

SAN PEDRO BAY PORTS

CLEAN AIR ACTION PLAN

Clean Air Action Plan Implementation Progress Report First Quarter 2022

ACCOMPLISHMENTS

GENERAL

- The Ports held their thirteenth CAAP Implementation Stakeholder Advisory Group meeting on February 1, 2022.
- The Ports posted a fourth quarter of 2021 Clean Air Action Plan Implementation Progress Report in March of 2022.

COVID-19 IMPACTS

- The Ports continued to experience high cargo throughput in Q1 2022. These high volumes are due to an uptick in goods-based spending and e-commerce as people continue to spend discretionary income on goods manufactured overseas. The Ports continue to monitor the situation very closely.
- Due to the ongoing COVID-19 pandemic future CAAP stakeholder meetings will continue to take place via webinar.
- Both Ports are developing plans for return to in-person work at this time. However, it is unclear exactly when staff will return to the office and when in-person, public meetings will commence.
- The impacts from COVID-19 and supply chain disruptions to the Ports' technology demonstrations are addressed below under Early Demonstrations and Deployments within the Trucks and Terminal Equipment headings.

TRUCKS

Clean Truck Fund (CTF) Rate. The Port of Los Angeles (POLA) and the Port of Long Beach (POLB) Boards of Harbor Commissioners approved their respective CTF Rate tariff, which covers exemptions and spending priorities, on November 4, 2021 and November 8, 2021, respectively. Collection of the CTF Rate is scheduled to commence on April 1, 2022. Both Ports Boards of Harbor Commissioners approved their respective spending plans for CTF rate dollars collected in Year 1 on March 24, 2022.

Rate Collection Mechanism. In anticipation of the CTF Rate, the Ports released a Request for Proposals (RFP) in 2019, which included minimum requirements for how to collect a rate from Beneficial Cargo Owners (BCOs). An agreement with the selected contractor, PortCheck, was approved by the POLB Board of Harbor Commissioners on March 26, 2021, and the POLA Board of Harbor Commissioners on May 20, 2021. Federal Maritime Commission (FMC) approval was obtained on August 20, 2021. PortCheck completed development of the rate collection system and the user manual. The Ports held and recorded two trucking stakeholder

workshops, including [tutorials](#), on January 25th and March 22nd ahead of the April 1, 2022 start date for CTF Rate collection (<https://cleanairactionplan.org/strategies/trucks/>).

Large-Scale Zero Emission (ZE) Truck Deployment Pilot Project. On November 19, 2020, the California Air Resources Board (CARB) and the California Energy Commission (CEC) released a unique joint funding opportunity for a large-scale ZE truck deployment within the state. The Ports coordinated with the South Coast Air Quality Management District (AQMD) and other regional partners on the development of a project proposal, including 100 ZE battery electric trucks and associated charging infrastructure, for this solicitation. The AQMD proposal was awarded nearly \$27 million. The grant agreement between AQMD and CARB was executed on June 4, 2021 and the grant agreement between AQMD and CEC was approved at the CEC business meeting on July 15, 2021. The Ports and AQMD are reviewing the final draft of the three-party Memorandum of Understanding (MOU), which will include \$1.5 million in match funding from each Port towards the project and is expected to be brought to each Port's respective Board of Harbor Commissioners in Q3 2022.

Early Deployment and Demonstrations. The Ports continue to manage several grant-funded demonstrations of ZE trucks, including over 20 hydrogen fuel cell and battery electric trucks as part of supply chain pilots. There are approximately 24 ZE trucks registered in the Ports' Drayage Truck Registry with access to both Ports. COVID-19 continues to have an impact on the future estimated delivery times of both the low NOx trucks and ZE trucks. On November 23, 2021, POLA released an RFP for projects to deploy at least 10 zero emission trucks. POLA will be providing \$3 Million in grant funds to support the awarded project. Proposals were evaluated in Q1 2022 and preliminary award selection is expected to be made in Q2 2022. At POLB, all four LNG plug-in hybrid electric trucks funded under a CEC grant have been placed into revenue service at TTSI. To charge the trucks, TTSI is testing the Nuvve charging system that is currently installed at the POLA San Pedro facility where TTSI used to operate before their move to Carson in 2021. Unfortunately, TTSI is unable to operate the trucks out of the San Pedro facility because their operations are all based in Carson. Since the Nuvve charging station is not located in the same facility as the demonstration trucks, the trucks are unable to start their routes with a full charge. In other words, the project is unable to demonstrate plug-in capability and zero-emission operation. At this time, the project is only able to demonstrate hybrid capability. As of March 2022, TTSI continues to pursue options to install electrical infrastructure at their Carson facility. Although all the trucks were delivered and are operating in revenue service, their rate of utilization has been low. The trucks are often in maintenance due to malfunctioning radiator/coolant systems. It is unclear whether the malfunctions are due to the trucks being old or due to the electrical modifications that were done as part of the project, and the project team continues to investigate the issue.

Proposition 1B Support and the Kickstart Incentive Program. The Ports supported AQMD with outreach to the drayage community regarding the Proposition 1B (Prop 1B) Program, which had \$50 million available in incentives to turn over the dirtiest pre-2010 diesel trucks to clean low NOx or ZE trucks. The open solicitation period closed on April 30, 2021. POLB provided application support to 22 drayage truck drivers, resulting in 10 application submissions to replace a total of 21 diesel trucks. Three applications were subsequently withdrawn, and one was deemed ineligible, resulting in 9 eligible trucks to be replaced with ZE trucks, and 3 to be replaced with low-NOx trucks through Prop 1B. The Ports have received feedback that some of the applicants have withdrawn their applications due to increases truck costs, which makes the grants less attractive, and that additional individuals may withdraw their applications as costs continue to rise. To further accelerate the transition to cleaner trucks, POLB has provided an additional \$1 million for low NOx and ZE drayage trucks as part of the "Kickstart Incentive Program." This program, approved by the POLB Board of Harbor Commissioners on April 26, 2021, is a supplement to the AQMD-administered Prop 1B Program, and will fund additional drayage truck applications from the solicitation that closed in April 2021.

Advanced Clean Trucks/Fleets Regulation. As a companion to the Advanced Clean Trucks (ACT) Regulation that CARB passed in June 2020, CARB continues to move ahead with establishing the requirements for large entities and fleets. CARB has held a series of workshops related to different aspects of the transition to zero emissions trucks, and Ports' staff continue to attend and participate. Ports' staff will continue to monitor the development and implementation of these regulations.

Feasibility Assessment for Trucks. As part of the 2017 CAAP update, the Ports committed to developing assessments for drayage trucks at least every three years. The Feasibility Assessments evaluate the current snapshot of emerging zero-emission and near-zero emission truck technologies. The first report, [2018 Feasibility Assessment for Drayage Trucks](#), was released in April 2019, with an update later in May 2020. The Ports began work on the second Feasibility Assessment for Drayage Trucks in Q1 2021. The Draft 2021 Feasibility Report for Trucks is expected to be released in Q3 2022 for public review and comment.

Public Truck Charging. POLB completed and released a [Public Charging and Fueling Study](#) in September 2021. To build on this effort, POLB released a Request for Information (RFI) in February 2022 to obtain information regarding the near-term development of publicly accessible electric-charging facilities for drayage trucks at four sites on POLB property. The RFI closes on March 29, 2022.

POLA Voucher Incentive Program. POLA Board of Harbor Commissioners approved an agreement with CALSTART to implement the Voucher Incentive Program on March 24, 2021. The Voucher Incentive Program will allocate \$40 million of the approximate \$45 million initially expected to be collected from the CTF Rate to provide up to \$300,000 towards the purchase price of a ZE truck. Each truck funded will be obligated to provide drayage service to the San Pedro Bay Ports for a period of three years. The Voucher Incentive Program complements the CARB Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) and will leverage the HVIP network of vendors for distribution of the funding. CALSTART is the current administrator of the CARB HVIP Program. With the support of CARB, CALSTART will administer the Voucher Incentive Program at no cost to the Harbor Department.

TERMINAL EQUIPMENT

Early Deployment and Demonstrations. The Ports continue to manage several grant funded demonstration projects, including ultra-low NOx and electric yard tractors, electric top handlers, and electric rubber-tired gantry cranes, as well as innovative approaches to charging infrastructure including micro-grid controls with distributed generation and battery storage.

At POLA, as part of the Green Omni Terminal project, five battery electric yard tractors were put into use. On March 16th one of the TransPower yard tractors had a thermal event contained in one battery pack on the vehicle. As a result, Pasha has suspended use of battery electric equipment at their facility. At Everport, two battery electric Taylor top handlers are in use. Three second generation BYD battery electric yard tractors were put in use at Everport during this quarter and are utilizing Smart Charging, developed by Cavotec. Additionally, Everport continues to operate 20 Capacity ultra-low NOx renewable natural gas yard tractors. The grant demonstration periods for these 20 yard tractors and two battery electric Taylor top handlers are complete and Everport will continue to operate the equipment in revenue service. The Advanced Infrastructure Demonstration (AID) Project that will demonstrate wireless charging stations for battery electric yard tractors at West Basin Container terminal began phase 1 construction in Q4 and construction continued through Q1.

At POLB, a total of 19 pieces of ZE cargo handling equipment (CHE) with supporting ZE infrastructure have been commissioned to date. At LBCT, one BYD battery-electric yard tractor

has been operating in revenue service and is currently collecting data. In March 2022, the Port and LBCT approved the final purchase order for the remaining four yard tractors. These yard tractors will require additional modifications including installation of the automated 5th wheel coupling system and modifications to address clearance issues related to jack-knife maneuverers when connected to their bombcarts. As of March 2022, seven eRTG cranes were in operation at SSA at Pier J. The last two eRTGs are anticipated for commissioning by July 2022. At Pier C, SSA began to take delivery of the first of the 33 electric yard tractors that will be delivered over the course of 2022. Infrastructure installation to support the yard tractor deployment will begin in Q2 2022 and is expected to be completed in Q3 2022.

Impacts from COVID-19 and the unprecedented spike in container volumes continued through Q1 of 2022. The ramifications of the impacts include delays in equipment delivery, long permitting timelines, and limited travel.

Feasibility Assessment for Terminal Equipment. As part of the 2017 CAAP update, the Ports committed to developing assessments for terminal equipment at least every three years. The Feasibility Assessments evaluate the current status of clean terminal equipment technologies and infrastructure. The first report, [2018 Feasibility Assessment for CHE](#), was released in September 2019. The Ports commenced the second Feasibility Assessment for Terminal Equipment in Q1 2021. The Draft 2021 Feasibility Report for Terminal Equipment was released for public review and comment on March 2, 2022. Comments are due April 29, 2022.

SHIPS

Vessel Speed Reduction. 94% of vessels visiting the Ports in Q1 2022 slowed down to 12 knots within 20 nautical miles of Point Fermin, and 88% of vessels slowed within 40 nautical miles.

Ship Incentive Programs. The Ports continue to collaborate with other West Coast ports on ways to enhance participation in their clean ship incentive programs. POLB adopted a revised Green Ship Incentive Program at their May 10, 2021 Board Meeting. The revised program incorporates the Environmental Shipping Index (ESI), an international voluntary incentive program which calculates the performance of vessels based on their NOx, sulfur oxides, carbon dioxide emissions, and fuel consumption. Tier III vessels will now be eligible for up to \$9,000 per call, which is the greatest Tier III incentive of any ship program worldwide. POLA continues to incentivize ships for complying with the ESI program.

Green Shipping Corridor. In Q1 2022, the Port of Los Angeles, Port of Shanghai, and C40 Cities announced a partnership, including the City of Los Angeles, City of Shanghai, shipping companies, and a network of cargo owners, to create the world's first transpacific green shipping corridor to decarbonize goods movement between ports in the United States and China. In Q1 2022, the partnership began developing an outline for the Green Shipping Corridor Implementation Plan and held several meetings.

At Berth Regulation. CARB's Board approved the latest update to the At Berth Regulation at their Board meeting on August 27, 2020. Completed and signed Port and Terminal Plans were submitted to CARB by December 1, 2021. During Q1 2022, Port staff as directed by CARB coordinated and provided support to the marine terminals on updates to Port/Terminal plans.

HARBOR CRAFT

Commercial Harbor Craft Regulation. On March 14, 2022, CARB held the second Board hearing to consider the Commercial Harbor Craft Regulation. Both Ports' staff submitted a comment letter in advance of the hearing and also provided public comment at the hearing. 15-day changes are expected to be released in Q2 2022.

OTHER

- **2021 Emissions Inventories.** Development of the 2021 annual emissions inventories for the two Ports has begun. Both Ports completed their respective 2020 annual Inventory of Air Emissions and released the reports in Q4 2021, demonstrating significant emissions reductions: <https://cleanairactionplan.org/results/emission-reductions/>.
- **Air Quality Monitoring Program.** The Port of Long Beach is planning to release its 2021 Air Quality Monitoring Report in Q3 2022. The Port of Los Angeles is also planning to release its 2021 Air Quality Monitoring Report in Q3 2022. The Ports' previous annual reports can be viewed at: <https://monitoring.cleanairactionplan.org/reports/>.
- **Technology Advancement Program.** In 2021, the Port received a total of ten (10) project concepts for consideration. Of the ten, three did not pass the RFI concept stage and were not invited to submit a proposal. One project concept that did not pass the concept phase proposed demonstrating an already commercialized technology for port drayage application, when TAP only funds pre-commercial technologies. The remaining two project concepts not selected proposed demonstrating hydrogen storage and demonstration of a fuel additive, both of which are not eligible projects per the Ports' TAP Guidelines.

The remaining seven project concepts were invited to submit a full proposal. Of the seven, three proposals were received and currently under the Ports' review. These projects involve a battery-electric locomotive project, a project involving two types of technology retrofits for two different container vessels while in transit, and a project to treat at-berth emissions on a multitude of vessels. The Ports are currently waiting on the submittal of four requested proposals. One for a battery-electric tugboat project and the other for a zero-emissions top handler that is powered using a battery-electric and hydrogen fuel cell technology. In addition, the Ports requested two proposals for two separate hydrogen fuel cell project concepts – one for a top handler application, the other for a yard tractor. As of March 2022, the Ports have not received new project concepts; however, the Ports continue to move projects forward, evaluate proposals with approved project concepts and manage existing TAP demonstrations

As for demonstration projects underway, Pacific Tugboat continued collecting the 1,000 hours of activity on the Nett Technologies BlueMAX™ NOVA 320e aftertreatment system required to demonstrate durability for CARB verification; Nett expects to complete collection of the durability hours in first quarter 2022 and complete the required emissions testing in the summer of 2022. Under a separate demonstration, installation of the water-in-fuel (WIF) system developed by MAN Energy Systems was completed on the vessel with emissions testing planned in Europe. Lastly, Pasha is building two new vessels and repowering one vessel under two related projects. One of the two new-build vessels is anticipated for delivery in June 2022. An unforeseen delay has occurred in regards to the bunkering line design. The bunkering line design was approved by the American Bureau of Shipping (ABS) on behalf of the United States Coast Guard (USCG) in 2019. The same design was identified for oversight review in 2019 by the USCG and approved without comments. Both approvals have been overturned. Both ABS and TGE (fuel gas system supplier) are working towards alternative design compliance. The second new-build vessel will be delivered in September 2022. The repowered vessel will be delivered in February of 2023. All three vessels will be installed with dual-fueled engine technology capable of burning LNG or diesel in the propulsion system, with the system optimized for LNG.

The Ports continue to engage and support interested stakeholders. This includes holding TAP bi-weekly meetings between the two Ports, leading the TAP Advisory Committee

(AC) meetings every 8 weeks with agency partners, responding to general inquiries, and participating in virtual meetings to provide updates on technology demonstrations.

Electric Vehicle Infrastructure Training Program (EVITP) Policy. POLB staff are developing a new policy that would potentially require contractors bidding on charging infrastructure projects for Port-owned vehicles to be EVITP approved, and their electricians EVITP certified. POLB is also considering a requirement that the EVITP Policy apply to any vehicle charging infrastructure work funded by the Port, including projects that receive incentives from the CTF Rate or the TAP. Finalization of the policy and Board consideration are anticipated for Q3 2022. Currently, POLA requires contractors that provide construction services for electric vehicle charging infrastructure or equipment, funded or authorized in whole or in part by the California Public Utilities Commission or the California Energy Commission, to hold EVITP certification.

Rule 2304 – Indirect Source Rule for Commercial Marine Ports Port staff participated in the initial working group meeting held on February 25, 2022 by AQMD.

PLANNED ACTIONS NEXT QUARTER

- 14th CAAP Implementation Stakeholder meeting on June 1, 2022.
- POLA will coordinate with CALSTART and CARB as part of the CTF Rate spending plan. POLB will begin contracting with CALSTART.
- The CTF Rate will go into effect on April 1, 2022. Port staff will monitor rate collection closely to ensure smooth implementation.
- Continue coordination with AQMD on a Large-Scale ZE Truck Deployment project.
 - Finalize a three-party MOU with AQMD to provide match funding from the two Ports.
- Close the public comment period for the draft 2021 Cargo Handling Equipment Feasibility Assessment.
- Receive third-party comments for the draft 2021 Drayage Trucks Feasibility Assessment.
- Continue to evaluate TAP proposals and recommend projects selected by the TAP AC for funding.
- Continue to deploy additional grant-funded ZE equipment and vehicles.
- POLA will continue preparing the implementation plan for the Green Shipping Corridor Project.
- Both Ports will begin planning and engaging with interested parties in regards to the Department of Energy's forthcoming large grant funding opportunity to develop a Hydrogen Hub in Southern California.
- POLB will execute a \$2.5 million grant agreement with the CEC for the EV Blueprint Phase II Project. Work to be conducted under this project includes ZE infrastructure master planning, deployment of light- and medium-duty charging infrastructure at the Port's Maintenance Site, and development of workforce assessment to be led by Long Beach City College.
- POLB will close out the 2019 DERA grant after the successful deployment of three hybrid RTG cranes at Pier T.

Send any questions or comments to the CAAP email at: caap@cleanairactionplan.org