

Attachment C

Implementation Plan for the Proposed Intermediate-Term (2023-2030) Equipment and Infrastructure Goals of (1) Purchase of All New Hybrid or Cleaner Rubber Tire Gantry Cranes, and (2) Purchase of All New Zero-Emissions Off-Dock Yard Tractors

Attachment C

Implementation Plan for the Proposed Intermediate-Term (2023-2030) Equipment and Infrastructure Goals of (1) Purchase of All New Hybrid or Cleaner Rubber Tire GantryCranes, and (2) Purchase of All New Zero-Emissions Off-Dock Yard Tractors

MEETING DATE: 12/17/2020

AMOUNT: Not Applicable

PARTIES INVOLVED: None

SUBMITTED BY: Bryan Brandes, Director of Maritime

APPROVED BY: Danny Wan, Executive Director

ACTION TYPE: None

EXECUTIVE SUMMARY:

As part of the first annual progress report on the Near-Term Action Plan of the Port's Seaport Air Quality 2020 and Beyond Plan, the Board approved Resolution No. 20-59, which directed staff to submit recommendations to implement two new Intermediate-Term (2023-2030) Equipment and Infrastructure Goals: (1) all new rubber tire gantry (RTG) cranes purchases shall be hybrid or cleaner, and (2) all new off-dock yard tractor purchases shall be zero emissions provided that incentive funding is available. With input from Port tenants, staff has developed recommendations for the Board's consideration. More specifically, staff recommends requiring all new manufactured RTG crane purchases to be hybrid or cleaner, but not requiring the purchase of zero emission yard tractors, for reasons explained in this Report.

BACKGROUND

On July 23, 2020, the Board approved Resolution No. 20-59, approving an update to the Near-Term Action Plan of the Port's Seaport Air Quality 2020 and Beyond Plan (2020 and Beyond Plan). The Board directed staff to submit a recommendation for plans to implement the proposed Intermediate-Term (2023-2030) Equipment and Infrastructure Goals (Goals). The Goals are 1) all new rubber tire gantry (RTG) crane purchases shall be hybrid or cleaner, and 2) all new off-dock yard tractor purchases shall be zero-emissions provided that incentive funding is available. Staff has discussed these goals with applicable Port tenants and developed Implementation Plan recommendations for the Board's consideration.

The Board's proposed Goals were based on an informational report presented to the Board on December 12, 2019, which analyzed the feasibility of replacing all cargo handling equipment (CHE) at the Port with zero-emission technology (AECOM, 2019). The feasibility study made several key planning assumptions:

- No change will occur in status quo Seaport terminal operations (i.e., operations remain primarily manual, in contrast to automated operations).
- Diesel RTG cranes have a 20-year machine life.
- Off-dock yard tractors have a useful operating life of approximately 8 years.
- No equipment is discarded before the end of its typical life span (i.e., no "stranded assets").
- Existing grant and voucher programs remain in place indefinitely.
- No infrastructure costs are included (i.e., equipment costs only, not including charging equipment).

The feasibility study concluded it is not currently feasible to replace all CHE with zero-emissions equipment at this time. However, replacing certain types of CHE with zero or near-zero equipment is feasible. Specifically:

- When purchasing new RTG cranes, purchasing new hybrid RTG cranes instead of traditional diesel RTG cranes is feasible and cost-effective, even without grant monies.
- Retrofitting existing diesel RTGs to hybrid, which is more costly, is only feasible if supported by grant funding.
- While on-dock (terminal) zero-emissions yard tractors remain infeasible, purchasing zero-emissions yard tractors at off-dock facilities may be feasible but only if grant funding is available.

The Port's Zero Emissions CHE Feasibility Study is available on the Port's web site: <https://www.portoakland.com/community/environmental-stewardship/maritime-airquality-improvement-plan/>

PORT TENANT SURVEYS

To inform the Implementation Plans, staff reached out to the terminal operators for feedback on RTG cranes, and to off-dock yard tenants for feedback on yard tractors. Staff received feedback from all three terminal operators, and most of the off-dock yard tenants surveyed. Below are the key findings:

Feedback from Port Terminal Operators re: RTG Cranes

- In total 26 RTG cranes operate at the Port, and 13 of those RTG cranes have already been converted to hybrid.
- One terminal operator already has a company policy that all new RTG cranes purchases shall be hybrid.

- None of the terminal operators are considering new RTG purchases at this time for at least the next 10 years, preferring instead to retrofit existing RTG cranes if grant funding is available.
- One terminal operator is considering retrofitting its existing diesel RTG cranes to hybrid if grant funding is available to offset the costs.

Feedback from Off-Dock Tenants re: Yard Tractors

- Many of the tenants do not operate yard tractors.
- Staff estimates approximately 20 total yard tractors are currently in operation at off-dock facilities within the Seaport, with an average fleet size of two.
- Most tenants expect to operate the same number of yard tractors in the future. Most respondents are encouraged by initial testing of battery-electric yard tractors but believe more wide-scale testing is needed for different load capacities and duty cycles before they can commit to convert from diesel to battery-electric.
- In addition, grants and other funding for both the incremental equipment cost and charging infrastructure is necessary in order to consider converting to battery-electric technology.
- Tenants will likely replace their yard tractors in 5-10 years and will make financial decisions on the type of off-dock yard tractor based on operational needs and available incentives at that time.
- Some tenant facilities require additional electrical infrastructure on their leasehold where they would need chargers, which can factor into the overall cost/benefit and prioritization of charger locations.

CONCLUSIONS & RECOMMENDATIONS

RTG Cranes

Staff has determined that the Implementation Plan for the proposed Intermediate-Term (2023-2030) Goal regarding the purchase of hybrid or cleaner RTG cranes should comprise the following:

1. Modify the Port's Environmental Ordinance to require the purchase of any new manufactured RTG crane by a Seaport tenant to be hybrid or cleaner on a go-forward basis.
2. Continue implementing the existing Port Environmental Exhibit in Tenant Leases, which requires staff and tenant to meet annually to discuss the feasibility of using zero-emissions equipment.

Off-Dock Yard Tractors

Staff does not currently recommend requiring the purchase of any new yard tractors at off-dock facilities be zero-emissions, for the following reasons:

- Operational proofing is still underway.
- Including a requirement to purchase only zero-emissions yard tractors may prohibit tenants from obtaining grant funding.
- Given the very small average fleet size for yard tractors at off-dock facilities, constructing additional charging infrastructure for only one or two zero-emissions yard tractors is not likely to be cost effective or the best use of infrastructure resources and funding for reducing emissions.

Staff instead recommends continuing to implement the existing Port Environmental Exhibit provisions in tenant leases, which requires staff and its off-dock tenant to meet annually to discuss feasibility of using zero-emissions equipment. Staff will re-evaluate its recommendations based on updated discussions with tenants and the viability of zero-emission yard tractors for routine use improves (i.e., more testing proves durability and dependability).

NEXT STEPS

Modification of the Port's Environmental Ordinance is subject to Board approval. Staff will draft modifications to the Port's Environmental Ordinance based on the recommendations outlined in this Report, any feedback the Board may provide, and public input on this Report. Staff anticipates a revised ordinance will be presented to the Board for consideration in early 2021.