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SIERRA CLUB HARBOR VISION TASK FORCE

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RE: JOINT COMMENTS ON MIDDLE HARBOR REDEVELOPMENT PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)/DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) AND APPLICATION SUMMARY REPORT BERTHS

Dear Mr. Cameron:

On behalf of the undersigned organizations, we write to provide comments on the Middle Harbor Redevelopment Project Draft Environmental Impact Statement (DEIS)/Draft Environmental Impact Report (DEIR) and Application Summary Report Berths ("DEIR/S"). We appreciate the opportunity to provide comments on the DEIS/DEIR. While this DEIR/S shows improvement in certain aspects compared to previous environmental review documents produced by the Port of Long Beach ("Port" or "POLB")), such as the DEIS/DEIR for the Pier J project, we still have several concerns about the project itself and the accompanying environmental document. After careful review, we have concluded that it fails in many respects to comply with the requirements of the California Environmental Quality Act ("CEQA") and the National Environmental Policy Act ("NEPA"). As described below, the DEIR/S is inadequate because it fails to carry out CEQA's mandates. It does not accurately identify or analyze the significant environmental impacts that would result from the implementation of the massive Project,

and it fails to provide sufficient mitigation for such impacts as it does identify. Moreover, it fails to consider alternatives that effectively protect the environment while providing good, well-paying, sustainable jobs for the region's workforce.

Given the inevitable regional and acute local impacts of the proposed Project, it is especially important that the DEIR/S contain the necessary analysis to enable both the decision makers and the public to understand the significant environmental repercussions of the Project. Additionally, it is also critical that the DEIR/S compare the proposed Project to other possible alternatives for redeveloping the Port. Instead, the DEIR/S effectively disguises the true impacts of the Project by omitting crucial information regarding what the Project will actually do, underestimating many environmental impacts and ignoring others altogether.

As a result of the DEIR/S's inadequacies, there can be no meaningful public review of the Project. CEQA accordingly requires the Port to prepare and circulate a revised DEIR/S to permit a complete understanding of the environmental issues at stake.

I. Overview of Project

Like previous plans, this project will expand port operations, creating numerous impacts on residents in the Harbor area and beyond. From an air quality perspective, this project has special relevance in that this is the first major EIR/EIS released since the Board of Harbor Commissioners ("Board") unanimously voted to adopt the San Pedro Bay Ports Clean Air Action Plan ("CAAP"). Thus, as deadlines slip in implementation of the CAAP, we become concerned about the general approach of this EIR/EIS. Thus, it is critical that the Port makes sure all impacts are adequately studied and truly mitigated in order that this project will result in minimal impact to residents near the Port. Moreover, the Project has many impacts beyond air quality that will affect residents, and we are concerned that the Port has not adequately mitigated these impacts.

At the outset, it is important to provide perspective on the magnitude of this project. At full build out, just the projected increase in throughput at this terminal is the equivalent of inserting the container throughput of the Port of Vancouver into the Harbor area.[1] Also, the projected final throughput for the project, 3.3 million Twenty-foot Equivalent Units ("TEUs"), will be approximately 1/3 greater than the container throughput of the current operations of the Port of Oakland, the fourth busiest container port in the nation.[2] Between the baseline year and full build-out, more than 3,000 trucks trips per day will be added to the roads surrounding the port.[3] Thus, this one project, part of a long list of

[1] Compare projected throughput increase from the Middle Harbor project, to 2006 throughput at the Port of Vancouver. Data from American Association of Port Authorities website. Accessed 9/18/07. Available at http://aapa.files.cms-plus.com/PDFs/2006_North_American_Container_Traffic.pdf
[2] *Id.*
[3] DEIR/S, at Table 1.6-1.

container expansion projects in the Harbor area,[4] will undoubtedly impact port-adjacent communities and the region in general. Without an expanded suite of mitigation measures, this terminal expansion will have a harsh impact on the land, water and air.

a. The Proposed Project will have an indelible impact on port-adjacent communities and the region in general.

The health impacts and regional air quality impacts from port activities are well documented. Of all listed TACs identified by the California Air Resources Board ("CARB"), diesel particulate matter ("DPM") is known to present the greatest health risks to Californians.[5] Dozens of studies have shown adverse impacts from DPM and NO_x including respiratory disease, cardiovascular mortality, cancer, and reproductive effects as well as an increase in regional smog and water contamination. CARB has determined that diesel exhaust is responsible for over 70% of the risk from breathing our air statewide and in the South Coast Air Basin ("SCAB").[6] Further, the South Coast Air Quality Management District ("SCAQMD") in the Multiple Air Toxics Exposure Study II ("MATES II") identified harbor-area communities as having among the highest cancer risks in the South Coast.[7] The MATES II study identified mobile sources, i.e. trucks, trains, ships, etc., to be the primary sources of toxic diesel particulate emissions.[8]

CARB recently revised its analysis of annual impacts from PM2.5 pollution. Previously, CARB estimated that statewide, 2,400 premature deaths annually are linked to goods movement, mostly from particulate pollution and 50% of these deaths are in the SCAB.[9] Now, as the chart below demonstrates, CARB estimates that there are 3,700 premature deaths statewide associated with PM2.5 from Goods Movement activities.[10]

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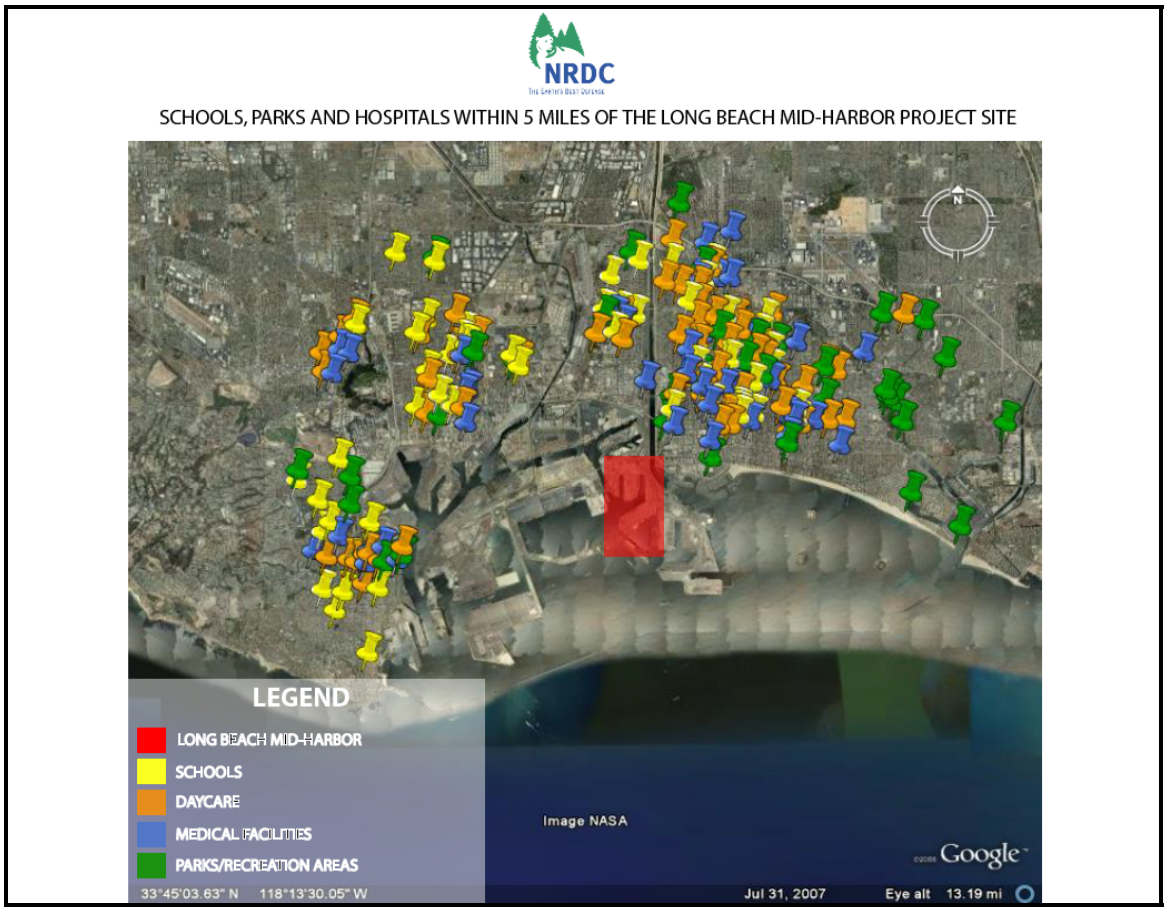
[4] DEIS/DEIR, at Figure 4-1.
[5] CARB, *Emissions Reduction Plan for Ports and Goods Movement in California*, 7 (2006)(hereinafter "ERP").
[6] ERP, at 7.
[7] SCAQMD, Multiple Air Toxics Exposure Study for the South Coast Air Basin-II, at ES-5 (March 2000) *available at* http://www.aqmd.gov/matesiidf/matestoc.htm. (hereinafter "MATES II").
[8] MATES II, at ES-3, ES-9.
[9] ERP, What's New-1 at 4.
[10] CARB, *Methodology for Estimating Premature Deaths Associated with Long-Term Exposures to Fine Airborne Particulate Matter in California Draft Staff Report*, (May 22, 2008) [*See* "Attached Literature" Exhibit A].

Table 6: Annual premature deaths associated with PM2.5 from Goods Movement activities[1]

Pollutant	*Low*	*Mean*	*High*
Primary Diesel PM	600	2,000	3,500
Secondary Diesel PM (Nitrates)	480	1,600	2,800
Secondary Diesel PM (Organic Aerosols)	15	49	85
Other Primary PM2.5[2]	12	39	68
Statewide Total[3]	***1,100***	***3,700***	***6,500***

[1]For the year 2005, these estimates do not include the contributions from particle sulfate formed from SO_X emissions, which is being addressed with several ongoing emissions, measurement, and modeling studies. Results listed are based on the previous emission inventories used in the Goods Movement Emission Reduction Plan in April of 2006 but with the new PM2.5-mortality relationship of 10 percent per 10 $\mu g/m^3$ increase in PM2.5 exposures; these values may change if emissions inventories are updated.
[2]PM2.5 includes tire wear, brake wear, and particles from boilers, which are not covered under primary diesel PM.
[3]Totals do not add up due to rounding.

Residents of Long Beach and other harbor area communities will undoubtedly face additional impacts due to the increased pollution from this project. For sensitive populations, such as children and the elderly, and for those who live and work in close proximity to these major sources of diesel exhaust, the risk will be even higher. Using Google Earth, the Natural Resources Defense Council ("NRDC") created the map below showing the myriad of sensitive sites within a 5-mile radius of the Middle Harbor Project. This chart clearly demonstrates the need for strong protections to ensure the health of these most sensitive populations are protected from the ills of port operations.



In this submission, we are attaching several studies that should be evaluated in improving the DEIS/DEIR.

Moreover, in addition to the huge impacts on residents and workers closest to the sources of emissions, port operations pose a particularly acute threat to regional air quality. The South Coast Air Basin ("SCAB"), where POLB is located, consistently ranks near the top of the lists for the nation's filthiest air quality. Freight transport, including the operations at the Port, greatly contributes to the persistent failure of the SCAB to meet clean air standards established by the Environmental Protection Agency. In fact, the SCAQMD has determined that the ports of Los Angeles and Long Beach are the single largest fixed-source of air pollution in Southern California. Pollution from the ports is responsible for more than 100 tons per day of smog and cancer-causing nitrogen oxides, more than the daily emissions from all 6 million cars in the region.[11] Without all feasible mitigation, the SCAB could fail to achieve the federal annual PM2.5 standard by 2014. This project proposes to add additional pollution that would not have occurred if the project was not

[11] SCAQMD, 2007 Air Quality Management Plan ("AQMP"), at IV-A-146.

built. Against this backdrop, there are several deficiencies in the DEIR/S that must be addressed.

II. The DEIR/S's Project Description is Inadequate.

The DEIR/S's project description fails to address numerous Project features. These omissions skew the DEIR/S's analysis of impacts and, thus, undercut the validity of the entire document under CEQA. Without a complete and accurate project description, an agency and the public cannot be assured that all of a project's environmental impacts have been revealed and mitigated.

"An accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR."[12] A complete project description is indispensable because "[a] curtailed or distorted project description may stultify the objectives of the reporting process.[13]

The DEIR/S's description of the proposed Project fails to meet this mandate in a number of respects. First, the Project description does not provide any specificity regarding the loading and unloading procedures at the expanded facilities. The DEIR/S acknowledges that many hazardous materials will be handled at the new project site.[14] Petroleum products, and certainly others identified in the document, have very different potential impacts than non-hazardous materials. Loading and unloading procedures could implicate several potential impacts, including direct discharges and discharges through storm water runoff into receiving waters. The CEQA Guidelines define a project as "the whole of an action, which has potential for resulting in a physical change in the environment."[15] The Project under review thus clearly includes these activities. In order for the public to have an opportunity to meaningfully comment on these impacts, the revised DEIR/S must disclose more detail regarding the protocol for handling hazardous materials at Middle Harbor.

Second, with respect to the dredging description, the DEIR/S describes only a portion of the actual dredging required for the Project. The DEIR/S describes the proposed dredging that would occur initially to implement the Project, but omits any description of future maintenance dredging activities, which are an integral part of most dredging projects. The revised DEIR/S must include an accurate and complete estimate of the frequency and volume of dredged material as part of the project description, and the analyses of dredging impacts must take these ongoing activities into account.

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[12] *County of Inyo v. City of Los Angeles* (1977) 71 Cal. App. 3d 185 192-93.
[13] *Id.* at 199; *see also San Joaquin Raptor/Wildlife Center v. Stanislaus County*, 27 Cal.App.4th 713, 730 (1994) ("An accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity.")
[14] DEIR/S, at 3.10-1.
[15] CEQA Guidelines § 15378.

Third, the DEIR/S's discussion of the need for the Project is circular. On the one hand, the Port contends that it cannot accommodate projected growth without facility improvements and upgrades.[16] On the other hand, long-term forecasts didn't take into account capacity limitations of infrastructure.[17] In sum, the Port relies on forecasts that assume new infrastructure but then justifies the new infrastructure to accommodate the forecasted growth. The Port cannot have it both ways. The revised DEIR/S should include demand forecasts under existing conditions to provide a true picture of forecasted growth under the No Project Alternative.

Finally, CEQA requires the Port to assess and consider alternative uses for this terminal, which includes development smaller container terminal.[18] By starting with the intention to "increase and optimize cargo handling efficiency of the Port"[19] the deck has been stacked at the outset to uncritically validate the project. Any alternative or mitigation measure that takes away from "increas[ing] and optimiz[ing] cargo handling efficiency of the Port"[20] will be deemed to violate the overall purpose of the project. For example, by utilizing such an erroneous project description, a broader range of smaller container operations were excluded from consideration. By predetermining the outcome, the Port has fallen into the trap warned by the court in *County of Inyo*, and it has precluded an open discussion of the various uses of this land in violation of CEQA.

III. The Port's Past Failure to Effectively Mitigate Its Impacts Provides Great Concern.

Courts allow a review of prior shortcomings in analyzing the adequacy of mitigation measures. The Supreme Court has stated that "[b]ecause an EIR cannot be meaningfully considered in a vacuum devoid of reality, a project proponent's prior environmental record is properly a subject of close consideration in determining the sufficiency of the proponent's promises in an EIR."[21] As one of the largest fixed source of pollution in the region,[22] the Port should have made greater strides in protecting residents from its harmful pollution before moving forward with a project that will increase throughput and will increase emissions.[23] While the Port has developed the CAAP, it is falling way behind in implementing some of the key measures contained within it. For example, the ports failed to meet the Spring 2007 deadline to adopt "San Pedro Bay Standards" that would commit the ports to reducing air pollution to levels that would help the region

[16] DEIR/S, at 1-4.
[17] *Id*.
[18] Cal. Pub. Resources Code §§ 21002 et seq.
[19] DEIR/S, at ES-2.
[20] *Id.*
[21] *Laurel Heights Improvement Assoc. of San Francisco v. Regents of the University of California*, 47 Cal.3d 376, 420 (Cal. 1988).
[22] SCAQMD, Air Quality Management Plan, at IV-A-146.
[23] Letter from NRDC et al. to Mayor and Port of Los Angeles and Mayor and Port of Long Beach, September 25, 2007.

attain federal air quality standards.[24] Moreover, the Port is behind schedule in implementing several clean air technologies that will provide demonstrable benefits to harbor-area residents and the region in general.

This past record of delay in implementing feasible technologies to reduce pollution raises significant red flags for those mitigation measures that are not truly enforceable and do not require strict timelines. CEQA is clear that "[m]itigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding agreements."[25] As such, we articulate below several concerns about the mitigation measures contained within the DEIR/s because they are unduly vague and fail to insure residents that clean up of sources will occur.

IV. The Air Quality Analysis and Associated Mitigation Measures Are Inadequate Under CEQA and NEPA.

a. Failure to Comply with the Clean Air Action Plan in Adopting San Pedro Bay Standards Serves as a Major Flaw of this Project.

The Port promised in Section 2.2 of the CAAP that it and the Port of Los Angeles would establish these standards for the San Pedro Bay:

- Reduce public health risk from toxic air contaminants associated with port-related mobile sources to acceptable levels.
- Reduce criteria pollutant emissions to the levels that will assure that port-related sources decrease their "fair share" of regional emissions to enable the South Coast Air Basin to attain state and federal ambient air quality standards.
- Prevent port-related violations of the state and federal ambient air quality standards at air quality monitoring stations at both ports.

As the CAAP states: "[P]rojects that meet the Project Specific Standard associated with health risk must also meet the criteria pollutant emissions reductions associated with their "fair share" of regional emissions, and health risk reductions, as stated in the San Pedro Bay Standard."[26]

In the Middle Harbor case, the decision makers cannot know whether the project specific standards are tough enough precisely because San Pedro Bay Standards have not been adopted by either port. The monitoring stations whose data is available on the ports' CAAP website consistently show that PM 2.5 emissions are well above the federal and

[24] *Id.* at 26-27.
[25] CEQA Guidelines § 15126.5(a)(2).
[26] CAAP Final Technical Report at 24.

California annual average standards.[27] The recent MATES III report from the Southern California Air Quality Control District[28] shows that the areas of highest cancer risk in the District are those immediately adjacent to the Ports – just as they were in the MATES II report.[29] Accordingly, it is impossible for decision makers to know whether moving forward with this project will allow the Port to meet clean air goals because the goals have not been established yet. Moreover, this is not an issue that is in front of the Port for the first time. On September 25, 2007, more than ten months ago, several members of the CAAP stakeholder group brought the extreme delay in setting these standards to the Port's attention. While we appreciate the Port providing an explanation of the difficulty in setting these standards at the last CAAP stakeholder meeting, we also note that publishing the Middle Harbor Project DEIR/S was a large task too, and the Port managed to produce this document. As such, we would prefer that resources be shifted to complete this critical CAAP commitment before moving forward with work on the Middle Harbor Project.

Given these circumstances, it would not be in the public interest to decide whether to certify the Middle Harbor Project or approve the Project before the San Pedro Bay Standards promised in the CAAP have been adopted.

b. The Air Quality Analysis Makes Several Unsupported Assumptions.

Initially, the air quality analysis is flawed in several respects. The Port has engaged in an analysis that assumes many of the benefits of the CAAP will proceed even in the unmitigated air quality numbers. Given that the CAAP is only a five year plan that could be changed at any point, the Port must include actual enforceable mitigation measures as a part of this project. Moreover, CAAP was designed by the Ports to be implemented through leases, so we are discouraged by the failure of the environmental document to include specific, enforceable mitigation measures. Before discussing the mitigation, it is important to cull out some of the major flaws in the air quality analysis. The following bullets provide a list of several assumptions that lack support:

- The air quality analysis assumes that 33% of the OGVs would cold-iron by 2010.[30] There is no basis to assume this without an enforceable commitment to achieve this level of cold-ironing.
- In its unmitigated emissions analysis for auxiliary engines, the Port assumes that 100% of vessels calling at the Port will use .2% Marine Gas Oil ("MGO").[31] The Port has provided no basis to conclude that 100% of ship auxiliary engines will

[27] See http://caap.airsis.com/. The U.S. EPA standard for annual average PM 2.5 exposure is 15 milligrams per cubic meter. The analogous California standard is 12 milligrams per cubic meter.
[28] SCAQMD, Draft Report Multiple Air Toxics Exposure Study-III, at ES-3 (Jan. 2008), *available at* http://www.aqmd.gov/prdas/matesIII/matesIII.html (hereinafter "MATES III").
[29] *See* MATES II.
[30] DEIR/S, at A-1-5.
[31] *See* DEIR/S, at Table A.1.2-Alt1-U9, Table A.1.2-Alt1-U10.

burn .2% MGO within the timeframes analyzed in the DEIR/S because the unmitigated project will not have any enforceable commitment to use this fuel until 2012 when the CARB regulation applies.[32] Even with the CARB regulation, the Port will need a backstop because industry groups may sue to block implementation of this regulation. Perhaps, the Port relies on its voluntary fuel incentive program that is set to run from July 2008 until the end of the June 2009 as the basis to assume 100% use of .2% sulfur fuel.[33] However, given that this is simply a one year program and there is not even 100% participation, this should not be included in the unmitigated emission numbers.

- In its unmitigated emissions analysis for auxiliary engines, the Port also assumes 100% compliance with vessel speed reduction. It is our understanding that under the Port's voluntary program, there is not 100% compliance. This defect in the analysis must be cured.
- It is unclear whether the Port included the 2005 ARB/Railroad Statewide Agreement in its emissions assumptions for the mitigated and unmitigated emissions. This should not be included in these assumptions, and if the Port relied upon emissions assumptions for its analysis, it should write those assumptions as a mitigation measure. For example, although the Statewide Agreement includes a provision for idling, there are many exceptions to this provision. In addition, there is no assurance that even the agreed upon idling scenarios would be limited to 1.5 hours, since the Statewide Agreement contains exemptions for self-determined "essential" idling and CARB enforcement staff cannot feasibly enforce more than a small portion of idling events. Please clarify whether this was assumed in the next version of the document.
- Commenters could not find the description in the DEIR/S of what peak daily emissions would entail. The DEIR/S claims that "annual average daily emissions…are more representative of typical port conditions, as peak daily conditions occur more infrequently and they are based on a more theoretical set of assumptions."[34] However, it is hard for commenters to verify this without the assumptions that form the basis for peak daily emissions. Commenters believe that the DEIR/S should not be so quick to assume that peak daily emissions will not occur at the facility.
- The DEIR/S air quality analysis assumes that the mitigated project will comply with the CAAP. However, as mentioned above, the CAAP is only a five year plan set to expire in 2011. The Port has provided no guarantee that all the measures within the CAAP would extend beyond this 2011 date.[35] The

[32] Even reliance on the CARB regulation should be backstopped with enforceable mitigation commitments
[33] *See* POLB News Release, Vessel Fuel Incentive Program Launched (July 10, 2008)(noting "projected participation of 50%").
[34] DEIR/S, at 3.2-30.
[35] DEIR/S, at 3.2-20.

appropriate approach here is to codify the mitigation measures as enforceable commitments with clear timelines under CEQA and NEPA.

- Since the publication of this report, CARB has revised its numbers on the impacts of goods movement in California. The chart on page 3.2-59 of the AQ should be updated to reflect these updated numbers.

c. The Project Must Include An Analysis of Construction Emissions and Operational Emissions Combined.

This project entails significant construction to take place over a decade.[36] Accordingly, construction emissions and operations emissions will take place concurrently. Given the significant construction involved in the development of this project (e.g. 9 stages over 2 construction phases), the environmental documentation must include an analysis of the emissions combined. Moreover, this analysis should include information on peak daily construction and peak daily operational emissions combined.

d. The Clean Air Act Conformity Analysis Must be Improved.

i. Reliable Scientific Evidence Shows Elevated PM2.5 in the Near-Highway Environment.

The evidence that highway emissions have a significant impact on air quality in the near-highway environment is not new. MATES-II first identified the importance of highway emissions in 2000. Although MATES-II was focused on the significance of diesel particulate as the largest source of cancer risk in the air basin, it also provided important findings that demonstrated that higher levels of diesel pollution occur near highways. The Report found the greatest exposure to diesel PM at locations where "the dominance of mobile sources is even greater than at other sites." It also found that "model results, which are more complete in describing risk levels…than is possible with the monitored data, show that the higher risk levels occur… near freeways." "Results show that the higher pollutant concentrations generally occur near their emission sources." These findings provided evidence that neighborhoods near highways would experience higher concentrations than the regional averages. Based on these observations, MATES-II concluded that "[f]or mobile source compounds such as benzene, 1-3 butadiene, and particulates associated with diesel fuels, higher concentration levels are seen along freeways and freeway junctions." This work identified the near-highway environment as a high risk environment where elevated levels of PM would be expected because of emissions from diesel vehicles.

This triggered further research in the region. A team from USC conducted seminal studies to measure the concentrations of highway pollutants as a function of distance

[36] DEIR/S, at 1-25.

from the I-710 and I-405 freeways.[37] Both studies included measurements of concentrations of CO and black carbon (BC) at increasing distances from the freeway. CO and BC were intentionally selected because their ambient concentrations are strongly related to vehicle emissions. Black carbon, also measured as elemental carbon (EC) in the monitoring reported in MATES-II and MATES-III, is a species of PM2.5 that was used in the MATES-II study as a measure of diesel PM in the Air Basin. The MATES-III study reported more recent investigations showing that elemental carbon is an inadequate measure of diesel PM, and that other methods show that total diesel PM is at least 72% greater than elemental carbon.[38] The AQMP relies on the MATES-III data to identify elemental carbon as one of the six major species of PM2.5 in the South Coast air shed that contribute significantly to PM2.5 nonattainment.

The freeway studies show the dramatic increase in BC/EC in the near-highway environment. The studies measured concentrations at five distances downwind and upwind from the freeways. By comparing the upwind measurements which provide a good estimate of regional carbon loadings in the Air Basin with the downwind measurements, these studies provide a good estimate of the increase in concentrations of primary carbon particles emitted from highways in the vicinity of major highways compared to regional concentrations measured in the urban air shed.

The BC measurements from each of the freeway studies are summarized separately below along with measured upper and lower limits, and the observed difference between the comparable upwind and downwind BC concentrations:

Measured Average (and Upper and Lower Limit) BC Concentrations at Increasing Distances from the 405 Freeway

Downwind Distance (m)	**BC (µg/m3)**	**BC (µg/m3) Downwind-Upwind Average Concentration**
30	5.4 (3.4-10.0)	4.75
60	3.2 (3.0-3.5)	2.55
90	2.5 (2.4-2.6)	1.85
150	1.6 (1.1-2.0)	0.95
300	1.3 (1.1-1.5)	0.65

[37] *See* Zhu Y. et al., *Concentration and Size Distribution of Ultrafine Particles Near a Major Highway*. J. Air & Waster Management, 52: 1032-1042 (2002) [*See* "Attached Literature" Exhibit B1]; Zhu Y. et al. *Study of Ultrafine Particles Near a Major Highway With Heavy-Duty Diesel Traffic*. Atmospheric Environment, 36: 4323-4335 (2002). [*See* "Attached Literature" Exhibit B2]

[38] MATES-III, at 2-9.

Measured Average (and Upper and Lower Limit) BC Concentrations at Increasing Distances from the 710 Freeway

Downwind Distance (m)	BC (µg/m3)	BC (µg/m3) Downwind-Upwind Average Concentration
200 m (upwind)	4.6 (3.1-5.9)	N/A
17 m	21.7 (20.3-24.8)	17.1
20	19.4 (16.5-21.6)	14.8
30	17.1 (12.6-19.3)	12.5
90	7.8 (4.5-9.3)	3.2
150	6.5 (3.9-9.2)	1.9
300	5.5 (3.5-7.7)	0.9

Notice the large increase in the near-highway concentrations of BC downwind of the I-710 compared to the I-405. The Interstate 710 study was conducted in part because the freeway has a much higher percentage of heavy-duty diesel truck travel than the Interstate 405 freeway. Average traffic flow during sampling periods was 12,180 vehicles per hour with more than 25 percent of vehicles being heavy-duty diesel trucks. This is perhaps the highest density of diesel truck traffic anywhere in the U.S. Measurements were taken at 17, 20, 30, 90, 150 and 300 meters downwind and 200 meters upwind from the center of the freeway. As with the 405 freeway study, relative concentrations of CO and BC downwind from the freeway were found to be many micrograms per cubic meter greater than upwind concentrations and tracked each other well as one moves away from the freeway.

These studies show that in the impact zone downwind of a heavily traveled freeway in the Air Basin with average truck traffic (I-405), emissions of BC from the freeway will add 4.75 µg/m3 to PM2.5 at 30 meters from the freeway dropping off to 0.65 µg/m3 greater than the regional concentration at 300 meters. The study also shows a freeway with heavy truck traffic will add 12.5 µg/m3 at 30 meters dropping off a 1.9 µg/m3 increase above the regional levels at 300 meters.

The incremental effect of highway emissions downwind from the I-710 have been confirmed in recent weeks by data released as part of the deployment of Mobile Monitoring Platform Results in the I-710 corridor.[39]. These results include BC concentrations within the so-called buffer zone 500 feet from the freeway compared with results measured beyond the 500 feet buffer. Concentrations measured in West Long Beach residential area on the morning of July 17, 2007, show nearly a four-fold greater BC level within 500 feet from the 710 freeway compared to the same neighborhood outside the 500 feet zone (18 vs. 5 µg/m3). This difference of 13 µg/m3 is highly consistent with the upwind/downwind results reported in the original 710 study.

[39] *See* CARB, Mobile Monitoring Platform Update and Results, April 17, 2008, at the HCMS Community Meeting, Wilmington Senior Center. [See "Attached Literature" Exhibit C]

These results were supported by measurements made in other regions. A study in Seattle, WA measured the relationship between BC levels at an urban near-roadway monitoring site, and a heavily traveled freeway.[40] This study showed that near the I-5 there was frequently peak evening rush hour BC levels of 5 µg/m3 or above. The BC data was obtained from the Olive Street monitoring site located at the EPA-designated micro scale within the I-5 traffic corridor. The traffic volumes and BC readings correlate well, supporting the hypothesis that traffic is a major contributor to PM2.5 at the site, given that BC originates from motor vehicle exhausts as ultrafine or fine particles. The Olive Street air monitoring site is about 20 meters west of the southbound lane of I-5 in the CBD. This area of I-5 contains express lanes along with several high use overpasses, which all contribute to the area traffic. In 2003, daily volumes along this section of I-5 average 284,700 vehicles per day. Light-duty traffic has peak weekday flows above 10,000 vehicles per hour, with diesel traffic of about 1,000 vehicles per hour (10%). BC tends to peak during weekdays with high traffic volumes, and is sharply lower on weekends. This reduction parallels the significantly lower weekend diesel traffic volumes. Peak BC measurements occur during the afternoon rush hour (4-6 pm). Correlations between light-duty vehicle volumes and BC peaks (readings above 5 µg/m3) are better than those between diesel truck volumes and BC peaks. This may occur because light-duty volumes overwhelm diesel truck volumes during this peak period (93 percent of the traffic volume is from light-duty vehicles).

The Seattle study also measured BC at a Beacon Hill site about 600 meters from a major freeway, which is used as the urban background for Seattle. Hourly BC readings during the study period stayed within the range of 0 to 2 µg/m3, with readings mostly below 1.0 µg/m3. Comparing these sites demonstrates results similar to the data obtained from the I-405 study with BC concentrations in the near-highway environment being about 4 µg/m3 greater than the urban regional concentration.

The East Bay (California) Children's Respiratory Health study[41], conducted with support from Cal EPA's Office of Environmental Health Hazard Assessment, obtained measurements of PM2.5 concentrations at monitors located in the schoolyards of 10 middle schools in communities across the East Bay. This study reported the distance of each monitor from major freeways, the traffic density on the nearest freeway, and whether the school was located downwind of the traffic source. The PM2.5 measured at the school closest to (60 meters away) and downwind from a major freeway, was 15 µg/m3 which was 3 µg/m3 greater than the 12 µg/m3 PM2.5 concentrations reported at the regional air district network monitor located about 1 mile from major traffic sources.

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[40] Curtis H. et al., *Traffic Flows and Black Carbon Levels in the Urban Seattle Environment,* (Fall 2004). [See "Attached Literature" Exhibit D]

[41] Kim J. et al., *The East Bay (California) Children's Respiratory Health Study,* (June 2004). [See "Attached Literature" Exhibit E].

The recently released West Oakland Health Risk Assessment[42] conducted by the CARB provides similar results from a modeling study that shows highly elevated concentrations of diesel PM in a neighborhood downwind of the Port of Oakland and surrounded by heavily traveled major freeways. The risk assessment showed that despite the significant contribution of emissions from ocean going vessels, local watercraft, railyard and port activities, the emissions from non-port related on-road truck operations accounted for 80% of the diesel PM in West Oakland.

These and other studies provide credible evidence that PM2.5 concentrations in the near-highway environment are expected to range from 3 µg/m3 to as much as 13 µg/m3 greater than concentrations measured at regional monitors located outside the high impact zone of heavily traveled freeways.

Data from these highway studies were expressly relied upon by US EPA to decide that it must establish a transportation conformity program to review the localized impacts of PM2.5 emissions from highways.[43] EPA concluded that the evidence of localized impacts from highways was sufficiently compelling to require that "it is essential that a quantitative PM2.5 or PM10 hot-spot analysis be performed for all projects of air quality concern." *Id.* If the evidence of localized impacts was sufficient to justify a national regulatory program to protect against NAAQS violations caused by new highways, it is also compelling enough to require a quantitative analysis to ensure that the SIP will protect against existing localized NAAQS violations caused by highway emissions.

ii. The Conformity Analysis is Inadequate Because it Fails to Assure Attainment in the Near-Highway Environment.

Despite the Port's claims that - "[t]he POLB regularly provides its Port-wide cargo forecasts to SCAG for the development of the AQMP" and that "[c]argo projections have been included in all SCAB attainment and maintenance plans, including the most recent EPA-approved 1997/1999 SIP. As a result, the Proposed Project would conform to the most recently EPA-approved SIP,"[44] - these attainment plans failed to consider the spike in emissions occurring in the near-highway environment. As such, the Port cannot claim the Project will conform under the Clean Air Act because the SIP's and associated documents do not show attainment in the near highway environment.

Moreover, given the data exhibiting the spike in emissions in the near highway environment demonstrates a need for the Port to ensure greater monitoring and protection of those residents residing in close proximity to these major goods movement freeways.

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[42] CARB, *West Oakland Health Risk Assessment*, (March 2008) [See "Attached Literature" Exhibit F]. Appendices A through E not attached and available at http://www.arb.ca.gov/ch/communities/ra/westoakland/westoakland.htm.
[43] *See* Transportation "hot spot" rule, 71 Fed.Reg. 12468, 12494 (March 10, 2006).
[44] DEIR/S, at 3.2-12.

e. Mitigation Measures Must Be Strengthened in the DEIR/S.

i. AQ-6: Low-sulfur Fuels in OGV.

We are pleased that the DEIR/S mentions an emissions reduction strategy for the main engines of ocean-going vessels that is in line with the auxiliary engine requirements. However, the DEIR/S provides an exceptionally vague description of the commitments related to use of low sulfur fuels. At the CAAP Stakeholder group meeting that took place on July 25, 2008, Port of Long Beach staff indicated that the low sulfur fuel requirements would be implemented 100% upon lease renewal. However, the document provides no detail on the timeline and percentages of compliance. This lack of specificity violates CEQA. This must be cured in subsequent versions of the EIR/S.

Cleaner fuels in both types of engines could significantly reduce emissions from virtually unregulated engines transiting and maneuvering at the Port of Long Beach. In its current state, the mitigation measure is unenforceable, and as such, must be strengthened in subsequent iterations of the environmental document. Strengthening this measure could result in significant decreases in PM10 and PM2.5 levels as well as reduced cancer risk from DPM.

The Maersk commitment to cleaner fuel, information provided by marine engine manufacturers, and CARB's Auxiliary Engine Regulation now provide substantial evidence that any technological concerns regarding the use of cleaner fuels in auxiliary engines and main engines have been addressed. At a recent Maritime Working Group meeting, representatives of some of the world's biggest engine manufactures and shipping lines including MAN B&W, Wartsila, BP Shipping, DNV, Maersk and other participants, concurred that the implementation of cleaner fuels in main engines is an excellent approach to achieve significant emission reductions in a cost-effective manner.[45] They consider fuel switching to be a standard operation that can be conducted safely by any competent marine engineer. These technical experts made it clear that low sulfur levels, such as 1,000 ppm, in marine fuels were compatible with large ship engines and maritime operations in general, and that if it were required, the "free market" would respond and make supplies available. In fact, it is our understanding that NYK Line at the Port of Los Angeles is currently using <.1% sulfur fuel.[46]

Given the likely shortfall that exists to achieve the CEQA significance thresholds in the short-term horizon years, it is imperative that the DEIR/S pursue the cleanest lower sulfur distillate fuels in both auxiliary and main engines for all ships visiting these terminals. Additionally, CARB announced at their September 25, 2007 marine regulation workshops that emissions from boilers are ten times higher than previously calculated.

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[45] The Maritime Air Quality Technical Working Group, Focus on Fuel Switching, hosted by CARB, July 24, 2007; http://www.arb.ca.gov/ports/marinevess/meet.htm.
[46] SCAQMD, Mitigation Measure Examples: Ocean Going Vessels, *available at http://www.aqmd.gov/CEQA/handbook/mitigation/ogv/TableIX.doc*.

The resulting SOx, NOx and PM emissions must be addressed at the outset with the use of significantly cleaner fuels. In fact, without a high level of stringency on marine fuel usage for auxiliary engines, main engines and boilers, the South Coast AQMD's ability to meet Federal Standards for PM2.5 will be jeopardized.

Therefore, we recommend that the DEIS/DEIR require the following:
• Ensure 100% compliance and enforcement of the 2,000 ppm requirement for auxiliary engines, regardless of the status of the CARB auxiliary engine regulation; and
• By January 1, 2010, take necessary steps to ensure 100% compliance and enforcement of the 1,000 ppm requirement for auxiliary engines (interim deadlines should include a 50% requirement by 2009).
• Main engines and boilers, at a minimum, should fall under the same requirements and timetable as we recommend for auxiliary engines and, by 2010, main engines should be required to use 1,000 ppm fuel.

Ultimately, the Port must commit to unconditionally require low sulfur fuel immediately upon lease renewal. Finally, we want to emphasize that dock-side power should not be viewed as a substitute for cleaner fuels. These two strategies must be used in concert to ensure that emissions from large vessels are significantly reduced and significance thresholds are met.

ii. Locomotive Mitigation Must Be Strengthened.

While we appreciate the inclusion of on-dock rail in this project, the rail mitigation measures are completely lacking. We have identified two major deficiencies.

First, the project should incorporate more on dock rail. Though rail is a more efficient means to transport cargo rather than adding more drayage trucks, the proposed expanded Pier F intermodal rail yard would handle only 24 percent (796,800 TEUs per year) of the terminal's expected throughput.[47] The Port fails to explain why this number is not higher. In fact, the Port of Long Beach's own consultants explain that "[a] near-dock intermodal rail facility has some attractive characteristics, but it also has significant disadvantages and negative impacts relative to on-dock facilities."[48] Considering that current demand on the Alameda Corridor is "very low" and that forecasted project-related increases in trains could be "easily accommodated,"[49] the Port needs to explore further increasing on-dock rail to at least 50 percent. We suggest that the actual percentage should be even greater—more on the order of 70% or more[50]—because clean rail is a

[47] http://www.polb.com/civica/filebank/blobdload.asp?BlobID=5131 pg. 5
[48] *See* Moffatt and Nichol, *Screening Analysis of Container Terminal Options Part 2: Evaluation of Options*, 43 (Aug. 28, 2007).
[49] DEIR/S, at 3.5-21
[50] The Port should commit to a similar or greater percentage on-dock rail usage as committed to by the Port of Seattle (approximately 70%). *See* NRDC and CCA, *Harboring Pollution: The Dirty Truth about U.S. Ports* at 42.

more efficient means to transport the additional cargo generated from this project rather than adding more drayage trucks to transport containers to off-dock rail facilities. The increase of rail will also assist with the mitigation of impacted highway segments (MM TRANS-2.1), where the POLB is currently depending on Caltrans to implement measures in order to avoid significant impacts.[51]

Second, the Project should seek to expeditiously transfer to electrified rail. There is not even an analysis of this in the DEIR/S. Electrifying the rail will also aid in reducing the GHG footprint from this proposed project.

Third, *MM AQ-9 (Clean Railyard Standards)* Must Be Augmented—The Port states that the Clean Railyard Standard (MM AQ-9) will incorporate the cleanest railyard technologies but fails to quantify any section of the measure because "some of the systems are not yet available."[52] Yet even the technologies that are ready and commercially on the market are not assessed or mandated as requirements. The following systems within the Clean Railyard Standard should be quantified and phased in for locomotives:

- **Diesel electric hybrids**—the Green Goat provided by RailPower has been commercially available since 2005, and provides a 40 to 70 percent reduction in greenhouse gases and diesel fuel consumption.[53]

- **Multiple generator sets**—Union Pacific has been testing and operating Genset locomotives since 2005, and currently owns 159 Genset locomotives running in California and Texas. The Genset yard switcher reduces emissions of NOx by 80 percent and particulate matter by 90 percent while using as much as 30 percent less fuel compared to current older switching locomotives. The fuel savings also translates into a 30 percent reduction of greenhouse gas.[54]

- **Idling shut-off devices—**Line Haul locomotives can spend up to 40 percent of their time idling and switchers as much as 90 percent.[55] At least four EPA-recommended models of idling shut-off devices are already on the market for locomotives,[56] and CARB signed agreements with UP and BNSF in 2005 ensuring "idling devices limiting idling to 15 minutes" were to be installed on 99 percent of the 450 CA-based locomotives by July 1, 2008. [57]

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[51] DEIR/S, at 3.5-18.
[52] DEIS/DEIR, at 3.2-34. http://www.polb.com/civica/filebank/blobdload.asp?BlobID=5127
[53] http://www.dieselforum.org/technology-spotlight/diesel-hybrid-corner/bnsf-green-goat-release/
[54] http://www.uprr.com/newsinfo/chi-genset.shtml
[55] SCAQMD. *Container Movement Technology Forum and Roundtable Discussion.* January 2007. http://www.aqmd.gov/TAO/ConferencesWorkshops/Container_Forum-01-26-07/ContainerForumReport.pdf. pg. 27
[56] http://www.epa.gov/otaq/smartway/idlingtechnologies.htm#loco-mobile-sdsu
[57] http://www.arb.ca.gov/railyard/hra/031808hra_stra_fs.pdf

iii. Shoreside Power Mitigation is Weak.

Mitigation measure AQ-5 must be improved. We are disappointed that only 33% of the vessels calling at this terminal will cold-iron by 2010. While this may technically comply with the CAAP commitment, this does not comply with the Port's duty to adopt all feasible mitigation. The DEIR/S should include a schedule to require 70% to 80% of all ships—both frequent and non-frequent visitors—to use shore-side power at every terminal by 2010 as exemplified by the China Shipping terminal and the RFP for Berths 206-209 at the Port of Los Angeles. In addition, there should be greater specificity on the percentages of use that will be achieved between 2010 and 2015. According to the Mitigation Measure, there will be a jump from 33% to 100% between 2010 and 2015. Does this mean that the terminal could wait until 2014 to accelerate its use of shoreside power? Finally, we remind the port that in addition to being a way to mitigate traditional criteria pollutant emissions, cold-ironing serves to mitigate greenhouse gas emissions too.

iv. Main Engine Controls for New Vessel Builds and Existing Vessels Must Be Included as a Mitigation Measure.

The Port must include a mitigation measure for new vessel builds to require new vessels to utilize a combination of advanced control technologies to achieve fleet average emission reductions of 30% for NOx and particulates by 2014, and a 70% reduction of NOx and 50% reduction of particulates by 2023. Currently, there are many vessels on order to be constructed. Once those vessels are built, it is more difficult to control their emissions. Controls such as water injection, emulsified fuels or humid air are feasible technologies. In addition, SCR is a mature technology in use on a wide variety of sources including marine vessels. The feasibility of using advanced controls on marine vessel engines, including main engines, is supported by the recent proposal by the Marine Environmental Protection Committee of the International Maritime Organization to establish increasingly stringent marine vessel emissions limits.

v. The Construction Mitigation Measures Must be Improved.

The mitigation measures for construction are vague. We recommend that the construction mitigation comply with the following requirements:

Construction Equipment
Equipment[58] greater than 25 horsepower must:
(1) Meet current emission standards[59] *and*

[58] Equipment refers to vehicles such as excavators, backhoes, bulldozers propelled by an off-road diesel internal combustion engine.
[59] These standards are described in Division 3 Chapter 9, Article 4, Section 2423(b)(1)(A) of Title 13 of the California Code of Regulations, as amended. An explanation of current and past engine

(2) Be equipped with Best Available Control Technology (BACT)[60] for emissions reductions of PM and NOx, *or*
(3) Use an alternative fuel.

Diesel Trucks
On-road trucks used at construction sites, such as dump trucks, must:
(1) Meet current emission standards, *or*
(2) Be equipped with BACT[61] for emissions reductions of PM and NOx, *and*
(3) Any trucks hauling materials such as debris or fill, must be fully covered while operating off-site (i.e. in transit to or from the site).

Generators
Where access to the power grid is limited, on-site generators must:
(1) Meet the equivalent current off-road standards for NOx, *and*
(2) Meet a 0.01 gram per brake-horsepower-hour standard for PM, *or*
(3) Be equipped with Best Available Control Technology (BACT) for emissions reductions of PM.

Special Precautions Near Sensitive Sites
All equipment operating on construction sites within 1,000 feet of a sensitive receptor site (such as schools, daycares, playgrounds and hospitals)[62] would either:
(1) Meet US EPA Tier IV emission standards *or*
(2) Install ARB Verified "Level 3" controls (85% or better PM reductions), and
(3) Notify each of those sites of the project, in writing, at least 30 days before construction activities begin.[63]

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standards can also be accessed at http://www.dieselnet.com/standards/. Currently all new equipment are meeting the US EPA Tier II standards and most equipment also meets Tier III standards (all 100HP to 750HP equipment). Note that Tier IV standards would automatically meet the BACT requirement.

[60] Here BACT refers to the "Most effective verified diesel emission control strategy" (VDECS) which is a device, system or strategy that is verified pursuant to Division 3 Chapter 14 of Title 13 of the California Code of Regulations to achieve the highest level of pollution control from an off-road vehicle.

[61] Here BACT also refers to most effective VDECS as defined by the California Air Resources Board (CARB).

[62] Sensitive sites are defined and described in the CARB Air Quality and Land Use Planning Guidelines, 2005; http://www.arb.ca.gov/ch/landuse.htm.

[63] Notification shall include the name of the project, location, extent (acreage, number of pieces of equipment operating and duration), any special considerations (such as contaminated waste removal or other hazards), and contact information for a community liaison who can answer any questions.

vi. The Port Should Provide Funding to Provide Clinics and Other Sensitive Site Mitigation to Reduce the Impacts from Port Pollution.

To avoid injury to public health, the project must mitigate its impacts through the reduction of emissions to as near zero as possible, and this comment letter offers numerous measures that should be used in pursuing that goal. Given that increases in pollution are likely even after these measures are implemented and given the lasting effects of baseline pollution, further mitigation is needed to address the extraordinary impact of port related emissions on the respiratory health of communities near the ports and port-related goods movement corridors. The impact of this pollution is perhaps most demonstrable in children in the harbor area. According to the 2003 National Health Interview Survey, an estimated 9 million (12.5%) children under the age of eighteen in the United States have been diagnosed with asthma at some time in their lives. Data from the 2005 LA County Health Survey shows that 13.7% (381,000) of children 0-17 years old in LA County have been diagnosed with asthma. Research conducted by the Long Beach Health District demonstrates that 19.8% (28,000) of Long Beach children have been diagnosed with asthma.

Many residents of goods movement communities and workers at the ports have already suffered irreparable long term damage to their lungs – as noted earlier, diminished lung function in children generates lifelong health effects. The ports should fund the establishment of one or several medical facilities in Long Beach dedicated to the respiratory and general health of the people most affected by port emissions – those living in the neighborhoods closest to the port and along the I-710 corridor, and workers at the port.

Many of the goods movement adjacent neighborhoods in Long Beach and along the I-710 and other routes are heavily populated with low and moderate income families unable to afford health insurance. Similarly, while some workers at the port earn relatively high wages with good benefits, thousands of others earn low wages with few or no benefits. For example, the most recent academic study of port truck drivers – a class of workers severely impacted by diesel emissions – concluded that the drivers earn on average $29,000 per year, and that 90% of them lack health insurance.

Thus, funding for clinics should be sufficient not only to construct appropriate facilities, but also include adequate support for operations so that two classes of patients – residents of the identified goods movement adjacent communities and port workers can access the facility without out of pocket cost regardless of insurance status.

Finally, the Port needs to explore installation of air filtration system to protect residents from harmful levels of air pollution. The Port of Los Angeles agreed through the TraPac MOU to fund filtration systems in school in the vicinity of that project, and this Project should also include this type of mitigation.

f. The Cumulative Impacts Analysis Does Not Meet CEQA Guidelines.

CEQA requires that an EIR address cumulative impacts "when the project's incremental effect is cumulatively considerable."[64] The DEIR/S concedes that it will have many cumulatively considerable impacts under both CEQA and NEPA.[65] However, although there is some discussion of the incremental impact that the Middle Harbor project will have, there is no discussion of the effects of the recognized cumulative impacts as a whole on human health or the physical environment. Nor is there any discussion of how to mitigate the cumulative impacts of the identified Port projects.

This lack of analysis violates CEQA. CEQA Guideline 15130(b)(4) provides that the following (among others) element is necessary "to an adequate discussion of significant cumulative impacts . . . .(4) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available . . . ." The policy reason supporting Section 15130(b)(4) is that decision makers need to know, in deciding whether to approve a project, what the expected impacts will be on the ground as a result of all of the projects identified as cumulative impacts. A person living across the fence line from the Port breathes or will be breathing air that is affected by all of these projects, not just by the Middle Harbor Project or another individual project. At some point, the decision makers may decide, for example, that the overall health risks from Port development are just too high, even though the contribution of a single project may be relatively small – and they need the data and analysis to make this call. This is especially true given the conclusions of the recent MATES III study and CARB's updated study of the number of goods movement-related deaths in California each year.[66] But the data required to evaluate this issue is not present in the DEIR/S.

Of the list of projects on pages 3.2-108 to 3.2-109 of the DEIR/S, many have already commenced the formal planning process, and many have CEQA-related documents already in existence. There is sufficient data already available in documentation about these Port of Long Beach-related projects for the DEIR to describe the current environmental and health impacts from these projects, taken together, as well as the expected situation on the ground when and if the Middle Harbor project is constructed and operated. Each of these is a public project for which substantial environmental documentation is or will be available.[67]

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[64] CEQA Guidelines § 15130; *see also* CEQA Guidelines § 15355.
[65] DEIR/S, at 3.2-110.
[66] CARB, Methodology for Estimating Premature Deaths Associated with Long-Term Exposures to Fine Airborne Particulate Matter in California Draft Staff Report (May 22, 2008).
[67] For example, there are existing EIRs, Notices of Preparation or other environmental planning documents that can be consulted on these Port of Los Angeles projects listed in Table 4-1: Pier 400 / Plains All American, Berth 136-147, San Pedro Waterfront Project, Channel Deepening Project, Cabrillo Way Marina Phase II, Port Police Headquarters, Ultramar lease renewal, Berth 206-209, Southern California International Gateway, Port Transportation Master Plan, I-110/SR-

Nonetheless, as we noted in our initial comment letter, there is no discussion of the effects of the recognized cumulative impacts as a whole on human health or the physical environment. Nor is there any discussion of how to mitigate the cumulative impacts of the identified projects. This violates CEQA.

Finally, it is unclear why the DEIR/S excludes the I-710, Southern California International Gateway, and the Union Pacific ICTF projects in its cumulative impacts air quality analysis. This is especially egregious because this project will placed added stress to potentially force the need for these expansion projects. Accordingly, they should be included in the cumulative impacts section.

V. The Greenhouse Gas Analysis and Associated Mitigation Measures Are Inadequate Under CEQA and NEPA.

a. The DEIR/S Fails to Adequately Set Forth the Threat of Greenhouse Gas Emissions.

The DEIR/S's exceedingly cursory summary of the present and future impacts of global warming is inadequate and fails to fulfill the informational requirements of CEQA and NEPA. The DEIR/S devotes only one sentence to describe the impacts of global warming, stating that global warming and GHG emissions may lead to "potentially negative environmental, economic, and social consequences around the globe."[68] There is no discussion of what these consequences may be, how global warming will impact California, or how global warming will effect the environment throughout the United States and in other countries around the world.

CEQA requires that an "EIR must demonstrate that the significant environmental impacts of the proposed project were *adequately investigated and discussed* and it must permit the significant effects to be considered in the *full environmental context*."[69] Accordingly, the DEIR/S should at a minimum describe the cumulative impacts of global warming on the environment and how increasing GHG emissions will affect those impacts. Furthermore, an EIR "must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published…or…at the time the environmental analysis is commenced, from both a local and regional perspective."[70] In other words, the DEIR/S should describe the current state of the "local and regional" environment as it is affected by global warming in order

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47 Connector, Terminal Free Time, Pier Pass, Union Pacific ICTF Modernization. The same is true for Long Beach projects Middle Harbor Terminal Redevelopment , Piers G and J, and Pier T, and for the Alameda Corridor Transportation Authority / CalTrans project the Schuyler Heim Bridge Replacement and SR 47 Expressway.

[68] DEIR/S, at 3.2-8.

[69] CEQA Guidelines, § 15125(c), (emphasis added).

[70] CEQA Guideline § 15125(a)

to establish a baseline for comparing the impacts increased GHG emissions will have on the environment. Because an EIR is intended "to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action," the DEIS/R must be revised to adequately inform the public about the risks associated with increasing GHG emissions.[71]

Similarly, NEPA requires an EIS to "succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration."[72] This description "shall be no longer than is necessary to understand the effects of the alternatives" but "shall be commensurate with the importance of the impact."[73] In light of the seriousness and worldwide scope of global warming impacts and considering the cumulative nature of GHG emissions, an DEIS must describe the affected environment in sufficient detail to convey the potential risks both California and the world may face due to increasing GHG emissions.

To more accurately convey the severity of the impacts of global warming, the DEIR/S should be revised to include numerical estimates of the extent of projected impacts. The DEIR/S should include specific information about the projected impacts in California caused by GHG emissions, for example, by describing that loss for the Sierra snowpack is estimated to be between 30-90%, depending on the extent to which emissions are reduced now and in the near future.[74] Additional impacts projected for California by the end of the century include:

- Temperature rises between 3-10.5°F;
- 6-30 inches or more of sea level rise;
- 2-4 times as many heat wave days in major urban centers;
- 2-6 times as many heat-related deaths in major urban centers;
- 1.5-5 times more critically dry years;
- 25-85% increase in days conductive to ozone formation;
- 3-20% increase in electricity demand;
- 10-55% increase in the expected risk of large wildfires; and
- 7-30% decrease in forest yields (pine).

Id. By providing details as to the ranges of proposed impacts, and indicating that the higher-range of impact estimates are projected if GHG emissions continue to increase under a "business as usual" scenario, decision-makers and the public will be better

[71] *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 47 Cal.3d 376, 392 (1988).
[72] CEQ Regulation, §1502.15.
[73] *Id.*
[74] California Climate Change Center, "Our Changing Climate, Assessing the Risks to California." (2006). (*See* "Attached Literature" Exhibit G).

informed of the magnitude of the climate crisis and the urgency with which it must be addressed. Furthermore, the DEIS/R should consider supplementing its description of global warming impacts with data from the recently released report of the Committee on Environment and Natural Resources, the *Scientific Assessment of the Effects of Global Change on the United States* (May 2008).[75]

b. THE DEIR/S FAILS TO ANALYZE AND MITIGATE BLACK CARBON EMISSIONS

i. Background: Black Carbon Has a Significant Impact on Global Warming, and as a Short-Lived Pollutant, Mitigation Can Provide Immediate Significant Climate and Health Benefits

While the DEIS/R provides some treatment of traditional greenhouse gases, it utterly fails to address black carbon, an important short-lived pollutant that contributes to global and regional warming. Black carbon is produced by incomplete combustion and is the black component of soot. Although combustion produces a mixture of black carbon and organic carbon, the proportion of black carbon produced by burning fossil fuels, such as diesel, is much greater than that produced by burning biomass.

Black carbon heats the atmosphere through a variety of mechanisms. First, it is highly efficient at absorbing solar radiation and in turn heating the surrounding atmosphere. Second, atmospheric black carbon absorbs reflected radiation from the surface. Third, when black carbon lands on snow and ice, it reduces the reflectivity of the white surface which causes increased atmospheric warming as well as accelerates the rate of snow and ice melt. Fourth, it evaporates low clouds. Notably, black carbon is often complexed with other aerosols such as sulfates, which greatly increases its heating potential.[76]

Due to black carbon's short atmospheric life span and high global warming potential, decreasing black carbon emissions offers an opportunity to mitigate the effects of global warming trends in the short term.[77] Black carbon is considered a 'short-lived pollutant' (SLP) because it remains in the atmosphere for only about a week in contrast to carbon dioxide, which remains in the atmosphere for over 100 years. Furthermore, the global warming potential of black carbon is approximately 760 times greater than that of carbon

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[75] [*See* "Attached Literature" Exhibit H].

[76] Ramanathan, V. & Carmichael, G., *Global and Regional Climate Changes Due to Black Carbon*, Nature Geoscience 1:221-227 (2008); AND Jacobson M., *Strong Radiative Heating Due to the Mixing State of Black Carbon in Atmospheric Controls*, Nature 499: 695- 697 (2001). [*See* "Attached Literature" Exhibit I and J, respectively].

[77] Ramanathan, V. & Carmichael, G., *Global and Regional Climate Changes Due to Black Carbon*, Nature Geoscience 1:221-227 (2008). [*See* "Attached Literature" Exhibit I].

dioxide over 100 years[78] and approximately 2200 times greater over 20 years.[79] It is estimated that black carbon is the second greatest contributor to global warming behind carbon dioxide.[80]

Unlike traditional greenhouse gases, which become relatively uniformly distributed and mixed throughout the Earth's atmosphere, black carbon exerts a regional influence. The impacts of black carbon on a regional level include both atmospheric heating, as discussed above, and hydrological changes. Hydrological changes occur due to alterations in cloud formation and heat gradients.[81] For instance, aerosol pollution has been linked to decreases in the summer monsoon season in tropical areas as well as the drought in the Sahel region of Africa.[82] California is an area of particular concern because of the drought-fire cycle. The more drought conditions prevail, the more forest fires burn, and the forest fires in turn emit massive quantities of black and organic carbon. The release of these aerosols intensifies the drought effect.

Another impact of black carbon is accelerated snowmelt; for instance, black carbon is likely contributing to the retreat of Himalayan glaciers and the resulting water shortage in areas of Asia.[83] When black carbon settles on snow, it makes the snow darker so that it absorbs more solar radiation. This directly leads to snow melt. In addition, local atmospheric heating due to black carbon increases the melting rate. These same effects may well be operating on the Sierra Nevada, which would reduce water availability throughout California at crucial times of the year.

Black carbon is also detrimental to human health. The health effects of particulate matter (PM), of which black carbon is one constituent, have been documented in the DEIR/S. But black carbon specifically has a number of negative effects on human health. Black carbon has been linked to a variety of circulatory diseases. One study found an increased mortality rate was correlated with exposure to black carbon.[84] The same is true for heart attacks.[85] Another study found that residential black carbon exposure was associated

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[78] Reddy, M.S. & Boucher, O., *Climate impact of black carbon emitted from energy consumption in the world's regions*. Geophys. Res. Letters. 34: L11802 (2007). [*See* "Attached Literature" Exhibit K].
[79] Bond, T. & Sun, H. *Can Reducing Black Carbon Emissions Counteract Global Warming?* Environ. Sci. Technol. 39:5921-5926 (2005). [*See* "Attached Literature" Exhibit L].
[80] Ramanathan, V. & Carmichael, G., *Global and Regional Climate Changes Due to Black Carbon*, Nature Geoscience 1:221-227 (2008).
[81] Id.
[82] Id.
[83] Id.
[84] Maynard, D. et al., *Mortality risk associated with short-term exposure to traffic particles and sulfates*. Environ. Health Perspect. 115:751-755 (2007). [*See* "Attached Literature" Exhibit M].
[85] Tonne, C. et al., *A case control analysis of exposure to traffic and acute myocardial infarction*. Environ Health Perspect. 115:53-57 (2007). [*See* "Attached Literature" Exhibit N].

with increased rates of infant mortality due to pneumonia, increased chronic bronchitis, and increased blood pressure.[86]

In developed countries, diesel burning is the main source of black carbon. Diesel emissions include a number of compounds such as sulfur oxides, nitrogen oxides, hydrocarbons, carbon monoxide, and particulate matter. Diesel particulate matter is approximately 75% elemental carbon.[87] The Port has numerous diesel engines in use: marine vessels, cargo loading equipment, stationary equipment engines, construction vehicles, heavy-duty trucks, and locomotives. Thus, it is crucial that black carbon be addressed in the DEIR/S.

ii. The DEIS/R Must Quantify the Project's Black Carbon Emissions

1. Analyzing Particulate Matter is Insufficient to Address Black Carbon

Particulate matter (PM) refers to the particles that make up atmospheric aerosols. The primary constituents of PM are sulfates, nitrates, and carbon compounds. Sulfates and nitrates form in the atmosphere from the chemical reaction of sulfur and nitrogen dioxides. These may often be present as ammonium sulfate or nitrate salts. Carbon compounds may be directly emitted, e.g. black carbon emitted from combustion, or may form in the atmosphere from other organic vapors, e.g. oxidation of volatile organic compounds.

Because PM can be reduced through mitigation of other constituents of PM than black carbon, it is essential that black carbon emission reduction strategies be considered independently from PM reductions. The proportions of the constituents of PM vary over time and by location.[88] According to a recent series of surveys conducted at various U.S. cities under the EPA's "Supersite" program, black carbon was often only about 10% of total measured $PM_{2.5}$.[89]

In contrast to total $PM_{2.5}$, diesel PM is composed largely of black carbon. Nonetheless, some diesel PM reduction strategies do not affect black carbon. For instance, diesel oxidation catalysts can reduce diesel PM emissions as a whole by approximately 20 to

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[86] Schwartz, J. Testimony for the Hearing on Black Carbon and Arctic, House Committee on Oversight and Government Reform United States House of Representatives (Oct. 18, 2007). <http://oversight.house.gov/documents/20071018111144.pdf>

[87] EPA (2002) *Health Assessment Document for Diesel Engine Exhaust*, EPA/600/8-90/057F. <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=29060>

[88] *See* EPA (2004) *The Particle Pollution Report*, EPA 454-R-04-002. http://www.epa.gov/air/airtrends/aqtrnd04/pm.html

[89] For an overview of the program and initial results see http://www.epa.gov/ttn/amtic/supersites.html

40%, yet they do not decrease black carbon emissions.[90] In addition, while low-sulfur fuel will reduce sulfate emissions, in and of itself low-sulfur fuel will not reduce black carbon. Low-sulfur fuel is important because it *allows* for better technology to reduce black carbon.[91] Yet those reductions can only occur once the technology has been implemented.

2. Methods Are Available to Specifically Quantify Black Carbon Emissions from the Project

Although the DEIR/S quantifies the estimated traditional GHG emissions from the proposed Project, it makes no attempt to quantify black carbon. This omission must be rectified. Like GHG, black carbon emissions from various types of engines and activities can be estimated through numerical calculations.[92] Considering the importance and ability of quantifying black carbon emissions, the DEIR/S should be revised to incorporate an analysis of the Project's contribution of black carbon.

The estimated black carbon emissions from the Project can be inventoried similarly to other greenhouse gas emissions:

- Estimate the mass of diesel fuel consumed by each type of diesel engine, e.g. ship, machinery, truck, construction equipment, and locomotive.
- Calculate a black carbon emission factor (EF) using reference values available in the literature.[93] For instance, Bond and colleagues provide an equation for "EF_{BC}" from various types of diesel engines that takes into account 4 different factors.[94]
- Multiply the emission factor times the mass of diesel (in kilograms) used for each engine type. This will provide the grams of black carbon emitted by that engine type.
- Sum all black carbon emissions from each engine category to obtain total black carbon emissions from the Project.

After obtaining the total black carbon emissions from the Project, the relative global warming impact of the emissions can be compared to other global warming pollutants. Carbon dioxide-equivalent values, such as those in Table 3.2-6 of the DEIR/S, can be obtained by multiplying total black carbon emissions (in kilograms) from the Project by the global warming potential (GWP) for black carbon. Although there is some variation

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[90] Walker, A.P., *Controlling Particulate Emissions from Diesel Vehicles*, Topics in Catalysis 28: 165-170 (2004). [*See* "Attached Literature" Exhibit O].
[91] *See, e.g.* 69 Fed. Reg. 38957, 38995 (June 29, 2004).
[92] *See, e.g.*, Bond T. et al., *A technology-based Global Inventory of Black and Organic Carbon Emissions from Combustion*. J. Geophys. Res., 109: D14203 (2004).
[93] Id.
[94] Id. at 4 and Table 7.

in estimated GWP values, representative black carbon GWP values are: 760 over 100 years[95] or 2200 over 20 years.[96]

c. The DEIS/R Grossly Understates the Level of Emissions Resulting from the Project.

i. The DEIR/S Violates CEQA and NEPA by Improperly Excluding GHG Emissions Generated Outside California as a Result of the Project.

In calculating the emissions for Project sources that travel outside of California (namely on-road trucks, line haul trains, and ships) the DEIS/R only includes emissions from the portion of travel that is within California borders.[97] Emissions generated outside California are excluded on the grounds that the California Climate Action Registry (CCAR) "does not require reporting of [this type] of emissions" and because the CCAR has "not developed assumptions for operational or geographical boundaries" of these out-of-state emission sources.[98] Restricting the analysis of increased GHG emissions to only those within the California border reflects the Port and USACE's failure to comply with the reach of both CEQA and NEPA. Since CCAR does not dictate the scope of effects analyzed under CEQA and NEPA, the Port and USACE must re-total the GHG emissions caused directly and indirectly by the Project and then must reassess the impacts these additional emissions may cause.

Under CEQA, an EIR must consider "reasonably foreseeable indirect physical changes in the environment which may be caused by the project."[99] An indirect impact is a physical change in the environment that is "not immediately related to the project but…is caused indirectly by the project."[100] These indirect impacts or effects may be removed in time or distance but are still reasonably foreseeable.[101] Redevelopment of Middle Harbor will result in foreseeable increases in the number of annual ship calls, truck trips, and rail trips which will generate both direct and indirect increases in GHG emissions.[102] Additionally, "[a]ny emissions or discharges that would have a significant effect on the environment in the State of California are subject to CEQA where a California public agency has authority over the emissions or discharges."[103] Here, because a California

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[95] The combined global average direct (480) and indirect (281) GWP for black carbon as reported in Reddy & Boucher, supra Note 3.
[96] Bond T. & Sun H. *Can Reducing Black Carbon Emissions Counteract Global Warming?* Environ. Sci. Technol. 39:5921-5926 (2005).
[97] DEIR/S, at 3.2-17.
[98] *Id.* at 3.2-23.
[99] Guidelines § 15064(d)
[100] Guidelines § 15064(d)(2).
[101] Guidelines § 15358(a)(2).
[102] DEIR/S at 1-7.
[103] Guidelines § 15277

public agency, namely CARB, has authority over regulating GHG emissions, and because out-of-state emissions will indisputably have an effect on the environment in California, all indirect emissions, both within and outside California, must be quantified and addressed. Regardless of the point of origin of these additional trips, the increased transit will partially be a result of the increased capacity of the Port, and their corresponding GHG emissions must be must be included in the calculation of total GHG emissions.

Furthermore, CEQA requires an agency to "use its best efforts to find out and disclose all that it reasonably can."[104] Nothing in CEQA limits its focus to environmental effects occurring within California. Rather, CEQA examines effects to "ecosystems," the boundaries of which are in no way influenced by state lines.[105] Indeed, as CEQA 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" the DEIR/S's narrow interpretation of indirect environmental effects flies in the face of one of CEQA's foremost principles.[106] Because the full trip length from these transportation modes is reasonably foreseeable, it must be incorporated into the DEIR/S's emissions calculations.

Similarly, NEPA requires every EIS to address and describe the indirect effects of a project, defined as those effects "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable."[107] Included in the definition of "indirect effects" under NEPA are those "growth inducing effects and other related effects on air and water and other natural systems, including ecosystems."[108] The GHG emissions emanating from the increased ship, truck, and train traffic both to and from the Port are considered indirect effects of the Project under NEPA, as they are "father removed in distance," "reasonably foreseeable," and are considered "growth inducing effects" since they result from the increased ship handling capacity of the Port. Furthermore, NEPA "is clearly not limited to actions of federal agencies that have significant environmental effects within U.S. borders."[109] Therefore, to ignore GHG emissions simply because they originate outside of the California borders is to ignore the

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[104] Guidelines § 15144; *see also* Guidelines § 15151 (an EIR must disclose what is "reasonably feasible").
[105] *See* Guidelines § 15358(a)(2).
[106] *Laurel Height Improvement Ass'n v. Regents of University of California*, 47 Cal.3d 376, 404 (1988).
[107] 40 C.F.R. Guideline 1508.8
[108] *Id.*
[109] *Environmental Defense Fund v. Massey*, 986 F.2d 528, 536 (D.C. Cir. 1993); 42 U.S. C. § 4332(2)(F) (requiring all federal agencies to "recognize the worldwide and long-range character of environmental problems," and promote international cooperation in solving environmental challenges.); 42 U.S.C. § 4321 (NEPA is intended to "encourage productive and enjoyable harmony between *man and his environment"* as well as to "promote efforts which will prevent or eliminate damage to the environment and *biosphere."*) (emphasis added); Cal. Pub. Res. Code § 21002.1(a) (requiring that an EIR "identify the significant effects on the environment of a project.").

clear language of the NEPA regulations.

As demonstrated by the Memorandum of Understanding between the Port of Los Angeles (POLA), California Attorney General Edmund G. Brown, and the Mayor of Los Angeles,[110] emissions outside California indirectly resulting from the Project are both reasonably foreseeable and feasible to quantify. In the Memorandum of Understanding, POLA agreed to set the geographic boundary for its GHG emissions calculations at the point of origin/destination for ships, the major cargo destination/distribution points for rail transit, and the major destination/distribution points for out-of-state truck transit. The POLA inventory recognizes the proper geographic scope for port-related GHG analyses, and for the above stated reasons, this model of calculating and reporting emissions should be incorporated into the Port's NEPA and CEQA analyses.

Accordingly, the DEIR/S should be revised to include GHG emissions from all sources resulting from implementation of the Project. Such an inventory should include all indirect effects from additional ship, truck, rail, and automobile traffic resulting from the project, regardless of where such emissions occur.

ii. The DEIS/R Misrepresents the CCAR Protocol for Tracking GHG Emissions.

Reliance on the CCAR Protocol as a method for calculating direct and indirect effects under NEPA and CEQA is also improper because, unlike NEPA and CEQA, the Protocol does not require reporting of indirect emissions. The CCAR Protocol was not intended to be used as a tool to measure a project's impact on the environment, but was designed "to help organizations [] establish GHG emissions baselines against which any future GHG emission reduction requirements may be applied."[111] Because a purpose of the Protocol is to help entities establish their GHG baseline, it is important that the Protocol limit reporting to sources of emissions that each entity is directly responsible for. However, NEPA and CEQA require agencies to analyze both the direct *and* indirect effects on the environment. Therefore, the focus of the CCAR Protocol on direct emissions and its requirement that entities at a minimum report sources of emissions within the state does not constitute a "reasonable explanation for the geographic scope" of the GHG analyses.[112]

The DEIR/S also misstates the scope of emissions covered by the CCAR Protocol. The CCAR Protocol does not limit an entity's emissions reporting to only California-based sources, but it encourages its members to report all their GHG emissions, regardless of where they occur, setting the California border as the floor for the geographic scope of

[110] Memorandum of Understanding between POLA, the Attorney General, and the Mayor of Los Angeles, December 6, 2007. ("See "Attached Literature" Exhibit P).
[111] *General Reporting Protocol, Version 3.0* at 9. [*See* "Attached Literature" Exhibit Q].
[112] Guidelines § 15130 (b)(3).

emissions.[113] Furthermore, the CCAR Protocol requires its members to report out-of-state emissions from car and truck trips if the vehicles are registered in California.[114] Recognizing the global impact of GHG emissions, the CCAR Registry also accepts emissions data from an entity's sources outside the U.S; although it currently is unable to verify international emissions data.[115]

iii. The NEPA Baseline Adopted by USACE Is Flawed.

The DEIS/R is fundamentally flawed because USACE improperly incorporates upland construction projects as part of the NEPA baseline. Section 1.2.1.2 of the DEIS/R states:

> The NEPA Baseline for this Project assumes that increases in cargo throughput will occur in the future as a result of demands for higher levels of containerized shipping and Port authorized upland developments not under federal jurisdiction. As a result, this baseline is not bound to a "no growth" scenario. Potential impacts are determined by comparing conditions with and without the federal components of the Project at given points in the future… The NEPA Baseline would include construction of site improvements and operational activities that could occur without issuance of federal permits. Therefore, the baseline would not include any in-water activities (e.g., dredging, filling, and/or new wharf construction)… [T]his baseline would include redevelopment and backland expansion on existing lands within the Project site to accommodate additional containerized cargo up to the capacity of the existing wharves and berths… The NEPA Baseline is equivalent to Alternative 3 (Section 1.6.3.3) because Alternative 3 only includes construction and operational activities that would not require issuance of federal permits.

Incorporating project activities that are outside the jurisdiction of USACE into the NEPA baseline depends on the degree of USACE involvement in the Project. Where USACE participation is nominal, the scope of the NEPA analysis corresponds to the degree of "control and responsibility" the USACE exercises over the Project.[116] Therefore, if the USACE exerts minimal control or if the regulated activity is "merely a link" in a corridor type project, the NEPA baseline should include all the environmental conditions and changes that are beyond the USACE's jurisdiction.[117] In other words, only those environmental impacts that stem directly and indirectly from the portion of the project within USACE's jurisdiction will be analyzed under NEPA.

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[113] *General Reporting Protocol*, at 6.
[114] *Id.* at 11.
[115] *Id.* at 12.
[116] 33 C.F.R. Pt. 325, App. B (7)(b)(1).
[117] 33 C.F.R. Pt. 325, App. B (7)(b)(2)(i).

However, where, as here, USACE activity is more substantial, the extent of USACE's participation suffices "to turn [the] essentially private action into a Federal action" and all impacts and effects from the Project must be considered under NEPA.[118] Indeed, this Project is very similar to the "shoreside facility" example in the USACE's NEPA Implementing Procedures which represents a type of project that merits "extending the scope of analysis to include the upland portions of the facility."[119] Activities normally permitted at a shoreside facility, such as: "dredging, wharves, bulkheads, berthing areas and disposal of dredged material" typically warrant extending USACE control over an entire project for purposes of NEPA review.[120] The Middle Harbor Redevelopment Project is extremely similar to the activities planned at the "shoreside facility," consisting largely of dredging, wharves, berthing areas, and disposal of dredged material. Specifically, the activities under USACE warrant extending federal jurisdiction include:

- Removal of 14.4 acres of existing land producing 680,000 cubic yards (cy) of dredged material and 1,290,000 of excavated material, resulting in the filling of 65.3 acres of water and creating approximately 54.6 acres new land;
- Removal of portions of Pier D and Pier E;
- Demolishing existing wharf at Berths D29-D31, E12-13, E23-26, F6-F10;
- Construction of dikes at Berths D29-D31, E24, the southern boundary of Slip 1, between Berths E24 and F10;
- Construction of new wharf structures at the extension of Berth E23, E24, E25, E26;
- Construction of four temporary pile-supported mooring dolphins. [121]

Considering the extensive nature of these activities and their dominance among the Project components as a whole, the USACE has sufficient "control and responsibility" to extend the scope of the NEPA analysis over the all activities planned in the Project.

Second, the Corps' own regulations properly recognize that "[i]n some situations, a permit applicant may propose to conduct a specific activity requiring a Department of the Army (DA) permit (e.g., construction of a pier in a navigable water of the United States) which is merely one component of a larger project." 33 C.F.R. Pt. 325 (App. B., § 7(b)(1)); *see also Friends of the Earth v. U.S. Army Corps of Engineers*, 109 F. Supp.2d 30, 40-41 (D.C. Dist. 2000)(holding that the Corps was required to prepare an EIS that assessed the impacts of the *entire* project, including the building and operation of hotels, parking garages and other related complexes on the upland area, and not just from the physical mooring of the boat at the harbor as the Corps had contended). The regulations further explain that "shipping terminals" are one clear example of a project for which the Corps should expand the scope of its environmental review to include the impacts of the

[118] 33 C.F.R. Pt. 325, App. B (7)(b)(2)
[119] 33 C.F.R. Pt. 325, App. B (7)(b)(3)
[120] *Id*.
[121] DEIR/S, at 1-25 through 1-37.

larger project. In such an instance, the Corps must determine whether an EIS is required for the larger project. The regulations explain:

> a shipping terminal normally requires dredging, wharves, bulkheads, berthing areas and disposal of dredged material in order to function. Permits for such activities are normally considered sufficient Federal control and responsibility to warrant extending the scope of analysis . . .

33 C.F.R. § 325 (App. B., § 7(b)(3)) (emphasis added).

Third, many of the activities which were improperly incorporated into the NEPA baseline, also known as Alternative 3 - Landside Improvements Alternative, are partially dependent on the increased berthing capacity resulting from the dredging and wharf improvements. Alternative 3 activities, such as the redevelopment of terminal areas and container yard and updating railroad infrastructure, are designed to respond to the increased throughput from the modern cargo vessels which will be able to berth in the deeper waters.[122] If not for the increased ship handling capacity and the Port's future ability to handle much larger ships, there would be less of a need for the upland terminal and rail improvements.[123] The dependent nature of the upland Project activities upon the resulting increased berthing capacity from the USACE controlled activities is reason enough to extend the scope of the NEPA analysis to the Project as a whole.

Due to the considerable "control and responsibility" the USACE maintains over the Project as a whole and the clear guidance within USACE regulations, the NEPA baseline should be set similar to the CEQA baseline, at a fixed time before the commencement of any redevelopment activities. Therefore, all activities associated with the Project occurring after the baseline date should be analyzed under NEPA.

d. The Project's Impact on Global Warming is Also Significant Under NEPA.

While the Port properly determined that annual GHG emissions from the Project are significant under CEQA because they exceed baseline emissions, USACE refuses to acknowledge the significance of the Project's GHG contribution under NEPA on the grounds that there are no adopted GHG significance thresholds.[124] USACE's failure to find that the Project's GHG emissions are a significant impact is fundamentally flawed. Neither NEPA, CEQ guidelines, nor USACE NEPA Regulations require quantitative thresholds of significance in order to discuss the environmental impacts of a proposed project. The Ninth Circuit in *Center for Biological Diversity v. National Highway Traffic Safety Administration* recognized the legal necessity of evaluating the cumulative significance of GHG emissions under NEPA, despite the absence of a quantitative

[122] DEIR/S, at 1-47,48; 1-7.
[123] DEIR/S, at 1-6.
[124] DEIR/S, at 3.2-112.

threshold, stating "[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct."[125] "Thus, the fact that climate change is largely a global phenomenon that includes actions that are outside of [the agency's] control . . . does not release the agency from the duty of assessing the effects of *its* actions on global warming within the context of other actions that also affect global warming. The cumulative impacts regulation specifically provides that the agency must assess the impact of the action when added to other past, present, and reasonably foreseeable future actions *regardless of what agency (Federal or non-Federal) or person undertakes such other actions.*"[126]

In addition, "it is reasonable to anticipate a cumulatively significant impact on the environment" from increased GHG emissions.[127] The DEIR/S recognizes that there will be an "appreciable impact on global climate change" resulting from a project's emission combined with other anthropogenic GHG sources.[128] Therefore, the failure to analyze the indisputable significance of the Project's GHG emissions violates NEPA because the DEIS/R misrepresents the environmental impact of the proposed actions.[129]

Furthermore, by substantially increasing California's existing emission levels, the Project threatens the successful implementation of the California Global Warming Solutions Act (AB 32, 2006) and Executive Order S-3-05, which require deep reductions in current levels of GHGs in California.[130] Accordingly, a revised DEIR/S must be prepared that adequately analyzes the cumulative significance of the Project's GHG emissions on global warming under NEPA.

e. Additional Feasible Mitigation Measures Must be Adopted to Eliminate the Project's GHG Contribution.

Mitigation of a project's significant impacts is one of the "most important" functions of CEQA.[131] Under CEQA, feasible mitigation measures must be adopted that will avoid or substantially lessen significant environmental effects.[132] As presented in the DEIR/S, proposed mitigation will only reduce annual Project GHG emissions by 40,974 metric

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[125] 508 F.3d 508, 550 (9th Cir. 2007) (holding an EA inadequate for inadequate cumulative impacts analysis).
[126] *Id.* (internal citations and quotations omitted; emphasis in original).
[127] CEQ Reg. 40 C.F.R. § 1508.27(7)
[128] DEIR/S at ES-22.
[129] 42 U.S.C. § 4332 (C)
[130] *See* 40 C.F.R. § 1508.27(10) (factor in significance determination includes whether action threatens to violate federal, state, or local law or requirements); *see also* Executive Order S-3-05 (June 1, 2005) (setting greenhouse gas emissions reduction targets for California); Control of Emissions From New Highway Vehicles and Engines, 68 FR 52922 (September 8, 2003) (affirming EPA's recognition of climate change and the need to reduce greenhouse gases).
[131] *Sierra Club v. Gilroy City Council*, 222 Cal.App.3d 30, 41 (1990).
[132] Pub. Res. Code § 21002.

tons of CO_2 equivalent in 2010, from 587,463 to 546,669 metric tons.[133] The mitigation measures applied for the purposes of calculating mitigated emissions data were AQ-5, AQ-12, and AQ-13.[134] Depending on the Project year, these three measures would reduce the Project's GHG emissions by 8 to 10 percent, leaving 90 to 92 percent of emissions unmitigated.[135] While the mitigation measures adopted by the Port to reduce greenhouse gas emissions are an important first step, much more can be done to reduce the significance of this impact. Indeed, absent further mitigation, the sizable annual emissions resulting from the Project will frustrate achievement of California's mandate to reduce emissions under AB 32 and Executive Order S-3-05. With the potential to influence the environmental performance of the shipping sector, an industry that is largely unregulated and contributes more greenhouse gases than most Annex I countries to the Kyoto Protocol, the Port and USACE are in a unique position to have considerable impact on global warming and fully mitigate the Project's global warming impacts.

The Port and USACE should include the following mitigation measures, some of which were derived from the International Council on Clean Transportation's report, *Air Pollution and Greenhouse Gas Emissions from Ocean-going Ships: Impacts, Mitigation Options and Opportunities for Managing Growth,*[136] which provides a detailed analysis of potential mitigation a port can adopt to reduce GHG emissions from the shipping sector.

a. **Create a Technology Advancement Program ("TAP") for GHG Mitigation:** The Port needs to take seriously the impacts associated with climate change. Accordingly, the Port should develop (or expand the already existing criteria pollutant TAP under the CAAP) to include the development of technologies to reduce GHG emissions from freight movement.

b. **Implement Stricter Fuel-Efficiency/Design Standards for Heavy Duty Trucks:** While MM AQ-8 partially addresses the significant contribution of GHG emission from heavy duty trucks, the DEIR/S does not fully explore the mitigation options available in this sector.[137]

- Aerodynamics: Aerodynamic truck designs can improve fuel economy

[133] DEIR/S, at 3.2-64, 3.2-69.
[134] DEIR/S, at 3.2-68.
[135] *Id.*
[136] International Council on Clean Transportation (ICCT) (Mar. 2007) *Air Pollution and Greenhouse Gas Emissions from Ocean-Going Ships: Impacts, Mitigation Options and Opportunities for Managing Growth* at 34, <http://www.theicct.org/documents/MarineReport_Final_Web.pdf> [hereinafter "ICCT"] [*See* "Attached Literature" Exhibit Q].
[137] *See* Union of Concerned Scientists, *Technology Options for Tractor Trailers*, 2008. [*See* "Attached Literature" Exhibit R].

15 to 20 percent, but manufacturers continue to produce trucks with the "classic," and less efficient, body style.[138] MM AQ-8 does not address the potential GHG reductions in truck aerodynamics. Therefore, as well as phasing out truck models based on their year of manufacture, the Port should also ban trucks, both new and old, that are of the "classic" and inefficient design. Truck aerodynamics can be improved by adding integrated roof fairings, cab extenders, and air dams. The tractor-trailer gap can be minimized by adding side skirts and rear air dams. Single unit trucks can be improved with air deflector bubbles. Improving the aerodynamics of a typical line-haul truck by 15 percent could cut annual fuel use more than 2,000 gallons, save over $3,500 in fuel costs, and eliminate 20 metric tons of carbon dioxide.

- Reduce Rolling Resistance:
  - All truck tires should be of a make and model identified by the EPA's SmartWay program[139] as having the lowest rolling resistance and best fuel economy improvements. Also, it is important that tires which are retreaded continue to meet the same standards for rolling resistance as the original tire.
  - When possible, truck owners should use single wide tires, or "super singles," which are designed to replace two side-by-side tires. Single wide-base tires save fuel by reducing vehicle weight, rolling resistance and aerodynamic drag, while also improving tank trailer stability by allowing lower mounting. Specifying single wide-base tires on a new combination truck could save $1,000 immediately and reap annual fuel savings of two percent or more while cutting carbon dioxide by more than four metric tons. These offer the advantage of reduced rolling resistance and reduced overall weight.
  - All trucks should be equipped with automatic tire inflation systems to ensure tires are maintained at the proper inflation level, thereby improving fuel efficiency. Retrofitting a line-haul truck with an automatic tire inflation system could save 100 gallons of fuel annually and reduce tire wear and maintenance, while eliminating one metric ton of carbon dioxide. An ATI system used on a typical line-haul truck can generally pay for itself in just over two years, while decreasing the risk of expensive tire failure caused by under inflation.

[138] *Id.*
[139] <http://epa.gov/smartway/documents/420f07033.htm>

- Weight Reduction- Lighter weight tractor and trailer components, such as aluminum axle hubs, frames and wheels, can reduce truck weight by thousands of pounds, thus improving fuel economy. Every 10 percent drop in truck weight reduces fuel use between 5 and 10 percent.
- Low Viscosity Lubricants- Low viscosity lubricants can reduce friction and energy losses. Typically, the combined effect of low viscosity synthetic engine oils and drive train lubricants can improve fuel economy by at least 3 percent. Despite the higher cost of synthetic oils, truck owners can save nearly 500 gallons of fuel and cutting five metric tons of carbon dioxide annually. Additional monetary savings may be possible due to reduced wear and maintenance.
- Driver Training Program- Even highly experienced drivers can enhance fuel economy using simple practices such as cruise control, coasting whenever possible, limiting use of cab accessories, smooth and gradual acceleration, progressive shifting, etc. Driver training can reduce fuel consumption by 5 percent or more, eliminating about eight metric tons of greenhouse gas emissions per truck each year.[140]

c. **Incorporation of Efficiency/Low GHG Emissions Standards into Construction and Operation Equipment:** MM AQ-2, MM AQ-3 and MM AQ-7 should be modified to incorporate criteria for low-emission/high efficiency criteria for construction and operation equipment. Criteria can include the use of alternative fuels, hybrid technology, and specific fuel economy standards.

d. ***Ocean Going Vessels***: We recommend that the Port analyze further technologies that could be adopted to take advantage of increased fuel savings and promote the use of alternative energy sources.

   i. **Bulbous Bows**: Application on large tankers and bulk cargo ships result in a 5-15% decrease in resistance, thus decreasing the amount of fuel necessary to power ships and reducing emissions.[141] Bows save significant fueling costs and overall life cycle costs.[142]

   ii. **Sky Sail**: Initial retrofit of a cargo vessel utilizing the Sky Sail system was completed in January 2008. Testing under normal shipping operation is currently being conducted, with potential fuel reduction use of up to 35 percent.[143] Since high propulsion power

[140] US EPA. *A Glance at Clean Freight Strategies.* http://epa.gov/smartway/documents/drivertraining.pdf
[141] Kyriazis, Georgios. *Bulbous Bow Design Optimization for Fast Ships.* Massachusetts Institute of Technology, 1996. http://dspace.mit.edu/bitstream/1721.1/40238/1/36001502.pdf
[142] Zoccola, Mary. *Bulbous Bows Save Fuel.* http://www.dt.navy.mil/pao/excerpts%20pages/1997/bulbous3.html
[143] http://news.bbc.co.uk/2/hi/europe/7205217.stm and

can only be reached from 70 degrees onwards, with optimal courses between 120 and 140 degrees,[144] the Sky Sail is not appropriate for all routes. However, the Ports should analyze up to what extent the Sky Sail would be feasible and develop requirements to encourage vessel owners to test and adopt the technology.

iii. The DEIS/DEIR also fails to mention some measures that are recommended in the CAAP. For new ships, the following should be considered as mandatory measures:

1. **Energy Recovery Systems:** Incorporate shaft generators, micro turbines, and waste heat recovery/economizer devices to take advantage of main engine power and exhaust heat. These systems allow for better energy efficiencies and can allow boilers and auxiliary engines to be shut down during ocean transits. Such systems can reduce fuel consumption and corresponding GHG emissions by 10 percent.[145]

2. **Fueling Flexibility-** Design extra fuel storage tanks and appropriate piping to run both main and auxiliary engines on a separate/cleaner fuel, as ports, states, and national governments set regional or localized fuel standards.

iv. **Utilization of Environmentally Differentiated Port Fees Based on Vessel GHG Emissions**: Environmentally differentiated port dues would provide a significant incentive for large shipping companies to invest in emission control technologies for new and existing vessels and substantially reduce the GHG generated as a result of the Project.

f. Limitations/Controls on Use of GHG Refrigerants: The Port and USACE did not address any mitigation measures that would reduce GHG emissions caused by escaped refrigerants. Fluorinated and chlorinated hydrocarbons are still used as cooling agents in refrigerated vessels. Hydrofluorocarbons (HFCs) are highly potent greenhouse gases. Because some HFCs have a global warming impact of close to 12,000 times that of carbon dioxide, even small reductions in HFC

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http://www.skysails.info/index.php?id=64&L=1&tx_ttnews[tt_news]=98&tx_ttnews[backPid]=6&cHash=c1a209e350

[144] http://www.skysails.info/fileadmin/user_upload/Pressedownload/Dokumente/EN_Technology_Information.pdf pg.3

[145] Maersk. *Maersk Pilot Fuel Switch Initiative.* 16 May 2008. http://www.futureports.org/events/airquality/aq-flanagan-ppt.pdf

emissions can have a large impact. It is estimated that 50 percent of HFCs on a ship are released to the air during operation and that an additional 15 percent are emitted during maintenance.[146] To reduce HFC emissions, the Port should evaluate the following mitigation measures:

1. Require all ships using the Port to use alternative refrigerants.
2. Use environmentally differentiated fees for vessels that use alternative refrigerants. Fees should be set at a rate significant enough to encourage a switch to alternative refrigerants.
3. Establish a mitigation fund to assist ships in switching to alternative refrigerants.
4. Require periodic leak inspections for ships, trucks, and trains that use HFC refrigerants.
5. Provide refrigerant servicing at the Port to help ensure HFC's are recovered during servicing.

In addition, the Environmental Protection Agency's *Global Mitigation of Non-CO_2 Greenhouse Gases* specifically addresses HFCs and potential mitigation.[147] While the DEIR/S's estimate of emissions from refrigerant leaks is relatively low, the DEIR/S improperly limits its analysis to leaks occurring within California, not the entire trip length.

g. Preferential Contracting with Cleanest Carriers. To the extent the Port contracts with third parties, much like environmentally differentiated port dues, preferential contracting with the cleanest carriers can provide incentives for additional GHG reductions. In addition, by only contracting with the cleanest carriers, the Port will reduce the emissions resulting from the Project. An examination of preferential contracting and environmentally differentiated fees should extend to the use of rail over trucks as a means of transport.

h. Increased Use of Renewable Power for Electricity Generation: The feasibility of generating additional on-site renewable electricity generation should be explored as well as a higher percentage of off-site renewable electricity.

- Maximize use of Solar Power: The Port should further consider the use of solar power as a self-generated source of renewable energy. Apart from the installation of solar panels on the main terminal building that is identified in MM AQ-17, the Port should explore additional locations for panels, such as installing panels on other buildings at the Port and on canopies over parking lots, which has the added benefit of providing shade.

[146] ICCT Report at 34. [*See* "Attached Literature" Exhibit Q].
[147] (*See* "Attached Literature" Exhibit S).

The Port should also commit to producing a specified amount of energy from its own solar panel system. In the December 7, 2007 Memorandum of Understanding between the Port of Los Angeles (POLA), the Attorney General of California, Edmund G. Brown, Jr., and the Mayor of Los Angeles, POLA committed to installing a solar panel system capable of producing approximately of 10 Mega-Watts of energy.[148] During the initial phase of solar development, POLA agreed to install panels on the cruise terminal and in adjacent parking lots, with later plans of installing panels on other POLA building and possibly tenant properties.[149] Like POLA, the Port should make a similar Mega-Watt commitment and capture solar energy. To the extent space for solar power may be limited at POLB, the solar can be installed in the surrounding community to offset Project emissions.

i. Enhance *MM AQ-10 (Truck Idling Reduction Measures)*: The Port assumes that methods such as increasing the amount of time gates are open as well as creating a tracking and appointment-based delivery schedule will result in idling minimization. However, the Port fails to limit the idling time allowed or present any monitoring or enforcement of this mitigation measure. We recommend that the Port mandate specific idling restrictions, such as time limits for Cargo-Handling Equipment required by CARB, and include a 30 minute limit on truck turnaround time. Further measures in order to assist drivers in meeting the requirement should also be established. For example, the Port should provide plug-ins for trucks that must keep engines running for operational purposes. Climate-controlled "comfort stations" could be provided for drivers who would otherwise idle their trucks in order to operate the air conditioner or heating. Mandatory logistics software as a part of the tracking system would improve scheduling, increase efficiency and ensure full truckloads.

j. Utilize Recycled Materials: Use of recycled materials will lessen the carbon footprint of the Project. The DIES/R should commit to using recycled materials whenever possible in the construction and operation phases of the Project.

k. Implement Fleet Monitoring for Hull Efficiency: Managing hull resistance involves an evaluation of ship performance data to determine the extent of resistance on a ship from fouling on the hull and propeller and ascertain the point where ship maintenance (such as hull cleaning) would be economically

[148] Memorandum of Understanding between POLA, the Attorney General, and the Mayor of Los Angeles, December 6, 2007. [*See* "Attached Literature" Exhibit P].
[149] Memorandum of Understanding between POLA, the Attorney General, and the Mayor of Los Angeles, December 6, 2007. Attachment C, *Conceptual Scope of Solar Photovoltaic Development: Port of Los Angeles*, [*See* "Attached Literature" Exhibit T].

beneficial.[150] A rough hull (through use of poor quality paints and algae growth) requires additional power (and thus more fuel) to move.[151] Fleet monitoring for hull efficiency is a service provided in Long Beach.[152] Requiring the monitoring of hull efficiency, use of low-resistance hull paint, and hull cleaning when appropriate would reduce fuel consumption, and consequently, emissions of GHG and criteria pollutants from the excess and needless burning of fuel.

l. AQ-19 (Tree Planting): We also support the planting of trees around the main terminal building in order to decrease the amount of energy needed for heating and cooling, as well as for the uptake of carbon. This is another measure that could be expanded beyond the Port complex. Enhancement of Long Beach's Urban Forest is an effective way of not only reducing greenhouse gas emissions, but also improving air quality and reducing air pollution.

- A single mature tree can absorb as much as 48 lbs of CO2 per year and release enough oxygen into the atmosphere to support two human beings.

- Urban forests provide tangible economic benefits, including: energy savings, enhancement of property values, deferred street maintenance costs, reduced costs associated with poor air quality, and increased commercial activity.[153] The Port should work with the city of Long Beach in order to survey the current urban forest and create appropriate targets and programs for the planting and maintenance of trees within the city; ideal canopy is considered to be between 30 to 40 percent. [154] Guidelines on analyzing an Urban Forest as a carbon sink can be found under the Urban Forest Greenhouse Gas Protocol.

m. Electrified Tugs: The Port should plug in to charge at dock and use stored electric energy to perform ship assist operations. Fast-charging systems have already been commercialized for use at airports (for ground support equipment) and other industrial settings, powering over 15,000 vehicles in North America. The DEIR/S should include a mitigation measure requiring the Port to provide, within one year of project approval, an AMP staging area and require tugs servicing the terminal to plug into shoreside power when not in use.

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[150] Munk, Torben. *Fuel Conservation Through Managing Hull Resistance*, (2006). [*See* "Attached Literature" Exhibit U].
[151] IMO, *Study of Greenhouse Gas Emissions From Ships*, Part 5. "Technical and Operational Measures to Reduce Greenhouse Gas Emissions from Ships," Issue No. 2-32 (Mar. 2000) at 72 [*See* "Attached Literature" Exhibit V].
[152] Propulsion Dynamics, Inc. <http://www.propulsiondynamics.net/cms/index.php>
[153] ICLEI Local Governments for Sustainability. *Talking Trees An Urban Forestry Toolkit for Local Governments.* November 2006.
[154] California Climate Action Registry, US Forest Service et al. *Urban Forest Greenhouse Gas Reporting Protocol.* June 1, 2008.

n. Cranes: Already electrically powered cranes could be further optimized to save energy. Virtually all ship-to-shore cranes are equipped with regenerative breaking to capture energy while lowering containers. However, this energy often goes unused for lack of storage or load sharing. We recommend optimization of cranes to fully utilize regenerative power. Other cargo-handling equipment can be electrified, at least partially. RailPower Technologies, for example, offers a retrofit hybrid system for rubber-tired gantries.

o. Yard hostlers: This equipment may be the most promising piece of yard equipment to electrify, since these are the greatest source of GHGs from yard equipment. Yard hostlers idle up to half the time, often pull minimal loads rather than a full container, and operate at low speeds. These characteristics make yard hostlers amenable to similar technology used to electrify airport ground support equipment. The Port of Los Angeles and SCAQMD are currently in development of an electric hostler,[155] and POLA is also considering the substitute of electric drayage trucks for hostlers. Once these prototypes have been developed, POLB should commit to using as many electric yard hostlers or electric trucks as possible.

p. Intelligent Container Design:[156] The Port should commit to exploring efficiency and design improvements to containers. Dramatically reducing the weight and improving the design of containers can result in greenhouse gas reductions as well as criteria pollutant reductions. The container itself is typically 10-25% of the gross weight of a container loaded with cargo, and 20% of containers are shipped empty. Container design has not changed in almost 50 years. Clear targets for redesign include weight reduction and technology to facilitate logistics, such as tracking devices, as well as improved design for refrigeration. The most significant gains from redesign are the following:

- Reduced loads and increased efficiency for ships, trucks, and trains that carry containers;
- Reduced loads and increased efficiency for cargo handling equipments at ports, rail-yards, and warehouses;
- Reduced emissions of climate-changing refrigerant compounds and improved efficiency in refrigeration;
- Improved facility of security scanning and related logistical benefits;
- Improved ease of recycling or non-container reuse to reduce the waste caused by shipping and storing empty containers resulting from the trade imbalance; and

[155] SCQAMD. *Board Meeting Date: April 4, 2008. Agenda No. 5.* http://www.aqmd.gov/hb/2008/April/08045a.htm

[156] Information provided by Laura Schewel, Rocky Mountain Institute, Personal Communication, 21 September 2007.

- Fewer trips necessary to carry the same amount of freight because of reduced tire weights.

Nationwide adoptions of a lightweight container (~30-50% weight reduction) could reduce at least 1 million tons of CO2e (assuming that 5% of Class 8 trucks carry new containers and 20% of freight trains carry new containers).

Also, there is significant potential to reduce greenhouse gas emissions from the volatilization of HFCs via alternate refrigeration and improved efficiency of the refrigerated containers. Refrigerated transport is responsible for around 14 million tons of CO2-equivlanet emissions in the US.

It should also be noted that other equipment at container terminals could be "lightweighted" to save fuel or energy and reduce GHGs. For example, Super-post- Panamax cranes can weigh 1,400 metric tons; reducing this unnecessary weight would cut energy use.

q. AQ-17 (Solar Panels): We are pleased that the DEIS/DEIR includes the installation of photovoltaic panels in order to increase the amount of renewable power used and reduce GHGs. However the small amount of photovoltaics on the main terminal building will result in a less than 1% reduction in GHGs created by the project, while solar panels are a measure that could be expanded beyond the main terminal building and beyond the Port complex. The installation of photovoltaic panels on all buildings, parking lots or carports within the project, as well as to houses, schools and buildings within the community of Long Beach could make a large impact on the amount of carbon emissions for the project.

- Photovoltaic panels are a renewable, clean energy source that would provide 3.6 MWh/year per average household for 250 square feet of PV panels, saving approximately over 3,000 pounds of CO2 and over a thousand dollars per average household annually.[157]

- The solar industry is one of the few construction sectors currently growing, with solar companies employing between 16,500-17,500 California workers and expecting to hire approximately 5,000 more in the next year. Most of these jobs are in installation, requiring limited training and providing annual salaries ranging from $31,200 to $60,000.[158] An increase in solar power in Long Beach would not only mean

[157] Assumptions: 50% capacity, annual usage is 7200 KWh/year, average electricity rate is $0.1738/kWh. http://www.findsolar.com/index.php?page=rightforme
[158] Baker, David. *Solar industry needs workers.* San Francisco Chronicle. May 8, 2008. http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2008/05/10/BUGD10JVGP.DTL

reductions in greenhouse gases and energy cost savings for city residents, but also the creation of well-paid green collar jobs.

r. Fully Mitigate Remaining GHG in Surrounding Community: Despite the implementation of the mitigation measures outlined in the DEIR/S, the remainder of unmitigated emissions may still be substantial.[159] The Port needs to look for GHG mitigation opportunities at the Project Site and the Port in general before looking elsewhere. The DEIR/S must examine the ability to achieve these additional reductions in GHG through programs in the surrounding community. GHG offset programs can be designed to benefit local communities, both contributing global reduction benefits and demonstrating an entity's commitment to sustainable business practices. For example, in a recent settlement with the Attorney General regarding the mitigation of GHG emissions from a proposed refinery expansion, ConocoPhillips Co. agreed to contribute $7 million to a carbon offset fund created by the Bay Area Air Quality Management District, with the goal of achieving "verifiable quantifiable reductions in GHG emission, with priority given to projects near" the expansion site.[160] The Settlement also provided $2.8 million to fund reforestation and conservation projects and $200,000 for restoration of the San Pablo Bay wetlands.

s. Specific Mitigation Measures are Necessary to Reduce Black Carbon Emissions

Apart from the mitigation measures the Port should implement to reduce and offset the Project's GHG emissions, the Port should also establish measures to monitor and control black carbon.

i. **Monitor and Report Black Carbon Emissions from the Port:** One of the first steps towards reducing black carbon is to develop a proper monitoring and reporting system. The Port of Long Beach currently reports daily concentrations of various air pollutants, including PM, on the Clean Air Action Plan website.[161] As discussed above, however, black carbon must be considered separately from PM.

The Port should monitor and make publicly available the daily concentrations of black carbon. This can be accomplished using measuring devices called *aethalometers*, which are commercially available and simple to operate.[162] An aethalometer is an electronic

[159] DEIS/R at 3.2-64.
[160] Settlement Agreement between ConocoPhillips Co. and the California Attorney General, Sept. 10, 2007. (*See* "Attached Literature." Exhibit W].
[161] <http://caap.airsis.com/Default.aspx>
[162] See <http://www.mageesci.com/> (one of the companies that mass produces aethalometers).

box that measures the attenuation of light in certain wavelengths of particles that collect as air passes through a filter.[163] The units come in rack-mounted as well as portable versions.[164]

ii. **Accelerate Compliance Schedules:** Because black carbon pollution causes rapid and significant atmospheric heating as well as substantial human health risks, it is necessary to address this pollutant as rapidly as possible.

Mitigation Measures AQ-2, 3, 7, and 8 require that non-road construction equipment, tug boats, container handling equipment and heavy-duty trucks implement PM emissions control strategies. Because black carbon is a component of diesel PM, these strategies will also reduce black carbon. One of the most common options is the use of a catalyzed diesel particulate filter, which can be added to existing engines as well.[165] The schedule for compliance, however, is far too lax. These technologies are available today and should be introduced as rapidly as possible. The DEIR/S must set earlier deadlines for implementation.

Likewise, MM AQ-5 will eventually require 100% use of shore power or other emissions reduction strategy. This will reduce total PM emissions as well as black carbon. But full implementation is not required until 2015 and only 33% compliance is required by 2010. Full compliance should be required much earlier.

iii. **Detect and Mitigate "Super-emitters":** Some engines that receive poor maintenance or have mechanical difficulties emit 10 to 15 times the average levels of black carbon.[166] While these may be older engines, engine age is not the single indicator of emissions levels. A single super-emitter can negate the positive reductions achieved through retrofitting or replacing a number of "average" diesel engines. Therefore, it is essential to add a mitigation measure that requires the Port to develop a monitoring system to detect diesel engines of all varieties that emit high levels of black carbon.

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[163] See the Magee Science Aethalometer Owner's Manual available at: <http://www.mageesci.com/support/downloads/Aethalometer_book_2005.07.03.pdf>
[164] *Id*.
[165] See generally 69 Fed. Reg. 38957 (June 29, 2004) (discussing diesel particulate filters as a means of complying with EPA's Non-road Diesel Rule).
[166] Bond, T. et al., *A technology-based Global Inventory of Black and Organic Carbon Emissions from Combustion*. J. Geophys. Res., 109: D14203 (2004). [*See* "Attached Literature" Exhibit X].

A potential monitoring device is the new AE90 aethalometer which has a tailpipe monitoring extension.[167] Periodic measurement of Port vehicles using this device should be required. A mitigation fund could be created to help vehicle operators rapidly and effectively mitigate the emissions from super-emitting vehicles.

iv. **Require Mitigation of Locomotive Black Carbon Emissions:** As mentioned above, MM AQ-9 requires that the "cleanest locomotive technologies" be used, but sets no explicit criteria.[168] Like non-road engines and heavy-duty road engines, locomotive engines are also subject to PM emissions reductions standards under the EPA's recent Locomotive Rule.[169] Similar to the accelerated standards set for other types of diesel engines in use as the Port, this mitigation measure should create an explicit and accelerated timetable by which new and existing locomotives must reach Tier 3 and Tier 4 standards.

v. **Require Ocean Going Vessels (OGV) to Reduce Black Carbon Emissions:** The shore power requirement in MM AQ-5 is a first step towards reducing black carbon emissions from OGVs. But more needs to be done. As mentioned above, the compliance schedule could be greatly accelerated. OGVs should be required to implement similar diesel emissions reductions as other diesel engines in use at the Port.

Many of the same technologies used in trucks and locomotives could be translated to use in large marine engines. Technologies such as diesel particulate filters require low-sulfur fuel, but MM AQ-6 and 13 already mandate use of this fuel. Consequently, there is no barrier to requiring that large OGVs achieve substantial reductions in diesel PM emissions on a similar schedule to that of other diesel engines at the Port.

IV. The DEIR/S Provides Inadequate Analysis of and Mitigation For the Project 's Traffic Impacts.

Study after study shows that the Port of Long Beach is one of the major contributors to the egregious traffic congestion on the 710 freeway. The Project, by substantially

[167] Hansen, T. From Magee Science, 2005. A recent presentation on this device is available at: <www.epa.gov/airnow//2005conference/sunday/hansen.ppt> [*See* "Attached Literature" Exhibit Y].
[168] DEIS/R at 3.2-114.
[169] 73 Fed. Reg. 25098 (May 6, 2008).

increasing throughput and employment at the Port will inevitably worsen these conditions through trips related both to goods movement and to commuting. Traffic is surely one of the issues that most concern the Port's local and regional neighbors. Any decision made concerning the Project that was not supported by complete and accurate information about traffic could not be considered an unformed decision. And, of course, CEQA's entire purpose is to promote informed decisionmaking.

It is thus disappointing that the DEIR/S has chosen to take a view of traffic impacts so narrow as to make accurate analysis impossible. Even as other documents make clear that the Port has region-wide traffic impacts, the DEIR/S limits its analysis to the relatively tiny area south of Anaheim Street. At the same time, the DEIR/S the only substantial mitigation measures the EIR considers are road improvements, and it fails even to accurately describe, or even identify, those improvements. In short, the DEIR/S's treatment of traffic issues is far less than its community and their decisionmakers deserve.[170]

i) The DEIR/S Uses a Study Area That Inaccurately Minimizes the Project's Severe Traffic Impacts.

The study area chosen for the DEIR/S's traffic analysis is unaccountably small, considering no freeway segments north of the 405/710 junction, and no part of the 710 north of Willow Road. The DEIR/S provides no explanation, let alone substantial evidence, supporting its apparently arbitrary exclusion of the long stretch of the 710 freeway impacted by Port-related traffic, running at least as far north as the City of Commerce.

The short segment of the 710 that the DEIR/S does consider has an LOS of F under baseline conditions and would obviously get worse if the Project were built as proposed without mitigation. There is every reason to believe that the northerly segments of the same freeway are, and will be, similarly effected by Port traffic. According to one recent important freeway study, "large numbers of trucks that use I-710 to travel between the Ports and rail freight yards located near Interstate 5 (I-5), and to warehousing and distribution points scattered *throughout the Southern California urban area*"[171] (emphasis added). This study, which focused on the same Port-related congestion problems at issue here, considered a study area extending through Commerce to SR 60.

More specifically, the Port of Los Angeles Baseline Transportation Study[172] prepared by Meyer, Mohaddes Associates, Inc. ("MMA") illustrates the projected and current volume of truck trips that is directly related to the combined operations of both Ports' (the Port of

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[170] *Laurel Heights Improvement Association, Inc. v. Regents of the University of California* (1988) 47 Cal. 3d 376, 494.
[171] Los Angeles County Metropolitan Transportation Authority, "I-710 Major Corridor Study" at S-9. [*See* "Attached Literature" Exhibit Z].
[172] *See* "Attached Literature" Exhibit AA.

Los Angeles and Port of Long Beach). MMA found that the I-710 carries over 25,000 port truck trips per day for travel south of the 405. Truck travel further north on I-710 carries 20,000 port trucks north of I-405, 15,000 north of Route 91, and 11,600 north of I-105. MMA projects that in a worst-case scenario, by 2025 unmitigated "port-related truck volume (for both ports combined) is projected to reach 60,000 on I-710 just north of the Ports, compared to 25,300 currently." The Port's own documents demonstrate the Port of Long Beach's share of traffic on these segments, which are outside the DEIR/S's arbitrary study area, is substantial in its own right. [173]

By excluding large portions of heavily-impacted freeways, the DEIR/S severely understates the Project's traffic impacts. The California Supreme Court has emphasized that "an EIR may not ignore the regional impacts of a project approval, including those impacts that occur outside of its borders; on the contrary, a regional perspective is required."[174] An EIR must analyze environmental impacts over the entire area where one might reasonably expect these impacts to occur.[175] This principle stems directly from the requirement that an EIR analyze all significant or potentially significant environmental impacts.[176] An EIR cannot analyze all such environmental impacts if its study area does not include the geographical area over which these impacts will occur.

Traffic from the Project, together with traffic from the cumulative development anticipated in the region, would inundate area freeways. It would also contribute to the Project's air quality and noise impacts, discussed in Sections VI and VII, respectively. Yet this DEIR/S leaves the public and decision-makers in the dark as to the Project's actual traffic impacts because it arbitrarily omits critical freeway segments north of Anaheim Street. The DEIR/S has clearly failed to meet CEQA's mandate, and must be revised and recirculated if it is to support approval of this Project.

ii) The DEIR/S Ignores Several Feasible Measures That Would Mitigate the Project's Traffic Impacts.

Even with its truncated study area, the DEIR/S still finds that Project-related traffic will contribute to significant impacts at several intersections and freeway segments. Faced with these substantial traffic impacts, the DEIR/S proceeds to shirk its duty to identify measures that would mitigate or avoid the Project's traffic impacts. The EIR's duty in this regard is straightforward: it "shall describe feasible measures which could minimize

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[173] *See* Port of Long Beach, "2006 Emissions Inventory." Section 6 Heavy Duty Vehicles. (2008) [*See* "Attached Literature" Exhibit AB.]
[174] *Citizens of Goleta Valley*, 52 Cal. 3d at 575.
[175] *See Kings County Farm Bureau*, 221 Cal. App. 3d at 721-23.
[176] *See* Pub. Res. Code §§ 21061, 21068; *see also Citizens to Preserve the Ojai v. County of Ventura* (1986) 176 Cal. App. 3d 421, 432-33 (finding "an absolute failure to comply [with CEQA]" where information relevant to project's impacts was omitted).

significant adverse impacts."[177] The DEIR/S flatly declines to follow this mandate, and so fails at its most essential duty– minimizing the environmental impacts of the Project.[178]

Instead of identifying measures to mitigate traffic impacts, the DEIR/S simply states that it will contribute its fair share into a hypothetical Caltrans program "to improve the impacted study highway segments in a manner that will improve the segments[']level of operation."[179] Where, as here, the lead agency does not have the authority to implement needed road improvements, a commitment to "fair share" payments is a reasonable beginning for a traffic mitigation program, but it is nowhere near sufficient. First, the DEIR/S must identify the specific measures that would reduce or avoid the Project's significant traffic impacts. Punting to Caltrans does not fulfill the Port's duty to describe mitigation measures. While CEQA allows a lead agency, as part of its approval of a project, to make findings that mitigation measures are "within the responsibility and jurisdiction of another public agency"[180] this provision does not in any way relieve the EIR of its duty to identify those measures. The DEIR/S must be revised to include a clear, specific list of improvements that would mitigate the Project's significant traffic impacts. Only then will its commitment to a fair share program begin to be meaningful and legally adequate.

Moreover, merely stating that the Port will contribute its "fair share" to the hypothetical Caltrans program is insufficient. An EIR must include evidence of a mitigation measure's efficacy.[181] The DEIR/S's vague commitments to pay a "fair share" toward improvements does not meet this requirement. The term "fair share" is hardly self-defining. The DEIR/S must include an outline of the procedures by which the Port will determine its fair share. Without an explanation of how fair share would be determined, the measure does nothing to assure the public that the Port's contribution to the hypothetical improvement program will be sufficient to ensure that the improvements are actually implemented.

Similarly, there is no guarantee that the Port and Caltrans will be able to reach agreement on the magnitude of the Port's contribution to cumulative traffic impacts. Mitigation

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[177] CEQA Guidelines § 15126.3(a)(1); *see also Woodward Park Homeowners Ass'n, Inc. v. City of Fresno* (2007) 150 Cal. App. 4th 683, 724 ("The EIR also must describe feasible measures that could minimize significant impacts.").

[178] *See, e.g., Save Round Valley Alliance v. County of Inyo* (2007) 157 Cal. App. 4th 1437, 1446 ("The foremost principle under CEQA is . . . to afford the fullest possible protection to the environment . . .") (internal quotation marks omitted).

[179] DEIR/S, at 3.5-15.

[180] CEQA Guidelines section 15091(a)(2)

[181] *See Save Our Peninsula Committee v. Monterey County Board of Supervisors* (2001) 87 Cal. App. 4th 99, 130.

measures must be "fully enforceable."[182] The lead agency must provide substantial evidence showing that measures "will actually be implemented . . ., and not merely adopted and then neglected or disregarded."[183] Again, with neither an explanation of how the Port intends to determine its fair share nor any provision to make this obligation enforceable, the measure does not meet CEQA's standards.

CEQA's core substantive component—with which every public agency must comply—requires that the Port "*shall* mitigate or avoid the significant effects . . . of projects that it carries out or approves *whenever* it is feasible to do so"[184] (emphasis added). Despite this clear mandate, the DEIR/S ignores several feasible mitigation measures that could substantially reduce the Project's traffic impacts.

First, as the DEIR/S admits, the Port is not well served by public transit.[185] Improving this situation by increasing transit service to the Port would obviously reduce traffic impacts. The DEIR/S contains nothing to suggest that such improvements would be infeasible. While the document states that work schedules at the Port are "non-typical," transit schedules could be coordinated with those work schedules. Given the large number of Port employees, it is likely that efficient, effective transit routes and schedules could be devised. These transit improvements would, moreover, serve as effective mitigation measures for the Port's air quality and greenhouse gas impacts, and must be considered in those contexts as well. Implementing such transit improvements would likely require further study of where Port workers live; as discussed below, such a study is already necessary for accurate analysis of the Project's population and housing impacts.

Another potential traffic mitigation measure would focus on improving the efficiency of truck usage at the Port. Currently, the port drayage market is structured to maintain a truck to driver ratio of close to 1:1. A system, like the one currently in place at the Port, that relies on individual drivers to own and operate their own trucks, inevitably contributes excessive traffic to the roadway system, as drivers must bring their trucks to and from work. If, however, trucks are owned by the trucking companies according to an asset-based employee model, then trucks could be slip-seated. That is, a trucking company could dispatch a single truck on multiple shifts to be driven by different drivers. This would reduce the number of trucks needed to move the same number of containers on any given day. Additionally, with trucking companies owning their trucks and providing parking while trucks are out of use, this system would ensure that trucks were used for their real purpose—moving goods—and would reduce the amount of time trucks spend on the region's freeways–and causing congestion—solely for the purpose of getting a driver to or from work. By limiting the number of commute-only truck trips,

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[182] CEQA Guidelines 21081.6(b); *see also Federation of Hillside and Canyon Associations v. City of Los Angeles* (2000) 83 Cal. App. 4th 1252, 1260-61.
[183] *Federation of Hillside and Canyon Associations*, 83 Cal. App. 4th at 1261.
[184] Pub. Res. Code § 21002.1(b).
[185] DEIR/S, at 3.5-1.

the asset-based model and slip-seating could substantially reduce the Project's traffic impacts. The Port could implement this system simply by creating a concession system that requires all trucks accessing the Port to be owned by an asset-based trucking company. This system would, moreover, diminish idling time, substantially improving trucks' emissions performance and reducing the Project's air quality and greenhouse gas impacts. We see no reason it is not feasible.

Similar efficiency-focused measures would shift goods movement away from trucks, reducing the numbers of trucks on the road. Such measures include the use of maglev systems or on-dock rail for short-distance goods movement in the Port vicinity. A recent study found maglev to be both feasible and capable of eliminating up to 1 million truck trips per year within the Port of Los Angeles.[186] The increased use of on-dock rail, discussed in Section IV.e.ii above in the context of air quality mitigation, would also serve to relieve freeway congestion and must be considered as a traffic mitigation measure as well. The program discussed in Section IV.e.ii above, by which rail is to be given preferential treatment over truck transport, would have a similar effect and must also be identified as a traffic-reducing measure. Measures to improve the utilization and efficiency of the regional rail system would also reduce dependence on trucks. These include the implementation of a Goods Movement High Speed Rail Transport for freight, a computer-based technology that improves efficiency with near zero emissions[187], or an effort to maximize the use of the currently under-utilized Alameda Corridor. Finally, the Port could reduce truck usage, and all its related impacts, by making the transfer from trucks to rail easier through the construction of an intermodal facility on Port property, perhaps on the import car lot off Anaheim Street.

Again, these systems would clearly take trucks off the region's roads and reduce all of the Project's impacts related to truck traffic: congestion, air quality, and noise. There is no indication in the DEIR/S that such infrastructure measures would be infeasible. CEQA therefore requires that they be implemented. The DEIR/S cannot be certified as adequate, and the Project cannot be approved, until these measures have been considered.

VII. The DEIR/S Severely Understates the Project's Noise Impacts.

The noise generated by Port operations greatly affects the residents of Long Beach, particularly residents of the Cesar Chavez Park neighborhood, located approximately a quarter mile from the project site's boundary. The DEIR/S acknowledges that the sensitive receptors in the vicinity of the Port already suffer noise levels that exceed the maximum noise limits prescribed by the Long Beach Municipal Code ("LBMC") and that the proposed Project will substantially increase the noise levels in and around the Project

[186] *See* General Atomics, "Conceptual Design for the Electric Cargo Conveyor System" (2006) at 1, 10. [*See* "Attached Literature" Exhibit AC].
[187] *See* Southern California Association of Governments, "Regional Transportation Plan" (2008), at 32. Hereafter, "SCAG RTP". [*See* "Attached Literature Exhibit AD].

area.[188] Nonetheless, the analysis and proposed mitigation measures for noise impacts are wholly inadequate for the reasons described below. First, the DEIR/S establishes thresholds of significance that are not appropriate given the context of the Project site. Second, the DEIR/S employs faulty methodology for selecting noise monitoring sites. The noise analysis goes on to omit obvious sources of noise from the Project, inadequately describe others, and neglect important effects noise has on human health. Finally, the DEIR/S proposes only minimal measures to lessen the severity of noise and vibration impacts and absolutely no measures to avoid them. For all of these reasons, the DEIR/S's noise analysis does not meet the requirements of CEQA.

i) The Noise Analysis Identifies Improper Significance Criteria.

By selecting inaccurate and misleading significance criteria, the DEIR/S understates the significance of the noise impacts resulting from development and operation of the Project. First, the DEIR/S's significance criteria state impacts in terms of increases of ambient noise levels of three dBA or exceedance of maximum noise levels allowed by the LBMC, even if ambient noise levels already exceed compatible levels for nearby uses.[189] These criteria are inappropriate at this project site given that "existing ambient noise levels already exceed the maximum day and nighttime noise limits prescribed by the LBMC . . . in some cases by a substantial margin."[190] In fact, according to the DEIR/S, residents of the Cesar Chavez Park neighborhood already tolerate ambient noise levels that exceed the maximum allowed by the LBMC by 11 dBA on average during both daytime and nighttime hours.[191] In effect, this level of exceedance results in a doubling of loudness compared to the maximum allowed under the LBMC.[192]

CEQA does not countenance finding significant impacts only if a project contributes an arbitrary increase over existing impact levels.[193] Rather, any worsening of noise impacts could be considered a significant impact depending on the Project setting.[194] Where, as here, the Project occurs in a neighborhood setting where residents are already faced with noise problems, any worsening of noise impacts should be considered a significant impact. The Port provides no justification for its approach of automatically deeming all such increases of less than three dBA insignificant. The DEIR/S must consider that the noise impacts will be experienced by residents already exposed to exceptionally high noise levels from the Port.

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[188] DEIR/S, at 3.9-8.
[189] DEIR/S, at 3.9-11.
[190] DEIR/S, at 3.9-8.
[191] DEIR/S, at Table 3.9-5.
[192] DEIR/S, at 3.9-1.
[193] *See Los Angeles Unified School District v. City of Los Angeles*, 58 Cal.App.4th 1019, 1025-26 (1997).
[194] *See id.*

The DEIR/S also fails to adequately address residents' existing noise concerns or to discuss the adverse effects that noise has on people. The DEIR/S provides no attempt to gauge existing levels of communication interference, sleep interference or physiological responses and annoyance, nor does it attempt to predict future levels associated with the Project. At the very least, the DEIR/S should have included a community attitude survey to assess how residents perceive existing noise levels. Such a survey should include a summary of the type and extent of the noise complaints that have been registered with the Port of Long Beach. Additional significance criteria for all stages of the Project should have been included based on this information.

Accordingly, in order to accurately evaluate the effects of the Project on nearby residents, the EIR must utilize thresholds of significance that are based on *all* of the following: (1) existing noise impacts experienced by residents; (2) community attitude and health criteria (described below); (3) the EPA's noise regulation, which identifies 55 dB DNL as the requisite level with an adequate margin of safety for areas with outdoor uses, including residential and recreation uses; and (4) the noise regulations set forth in the City of Long Beach's Municipal Code.

ii) The DEIR/S Employs Faulty Methodology to Select Noise Monitoring Sites.

The DEIR/S selects Cesar Chavez Park (Site 3) as the noise monitoring site to represent noise experienced by residences in the vicinity of the park. However, measurement of noise levels at this park alone are not necessarily representative of the noise levels residents will experience. As the DEIR/S states "a substantial sound wall at the western boundary of the park....provides significant attenuation of the noise produced by traffic flows..." on the freeway and area roadways.[195] However, the document assumes that the only noise impacts of consequence to the residents would be noise generated by project traffic. As discussed further below, operational noise impacts to this neighborhood must also be evaluated. It stands to reason that those residences located some distance away from the soundwall would be susceptible to noise impacts not only from roadway noise but also from increased operations at Pier E. Therefore, a noise monitoring station should have been established at both the park and at an actual residence in the neighborhood.

iii) The DEIR/S Does Not Adequately Analyze or Mitigate Noise Impacts.

The DEIR/S erroneously omits numerous sources of noise from the acoustical model in its assessment of project impacts. To determine operational noise impacts, the DEIR/S employed a "road traffic model," which included noise from cars and trucks. The DEIR/S also compared existing train movements with future train volume projections to estimate train operation and vibration impacts. The DEIR/S failed to evaluate operational noise

[195] DEIR/S, at 3.9-4.

from several key operations and Project elements: 1) a substantial increase in the number of ships entering the Port, 2) a substantial increase in noise from ship loading and unloading operations, 3) increased use of gantry cranes and yard tractors for loading and unloading operations, and 4) noise associated with construction and maintenance dredging activities. These omissions render the documents acoustical model inadequate. Noise associated with these activities, as well as others (e.g. increased rail and truck traffic), must be quantified and incorporated into a revised assessment of potential noise impacts.

The DEIR/S's description of impacts related to construction noise is equally unsatisfactory. In lieu of actually analyzing construction related noise impacts on nearby sensitive receptors, the document summarily concludes that for Sites 3-7, in all residential communities and all but one located within two miles of the project site, construction noise levels would be reduced to less-than-significant levels due to distance, intervening structures, and topography.[196] Similarly, the document concludes that for Sites 3-7 construction noise would be reduced to levels below the maximum allowed by the LBMC due to distance, intervening structures, and topography.[197] In both instances, the DEIR/S provides no evidence, let alone analysis, to conclude that the Project's construction-related noise impacts would be less than significant. Furthermore, compliance with a certain standard does not necessarily mean noise impacts are insignificant.[198] This is especially true in an area that is already adversely impacted by high noise levels. Here, the effected public is given no specific information as to the type and severity of potential noise impacts. Any revised document must quantify and analyze noise levels experienced at sensitive receptor sites.

Most egregiously, the documents analysis of impacts related to operational noise dismisses entirely the residential communities surrounding the Port by concluding that since the nearest sensitive receptors are outside Port property, operational noise sources generated at the Project site would not increase noise levels at sensitive receptor sites.[199] Again, the document provides no evidence to support this conclusion. A conclusion regarding the significance of an environmental impact that is not based on an analysis of the relevant facts fails to fulfill CEQA's informational goal.[200] The Port of Long Beach DEIR/S fails to fulfill this paramount CEQA purpose both because it neglects to present all relevant facts relating to the Project's construction and operational noise impacts upon sensitive receptors and because its cursory conclusions are based upon no analysis. Without a detailed quantitative analysis of construction and operation related noise, it is not possible to assess the significance of noise effects, determine the severity of these

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[196] DEIR/S, at 3.9-13.
[197] DEIR/S, at 3.9-14.
[198] *See Oro Fino Gold Mining Corporation v. County of El Dorado,* 225 Cal. App. 872, 881-82 (1990).
[199] DEIR/S, at 3.9-15.
[200] *See also Stanislaus Natural Heritage Project,* 48 Cal.App.4th at 182; *Citizens of Goleta Valley,* 52 Cal.3d at 568.

impacts, or establish whether the proposed mitigation measures would effectively reduce such effects.

The DEIR also understates appropriate noise limits and ignores other relevant indicators of significance. For example, as discussed above, the DEIR/S's significance threshold of changes in noise levels of 3 dBA or greater ignores established standards for noise levels to protect human health and welfare. According to the U.S. Environmental Protection Agency ("EPA"), a noise impact is significant if it exceeds 55 DNL, which the EPA has identified as the requisite level with an adequate margin of safety for areas with outdoor uses, including residential and recreational uses.[201] The same report identifies 70 dB as the requisite 8-hr exposure level necessary to protect against hearing loss from intermittent noise.[202] Here, we know that residents in neighborhoods already suffer ambient noise levels above maximum allowable levels in the LBMV. The blatant disregard for established appropriate noise limits combined with a lack of analysis of likely impacts that will be experienced by sensitive receptors results in a wholly inadequate analysis of noise impacts under CEQA.

Furthermore, the DEIR/S's antiseptic approach to noise analysis omits the most relevant effects that come from noise. The DEIR/S fails to identify the multiple criteria which have been established to help protect public health and safety and prevent disruption of certain human activities.[203] These criteria are based on the effects of noise on people such as communication interference, sleep interference, physiological responses and annoyance. These are described more fully below.

(1) Communication Interference

A primary concern in environmental noise problems is communication interference including speech interference and interference with activities such as social interaction. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level.

(2) Sleep Interference

Sleep interference is a major noise concern in noise assessment and is most critical during nighttime hours. Noise can make it difficult to fall asleep, create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages and cause awakening. Noise may also cause awakening which a person may or may not be able to recall. Extensive research has been conducted on the effect of noise on sleep

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[201] *See* EPA, "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" 21 (March, 1974), http://www.nonoise.org/library/levels74/levels74.htm [*See* "Attached Literature" Exhibit AD].
[202] *Id.* at 20.
[203] Id.

disturbance. Recommended values for desired sound levels in residential bedroom range from 25 to 45 dBA, with 35 to 40 dBA being the norm.

The National Association of Noise Control Officials has published data on the probability of sleep disturbance with various single event noise levels. Based on experimental sleep data as related to noise exposure, a 75 dBA interior noise level event will cause noise induced awakening in 30 percent of the cases.

(3) Physiological Responses

These are measurable effects of noise on people such as changes in pulse rate and blood pressure. Generally, physiological responses are a reaction to a loud short term noise such as a rifle shot or a loud jet overflight.

Annoyance is a very individual characteristic which can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability. The level of annoyance depends on the characteristics of the noise, defined as the loudness, frequency, time and duration of the noise, and how much speech and/or sleep interference results from the noise. The level of annoyance is also a function of the attitude of the receiver. Personal sensitivity to noise varies widely. It has been estimated that 2 to 10 percent of the population is highly susceptible to annoyance from noise not of their own making, while approximately 20 percent is unaffected by noise.

VIII. The DEIR/S Fails to Analyze the Projects Impacts to Hydrology and Water Quality Accurately.

The DEIR/S's discussion of water quality impacts and mitigation is also inadequate. The document fails to identify and fully describe potential impacts and fails to discuss feasible mitigation measures. First, the DEIR/S fails to describe with any specificity several activities at the proposed Project site that could lead to violation of regulatory standards pertaining to water quality. For example, as discussed above, the document does not describe the unloading and loading procedures of bulk materials at the Port. This omission renders the document insufficient to determine if there is a potential for discharge of materials into harbor waters apart from any potential contamination from runoff.

Second, the DEIR/S fails to adequately analyze several potential impacts related to additional pollutants entering the receiving waters through stormwater runoff. For example, with respect to stormwater discharges, the document acknowledges that "impacts would depend on the material spilled, speed of cleanup, and sedimentation rate of the material" but stops short of actually analyzing the impacts of a spill.[204] Even though there are several parameters that would influence the impact, the document should

[204] DEIR/S, at 3.3-18.

analyze potential impacts from a spill of materials typically transported through this facility and measures to be employed to avoid and mitigate the effects of such a spill. Furthermore, the document does not discuss the Port's historical record regarding compliance with applicable water quality permit provisions and regulations. A review of the DEIR/S' section on Hazards and Hazardous Materials reveals that the Port's history of hazardous materials spills, both container-related spills and overall spills, is far from stellar.[205] The DEIR/S should evaluate the effects of all hazardous materials spills that can potentially occur based both on the Port's compliance history and on the added potential for future spills given a dramatic increase in operations. Without such an analysis the DEIR/S provides insufficient evidence to substantiate its claim that any resulting impacts to receiving waters from spills would be less than significant.

Similarly, the DEIR/S states that increased truck and rail activities at the site could increase the amount of particulate and chemical pollutants settling from the air and brought in by vehicles and that these pollutants would enter the East Basin waters through stormwater runoff.[206] The document goes on to say that sampling at the POLB showed that "copper, lead, nickel, and zinc were found in concentrations that could have the potential to exceed the standards for marine water quality standards" in other parts of the Port.[207] Yet, the document concludes that "project activities are unlikely to result in runoff of metals at concentrations that would exceed water quality standards."[208] The conclusion begs the question of why exactly activities at the expanded facilities would not result in this type of runoff. Once again, the DEIR/S provides no evidence to support this statement.

Third, although the DEIR/S acknowledges that turbidity can impact water quality and that turbidity would increase during several project construction activities, the document concludes in each potential instance that the turbidity would be localized to the area of the activity and would thus not result in violation of regulatory standards or guidelines for water quality.[209] However, the conclusion is not supported with evidence. The document reports that dredging and excavation would occur twelve times over a period of ten years for a total of 528 days; pile removal would occur seven times over eight years for a total of 800 days; pile and bulkhead installation would occur eleven time in nine years for a total of 503 days; and placement of riprap would occur nine times in nine years for a total of 695 days.[210] It is difficult to imagine that all of these "localized" impacts would not combine to constitute an impact to water quality. Given an estimated construction schedule of ten years, or 3,650 days, the proposed turbidity-inducing activities would take place on approximately 2,526 of these days, and that is if one calculates the average number of days that the construction activities take place rather than the maximum

[205] *See* DEIR/S, at 3.10-2 and 3.10-3.
[206] DEIR/S, at 3.3-18.
[207] *Id.*
[208] *Id.*
[209] DEIR/S, at 3.3-14.
[210] DEIR/S, at 3.3-12.

number of days it could occur. Even if these impacts are localized, in the least it would seem that water quality in the immediate vicinity of the construction activities would be severely affected. Nowhere does the document analyze the potential for these activities to overlap and the resulting impacts from having multiple construction activities happening at once.

Similarly, the cumulative impacts analysis dealing with potential water quality impacts caused by suspension of sediments during construction concludes that impacts would not be significant. The estimated cumulative development at the Port of Los Angeles and the Port of Long Beach will combine to fill approximately 277 acres of marine waters and construction activities from all the projects "would cause suspension of sediments that could alter water quality parameters," such as dissolved oxygen, nutrients, and turbidity.[211] Yet, the document asserts that the impacts will be less than significant because the effects are dispersed in time and space and are not expected to exceed regulatory quality standards. The DEIR/S provides no analysis to support this conclusion.

Third, the DEIR/S states that "the amount of vessel traffic in East Basin would nearly double compared to baseline conditions...as a result of the Project."[212] Despite this enormous increase in ship traffic, however, the DEIR/S fails to discuss potential impacts related to a decrease in dissolved oxygen associated with turbidity from increased ship traffic.

Finally, the proposed dredging would impact the tidal prism of the Long Beach harbor, i.e. the volume of water that flows into a tidal channel and out again during a complete tide, excluding any upland discharges. In general, increased harbor system volume, especially via channel deepening, increases the tidal prism and, thus, the salinity intrusion. Although the DEIR/S states that "the tidal prism would be slightly reduced by the fill" called for by the Project, it fails to provide any further information or analysis to support its conclusion that the change will not result in a significant impact.[213] The DEIR/S is silent as to potential impacts to the tidal prism due to cumulative effects and silent as to projected sea-level rise from global climate change. The revised DEIR/S must assess the direct, indirect, and cumulative impacts of the proposed Project on the tidal prism and salinity of the Port of Long Beach harbor system.

IX. The DEIR/S Fails to Disclose the True Risk Hazardous Materials Pose to Water Quality.

The DEIR/S discloses spills of petroleum and other hazardous materials between 1997 and 2007.[214] The POLB has experienced an average of 43 spills of hazardous material

[211] DEIR/S, at 3.3-22.
[212] DEIR/S, at 3.3-18.
[213] DEIR/S, at 3.3.-16.
[214] DEIR/S, at Table 3.1-1 at 3.10-2.

per year during the past decade.[215] This number does not reflect all spill incidents (approximately 100-250 spills annually), but rather only those spills that were of a sufficient size to warrant investigation. The document also presents a segregated list of container-related spills.[216] The DEIR/S's analysis, however, focuses only on those hazardous materials spills directly associated with container terminals. Thus, the document's evaluation of potential risk associated with the probability of a spill is falsely skewed because it is based on a lower number of spills per year. Yet, the proposed Project area is likely to include several of the activities that have the potential to result in spills other than those listed in Table 3.10-2. For instance, incidental spills of hazardous materials used in boat maintenance, fuel dock and bunking accidents, incidental spills from onshore vehicles and large commercial vessels discharging oil-contaminated ballast water could all conceivably take place at the proposed facilities. These spills, although not strictly container-related, can still occur as a result of proposed Project activities and can still result in significant environmental impacts. This faulty analysis is particularly disturbing because it implicates other issue areas evaluated by the document including impacts on water quality and biota and habitat. The DEIR/S should have included all potential spills in its projections of future probable spills and in its analysis of potential impacts from those spills. Moreover, the DEIR/S should have used this more comprehensive analysis to inform other relevant sections of the document.

X. The DEIR/S Presents an Inadequate Analysis of the Project's Impacts to Biological Resources

The analysis of impacts on biological resources from dredging is similarly defective. The DEIR/S glosses over potential impacts on special status birds and marine mammals (e.g., brown pelicans, least terns, seals and sea lions) by characterizing the loss of foraging habitat as "temporary." For example, the DEIR/S attempts to reason that mammals and birds will be disturbed by construction activities because the activities "would likely cause fish and birds to leave the immediate construction area."[217] This mischaracterization of the Project's construction-related impacts downplays the nature and time-frame of the Project construction. The Project's protracted construction schedule proposes an intensive and disruptive array of construction activities for the next 10 years. Ten years is not an insignificant amount of time to evict special status species from foraging habitat in and around Middle Harbor.

Furthermore, the document's treatment of cumulative impacts on biota and habitats falls far short of meeting CEQA requirements. The document summarily concludes that since cumulative projects in the POLB and POLA would be "dispersed in time and space" no significant impacts to birds and marine mammals would occur.[218] Rather than presenting an analysis of construction activities and construction schedules that can reasonably be

[215] *Id.*
[216] DEIR/S, at Table 3.10-2.
[217] DEIR/S, at 3.4-18.
[218] DEIR/S, at 3.4-28.

anticipated, the DEIR/S takes a "trust us" approach and asks the reader to believe that cumulative impacts from a long list of massive construction projects would result in minimal impacts to wildlife in the harbor. This approach is not acceptable, and its conclusion that potential cumulative impacts to biota and habitats would be less than significant cannot stand.

Moreover, the DEIR/S's analysis of dredging impacts fails to quantify the impacts of re-suspended contaminants on fish mortality rates.[219] The revised document must identify and analyze this impact and propose and adopt adequate mitigation. Finally, the DEIR fails to identify and analyze the impacts associated with the any dredging necessary for maintenance. This "maintenance" dredging could exacerbate all of the above impacts, and could keep the habitat value of the Middle Harbor and the larger POLB/POLA low by preventing the reestablishment of the benthic community and fish populations.

XI. The DEIR/S's Analysis of the Project's Effect on Regionwide Population and Housing Is Seriously Flawed.

The DEIR/S's discussion of the Project's population and housing impacts is hardly worthy of the name "analysis." It is, rather, a series of assumptions repeated in various forms, with no attempt to describe the Project's actual impacts on the real world. As explained below, the DEIR/S's analysis cannot support its conclusions.

Initially, the DEIR/S is quite confused as to the area of analysis in this section. At first, the DEIR/S sets out clear standards of significance for the Project's impact on population and housing: If the Project would increase employment, population, or housing demand by 0.5 percent or more, it is deemed to have a significant impact.[220] The study area for employment is the five-county Los Angeles region, and the study area for population and housing is the Gateway Cities subregion.[221] Moreover, the standards for population and housing demand focus on impacts to individual cities within the subregion, while the employment standard looks at the region as a whole.[222] The DEIR/S provides no explanation for wither the different study areas or for the shifting focus from regionwide to local impacts.

While the tables within the chapter reflect these studies, the headings preceding *all* the impact discussions, however, state that each standard concerns the entire five-county region. Thus, it is not unclear why the DEIR/S focuses on particular geographic areas, and it is unclear which areas it actually focuses on. Until these discrepancies are remedied, and substantial evidence provided to support the choice of study areas and standards, the EIR/S will remain wholly inadequate and insufficient to support project approval.

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[219] DEIR/S, at 3/4-17.
[220] DEIR/S, at 3.12-7.
[221] *Id.*
[222] *Id.*

Moreover, population and housing demand standards, by their own terms, require an analysis of the Project's impact on individual cities. The DEIR/S, however, only analyzes population and housing impacts on a subregion-wide basis. It simply calculates the Port and the Project's percentage of the total population and housing demand of the Gateway Cities subregion, and assumes that the population will be spread out evenly--the same percentage in each individual city.[223] The tables listing the individual cities thus do not represent an analysis of the Project's impact on those cities; they are merely restatements of the original subregion-wide calculation. These tables provide no support whatsoever for the DEIR/S's conclusion that the Project will have a less than significant impact on population and housing demand in any individual city.

By spreading the population so thinly, the DEIR/S's approach minimizes the Project's impact. In fact, some cities will certainly have a higher percentage of new Port-related residents than others; it is very likely that some cities' population growth will exceed the stated standards of significance. This is especially true with respect to housing demand, where the percentage of subregion-wide demand attributable to the Project is 0.4 percent, just below the threshold.[224] For just one example, if further study demonstrated that the Project would likely lead to new demand for 52 housing units in Bell Gardens (just 13 units more than the DEIR/S currently claims), then it will have crossed the threshold into significance. It is very likely that at least one of the cities in the Gateway subregion will have an increase in housing demand of 0.5 percent or more; the same may well be true of population.

The only way the DEIR/S could answer the questions posed by its own significance standards would be to create formulae for projecting the percentages of new Port-related population that will live in each city. The current residences of Port-related workers, along with historical trends, would provide a good start. The EIR would then need to analyze the types of jobs that will be created, and to compare the likely incomes against housing prices in the various cities.

This analysis would also provide much-needed information related to other sections of the DEIR/S and the CEQA process. The housing data would also help analyze traffic, as it would explain where commuters are likely to be coming from, and the employment data will be essential for the Port's determination of whether or not this project will provide the community with sufficient benefits to make its serious environmental impacts worthwhile.

Until the DEIR/S is revised to undertake this analysis, and recirculated to allow public review and input regarding the analysis, it will remain inadequate. As the documents

[223] *See, e.g.*, DEIR/S at 3.12-9 ("[I]t is assumed that the incoming population would be distributed through the 27 cities of the Gateway Cities subregion based on the relative population of each city . . . .").
[224] Table 3.12-18.

stands now, there is no evidence supporting its impact conclusions, let alone the substantial evidence required by CEQA. In light of the total lack of evidence, the DEIR/S cannot validly be certified, nor may the Project be approved.[225]

XII. The EIR Fails to Provide an Accurate Picture of the Project's Growth-Inducing Effects.

An EIR must discuss the ways a project could directly or indirectly facilitate or remove obstacles to population growth or new development in the surrounding environment.[226] A proposed project is considered either directly or indirectly growth-inducing if it: (1) fosters economic or population growth or additional housing; (2) removes obstacles to growth; (3) taxes community services or facilities to such an extent that new services or facilities would be necessary; or, (4) encourages or facilitates other activities that cause significant environmental effects.[227] An environmental impact report must discuss how a proposed project, if implemented, could induce growth.[228] While the growth-inducing impacts of a project need not be labeled as adverse, the secondary impacts of growth (e.g., loss of open space/habitat/agricultural lands, air quality, transportation, etc.) may be significant and adverse. In such cases, the secondary impacts of growth inducement must be disclosed as significant secondary or indirect impacts of the project.

The appropriate components for an adequate analysis include: (1) estimating the amount, location and time frame of growth that may occur as a result of the project (e.g., additional housing, infrastructure, and mixed use developments); (2) applying impact assessment methodology to determine the significance of secondary or indirect impacts as a result of growth inducement; and (3) identifying mitigation measures or alternatives to address significant secondary or indirect impacts. The Port of Long Beach's DEIR/S's growth-inducing impacts analysis fails to contain these essential components.

At the outset, the analysis of growth inducing impacts includes a glaring inconsistency regarding the number of jobs the proposed Project will create. While one portion of the section claims the Project would generate 2,961 new jobs in addition to construction jobs, another section claims the Project would add 24,779 jobs.[229] This inconsistency must be rectified.

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[225] *See Santiago County Water Dist. v. County of Orange* (1981) 118 Cal. App. 3d 818, 829 ("[T]he ultimate decision of whether to approve a project . . . is a nullity if based upon an EIR that does not provide the decision-makers, and the public, with the information about the project that is required by CEQA."); *Citizens to Preserve the Ojai v. County of Ventura* (1985) 176 Cal. App. 3d 421, 428 ("Certification of an EIR which is legally deficient because it fails to adequately address an issue constitutes a prejudicial abuse of discretion . . . .")

[226] Pub. Res. Code § 21100(b)(5); *City of Antioch v. City Council of Pittsburg* (1986) 187 Cal. App. 3d 1325, 1337.

[227] CEQA Guidelines § 15126.2(d).

[228] *Id.* at § 15126(d).

[229] DEIR/S at 5-2 and 5-3, respectively.

The DEIR/S's analysis of the projects effect on region-wide population and housing is seriously flawed. First, while the document acknowledges that the Project would result in growth-inducing effects during the construction period, it dismisses the potential impacts of this growth by calling them incremental short-term effects. Ten years of construction is not "short-term," however. These impacts must be analyzed.

Moreover, the DEIR/S fails to consider any of the growth-inducing effects of the Project's operation, and provides thoroughly insufficient justification for this failure. First, the DEIR/S fails to consider the substantial economic activity that is indirectly induced by Port operations. Presently, Long Beach and other near-Port cities host dozens, if not hundreds of ancillary facilities that serve the Port, including such operations as warehouses, truck service and fueling centers, container storage yards, and distribution centers. A small sampling of these facilities are shown on the map attached to this letter as Exhibit AE, titled "Map of Off-Port Goods Movement Related Facilities". *See also, e.g.*, SCAG RTP at 3, 4. Such facilities have a wide range of environmental impacts, including noise, air pollution, greenhouse gas emissions, land use conflicts, and stormwater runoff.

For just one example, as noted in a recent study, "warehousing and redistribution centers may be located as far as 60 miles inland from the ports."[230] Carrying goods to an increased number of such ancillary facilities would add to the Project's already significant traffic-related impacts, including congestion, air quality, greenhouse gas emissions, and noise. In other communities, closer to the Port, ancillary facilities lead to the accumulation of empty containers that blight views and pose serious hazards to residents, especially children.[231] These aesthetic and safety impacts are nowhere analyzed in the DEIR/S.

These facilities are directly induced by the Port. The Project, by greatly expanding Port operations, will similarly cause these ancillary facilities—and their environmental impacts--- to multiply and grow. The DEIR/S must analyze this induced growth and all of its environmental impacts, both in the standalone Growth-Inducing Effects section, and as a part of the main analysis of each relevant impact area.

Second, despite the impacts to housing demand discussed in Section XI above, the DEIR/S denies that this housing demand will have environmental impacts, because the "residential area in the Project vicinity is largely built out."[232] This statement displays, once again, that the DEIR/S has an inappropriately narrow view of the Project's impact

[230] Wilbur Smith and Associates, "Economic Benefits and Costs of Growth in Goods Movement: Multi-county Goods Movement Action Plan" (2007), at 1-13. [*See* "Attached Literature" Exhibit AF].
[231] *See* Deborah Schoch, "Unsightly Evidence of U.S. Trade Gap Piles Up," Los Angeles Times (June 9, 2006). [*See* "Attached Literature" Exhibit AG].
[232] DEIR/S at 5-2.

area. Large parts of the Los Angeles region, notably the Inland Empire area of Riverside and San Bernardino counties, are far from built out. It is very likely that many new Port-related workers, or workers brought to the region by induced growth, will settle in these fast-growing areas.

Housing patterns in the Inland Empire tend to be sprawling and therefore to have substantial environmental impacts. To provide an accurate account of these indirect impacts, the DEIR/S will need to include, as discussed above, a thorough study of where Port-related workers live, and where new such workers will live. Again, this study will require considering the types and compensation levels of the jobs that will be created, both directly at the Port and indirectly through the Project's growth-inducing effects.

Finally, regardless of where new workers live, the increase in population, both during the prolonged construction period and during Project operation, would also place additional demands on region's roadways, nearby school facilities, and other public services. Yet the DEIR/S fails to disclose and analyze these related impacts. As with numerous other impact analyses in the DEIR/S, the document never bothers to actually analyze these impacts or provide any evidence to support its cavalier conclusions. The associated environmental impacts to, for example, traffic, air quality, and public infrastructure and services, resulting from the increased population growth must be addressed in any revised document.

XIII. The DEIR/S Does Not Adequately Discuss Alternatives to the Proposed Project.

The analysis of alternatives to the proposed project lies at "[t]he core of an EIR."[233] In this analysis, the EIR must consider a reasonable range of alternatives that would avoid or substantially lessen this impact while feasibly attaining most of the Project's basic objectives.[234] If the EIR refuses to consider a reasonable range of alternatives or fails to support its analysis with substantial evidence, the purposes of CEQA are subverted and the EIR is legally inadequate.[235] If a feasible alternative exists that will meet the project's objectives while reducing or avoiding its significant environmental impacts, the project may not be approved.[236]

An adequate alternatives analysis is a crucial component of complying with CEQA/NEPA. The CEQ has labeled the alternatives requirement as the "heart" of the

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[233] *Citizens of Goleta Valley II*, 52 Cal. 3d at 564; *see also* Pub. Res. Code § 21002.1(a) ("The purpose of an environmental impact report is . . . . to identify alternatives to the project . . . .").
[234] *See* § 21100(b)(4); CEQA Guidelines § 15126.6(a).
[235] *San Joaquin Raptor*, 27 Cal. App. 4th at 735-38; *Kings County Farm Bureau*, 221 Cal. App. 3d at 736-37.
[236] Pub. Res. Code § 21002.

EIS.[237] Further, NEPA contains a clear mandate that the alternatives must be explored in depth and with the same level of detail as the proposed action.[238] The analysis of the alternatives throughout the document fails in this respect. As articulated in detail above, the incorrect project description inhibits an accurate assessment of the alternatives to this expansion project by artificially limiting the number of alternatives that could fulfill this flawed objective.

The alternatives analysis, moreover, misconstrues the Coastal Act by stating "Port activities should be water-dependant and give highest priority to navigation, shipping, and necessary support facilities to accommodate the demands of foreign and domestic waterborne commerce."[239] However, the DEIR/S fails to note that the Coastal Act states explicitly that ports must "[g]ive highest priority to the use of existing land use of existing land space within harbors for port purposes, including, but not limited to, navigational facilities, shipping industries, and necessary support and access facilities."[240] As such, the choice of four alternatives, which include two that require the creation of new land out of ocean, do not appear to comply with this mandate.

The proposed project would have significant and unavoidable air quality and traffic impacts. Similarly, though many of the proposed greenhouse gas mitigation measures included in the DEIS/DEIR such as utilizing compact fluorescent lights, LEED building and increased recycling rates (AQ 15, AQ-14 and AQ-18) are commendable, they fail to tackle the project's largest sources of greenhouse gases: the transport and movement of goods. Considering that the 2030 Annual GHG Emissions Associated with Operations of the Middle Harbor Container Terminal are projected to grow by more than fourfold, the Port must analyze an alternative that seriously curbs GHG emissions. CEQA requires the DEIR/S to consider alternatives that directly address these impacts.[241]

As the Port is well aware, California passed an ambitious law to tackle climate change, and it is discouraging that the DEIR/S for a project with such a great increase in GHG includes neither adequate mitigation any alternative, other than required No Project

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[237] 40 C.F.R. § 1502.14; *see also Monroe County Conservation Council, Inc. v. Volpe*, 472 F.2d 693, 697-98 (2d. Cir. 1972)("The requirement for a thorough study and a detailed description of alternatives…is the linchpin of the entire impact statement."); Cal. Pub. Res. Code § 21002; 14 Cal. Code Regs. § 15126.6.

[238] *See* 40 C.F.R. § 1502.14 (a) and (b); *see also Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act* Regulations, 46 Fed. Reg. 18026 (Mar. 23, 1981)("The degree of analysis devoted to each alternative in the EIS is to be substantially similar to that devoted to the "'proposed action.'").

[239] DEIR/S, at 1-13.

[240] Cal. Pub. Res. Code Div. 20 at § 30708.

[241] . *See* CEQA Guidelines § 15126.6(b); *Laurel Heights*, 47 Cal. 3d at 401-04; *Kings County Farm Bureau*, 221 Cal. App. 3d at 732 ("[I]f there is evidence of one or more potentially significant impacts, the report must contain a meaningful analysis of alternatives . . . which would avoid or lessen such impacts.").

alternative, that eliminates the proposed project significant and unavoidable greenhouse gas emissions.

Fortunately, many of the mitigation measures aimed at SCAQMD thresholds also increase efficiency or utilize technologies that decrease diesel fuel use and corresponding emissions of greenhouse gases; these measures can form the basis of an alternative project design aimed at improving the efficiency of ships, trucks, locomotives, and cargo-handling equipment, in order to reduce the Port expansion's carbon footprint.

The most important aspect of this alternative would be the reduction of the Port's dependence on diesel trucks, primarily through rail electrification and other technologies, none of which the DEIR/S addresses.. Electricity coming from power plants does create GHG emissions, however each kilowatt-hour that replaces diesel saves 2–4 pounds of carbon dioxide (depending upon the source of electricity replacing it is).[242] Several electric rail systems were reviewed under the *CAAP Joint Port Transportation Technology Review Program - Zero Emissions Container Mover System* which is partly funded by the Technology Advancement Program.[243] The following systems were deemed either "More Feasible" or "More Ready": [244]

Maglev- utilizing electromagnetic force, a Maglev system would create zero emissions at source and has been demonstrated in La Jolla, CA as a feasible cargo shipping technology, though not yet ready and market available. At 80 mph new, elevated guideways would move cargo, also requiring associated terminal infrastructure. A demonstration project would not be undertaken to prove technological capacity but economic feasibility, since the Maglev is admittedly expensive. Port of Los Angeles study cost estimates $45.5 million/mile however annual fuel savings in 2007 were estimated to be $2 million.[245]

LIM-Rail-Linear motors would be placed along railroad tracks and aluminum plates attached to the bottom of cars. A magnetic field moving along the motors in the track would induce a current in the plates and propel the vehicles. The LIM-Rail system uses existing infrastructure and current railroad operational practices, but can also be used in conjunction with the Maglev system. There is currently no test track for this concept, though the principles have been applied in other systems.

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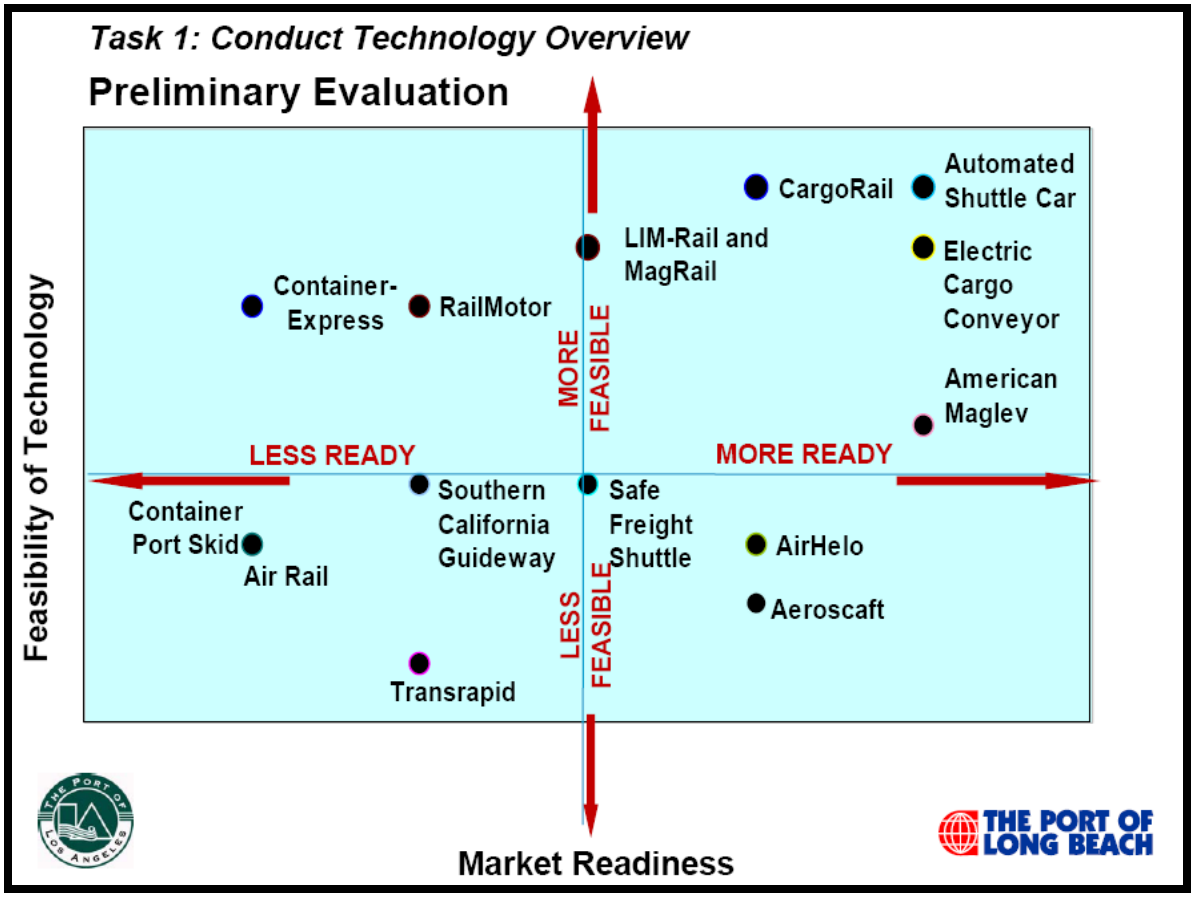
[242] Port Innovation Workshop Final Report, Rocky Mountain Institute, April 2007
[243] Lyte, William. *Building a Maritime Technology Cluster at the San Pedro Ports.* Kennedy/Jenks Consultants. Presented 12/4/07. http://www.metrans.org/nuf/2007/documents/Lytepresentation.pdf
[244] General Atomics. *MAGLEV and Linear Motors for Southern California Transportation Presentation to Southern California Association of Government MAGLEV Task Force.* February 8, 2007. pg. 28.
[245] Assumptions: 10-mile route, 1 million cargo cars and 50 tons/car or 500 million ton-miles per year. Ibid. pg. 42.

Electric Dual-Mode Trams- The CargoRail trams are rubber-wheeled vehicles that can carry marine cargo containers at 75 mph on an elevated guideway or on local streets. On the guideway, they would be propelled by electricity via permanent magnet hub motors in the wheels. On local streets they could be fueled by clean fuel, such as CNG, to generate the electricity for the motor.

Moreover, in conjunction with the POLA, the POLB commissioned a study of Zero Emission Container Mover Systems. As the chart from a presentation to the Board of Harbor Commissioners demonstrates, there are several technologies that have been quantified as "More Feasible" and "More Ready."[246]



Finally, we are providing some rough calculations of the benefits and costs of various technologies that have been proposed as alternatives to traditional modes of diesel transport.

[246] Zero Emissions Container Mover System Evaluation Status Update, (September 6, 2007) *available at* http://www.portoflosangeles.org/DOC/Zero_Emissions_Container_Mover_System_Pres_090607.pdf.

Table 1: Technology Comparison

	Commercial Applications?	Use w/ existing infrastructure?	Ton-mile/kWh[247]	Cost per Mile (single track estimates)
LIM on the vehicle	TRANSIT	NO[248]	N/A	$100+ million (transit applications)
LIM on the Track	NO	YES	5-10	$10-20 million[249]
EMS Maglev	TRANSIT	NO	5-10	$70-170 million[250] (double track cost)
EDS Maglev	NO	NO	5-10	$45.5 million[251]
Electric Rail	YES	YES	8-10	$9-13 million[252]
CargoRail Concept	NO	NO	N/A	$40-54 million[253]
Automated Shuttle Car Concept	YES[254]	NO	N/A	N/A
Container Pipelines	NO	NO	N/A	N/A

[247] The ton-mile/kWh figures are estimates since it is hard to determine efficiency without pilot tracks under weight. Direct use of electricity will likely have higher efficiency. Efficiency will differ based on loads and speeds. Electric applications also lose efficiency in creating and transferring electricity to the vehicle.

[248] Transit applications have been dedicated lines only. Likely lower grade steel rails not capable of withstanding heavy freight applications. All the concepts would require new guideway construction.

[249] Does not include costs to apply metal reactive plates to locomotives and railcars.

[250] Low cost figure based on the Transrapid dual guideway system built in Shanghai, China for high-speed transit. The high cost figure is based on the cost/mile for the low-speed Linimo transit line in Nagoya, Japan.

[251] Does not include cost of the vehicles estimated at $800,000 each – General Atomics figures.

[252] Cost estimates are from early 1990's SCAG study of electrifying the Alameda Corridor. Costs include cost of implementing electric infrastructure and 12-14 electric locomotives. Cost figures were put in 2007 dollars with inflation calculator. Total costs were divided by 20 miles to derive cost per mile estimates.

[253] Includes the cost of 180 to 285 vehicles needed per mile at $120,000 per vehicle.

[254] The concept has been used in the Steel industry for heavy applications.

A reasonable range of alternatives must include proposals that "offer substantial environmental advantages" over the proposed project.[255] The technologies discussed here offer such an advantage and are proven to be feasible. Thus, it is inexplicable why this DEIR/S is devoid of any true analysis of alternatives to ease the Port into a more efficient and less polluting future.

XIV. The Environmental Justice Analysis Is Similarly Lacking.

It is no secret that port operations implicate several environmental justice concerns. Accordingly, we found the environmental justice analysis completely lacking in that it skewed the real impacts of who is being impacted by Port operations. Perhaps, the most glaring example of this inadequacy is the discussion related to Impacts AQ-2 and AQ-4 where the DEIR/S concludes that there are no environmental justice impacts from construction and operations of the facility because "[t]he criteria pollutant dispersion model indicates the highest offsite concentrations of one-hour and annual NO2 would be well within the industrial areas of the Port."[256] This conclusion completely misses the point that Figures 3.15-1 and 3.15-2 show that there are significant census tracts that have a high percentage of low income communities of color just outside of the port complex. In fact, for another air quality impact (odor), the DEIR/S finds that this impact would represent a disproportionately high and adverse impact on minority and low-income populations because "the populations in closest proximity to the Port, where effects are likely to be greatest, are predominantly minority…and disproportionately low-income."[257] It is hard for commenters to fathom why the air quality impact would not result in this same conclusion, especially considering there are significant impacts for several air pollutants. This myopic view of the environmental justice impacts from project-related air pollution that effectively precludes the Port from looking beyond its own gates is not valid under CEQA and NEPA.

XV. A Revised Draft EIR Must Be Prepared and Recirculated.

Because of the inadequacies discussed above, the Port of Long Beach DEIR/S cannot form the basis of a final EIR/EIS. CEQA requires preparation and recirculation of a supplemental draft "[w]hen significant new information is added to an environmental impact report" after public review and comment on the earlier draft EIR.[258] The opportunity for meaningful public review of significant new information is essential "to test, assess, and evaluate the data and make an informed judgment as to the validity of the

[255] *See Citizens of Goleta Valley*, 52 Cal. 3d at 565-66.
[256] DEIR/S, at 3.15-9.
[257] DEIR/S, at 3.15-9.
[258] Pub. Resources Code § 21092.1.

conclusions to be drawn therefrom."[259] An agency cannot simply release a draft report "that hedges on important environmental issues while deferring a more detailed analysis to the final [EIR] that is insulated from public review."[260]

In order to cure the panoply of DEIR/S defects identified in this letter, the Port must obtain substantial new information to adequately assess the proposed Project's environmental impacts, and to identify effective mitigation and alternatives capable of alleviating the Project's significant impacts. This new information will clearly necessitate recirculation. CEQA requires that the public have a meaningful opportunity to review and comment upon this significant new information in the form of a recirculated draft supplemental EIR.

We appreciate your consideration of our comments. Please feel free to contact us if you have any questions.

Sincerely,

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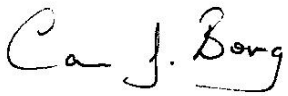

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[259] *Sutter Sensible Planning, Inc. v. Sutter County Board of Supervisors*, 122 Cal. App. 3d 813, 822 (1981); *City of San Jose v. Great Oaks Water Co.*, 192 Cal. App. 3d 1005, 1017 (1987).
[260] *Mountain Lion Coalition v. California Fish and Game Comm'n*, 214 Cal.App.3d 1043, 1052 (1989).

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1) Exhibit A -- CARB, *Methodology for Estimating Premature Deaths Associated with Long-Term Exposures to Fine Airborne Particulate Matter in California Draft Staff Report*, (May 22, 2008).

2) Exhibit B -- Zhu Y. et al., *Concentration and Size Distribution of Ultrafine Particles Near a Major Highway*. J. Air & Waster Management, 52: 1032-1042 (2002).

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4) Exhibit C -- CARB, Mobile Monitoring Platform Update and Results, April 17, 2008, at the HCMS Community Meeting, Wilmington Senior Center.

5) Exhibit D -- Curtis H. et al., *Traffic Flows and Black Carbon Levels in the Urban Seattle Environment*, (Fall 2004).

6) Exhibit E -- Kim J. et al., *The East Bay (California) Children's Respiratory Health Study*, (June 2004).

7) Exhibit F -- CARB, *West Oakland Health Risk Assessment*, (March 2008).

8) Exhibit G -- California Climate Action Registry, *General Reporting Protocol*, *Version 3.0*: Reporting Entity-Wide Greenhouse Gas Emissions (April 2008).

9) Exhibit H -- Committee on Environment and Natural Resources, National Science and Technology Council, *Scientific Assessment of the Effects of Global Change on the United States*, (May 2008).

10) Exhibit I -- Ramanathan, V. & Carmichael, G., *Global and Regional Climate Changes Due to Black Carbon*, Nature Geoscience 1:221-227 (2008).

11) Exhibit J -- Jacobson, M., *Strong Radiative Heating Due to the Mixing State of Black Carbon in Atmospheric Controls*, Nature 499: 695- 697 (2001).

12) Exhibit K -- Reddy, M.S. & Boucher, O., *Climate impact of black carbon emitted from energy consumption in the world's regions*. Geophys. Res. Letters. 34: L11802 (2007).

13) Exhibit L -- Bond, T. & Sun, H. *Can Reducing Black Carbon Emissions Counteract Global Warming?* Environ. Sci. Technol. 39:5921-5926 (2005).

14) Exhibit M -- Maynard D. et al., *Mortality risk associated with short-term exposure to traffic particles and sulfates*. Environ. Health Perspect. 115:751-755 (2007).

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16) Exhibit O – Walker, A.P., *Controlling Particulate Emissions from Diesel Vehicles*, Topics in Catalysis 28: 165-170 (2004).

17) Exhibit P – Memorandum of Understanding between POLA, the Attorney General of California, and the Mayor of Los Angeles. Dec. 6, 2007.

18) Exhibit Q – International Council on Clean Transportation (ICCT) (Mar. 2007) *Air Pollution and Greenhouse Gas Emissions from Ocean-Going Ships: Impacts, Mitigation Options and Opportunities for Managing Growth* at 34.

19) Exhibit R – Union of Concerned Scientists, *Reducing Global Warming Pollution: Technology Options for Tractor Trailers,* (2008).

20) Exhibit S -- Environmental Protection Agency: Office of Atmospheric Programs. *Global Mitigation of Non-CO_2 Greenhouse Gases* (June 2006).

21) Exhibit T -- Memorandum of Understanding between POLA, the Attorney General, and the Mayor of Los Angeles, Dec. 6, 2007. Attachment C, *Conceptual Scope of Solar Photovoltaic Development: Port of Los Angeles*.

22) Exhibit U -- Munk, Torben. *Fuel Conservation through Managing Hull Resistance*, (2006).

23) Exhibit V -- IMO, Study of Greenhouse Gas Emissions From Ships, Part 5, Technical and Operational Measures to Reduce Greenhouse Gas Emissions from Ships, Issue No. 2-32 (Mar. 2000) at 72.

24) Exhibit W -- Settlement Agreement between ConocoPhillips Co. and the California Attorney General, Sept. 10, 2007.

25) Exhibit X -- Bond, T. et al., *A technology-based Global Inventory of Black and Organic Carbon Emissions from Combustion*. J. Geophys. Res., 109: D14203, (2004).

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28) Exhibit AA -- Meyer, Mohaddes Associates, Inc, Port of Los Angeles Baseline Transportation Study, April 2004.

29) Exhibit AB – Port of Long Beach, 2006 Emissions Inventory, Section 6 Heavy Duty Trucks, pg. 149 (published in June 2008).

30) Exhibit AC -- General Atomics, "Conceptual Design for the Electric Cargo Conveyor System" (2006) at 1, 10.

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32) Exhibit AE -- EPA, "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" 21 (March, 1974) http://www.nonoise.org/library/levels74/levels74.htm.

33) Exhibit AF – NRDC Map of Off-Port Goods Movement Related Facilities.

34) Exhibit AG -- Wilbur Smith and Associates, "Economic Benefits and Costs of Growth in Goods Movement: Multi-county Goods Movement Action Plan" (2007).

35) Exhibit AH -- Deborah Schoch, "Unsightly Evidence of U.S. Trade Gap Piles Up," Los Angeles Times (June 9, 2006).

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