SAN PEDRO BAY PORTS

CLEAN AIR ACTION PLAN

Clean Air Action Plan Implementation Progress Report
Third Quarter 2022

ACCOMPLISHMENTS

GENERAL

- The Ports held their fourteenth CAAP Implementation Stakeholder Advisory Group meeting on June 1, 2022.

- The Ports continued to experience high cargo throughput in July and August of Q2 2022. However, in September, the Ports experienced a drop in throughput due to diminishing consumer demand, full warehouses, and inflation concerns.

- Port of Long Beach (POLB) executive leadership returned to partial in-person work on September 12, 2022. Staff from both Ports are expected to partially return to in-person work in mid-October.

- 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 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. Both Ports Boards of Harbor Commissioners approved their respective spending plans for CTF rate dollars collected in Year 1 on March 24, 2022. Collection of the CTF Rate commenced on April 1, 2022. Combined, the Ports are currently on track to collect approximately $90 million annually. The Ports have not heard of any effect from the CTF Rate on drivers. Drivers are encouraged to reach out to the Ports through email at caap@cleanairactionplan.org or by calling (866) 721-5686.

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 have finalized the three-party Memorandum of Understanding (MOU), which will include $1.5 million in match funding from each Port towards the project. POLB received approval of the funding request at the April 25, 2022 Board of Harbor Commissioners meeting. POLA received approval of the funding

request at the September 22, 2022 Board of Harbor Commissioners meeting. Delivery of the first batch of trucks is set to take place in Q4 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 38 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(s). Preliminary award selection(s) and work on contracting was made in Q2 2022. POLA expects to obtain Board approval in Q4 2022.

At POLB, all four LNG plug-in hybrid electric trucks funded under a CEC grant have been out of service due to pressure cracks discovered in the engines. Technology manufacturer, US Hybrid continues to work with Cummins to further assess and address the issues. In the meantime, TTSI continues to pursue options to install electrical infrastructure needed to power the Nuvve chargers at their Carson facility.

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. Several applicants dropped out or modified their requests, resulting in a total of four applicants looking to replace eleven trucks completing contracting during Q3 2022. All applicants will be applying for the Manufacturer Delay Compliance Extension available in CARB's Truck and Bus Rule. 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. AQMD is still evaluating which fleets would be the best recipients of the Kickstart funds based on the likelihood of successful project completion.

CTF Rate Voucher Incentive Program. As part of the CTF Rate spending plans approved by each Port's Board of Harbor Commissioners in March 2022, the Ports committed to partnering with CALSTART to implement a Ports-specific Zero Emission Truck Voucher Incentive Program (Voucher Incentive Program). The POLA Board of Harbor Commissioners approved an agreement with CALSTART to implement the Voucher Incentive Program on March 24, 2022. POLB plans to go to their Board with a similar agreement in Q1 2023. The Voucher Incentive Program will allocate up to $40 million from POLA and up to $30 million from POLB of the approximate $90 million initially expected to be collected from the CTF Rate by both Ports. Although the initial proposal from the Ports was to provide $150,000 vouchers for the purchase of a battery electric truck and up to $300,000 towards the purchase price of a hydrogen fuel cell truck, there is currently limited demand for vouchers at these incentive levels, as evidenced by the fact that an early release of $5 million by POLA in early September resulted in only one voucher request. As such, the Ports are exploring an alternative voucher program structure such as offering a plus-up voucher from the Ports on top of the current CARB Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) voucher amount. The Ports will work with CARB and CALSTART in Q1 2023 to further build the Voucher Incentive Program structure and integrate the Ports' program into the existing HVIP administrative process and website.

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 has met with CARB staff and will continue to monitor the development and implementation of these regulations. The first of two Board meetings to approve the Advanced Clean Fleets Regulation will occur in Q4 2022.

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 was released in August 2022 for public review and comment with feedback accepted through September 27, 2022.

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 closed on March 29, 2022. In September, POLB released a summary document describing the findings of the RFI.

POLB has executed two lease agreements with 4 Gen Logistics and WattEV. These companies will install a combined 74 truck charging stations capable of supporting public truck charging.

In August, as part of POLA's contribution to the Volvo Low Impact Green Heavy Transport Solutions (LIGHTS) project, POLA completed and submitted to CARB a report assessing the potential of deploying battery electric trucks at or near the Ports, including a look into the operational capabilities and charging infrastructure needed for battery electric truck deployment. The report identified potential opportunity charging locations for battery electric truck that could operate at or near the Ports in order to help transition the drayage fleet to zero emissions by 2035.

Trucker Outreach. The Ports, in cooperation with the Harbor Trucking Association (HTA), AQMD, and CARB, hosted an outreach event at the POLB Maintenance Facility on July 15, 2022. The purpose of the event was to disseminate information about current and upcoming rulemakings affecting drayage trucking and provide information on current and upcoming incentive programs available for the purchase of new low-NOx and zero emission trucks and infrastructure.

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, Pasha operates two battery electric yard tractors at their facility. At Everport, two battery electric Taylor top handlers are in use. Two of the three second generation BYD battery electric yard tractors that were taken out of service at Everport in Q2 2022 were repaired and put back in to service in August. One of the three second generation BYD battery electric yard tractors that has been in use at Everport since Q1 2022 was taken out of service for preemptive repairs in August and is expected to be put back into use in Q4 2022. The Smart Charging System, developed by Cavotec and associated with the battery electric yard tractors, were utilized this quarter. 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

continues 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 2021 and construction continued through Q3 2022.

At POLB, a total of 21 pieces of ZE cargo handling equipment (CHE) with supporting ZE infrastructure have been commissioned to date. As of August 2022, nine eRTG cranes were in operation at SSA/Pier J. At Pier C, SSA continues to take delivery 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 Q1 2023. At Pier T, the three hybrid RTGs procured as part of an Environmental Protection Agency Diesel Emission Reduction Act (DERA) 2019 grant solicitation completed their demonstration period and the grant was officially closed out.

Infrastructure Master Planning for Terminal Equipment
In May 2022, POLB executed a $2.5 million grant agreement with the CEC for the EV Blueprint Phase II Project, which includes development of a zero-emission infrastructure master plan for terminal operations at Pier J. POLB staff have solicited for consultant support to develop the master plan. POLB will be working with the other container terminals to develop zero-emission infrastructure master plans as well.

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 were due April 29, 2022. A total of 6 comment letters were received. Ports reviewed the comments provided and made updates to the Final 2021 Feasibility Report for Terminal Equipment, which was released on August 25, 2022.

SHIPS

Vessel Speed Reduction. 97% of vessels visiting the Ports in Q3 2022 slowed down to 12 knots within 20 nautical miles of Point Fermin, and 94% 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 continued to implement the revised Green Ship Incentive Program, which incentivizes vessel calls from ships utilizing emission reduction technologies and clean fuels, adopted at their May 10, 2021 Board Meeting. POLA continues to incentivize ships for complying with the Environmental Ship Index (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 Q2 2022, the Port of Long Beach and Ocean Network Express joined the Green Shipping Corridor partnership. The partnership continued to develop the Green Shipping Corridor Implementation Plan and held several meetings during Q3 2022.

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 Q3 2022, Port staff continued to meet with terminal operators regarding implementation of their terminal plans. In July 2022, the Ports provided a boat tour to CARB staff at the Port of Los Angeles. Afterwards, the Ports discussed with CARB staff infrastructure construction delays for newly regulated vessel types due to supply chain issues and the status of the yet to be approved RoRo shore power standard set by international standards committees.

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 provided public comment at the hearing. The 15-day changes were released on May 19, 2022 and comments were due June 3, 2022. The final regulation language was submitted to the Office of Administrative Law (OAL) for approval in July 2022. Upon review, OAL denied approval citing a lack of clarity in the regulation and requested CARB revise the language. CARB will release a 15-day change proposal with the updated regulatory language and resubmit the regulatory package to OAL for approval in Q4 2022.

OTHER

- ***2021 Emissions Inventories.*** Development of the 2021 annual emissions inventories for the two Ports continued in Q3 2022. 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/. Both Ports are expected to release their respective 2021 Emissions Inventory in Q4 2022.

- ***Air Quality Monitoring Program.*** The Port of Long Beach released its 2021 Air Quality Monitoring Report in September 2022. The Port of Los Angeles is planning to release their respective 2021 Air Quality Monitoring Report in Q4 2022. The Ports' previous annual reports can be viewed at: https://monitoring.cleanairactionplan.org/reports/.

- ***Technology Advancement Program.*** The Port received five project concepts in 2021, which include a battery-electric locomotive project, a hybrid zero-emission harbor craft, two types of technology retrofits for two separate container vessels while in transit, two zero-emission top handlers powered using hydrogen fuel cell technology and an at-berth emission control technology. All five project concepts passed initial review and proponents were invited to submit a proposal, all of which are under review or in contract development prior to seeking final approval from the Ports' respective Board of Harbor Commissioners. As of September 30, 2022, the TAP has not received any new project concepts; however, the Ports continue to move projects forward, evaluate proposals with approved project concepts and manage existing TAP demonstrations.

  One of the projects that was moved forward in Q3 2022 involves a partnership with Toyota Tsusho America, Inc. to design, develop and demonstrate a zero-emission, repowered hydrogen fuel cell top handler and a mobile hydrogen refueler at Fenix Marine Services, a container terminal at POLA. POLB received approval of the funding request at the September 12, 2022 Board of Harbor Commissioners meeting. POLA plans to request approval from their Board of Harbor Commissioners in Q4 2022.

  As for demonstration projects underway, Pacific Tugboat continued collecting the 1,000 hours of activity on the Nett Technologies BlueMAX™ NOVA 320e after treatment system required to demonstrate durability for CARB verification. Because of the very slow rate of accumulation of hours, Nett Technologies is both working with the vessel partner, Pacific Tugboat Services, to prioritize use of the vessel to speed hour accumulation and is working

with CARB to see if Nett Technologies can receive conditional verification in the interim. Under a separate demonstration, emissions testing on the water-in-fuel (WIF) system developed by MAN Energy Systems was completed on an MSC vessel. With a water-in-fuel ratio of 41% water content and at up to 50% engine load, NOx reductions of up to 21% were achieved. Lastly, Pasha has completed the build of one of the two LNG vessels. The Pasha Hawaii MV George III vessel was delivered in July 2022. The second new-build vessel is in the commissioning phase and anticipated for delivery in March 2023. The repowered vessel will be delivered in June 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. Finally, the Effenco Electric Active Start-Stop Technology demonstration project was officially terminated during Q3 2022. Due to bankruptcy, Effenco was unable to complete the full demonstration period and conduct emissions testing to evaluate the performance of the anti-idling stop-start system installed on six yard tractors at APM Terminals. Preliminary results did show a reduction in fuel consumption while the system was in use, but a CARB aftermarket parts exemption was not obtained and so the system cannot be installed on equipment in California. As such, APM Terminal scrapped the demonstration equipment at the conclusion of the project.

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. The Ports began to re-evaluate the TAP Program Guidelines with an update planned for release by Q1 2023.

- ***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 Q1 2024. 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 continues to monitor the progress of the regulation and participates in all workshops/meetings.

- ***U.S. Department of Energy Hydrogen Hubs.*** The Ports are working together with many other public and private California stakeholders through the Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES) to support the development of an application to the Department of Energy's (DOE) Regional Clean Hydrogen Hubs grant solicitation. The program will be awarding grants up to $1.25 Billion, and the Ports are coordinating with state leaders and ARCHES to secure projects under this opportunity. The Port of Los Angeles presented information on this opportunity to the communities of Wilmington, Carson and West Long Beach at an AB 617 meeting in August and then held a workshop in September. The full DOE grant solicitation was released on September 22, and applications are due in Q2 2023.

PLANNED ACTIONS NEXT QUARTER

- POLA and POLB will work with CARB and CALSTART to develop a restructured ZE truck voucher program using CTF Rate funds.

- Port staff will continue to monitor rate collection and if there are any effects on drivers.
- Continue coordination with AQMD on a Large-Scale ZE Truck Deployment project.
- Finalize the 2021 Emissions Inventories.
- 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.
- Both Ports will continue preparing the implementation plan for the Green Shipping Corridor Project.
- Both Ports will continue planning and engaging with ARCHES in regard to the Department of Energy's forthcoming large grant funding opportunity to develop a Hydrogen Hub in Southern California.
- POLA will go to their Board for approval of the TAP Toyota Tsusho America, Inc hydrogen repowered top pick and mobile fueler.
- POLA will go to their Board for approval of the selected ZE truck proposals from the ZE truck deployment RFP.

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