

January 22, 2019

Mr. Chris Lytle  
Executive Director  
Port of Oakland  
530 Water Street  
Oakland, California 94607

Dear Mr. Lytle:

Thank you for developing and releasing a Revised Draft Seaport Air Quality 2020 and Beyond Plan (Revised 2020 Plan), and providing California Air Resources Board (CARB) staff and the public a second opportunity to comment on this pivotal planning document for the Port of Oakland (Port). We appreciate the numerous improvements to the Plan and the second public review process, and continue to urge the Port to commit to additional transformative actions beyond those listed in the Revised 2020 Plan. Those actions, as described in this letter, are critical to protect local communities from exposure to harmful air pollution and should be included in the Plan prior to adoption.

Since we submitted our initial comment letter on the Draft 2020 Plan (attached), CARB's governing board identified West Oakland as one of the 10 initial communities for focused action pursuant to Assembly Bill (AB) 617 (C. Garcia, Chapter 136, Statutes of 2017). As a selected community with high cumulative exposure burden to air pollution, more aggressive near-term actions to improve public health are critical to dovetail with the five-year planning horizons for West Oakland. Echoing the comment from Ms. Margaret Gordon of the West Oakland Environmental Indicators Project during the January 10, 2019 Task Force Meeting, we agree there needs to be merging of the AB 617 effort for West Oakland and the Revised 2020 Plan to achieve "mitigations for workers and residents nearby the Port." The Port can position itself, its tenants, and its transportation operators, to leverage funds and planning efforts to improve air quality and system efficiencies in a way that serves the community and the Port's bottom line.

We continue to support the Revised 2020 Plan's focus on the necessary transition to zero-emission operations to protect public health and combat climate change. We are encouraged that the Revised 2020 Plan includes more detail on the Port's ongoing planning, tracking, and evaluation activities, as well as efficiency initiatives, to reduce emissions and protect community health, while increasing operational efficiencies and remaining competitive with other West Coast ports.

CARB strongly recommends further revision of the Revised 2020 Plan prior to consideration by the Board of Port Commissioners on April 25, 2019:

1. Commit to additional actions, especially in the near-term phase (2019-2023), to provide health benefits for West Oakland, an AB 617 community;
2. Establish sector-specific zero-emission goals detailing the Port's vision for the transition to a zero-emission seaport; and
3. Revise and clarify details of newly incorporated material in the Plan document.

### **Commitment to Additional Actions**

CARB urges the Port to commit to adding at least the following strategies for its Near-Term Action Plan (2019-2023). The majority of these actions create policies that would require no net financial investment from the Port or its tenants. Staffing for implementation would not be solely incumbent upon the Port itself.

- High-Emitting Truck Detection System (E-T-6). CARB funded the University of California, Berkeley evaluation of in-use trucks serving the Port, and has since developed its own advanced detection system, the Portable Emissions AcQuisition System (PEAQS). This provides CARB the ability to detect automatically, and in real-time, trucks with high emissions. In 2018, CARB amended its statewide inspection programs to lower opacity limits for trucks equipped with diesel particulate filters. Lowered opacity limits support our ability to identify and require repair of the subset of high polluting drayage trucks affecting West Oakland. We are asking the Port to collaborate with CARB to determine how PEAQS or other advanced detection systems can be used to identify trucks with high emissions for citation and repair. The Center for Environmental Public Policy at the University of California, Berkeley submitted recommendations on this issue and may be interested as well.
- Ship Rates and Incentives (O-4 and O-6). The Revised 2020 Plan indicates that ships remain the single largest contributor of emissions from the Port; therefore, all emission reduction measures for ships are urgently needed. One potential implementation action, O-6, describes the Port offering financial incentives for ships with lower-emitting engines, cleaner burning fuels, and shore power capabilities. Separately, potential implementation action O-4 quantifies the potential emission reductions from implementation of a voluntary vessel speed reduction (VSR) program. The Port should commit to adopting a berthing rate structure that rewards ships with lower in-transit and/or at berth emissions. A Port commitment for a voluntary VSR does not need to wait until the completion of the Bay Area Air Quality Management District pilot study.

- Request Railroads to Use Cleanest Engines in Oakland (E-L-5). CARB's 2008 Health Risk Assessment for West Oakland identified off-port locomotive emissions as a significant contributor to health risk in the West Oakland community. Initiatives to reduce emissions from the port should also consider emissions from nearby off-port rail yards, especially considering that a significant fraction of freight is transported in sequence through both facilities. Therefore, the Port should not delay to request and coordinate with neighboring Class 1 rail yards to use the cleanest available locomotive propulsion technologies on their properties.
- Infrastructure Planning and Investment. We previously suggested that Port begin infrastructure investments in the Near-Term (2019-2023) instead of waiting until the Intermediate Term (2023-2030). We are supportive of the additional equipment and infrastructure actions in the Revised 2020 Plan, but urge the Port to begin deploying more widespread electrical infrastructure and modifying electrical substations now.

The Maritime Power Capacity Study for Terminal Electrification is expected in Spring 2019, and early upgrades will begin laying the groundwork for zero-emission maritime operations. Earlier investments in infrastructure will accelerate the adoption of zero-emission equipment instead of next-best alternatives, and will also allow infrastructure projects to remain competitive for local, State, and/or federal incentive opportunities.

To address the lack of space for truck charging infrastructure that is cited in the response to comments on the Draft Plan, we strongly encourage the Port to work with the City of Oakland to identify space within the entire former Oakland Army Base property for this need. This action is to help mitigate the impacts of the expanded on- and off-port freight activities occurring in response to development of that property by both the Port and the City.

### **Establishing Sector-Specific Zero Emission Goals**

CARB staff supports the Revised 2020 Plan's overall strategies to promote pathways to zero-emission technologies. As indicated in our initial comment letter, we reiterate the urgency to set transformative and ambitious zero-emission goals beginning in the near-term phase. We recognize a number of specific and conflicting suggestions were received for achieving percentages of zero-emission equipment by a certain date, which cannot all be accommodated because some conflict with each other.

We urge the Port to respond to CARB's initial comments and those received from other stakeholders by identifying target dates for a percent of zero-emission equipment that should be possible for a given sector. These goals or targets can be included as sub-bullets in Strategies #2 and #3, which are currently listed on Page 4 of the Revised 2020 Plan. By establishing specific zero-emission performance goals, the Port will send clear signals to industry and tenants to invest in cleaner technologies. Further, early adoption of advanced technologies will expand opportunities for local, State, and federal funding that typically sunset before statewide requirements take effect.

### **Enhance and Revise the Plan**

The Port should further amend its Revised Draft 2020 Plan to include the following changes.

- Geographic domain of the emission inventory. The 2015 and 2017 calendar year inventories underestimate port emissions because the methodologies do not attribute emissions from trucks or locomotives before they enter or after they leave the port boundary. The impact of the narrow domain in the Revised 2020 Plan is that the emission sources for trucks and locomotives appear disproportionately small relative to their actual impact to the surrounding community and air basin. We recognize that the contribution to the emission inventory may not be directly proportional to a source's cancer risk determined through a health risk assessment. However, it is essential that the Port direct its consultants to use available activity data and CARB on-road and off-road models to calculate emissions of trucks and locomotives outside the port boundary for cargo being transported to and from the port.
- Emission reductions, port staffing, and financial investments. Some, but not all potential and identified Implementation Actions (Table 2 and Appendix C) include emission benefits or cost information. The Revised 2020 Plan includes substantial detail and consideration for each (potential) action, but it is not clear to stakeholders or other readers whether the Port considers an action to not be feasible due to port staffing, funding limitations, or other reasons. The Port should expand analysis of potential implementation actions to include emission reductions expected, estimated port staffing, and required financial investments. Objective criteria for each action will help prioritize and direct funding to the most effective projects.

- Adjustments to cost methodology in Appendix F. We request two edits to this section:
  1. The cost analysis for operating expenditures (OpEx) do not include a recently available credit through CARB's Low Carbon Fuel Standard (LCFS) beginning in 2019. Yard tractors, other cargo handling equipment, transport refrigeration units, and ocean-going vessels at berth are now eligible for generation and sale of credits for zero-emission operation. In some cases, including yard tractors, credit sale revenues may exceed the assumed cost of electricity at \$0.15/kW-hr. The Port should revise OpEx assumptions to account for LCFS credit values.
  2. Figure F.10 presents the expected year that a single year of operating expenditures will be less than the increased capital cost of a zero-emission yard tractor, both with and without the current vouchers. The target dates of 2022 and 2038 do not provide a useful statistic because many yard tractors are operated for five years or longer. Instead, we suggest presenting the operational time (with cost savings realized over several years) to break even in a specific calendar year.

Our individual commitments for action and effective collaboration are critical to achieve our mutual vision to transform freight operations at the Port of Oakland and across California. CARB urges the Port to reconsider our comments on the initial Draft and specifically those highlighted in this letter on the Revised 2020 Plan. With an expanded commitment to additional near-term actions, we are confident of the Port's ability to lead the transition to a zero-emission seaport with its tenants, plus the ocean carriers, railroads, and trucking firms serving the port.

If you have any questions, please contact Cynthia Marvin, Chief of the Transportation and Toxics Division, at (916) 324-0062 or via email at [cynthia.marvin@arb.ca.gov](mailto:cynthia.marvin@arb.ca.gov).

Sincerely,



Richard W. Corey  
Executive Officer

Attachment

cc: See next page.

Mr. Chris Lytle  
January 22, 2019  
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cc: Elizabeth Adams  
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Cynthia Marvin, Chief  
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September 5, 2018

Mr. Chris Lytle  
Executive Director  
Port of Oakland  
530 Water Street  
Oakland, California 94607

Dear Mr. Lytle:

Thank you for providing the California Air Resources Board (CARB) staff the opportunity to comment on the Port of Oakland's Draft Seaport Air Quality 2020 and Beyond Plan (2020 Plan). The Draft 2020 Plan articulates the necessary, longer-term objective to transition to zero-emission maritime operations, and outlines a framework for guiding the selection of actions that will achieve emission reductions. The objectives and framework demonstrate very positive intent, but must be backed by clear commitments from the Port for specific actions to cut emissions, protect the health of neighboring communities, and combat climate change.

We urge you to revise the draft 2020 Plan to identify and commit to measurable near-term steps, with defined implementation dates, to further reduce emissions from sources operating on Port property and sources carrying cargo destined for export or import through your facility. With the addition of this specificity, we are confident of the Port's ability to lead the transition to a zero-emission seaport with its tenants, plus the ocean carriers, railroads, and trucking firms serving the port. Your initiatives to increase operational efficiency are an essential complement to the use of zero-emission equipment to improve competitiveness, consistent with the multi-agency California 2016 Sustainable Freight Action Plan.

Both the emission reduction commitments and efficiency gains you identify in the revised 2020 Plan will be important contributions to support community emission reduction programs being developed in response to Assembly Bill (AB) 617 (Garcia, Chapter 136, Statutes of 2017). The State of California, through the passage AB 617, placed additional emphasis on protecting local communities from the harmful effects of air pollution and high exposure burdens. In response, CARB established the Community Air Protection Program (CAPP) to work with local air districts, community groups, industry, and others to develop a community focused action framework.

Recently, CARB staff recommended the community of West Oakland, and six others throughout California, for Board approval in September 2018 to begin developing an emission reduction program. Additional State funding will be available through AB 617 to achieve quantifiable emission reduction targets beyond existing actions to further reduce air pollution disparities. The Port can position itself, its tenants, and its

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transportation operators, to leverage those funds to improve air quality and system efficiencies in a way that serves the community and the Port's bottom line.

In March 2018, CARB committed to develop new regulations and strengthen existing programs to transition a variety of freight sectors to zero and near-zero emission operations, including sources serving the Port. These actions will dovetail with the vision of California's 2016 Sustainable Freight Action Plan for a freight system that can "transport freight reliably and efficiently by zero emission equipment everywhere feasible, and near-zero emission equipment powered by clean, low-carbon renewable fuels everywhere else."

We are looking to the Port to establish synergistic policies as you have previously done. For example, our organizations successfully collaborated to strengthen local compliance with statewide air quality regulations through Port actions, like monitoring truck entry and turning away non-compliant drayage trucks. With the Bay Area Air Quality Management District, all three organizations partnered to bring cleaner technology to the Port in advance of statewide requirements, aided by substantial public incentives. Moving forward, our individual commitments for action and effective collaboration are even more critical to achieve our mutual vision to transform freight operations at the Port of Oakland and across California.

We have attached specific comments and recommendations that we urge the Port of Oakland to incorporate in the revised 2020 Plan to protect public health, improve air quality, fight climate change, and increase efficiency. We look forward to working with you and your staff on these objectives. We also ask that you release this revised Plan for public review prior to consideration by the Board of Port Commissioners.

If you have any questions, please call me at (916) 445-4383 or have your staff contact Cynthia Marvin, Chief, Transportation and Toxics Division, at (916) 324-0062 or via email at [cynthia.marvin@arb.ca.gov](mailto:cynthia.marvin@arb.ca.gov).

Sincerely,



Richard W. Corey  
Executive Officer

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Page 3

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Cynthia Marvin, Chief  
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**Attachment to California Air Resources Board Staff Comments on  
the Draft Port of Oakland Seaport Air Quality 2020 and Beyond Plan**  
September 5, 2018

The California Air Resources Board (CARB) staff provides the following detailed comments and recommendations for the Port of Oakland to consider as you move toward a revised version of the Seaport Air Quality 2020 and Beyond Plan (Plan) for presentation to the Port's Seaport Air Quality Task Force meeting scheduled for September 26, 2018. We also specifically ask that the Port release the full revised Plan for public review prior to consideration by the Board of Port Commissioners.

- Emission Inventory: At our meeting on August 16, we were pleased to hear that the calendar year 2015 inventory used in the Draft Plan will be replaced with an updated 2017 inventory in the revised Plan. Because the 2015 methodology underestimates Port emissions, this a crucial update. In addition, the following analyses should be performed and included in the revised Plan.
  1. The geographic domain needs to be expanded to include emissions from trucks and locomotives after they leave the Port boundary. Limiting emissions of trucks and locomotives to operations only on Port property does not adequately capture or address the near-source toxics exposure or regional contribution of emissions associated with freight transport to and from the facility. The port should expand the domain of emissions from trucks and locomotives out to the cargo's first point of rest or to the boundary of the air basin, whichever comes first. This approach is used by both the Ports of Los Angeles and Long Beach when updating their emission inventories.
  2. We are pleased to hear that CARB's latest on-road mobile emissions model, EMFAC2017, will be used to in the updated inventory to more accurately characterize the real-world emissions of diesel trucks when traveling through nearby communities. This approach will incorporate results of more comprehensive laboratory testing, and the frequency of diesel particulate filter (DPF) failures observed during the UC Berkeley roadside plume measurement study.
  3. The Union Pacific intermodal rail yard, located immediately adjacent to the Port and State Route 880, handles some of the Port's cargo, but is not included in the inventory. CARB recognizes that the Union Pacific rail yard, unlike the Oakland International Gateway (OIG) and the Oakland Global Rail Enterprise (OGRE) rail facilities, is not on port property. However, the Port should develop and apply a methodology that incorporates the emissions associated with moving cargo that originates or is destined for the Port.
  4. Emissions from diesel-powered Transport Refrigeration Units (TRUs) can significantly affect cancer risk in the communities adjacent to the Port and

access roadways. We recommend that you quantify and include emissions from TRU generator sets, and TRU engines, for both on-port operation and the same geographic domain as listed above for trucks and locomotives, and reflected in the revised Plan.

- **Trucks:** We appreciate the role and influence of the Port on reducing truck emissions over the past decade through the monitoring at terminal gates and turning away of trucks that are not compliant with CARB's Drayage Truck Regulation. As you've heard extensively, community members in West Oakland and others remain concerned with truck queuing and idling outside terminals, as well as emissions and safety concerns with truck traffic and idling in their neighborhoods. We recommend the following:
  1. The Port should establish the following zero-emission targets for drayage trucks servicing the port:
    - a. By 2021, the port should require zero-emission truck operation for transport of containers on-site and between terminals, as well as to nearby rail yards, or other freight facilities. This could be achieved by developing a concession program, where companies have responsibility and oversight for short-haul operations between terminals, and between local rail yards such as the adjacent Union Pacific intermodal rail yard that handles a large amount of port cargo through its facility.
    - b. By 2035, the port should establish a goal of 100% zero-emission drayage trucks servicing the port, with interim milestones for the transition. This goal will align with the San Pedro Bay Ports' Clean Air Action Plan 2017 Update.
  2. CARB recognizes the Port's efforts over the past years to reduce truck congestion. We understand from Port communications that after beginning nighttime operations for a \$30 fee, average truck wait times have reduced by 50 percent, but are still at 60 to 90 minutes per truck on average. We appreciate the Port's efforts with the City of Oakland to develop a Truck Management Plan to continue addressing truck congestion, routing, and operation in neighborhoods. Public meetings held in spring and summer 2018 suggest that under the auspices of the Truck Management Plan, the City and Port will convene an efficiency task force, include outreach and local code enforcement, and refine truck appointment systems. We support these efforts to address long-standing community concerns and increase operational efficiency.

We encourage the Port continue to work with the City to install adequate signage in neighborhoods and along truck routes, and to enforce local ordinances when violated. The Port should also partner with community groups to apply for Supplemental Environmental Projects (SEP) grants to

receive funding for local initiatives. CARB can provide further information on this potential funding source. These funds originate from settlement dollars of violators of environmental regulations. The community of Bayview Hunters Point near the Port of San Francisco has achieved success in reducing illegal truck idling after receiving funding through an approved SEP to install signage and conduct other outreach in that community.

3. The San Pedro Bay Ports, through the Clean Air Action Plan, implemented a Clean Truck Program about a decade ago that established fees to be paid by beneficial cargo owners on gate moves performed by compliant but more polluting trucks. The program was very successful in cleaning up the fleet in advance of statewide requirements, generating revenue for the development and advancement of lower and zero-emitting technologies, and reducing community cancer risk. In the San Pedro Bay Ports' program, fees were established commensurate with the emission standards applicable to each truck, which sent appropriate price signals. Those ports are evaluating potential rate structures for the new program to accelerate the introduction of zero and near-zero emission trucks. Considering these successes elsewhere, CARB staff recommends the following for the Port of Oakland:
  - a. Today, the Port should continue banning trucks not equipped with model year (MY) 2007 or newer engines as required by CARB's Drayage Truck Regulation. This voluntary initiative has been, and will continue to remain, an effective tool to maximize the benefits of statewide rules.
  - b. By 2023, the Port should use the Drayage Truck Registry to begin banning trucks not equipped with MY 2010 or newer engines pursuant to CARB's Truck and Bus regulation.
  - c. By 2023, the Port should implement a rate (i.e. fee) structure, where cargo owners would pay more for each gate move if the trucks carrying their goods are not using the cleanest commercially available technologies.
- Ocean-Going Vessels: CARB recognizes that a major source of prevailing diesel PM (and health risk) originates from vessels, especially while vessels transit to and from berths at the Port. We are encouraged to see strategies in the draft Plan for reducing in-transit emissions, such as vessel speed reduction (VSR) and joining incentive programs to attract lower-emitting ships to the Port of Oakland. However, the Port should commit to implementation dates in the near-term to provide the earliest possible emission reductions from vessels. We make the following recommendations:
  1. By 2020, the Port should join one of the international vessel environmental performance incentive programs, such as the Environmental Ship Index (ESI) Incentive Program used by the Port of Los Angeles. Providing lower docking fees or other financial incentives to attract cleaner vessels and reward vessel

- measures that go beyond requirements will increase emission reductions within the Bay Area and other surrounding West Coast ports.
2. By 2020, design and implement a VSR program that would reduce emissions from vessels in transit to the greatest extent possible. CARB recommends that a VSR zone that begins outside the Golden Gate Bridge.
  3. By 2020, require, where feasible, use of shore power for 100 percent of visits by vessels equipped with shore power. CARB's existing regulation already requires an equipped vessel at an equipped berth to connect. This recommended measure should include responsibility for the marine terminal operators to provide access to shore power connections for each vessel equipped to plug in, accelerating the anticipated CARB requirements.
  4. By 2020, set interim goals for demonstrating and deploying alternative systems to control vessels when shore power is not available.
- **Locomotives:** With growing rail traffic serving the Port, whether on-site or from adjacent rail yards, locomotive operations present a serious risk to public health that will increase over time. Further, emissions from locomotives affect regional attainment of ambient air quality standards in the Bay Area and its downwind neighbors. In response, CARB has requested that the U.S. Environmental Protection Agency (U.S. EPA) establish more stringent national standards for remanufactured locomotives to take effect in 2023 and a new Tier 5 standard to take effect in 2025, including a requirement that newly built locomotives be capable of limited zero-emission operation.

At a local level, the Port needs to use its control of or its influence over rail operations to take more aggressive action to accelerate turnover to the cleanest available technologies. We acknowledge the incentive funded project described in the draft Plan to replace an old switcher locomotive with a new Tier 4 switcher at the OGRE rail yard – the revised Plan should significantly expand the rail emission reduction actions.

1. The Port should support CARB's Tier 5 petition to U.S. EPA with a written letter (other support letters are posted on CARB's rail activities website) and seek partners to demonstrate the use of Tier 5 equivalent locomotives in the three rail facilities.
2. For the OIG and OGRE rail yards, which are on port property, the Port should set specific targets to cut emissions by replacing switchers with zero-emission railcar movers, or zero-emission locomotives. These types of projects are eligible for several local, State, and federal incentive programs.

3. For the Union Pacific Rail Yard that located between the Port and West Oakland community, the Port should use its relationship with the railroad to encourage a clear strategy and cooperative plan for replacing locomotive engines with cleaner technologies.
  4. The Port's revised Plan should utilize the full range of mechanisms available to the Port (e.g., lease conditions or other incentives) to achieve idling reductions ahead CARB requirements to be developed for rail yard operations.
- **Cargo Handling Equipment:** We recognize the emission benefits and positive steps the Port has taken to reduce emissions from cargo handling equipment. The draft Plan features a repower project of 13 rubber-tired gantry (RTG) cranes as a key near-term action to reduce emissions, and also outlines the potential demonstration of six additional pieces of equipment upon receipt of a grant. Recognizing that zero-emission technologies are rapidly advancing in this sector, we provide the following recommendations as minimum targets that can be established today:
    1. In the revised Plan, the Port should establish a target to achieve 100 percent zero-emission yard trucks by 2023. Today, there are commercially-available technologies manufactured by several companies such as OrangeEV and BYD that should be able to meet the demands of a seaport within the next five years.
    2. In the revised Plan, the Port should establish a goal of 100 percent zero-emission RTG cranes by 2026. In this particular sector, repower or conversion kits are available for a fraction of the cost of replacing the entire RTG crane. Further, zero-emission technologies do not need batteries to power all of their operations; instead, they can operate using direct power technologies using cable reels or conductor rails when lifting and lowering containers. A number of ports around the world have been retrofit to electrify RTG crane operations and reduce emissions, save money on maintenance and fuel, and improve efficiencies.
    3. In the revised Plan, the Port should consider a goal of 100 percent zero emission cargo handling equipment by 2030. Establishing targets earlier than statewide regulations will ensure the Port and its tenants remain eligible for a wider range of incentive funding opportunities when repowering or replacing older equipment.
  - **Infrastructure:** In March 2018, CARB committed to a number of freight actions for Board consideration over the next five years, with potential implementation beginning as early as 2021. The actions will transition a wide range of freight equipment toward zero-emission technologies and operations, including drayage trucks, TRUs, commercial harbor craft, cargo handling equipment, and locomotives. With regulatory pressures and incentives available for early action, the Port's

customers will expect infrastructure to support operation of zero-emission equipment within the next few years.

We recognize the Port will need to fund infrastructure over time and design a resilient and reliable system, with the unique challenge of multiple electrical service providers. However, the Port should not wait until the Intermediate Term (2023-2030) to begin upgrading its infrastructure to provide expanded charging and fueling capability at berth and on terminals that can support that equipment.

1. The Port should commit to upgrading specific components of infrastructure within the Near-Term (2018-2023) phase, which will help the Port and its tenants to remain eligible for incentive dollars that require projects to be completed in advance of statewide requirements.