redevelopment Plan for the Oakland Army Base Redevelopment Project*, City of Oakland 2000). The Redevelopment Plan defines a framework of agency powers, duties, and obligations to enable redevelopment of the project area. The Redevelopment Plan incorporates in its entirety (and as may be amended from time to time) the OARB Reuse Plan[3] (*Amended Draft Final Reuse Plan for the Oakland Army Base*, OBRA 1998, as amended 2001). The Reuse Plan describes a "Flexible Alternative" land use plan for the Gateway development area with proposed land uses and approximate densities as envisioned by the West Oakland community and the Oakland Base Reuse Authority (OBRA).[4] The Reuse Plan also describes the Port of Oakland's plans for maritime and rail facilities in the Port development area.

Redevelopment would replace existing uses—some in derelict condition—with vibrant, mixed-use development. Redevelopment benefits include the following:

- Job generation
- Increased number of Oakland housing units
- Improved visual environment
- Improved land use variety and compatibility
- Increased public access to and along the Oakland waterfront
- Remediation of site contamination as necessary, and related improvement to surface and groundwater quality
- Improved efficiency of Port operations
- Ability of the Port to handle 2020 cargo throughput projections

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[3] Note the Reuse Plan is officially referred to as a "draft final" until its formal adoption by the OBRA, at which time it will simply be the final Reuse Plan.

[4] The Redevelopment and Reuse plans, herein summarized and incorporated by reference pursuant to Public Resources Code Section 21061, are available for review at 250 Frank Ogawa Plaza, Suite 3330 during regular business hours.

Build-out of the proposed land uses in the project area is projected to result in up to 375 new live/work units[5], approximately 4.1 million square feet of new business-oriented development, approximately 3 acres of new community-serving uses, nearly 31 acres of park and open space, approximately 120 acres of new maritime cargo terminals and 82 acres of re-configured terminal area, 105 acres of ancillary maritime support uses and a relocated and improved rail facility. Note this build-out does not include ongoing Port modernization, as described in Section 3.6.4, nor other Port improvements in the Maritime sub-district that have already been approved. Figure 3-3 conceptually illustrates the redevelopment strategy, and Table 3-1 describes in more detail the projected build-out.

3.1.3 Key Redevelopment Entities

Planning and implementation of the redevelopment program involves numerous government agencies and members of the community. A general description of key entities and their roles in base reuse and project area redevelopment is provided below.[6]

The U.S. Army. The U.S. Army (Army) constructed and operated the OARB. The Army is transferring OARB property to several entities for reuse.

The U.S. Army Reserves. The U.S. Army Reserves (Reserves) has retained certain OARB property. The Reserves is expected to transfer this OARB property to other entities, including the City, the Port, and the East Bay Municipal Utility District (EBMUD), in the future.

The California State Lands Commission. The California State Lands Commission (SLC) has jurisdiction over "tidelands trust" lands, which are certain tidal and submerged lands granted by the state in trust to cities and counties to develop harbors in furtherance of state and national commerce. These grants require that granted lands be used consistent with the public trust and terms of the grant and require the grantee to use the revenues produced from these lands for trust purposes consistent with the grants. The existence and extent of lands subject to the trust at OARB has not been determined. The SLC has taken the position that a portion of the OARB

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[5] Under Community Redevelopment Law at the time the OARB area project area was established, 20 percent of a tax increment generated within a district must be used by the redevelopment agency to increase, improve, and preserve the supply of affordable housing (HSC § 33334.2). On December 11, 2001 the Oakland Redevelopment Agency adopted a resolution increasing the percentage to 25 for redevelopment areas that achieve a 120 percent debt coverage threshold. While such housing is required to be located within the City, it need not be located within the project area, if the agency and legislative body find this would benefit the project area (HSC § 33334.2(g). Affordable housing demolished or removed for purposes of redevelopment must be replaced within four years of such destruction or removal (HSC § 33334.5). No such housing will be demolished as a result of redevelopment. Furthermore, the redevelopment program provides for setting aside required monies, and locating required housing at sites located outside the project area. The characteristics and location of this housing have not been identified. Therefore, sufficient information does not currently exist with which to analyze impacts of its construction and occupation; when such information is developed, the housing project(s) may be subject to environmental review under CEQA.

[6] See also Table 3-2, which lists relevant agencies, as well as approvals, permits, or consultation processes required to implement this redevelopment program, and Figure 4.2-1, which depicts jurisdictional boundaries.

insert

Figure 3-3 Conceptual Redevelopment Strategy

Table 3-1
OARB Area Redevelopment Project Area Buildout, 2002 through 2020

		Redevelopment Sub-District				
		OARB[a]				
Potential Land Uses	**Units[b]**	**Gateway**	**Port**	**Maritime**	**16th/Wood**	**Total**
Light Industry	sq. ft.	494,000[c]		0	305,000	799,000
Office, R&D	sq. ft.	1,528,000		0	1,437,000	2,965,000
Retail	sq. ft.	25,000		0	1,300	26,300
Warehouse/distribution	sq. ft.	300,000		0	0	300,000
Total square feet		**2,347,000**		**0**	**1,743,300**	**4,090,300**
Live/work units					375	375
From uses listed above	ac.	168	0	0	40	208
Park, Public Access	ac.	29	0	0	1	30
New Maritime Terminals	ac.		55	65	0	120
Terminal Reconfiguration	ac.			82		82
Maritime Support	ac.	15	2	88[e]	0	105
Rail	ac.		130	35	0	165
Acres to be redeveloped[d]		**212**	**187**	**270**	**41**	**710**
Total acres		**228**	**241**	**1,290**	**41**	**1,800**

Notes:

[a] As required by federal BRAC law, redevelopment of the OARB sub-district includes a Homeless Assistance Accommodation program. Redevelopment as proposed would locate the entire program outside the project area; however, Chapter 7: Alternatives to the Proposed Redevelopment Program, examines alternatives for locating the Homeless Assistance Accommodation program on site.

[b] sq. ft. = square feet; ac. = acres

[c] Includes 50,000 square feet of training facilities for the Joint Apprentice and Training Committee (JATC).

[d] Acreages identified above are gross land use acreage, and are inclusive of roadway and utility rights-of way.

[e] See discussion of ancillary maritime uses (AMS), Section 3.6.4.

that includes the property west of Maritime Street, is within the tidelands trust boundary. The Port and OBRA are working with the SLC to execute an "exchange," whereby tidelands trust requirements would be transferred from portions of the Gateway development area to the Port development area and Maritime sub-district.

The San Francisco Bay Conservation and Development Commission. The San Francisco Bay Conservation and Development Commission (BCDC) has jurisdiction over the San Francisco Bay, its shoreline, and certain related waterways. BCDC exerts its authority through its regulatory program and two planning documents: the *San Francisco Bay Area Seaport Plan* (the "Seaport Plan," BCDC and the Metropolitan Transportation Commission [MTC], 1982, as amended through 2001) and the *San Francisco Bay Plan* (the "Bay Plan," BCDC 1968, as amended through 2001). These plans define "priority use areas" at specific shoreline sites. If a site is designated a priority use area in the Seaport Plan or the Bay Plan, it is reserved for that use. Until the plans were amended in April 2001, the entire OARB was designated as port priority use. In September 2000, the City and Port filed a joint application to amend the Seaport

Plan and Bay Plan to reconfigure the development areas on the Base, to remove the port priority use designation from the Gateway development area, and to designate other specific parcels as port priority use areas. BCDC then amended the plans in April 2001 to reflect the requested change in land use designation. BCDC retains ongoing permit jurisdiction over the Bay and shoreline areas of the project area.

Department of Toxics Substance Control. The Department of Toxics Substances Control (DTSC) is a department of the California Environmental Protection Agency responsible for approving the Remedial Action Plan (RAP), approving the Army's early transfer (FOSET) of the Base to OBRA, and overseeing remediation at the OARB.

The East Bay Regional Park District. The East Bay Regional Park District (EBRPD) is a regional agency that is expected to receive certain OARB property (15 acres) from the Army via the Department of the Interior for a public park.

The Oakland Base Reuse Authority. The Oakland Base Reuse Authority (OBRA) is the Local Reuse Authority (LRA) responsible for managing OARB assets and planning reuse of the Base. The OBRA operates the interim leasing operations, will acquire property from the Reserves, will accept the majority of OARB property from the Army, and will, in turn, transfer that property to other entities for reuse/redevelopment.

The City of Oakland. The City of Oakland (City) adopted the Redevelopment Plan, establishing the project area, and empowered the Oakland Redevelopment Agency to enact that plan and oversee redevelopment. The City is the lead agency under CEQA and, except as otherwise provided in the City Charter with respect to certain Port-related matters, is also responsible for planning, including amending the General Plan, rezoning, issuing land use approvals, and — jointly with the Port — altering the Port area boundary from time to time.

The Oakland Redevelopment Agency. The Redevelopment Agency of the City of Oakland (also the Oakland Redevelopment Agency, ORA) is expected to accept the majority of OARB land from the OBRA, transfer lands to other entities, and implement the Redevelopment Plan.

The Port of Oakland. The Port of Oakland (Port) is expected to accept certain OARB lands from the ORA, acquire land from the Reserves, annex these lands to the Port area, waive certain reversionary rights, approve changes in the Port area jointly with the City to allow City development to proceed, and approve redevelopment activities within its jurisdiction.[7]

[7] Section 706(3) of the City of Oakland Charter vests in the Board of Port Commissioners "complete and exclusive power" over "…all the waterfront properties, and lands adjacent thereto, or under water, structures thereon, and approaches thereto, storage facilities, and other utilities, and all rights and interests belonging thereto, which are now or may hereafter be owned or possessed by the City, including all salt or marsh or tidelands and structures thereon granted to the City in trust by the State of California for the promotion and accommodation of commerce and navigation." Section 706(4) of the Charter vests in the Board "complete and exclusive power" over "...that part of the City hereinafter defined as the 'Port area,' " which Section 725 defines as "the same area that existed immediately prior to the adoption of this Section, as it has been defined by Charter and by ordinance, and as it may hereafter be altered by Council ordinance in accordance with and upon the recommendation of the Board, or by amendment of this Charter."

The Alameda County Homeless Base Conversion Collaborative. The Homeless Collaborative is a non-profit collaborative of organizations that provides housing and services to the homeless. Under federal BRAC law, base closure programs must include an accommodation to recognized homeless providers. The OARB Reuse Plan commits to providing a Homeless Assistance Accommodation through the Homeless Collaborative, including providing for the following services: a workforce and business development campus, a food bank, transitional housing, domestic violence support services, and a childcare facility. Redevelopment as proposed would locate the entire program outside the project area.[8]

The Joint Apprentice and Training Committee. The Joint Apprentice and Training Committee (JATC) is a non-profit educational organization expected to receive certain OARB property (3 acres) from the ORA for a job training facility.

The West Oakland Community Advisory Group. The WOCAG is community group representing a broad range of interests in West Oakland. WOCAG advised the OBRA in preparing the original, revised, and amended Reuse plans and continues to meet and provide input on the redevelopment program.

Developers. Private or quasi-private sector developers, as well as public sector development entities such as the City and Port, may implement specific projects (subsequent redevelopment activities) within the project area.

3.2 BACKGROUND

This section describes closure and transfer of the OARB, the history and status of reuse planning, and the history and status of redevelopment planning. The processes of base closure, transfer, and reuse/redevelopment are complex and inter-dependent. Figure 3-4 illustrates these processes and their general status. Figure 3-5 provides more detail regarding disposal and transfer of OARB.

3.2.1 Base Closure, Transfer, and Reuse Planning

Base Closure and Transfer

During the late 1980s and the 1990s, the U.S. government closed and/or realigned (transferred the functions of) numerous military facilities. Through the closure process, all or a portion of

[8] Pursuant to a 1999 Legally Binding Agreement between, OBRA, ORA, and the Homeless Collaborative, OBRA and ORA committed to provide low-cost leases to the Homeless Collaborative for eight buildings (approximately 229,000 square feet and 52 dwelling units) to be used as a workforce and business development campus, childcare facility, transitional housing, and food bank. Subsequent to that agreement, however, BCDC requirements related to Port Priority land uses at and near the Base necessitated OBRA to substantially revise the property disposition plan for the OARB, and those eight buildings are no longer available for Homeless Collaborative long-term leasing. Therefore, pursuant to the terms of the 1999 Legally Binding Agreement, the parties are currently negotiating alternative terms and conditions to satisfy the homeless assistance component of the Reuse Plan.

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Figure 3-4 OARB Reuse and Redevelopment Process

Insert (11x17 figure page 2)

Figure 3-4 OARB Reuse and Redevelopment Process

insert

Figure 3-5 OARB Property Conveyance

these military bases were then available to their respective local cities or counties for community reuse. In this manner, local communities are able to re-capture the loss of jobs that occurred when a base was closed. Planning for reuse of these bases generally occurs under the guidance of an LRA, an entity established specifically for the purpose of planning transitional and ultimate reuse, and managing the assets of the base during the military-to-community transitional or "interim" period.

In 1995, the Base Realignment and Closure (BRAC) Commission recommended closure and realignment of the OARB. In July 1995 the President of the United States approved the BRAC Commission's recommendation, Congress reviewed the recommendation, and it became law on September 28,1995.

The Army, the lead agency for base closure and transfer of OARB, first realigned the approximately 430-acre Base, reserving 26 acres for the Reserves. The Army then began the process of OARB "disposal" by screening requests for property. The Army plans to convey 384 acres to the OBRA and 15 acres to the EBRPD.[9] The OBRA, in turn, plans to transfer the land to the ORA; the ORA will transfer 241 acres to the Port (approximately 185 acres of upland and 56 acres of submerged land),[10] and 3 acres to the JATC.

In its role as lead agency for OARB closure and disposal, the Army undertook several federal planning processes, described below.

Federal Environmental Review. The Army prepared an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act ([NEPA], 42 United States Code [USC] § 4231 *et seq.*). The EIS described the direct effects of its action, Base closure and disposal. The EIS also described Base reuse as a secondary effect of disposal (U.S. Army Corps of Engineers [Corps] Draft EIS 1999; Supplemental Draft EIS 2001; Final EIS 2001).

Coastal Zone Consistency Determination. Pursuant to the Coastal Zone Management Act of 1972 as amended, ([CZMA], 16 USC § 1451), in May 2001 the Army obtained BCDC's agreement with the Army's consistency determination. The Army is responsible for ensuring that federal development projects in the coastal zone, including projects such as the Army's closure and transfer of the OARB, are consistent to the maximum extent practicable with the California Coastal Management Program (CCMP). In the San Francisco Bay area, two documents embody the CCMP: the McAteer-Petris Act and the Bay Plan (BCDC 1998, as amended), which incorporates the Seaport Plan (BCDC and MTC 1997, as amended). Therefore, the Army must determine the proposed federal action is consistent with the McAteer-Petris Act and the Bay and Seaport plans. Because the Bay and Seaport plans initially designated the entire OARB as a Port Priority Use area, the City and the Port of Oakland applied for an amendment to those

[9] The Army will assign 15 acres to the Department of Interior who will transfer this acreage to the EBRPD.

[10] As discussed in Section 3.1.2, the upland portion of the Base includes the approximately 9 acres to be acquired by the Port from the Reserves.

plans in September 2000. The amendment was designed to ensure that adequate acreage would be devoted to meeting BCDC's year 2020 container throughput forecasts for the Port and reserving sufficient property for the City to meet its goals of economic development and job generation. The application for the plan amendments was approved by BCDC in January 2001. After the Seaport and Bay plans were amended by BCDC to remove the "port priority" use designation from the Gateway development area (see discussion regarding BCDC, above), BCDC issued a letter concurring with the Army's consistency determination for the OARB closure and transfer in May 2001.

National Historic Preservation Act Consultation. Pursuant to Section 106 of the National Historic Preservation Act ([NHPA], 16 USC §470 *et seq.*), the Army engaged in consultation with the Office of Historic Preservation (OHP) regarding historic resources on the Base. Through the Section 106 consultation process, the Army must take into account the effect of its undertaking on historic resources that are listed, or are eligible for listing on the National Register of Historic Places (NRHP). On December 11, 2001, a Memorandum of Understanding (MOU) was executed between the State Historic Preservation Officer (SHPO) and the Army. That MOU describes the Section 106 consultation process and its conclusions. The executed MOU, to which the OBRA and the Port are concurring parties, signifies completion of the NHPA Section 106 consultation.

Endangered Species Act Section 7 Consultation. Pursuant to the Endangered Species Act Section 7 ([ESA], 16 USC §1531 *et seq.*), the Army consulted with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) regarding the potential impact that disposal and reuse of the Base might have on listed species. The Army notified the USFWS by letter dated August 3, 2000 that it intended to include the following restriction in the property transfer document to ensure that potential impacts to the federally endangered California least tern would be avoided: "Prior to site development or other opening of the property parcel known as the 'spit' area (a parcel consisting of approximately 15 acres at the far west end of the installation, south of and adjacent to the east end of the Oakland Bay Bridge)[11] to public access or other reuse, the new owners will coordinate with and obtain approval of their specific development plan for the property from the USFWS Endangered Species Office." In a letter dated October 11, 2000, the USFWS concurred with the Army's determination that the disposal and reuse of the Oakland Army Base "are not likely to adversely affect least terns." In a letter dated April 10, 2000, the NMFS determined the actions associated with the Army's proposed disposal and reuse of the OARB have either been previously addressed, or will be addressed in future Section 7 consultations.[12]

[11] The area termed the "spit" by the USFWS is termed the Bay Bridge touchdown peninsula or the Gateway peninsula in this document.

[12] This correspondence is included in Appendix 4.12.

Base Reuse Planning

Once the Base was slated for closure and transfer, OBRA was tasked with directing the OARB reuse process. The OBRA governing body comprises representatives of the City, County, City of Alameda, Congressperson Lee's office, the Association of Bay Area Governments, and adjacent jurisdictions. As the Local Reuse Authority under federal base closure law, the OBRA is the agency eligible to manage the Base and its assets in the transitional period between base closure and transfer, to accept the Base property from the Army, and to plan for its reuse.

Through a separate environmental review, after the OARB was closed in 1995, OBRA entered into a master lease with the Army for the entire base that provided for continued use of the existing facilities by various tenants (Interim Leasing Program Initial Study/Mitigated Negative Declaration, ER 98-13).[13] As part of the reuse planning process, OBRA established the WOCAG to examine reuse opportunities and recommend community reuse options for OBRA's consideration. Interviews with Oakland residents began as early as 1996, and many meetings were held to discuss the community's vision of the reuse of the Base. The planning document produced by the OBRA in consultation with WOCAG was the *OARB Amended Draft Final Reuse Plan* (OBRA 1998, as amended through 2001). The Reuse Plan documents the community reuse planning process and describes the proposed reuse development, including land use classifications and development densities. The first draft Reuse Plan was issued in 1998, and the 2001 amended draft Reuse Plan reflects changes required for consistency with the Bay and Seaport plans. Redevelopment of the Base pursuant to the Reuse Plan is intended to accrue economic benefits to the Oakland citizenry.

Once the Army transfers ownership of the majority of OARB land to the OBRA, the OBRA will, in turn, transfer the land to the ORA. The ORA will transfer the Port development area to the Port, 3 acres to JATC, and will retain the Gateway development area. The ORA will then be primarily responsible for redevelopment of the Gateway development area, and the Port will be primarily responsible for redevelopment of the Port development area.

3.2.2 Redevelopment Planning

The City is the lead agency for CEQA. Immediately upon the BRAC Commission's recommendation to close the OARB, the City began to evaluate how best to implement community reuse of the Base and the surrounding areas. The City investigated redevelopment options, designated a redevelopment survey area, and prepared a preliminary redevelopment plan in September 1999. Conditions within the survey area were inventoried, conditions of blight documented (see below, under "Need"), the survey area was refined, and the *Oakland Army*

[13] During construction of the Bay Bridge Seismic Improvement Project (also termed the Bay Bridge Replacement Project), Caltrans is expected to utilize western portions of the Gateway development area near Berth 7 for construction staging. This use is similar in nature to ongoing water-oriented transportation-activities occurring in this portion of the Base under the existing interim leasing program. Caltrans would complete its use of Base lands prior to the end of the redevelopment build-out period, and its interim use of OARB property is not expected to affect redevelopment as proposed.

Base Preliminary Redevelopment Plan prepared (City of Oakland 1999). The Preliminary Redevelopment Plan accomplishes the following:

- describes boundaries of the survey area;
- provides a general statement regarding proposed land uses and densities, major transportation infrastructure, and development standards for the survey area;
- demonstrates how redevelopment of the survey area would accomplish the intent of the California Community Redevelopment Law (CRL);
- demonstrates how proposed redevelopment of the survey area conforms to the Oakland General Plan; and
- generally describes the impact of survey area redevelopment on nearby residents.

Based on the Preliminary Redevelopment Plan, a final project area was defined and a final redevelopment plan and supporting documentation prepared (Hausrath Economics Group [HEG] 2000; City of Oakland 2000).

On July 11, 2000, the City adopted and approved, via Ordinance No. 12259 C.M.S., the *Redevelopment Plan for the Oakland Base Redevelopment Project* (City of Oakland 2000), and established a redevelopment project area. The Redevelopment Plan provides the ORA—the agency primarily responsible for the project area's redevelopment—with powers, duties, and obligations to implement and further a program of redevelopment, rehabilitation, and revitalization of the project area as broadly defined in the plan. The Redevelopment Plan incorporates the Reuse Plan, as it may be amended from time to time. The City may amend the Redevelopment Plan after certification of this EIR.

The Redevelopment Plan estimates build-out of the project area by 2020. With respect to the Gateway development area and 16th/Wood sub-district, this long-term build-out horizon is coupled with the need of the ORA to flexibly respond to fluctuating market and economic conditions. These conditions necessarily require the Redevelopment Plan to be broad and flexible. As the plan states:

> *Because of the long-term nature of this Plan and the need to retain in the [ORA] the flexibility to respond to market and economic conditions, developer interests, and opportunities from time to time presented for redevelopment, this Plan does not present a precise plan or establish specific projects for the redevelopment, rehabilitation, and revitalization of any area within the project area, nor does this Plan present specific proposals in an attempt to solve or alleviate the concerns and problems of the community relating to the project area. Instead, this Plan presents a process and a basic framework within which specific plans will be presented, specific projects will be established, and specific solutions be proposed and by which tools are provided to the [ORA] to fashion, develop, and proceed with such specific plans, projects, and solutions.*

3.3 PURPOSE, NEED, AND OBJECTIVES

3.3.1 Purpose

The primary purpose of the proposed redevelopment is to alleviate physical and economic blight in the project area resulting in part from closure of the OARB.

3.3.2 Need

The West Oakland area of the City is an older urban center that historically supported maritime-related industry associated with the Oakland waterfront, such as shipping, shipbuilding, and goods processing. During World War II, the U.S. Navy's Fleet and Industrial Supply Center, Oakland (FISCO) and the OARB were established on the Oakland waterfront as maritime staging points and supply depots supporting American armed forces operating in the Pacific theater. In addition, during World War II, approximately a dozen shipyards operated along the Oakland Estuary in or near West Oakland. West Oakland businesses supported the military, and shipbuilding and shipping industries, and local residents provided labor. After World War II, the need for military support by local civilians sharply declined. Along the Oakland Estuary, the shipbuilding industry declined, while the cargo shipping industry increased, absorbing some, but not all West Oakland maritime labor. The post–World War II era initiated a gradual, but steady state of economic decline in West Oakland. In the 1960s to 1970s, the shipping industry worldwide, including Oakland's port, shifted from relatively labor-intensive bulk cargo to much more labor-efficient containerized cargo methods (Minor 2000). With this shift, the economic decline of West Oakland escalated, leaving in its wake outdated and outmoded industrial facilities and a poor mix of incompatible industrial, business, and residential land uses.

Compounding this decline was closure of the OARB by Congress in 1995. The Base is primarily a World War II–era facility, with a relatively high percentage of temporary buildings, as well as obsolete structures and antiquated utility systems. Moreover, the majority of the site is located on fill, and settlement of underlying strata has further stressed structures and utility systems. The closure of the OARB poses a substantial burden to the local West Oakland community, already characterized as economically depressed.

Pursuant to California's Community Redevelopment Law (HSC § 33000 *et seq*.), the City conducted a detailed analysis of the current and expected conditions of decline and blight in West Oakland. The results of this study are documented in the *Report to City Council: Oakland Army Base Redevelopment Project* (herein "Report to City Council") (HEG 2000). Chapter 4 of the Report to City Council describes blight within each of the three redevelopment sub-districts.[14]

[14] Chapter 4 and Appendix B of the *Report to City Council*, herein summarized and incorporated by reference pursuant to PRC Section 21061, provides substantial written and photographic evidence of existing blighted conditions in the project area. The report is available for review at 250 Frank Ogawa Plaza, Suite 3330, during regular business hours.

Pursuant to Community Redevelopment Law, a military base must meet a two-pronged test to be considered blighted (HSC §§ 33492.10(a), 33492.11). First, the blighted conditions cannot reasonably be expected to be alleviated in the absence of redevelopment. Second, the military base must satisfy two of seven criteria regarding physical blight. According to the Report to City Council, the OARB redevelopment sub-district meets the first test, and also meets or exceeds all seven criteria of the second test, including the following:

- unsafe or unhealthy buildings;
- obstacles to economically viable reuse;
- adjacent to or nearby incompatible land uses;
- non-conformance with subdivision, zoning, or planning regulations;
- infrastructure that does not meet existing standards;
- buildings that, when built, did not conform to codes; and
- materials or facilities that need to be removed.

Furthermore, under Community Redevelopment Law, non-military areas related to a base closure must meet a four-pronged test of blight (HSC §§ 33492.10(b), 33030, and 33031). First, an area must be predominantly urbanized, and the blighted conditions cannot reasonably be expected to be alleviated in the absence of redevelopment. Second, the area must have inadequate public improvements, parking, or utilities. Third, the area must be necessary for the effective redevelopment of the related military base. Finally, the area must satisfy one or more criteria regarding physical blight and one or more criteria of economic blight. According to the Report to City Council, the Maritime and 16th/Wood sub-districts met the first three tests, and met or exceeded criteria of the fourth test, including the criteria shown in Table 3-2.

Table 3-2
Criteria for Physical and Economic Blight

	Applied to Following Sub-District per Report to City Council	
Criteria Establishing Blight	**Maritime**	**16th/Wood**
Physical Blight		
Unsafe or unhealthy buildings	**U**	**U**
Obstacles to economically viable use of buildings or lots	**U**	**U**
Adjacent or nearby incompatible land uses		**U**
Lots in multiple ownership of irregular form and shape and inadequate size for proper usefulness		**U**
Economic Blight		
Depreciated or stagnant property values or impaired investments	**U**	**U**
Non-conformance with subdivision, zoning, or planning	**U**	**U**

Table 3-2
Criteria for Physical and Economic Blight

Criteria Establishing Blight	Applied to Following Sub-District per Report to City Council	
	Maritime	16th/Wood
regulations		
Infrastructure that does not meet existing standards	U	U
Buildings that, when built, did not conform to codes	U	U
Materials or facilities that need to be removed	U	U
Abnormally high business vacancies or low lease rates, high turnover, abandoned buildings, excessive vacant lots within an area developed for urban use, and served with utilities	U	U
High crime rate that constitutes a serious threat to public safety and welfare	U	U

Source: *Report to City Council: Oakland Army Base Redevelopment Project* (HEG, 2000).

Within the OARB and 16th/Wood sub-districts, conditions of blight are widespread. Generally, within the Maritime sub-district, conditions of physical blight were concentrated at the former FISCO site, at the time the Redevelopment Plan was drafted. This site is currently undergoing redevelopment under previously certified environmental review (Port of Oakland 1998 and 1999; Corps and Port of Oakland 1998) and construction is nearly complete. Details of ongoing and future Port facility modernization in the Maritime District evolve on a facility-by-facility basis, and the modernization of each specific facility has been and will continue to be implemented by and under the control of the Port under separate project-level approval and environmental review.

3.3.3 Objectives

In developing the Redevelopment Plan, the City identified objectives for redevelopment of the entire project area. In addition, through the OARB base reuse planning process, the City and community collaboratively identified additional objectives for redevelopment of the OARB, especially the City's Gateway development area. The Port has also identified objectives specific to the Port development area and Maritime sub-district, as shown in Table 3-3.

Table 3-3
Redevelopment Objectives

Objective	Applies to the Following		
	Gateway development area	**Maritime sub-district and Port development area**	**16th/Wood sub-district**
Alleviate economic and social degradation due to closure of OARB	**U**	**U**	**U**
Eliminate blighting influences	**U**	**U**	**U**
Create a vibrant and balanced land use pattern	**U**	**U**	**U**
Strengthen the economic base	**U**	**U**	**U**
Allow for sustainable job creation	**U**	**U**	**U**
Expand, improve, and preserve low/moderate-income housing.	**U**	**U**	**U**
Provide for high-quality public/community services	**U**	**U**	**U**
Provide for safe, efficient, and effective movement of people and goods	**U**	**U**	**U**
Protect, preserve, and enhance environmental resources	**U**	**U**	**U**
Minimize waste generation, maximize reuse/recycling.	**U**	**U**	**U**
Accommodate the Port's share of regional cargo throughput in 2020		**U**	
Respond to trends and requirements of maritime shipping		**U**	
Increase Port productivity and efficiency		**U**	
Provide sufficient capacity to substitute for other West Coast gateway ports in the event of natural disaster or other emergency		**U**	
Keep competitive with other West Coast ports		**U**	

Source: Staff Report to the Oakland City Planning Commission (September 19, 2001; Case File No. DET01-06, ER01-035), included in Appendix 1 of this EIR.

In order to achieve district-wide redevelopment goals, all sub-districts require investment in infrastructure and improvement of investment potential. In addition, in the OARB and 16th/Wood sub-districts, substantial construction, or demolition followed by re-construction will also be required.

3.4 LOCATION

The project area encompasses approximately 1,800 acres in western Oakland, partially along the eastern shoreline of San Francisco Bay (Figures 1-1 and 3-1). This is the westernmost portion of West Oakland. The project area is located approximately two miles west of the central business district. The project area is roughly L-shaped. It is located adjacent to several regional transportation links, as well as to the Bay. The project area is bounded by the following:

- To the north is Interstate 80 (I-80), and the Bay Bridge touchdown (where the bridge meets land, located on a peninsula into the Bay also called the "Gateway peninsula") and toll plaza; beyond is the Bay.
- To the northeast is the East Bay Municipal Utility District (EBMUD) Main Wastewater Treatment Plant (WWTP), a large, region-serving industrial sewage treatment facility. Beyond the WWTP is the MacArthur maze (the interchange of I-80, I-580, and I-880), and farther beyond is the City of Emeryville. To the southeast is the Union Pacific (UP) intermodal railyard and Jack London Square.
- To the south is the Inner Harbor of the Oakland Estuary; beyond is Alameda Point, another closed military installation.
- To the west are Oakland's Middle and Outer harbors; beyond is the Bay.

The OARB sub-district encompasses approximately 470 acres. This sub-district encompasses approximately 430 acres of OARB (both the land and submerged portions of the Base, including on-Base lands currently owned by the Reserves) plus several parcels immediately adjacent to the northern boundary of OARB, between the Base and I-80, totaling approximately 39 acres. It is bounded by (clockwise from north) the Bay Bridge, I-880, the Port of Oakland, and the Bay. This sub-district comprises two development areas: the 228-acre Gateway development area is the northwest portion of the sub-district; the 241-acre Port development area is in the west and southeast portion.

The Maritime sub-district encompasses approximately 1,290 acres. The majority of this sub-district comprises that portion of the Port of Oakland dedicated to maritime use from the Outer Harbor on the west to and including Howard Terminal on the east (including Schnitzer Steel, a non-Port property), and from the Inner Harbor on the south to Berth 10 on the north. The Maritime sub-district includes the existing marine cargo terminals, the Joint Intermodal Terminal (JIT) rail facility, marine terminals recently constructed or under construction at Berths 57-59, and the Middle Harbor Shoreline Park, also under construction.[15] It abuts, but does not include,

[15] Berths 55-59, including the Middle Harbor Shoreline Park and the JIT, are elements of the Port's Vision 2000 program. Impacts of their construction and operation were disclosed in a certified EIR (*Berths 55-58 Project EIR,* Port of Oakland, Draft EIR 1998; Final EIR 1999; SCH No. 97102076). This program is intended to provide modern marine and rail facilities to transport containerized cargo between foreign—predominantly Asian Pacific—ports and destinations throughout the United States. The program also provides a new regional waterfront park, and substantial new public Bay access. The projects comprising the Vision 2000 Program were approved in 1999. Portions of those projects have been completed and are currently in operation; construction of the remaining portions is in progress.

Jack London Square and the Union Pacific Railroad Desert yard. This sub-district also includes areas not under the Port's ownership, including a portion of I-880 and its frontage road, Schnitzer Steel, miscellaneous parcels near 2nd and 3rd streets, and miscellaneous parcels east of I-880 between Wood Street, West Grand Avenue, and 26th Street. The area outside the Port's ownership within this sub-district totals approximately 192 acres.

The 16th/Wood sub-district encompasses approximately 41 acres. This sub-district is located roughly between the realigned Cypress Freeway (I-880) to the west and Wood Street to the east, West Grand Avenue to the north and 7th Street to the south. The area includes the old Southern Pacific Railroad (SPRR) station (also known as the Amtrak station), as well as the Phoenix Iron Works site.

3.5 PROJECT AREA CHARACTERISTICS

The project area is urbanized, with some vacant parcels that at one time were industrialized. The project area, including each sub-district, also contains some parcels that are contaminated, and/or are listed on the Cortese List. The following discussion focuses on the project area's physical characteristics. Section 4.1: Consistency with Plans and Policies, and Section 4.2: Land Use, describe the planning and policy characteristics/context of the project area.

3.5.1 OARB Sub-District

With the exception of approximately 12 acres at the Gateway peninsula and several parcels above West Grand Avenue, the OARB sub-district is developed. Its focus is transportation-oriented, with highway operations and maintenance facilities, cargo container storage and maintenance facilities, ship berths and terminals, rail yards, and large warehouses. A major truck route, Maritime Street, runs southwest-northeast through the Base. Industrial transportation uses dominate. An institutional multi-story, multi-winged Army administration building (Building No. 1) is centrally located within this sub-district, along with other Army-related transportation-supporting, residential, community services, recreation, and office uses. Some of the buildings, including the large administration building, are in obvious disrepair.

The Gateway peninsula, located within the Gateway development area, is undeveloped land traversed by both overhead and underground easements, and is used occasionally for temporary storage. Two relatively small buildings exist at the peninsula: one is a Caltrans building, the other is an EBMUD dechlorination facility. In general, however, the site remains unused, and is fenced off from the remainder of the project area.

The miscellaneous parcels located within this sub-district but not within the Base are owned by a variety of owners, but primarily the Port and Caltrans. These parcels are used for such purposes as highway maintenance, container storage and materials storage, Port-related trucking operations and other storage and temporary uses.

3.5.2 Maritime Sub-District

The majority of this sub-district is an operating maritime cargo port, and it is dedicated almost entirely to industrial transportation uses. The sub-district contains terminals with large waterfront cranes and a variety of mobile and semi-mobile ground equipment, and railyards. Cargo containers are stacked in the terminal yards. Large transport trucks are common on the streets in this area, either actively moving cargo, or waiting in queues to enter the terminals.

The shoreline of the Middle Harbor is dedicated to public access. The 4.5-acre Port View Park exists in the southwest shoreline of the 7th Street Terminal. The approximately 30-acre Middle Harbor Shoreline Park is under construction, and will extend along the entire Middle Harbor shoreline to join with Port View Park (Port of Oakland 1999). This sub-district encompasses some inland areas not in port use.

One residential (loft) building is located within this sub-district on 2nd Street between Brush and Castro streets.

3.5.3 16th/Wood Sub-District

This sub-district, historically dedicated to industrial uses, is now generally underutilized. The large historic SPRR (Amtrak) station building remains, but is boarded up in a derelict state. Non-smokestack industrial and light industrial uses, such as warehousing/distribution centers, waste recycling facilities, and truck repair businesses are located in or adjacent to this sub-district, as are miscellaneous businesses located in older buildings. While there are currently no residential uses in this sub-district, such uses abut a portion of the project area, and others are directly across Wood Street from the eastern boundary of the sub-district. A portion of this sub-district is designated Port Priority Use pursuant to the Seaport Plan.

3.6 REDEVELOPMENT ACTIVITIES

Detailed information regarding redevelopment activities on specific parcels is, for the most part, not yet available. However, information is available regarding amendment of General Plan land use classifications and zoning, demolitions and site preparation, and major infrastructure improvements. Furthermore, stable assumptions regarding overall redevelopment densities and activities exist, and are sufficient for a general level of impact analysis and development of a mitigation program.

The redevelopment program includes the following activities:

- amendment of General Plan land use classifications and of zoning designations;
- amendment of the Port area boundary;
- approval of sub-district/development area-specific demolition, and site preparation;

- remediation of environmental impairments, including the remediation of surface and subsurface soil and groundwater contamination caused by prior releases of hazardous materials and the abatement of environmental hazards from regulated building components such as asbestos and lead-based paints;

- installation, repair and/or improvements to major infrastructure; and

- ultimate redevelopment, for which either the types of uses and maximum densities from the Reuse Plan are assumed or, for the Port, achievement of projected cargo throughput capacity as described in the amended Seaport Plan is assumed.

The following sources were used to develop information regarding proposed redevelopment:

- **Redevelopment Plan:** for the entire project area, describes necessary major infrastructure improvements.

- **OARB Reuse Plan** (as amended): for the majority of the OARB sub-district, describes a preferred reuse alternative, designating land uses and densities/intensities, and some major infrastructure.

- **City/Port Application to BCDC for Amendment of the Bay and Seaport Plans and BCDC Amendment to the Seaport Plan:** generally describes proposed Port Priority land use designations, necessary Bay fill, seaport facilities, and the Port's share of regional cargo throughput in 2020.

- **Pre-Application Discussions:** for the 16th/Wood sub-district, information from pre-application development meetings is included for approximately 23 acres proposed as the Central Station. This redevelopment activity is in the conceptual planning stages, and no application has been submitted to the City. For purposes of this environmental review, the City has made conservative assumptions based on preliminary input. The City also made assumptions regarding likely development in the remainder of the 16th/Wood sub-district.

- **EIR Scoping Comments:** input received from community members, regulatory agencies, and the Port of Oakland during the EIR scoping period identifies some potential redevelopment elements and activities.[16]

- **Environmental Reports:** Soil and groundwater investigative reports, as described in Section 4.7: Hazardous Materials, and listed in Appendix 4.7.

3.6.1 Amendment of Land Use Classifications and Zoning Designations

General Plan Land Use Classifications

Figures 3-6a and 3-6b illustrate existing and proposed General Plan land use classifications for the project area. Existing General Plan land use classifications primarily include Business Mix

[16] See Staff Report to the Oakland City Planning Commission (September 19, 2001; Case File No. DET01-06, ER01-035), included in Appendix 1 of this EIR. All written EIR scoping comments in their entirety, plus written summarizations of verbal scoping comments are included in Appendix 1.

and General Industrial/Transportation. In addition, some shoreline areas along the Middle and Outer harbors are classified Park & Urban Open Space (City of Oakland 1998).

The Business Mix classification is intended to create and enhance areas of the City that are appropriate for a wide variety of business and related commercial and industrial establishments, and it allows for flexibility in land use decisions. With Combining Zoning, live/work uses are allowed on lands classified Business Mix. The General Industrial/Transportation classification is intended to recognize, preserve, and utilize areas of the City for a variety of business and related establishments that may have potential to create off-site impacts such as noise, light, glare, truck traffic, and odor.

Under the Redevelopment Plan, no new land use classifications would be added to the project area. The majority of the project area would retain its current classification, with some acreages shifting between Business Mix and General Industrial/Transportation in the OARB sub-district. In addition, some existing General Industrial/Transportation in the vicinity of the Bay Bridge and the shoreline of the Gateway development area would be reclassified Park & Urban Open Space. The City would amend land use classifications and zoning within the OARB sub-district to allow for redevelopment as envisioned in the OARB Reuse Plan.

Zoning

Currently, the entire project area is zoned Industrial (M). The OARB sub-district and the majority of the Maritime sub-district are zoned M-40 (Heavy Industrial). Two areas of the Maritime sub-district are zoned M-30 (General Industrial): immediately east of I-880 above West Grand Avenue, and immediately west of I-880 along both sides of 7th Street. The majority of the 16th/Wood sub-district is zoned M-30, with a small area between 9th and 11th streets zoned M-20 (Light Industrial). The majority of the 16th/Wood sub-district is additionally zoned S-16 (Industrial-Residential Transition Combining Zone). The intent of this zoning overlay is to provide a compatible transition between residential and industrial zones, including joint living-work quarters. The S-16 Zone may be combined with any other zone that has a General Plan land use classification of Business Mix or General Industrial/Transportation, and abuts a residential zone, or with any industrial zone that abuts a residential zone (City of Oakland Municipal Code § 17.101.020).

The City is currently updating its zoning regulations to make them consistent with the General Plan. This update process is expected to conclude in the near future. As part of this city-wide zoning update, the City will re-zone the project area with new zoning designations that best match the land use classifications of the Reuse Plan and the Redevelopment Plan. These zoning designations would be consistent with the “Business Mix” and General Industrial/Transportation land use classifications, allowing such uses as Office, Research and Development, Warehouse/Distribution, and Light Industrial.

insert (color)

Figure 3-6a Existing Oakland General Plan Land Use Classifications

Insert (color)

Figure 3-6b Proposed Oakland General Plan Land Use Classifications

At such time as specific development projects within the project area are proposed, the City will identify the appropriate new zoning designation for those uses. As part of the approval process for these subsequent development projects, the City will consider rezoning actions as determined necessary at that time. In all cases, the subsequent zoning actions shall only be approved when determined consistent with the General Plan land use classifications as described in the OARB Reuse Plan, and as discussed above.

In addition to zoning regulations, future proposed uses would have to take into consideration the level of remediation and any associated land use restrictions.

3.6.2 OARB Sub-District: Gateway Development Area Redevelopment Activities

Demolition, Site Preparation, and Remediation

The Gateway development area would generally be cleared for new construction. All structures[17] would be demolished or de-constructed ("de-construction" consists of dismantling a structure so that historic elements and materials such as large timbers can be reused), and existing paving and concrete would be removed. Surface and subsurface contaminants would be removed, or remediated as appropriate to comply with applicable federal, state, and local requirements and processes discussed in Section 4.7: Hazardous Materials. Remediation activities will include a variety of activities, ranging from subsurface excavation and removal of impacted soils, to containment and removal of regulated building materials such as asbestos, to ongoing soil and groundwater management programs to assure the protection of human health and the environment. The area would be graded and drainage corrected**.** Approximately 1 acre on the Gateway development area would be filled as required for construction of the Port's New Berth 21 (see discussion in Section 3.6.4, below).

Transportation Improvements

Realignment and Extension of Maritime Street. To accommodate the Port's reuse of OARB, existing Maritime Street (above 7th Street) would be realigned 400 to 600 feet to the east. In order to accommodate this realignment, Maritime Street would also be extended along the Gateway development area/Port development area boundary to connect with West Grand Avenue at the current Wake Avenue intersection in a loop configuration. The City may reserve some land within the Gateway development area for right-of-way to allow construction and connection of the Maritime Street extension to West Grand Avenue.

Access Roadway. An access roadway would be constructed from realigned Maritime Street through the center of the Gateway development area to the Gateway peninsula. For a portion of its alignment, this roadway would constitute improvements to existing Burma Road.

Trails. As partial mitigation for impacts resulting from its construction of the relocated I-880 Freeway, Caltrans has committed to fund a bicycle/pedestrian spur trail from the vicinity of the

[17] Wharf 7 and the majority of Wharf 6½ would remain and be reused.

MacArthur maze (Bay Bridge Distribution Structure) along Burma Road to the Gateway peninsula. Redevelopment would be designed in a manner that would not preclude Caltrans from fulfilling its commitment. In addition, redevelopment would include a Class I spine trail within the right-of-way of the new access road, connecting Maritime Street to the new spur trail in Burma Road.

Utility Improvements

Storm Drainage. The OARB storm drain system in the Gateway development area is in substantial disrepair due to age and settlement. Certain areas are subject to insufficient drainage and contamination from storm event and dry season flows. Storm drain upgrades would include replacement and/or rehabilitation of the existing system, and installing a network of new storm drainpipes. In addition, manholes, inlets and outfall structures with backflow gates would be replaced or repaired (EarthTech 2000).

Sanitary Sewer. It is anticipated that redevelopment of the Gateway development area would require installation of new sewer infrastructure, including pipes, manholes, lift stations and controls, and similar facilities. The existing EBMUD sewer outfall that passes through the Gateway development area would be retained.

Water. Build-out of the Gateway development area would require construction of a new looped water line system, including new fire hydrants and valves. Additionally, as part of its East Bayshore Recycled Water Project, EBMUD intends to supply the Gateway development area with high-quality reclaimed water for irrigation and possibly for industrial processes and commercial applications, as appropriate. The impacts of the construction of the reclaimed water system and use of reclaimed water were analyzed by EBMUD and are disclosed in the certified project EIR (EBMUD 2001).

Electrical. Overhead and underground electrical distribution systems exist throughout the OARB. Existing OARB electrical facilities, however, are insufficient to serve future development within the Gateway development area. Electrical upgrades include demolishing the existing system; installing a new underground duct bank from the Port's 115 kV/12 kV (kilovolt) Davis substation at Maritime and 7th streets to existing and new switchgear; replacing and upgrading the area main switchgear; installing a new underground duct bank for the Hetch Hetchy/Treasure Island 12 kV feeder; installing new underground electrical utility infrastructure; and installing new 12 kV pad-mounded switchgear, as necessary (EarthTech 2000).

Natural Gas. A new natural gas system would be installed from the existing Pacific Gas & Electric (PG&E) transmission line located on the south side of the Bay Bridge toll plaza.

Telecommunications. The telecommunication system presently serving the Gateway development area is insufficient to support planned future development. New infrastructure would be required to upgrade the system's capabilities, including installation of new distribution

cables, feeder cables, switches, and connections to building mainframes. Existing fiber optics feeding San Francisco must also be preserved.

Relocation of Utilities. As a result of the realignment of Maritime Street (see Section 3.6.3), major infrastructure located in the right-of-way of that portion of Maritime Street would be relocated, including 6-inch and 4-inch PG&E gas mains, overhead electric distribution lines, EBMUD water lines, and City storm and sanitary sewer lines. It is anticipated that these utilities would be relocated when Maritime Street is realigned.

Build-Out Projections

The Gateway development area would be redeveloped by the ORA to provide an attractive entry to the City of Oakland, create significant new employment opportunities, and bring new industry and business to the area.

Proposed land uses and development intensities for the Gateway development area are based on the "Flexible Alternative" land use plan developed during preparation of the Reuse Plan. As its name implies, this land use program is intended to provide the flexibility to balance economic and community interests for the Gateway development area over time. The focus of development within the Gateway development area would include light industrial, research and development (R&D), and flex-office space uses, with business-serving retail space.[18] In addition, some warehousing and distribution facilities and ancillary maritime support facilities would be located in this area. The Gateway development area also includes commitments for public benefit uses (*i.e.,* a park, job training, and possibly homeless assistance programs). No housing is proposed within the Gateway development area. Actual development within the Gateway development area may vary over time.

Economic Development. Within the Gateway development area, approximately 165 acres may be available for economic development opportunities, including certain lands owned by the Port and Caltrans outside of the OARB but within the Gateway development area. According to the Reuse Plan, the maximum anticipated development potential for this area is approximately 2,347,000 square feet of new "flex" uses, including light industrial, office, R&D, ancillary (and possibly regional) retail, and warehouse/distribution. Based on gross land availability (including land needed for future roadways, pedestrian circulation, utility easements, etc.), overall development intensity for this area would be a floor-to-area ratio (FAR) of 0.35. (See Table 3-1.)

Park. The EBRPD has requested 15 acres of land from the Army located immediately south of the Gateway peninsula for use as a public park. This park would be visible to eastbound travelers on the Bay Bridge and would serve as the gateway to the City of Oakland. It is currently referred to as the "Gateway Park." The park would be accessible from Bay Trail spurs

[18] Depending on market conditions, the City may elect to include high-end retail, regional-serving retail, and/or a hotel. These uses are analyzed in *Chapter 7: Alternatives to the Proposed Redevelopment Program*.

constructed as part of both redevelopment and other activities[19] connecting to the waterfront, the Bay Bridge, Maritime Street, and Shellmound Street (the latter in Emeryville). Additionally, EBRPD is exploring the opportunity to acquire several additional non-OARB properties (including 4 and possibly more acres in the immediate vicinity) that may be available for expansion of this park.

A waterfront strip classified Urban Park & Open Space encompassing approximately 10 acres would access, then parallel, the shoreline in the Gateway development area. In combination with the park, this open space would provide maximum feasible public access consistent with redevelopment of the project area.

Community/Civic. The JATC has requested 3 acres of OARB land for a job-training facility. This organization provides job training in the building trades.

Additionally, although the preferred alternative is to locate the Homeless Assistance Accommodation program run by the Homeless Collaborative outside of the project area, this EIR examines alternatives that locate some or all of the program in the Gateway development area (Chapter 7: Alternatives to the Proposed Redevelopment Program).

Ancillary Maritime Support. Approximately 15 acres of the Gateway development area would be dedicated to truck parking, cargo storage, or other ancillary maritime support uses. Such uses would be located in the northwest portion of the Gateway development area, generally at a site known as the Baldwin Yard, north of West Grand Avenue and adjacent to I-80.

3.6.3 OARB Sub-District: Port Development Area Redevelopment Activities

Demolition, Site Preparation, and Remediation

The Port development area would be cleared for new construction. All existing structures would be demolished or de-constructed, and existing paving and concrete would be removed. Surface and subsurface contaminants would be removed or remediated as appropriate to comply with applicable federal, state, and local requirements and processes described in Section 4.7: Hazardous Materials. Implementation of the remediation program will commence following Base conveyance, and be integrated, as feasible, with the Port's planned infrastructure improvements and redevelopment activities. Additionally, the area would be graded and drainage would be corrected.

Transportation Improvements

Realignment and Extension of Maritime Street. To accommodate 2020 cargo throughput commitment of the Port, and operational characteristics of proposed rail facilities at the New

[19] See Section 4.10: Recreation and Public Access, for a discussion of Caltrans' requirements to construct Bay Trail and other public access amenities resulting from BCDC permit conditions for the I-880 (Cypress Structure) Replacement and Bay Bridge Replacement projects.

Intermodal Facility, existing Maritime Street (above 7th Street) would be realigned 400 to 600 feet to the east. In order to accommodate this realignment, Maritime Street would also be extended along the Gateway development area/Port development area boundary to connect with West Grand Avenue in a loop configuration. A portion of the loop would be located on the Gateway development area. Realignment would require consolidation and reconfiguration of the existing intersections of Maritime Street and of Maritime Street West with 7th Street. The reconfigured intersection would be an at-grade four-way intersection. This would require realignment of a portion of Maritime Street below 7th Street.

Trails. Design of realigned Maritime Street would include a Class I spine trail that would connect to the existing Bay Trail spur along 7th Street, to the proposed spine along the Gateway development area access road (see above), and to West Grand Avenue. This Bay Trail spine would traverse a portion of the Maritime sub-district, as well as the Port development area of the OARB sub-district.

Utility Improvements

Storm Drainage. The OARB storm drain system in the Port development area is in substantial disrepair. Certain areas are subject to insufficient drainage and contamination from storm event and dry season flows. Storm drain upgrades would include replacement and/or rehabilitation of the existing system, and installing a network of new storm drainpipes. In addition, manholes, inlets and outfall structures with backflow gates would be replaced or repaired. Most runoff from the Port development area would be collected by the newly constructed storm drain system and would be conveyed to the Port's existing main pipelines (Port of Oakland 2002).

Sanitary Sewer. It is anticipated that redevelopment of the Port development area would require installation of new sewer infrastructure, including pipes, manholes, lift stations and controls, and similar facilities.

Water. Build-out of the Port development area would require construction of a new looped water line system, including new fire hydrants and valves. Additionally, as part of its East Bayshore Recycled Water Project, EBMUD intends to supply the Port development area with high-quality reclaimed water for irrigation and possibly other uses, as appropriate. The impacts of the construction of the reclaimed water system and use of reclaimed water were analyzed by EBMUD and are disclosed in the certified project EIR (EBMUD 2001).

Electrical. Overhead and underground electrical distribution systems exist throughout the OARB. Existing OARB electrical facilities, however, are insufficient to serve future development within the Port development area. Electrical upgrades may include demolishing the existing system; installing a new underground duct bank from the Port's Davis substation at Maritime and 7th streets to new substations and switchgear; installing a new underground duct bank for the Hetch Hetchy/Treasure Island feeder; installing new underground electrical utility infrastructure; and providing necessary back-up power sources (Port of Oakland 2002).

Natural Gas. A new natural gas system would be installed from the existing Pacific Gas & Electric (PG&E) transmission line located on the south side of the Bay Bridge toll plaza. New PG&E natural gas main and distribution pipelines would be installed in realigned Maritime Street and would extend to Port facilities (Port of Oakland 2002).

Telecommunications. The telecommunication system presently serving the Port development area may be sufficient to support planned future development, but would require relocation. Existing fiber optics feeding San Francisco would be preserved.

Relocation of Utilities. As a result of the realignment of Maritime Street, major infrastructure located in the right-of-way of Maritime Street would be relocated, including 6-inch and 4-inch PG&E gas mains, 12.47 kV overhead electric distribution lines, EBMUD water mains, and storm and sewer pipelines. These utilities would be relocated when Maritime Street is realigned.

Build-Out Projections

Relocation of Railyard Functions. The Port intends to improve efficiencies and geometrics of its existing Joint Intermodal Terminal (JIT) rail facility, where cargo is transferred to and from trains, by relocating the functions of that facility to the eastern portion of the OARB (including the former Knight railyard) and portions of the Maritime sub-district immediately west of the Union Pacific (UP) Desert railyard, which is located immediately west of I-880. This facility is referred to as the New Intermodal Facility. Relocation and enhancement of the JIT's functions would result in longer, straighter track design, using land more efficiently than the existing JIT and would be located adjacent and parallel to existing Union Pacific (UP) rail facilities. Remediation associated with rail relocation is anticipated to occur in tandem with such relocation. In addition, the New Intermodal Facility would allow for more efficient maritime use of property closer to the marine terminals. Finally, the facility is expected to increase rail efficiencies, allowing the Port to reach the Seaport Plan's 2020 cargo throughput goals by maximizing transport by trains, rather than by truck.

The New Intermodal Facility would consist of paved and unpaved ballasted surface areas, rails and support infrastructure. Other related modifications to tail and support tracks would be required south of 7th Street for optimal operation of the New Intermodal Facility.

Existing railroad tracks crossing over 7th Street located between Maritime Street and I-880 would be reconstructed to accommodate additional railroad tracks, and vehicular traffic parallel to the tracks. In addition, existing 7th Street would be widened beneath the overcrossing railroad tracks.

Temporary Ancillary Maritime Support. With realignment of Maritime Street, a strip of land of approximately 44 acres would be located between the New Intermodal Facility and existing Port Outer Harbor terminals. These lands are expected to be used in the interim for ancillary maritime support (AMS) operations such as container storage, truck parking, warehousing, and

offices. Ultimately, this land is expected to be incorporated into one or more realigned and expanded Port marine terminals.

3.6.4 Maritime Sub-District Redevelopment Activities

Demolition, Site Preparation, and Remediation

Maritime sub-district activities related to OARB reuse would require demolition or de-construction of two railroad structures, demolition of marginal wharves in the Outer Harbor, and removal of existing paved surfaces. Surface and subsurface contaminants would be removed or remediated as appropriate to comply with applicable federal, state, and local requirements and processes described in Section 4.7: Hazardous Materials. The area would be graded and drainage corrected. Approximately 3 acres would be excavated and dredged to a depth of –50 feet mean lower low water (MLLW), removing about 250,000 cubic yards (CY) of material to create new Bay surface. Approximately 2 million CY of fill would be deposited in the Outer Harbor (currently at –42 feet MLLW) to create about 29 acres of new land, or "fastland."

Transportation Improvements

Realignment and Extension of Maritime Street. A portion of the improvements to Maritime Street discussed above are within the Maritime sub-district. Specifically, a portion of Maritime Street below 7th Street would be realigned to create a single, four-way intersection.

Build-Out Projections

The Maritime sub-district encompasses existing and planned maritime, rail, and park facilities on Port of Oakland property, plus miscellaneous right-of-way and other parcels not under Port control. The Port development area (including submerged lands) will provide the Port with approximately 240 additional acres. This would allow improvements in operations that are expected to result in significant efficiencies in the movement of cargo. Consolidation and realignment of areas not currently configured at peak geometry, plus modernizing improvements, would allow the Port to meet its share of cargo throughput as described in the Seaport Plan (BCDC and MTC 1982, as amended through 2001). Specifically, the Port has estimated it would achieve 24.5 million annual metric tons of container cargo throughput by the year 2020. This estimate served in part as the basis of an amendment to the Seaport Plan. Proposed components of Port development, primarily in the Maritime sub-district, are generally described below.

Expansion/Realignment of Maritime Facilities. The trend in terminal operations is to create operational efficiencies through expansion of storage, or "yard" areas in marine cargo terminals. This requires larger, fewer terminals, and consolidation of land areas. Another recent trend in shipping and terminal operations is the proliferation of "strategic alliances," whereby previously highly competitive shippers have aligned with one another, exchanging equipment and sharing ship space to increase efficiencies. Usually, alliances are created between firms located on adjacent marine terminals. This physical proximity facilitates equipment and ship sharing. In

order to further assist these alliances, better alignment of adjacent wharf faces between terminals and flexibility in adjusting lease lines, fence lines, etc. is required. On an ongoing basis, the Port intends to consolidate and realign terminals to increase efficiencies and support alliances. Because all Port terminals have tenants, this action is accomplished as opportunities present themselves. Information regarding such consolidation and realignment is, therefore, conceptual, and subject to change. The Port does, however, intend to implement this policy until terminals are configured to tenants' preferences.

Partly using land freed from rail use by the relocation of the functions of the existing JIT, the Port anticipates realignment of virtually all of its existing container terminal areas and expansion of Berths 55-59. Through the realignment process, operational elements of adjacent terminals are located to facilitate common use of ships, cargo handling equipment, etc. between terminals. Such a shared arrangement can increase throughput for adjacent terminal operators, and shippers delivering to more than one terminal in a single port. Realignment generally results in fewer, larger terminals with greater upland area for more efficient cargo storage and transfer. Terminal realignment and expansion would improve the efficiency of maritime operations and provide capacity for cargo throughput expected in the Bay and Seaport plans. Information regarding Port terminal realignment and expansion is evolving, and this EIR analyzes impacts to the extent information is available regarding ultimate throughput as described in the City and Port of Oakland's application to BCDC for a Seaport Plan amendment (City and Port of Oakland 2000).

New Berth 21. The Port proposes to replace existing Outer Harbor Berths 21, 20, 10, 9, and 8 with a "New Berth 21." To achieve an efficient terminal and berth geometry, reconfiguration of a portion of the Outer Harbor shoreline, including both excavation and fill, would be necessary. Approximately 3 acres of new Bay surface would be created by excavation, and 29 acres of new land (fastland) would be created by fill (in part from the nearby excavation). These net 26 acres[20] of fill are the minimum necessary to achieve efficiencies required to meet the 2020 cargo throughput projections as presented in the amended Seaport Plan (MTC and BCDC 1996, as amended through 2001). By maximizing cargo throughput using former OARB lands, the Port will eliminate the need for the previously planned Army and Bay Bridge marine terminals. The elimination of these two facilities eliminates the need for 127 acres of Bay fill previously included in the Seaport Plan.

Ancillary Maritime Support. The Port proposes to develop a Maritime Support Center (MSC) for centralized AMS operations on 75 acres located in the vicinity of the existing JIT. The MSC would house activities that directly facilitate the Port's container operations, such as container

[20] Portions of areas slated for excavation and fill are located beneath marginal wharves along the shoreline of the Oakland Outer Harbor, a situation termed "covered fill." This covered fill would include approximately 1 acre within the Gateway development area. The acreages of excavation and fill in this description do not take into account covered fill, and are for the gross area of excavation and of fill. More precise quantities of cut and fill, including extent of covered fill, would be developed prior to submittal of applications for fill to the BCDC, RWQCB and Corps.

freight stations, truck parking, container/chassis repair, storage, trans-loading, related cargo handling and distribution operations, and Port harbor maintenance functions.

In addition, the Port and the City agreed in their application for Seaport and Bay Plan amendments that the Port would provide an additional 15 acres of land near the Port area designating AMS uses involving trucking (City and Port of Oakland 2001). In 2001 BCDC amended the Bay and Seaport plans by Port Priority Use to approximately 11 acres of land in the I-880 right-of-way under the elevated portion of the freeway, and approximately 10 acres of land between the I-880 right-of-way and Wood Street, so that the Port could negotiate use of these areas for AMS uses (BCDC 2001). Subsequently, the City has considered non-Port Priority uses for land below West Grand Avenue between Wood Street and I-880. If, after further property negotiations and redevelopment planning, the Port and the City identify alternative site(s) for Port AMS uses, the Port and the City will seek a further Seaport Plan amendment to designate a new Port Priority Use acreage and delete Port Priority Use from these identified properties.

3.6.5 16th/Wood Sub-District Redevelopment Activities

Development of this sub-district as proposed would require removal of Port Priority Use designation in portions of this area. Removal of that designation would require amendment of the Bay and Seaport plans.

Demolition, Site Preparation, and Remediation

Redevelopment of the 16th/Wood sub-district may involve demolition of certain buildings, although the historic SPRR (Amtrak) Station is not expected to undergo demolition. Surface and subsurface contaminants would be removed or remediated as necessary to meet applicable legal requirements. The area would be graded and drainage would be corrected.

Build-Out Projections

The 16th/Wood sub-district encompasses approximately 41 acres. It includes several sites that have the potential for redevelopment opportunities, including the 23-acre SPRR (Amtrak) station site and the 5-acre former Phoenix Ironworks site.

Central Station. According to pre-application discussions with City staff, a developer has presented a preliminary development concept, called “Central Station,” that would include approximately 375 units of live/work space and approximately 1.4 million square feet of commercial, office, R&D, and retail space (inclusive of the live/work units). This concept plan includes restoration and reuse of the historic SPRR (Amtrak) station to include a community event space and creation of a 1-acre park. This is a preliminary development concept that would be generally analyzed in this EIR, and the concept plan may be altered or refined if subsequent, specific project applications for this site are received by the City.

Other Development. Other development and redevelopment plans within the remainder of the 16th/Wood sub-district are not known. Some parcels are currently for sale, but no pre-applications or applications are pending at the City. The EIR analysis assumes for purposes of cumulative impact analysis, build-out of 305,000 square feet of light industrial uses on the remaining parcels, which is consistent with the existing Business Mix land use classification identified in the General Plan.

3.7 OPERATIONAL CHARACTERISTICS AND ACTIVITIES

This section describes the characteristics and reasonably anticipated activities of project area operation that could result in impacts to the environment.

3.7.1 Light Industrial

Light industrial uses are proposed for the OARB sub-district Gateway development area and the 16th/Wood sub-district. Light industrial development includes a wide variety of land uses related to fabrication, processing, assembly, and non-smokestack manufacturing. These uses generally require 10 contiguous developable acres or more and good access to interstate freeway or other interstate transportation systems. Buildings are generally one to two stories. Utility system reliability is critical, and utility demand may be moderate to high. Light industrial uses generate a moderate amount of traffic, including truck traffic. Some light industrial uses may include processes that generate air or water pollutants. Some warehousing or storage of product may occur at the site. Hazardous materials may be transported to, stored, or used at light industrial sites.

3.7.2 Office and Research and Development

Office or R&D is proposed for the OARB sub-district Gateway development area and the 16th/Wood sub-district. Office development supports business, professional services, civic administration, medical, as well as non-hazardous laboratory and non-assembly, non-hazardous R&D uses. These uses generally require 25 contiguous acres or more to accommodate a multi-story building and surface parking and excellent telecommunications facilities. Office development should be located within 60 miles of a medium- to major-sized airport. Excellent transit connections are preferred. Office uses generate a high volume of employee vehicle traffic in peak commute hours. Minor amounts of routine hazardous materials (cleaning fluids, lubricants, etc.) may be transported to, stored, or used at office sites.

R&D development includes data processing, laser technology, communications, medical or biotechnology laboratories. In addition, R&D includes research, testing, design, development, and training for technology-focused industries such as aerospace, telecommunications, vehicles, satellites, medical, computers, electronics, and robotics. Assembly may occur on site as well. These uses generally require 5 contiguous acres or more, good access to similar facilities or a university (for access to workforce and to enhance technology transfer), and

technical equipment support services. Buildings are generally low profile, but may be multi-story. R&D uses generate a moderate amount of traffic, most related to employees. Some warehousing or storage of product may occur at the site. Hazardous materials may be transported to, stored, or used at R&D sites.

3.7.3 Retail

Ancillary retail is proposed for the OARB sub-district Gateway development area and the 16th/Wood sub-district. This type of retail would support other uses at the site: restaurants for area workers, copy shops, etc. Ancillary retail requires 1,000 to 5,000 square feet, adjacent off-street parking, and access to a critical mass of customer base. Minor amounts of routine hazardous materials (cleaning fluids, lubricants, etc.) may be transported to, stored, or used at retail sites.

The OARB sub-district Gateway development area may optionally include mid-sized, high-end retail. Such a use would be intended to attract shoppers to the site. Mid-sized retail generally requires 15 to 20 acres per store (including non-integrated parking), visibility from nearby major transportation facilities, and outstanding automobile access for a critical mass of customers. Buildings are two to five stories, and parking may be surface, or located in multi-story garages adjacent to or integrated with the main structure. Regional retail generates substantial traffic: employee and customer automobiles, delivery trucks, and trash haulers. Minor amounts of routine hazardous materials (cleaning fluids, lubricants, etc.) may be transported to, stored, or used at retail sites.

3.7.4 Warehouse/Distribution

Warehouse/distribution is proposed for the OARB sub-district. Warehouse/distribution development includes the short-term storage and transport of cargo. In the OARB sub-district, this use is currently envisioned to be located above West Grand Avenue, on a parcel known as the Subaru site. Warehouse/distribution centers are typically 250,000 or more square feet, require 20 contiguous acres or more, and must have outstanding access to the interstate freeway system. Access to additional interstate transportation systems is highly desirable. Preferred nearby support services include trucking companies, mechanics, and janitorial services. In order to achieve required internal clearances, buildings are at least 30 feet in height. Warehouse/distribution facilities usually operate 24 hours per day and generate noise and air emissions from transport trucks, ground equipment, and possibly trains. Traffic generation is moderate; a high proportion is mid-sized and large trucks. Minor amounts of routine hazardous materials (cleaning fluids, lubricants, etc.) may be transported to, stored, or used at warehouse sites.

3.7.5 Community/Civic

Community/civic use is proposed at the Gateway development area of the OARB sub-district. A specific use slated for this area is the JATC job training facility. This facility is expected to have the physical characteristics of, and operate much like, a light industrial land use. It may generate minor amounts of employee and trainee automobile traffic, as well as minor amounts of truck traffic. Job training would occur during regular business hours and could generate noise similar to a construction site. Minor amounts of routine construction hazardous materials (cleaning fluids, lubricants, fuels, paints, hydraulic fluids etc.) may be transported to, stored, and/or used at community/civic use sites.

In addition to the JATC facility, this analysis assumes the job/business training and food bank elements of the Homeless Collaborative program would occur in the Gateway development area. The training component would have the characteristics of light industrial, and the food bank would have the characteristics of warehouse/distribution land uses.

Community/civic use is also proposed for the 16th/Wood sub-district. Specifically, reuse of a portion of the historic SPRR (Amtrak) station is proposed as an event center. Exact details of the types of activities planned and the capacity of the facility are not yet stable and finite; but this document assumes the center would not generate substantial traffic in the peak hour, but would generate event-specific modest amounts of automobile traffic on a periodic basis.

3.7.6 Parks and Public Access

Interpretive/passive recreation park uses are proposed for the Gateway peninsula area of the OARB sub-district Gateway development area, along the Gateway development area shoreline, and a minor amount of urban park is proposed in the 16th/Wood sub-district. Parks require regular maintenance (trash removal, landscape upkeep, etc.). Depending on their size, parks generally generate very minor to minor amounts of routine, non-commute hour traffic. Parks that have event facilities may generate sporadic substantial temporary event-related vehicular traffic.

Waterfront development, including parks, requires non-vehicular public Bay access for pedestrians and bicyclists. Such public access generates essentially no vehicular traffic. Activities include landscape and trail maintenance.

3.7.7 Maritime

Maritime use is proposed for the OARB sub-district Port development area as well as the Maritime sub-district. Maritime development is fundamentally industrial; it is the movement of cargo between water-dependent transportation and another mode of transportation (*e.g.*, ship to truck, train to ship, etc.).[21] A marine terminal comprises a berth (the water area where ships

[21] Almost all cargo that passes through the Port of Oakland is containerized. The amount of cargo, or "throughput," is described as either metric tons, or—for containerized cargo—as a normalizing unit termed a twenty-foot equivalent unit (TEU). On average, one container of cargo is equal to 1.75 TEUs.

anchor), a wharf where cargo is transferred, a yard where cargo is stored, and a gate, where trucks enter and exit the terminal. A marine terminal requires contiguous waterfront land with direct access to the water, outstanding access to interstate roadways, and preferably, outstanding access to interstate rail facilities. A two-story administration building and several miscellaneous one-story buildings (*e.g.*, repair shop, storage, etc.) are typical; large waterfront cargo cranes and a variety of yard equipment are essential to terminal operation. Marine terminal operations related to ships may occur at any time; off terminal truck activities occur Monday through Friday 8 a.m. to 4:30 p.m. Operations can generate moderate amounts of employee vehicle trips and substantial truck traffic; because terminals operate on the basis of the shipping schedule, marine terminal traffic peaks may or may not correspond with other traffic peaks. Operations generate air emissions related to ships, trucks, yard equipment, and maintenance dredging; they also generate noise primarily related to transport trucks. During operations, some container ships maintain stability by up-loading ballast water into internal tanks, and as necessary, shifting ballast water internally and/or off-loading it. In this manner, aquatic organisms from one part of the world may be introduced to another, although ocean exchange of ballast water is required for ships that discharge ballast water at the Port of Oakland. Minor amounts of routine hazardous materials (cleaning fluids, lubricants, etc.) may be transported to, stored, or used at maritime use sites.

3.7.8 Ancillary Maritime Support

AMS uses are proposed for the OARB and Maritime sub-districts. Such uses may include a variety of port-related transportation-supporting facilities, including and not limited to: truck parking; container freight stations (packing and unpacking containers); container depots (container repair, cleaning, and temporary storage);U.S. Customs inspections; and agricultural inspection facilities. The facilities would attract moderate traffic, primarily truck. Since traffic would be dependent on ship activity, marine terminal traffic peaks may or may not correspond with other traffic peaks. Minor amounts of routine hazardous materials (cleaning fluids, lubricants, etc.) may be transported to, stored, or used at ancillary maritime support facilities.

3.7.9 Rail

Rail use is proposed for the Port development area of the OARB sub-district. Rail development is fundamentally industrial, and is the movement of cargo between rail-dependent transportation and another mode (*e.g.*, rail to truck, ship to train, etc.). A rail terminal comprises tracks, a yard where cargo is stored, and a gate, where trucks enter and exit the terminal. An intermodal rail yard handles mainly containerized freight. A rail terminal requires at least 75 acres of contiguous land with access to interstate roadways, and access to other modes, such as ships. A two-story administration building and several miscellaneous one-story buildings (*e.g.*, repair shop, storage, etc.) are typical; and a variety of yard equipment is essential to terminal operation. Rail terminals may operate 24 hours per day, seven days per week. Operations can generate moderate amounts of employee vehicle trips and substantial truck traffic; because terminals operate on the basis of the rail and shipping schedules, rail terminal traffic peaks may

or may not correspond with other traffic peaks. It should be noted that the truck trips generated by intermodal rail facilities occur predominantly on Port property, because these truck trips transport cargo between the rail facility and maritime facilities. Operations generate air emissions related to trains, trucks, and yard equipment; they also generate noise primarily related to trains and transport trucks. Routine hazardous materials (fuel, cleaning fluids, lubricants, etc.) may be transported to, stored, or used at rail sites.

3.7.10 Live/work

Live/work, high-density residential-commercial use is proposed for a portion of the 16th/Wood sub-district. Live/work land use usually requires excellent access to the arterial roadway system. Preferred nearby land uses include subsistence shopping (food, fuel, etc.), entertainment (restaurants), and community/civic services (transit, libraries, schools, hospitals, etc.). Buildings are generally multi-story. Live/work generates noise from vehicles and outdoor human activity, and air emissions from vehicles and in the winter from interior heating. Traffic generation from commute automobiles may be substantial in the commute peak hours, although less than with traditional high-density residential use.

3.8 CONSTRUCTION CHARACTERISTICS AND ACTIVITIES

This section describes the characteristics and reasonably anticipated activities of project area construction that could result in impacts to the environment. Chapter 4: Baseline and Setting, Impacts, and Mitigation, of this EIR describes potential effects of construction,[22] as well as best management practices (BMPs) and mitigation measures that would avoid or substantially reduce impacts of construction. These practices and measures would be made conditions of project approval, or required to be made enforceable through contract specifications. Construction is expected to occur on a parcel-by-parcel basis, from 2002 through 2020.

3.8.1 Demolition/Deconstruction and Removal/Remediation

All existing OARB and some Maritime sub-district structures would be demolished or de-constructed, and their foundations would be removed. As described in greater detail in Section 4.7: Hazardous Materials, regulated building components such as asbestos, electric transformers, and lead-based paints, will be removed and disposed of pursuant to applicable federal, state and local requirements. Additionally, surface and subsurface environmental conditions will be remediated in accordance with applicable federal, state and local requirements.

[22] Throughout Chapter 4: Baseline and Setting, Impacts, and Mitigation, “construction” includes demolition/deconstruction, removal/remediation, grading, excavating and fill activities, as well as infrastructure building and facility construction.

Assuming all OARB structures are removed, approximately 3.7 million square feet of existing structures would be demolished or de-constructed. The Army has identified some of these structures as contributing to the Oakland Army Base Historic District See Section 4.6: Cultural Resources.

3.8.2 Grading, Excavation, and Fill

In order to correct drainage, reduce the risk from flood or tsunami, and create sites geometrically suitable for development, site grading and land surface fill would be required. In addition, in order to develop a logical geometry for New Berth 21 in the Port development area of the OARB sub-district and a small portion of the Gateway development area, the shoreline would be reconfigured by filling 29 acres currently at a depth of –42 MLLW with approximately 2 million CY of material to create fastland, and excavating 3 acres to a depth of –50 feet MLLW to create open water (a net fill of 26 acres). While the excavated material would likely be one source of approximately 250,000 CY of the required fill, the source of the remaining approximately 1.8 million CY of the fill is not currently identified. This analysis assumes that material is imported from a location in the East Bay. It is estimated that approximately 90 percent of the fill material would arrive by barge, probably from maintenance dredging or from the Bay Bridge reconstruction project, and that 10 percent would arrive by truck.

3.8.3 Infrastructure and Utilities

Infrastructure and utilities include realignment of Maritime Street and utilities located within its right-of-way. Other roadway improvements and distribution utilities would be constructed as the need arises.

3.8.4 Construction Scenario

Construction methods are expected to be industry standard, and importation of specialized personnel from outside the region is not anticipated.

Because construction could occur over as much as 18 years, it is not practically possible to know how many personnel would be required or pieces of construction equipment would operate at any one time. It is, however, possible to broadly state that a combination of earthmovers, pile-drivers, cranes, and other heavy equipment, as well as haul and delivery trucks and personnel vehicles may be operating for months or years at a time.

This EIR includes a framework of BMPs and control measures for avoiding or mitigating reasonably anticipated construction impacts. These BMPs and controls focus on noise, air quality, traffic/parking, and water quality impacts; they rely in large part on policies and standards of the relevant resource and regulatory agencies. Construction BMPs and control measures are described as mitigation measures in Chapter 4: Setting and Baseline, Impacts, and Mitigation.

3.9 APPROVALS, PERMITS, AND CONSULTATIONS

Prior to undertaking demolition/deconstruction of structures, site preparation, or construction of improvements identified in this chapter, the ORA, City and/or Port may be required to obtain permits or approvals, or to engage in consultation with jurisdictional agencies. In addition, as subsequent redevelopment activities proceed, they may require additional permits, approvals, or consultations. Table 3-4 identifies potential discretionary regulatory requirements, and identifies agencies that may rely on the contents of this EIR to inform their discretionary decision-making process. This list may be modified from time to time, and the absence of an activity or an agency from the list does not preclude its use of this EIR for purposes of granting permits or approvals, or for engaging in consultation.

Table 3-4
Permit, Approval, or Consultation Processes that May Rely on the Contents of this EIR

Agency	Permit/Approval/Consultation Regulatory Trigger
	Federal
U.S. Army Corps of Engineers (Corps)	Section 404 (Clean Water Act) Permit Bay fill
	Section 10 (Rivers and Harbors Act) Construction in Waters of the U.S.
U.S. Fish & Wildlife Service (USFWS)	Section 7 (U.S. Endangered Species Act) Consultation for effects to special status species related to federally-permitted (Corps) action
National Marine Fisheries Service (NMFS)	Section 7 (U.S. Endangered Species Act) Consultation for effects to special status anadromous species related to federally-permitted (Corps) action
	State/Regional
California Department of Fish and Game (CDFG)	CEQA review Effects to state-protected species
S.F. Bay Conservation and Development Commission (BCDC)	Development permit Fill or excavation in the shoreline band Amendments to Seaport Plan Priority Port Uses
Caltrans	CEQA review Effects to State transportation systems
Regional Water Quality Control Board (RWQCB), Region 2	National Pollution Discharge Elimination System Permit (Waste Discharge Requirements [WDRs]) Effects to surface water quality from discharge of site runoff

Table 3-4
Permit, Approval, or Consultation Processes that May Rely on the Contents of this EIR

Agency	Permit/Approval/Consultation Regulatory Trigger
	General Permit Construction on site of 3 or more acres
	Clean Water Act 401 Certification for any Clean Water Act 404 permit
State Lands Commission (SLC)	Tidelands Trust Agreement Approve exchange of Tidelands Trust to place Trust on an area east of Maritime Street and remove Trust from area west of Maritime Street
California Department of Toxic Substances Control (DTSC)	Approve Remedial Action Plan (RAP) and accompanying Risk Management Plan (RMP), Consent Agreement, FOSET, oversee post-compliance remediation program
East Bay Regional Park District (EBRPD)	Accept property from Army Approve subsequent redevelopment activities
Bay Area Air Quality Management District (BAAQMD)	Grant demolition permits, stationary source permits
	Local
Oakland Base Reuse Authority (OBRA)	Adopt final Reuse Plan Continue Interim Leasing Program Approve acceptance of property from Army (including execution of necessary agreements) Obtain property from Reserves (including execution of necessary agreements) Approve transfer of property to ORA/City Approve a Finding of Suitability for Early Transfer, or FOSET (including execution of necessary agreements such as Consent Agreement and Environmental Services Cooperative Agreement) Secure environmental insurance for remediation program implementation Approve and execute Tidelands Trust Agreement for exchange of Trust between properties

Table 3-4
Permit, Approval, or Consultation Processes that May Rely on the Contents of this EIR

Agency	Permit/Approval/Consultation Regulatory Trigger
City of Oakland (City)	Amend Redevelopment Plan Amend General Plan Re-zone Approve amendment of Port area boundary Approve infrastructure improvements Issue demolition permits Issue miscellaneous land use approvals
Oakland Redevelopment Agency (ORA)	Amend Redevelopment Plan Approve acceptance of the OARB property from OBRA (including execution of necessary agreements) Approve transfer of property to the Port Approve infrastructure improvements Approve and execute Disposition and Development Agreement with Master Developer for the Gateway development area and/or 16th/Wood sub-district Implement redevelopment construction activities, including but not limited to infrastructure and remediation activities Approve subsequent redevelopment activities
Port of Oakland (Port)	Recommend amendment of Port area boundary Approve acceptance of property from OBRA (including execution of related agreements) Approve and execute Tidelands Trust Agreement for exchange of Trust between properties Waive reversionary rights to Gateway development area property Obtain property from the Reserves Approve infrastructure improvements Approve demolition permits Approve subsequent redevelopment activities

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GATEWAY PARK AREA:
EXISTING AND FUTURE CONDITIONS

MARCH 3, 2010

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Gateway Park Working Group

Bay Area Toll Authority • California Department of Transportation • California Transportation Commission • San Francisco Bay Conservation and Development Commission East Bay Regional Park District • City of Oakland • Port of Oakland • East Bay Municipal Utility District • San Francisco Bay Trail

PLANNING CONTEXT

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1. PURPOSE

The purpose of this study is to summarize base information about the Gateway Park site and environs, focusing on regional context, East Bay context, ownership, adjacent land uses and potential development opportunities. The information will be used to highlight how the opportunities and constraints can help form the park and foster ideas for future functions that will better serve not only its adjacent uses but also future visitors, neighboring communities, and users of the new Bay Bridge.

2. KEY FINDINGS

The pivotal position of Gateway Park in the Regional Setting offers the potential for creating a powerful visual and open space landmark, which for its success must overcome tremendous challenges in terms of access and clarity of arrival.

A maze of local and regional highway and railroad infrastructure to the north and east of the Park Area currently serves as a barrier to access but must be transformed into a series of welcoming access corridors.

Taking its rightful place in the East Bay Setting, Gateway Park will need to fulfill an ongoing symbolic and programmatic role diverse and inviting enough to draw visitors across the divide of industrial uses and safely along the edges of continuing and growing Port uses.

A major new waterfront destination at Gateway Park will help to right the balance of regional open spaces in the East Bay, bringing more active uses in closer proximity to population densities.

Working with immediate neighbors to the Park Area offers the opportunity to provide a series of gateway or portal experiences – of the Bay's natural environment, of the multi-layered history of transportation on the site, of the powerful economic engine of the Port and its adjacent redevelopment, and as access to a new, unparalleled, visual experience of the region from the bridge itself.

Site Constraints

- In a largely industrial area that does not have or anticipate residential uses, the challenge will be in creating a compellingly visible, attractive, safe, and user-friendly environment that invites visitors to come and stay to enjoy the park.
- Six different agencies maintain ownership of various portions of the site area and therefore it is essential to have an effective coordination structure in order to achieve consensus and ensure a seamless transition as development proceeds on each of the Park parcels, and in coordination with other redevelopment initiatives.
- The relatively flat and low-lying designated parkland site will need to be able to establish itself in a greater area dominated by significant infrastructure, such as the large cranes, shipping containers, and ships periodically moving in and out of the Port. A mutually beneficial relationship to the new East Span of the Bay Bridge, which makes the site unique and presents a significant attraction, will also be essential so that the park is not lost as the bridge takes its landmark role on the Bay.
- Redevelopment of surrounding parcels for commercial, industrial, Port and transportation uses, if not well coordinated, could create safety challenges for pedestrians and bicyclists, could block visual access to the water or to the desired Park access pathways, and could create unattractive back-door uses along the Park access pathways.

Potential Site Opportunities

- The potential Park site is largely contained within the Oakland Army Base redevelopment area and many of its major connection routes from the east are also located within a redevelopment zone – the West Oakland area, as shown in **Figure 9**. This positions the site in a favorable time and place where future Park and Park access implementation strategies might be seamlessly coordinated with redevelopment sites and especially with infrastructure and linkage projects that better connect the area with its surrounding communities.
- The new Bay Bridge will be heavily trafficked by bicyclists and pedestrians, with the Gateway Park serving as the entryway or exit for accessing the bridge.
- The Gateway site is situated in a bustling Port environment, with a high density of youth and schools in nearby West Oakland. This allows for opportunities to create an educational component for the park, fostering a symbiotic relationship between the working waterfront, the Park and local schools and learning facilities.
- The Gateway Park area is rich in local and regional history, as the setting of both the old and new Bay Bridges, with three designated historic landmark buildings and a legacy of transit stemming from the Key System.
- Reuse opportunities for the three historic buildings will naturally depend upon the program of uses for Gateway Park and the most advantageous locations for those uses. At the present the opportunities are seen to include:

The IERBYS

Originally built in 1938 to service railway cars, the steel frame building offers open span space for a wide variety of potential uses and potential exhibits including use as a visitor center with facilities for equipment rental or exhibition space, or museum.

Key Pier Substation

Built in 1926, this concrete building originally served as the substation for the Key Railway System, supplying power to the streetcars that served Oakland. The open interior, lit by a skylight and high windows, is well suited to people-oriented uses and might offer excellent views into the Park or to the water. Among potential uses are a café, gift shop, or visitor's center.

Caltrans Substation

The newest of the three buildings, the Caltrans Substation was built in 1939 to serve and is used as an electrical substation. Due to its concrete construction and adjacency to the Key System Substation, the building can potentially be reused as a support or storage space for a gallery or equipment rental facility.

Further discussion of the historical character of the structures and the area continue in Ecology: Historic Resources and Protections.

- Hazardous materials business plans (Chapter 6.95 of the Health and Safety Code, Section 25501 et seq.)
- State Uniform Fire Code requirements (Section 80.103 of the Uniform Fire Code as adopted by the state fire marshal pursuant to Health and Safety Code Section 13143.9)
- Underground storage tanks (Chapter 6.7 of the Health and Safety Code, Section 25280 et seq.)
- Aboveground storage tanks (Health and Safety Code Section 25270.5[c])
- Hazardous waste generator requirements (Chapter 6.5 of the Health and Safety Code, Section 25100 et seq.)

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or Superfund, as amended by the Superfund Amendments and Reauthorization Act (SARA), was originally passed in 1980. CERCLA created national policies and procedures to identify and remediate sites previously contaminated by the release of hazardous substances. These laws have the effect of holding past and present owners of real property liable for the costs of site investigations and remediation associated with environmental contamination regardless of whether the current owner was responsible for the contamination.

Federal Resource Conservation and Recovery Act (RCRA)

The Federal Resource Conservation and Recovery Act (RCRA) regulates hazardous waste storage, treatment, and disposal sites. The State of California implements the RCRA requirements under authorization from the federal EPA through enforcement of the California Hazardous Waste Control Law, which provides regulations that equal or exceed the federal standards.

Throughout Alameda County, a Hazardous Materials Management Plan must be prepared and submitted to the County by businesses that use or store certain quantities of hazardous materials. RCRA established a "cradle-to-grave" regulatory program for governing the generation, transportation, treatment, storage and disposal of hazardous waste. Under RCRA, individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as Federal RCRA requirements. In California, the DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous material waste. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

Hazardous Materials Management

The California Environmental Protection Agency (Cal EPA), Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. These laws require hazardous materials users to prepare written plans, such as Hazard Communication Plans and Hazardous Materials Business Plans. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely. A number of agencies participate in enforcing hazardous materials management requirements, including DTSC, the Regional Water Quality Control Board (RWQCB) and the Alameda County Department of Environmental Health (ACDEH).

Hazardous Materials Transportation

The United States Department of Transportation regulates hazardous materials transportation on all interstate roads. Within California, the state agencies with primary responsibility for enforcing federal and state regulations and for responding to transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). Together, federal and state agencies determine driver-training requirements, load labeling procedures, and container specifications. Although special requirements apply to transporting hazardous materials, requirements for transporting hazardous waste are more stringent, and hazardous waste haulers must be licensed to transport hazardous waste on public roads.

Soil and Groundwater Contamination

In Alameda County, remediation of contaminated sites is generally performed under the oversight of DTSC, the RWQCB, and/or the ACDEH and/or the City. At sites where contamination is suspected or known to occur, the project sponsor is required to perform a site investigation and draw up a remediation plan, if necessary. For typical development projects, site remediation is completed either before or during the construction phase of the project.

Site remediation or development may also be subject to regulation by other agencies. For example, if dewatering of a hazardous waste site were required during construction, subsequent discharge to the sewer system could require a permit from the East Bay Municipal Utility District (EBMUD), and discharge to the storm water collection system could require a National Pollutant Discharge Elimination System (NPDES) permit from the RWQCB.

Fuel Storage Tanks

State laws governing underground storage tanks (USTs) and above ground storage tanks (ASTs) specify requirements for permitting, monitoring, closure, and cleanup. Regulations set forth construction and monitoring standards for existing tanks, release reporting requirements, and closure requirements. Generally speaking, the ACDEH is the local agency designated to permit and inspect USTs and to implement applicable regulations. A closure plan for each UST to be removed must be prepared and submitted to the County prior to tank removal. Upon approval of the UST closure plan by the County, the Oakland Fire Department would oversee UST removal and the subsequent collection of subsurface soil samples from beneath a removed UST.

ASTs standards and requirements are relatively similar to USTs; however, the main difference revolves around inspection of operation and the ability to visually detect leaks early on. The Aboveground Petroleum Storage Act of 1990 requires facilities storing petroleum products in a single tank greater than 1,320 gallons, or facilities storing petroleum in aboveground tanks or containers with a cumulative storage capacity of greater than 1,320 gallons, to file a storage statement with the State Water Resources Control Board (SWRCB) and prepare a Spill Prevention, Control, and Countermeasure (SPCC) Plan. The SPCC plan must identify appropriate spill containment or equipment for diverting spills from sensitive areas as well as discuss facility-specific requirements for the storage system, inspections, recordkeeping, security, and personnel training. The SWRCB requires registration of an aboveground fuel storage tank at a construction site only if the tank is 20,000 gallons or larger, or if the aggregate volume of aboveground petroleum storage is over 100,000 gallons.

Worker Safety

The federal OSHA and Cal-OSHA are the agencies responsible for ensuring worker safety in the handling and use of chemicals in the workplace. The federal regulations pertaining to worker safety are contained in Title 29 of the Code of Federal Regulations, as authorized in the Occupational Safety and Health Act of 1970. They provide standards for safe workplaces and work practices, including standards related to hazardous materials handling. In California, Cal-OSHA assumes primary responsibility for developing and enforcing workplace safety regulations; Cal-OSHA standards are generally more stringent than federal regulations.

The state regulations concerning the use of hazardous materials in the workplace are included in Title 8 of the California Code of Regulations, which contain requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal-OSHA also enforces hazard communication program regulations, which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparing health and safety plans to protect workers and employees.

At sites known or suspected to have soil or groundwater contamination, construction workers must receive training in hazardous materials operations, and a site health and safety plan must be prepared. The health and safety plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at a contaminated site.

Additional safety and health regulations for construction are set forth in Title 29 of the Code of Federal Regulations, Subpart D, Section 1926. These regulations cover activities that could result in worker exposures to gases, vapors, fumes, and dust from construction operations, including the following: construction, installation, inspection, and maintenance of blast-cleaning enclosures to prevent the dispersion into the air of dust, fumes, and mist; abrasive-blasting operations that cause harmful dust in the breathing zone of an operator; and disposal of exhaust material. In addition, this section of the regulations covers welding and cutting operations.

Emergency Response

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local government and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES), which coordinates the responses of other agencies, including Cal EPA, CHP, the Department of Fish and Game, the RWQCB, and the local fire department. The Emeryville Fire Department provides first response capabilities, if needed, for hazardous materials emergencies within the city.

Structural and Building Components

Asbestos

Similar to federal laws, state laws and regulations also pertain to building materials containing asbestos. Inhalation of airborne fibers is the primary mode of asbestos entry into the body, making friable (easily crumbled) materials the greatest health threat. These existing laws and regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, or construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers; and require notice to federal and local governmental agencies prior to beginning renovation or demolition that could disturb asbestos.

Polychlorinated Biphenyls (PCBs)

PCBs are organic oils that were formerly placed in many types of electrical equipment, including transformers and capacitors, primarily as electrical insulators. Years after widespread and commonplace installation, it was discovered that exposure to PCBs may cause various health effects, and that PCBs are highly persistent in the environment.

In 1979, the U.S. EPA banned the use of PCBs in most new electrical equipment and began a program to phase out certain existing PCB-containing equipment. The use and management of PCBs in electrical equipment is regulated pursuant to the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2601 et seq. Regulations generally require labeling and periodic inspection of certain types of PCB equipment and set forth detailed safeguards to be followed in disposal of such items.

Lead and Lead-Based Paint

Pursuant to California Code of Regulations, Title 22 Section 66261.24, waste soil containing lead is classified as hazardous if the lead exceeds a total concentration of 1,000 parts per million (ppm) and a soluble concentration of 5 ppm.

4. DISCUSSION OF FINDINGS

Regional Setting

The proposed Gateway Park lies within the Bay Bridge EIS study area, the Oakland Army Base Redevelopment EIR study area and directly to the west and south of the West Oakland Redevelopment EIR study. Given the past and present industrial uses of the area numerous leaking underground storage tank sites and other environmental cases have been identified within this area. Previous land uses including an oil reclaiming plant, a ship manufacturing facility, and metal working operations. In the 1940s, the area was filled for the construction of the Oakland Army Base and was used by U.S. Army until 1995. Locomotive engines and trucks involved in the transport of cargo were serviced at this facility. In addition, hazardous materials may have been shipped either to or from the base during its operation. After the closure of the Oakland Army Base, the DTSC, Oakland Redevelopment Agency, and Oakland Base Reuse Authority have entered into a Consent Agreement for the cleanup of contaminated soil and groundwater at the site. Under this agreement, contaminated sites will be cleaned up to risk based cleanup levels suitable for the planned future land use of the site. One of the planned future uses is Gateway Park.

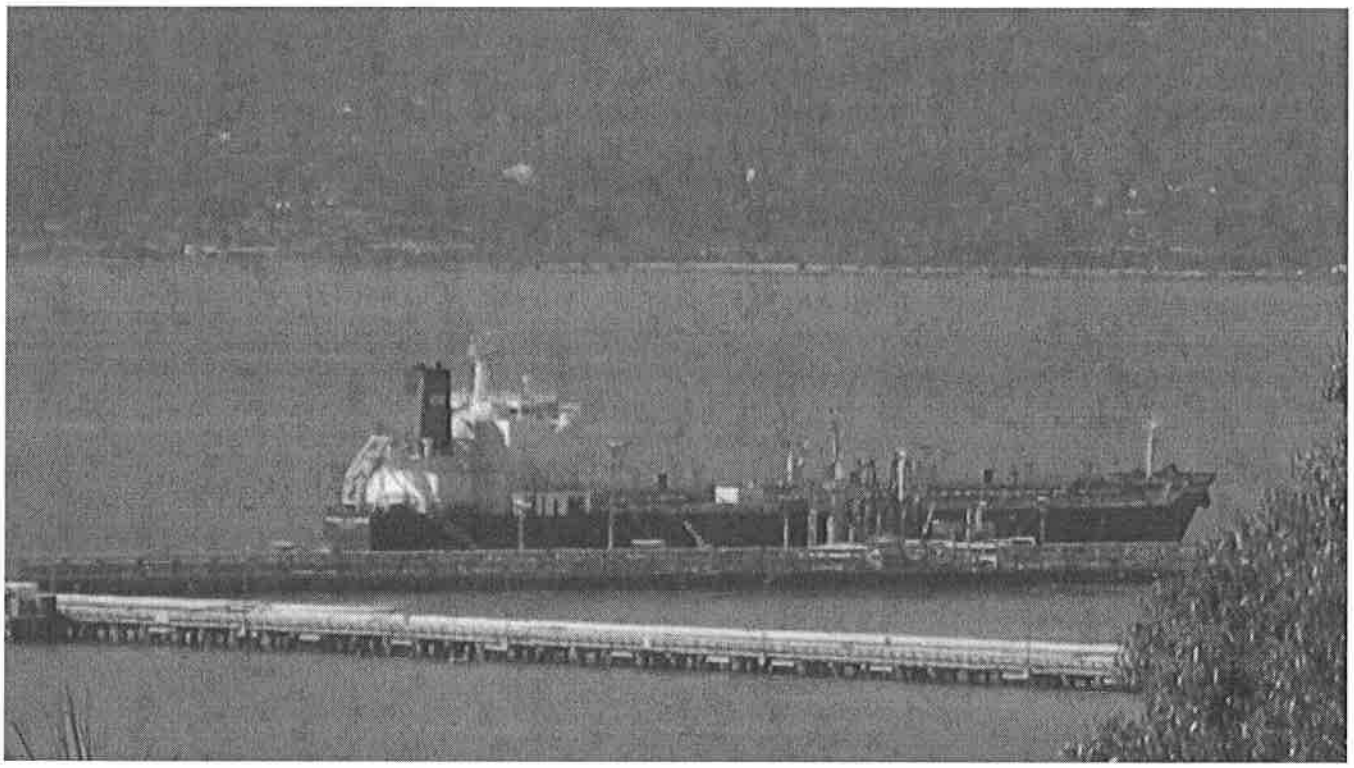
Project Setting

A Hazardous Wastes Assessment was conducted for the Bay Bridge EIS to identify potential contaminant sources within and adjacent to the project area that may affect design and construction of the project. Additionally, a search of State databases containing active and closed hazardous materials clean-up sites was conducted. These two investigations showed a list of sixteen hazardous material sites, six of which have been remediated and closed, three of which remain open for remediation and seven of which have an unknown status. Additionally, an environmental baseline study has been conducted to document the physical condition of the former Oakland Army Base property resulting from the use, storage, and disposal of hazardous substances and petroleum products during the base's history. It was recommended as part of the Oakland Army Base EIR that further investigation be conducted in the area around Burma Road and the south side of the spit to determine the source and vertical and horizontal extent of the previously detected contaminatioTable Haz-1 summarizes the findings of the Bay Bridge EIS hazardous wastes assessment and Table Haz-2 listed sites from the SWRCB list of Hazardous Material Sites in the vicinity of Gateway Park. In addition to the contaminant sites listed, lead contamination due to vehicle exhaust emissions of leaded gasoline can exist in materials next to freeways constructed prior to the ban of such fuels. In some locations, this contamination has been found at concentrations that are a potential hazard to human health and the environment if not handled correctly. The California Environmental Protection Agency, DTSC, has performed a health risk assessment of this material to determine its potential hazards and how these hazards can be reduced. As a result, DTSC granted Caltrans a variance to hazardous waste regulations that allows reuse of this material within the highway right of way under specific conditions.

NationalJournal

THE NEW ENERGY PARADIGM

Amid Oil Boom, Petroleum Exports Surge



An empty tanker sits at the pier of Chevron's refinery in Richmond, Calif., which refines roughly 250,000 barrels of oil a day into products like gasoline, diesel and jet fuel. (Amy Harder)

By Amy Harder Follow on Twitter
October 17, 2013

SPECIAL REPORT

THE NEW ENERGY PARADIGM:

AMERICA'S SHIFT FROM SCARCITY TO ABUNDANCE

RICHMOND, Calif.—It takes about a month for oil to arrive from the Middle East to a refinery here on the edge of the San Francisco Bay. On a clear day, you can see the Golden Gate Bridge in the distance from the refinery's pier, but you will probably notice first and foremost the massive tankers docked and unloading oil into a web of pipes.

About 60 percent of the oil processed by this refinery, owned and operated by Chevron, comes from the Middle East. Most of the rest comes from Alaska, also by tanker. But the oil coming in is not as interesting as what is going out. Many companies are beginning to turn around and export the refined gasoline, diesel, and jet fuel.

"As the economy has taken a hit, as vehicle efficiency standards have lowered the demand for fuel, California refineries in aggregate can now produce more than the local demand and therefore products are beginning to be exported," said Dave Reeves, president of global supply and trading at Chevron.

The boom in oil and natural-gas production in many parts of the country has helped position the United States as a net exporter of energy, and California is increasingly part of that trend.

From a sheer numbers perspective, America's increased refined-petroleum exports are notable. The United States exported 3 million barrels of refined petroleum products a day in July, an almost 150 percent increase over the past six years. In 2012, these exports were worth $117 billion and were the single-largest U.S. export, according to data released by the Commerce Department earlier this year. Only the auto industry—whose totals also include related manufacturing sectors—was tallied higher, at $146 billion.

Refined-petroleum exports out of the West Coast, which largely means California and Alaska, have increased by 126 percent in the last six years to reach 465,000 barrels a day in July 2013, the highest amount since at least 1981, according to data from the federal Energy Information Administration. The export trend on the West Coast is following in the footsteps of the Gulf Coast, which over the same time period saw a 187 percent increase to reach almost 2.2 million barrels a day of exports in July.

The factors driving these exports and the impact on prices at the pump in California and around the country are more convoluted than it may initially seem, especially to politicians worried about how the even perception of higher gasoline prices could affect campaigns.

The main factor that determines whether companies will export their refined petroleum products is economic: how much it costs to run a refinery, which in turn is driven by the price difference between crude oil and refined products, a concept the energy experts call the "crack spread."

"The only thing that matters is the spread between crude oil and refined products," said Amy Myers Jaffe, executive director of energy and sustainability at the University of California (Davis).

Executives within the oil and refining industry are beginning to blame tougher environmental regulations for why they're increasing exports, including California's low-carbon fuel standard (LCFS) and the national renewable-fuel standard (RFS), which both mandate the transportation sector to run on lower-carbon fuels, albeit in different ways. Chevron and other companies operating here in California, which has the third-highest refining capacity in the country according to 2011 EIA data, must contend with both sets of regulations.

"To the degree that we're unable for whatever reason, whether it's the RFS nationally or the LCFS within the state of California, when you get to that point where you can't meet demand, your real alternate choice is to look for export," Reeves said. "Directionally, it should incent more exports. And then directionally, if you export more there is less supply domestically, which will have a price impact domestically."

Right now, Reeves says Chevron exports a minimal amount of refined petroleum products out of its two California refineries, but has increased exports out of its facility at the Gulf Coast. Texas-based Valero says it doesn't export at all from its two California refineries but that it wants to.

"We would like to be able to export more to the Pacific Coast of Mexico or further down to South America," Valero spokesman Bill Day said. Citing infrastructure concerns and other costs within the state, Day added: "At this point, we haven't been able to do that from California."

Valero, like Chevron, says lower-carbon fuel policies will drive its products outside of U.S. borders. U.C. Davis's Jaffe says oil companies are using these regulations as a scapegoat.

"When these companies are going to tell you the reason they're having to sell to Latin America is because of the environmental restrictions here are too hard to comply, that is a diversion because they were exporting from California before the LCFS kicked in," Jaffe said.

Whether increased exports would create higher fuel costs for Americans depends on how much oil refineries kept stored on site, said Jaffe, who has been working on these issues for 30 years.

"We have a surplus of refining capacity versus demand so exports don't necessarily mean higher gasoline prices," she said. She referenced the August 2012 fire that erupted at Chevron's refinery here in Richmond as further evidence that the connection among exports, prices, and environmental regulations is not so clear-cut.

"When Chevron had the accident at Richmond and there was a worry about a shortage of gasoline, they were still exporting gasoline at that time," Jaffe said. "Inventories were low and the companies were having trouble meeting demand, and so exports made the situation worse and were probably a contributing factor to the high prices seen at the time."

Chevron and Texas-based Tesoro, another major California refiner, did not disclose specific export data on their refineries. Regardless of the cause, this export trend isn't poised to slow any time soon. In fact, some in the oil industry are looking to bypass the refiners altogether and export crude oil, which has been banned for almost 40 years.

Back in Washington, Harold Hamm, CEO of Continental Resources, the independent company with the biggest footprint in North Dakota's vast oil fields, said he's going to fight to repeal that ban.

"It's an archaic rule that should be done away with," Hamm said. "Ten years from now, I hope we're wrangling with Congress over it. We need exports."

He pointed out that refineries are exporting at record rates, so companies like his should have the same right. As he put it, "I don't think any of the domestic producers are going to be their milk cows."

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AERMOD Modeling of Air Quality Impacts of the Proposed Morrow Pacific Project

Final Report

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I. INTRODUCTION

This document presents the methodologies and results of a modeling analysis of air quality impacts of the proposed Morrow Pacific Project (MPP) in Oregon. The MPP includes three operating stages. In the first stage, coal will be offloaded from trains at the Port of Morrow via enclosed facilities into enclosed storage buildings and transferred into enclosed barges by enclosed conveyors. In the second stage, coal will be shipped down the Columbia River by enclosed barges to Port Westward in Columbia County. The MPP third stage involves the coal transloading from barges into ocean-going vessels (OGV). An Environmental Review (ER) and an air pollution permit application have been prepared for the MPP. However, no dispersion modeling has been performed in these documents to quantify the project impacts. Hence, AMI Environmental has been asked by Sierra Club to conduct an air quality modeling analysis using the regulatory dispersion model AERMOD to predict project impacts of criteria pollutants, such as nitrogen dioxide (NO_2), sulfur dioxide (SO_2) and fine particulates ($PM_{2.5}$). Project impacts are compared against applicable national ambient air quality standards (NAAQS).

II. MODELING METHODOLOGIES

This section documents the methodologies and assumptions used in the generation of modeling inputs such as source emissions, stack parameters, receptors, meteorological data and background concentrations.

A. Model Version

Version 12060 of the AERMOD model has been used in the modeling study. It is currently the latest version of the model that has been approved by the U.S. Environmental Protection Agency (USEPA, 2012). The most recent modeling guidance by US EPA has been implemented in the AERMOD model and it is fully capable of predicting project impacts for comparison against recent short-term NAAQS, e.g. the 1-hour NO_2 NAAQS of 100 ppb (188 ug/m^3), the 1-hour SO_2 NAAQS of 75 ppb (196 ug/m^3 and the 24-hour $PM_{2.5}$ NAAQS of 35 ug/m^3 as well as the annual NO_2 NAAQS of 53ppb (100 ug/m^3).

B. Source Emissions

Two basic scenarios are considered for modeling by the AERMOD model. In the first scenario, coal is unloading from trains while barges are loading at the dock in Port of Morrow. The second scenario involves coal loading at Port Westward onto a Panamax while the transloader is testing the emergency generator and a tug boat assisting the barge unloading operation. For both scenarios, AERMOD modeling has been performed for 1-hour and annual NO_2 and SO_2. $PM_{2.5}$ impacts are only modeled for the first scenario.

Pollutant annual emissions for all modeled sources are taken from the Project ER. Table 1 shows total annual emissions for each pollutant (NO_x, SO_2 and $PM_{2.5}$) at Port of Morrow. To convert these annual emissions into hourly emissions required by AERMOD, information about train and tug boat activities documented in the project ER are used. For trains, there will be 607 trains per year and 12 hours for train unloading. For tug boats, there will be 630 trips and 9 hours for barge loading. The storage facility is assumed to be a continuous source (365 days, 24 hours per day).

Table 1 also shows the $PM_{2.5}$ emissions from wind erosion of coal on open barges and open trains (railcars). The project ER states that the four-barge tow is 650 ft long by 84 ft wide, resulting in an exposed surface area of A=1.256 acre. Using the emission factor in Table 11.9-1 of AP-42 for wind erosion from coal piles, wind erosion emissions of open barges can be estimated from:

$$PM_{2.5} \text{ of open barge (lb/hr)} = 0.72*u*A*F = 4.341 \text{ lb/hr}$$

where u is the wind speed (=2*32 where 32 mph is the highest daily wind speed averaged over daytime hours at Hermiston during 2007-2011 and the factor 2 is to account for wind gust),
A is the exposed surface area (=1.256 acre)
F is the fraction of $PM_{2.5}$ (=0.075 from AP-42 Section 13.2.5.3)

The length of a unit train is 5,800 ft (ER p. 2-6) and it has a width of 9.5 ft. Its exposed surface area is calculated to be A = 1.26 acre. Windblown dust emissions from railcars of a unit train are then estimated using the same AP-42 formula above (Phyllis Fox, Train Staging, Oct. 28, 2012):

$$PM_{2.5} \text{ of open train (lb/hr)} = 0.72*64*1.26*0.075 = 4.35 \text{ lb/hr}$$

Table 1
Pollutant Emissions for Modeled Sources at Port of Morrow

Emission Sources	NO_x (tpy)	1-hr NO_x (lb/hr)	SO_2 (tpy)	1-hr SO_2 (lb/hr)	$PM_{2.5}$ (tpy)	24-hr $PM_{2.5}$ (lb/hr)
Train unloading	492	135.09	0.3	0.824	12.8	3.51
Tug boat	39	13.76	0.0088	0.0031	0.92	0.32
Storage facility	--	--	--	--	0.012	0.0027
Open barge	--	--	--	--	--	4.341
Open train	--	--	--	--	--	4.35

Table 2 shows the modeled sources and emissions at Port Westward. Total annual emissions have been taken from the project ER. For converting these annual emissions into hourly emission rates, all modeled sources are assumed to operate continuously (365 days, 24 hours per day) as stated in the project ER.

Table 2
Pollutant Emissions for Modeled Sources at Port Westward

Emission Sources	NO_x (tpy)	1-hr NO_x (lb/hr)	SO_2 (tpy)	1-hr SO_2 (lb/hr)
Panamax	81.5	18.61	14.7	3.36
Transloader (emergency power)	281	64.16	0.048	0.011
Transloader (shore power)	0.33	0.0753	7.9e-5	1.80e-5
Tug boat	32	7.31	0.0042	0.00096

B. Stack Parameters

Project emissions are modeled as point sources. Stack parameters (stack height, diameter, temperature and exit velocity) for the modeled sources are shown in Table 3. They are taken from the modeling studies of port operations conducted by the California Air Resources Board (CARB, 2006) and New Jersey Department of Environmental Protection (NJDEP, 2009). Emissions from tug boats and barges are released from a height of 20 ft. Windblown dust emissions from railcars are modeled as area source with a release height of 16 ft (CARB, 2006).

Table 3. Stack Parameters for Modeled Emission Sources

Source	Height (m)	Diameter (m)	Temperature (K)	Velocity (m/s)
Train engine	4.572	0.61	372.0	3.47
Tug Boat	6.0	0.5	300.0	0.0
Barge	6.0	0.5	300.0	0.0
Open train	5.0	--	--	-
Panamax	43.0	0.50	618.0	16.0
Generator	35.97	0.47	699.82	30.0

Note: Emissions from open trains are modeled as area source

C. Receptors

The AERMOD modeling uses a Cartesian grid of discrete receptors that are located within a radius of 5 km around the ports of Morrow and Westward. The receptor grid has varying resolutions: 50 m within the first 2 km and 100 m between 2 km and 5 km. Receptors located on the leased property at Port of Morrow have been removed from consideration. A total of 16,739 receptors have been used in the AERMOD modeling for Port of Morrow. The modeling at Port Westward has 16,762 receptors. A flagpole height of 1.5 m was also assigned to the modeled receptors. The preprocessor AERMAP has been employed to obtain terrain elevations at these receptors using the National Elevation Data (NED).

D. Meteorological and Ozone Data

For Port of Morrow, the AERMOD modeling uses the 2007-2011 surface meteorological data (including 1-min ASOS wind data to minimize calm hours) from Hermiston and upper-air data from Salem. The dataset has 589 calm hours and 1,662 hours with missing data (3.79% of possible 43,824 hours). The wind rose from Hermiston in Figure 1 shows predominant winds from the southwest.

The modeling for Port Westward uses the 2006-2010 surface data (including 1-min ASOS wind data) from Astoria and upper-air data from Salem. This dataset has 523 calm hours and 1,554 hours with missing data (3.55% of possible 43,824 hours). The wind rose of Astoria surface winds is shown in Figure 2. Wind directions at this station are highly variable, from east to northwest.

For 1-hour NO_2 modeling at Port of Morrow, the AERMOD model uses the Ozone Limiting Method (OLM) and the Plume Volume Molar Ratio Method (PVMRM). Both techniques are considered as Tier 3 by the US EPA and require hourly ozone data as input. Hourly ozone measurements at Hermiston during the same years (2007-2011) as the meteorological data are used as input to the AERMOD model.

E. Background Concentrations

For comparison with the NAAQS, background concentrations at a monitoring station are added to the concentrations predicted by the AERMOD model. Monitoring data during 2007-2008 tabulated in the Oregon DEQ 2011 Air Quality Annual Report (ODEQ, 2012) indicate that a 98th percentile of daily maximum NO_2 of 37 ppb (69.6 ug/m^3) and a 99th percentile of daily maximum SO_2 of 9 ppb (23.5 ug/m^3) were measured at the Hermiston municipal airport. Monitoring data in 2007 at the Hermiston pump station show a 98th percentile of daily maximum $PM_{2.5}$ of 24 ug/m^3. An annual-averaged NO_2 concentration of 8 ppb (15.0 ug/m^3) was also measured at the Hermiston airport. These pollutant

measurements are used as background concentrations for modeling impacts at Port of Morrow.

For modeling at Port Westward, the background concentrations are: 35.3 ppb (66.4 ug/m^3) recorded in Portland as the 2009-2011 average of the 98th percentile of daily maximum 1-hour NO_2 and 8.7 ppb (22.8 ug/m^3) recorded in Portland as the 2009-2011 average of the 99th percentile of daily maximum 1-hour SO_2. For 24-hour $PM_{2.5}$, the 2009-2011 design value of 20 ug/m^3 for the Dalles monitoring station is used as background. Background concentrations used in the modeling are shown Table 4 below.

While we included background concentrations to be consistent with applicable guidance, even if the background concentrations were all assumed to be zero, it would not affect any of the NAAQS violations discussed in this report.

Table 4. Pollutant Background Concentrations (ug/m^3)

Modeled Port	1-hour NO_2	1-hour SO_2	24-hour $PM_{2.5}$	Annual NO_2
Morrow	69.6	23.5	24.0	15.0
Westward	66.4	22.8	20.0	--

Figure 1 – Wind Rose of Hermiston 2007-2011 Surface Winds

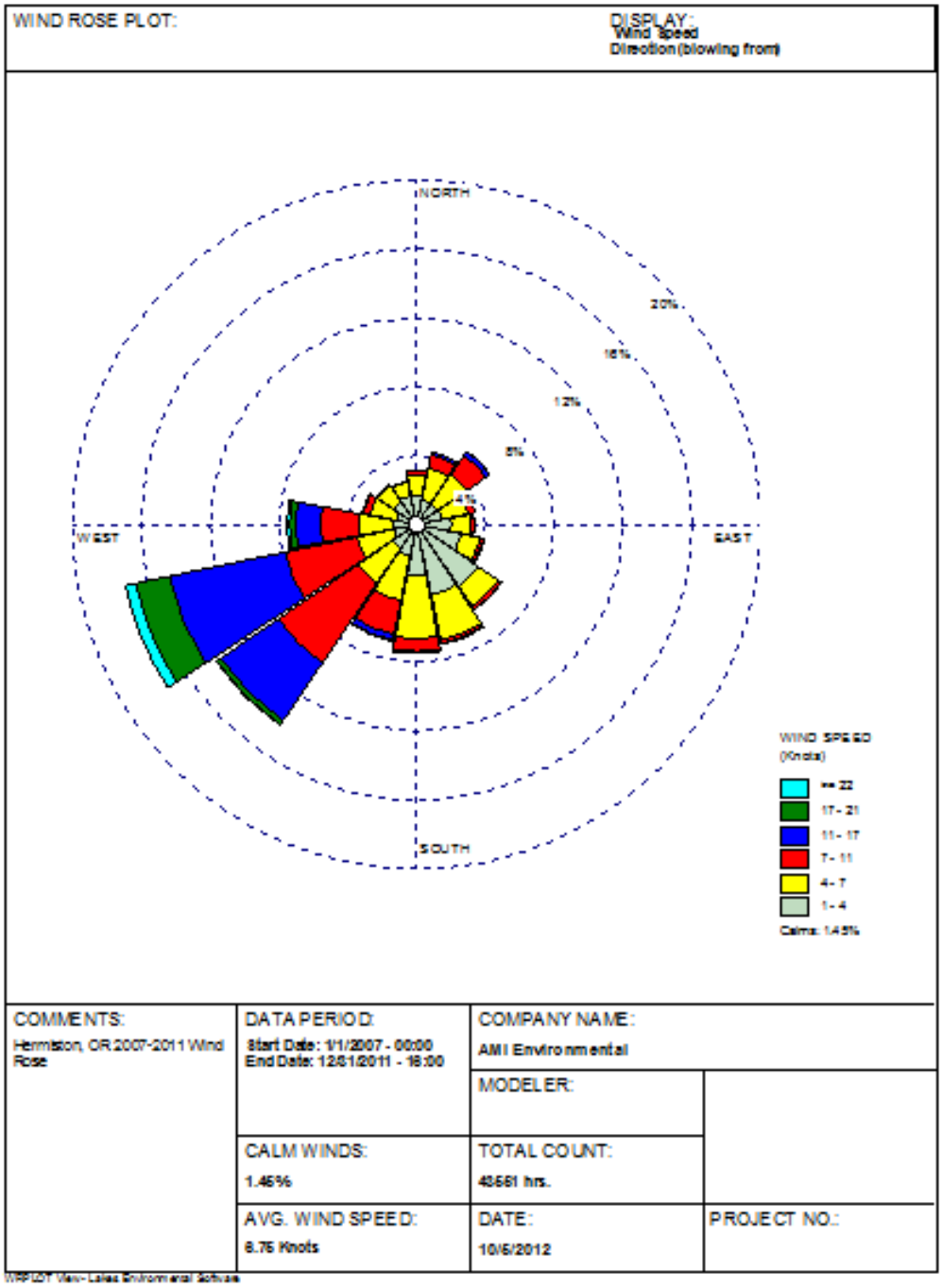
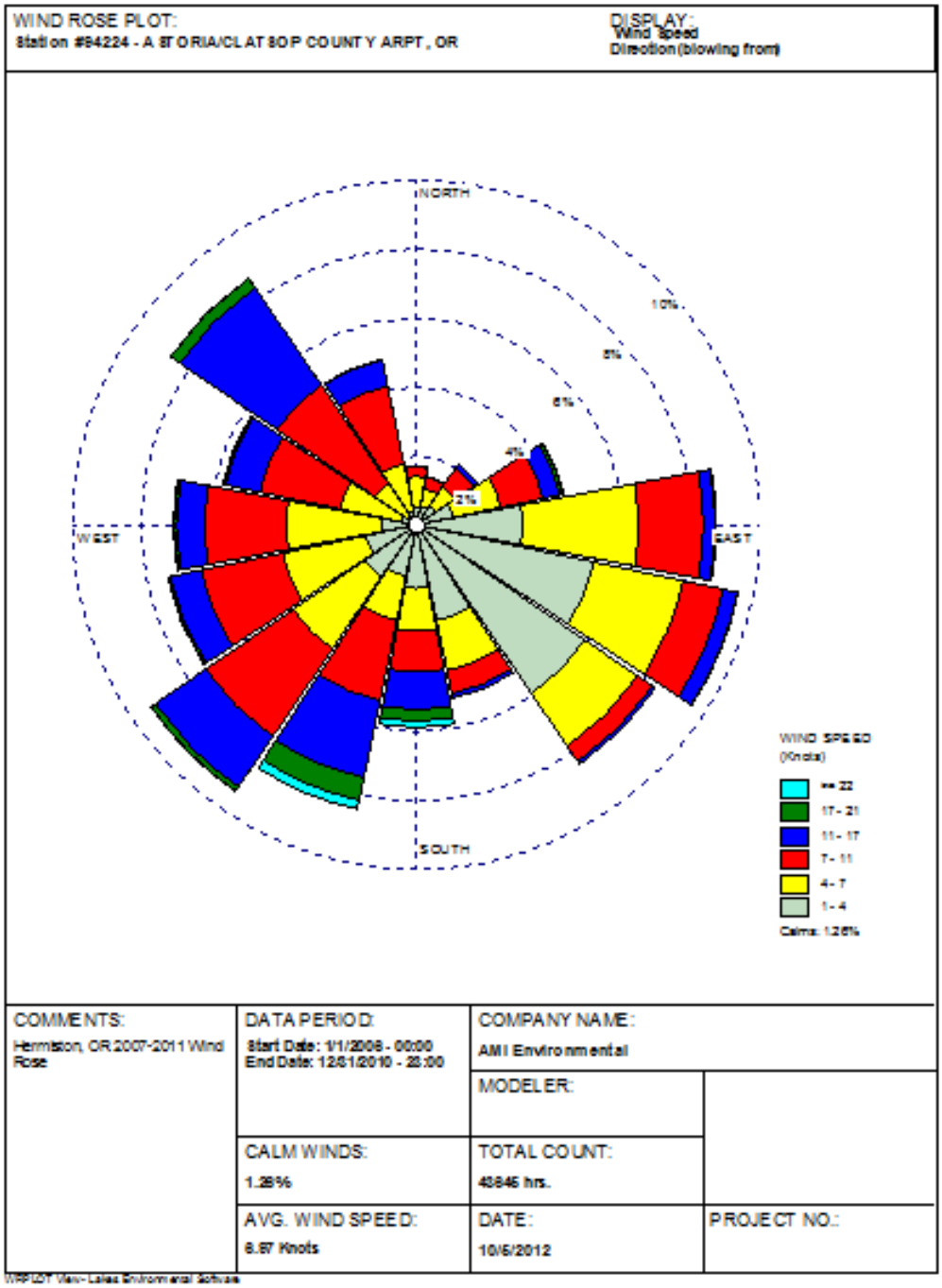


Figure 2 – Wind Rose of Astoria 2006-2010 Surface Winds



III. MODELING RESULTS

A. 1-Hour NO_2 Impacts

In January 2010, US EPA announced a new 1-hour NAAQS which is attained when the 3-year average of the 98th percentile of the daily maximum 1-hour NO_2 concentrations does not exceed 100 ppb (or 188 ug/m^3). Subsequently, US EPA issued in June 2010 a modeling guidance for using the AERMOD model with one year of onsite meteorological data or five years of offsite meteorological data (USEPA, 2010). According to the US EPA, the 8th highest maximum daily 1-hour concentration obtained with one year of onsite data or averaged over five years of offsite data should be used in the NAAQS comparison.

For 1-hour NO_2 modeling, US EPA has recommended several techniques that can be divided into three tiers:

1. Tier 1: Full conversion where the NOx emissions are assumed to be 100% converted into NO_2,

2. Tier 2: The Tier 2 technique is known as the Ambient Ratio Method (ARM). In this technique, a default conversion rate of 0.80 recommended in the US EPA March 2011 guidance is applied to the predicted NO_x concentrations, and

3. Tier 3: Two Tier 3 techniques known as Ozone Limiting Method (OLM) and Plume Volume Molar Ratio Method (PVMRM) are currently available in the AERMOD model.

The Tier 1 and Tier 2 methods are fully approved by the US EPA. The OLM and PVMRM techniques in Tier 3 are considered to be non-regulatory defaults and their use requires the approval of US EPA and state agencies on a case by case basis (US EPA, 2011). AMI Environmental contacted ODEQ regarding the appropriate Tier 3 methodology to use in this setting. ODEQ recommended the use of both techniques (OLM and PVMRM) and, hence, they have been employed in this modeling analysis.

A.1 Impacts of Port of Morrow Operations

1-hour NO_2 impacts from NO_x emissions from train unloading and a tug boat assisting barge loading at Port of Morrow have been modeled by all the above modeling techniques recommended by the US EPA: Tier 1 with full conversion; Tier 2 with 80% conversion; OLM and PVMRM in Tier 3. The Tier 3 techniques use in-stack NO_2/NO_x ratios of 0.15 for locomotive and 0.10 for tug boat. The in-stack ratio for locomotive is obtained from source tests conducted by Southwest Research Institute (Fritz, 2007). The ratio for tug boat is taken from source tests included in the in-stack NO_2/NO_x ratio

database that has recently been setup by the US EPA OAQPS. Hourly ozone measurements at the Hermiston airport from 2007-2011 have also been used as inputs.

Three AERMOD modeling runs (Tier 1, OLM and PVMRM) have been performed with the 2007-2011 meteorological data. Both the train and the tug boat are assumed to operate only during daytime hours (0600-1800). This is a conservative assumption that may understate the impacts since daytime hours typically have stronger wind and more unstable conditions than nighttime hours.

NO_2 modeling results for the 8th highest concentrations are summarized in Appendices A-C and presented in Table 5. As shown in this table, the AERMOD model has predicted, with all modeling techniques, large exceedances of the 1-hour NAAQS of 188 ug/m^3 by project emissions alone. The highest 8th highest concentrations obtained with Tier 1 (12,000.4 ug/m^3) and Tier 2 (9,600.3 ug/m^3) are much higher than those predicted by Tier 3 techniques. The highest concentration predicted by PVMRM (2,064.3 ug/m^3) is slightly higher than that of the OLM technique (1,872.6 ug/m^3).

For Tier 1, a plot of the contour of 188 ug/m^3 is shown in Figure 3. The area with concentrations exceeding 188 ug/m^3, i.e., violating the 1-hr NAAQS due to project emissions alone, has a radius of about 5 km north and west of the project site. These exceedances are also predicted within 3 km east and south of the project. Figure 4 shows that the area of NAAQS exceedances predicted with OLM is much smaller. PVMRM has predicted a much larger area of exceedances than OLM, albeit smaller than that of Tier 1.

Table 5. Predicted 1-Hour NO_2 Impacts of Port of Morrow Operations

Modeling Method	Project Conc. (ug/m^3)	Backgr. Conc. (ug/m^3)	Total Conc. (ug/m^3)	NAAQS (ug/m^3)	Percent Over NAAQS
Tier 1 -100%	12,000.4	69.6	12,070.0	188	**6,320%**
Tier 2 - 80%	9,600.3	69.6	9,669.9	188	**5,044%**
Tier 3-OLM	1,872.6	69.6	1,942.2	188	**933%**
Tier 3-PVMRM	2,064.3	69.6	2,133.9	188	**1,035%**

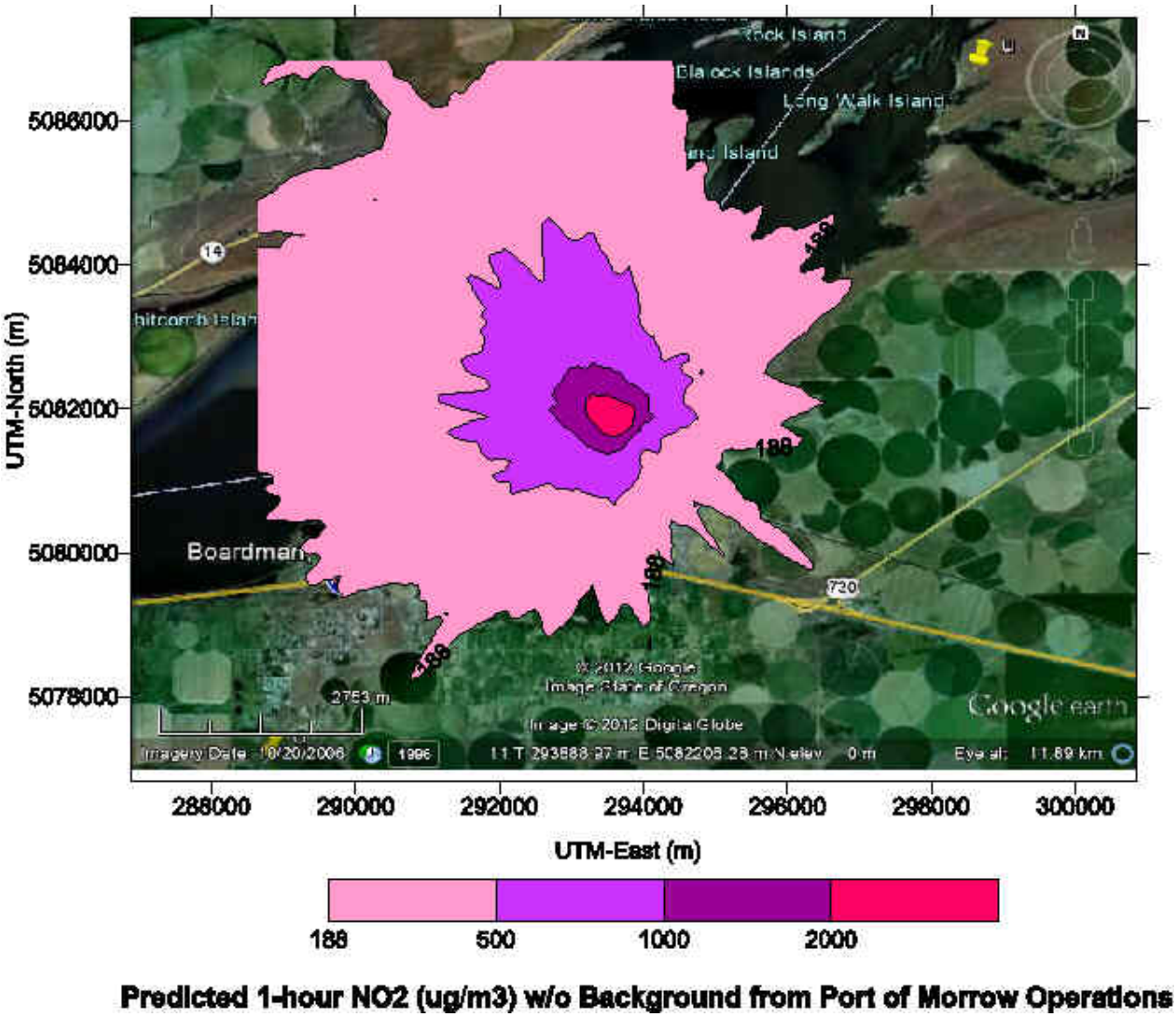


Figure 3. Area with Highest 8th Highest 1-hour NO_2 Concentrations (Tier 1-Full Conversion) Exceeding the 1-Hour NAAQS of 188 ug/m^3 by Port of Morrow Operations Alone

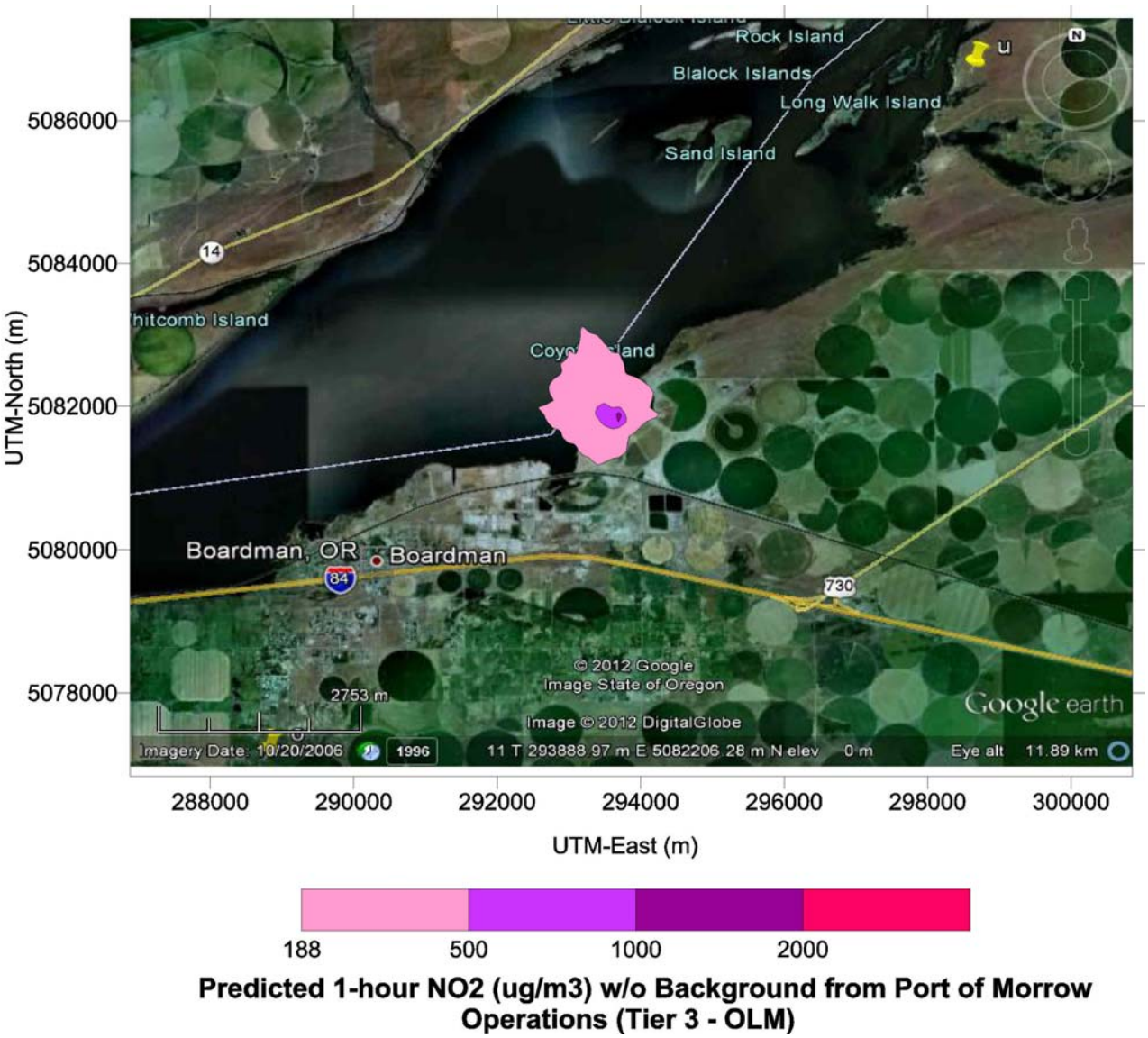


Figure 4. Area with Highest 8th Highest 1-hour NO_2 Concentrations (Tier 3-OLM) Exceeding the 1-Hour NAAQS of 188 ug/m^3 by Port of Morrow Operations Alone

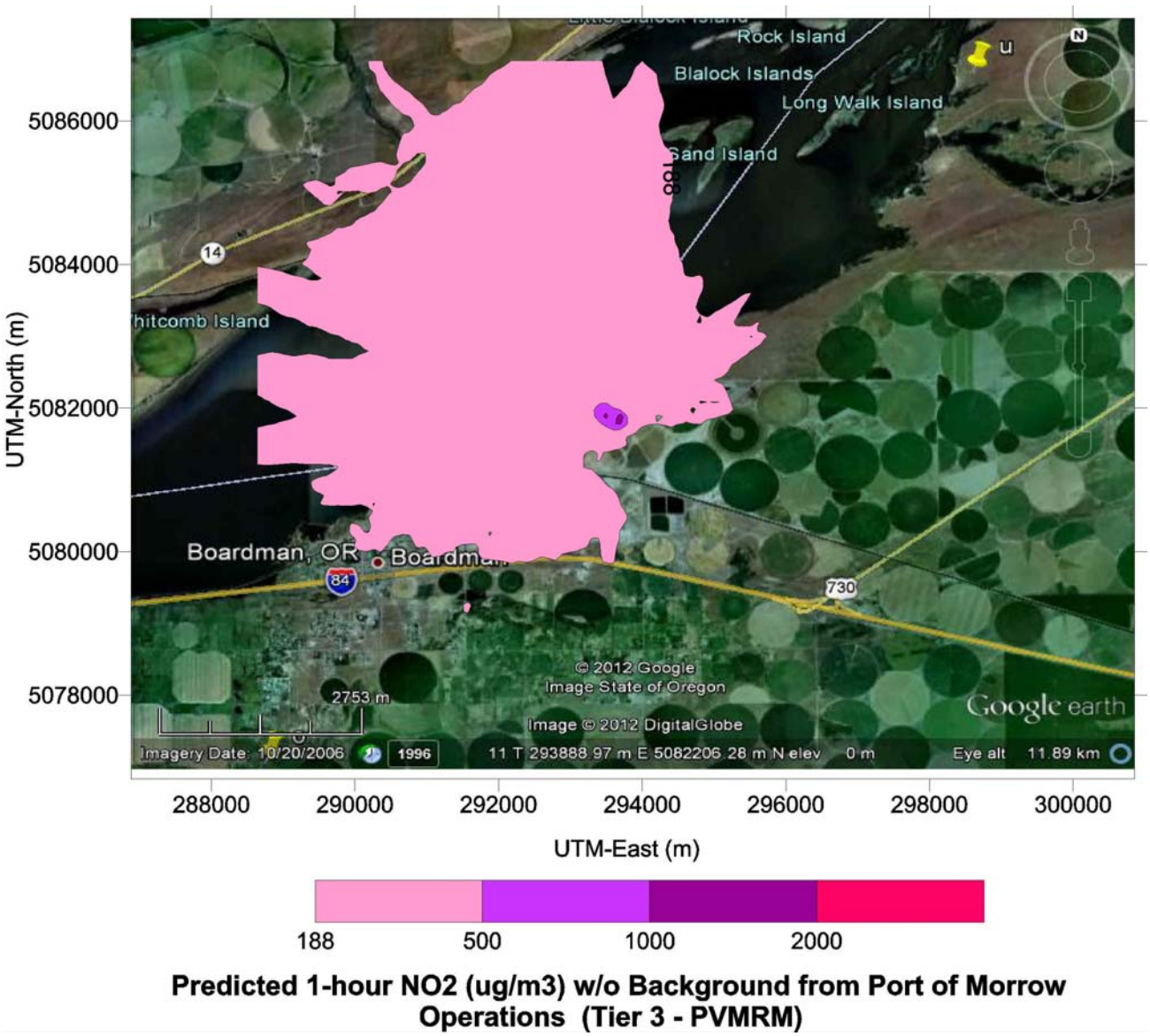


Figure 5. Area with Highest 8th Highest 1-hour NO_2 Concentrations (Tier 3-PVMRM) Exceeding the 1-Hour NAAQS of 188 ug/m_3 by Port of Morrow Operations Alone

A.2 Impacts of Port Westward Operations

1-hour NO_2 impacts from NOx emissions from the OGV Panamax loading, the transloader operating on emergency power and a tug boat assisting the barge unloading at Port Westward have been modeled by Tier 1 with full conversion and Tier 2 with 80% conversion. No Tier 3 technique, OLM or PVMRM, has been performed since Astoria does not have hourly ozone measurements publicly available. Modeling results are summarized in Appendix D. As shown in this Appendix and Table 6, the highest 8th

highest concentrations of from project emissions alone (4,670 ug/m^3 for Tier 1 and 3,736 ug/m^3 for Tier 2) largely exceed the NAAQS of 188 ug/m^3. With the added background of 66.4 ug/m^3, the NAAQS is predicted to be exceeded by 2,419% (Tier 1) and 1,923% (Tier 2).

Another AERMOD run has been performed where the transloader is operating on shore power. As shown in Appendix E and Table 7 below, the highest 8th highest NO_2 of 4,670 ug/m^3 is the same as in the previous modeling scenario with the transloader operating on emergency power. Thus, the NAAQS is predicted to be largely exceeded by 2,419% (Tier 1) and 1,923% (Tier 2) for both modeling scenarios.

The areas of NAAQS exceedances are shown in Figure 6 for the scenario with emergency power and Figure 7 for the scenario with shore power. Comparing these two figures shows that the area of exceedances of the former scenario is larger than that of the latter. Due to the emissions of the emergency generator, the area of exceedances extends about 3 km northwest of the project site.

Table 6. Predicted 1-Hour NO_2 Impacts of Port Westward Operations With Transloader on Emergency Power

Modeling Method	Project Conc. (ug/m^3)	Backgr. Conc. (ug/m^3)	Total Conc. (ug/m^3)	NAAQS (ug/m^3)	Percent Over NAAQS
Tier 1 -100%	4,670.0	66.4	4,736.4	188	**2,419%**
Tier 2 - 80%	3,736.0	66.4	3,802.4	188	**1,923%**

Table 7. Predicted 1-Hour NO_2 Impacts of Port Westward Operations With Transloader on Shore Power

Modeling Method	Project Conc. (ug/m^3)	Backgr. Conc. (ug/m^3)	Total Conc. (ug/m^3)	NAAQS (ug/m^3)	Percent Over NAAQS
Tier 1 -100%	4,670.0	66.4	4,736.4	188	**2,419%**
Tier 2 - 80%	3,736.0	66.4	3,802.4	188	**1,923%**

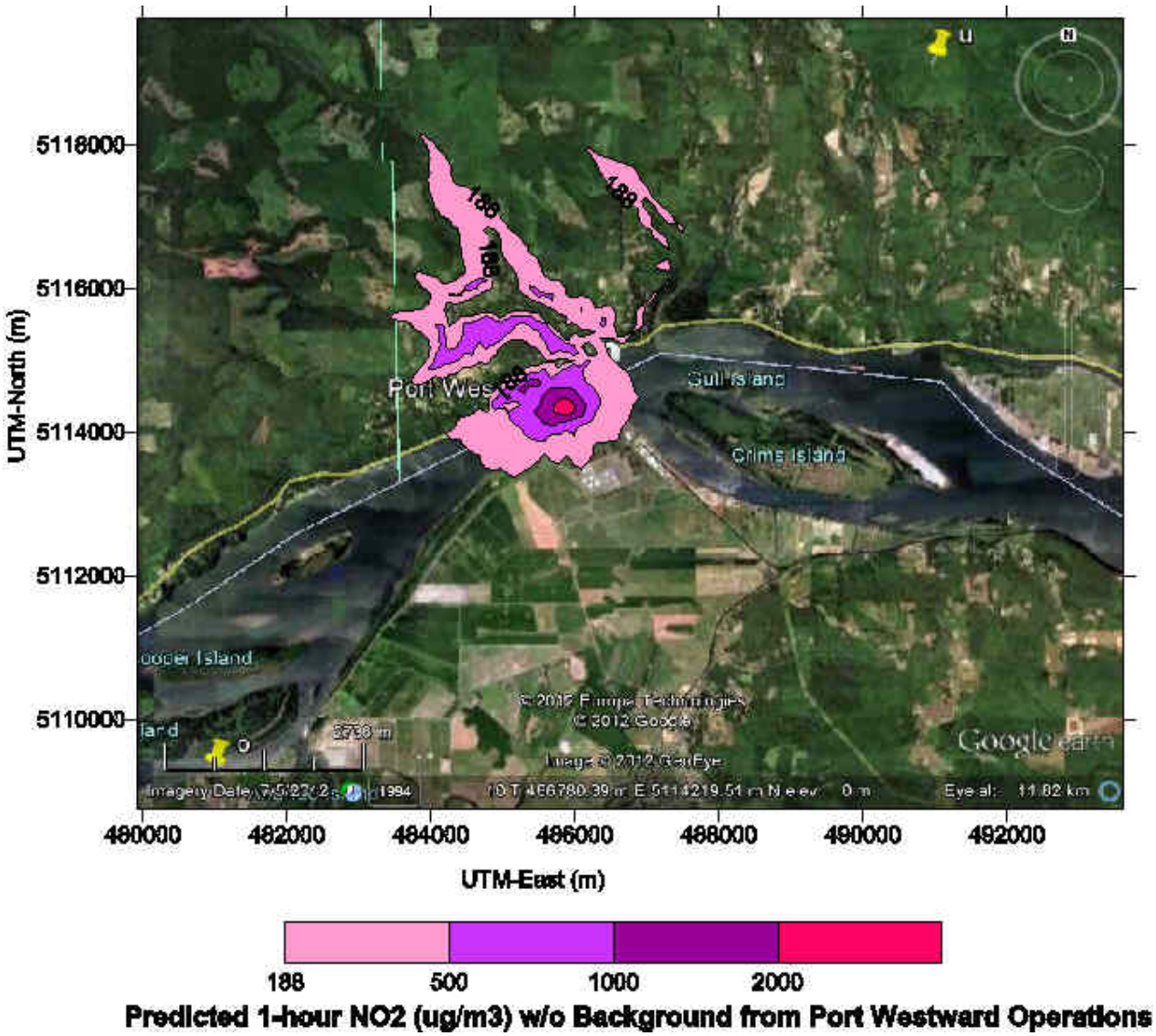


Figure 6. Area with Highest 8th Highest 1-hour NO_2 Concentrations (Tier 1-Full Conversion) Exceeding the 1-Hour NAAQS of 188 ug/m^3 by Port Westward Operations Alone (with Transloader on Emergency Power)

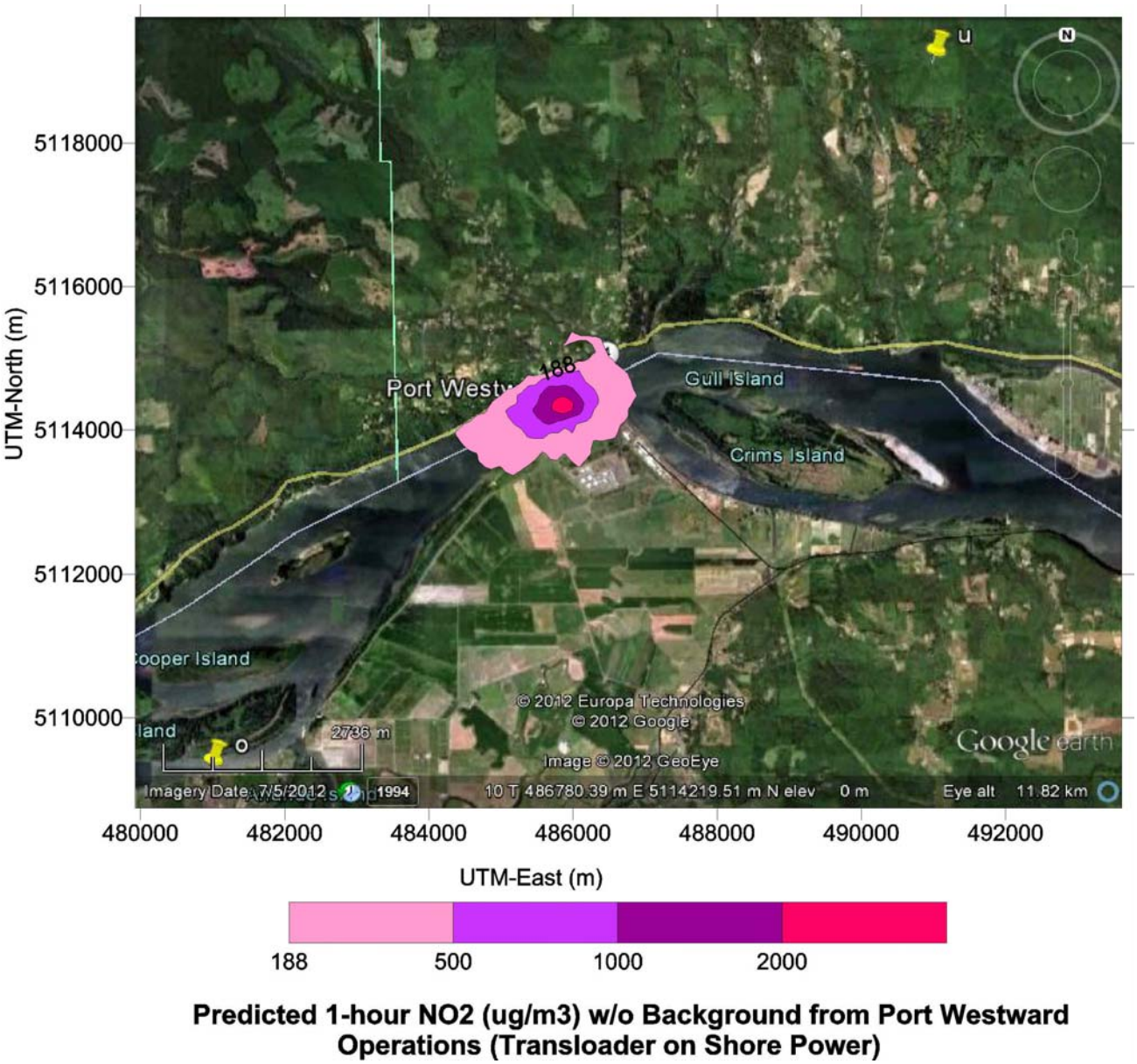


Figure 7. Area with Highest 8th Highest 1-hour NO_2 Concentrations (Tier 1-Full Conversion) Exceeding the 1-Hour NAAQS of 188 ug/m^3 by Port Westward Operations Alone (with Transloader on Shore Power)

B. 1-Hour SO_2 Impacts

In June 2010, US EPA announced a new 1-hour NAAQS which is attained when the 3-year average of the 99th percentile of the daily maximum 1-hour SO_2 concentrations does not exceed 75 ppb (or 196 ug/m^3). Subsequently, US EPA issued in August 2010 a modeling guidance for using the AERMOD model with one year or five years of meteorological data (USEPA, 2010b). According to the US EPA, the 4th highest

maximum daily 1-hour concentrations obtained with one year of onsite data or averaged over the modeled five years of offsite data should be used in the NAAQS comparison.

Impacts from SO_2 emissions from operations from both ports have been modeled. Modeling results are summarized in Appendix F (for Port of Morrow) and Appendix G (for Port Westward). As shown in Table 8 below, the AERMOD model has predicted the highest 4th highest SO_2 concentrations of 7.7 ug/m^3 for the Port of Morrow and 87.1 ug/m^3 for Port Westward. With the added background concentrations, the NAAQS is predicted not to be exceeded at both ports. The low SO_2 concentrations are due to the use of SO_2 emissions that are shown in the project ER. These emissions have been calculated based on the use of ultra low sulfur diesel for both locomotive and boats. We note that the locomotive and boats are currently legally allowed to use much higher sulfur content diesel fuel that what was assumed in the ER. *See* 77 Fed. Reg. 61281 (Oct. 9, 2012).

Table 8. Predicted 1-hour SO_2 (ug/m3) of Port Operations

Modeling Scenario	Project Conc.	Backgr. Conc.	Total Conc.	NAAQS	NAAQS Exceeded?
Port of Morrow	**7.7**	23.5	**31.2**	196.0	**NO**
Port Westward	**87.1**	22.8	**109.9**	196.0	**NO**

C. 24-Hour $PM_{2.5}$ Impacts

In September 2006, US EPA revised the 24-hour $PM_{2.5}$ NAAQS which is attained when the 3-year average of the 98th percentile 24-hour concentrations must not exceed 35 ug/m^3. Subsequently, US EPA issued in August 2010 a modeling guidance for using the AERMOD model with one year of onsite data or five years of offsite meteorological data (USEPA, 2010d). According to the US EPA, the highest 24-hour average concentration obtained with one year of onsite data or the highest average of the maximum 24-hour averages across five years of offsite data should be used in the NAAQS comparison.

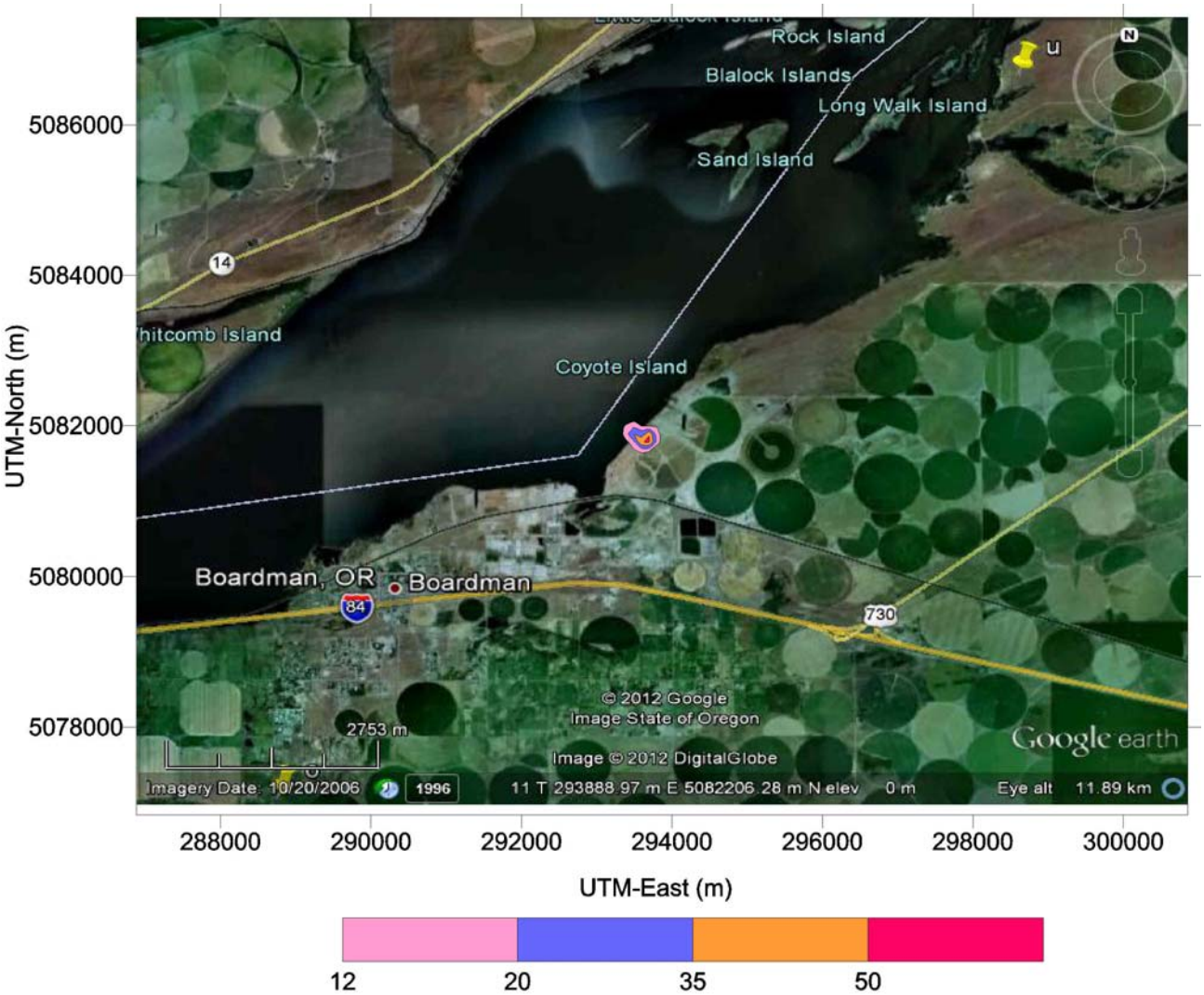
Impacts from $PM_{2.5}$ emissions from operations at Port of Morrow with enclosed and open barges and trains have been modeled. Modeling results are summarized in Appendix H (for enclosed barges and trains) and Appendix I (for open barges and closed trains). As shown in Table 9 below, the AERMOD model has predicted exceedances of the 24-hour NAAQS of 35 ug/m^3 by the highest 24-hour $PM_{2.5}$ concentrations of 96.3 ug/m^3 for the enclosed barges and 219.0 ug/m^3 for the open barges. With the added background concentration of 24 ug/m^3, the 24-hour NAAQS is predicted to be exceeded by both types of barges, by 2.4 times with the enclosed barges and by 5.9 times with the open barges.

Due to high emissions from wind erosion, impacts from open barges are much higher than those from enclosed barges. NAAQS exceedances are plotted in Figure 8 for the closed barge/closed train scenario and Figure 9 for the open barge/closed train scenario. In both figures, the NAAQS exceedances are denoted by the contour of 12 ug/m^3 (plus the background of 24 ug/m^3). Figure 8 shows these exceedances for the closed barge/train scenario are predicted to only occur close to the project site in Oregon, i.e. south of the state line on the Columbia River. For the open barge/closed train scenario, they will extend north of the state line, i.e. in Washington.

Another AERMOD modeling run has been performed to assess the impacts of the closed barge/open train scenario. The project ER indicates that up to two unit trains can be present onsite in any given hour (ER, p. 2-6). Their emissions (8.7 lb/hr=2*4.35 lb/hr) are modeled as area source with a length of 1500 ft (the length of rail lines within the MPP property) and a width of 19 ft (9.5 ft x 2). Modeling results are summarized in Appendix J. Table 9 shows that the highest 24-hour $PM_{2.5}$ concentration of 388.6 ug/m^3 is the largest among the modeled scenarios. The 24-hr NAAQS is also predicted to be exceeded by 10.8 times with the open trains. Figure 10 shows that the closed barge/open train scenario has the largest zone of exceedances among the modeled scenarios. The NAAQS exceedances are also predicted to occur in the Washington portion of the Columbia River.

Table 9. Predicted 24-hour $PM_{2.5}$ (ug/m^3) of Port of Morrow Operations

Modeling Scenario	Project Conc.	Backgr. Conc.	Total Conc.	NAAQS	Percent Over NAAQS
Operation with closed barges & closed trains	**96.3**	24.0	**120.3**	35.0	**244%**
Operation with open barges & closed trains	**219.0**	24.0	**243.0**	35.0	**594%**
Operation with closed barges & open trains	**388.6**	24.0	**412.6**	35.0	**1,079%**



Predicted 24-hour PM2.5 (ug/m3) w/o Background from Port of Morrow Operations (Closed Barges)

Figure 8. Area with Highest 24-hour $PM_{2.5}$ Concentrations (ug/m^3) Exceeding the 24-Hour NAAQS of 35 ug/m^3 by Port of Morrow Operations with Closed Barges and Trains

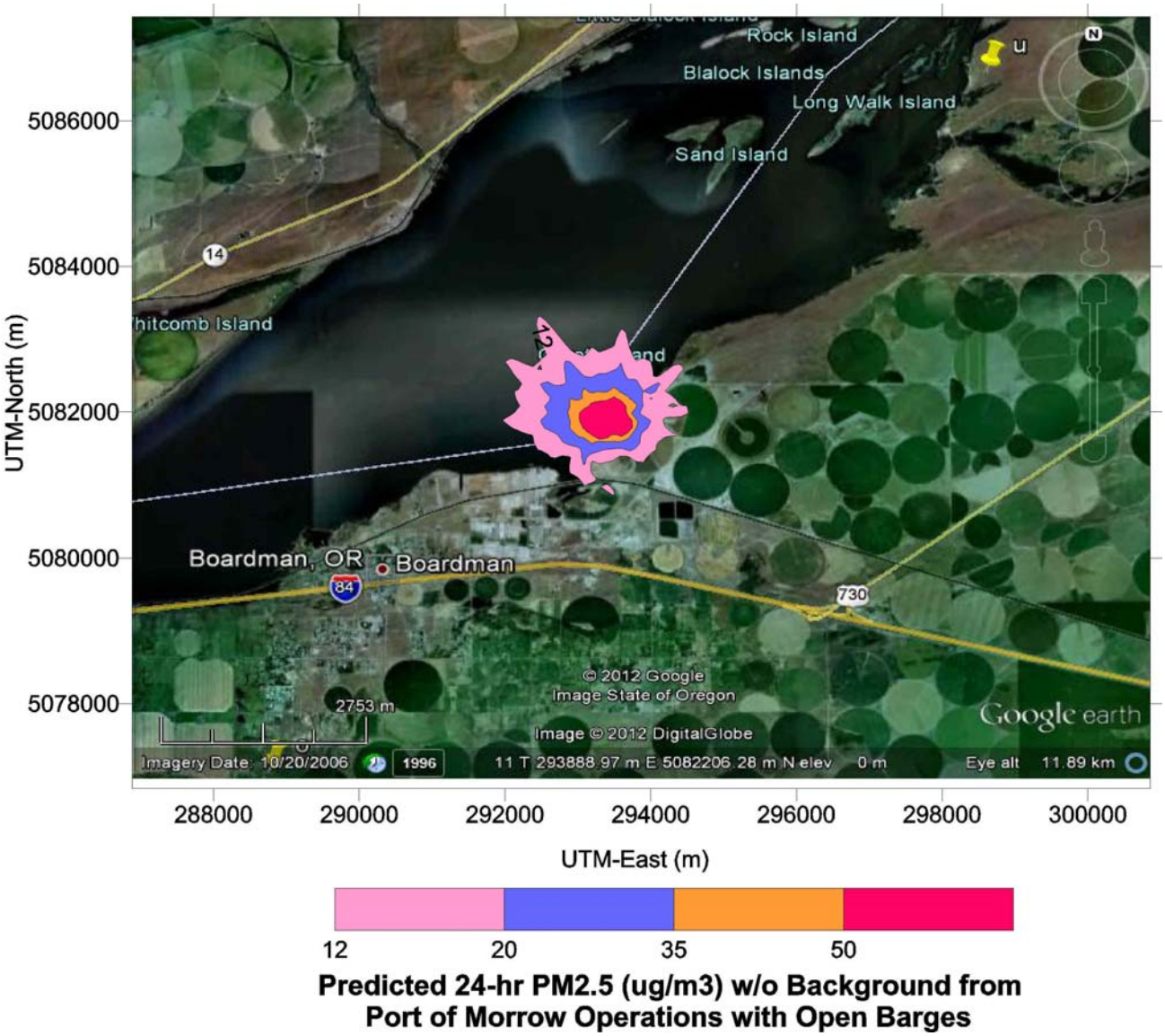


Figure 9. Area with Highest 24-hour $PM_{2.5}$ Concentrations (ug/m^3) Exceeding the 24-Hour NAAQS of 35 ug/m^3 by Port of Morrow Operations with Open Barges and Closed Trains

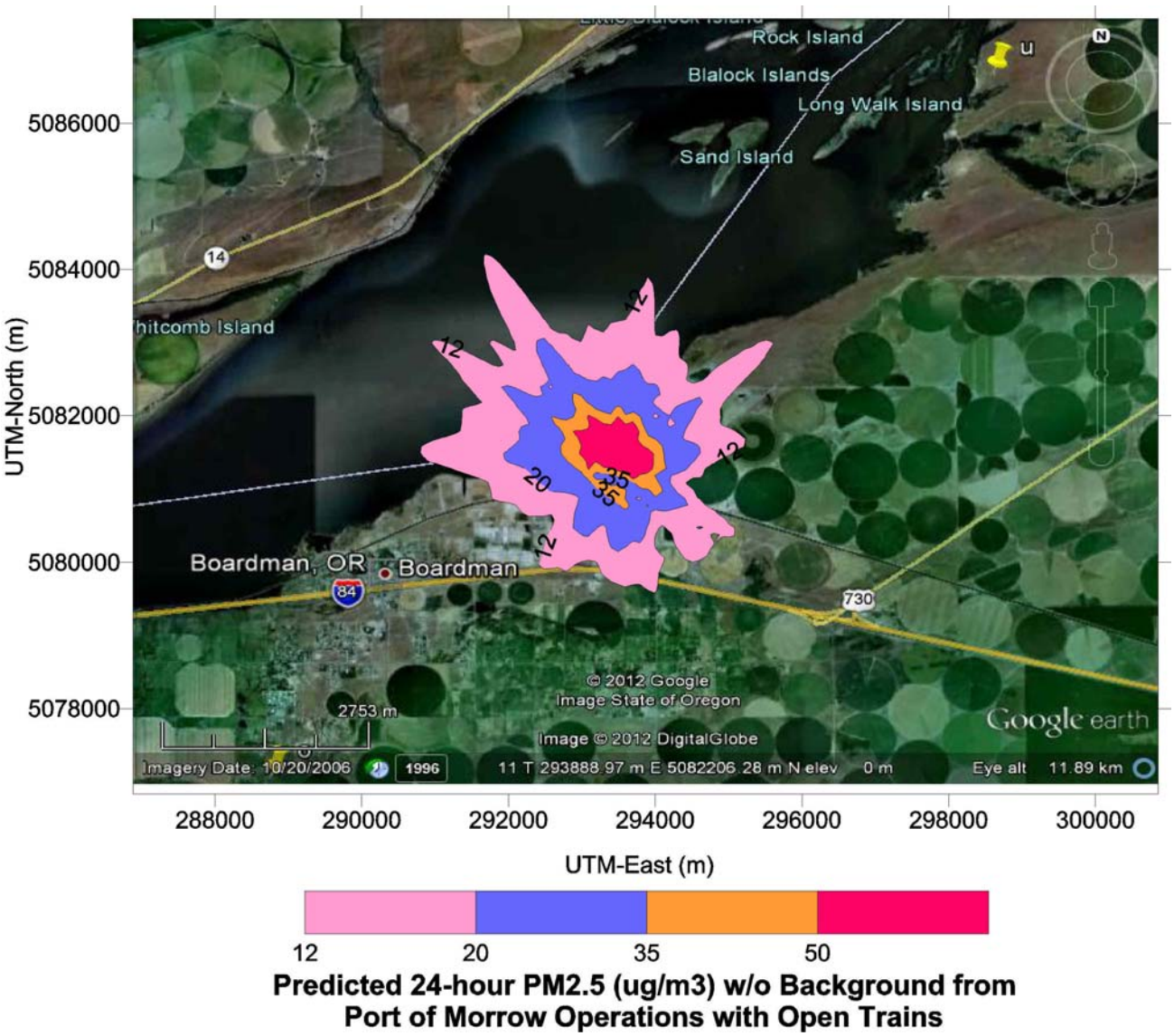


Figure 10. Area with Highest 24-hour $PM_{2.5}$ Concentrations (ug/m^3) Exceeding the 24-Hour NAAQS of 35 ug/m^3 by Port of Morrow Operations with Closed Barges and Open Trains

D. Annual NO_2 Impacts

Annual NO_2 impacts from the operations at Port of Morrow have been analyzed with the AERMOD run. This run uses NOx emissions from train unloading, a tug boat assisting the barge loading and a tug boat travelling on the Columbia River. NO_x emissions of the traveling tug are 3.62 tpy (790/218 where the total emissions are 790 tpy and the distance traveled is 218 miles as shown in the project ER). Table 10 shows that the annual-averaged concentrations predicted for 2007 are the highest among the modeled annual NO_2 concentrations. Modeling results for the year 2007 are summarized in Appendix K.

With the added background of 15 ug/m^3, the annual NAAQS of 100 ug/m^3 is predicted to be largely exceeded, by 16 times with Tier 1 and 12 times with Tier 2 as shown in Table 11. Figure 11 shows these exceedances occurring near the project site. No Tier 3 technique (OLM or PVMRM) has been performed. However, based on the large magnitude of the exceedances predicted by Tier 1 and Tier 2 and the results of applying Tier 3 techniques in 1-hour NO_2 modeling described in Section III. A.1 above, exceedances of the annual NAAQS are also expected with Tier 3 techniques (OLM or PVMRM).

Table 10. Predicted Annual NO_2 (ug/m^3) of Port of Morrow Operations

Modeling Method	2007	2008	2009	2010	2011
Tier 1 -100%	**1,750.9**	1,660.5	1,366.5	1,430.8	1,572.8
Tier 2 - 75%	**1,313.2**	1,245.4	1,024.9	1,073.1	1,179.6

Table 11. Predicted Maximum Annual NO_2 Impacts (ug/m^3) of Port of Morrow Operations

Modeling Method	Project Conc.	Backgr. Conc.	Total Conc.	NAAQS	Percent Over NAAQS
Tier 1 -100%	**1,750.9**	15.0	**1,765.9**	100.0	**1,666%**
Tier 2 - 75%	**1,313.2**	15.0	**1,327.2**	100.0	**1,227%**

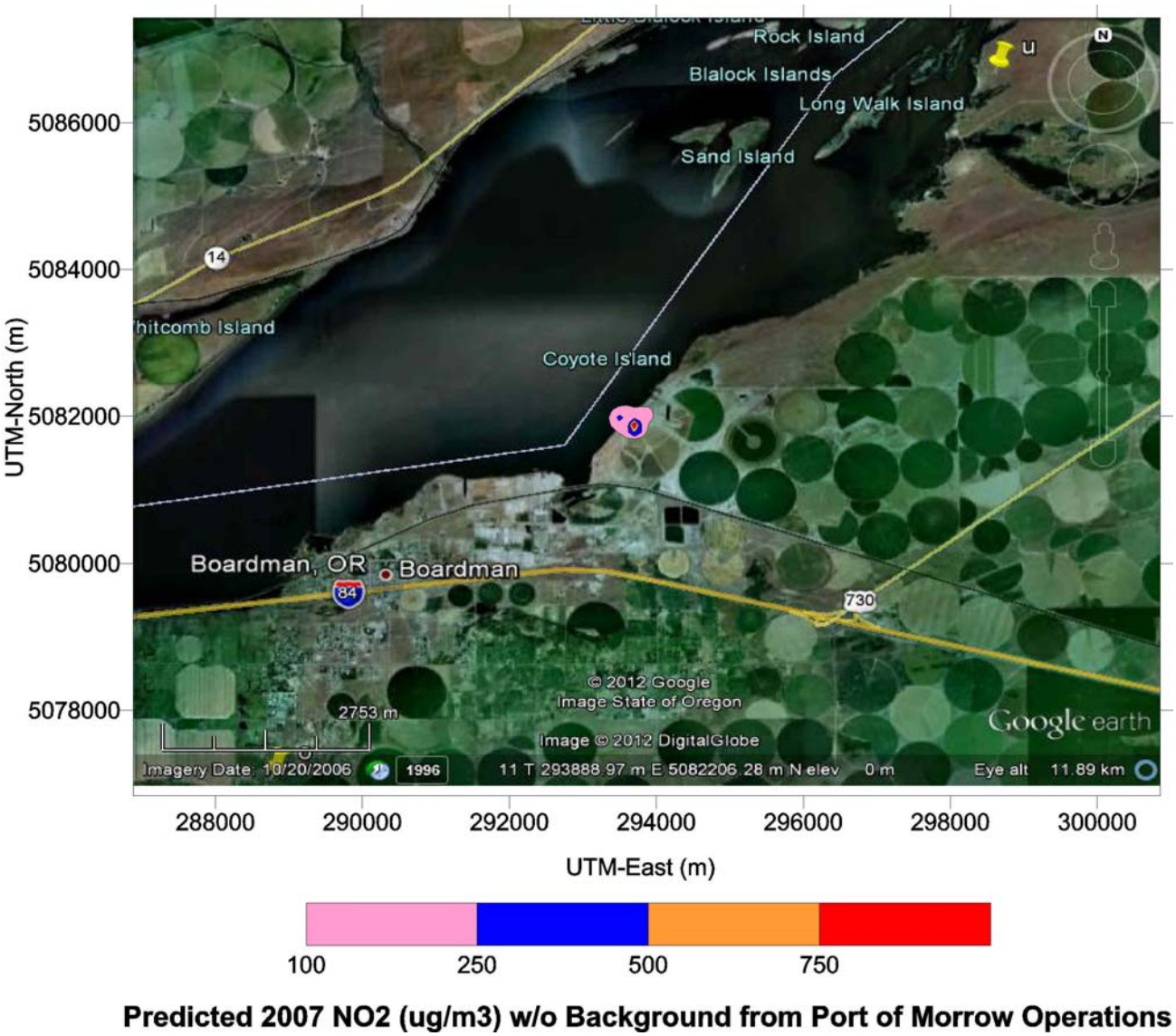


Figure 11. Area with Annual NO_2 (ug/m^3) Exceeding the NAAQS of 100 ug/m^3 by Port of Morrow Operations Alone

E. Nitrogen Deposition Impacts

Nitrogen deposition impacts due to dry and wet deposition from the operations at Port of Morrow have been analyzed with the AERMOD run. This run uses NO_x emissions from trains unloading and tug boats assisting the barge loading. A tug boat travelling on the Columbia River with NO_x emissions of 3.62 tpy is also included. Modeling results for the year 2011 with the highest NO_2 deposition fluxes are summarized in Appendix M. The maximum NO_2 deposition fluxes (in g/m^2/yr) predicted by AERMOD are converted into kg N/ha/yr by multiplying them by 3.043 = 10*(14/46) where 10 is the conversion factor from g/m^2 to kg/ha and (14/46) is the mass ratio of nitrogen (N) over NO_2. The converted maximum impacts are presented in Table 12 and a plot of the predicted deposition in

Figure 12 below. The predicted deposition fluxes largely exceed the ecological screening level (ESL) of 0.5 g/m^2/yr or 5 kg/ha/yr recommended by US EPA (US EPA, 2008).

Table 12. Predicted Nitrogen Deposition (kg N/ha/yr) of Port of Morrow Operations

Modeling Method	2007	2008	2009	2010	2011	ESL
Tier 1 -100%	164.4	155.1	185.7	128.9	**261.2**	**5**
Tier 2 - 75%	123.3	116.3	139.3	96.7	**195.9**	**5**

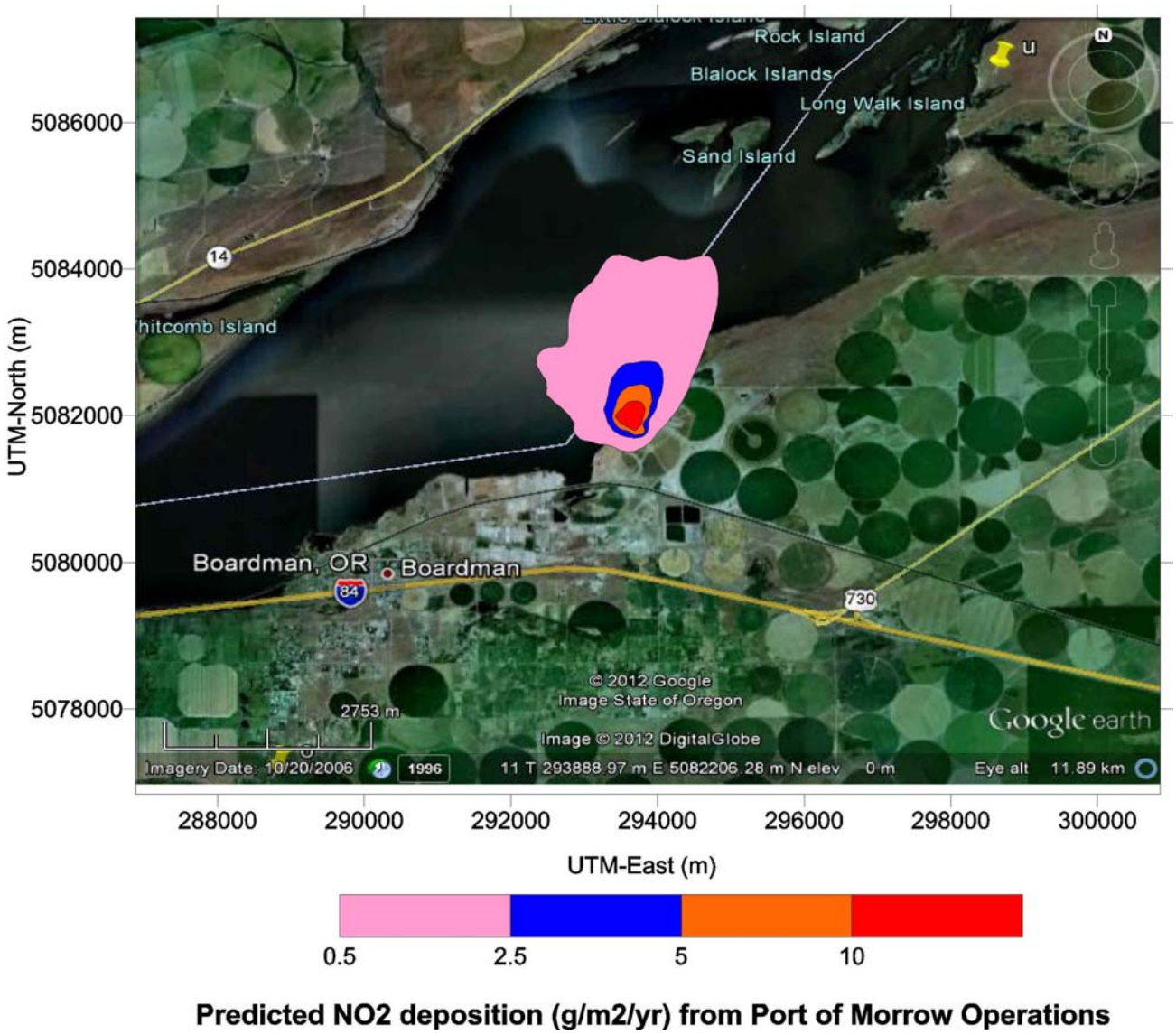


Figure 12. Area with Annual NO_2 Deposition (g/m^2/yr) by Port of Morrow Operations Alone

IV. CONCLUSIONS

Air quality impacts of NO_x, $PM_{2.5}$ and SO_2 emissions from the proposed operations at Port of Morrow and Port Westward of the Morrow Pacific Project have been analyzed with the AERMOD model. For NO_2, modeling techniques known as Tier 1 (full conversion) and Tier 2 recommended by the US EPA have been used for modeling at both ports. Tier 3 techniques (OLM and PVMRM) have also been used for modeling impacts at Port of Morrow. Using primarily project emissions documented in the project ER and the latest US EPA modeling guidance, the AERMOD model has predicted large exceedances of the NO_2 1-hour NAAQS of 196 ug/m^3 (by 9-63 times the NAAQS at Port of Morrow and by 19-24 times the NAAQS at Port Westward), the 24-hour $PM_{2.5}$ at Port of Morrow (by 2.4-10.8 times the NAAQS of 35 ug/m^3) and the annual NO_2 NAAQS at Port of Morrow (by 12-17 times the NAAQS of 100 ug/m^3). These large exceedances have been predicted to occur due to project emissions alone, i.e., without the addition of background concentrations and also in large areas around the project sites. NAAQS exceedances will occur in both Oregon and Washington. SO_2 impacts are insignificant due to low emissions from the use of ultra low sulfur fuel for both locomotive and boat engines. The AERMOD model has also predicted large nitrogen deposition around the Port of Morrow. Thus, the proposed Morrow Pacific Project will cause very adverse air quality impacts in both Oregon and Washington.

The AERMOD modeling files, including input/output files, meteorological data, ozone data and model executable, have been uploaded to box.com and are available from the folder: https://www.box.com/s/tseqhg95g7fe1jdw57lk .

V. REFERENCES

California Air Resources Board, 2006. *Diesel Particulate Matter Exposure Assessment Study for the Ports of Los Angeles and Long Beach*. Available at http://www.arb.ca.gov/ports/marinevess/documents/portstudy0406.pdf

Fritz, S, 2007. US Locomotive After-treatment Retrofit Progress Report: SwRI Test Programs. Southwest Research Institute. Available at http://www.arb.ca.gov/railyard/ryagreement/112807fritz.pdf

New Jersey DEP, 2009. *Estimated Air Quality Impacts on Surrounding Communities of $PM_{2.5}$ and SO_2 Emissions Resulting from Marine Operations at Elizabeth Port Authority Marine Terminal and Port Newark*. Available at http://www.state.nj.us/dep/stopthesoot/Port%20risk%20Summary-final%2010-9-09.pdf

Oregon DEQ, 2012. 2011 Oregon Air Quality Data Summaries. Available at: http://www.deq.state.or.us/aq/forms/2011AirQualityAnnualReport.pdf

U.S. EPA, 2012. Addendum to User's Guide of the AMS/EPA Regulatory Model AERMOD version 12060, February 2012. Available at: http://www.epa.gov/ttn/scram/models/aermod/aermod_userguide.zip

U.S. EPA, 2011. *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 NAAQS*. Memorandum issued on March 1st, 2011 from Tyler Fox, Leader of Air Quality Modeling Group, OAQPS. Available at http://www.epa.gov/region7/air/nsr/nsrmemos/appwNO2_2.pdf

U.S. EPA, 2010a. *Applicability of Appendix W Modeling Guidance for the 1-hour NO_2 NAAQS*. Memorandum issued on June 28, 2010 from Tyler Fox, Leader of Air Quality Modeling Group, OAQPS. Available at http://www.epa.gov/ttn/scram/guidance/clarification/ClarificationMemo_AppendixW_Hourly-NO2-NAAQS_FINAL_06-28-2010.pdf

U.S. EPA, 2010b. *Guidance Concerning the Implementation of the 1-hour SO_2 NAAQS for the Prevention of Significant Deterioration Program*. Memorandum issued on August 23, 2010 from Stephen D. Page, Director of OAQPS. Available at http://www.epa.gov/region07/air/nsr/nsrmemos/appwso2.pdf

U.S. EPA, 2010c. *Applicability of Appendix W Modeling Guidance for the 1-hour SO_2 NAAQS*. Memorandum issued on August 23, 2010 from Tyler Fox, Leader of Air Quality Modeling Group, OAQPS. Available at http://www.epa.gov/region07/air/nsr/nsrmemos/appwso2.pdf

U.S. EPA, 2010d. *Modeling Procedures for Demonstrating Compliance with $PM_{2.5}$ NAAQS*. Memorandum issued on March 23, 2010 by Stephen D. Page, Director of OAQPS. Available at: http://www.epa.gov/region07/air/nsr/nsrmemos/pm25memo.pdf

U.S. EPA, 2008. *Biological Assessment for Gateway Energy and Coke Company, Granite City, Illinois*. Available at: http://yosemite.epa.gov/r5/r5ard.nsf/c408a2009710018f8625716f004d9038/bab8e1b0ab50bdfc86257412006c2f20/$FILE/GatewayBioAssessment.pdf

Appendix A

Summary of AERMOD-Predicted 1-hour NO_2 Impacts (Full Conversion) of Port of Morrow Operations

**MODELOPTs: CONC ELEV FLGPOL

*** THE SUMMARY OF MAXIMUM 8TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	12000.43671	AT (293682.00, 5081859.00, 88.36, 88.36, 1.50)	DC
	2ND HIGHEST VALUE IS	11011.15662	AT (293495.00, 5081933.00, 81.42, 81.42, 1.50)	DC
	3RD HIGHEST VALUE IS	9546.46567	AT (293634.00, 5081812.00, 88.06, 88.06, 1.50)	DC
	4TH HIGHEST VALUE IS	8619.08562	AT (293535.00, 5081880.00, 84.73, 90.01, 1.50)	DC
	5TH HIGHEST VALUE IS	8446.96889	AT (293486.00, 5081914.00, 81.42, 90.01, 1.50)	DC
	6TH HIGHEST VALUE IS	7982.12692	AT (293695.00, 5081883.00, 88.89, 88.89, 1.50)	DC
	7TH HIGHEST VALUE IS	6129.74109	AT (293495.00, 5081983.00, 81.42, 81.42, 1.50)	DC
	8TH HIGHEST VALUE IS	5478.30847	AT (293645.00, 5081883.00, 88.58, 88.58, 1.50)	DC
	9TH HIGHEST VALUE IS	5425.12949	AT (293436.00, 5081947.00, 81.42, 81.42, 1.50)	DC
	10TH HIGHEST VALUE IS	5407.11800	AT (293545.00, 5081933.00, 81.42, 88.09, 1.50)	DC

Appendix B

Summary of AERMOD-Predicted 1-hour NO_2 Impacts (Tier 3-OLM) of Port of Morrow Operations

**MODELOPTs: NonDFAULT CONC ELEV FLGPOL
OLM

*** THE SUMMARY OF MAXIMUM 8TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED
OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	1872.57842 AT	(293682.00, 5081859.00, 88.36, 88.36, 1.50)	DC
	2ND HIGHEST VALUE IS	1506.09918 AT	(293634.00, 5081812.00, 88.06, 88.06, 1.50)	DC
	3RD HIGHEST VALUE IS	1269.56877 AT	(293695.00, 5081883.00, 88.89, 88.89, 1.50)	DC
	4TH HIGHEST VALUE IS	1157.13116 AT	(293495.00, 5081933.00, 81.42, 81.42, 1.50)	DC
	5TH HIGHEST VALUE IS	930.96011 AT	(293535.00, 5081880.00, 84.73, 90.01, 1.50)	DC
	6TH HIGHEST VALUE IS	898.70613 AT	(293486.00, 5081914.00, 81.42, 90.01, 1.50)	DC
	7TH HIGHEST VALUE IS	888.67937 AT	(293645.00, 5081883.00, 88.58, 88.58, 1.50)	DC
	8TH HIGHEST VALUE IS	804.59597 AT	(293729.00, 5081905.00, 89.36, 89.36, 1.50)	DC
	9TH HIGHEST VALUE IS	708.92971 AT	(293645.00, 5081933.00, 88.68, 88.68, 1.50)	DC
	10TH HIGHEST VALUE IS	708.92971 AT	(293645.00, 5081933.00, 88.68, 88.68, 1.50)	DC

Appendix C

Summary of AERMOD-Predicted 1-hour NO_2 Impacts (Tier 3-PVMRM) of Port of Morrow Operations

*** THE SUMMARY OF MAXIMUM 8TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	2064.26610 AT	(293682.00, 5081859.00, 88.36, 88.36, 1.50)	DC
	2ND HIGHEST VALUE IS	1640.03383 AT	(293634.00, 5081812.00, 88.06, 88.06, 1.50)	DC
	3RD HIGHEST VALUE IS	1453.05752 AT	(293495.00, 5081933.00, 81.42, 81.42, 1.50)	DC
	4TH HIGHEST VALUE IS	1349.15566 AT	(293695.00, 5081883.00, 88.89, 88.89, 1.50)	DC
	5TH HIGHEST VALUE IS	1276.62739 AT	(293486.00, 5081914.00, 81.42, 90.01, 1.50)	DC
	6TH HIGHEST VALUE IS	1137.14103 AT	(293535.00, 5081880.00, 84.73, 90.01, 1.50)	DC
	7TH HIGHEST VALUE IS	932.58202 AT	(293645.00, 5081883.00, 88.58, 88.58, 1.50)	DC
	8TH HIGHEST VALUE IS	854.25416 AT	(293495.00, 5081983.00, 81.42, 81.42, 1.50)	DC
	9TH HIGHEST VALUE IS	826.47500 AT	(293436.00, 5081947.00, 81.42, 81.42, 1.50)	DC
	10TH HIGHEST VALUE IS	819.38900 AT	(293729.00, 5081905.00, 89.36, 89.36, 1.50)	DC

Appendix D

Summary of AERMOD-Predicted 1-hour NO_2 Impacts (Full Conversion) of Port Westward Operations with Transloader using Emergency Power

**MODELOPTs: CONC ELEV FLGPOL

*** THE SUMMARY OF MAXIMUM 8TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS 4669.95119	AT (485884.00, 5114327.00, 1.82, 173.28, 1.50)	DC
	2ND HIGHEST VALUE IS 4019.45010	AT (485834.00, 5114327.00, 1.84, 173.28, 1.50)	DC
	3RD HIGHEST VALUE IS 4019.45010	AT (485834.00, 5114327.00, 1.84, 173.28, 1.50)	DC
	4TH HIGHEST VALUE IS 3552.36381	AT (485884.00, 5114377.00, 1.86, 173.28, 1.50)	DC
	5TH HIGHEST VALUE IS 3464.09646	AT (485934.00, 5114327.00, 1.81, 173.28, 1.50)	DC
	6TH HIGHEST VALUE IS 3464.09646	AT (485934.00, 5114327.00, 1.81, 173.28, 1.50)	DC
	7TH HIGHEST VALUE IS 3308.75055	AT (485834.00, 5114377.00, 1.88, 173.28, 1.50)	DC
	8TH HIGHEST VALUE IS 2985.93516	AT (485784.00, 5114327.00, 1.86, 178.84, 1.50)	DC
	9TH HIGHEST VALUE IS 2979.22153	AT (485884.00, 5114277.00, 1.79, 173.28, 1.50)	DC
	10TH HIGHEST VALUE IS 2935.63381	AT (485934.00, 5114377.00, 1.85, 173.28, 1.50)	DC

Appendix E

Summary of AERMOD-Predicted 1-hour NO_2 Impacts (Full Conversion) of Port Westward Operations with Transloader using Shore Power

**MODELOPTs: CONC ELEV FLGPOL

*** THE SUMMARY OF MAXIMUM 8TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS 4669.94844	AT (485884.00, 5114327.00, 1.82, 173.28, 1.50)	DC
	2ND HIGHEST VALUE IS 4019.45010	AT (485834.00, 5114327.00, 1.84, 173.28, 1.50)	DC
	3RD HIGHEST VALUE IS 4019.45010	AT (485834.00, 5114327.00, 1.84, 173.28, 1.50)	DC
	4TH HIGHEST VALUE IS 3552.36381	AT (485884.00, 5114377.00, 1.86, 173.28, 1.50)	DC
	5TH HIGHEST VALUE IS 3464.09646	AT (485934.00, 5114327.00, 1.81, 173.28, 1.50)	DC
	6TH HIGHEST VALUE IS 3464.09646	AT (485934.00, 5114327.00, 1.81, 173.28, 1.50)	DC
	7TH HIGHEST VALUE IS 3308.75055	AT (485834.00, 5114377.00, 1.88, 173.28, 1.50)	DC
	8TH HIGHEST VALUE IS 2985.93516	AT (485784.00, 5114327.00, 1.86, 178.84, 1.50)	DC
	9TH HIGHEST VALUE IS 2979.22153	AT (485884.00, 5114277.00, 1.79, 173.28, 1.50)	DC
	10TH HIGHEST VALUE IS 2935.63381	AT (485934.00, 5114377.00, 1.85, 173.28, 1.50)	DC

Appendix F

Summary of AERMOD-Predicted 1-hour SO_2 Impacts of Port of Morrow Operations with Ultra Low Sulfur Fuel

**MODELOPTs: CONC ELEV FLGPOL

*** THE SUMMARY OF MAXIMUM 4TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF SO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	7.71659	AT (293682.00, 5081859.00, 88.36, 88.36, 1.50)	DC
	2ND HIGHEST VALUE IS	6.87149	AT (293634.00, 5081812.00, 88.06, 88.06, 1.50)	DC
	3RD HIGHEST VALUE IS	5.11050	AT (293695.00, 5081883.00, 88.89, 88.89, 1.50)	DC
	4TH HIGHEST VALUE IS	4.23968	AT (293645.00, 5081883.00, 88.58, 88.58, 1.50)	DC
	5TH HIGHEST VALUE IS	3.29040	AT (293729.00, 5081905.00, 89.36, 89.36, 1.50)	DC
	6TH HIGHEST VALUE IS	3.11441	AT (293645.00, 5081933.00, 88.68, 88.68, 1.50)	DC
	7TH HIGHEST VALUE IS	3.11441	AT (293645.00, 5081933.00, 88.68, 88.68, 1.50)	DC
	8TH HIGHEST VALUE IS	3.01923	AT (293495.00, 5081933.00, 81.42, 81.42, 1.50)	DC
	9TH HIGHEST VALUE IS	2.90729	AT (293695.00, 5081933.00, 88.78, 88.78, 1.50)	DC
	10TH HIGHEST VALUE IS	2.85823	AT (293591.00, 5081747.00, 87.42, 87.42, 1.50)	DC

Appendix G

Summary of AERMOD-Predicted 1-hour SO_2 Impacts of Port Westward Operations with Ultra Low Sulfur Fuel

**MODELOPTs: CONC ELEV FLGPOL

*** THE SUMMARY OF MAXIMUM 4TH-HIGHEST MAX DAILY 1-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF SO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	87.08375	AT (485384.00, 5114627.00, 66.26, 173.28, 1.50)	DC
	2ND HIGHEST VALUE IS	80.86337	AT (485434.00, 5114677.00, 72.72, 173.28, 1.50)	DC
	3RD HIGHEST VALUE IS	71.77678	AT (485184.00, 5114527.00, 71.23, 173.28, 1.50)	DC
	4TH HIGHEST VALUE IS	71.62989	AT (485284.00, 5114577.00, 73.47, 173.28, 1.50)	DC
	5TH HIGHEST VALUE IS	68.69739	AT (485534.00, 5114727.00, 80.33, 173.28, 1.50)	DC
	6TH HIGHEST VALUE IS	68.69739	AT (485534.00, 5114727.00, 80.33, 173.28, 1.50)	DC
	7TH HIGHEST VALUE IS	66.50215	AT (485084.00, 5114477.00, 66.86, 178.84, 1.50)	DC
	8TH HIGHEST VALUE IS	65.75496	AT (485484.00, 5114727.00, 81.25, 173.28, 1.50)	DC
	9TH HIGHEST VALUE IS	65.43326	AT (485334.00, 5114627.00, 78.25, 173.28, 1.50)	DC
	10TH HIGHEST VALUE IS	65.43326	AT (485334.00, 5114627.00, 78.25, 173.28, 1.50)	DC

Appendix H

Summary of AERMOD-Predicted 24-hour $PM_{2.5}$ Impacts of Port of Morrow Operations with Enclosed Barges and Trains

**MODELOPTs: CONC ELEV FLGPOL

*** THE SUMMARY OF MAXIMUM 1ST-HIGHEST 24-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF PM25 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
ALL 1ST HIGHEST VALUE IS	96.34646	AT (293634.00, 5081812.00, 88.06, 88.06, 1.50)	DC
2ND HIGHEST VALUE IS	92.71799	AT (293682.00, 5081859.00, 88.36, 88.36, 1.50)	DC
3RD HIGHEST VALUE IS	49.79568	AT (293695.00, 5081883.00, 88.89, 88.89, 1.50)	DC
4TH HIGHEST VALUE IS	43.46942	AT (293645.00, 5081883.00, 88.58, 88.58, 1.50)	DC
5TH HIGHEST VALUE IS	39.06540	AT (293486.00, 5081914.00, 81.42, 90.01, 1.50)	DC
6TH HIGHEST VALUE IS	33.96834	AT (293535.00, 5081880.00, 84.73, 90.01, 1.50)	DC
7TH HIGHEST VALUE IS	31.94523	AT (293495.00, 5081933.00, 81.42, 81.42, 1.50)	DC
8TH HIGHEST VALUE IS	30.02961	AT (293729.00, 5081905.00, 89.36, 89.36, 1.50)	DC
9TH HIGHEST VALUE IS	29.26999	AT (293591.00, 5081747.00, 87.42, 87.42, 1.50)	DC
10TH HIGHEST VALUE IS	26.18454	AT (293595.00, 5081733.00, 87.43, 87.43, 1.50)	DC

Appendix I

Summary of AERMOD-Predicted 24-hour $PM_{2.5}$ Impacts of Port of Morrow Operations with Open Barges and Closed Trains

**MODELOPTs: CONC ELEV FLGPOL

*** THE SUMMARY OF MAXIMUM 1ST-HIGHEST 24-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF PM25 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	96.39479 AT (293634.00, 5081812.00, 88.06, 88.06, 1.50)	DC
	2ND HIGHEST VALUE IS	93.31912 AT (293682.00, 5081859.00, 88.36, 88.36, 1.50)	DC
	3RD HIGHEST VALUE IS	74.26387 AT (293385.00, 5081765.00, 81.44, 89.12, 1.50)	DC
	4TH HIGHEST VALUE IS	58.07956 AT (293486.00, 5081914.00, 81.42, 90.01, 1.50)	DC
	5TH HIGHEST VALUE IS	52.50092 AT (293535.00, 5081880.00, 84.73, 90.01, 1.50)	DC
	6TH HIGHEST VALUE IS	51.74925 AT (293495.00, 5081933.00, 81.42, 81.42, 1.50)	DC
	7TH HIGHEST VALUE IS	50.58559 AT (293436.00, 5081947.00, 81.42, 81.42, 1.50)	DC
	8TH HIGHEST VALUE IS	50.00263 AT (293695.00, 5081883.00, 88.89, 88.89, 1.50)	DC
	9TH HIGHEST VALUE IS	48.44197 AT (293436.00, 5081761.00, 86.93, 86.93, 1.50)	DC
	10TH HIGHEST VALUE IS	47.93824 AT (293303.00, 5081902.00, 81.42, 81.42, 1.50)	DC

Appendix J

Summary of AERMOD-Predicted 24-hour $PM_{2.5}$ Impacts of Port of Morrow Operations with Closed Barges and Open Trains

**MODELOPTs: CONC ELEV FLGPOL

*** THE SUMMARY OF MAXIMUM 1ST-HIGHEST 24-HR RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF PM25 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	388.58720	AT (293395.00, 5081533.00, 92.82, 92.82, 1.50)	DC
	2ND HIGHEST VALUE IS	369.14316	AT (293445.00, 5081483.00, 93.82, 93.82, 1.50)	DC
	3RD HIGHEST VALUE IS	329.09982	AT (293495.00, 5081433.00, 94.48, 94.48, 1.50)	DC
	4TH HIGHEST VALUE IS	321.34654	AT (293545.00, 5081383.00, 94.61, 94.61, 1.50)	DC
	5TH HIGHEST VALUE IS	320.74418	AT (293595.00, 5081333.00, 94.54, 96.30, 1.50)	DC
	6TH HIGHEST VALUE IS	206.12712	AT (293395.00, 5081583.00, 91.05, 91.05, 1.50)	DC
	7TH HIGHEST VALUE IS	203.49253	AT (293645.00, 5081283.00, 96.25, 96.25, 1.50)	DC
	8TH HIGHEST VALUE IS	175.37558	AT (293445.00, 5081533.00, 92.35, 92.35, 1.50)	DC
	9TH HIGHEST VALUE IS	175.37558	AT (293445.00, 5081533.00, 92.35, 92.35, 1.50)	DC
	10TH HIGHEST VALUE IS	174.66553	AT (293345.00, 5081633.00, 91.60, 91.60, 1.50)	DC

Appendix K

Summary of AERMOD-Predicted Annual NO_2 Impacts of Port of Morrow Operations

**MODELOPTs: NonDFAULT CONC DEPOS ELEV FLGPOL
DRYDPLT WETDPLT

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 1 YEARS
***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	NETWORK OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	1750.88666	AT (293682.00, 5081859.00, 88.36, 88.36, 1.50)	DC
	2ND HIGHEST VALUE IS	1052.50428	AT (293695.00, 5081883.00, 88.89, 88.89, 1.50)	DC
	3RD HIGHEST VALUE IS	635.06315	AT (293729.00, 5081905.00, 89.36, 89.36, 1.50)	DC
	4TH HIGHEST VALUE IS	435.52880	AT (293745.00, 5081933.00, 89.41, 89.41, 1.50)	DC
	5TH HIGHEST VALUE IS	435.52880	AT (293745.00, 5081933.00, 89.41, 89.41, 1.50)	DC
	6TH HIGHEST VALUE IS	354.24233	AT (293695.00, 5081933.00, 88.78, 88.78, 1.50)	DC
	7TH HIGHEST VALUE IS	330.98272	AT (293545.00, 5081933.00, 81.42, 88.09, 1.50)	DC
	8TH HIGHEST VALUE IS	330.98272	AT (293545.00, 5081933.00, 81.42, 88.09, 1.50)	DC
	9TH HIGHEST VALUE IS	316.01375	AT (293495.00, 5081983.00, 81.42, 81.42, 1.50)	DC
	10TH HIGHEST VALUE IS	305.49073	AT (293795.00, 5081933.00, 89.75, 89.75, 1.50)	DC

Appendix M

Summary of AERMOD-Predicted Nitrogen Deposition Impacts of Port of Morrow Operations

**MODELOPTs: NonDFAULT CONC DEPOS ELEV FLGPOL
DRYDPLT WETDPLT

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 1 YEARS ***

** DEPO OF NO2 IN GRAMS/M**2/YR **

GROUP ID		TOTAL DEPO	NETWORK RECEPTOR GRID-ID	(XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE
ALL	1ST HIGHEST VALUE IS	85.83330 AT	(293645.00, 5081883.00, 88.58, 88.58, 1.50)		DC
	2ND HIGHEST VALUE IS	59.12736 AT	(293695.00, 5081933.00, 88.78, 88.78, 1.50)		DC
	3RD HIGHEST VALUE IS	56.41767 AT	(293695.00, 5081883.00, 88.89, 88.89, 1.50)		DC
	4TH HIGHEST VALUE IS	53.31785 AT	(293682.00, 5081859.00, 88.36, 88.36, 1.50)		DC
	5TH HIGHEST VALUE IS	50.98385 AT	(293645.00, 5081933.00, 88.68, 88.68, 1.50)		DC
	6TH HIGHEST VALUE IS	50.98385 AT	(293645.00, 5081933.00, 88.68, 88.68, 1.50)		DC
	7TH HIGHEST VALUE IS	38.15760 AT	(293695.00, 5081983.00, 86.48, 89.33, 1.50)		DC
	8TH HIGHEST VALUE IS	33.88791 AT	(293645.00, 5081983.00, 87.43, 87.43, 1.50)		DC
	9TH HIGHEST VALUE IS	26.27295 AT	(293495.00, 5081983.00, 81.42, 81.42, 1.50)		DC
	10TH HIGHEST VALUE IS	25.56387 AT	(293745.00, 5081983.00, 88.92, 88.92, 1.50)		DC