

# REPORT

**Report:** Maritime Air Quality Improvement Plan (“MAQIP”) Calendar Year 2018 1<sup>st</sup> Quarter Status Report (**Engineering**)

**MEETING DATE:** 4/12/2018

**SUBMITTED BY:** Chris Chan, Director of Engineering

**APPROVED BY:** J. Christopher Lytle, Executive Director

## **INTRODUCTION**

Air quality improvement on behalf of public health and quality of life, especially for local residents and workers, is a strategic and organizational priority for the Port of Oakland (“Port”).

The framework for the Port’s current maritime air quality efforts is the Maritime Air Quality Improvement Plan (“MAQIP”), which the Board of Port Commissioners (“Board”) adopted in April 2009. The MAQIP incorporated and adopted the goal set forth in the 2008 Port of Oakland Maritime Air Quality Policy Statement (Board Resolution No. 08057, March 18, 2008) to reduce the excess community cancer health risk related to exposure to diesel particulate matter (“DPM”) emissions associated with the Port’s maritime operations by 85% from 2005 to 2020, through all practicable and feasible means. Based upon the most recent seaport emissions inventory (Year 2015), DPM emissions from sources at the seaport have decreased 76% since 2005. While this a substantial achievement towards the 85% risk reduction goal, achieving that goal and continuing to reduce emissions beyond 2020 requires additional reduction measures and long-term planning.

On December 14, 2017, Port staff presented a Status Report to the Board on the MAQIP, including a schedule of actions. The schedule committed Port staff to provide a progress report to the Board and the public in the first quarter of 2018.

On March 8, 2018, the Board renewed its commitment to improving air quality in its “Port of Oakland Strategic Business Plan 2018-2022.” The Strategic Business Plan incorporates the original MAQIP goals, and commits the Port to developing an updated MAQIP beyond the Year 2020.

This Status Report updates the Board and public on (1) the progress made to meet the goals of the original MAQIP, and (2) the development of the “2020 and Beyond Plan.”

## **MEETING THE ORIGINAL MAQIP GOALS: “YEAR 2018 MAQIP UPDATE”**

The December 14, 2017, Status Report provided an update on activities underway at that time. These included 1) the West Oakland Truck Management Plan (“West Oakland TMP”), 2) a set of new potential emissions reduction measures, which staff submitted to the Bay Area Air Quality Management District (“BAAQMD” for its review in October 2017, and 3) shore power compliance.

Since December 2017, Port staff have made progress on these and other actions, including:

- 1) Reconvened the original MAQIP Task Force;
- 2) Substantially completed data collection for the fourth seaport emissions inventory (Year 2017);
- 3) Prepared and submitted two grant applications to promote zero-emissions-capable and zero-emissions equipment use at maritime facilities (see State Grants, below, for more detailed discussion of these two grants);
- 4) Analyzed the emissions reductions from the new potential measures (above) to achieve the 85% DPM reduction goal; and
- 5) Incorporated specific air quality provisions into tenancy agreements as part of the required Environmental Exhibit for these agreements.

A brief description of the above-referenced activities follows (see Table 1 at the end of this Report for a summary):

### **West Oakland Truck Management Plan (MAQIP-related action)**

The Port and the City of Oakland (“City”) convened the first of five West Oakland TMP public meetings on Wednesday, October 11, 2017, and the second public meeting on Saturday, December 2, 2018. The Port and the City held the second meeting at City Slicker Farms in West Oakland. Meeting #2 included a “mobile” workshop so residents, Port staff, and other participants could visit nearby locations identified as parking and truck circulation “hot spots.”

The Port and the City have scheduled the third West Oakland TMP meeting for April 7, 2018. Meeting #3 will allow participants to review the truck parking and truck circulation surveys completed to date by the Port-City team based on studies and community input from the first two meetings. Recent studies include a truck circulation study using “StreetLight” data for commercial vehicles showing truck movements between the Port and West Oakland, and within West Oakland, and data on truck enforcement.

The Port-City team is planning the fourth West Oakland TMP community meeting and the fifth community meeting in late spring 2018. The Port-City team expects to complete the draft West Oakland TMP in summer 2018 for public review. Guiding the West Oakland TMP throughout is the commitment to stakeholder involvement in the planning process including methods that facilitate participatory decision-making.

### Potential Additional Emission Reduction Measures (under consideration)

The Port has modeled (i.e., forecasted) year 2020 and 2030 emissions to identify potential additional emissions reduction measures that will help the Port reach the MAQIP 85% DPM health risk reduction goal. The key findings of the modeling are: 1) the Port needs additional reduction measures “above and beyond” State regulatory requirements to reach its 85% reduction goal; and 2) emissions from vessels (ocean-going vessels and harbor craft/tugs (neither of which the Port owns) are the largest current sources of DPM emissions.

Due to the predominance of emissions from vessels, many of the emission reduction measures now under review are measures that apply to ocean-going vessels and harbor craft. For these sources, however, the range of options is limited.

For example, for ocean going vessels, cost, ownership, timely delivery of cargo and safety concerns related to vessel schedules and operations are significant factors constraining consideration of a potential voluntary vessel speed reduction program (“VSR.”) At the February 23, 2018, MAQIP Task Force Meeting #1 (see Public Participation: Reconvening the MAQIP Task Force, below), representatives of the San Francisco Bar Pilots (SFBP) expressed many of these concerns related to VSR. Port staff held a subsequent meeting with the SFBP on Thursday, March 15, 2018, where SFBP provided additional detail and perspectives on their concerns associated with a voluntary VSR program.

For harbor craft, the Bay Area Air Quality Management District (“BAAQMD”) is funding two tug retrofits under the Carl Moyer program. However, harbor craft (i.e., tugs) are very costly to purchase. Thus, the Port continues to analyze how to include harbor craft measures in its recommended package of additional measures.

Finally, the Port also calculated emissions reductions for hybrid and zero-emissions cargo handling equipment (“CHE”) and drayage trucks (neither of which the Port owns) under two hypothetical business growth scenarios. While CHE and drayage truck emissions declined substantially between 2005 and 2015 (i.e., 82% for CHE; 98% for drayage trucks), Port staff are pursuing further emissions reductions for these sources through incentive funding (see State Grants, below.)

### State Grants

The State of California has set ambitious greenhouse gas (“GHG”) reduction targets for 2030 and 2050. However, the transition from current carbon-based combustion to near-zero and zero-emissions will take time. During the transition period and before new regulatory mandates, the State is encouraging new technologies through an array of grant and incentive programs. (See Table 2 at the end of this Report for a list of current grant and incentive opportunities.)

Since December 2017, Port staff have focused intensive efforts on meeting with Port tenants, equipment owners, and manufacturers to develop grant-eligible projects. Port staff have identified numerous grant and incentive programs that may be applicable to

Port tenants, equipment owners, or manufacturers. It is important to stress that for incentives involving new equipment, the Port is generally not the equipment owner. Thus, for these types of grants, the Port can play a role by identifying grant opportunities, conducting feasibility studies, preparing grant applications, and encouraging partnerships between tenants, equipment manufacturers and grant-making agencies. Accordingly, for these grants to be successful, effective coordination and cooperation among the Port, tenants, and the agencies are essential. In some cases, the Port may apply for grants for its own electrical system upgrades and charging infrastructure where the Port is the utility. (Note that PG&E also provides power to some of the marine terminals.)

For the period December 2017-March 2018, Port staff and SSA Terminals prepared a Carl Moyer application to convert thirteen rubber-tire gantry (“RTG”) cranes at the Oakland International Container Terminal (“OICT”) to hybrid-electric technology. On January 24, 2018, SSA Terminals submitted this application to the BAAQMD. The proposed equipment would reduce DPM emissions from this equipment by 95%, nitrogen oxides (“NOx”) emissions by 99%, reactive organic gases (“ROG”) by 98%, and GHG emissions by more than 40%.

Port staff, SSA Terminals, and the BAAQMD met on March 9, 2018, to discuss the Carl Moyer grant. At the meeting, BAAQMD staff expressed a strong alternative preference for fully electric RTGs. SSA Terminals and Port staff explained that there were operational impediments to implementing a fully electrified operation at OICT at this time and stressed the immediate emissions benefits from the hybrid-electric equipment proposal. Continued discussions with BAAQMD regarding the Carl Moyer grant ensued and have been productive. On Friday, March 16, 2018, the BAAQMD expressed support for the project as a first stage in a longer-term electrified operation. On Friday, March 23, 2018, in an e-mail to Port staff, BAAQMD tentatively indicated that its Mobile Sources Committee (MSC) might consider the project on May 24, 2018, with full BAAQMD Board approval possible in June 2018.

On February 23, 2018, Port staff also submitted an application to the California Energy Commission (CEC) to fund advanced freight vehicle infrastructure deployment (GFO-17-603). The CEC grant provides a maximum of \$8 million per entity. The Port applied to install electric vehicle (EV) charging infrastructure upgrades at four off-dock tenant locations to support charging of tenant-operated electric drayage trucks. Proposed electrical infrastructure upgrades include 1) installation of switchboards and transformers, 2) extension of power lines to distribution centers, and 3) construction of charging connection points for 24 chargers, (includes deployment of 10 BYD Motors Inc. (“BYD”) chargers to support the testing of 10 BYD battery electric drayage trucks and 1 TransPower electric vehicle supply equipment (“EVSE”) to support the testing of a TransPower drayage truck.)

Port tenants have also applied independently for State grants. For example, Centerpoint Oakland Development, LLC, which recently entered into a 66-year lease

with the Port covering approximately 27 acres of the Port-owned former Oakland Army Base, applied for a CEC grant to provide charging infrastructure for its future warehouse development.

Another Port tenant, GSC Logistics (“GSC”), recently received a BYD electric drayage truck, model 8TT, through a California Air Resources Board (“CARB”) grant to a coalition of Air Districts. GSC has been using the single 8TT truck for short drays on Port property, for example, between the marine terminals and the GSC yard on Maritime Street. GSC presented information about the all-electric truck at the reconvened MAQIP Task Force Meeting #1 on February 23, 2018 (see Public Participation, below.) This 8TT truck is the first in-use, all-electric drayage truck at the Port, and represents the first step towards zero emissions equipment.

Finally, several other Port truckers have received Proposition 1B Goods Movement (“Prop 1B”) grants from the Bay Area Air Quality Management District (“BAAQMD”) for additional low NOx and fully electric zero emissions trucks.

### Shore Power

Compliance with the California Air Resources Board’s “At-Berth Regulation” for ocean-going vessels is key to reducing DPM emissions. Shore Power compliance has resulted in substantial emissions reductions. In 2005, ocean-going vessel emissions were 208 tons DPM; in 2015, ship emissions were 52 tons. This represents a 75% reduction in ocean-going vessel DPM emissions between 2005 and 2015. Nonetheless, shore power compliance continues to constitute a challenge due to many factors, such as equipment damage and failure, vessel size, inconsistent positioning of cables, and foremost, the absence of shore power equipment on certain vessels, which the Port does not own. As a result, data show a wide range of compliance performance by the fleets at the Port. For example, in 2017, some fleets achieved 100% plug-ins while other fleets were only at 50% (Note: the CARB “At-Berth Regulation” does not apply to fleets with fewer than 25 vessel calls per year or steamships).

For January 2018, shore power usage at the Port was on average 72% across all grant-funded berths. The grant requirement for 2018 is 80% usage of shore power. In comparison, the At-Berth Regulation requires each regulated fleet to achieve 70% usage of shore power. Port staff track shore power usage monthly and work with shipping lines and terminal operators to identify factors that prevent plug-ins in an effort to overcome those factors and achieve increased shore power usage. For example, to overcome cable-positioning issues, the Port has commissioned an engineering study to analyze extending the reach of a vessel plug from a few feet to up to 100 feet to the nearest shore power outlet to improve plug-in rates.

For February 2018, shore power usage showed continued improvement. Out of 113 vessel “calls” (i.e., visits) in February, 89 vessels successfully used the shore power system. This is a 79% usage rate. Berths 30, 32, 35 and 37 all showed usage rates above the 80% Prop.1B grant requirement.

## Public Participation: Reconvening the MAQIP Task Force

The Port developed the original MAQIP through a comprehensive public stakeholder participation process led by Port staff with the assistance of CONCUR Inc. (“CONCUR”), a Berkeley-based consulting firm. The original MAQIP Task Force (“Task Force”) of 35 stakeholders represented community members, Port tenants, truckers and shipping lines, environmental advocacy groups, air quality and health agencies, and other maritime-related businesses.

The MAQIP provides for monitoring and reporting on progress on MAQIP goals. Included in this monitoring and reporting structure is on-going stakeholder engagement. Specifically, the original MAQIP calls for the Port to reconvene the MAQIP Task Force within two years of the 2020 planning horizon for a “review of progress, strategies, compliance success and new technologies. As 2020 approaches, the emphasis will be on regulatory compliance and on measures above and beyond regulatory requirements.”

In fulfillment of this commitment, Port staff again retained CONCUR to support and facilitate the MAQIP Task Force. CONCUR conducted a Stakeholder Assessment in mid-December 2017-January 2018, which resulted in findings and recommendations. Among the key findings, stakeholders stated that they were aware of the progress in reducing DPM emissions and supported the continued focus on the -85% reduction in DPM by the Year 2020. Stakeholders expressed a strong preference for a succinct Year 2018 MAQIP update and a more extensive process for the “2020 and Beyond Plan”. On Friday, February 23, 2018, the Port reconvened the MAQIP Task Force. The Port is planning a follow-on meeting on May 9, 2018 to focus on the “2020 and Beyond Plan” and related public participation process and structure.

## Emissions Inventory

In 2005, the Port prepared a “Seaport Air Emissions Inventory” to identify and quantify air emissions from maritime activities. In 2008, CARB used the 2005 Seaport Emissions Inventory to conduct the West Oakland human health risk assessment (“HRA”). CARB’s HRA attributed 16% of the DPM cancer risk in West Oakland to Port sources, while other sources and the Union Pacific Railroad operations accounted for 80% and 4% of the health risk, respectively.<sup>1</sup>

Since 2005, the Port has conducted two Emissions Inventory updates in 2012 and 2015, respectively. At the MAQIP Task Force Meeting on February 23, 2018, the Port compared the 2005 and 2015 seaport emissions showing a decline in total DPM emissions of 76%. Importantly, the two largest source categories are ocean-going

---

<sup>1</sup> California Air Resources Board (CARB), *Draft Diesel Particulate Matter Health Risk Assessment for the West Oakland Community: Summary of Results* (2008.)

vessels (79% of emissions) and harbor craft (12 % of emissions). Port truck emissions declined by 98%, constituting 6% of DPM emissions in 2005 and just 1% in 2015.

The Port is now preparing its fourth Emissions Inventory for Year 2017 emissions. The 2017 Emissions Inventory will help the Port and stakeholders assess the effectiveness of existing emissions reduction measures and regulations, such as the drayage truck rule and the “At-Berth” rule for ships. To ensure that the 2017 Emissions Inventory reflects regulatory agency input, the Port convened a meeting on Thursday, January 25, 2018, with BAAQMD and CARB to determine the inventory modeling protocol. The Port has also committed to annual seaport emissions inventories through 2020.

## **DEVELOPING AN UPDATED MAQIP: THE “2020 AND BEYOND” PLAN**

### **Factors Shaping Future Air Quality Planning**

In addition to existing air quality regulations, State GHG reduction targets, new laws and regulations, and amendments to existing regulations are informing future maritime-related air quality planning. The State’s Sustainable Freight Action Plan establishes targets to transition goods movement to zero emissions technologies, and the State’s 2030 and 2050 GHG emission reduction goals create a long-term “frame” for plan implementation.

Furthermore, on July 26, 2017, Governor Brown approved Assembly Bill 617 (“Non-Vehicular Air Pollution: Criteria Air Pollutants and Toxic Air Contaminants”), which focused attention on communities affected by a high cumulative exposure to criteria air pollutants and toxic air contaminants (“TACs”), including DPM. BAAQMD staff has identified West Oakland as a high-priority AB 617 community. Port staff participated in BAAQMD’s February 26, 2018, workshop and submitted comments requesting funding to promote the widespread proliferation of local electric drayage trucks.

In addition, new community-based research and data constitute another factor shaping future air quality planning. In this regard, Port staff plan to attend an event sponsored by a local environmental group, the West Oakland Environmental Indicators Project (“WOEIP”), on Earth Day (April 21, 2018) where local organizations will present air quality data using local monitors and sensors.

### **“2020 and Beyond Plan”: Blueprint**

To guide the Port through this changed landscape of new regulations, accelerated GHG emissions targets, and the AB 617-focus on community exposure, Port staff is designing a blueprint for the Seaport’s long-term air quality plan: the “2020 and Beyond Plan.”

The key elements of the “2020 and Beyond Plan” are its vision, purpose, goals, strategies, implementing actions, feasibility criteria, timeline, and public participation, as described below.

## Vision

The vision of the “2020 and Beyond Plan” is to transition Seaport operations to near-zero and zero-emissions technologies to achieve cleaner regional and local air quality, reduce GHGs, sustain Seaport growth and development, and improve local public health and quality of life. In its planning and implementation, the “2020 and Beyond Plan” envisions a largely electrified “post-carbon” Seaport that contributes to long-term community, worker and business health, growth, and resiliency.

## Purpose

The primary purpose of the “2020 and Beyond Plan” is to promote public health and quality of life by continuing Port efforts to minimize and, where possible, fully eliminate criteria pollutants and TAC emissions from Seaport-related sources. Due to the proximity of the West Oakland community to Port maritime operations, the “2020 and Beyond Plan” will prioritize reducing localized exposure of residents to toxic air contaminants (“TAC”) emissions. As a companion focus, the “2020 and Beyond Plan” will target GHG emissions that contribute to global climate change. The key means to reduce GHG emissions is to reduce fossil fuels emissions by switching to electrified equipment and operations, cleaner fuels, and renewables. The “2020 and Beyond Plan” seeks to support the State’s GHG reduction goals by prioritizing the transition of Seaport facilities, infrastructure, equipment, and maritime operations to electrified operations and equipment.

## Goals

The “2020 and Beyond Plan” has four primary goals:

- Goal #1: Minimize Criteria Air Pollutants, Toxic Air Contaminants and Exposure
- Goal #2: Reduce Greenhouse Gases
- Goal #3: Build and Strengthen Partnerships
- Goal #4: Provide Opportunities for Meaningful Public Participation:

## Strategies

The heart of the plan are its strategies and implementing actions. The “2020 and Beyond Plan” relies on primary and supporting strategies to guide implementation actions and outcomes.

### Primary Strategies

- Strategy #1: Emissions Reduction Programs and Projects (Focus: Continue to Reduce DPM). Continued focus on reducing DPM emissions from existing equipment to achieve existing MAQIP goals and improve local public health. Strategy #1 relies upon the Seaport Emissions Inventory to identify which



additional measures or programs might contribute to further emissions reductions.

- Strategy #2: Transition to Zero- and Near-Zero Equipment (Focus: Reduce GHG Emissions and Localized Exposure to Toxic Air Contaminants). Focus on programs and projects that promote the transition to new technologies, such as fully electric trucks, low-NOx (natural gas) drayage trucks, and hybrid-electric cargo handling equipment. To support the transition, the Port will work with its tenants, equipment manufacturers, grant-making agencies and truckers to identify projects for grant and incentive funding support.
- Strategy #3: Upgrade Electrical systems and Infrastructure. (Focus: Support transition to electrified operations and equipment.) The transition to electrified equipment and operations requires investments in electrical systems, both to upgrade existing systems and to build new infrastructure. The Port will need to plan and coordinate for electrical system upgrades needs in areas served by the Port as a utility with terminal operators, off-dock tenants and equipment owners. The Port will also need to coordinate with PG&E in PG&E's service area.

Figure 1 illustrates the three draft “2020 and Beyond Plan” Primary Strategies



### Supporting Strategies

- Build Partnerships: Build and strengthen partnerships between tenants, equipment owners, operators, community organizations, and public agencies to collaborate on behalf of the “2020 and Beyond Plan” and economic and workforce development.

- **Provide Public Participation Opportunities:** Provide meaningful public participation opportunities to a wide spectrum of stakeholders, including groups that may not have previously participated, to inform plan development and implementation. Design a public participation process that is responsive to stakeholder input and perspectives.
- **Seek Grants and Incentive Funding:** With its tenants and regulatory partners, the Port will identify grants and incentive funding to support the implementation of near-zero and zero emissions technology.

### Implementing Actions

The Port will identify specific implementing actions by emissions source category (i.e., ocean-going vessels, harbor craft, cargo-handling equipment, trucks, and locomotives), where applicable, for each of the three Strategies outlined above. For each implementing action, the Port will identify the applicable methods and tools required for successful implementation including affordability (costs, funding), feasibility and partners.

At this stage in plan development, Port staff have identified the following categories of implementing actions under each Strategy. **(Note: The “Blueprint” for the “2020 and Beyond Plan” characterizes new programs and projects as “potential”, pending feasibility review (financial and operational), among many factors):**

#### Strategy #1: Emissions Reduction Programs and Projects; (Year 2020 goals)

- On-going MAQIP programs, mostly built around regulatory compliance: Low-sulfur fuel, shore power, electrified ship-to-shore cranes, electrified reefer plugs, comprehensive truck management program (“CTMP”), cargo-handling equipment, and harbor craft.
- Potential additional emissions reduction considerations: Hybrid RTG cranes, alternative emissions capture systems (i.e., “bonnet”), voluntary vessel speed reduction, additional vaults and cable reels to improve shore power usage and compliance, harbor craft repowers, truck systems repair facilities and idling-reduction technologies for trucks.

#### Strategy #2: Transition to Zero-and Near-Zero Equipment; (First stage of electrification: “2020 and Beyond” goals)

- Electrified cargo-handling equipment and fully electric trucks, such as electric RTG cranes, yard hostlers, intra-port trucks, forklifts (including warehouses), top-picks and side picks.

### Strategy #3: Upgrade Electrical Systems and Infrastructure (2020 and Beyond goals)

- Associated electrical system upgrades, engineering feasibility studies; plug-in/charging infrastructure for Port fleet and personal vehicles.

#### Feasibility Criteria

Each implementing action must satisfy rigorous feasibility criteria, i.e.: 1) it must be affordable, cost-effective and economically sustainable, 2) the technology must be commercially available, and 3) it must be operationally feasible.

#### Timeline

The current 2009 MAQIP has a planning horizon in Year 2020. The “2020 and Beyond Plan” looks beyond the year 2020, seeking to frame the Port’s air quality planning activities within the State’s near-term grant making cycles and the Port business activities (i.e., capital development program and lease renewal cycles: 1 to 10 Years from Plan adoption.) For the GHG component of the plan, the State’s 2030 and 2050 GHG emissions reduction targets create a long-term planning “frame.”

Port staff will continue to work with tenant, regulatory and community partners to assess the reasonableness of setting specific, feasible, time-bound performance measures within each strategy. However, the State has already changed target dates for specific source categories, reflecting uncertainty in its rulemaking and the need for additional analysis and study. For example, at the most recent CARB meeting on Thursday, March 22, 2018, the CARB staff recommended postponement of new regulations for cargo handling equipment and ocean going vessels. For cargo handling equipment, CARB will consider new regulations in 2022 with implementation proposed for 2026; for ocean-going vessels, CARB will consider new regulations in 2019 with implementation in 2023.

CARB cited several factors for the postponement of regulatory action, including the need for planning/funding for support (i.e., electrical) infrastructure. The uncertainty in the State’s regulatory process points to the very long-term nature of the transition to near-zero and zero emissions technologies and is one of the key factors influencing the Port’s consideration of how and when to establish performance standards for the “2020 and Beyond” Plan.

#### Public Participation

Community members and organizations have expressed a strong desire to be involved in developing the “2020 and Beyond Plan.” Additionally, the West Oakland Environmental Indicators Project (“WOEIP”), a West Oakland-based organization, and several associated organizations and agencies, have requested a briefing from Port staff on previous community stakeholder engagement studies (CSE) conducted in 2009

and 2015.<sup>2</sup> As a result, Port staff and stakeholders will continue the discussion of future public engagement for the “2020 and Beyond Plan” at the second MAQIP Task Force meeting, currently planned for May 9, 2018. The Port intends to develop a public participation process that reflects community input and provides for a broad cross-section of stakeholders to engage in the planning process. The Port will make all good faith efforts to ensure outreach to and access for organizations, members of the public and community groups to participate in a meaningful manner in the Port’s public participation activities.

#### Draft and Final Plan

Port staff plans to present a draft “2020 and Beyond Plan” for Board and public comment in July 2018. Based upon review and comment, Port staff will prepare a final plan for Board consideration and approval.

---

<sup>2</sup> The Port retained Viveka Chen & Associates (VCA) to conduct an assessment to design a forum to serve as a focal point for continued public engagement on Port maritime projects. VCA completed its report in October 2009. In 2015, the Port updated its assessment of community stakeholder engagement (CSE) with consulting support from Viveka Chen and Anuja Mendiratta. Based upon stakeholder feedback, VCA recommended designing community engagement around four issue areas: jobs/workforce development, environment/air quality, economic impact and operations, logistics and security. To move forward, the Port will present its current concept at the next scheduled MAQIP Task Force Meeting.

Table 1: Summary Table of Status of MAQIP Update and Related Actions (April 12, 2018)

Action	Date	Status (3/22/18)
<p>Building the Port's Air Quality Team</p> <ul style="list-style-type: none"> <li>- Resources</li> <li>-</li> <li>-</li> <li>- Consultants</li> </ul> <p>Partners: Tenants and fleet operators (ships)</p> <ul style="list-style-type: none"> <li>-</li> <li>- Regulators and other public agencies</li> <li>-</li> <li>-</li> <li>-</li> <li>- MAQIP Task Force</li> </ul>	Ongoing	<p>Port staff have itemized tasks and related resource needs for inclusion in the FY 2019 budget.</p> <p>Consultants retained for technical studies, grants, forecasting, emissions inventories and plan documentation and project management;</p> <p>Port staff have been working closely with Port tenants to identify projects suitable for incentive funds (i.e. grants)</p> <p>On-going consultation with CARB, BAAQMD, CEC, Alameda County Transportation Commission (ACTC) regarding grant funding opportunities, rulemaking and policies.</p> <p>MAQIP Task Force reconvened; Task Force assessment completed; first meeting held on Feb 23, 2018; second meeting scheduled for May 9, 2018.</p>
<p>Implementing current MAQIP</p> <ul style="list-style-type: none"> <li>- 2017 Emissions Inventory</li> </ul>	1 <sup>st</sup> Q 2018	Year 2017 Emissions Inventory underway; Port committed to 2018, 2019 and 2020 inventories; Port, BAAQMD and CARB met on Jan 25, 2018, to discuss modeling protocol.
<p>Complying with Shore Power Grants</p> <ul style="list-style-type: none"> <li>- Working with terminal operator, OICT, to use a shore power extender system at vaults where needed</li> </ul>	Ongoing 1 <sup>st</sup> Q 2018	<p>January 2018 at 72%; February 2018 at 79%.</p> <p>Shore Power Extender system study underway.</p>
<p>Preparing a Truck Management Plan (TMP) with the City of Oakland</p> <ul style="list-style-type: none"> <li>- Design and lead second of five West Oakland community meetings</li> </ul>	<p>Dec 2, 2017</p> <p>2<sup>nd</sup> Q 2018</p>	City-Port team held TMP Meeting #2 on Saturday, December 2, 2018 as a mobile workshop in West Oakland. TMP Meeting #3 planning is underway for April 7, 2018.

Action	Date	Status (3/22/18)
Planning new MAQIP 2020 and Beyond	2018 1 <sup>st</sup> Q 2018	Comprehensive project management schedule developed for MAQIP “2020 and Beyond Plan”; “Blueprint” and outline prepared.
Initiate new MAQIP 2020 and Beyond Task Force		Stakeholder assessment findings and recommendations completed; briefing at MAQIP Task Force Meeting #2 (May 9, 2018) on 2009 and 2015 Community Stakeholder Engagement (“CSE”) studies.
Grants		Grants <ul style="list-style-type: none"> <li>• Prepared and submitted Carl Moyer Program application for 13 hybrid-RTGs at OICT on January 24, 2018. BAAQMD expressed support on March 16, 2018.</li> <li>• Prepared and submitted CEC grant for electrical systems upgrades on February 23, 2018.</li> </ul>
Updating the Board and public (i.e. Conduct first periodic update to the Board and public.)	1 <sup>st</sup> Qtr. 2018	April 12, 2018 1 <sup>st</sup> Quarter Status Report (This report.)
Present draft recommendations for Board consideration	3 <sup>rd</sup> Qtr.	Refining options for emission reductions and resource needs including program and grant match costs for Board review.
“2020 and Beyond Plan (Draft)”		“Blueprint” scheduled for presentation on April 12, 2018; Draft in July 2018 for Board and public comment; final Plan targeted for end of 2018.

Table 2: Grant and Incentive Funding Opportunities: (April 12, 2018)

Opportunity	Notes	Application Deadline
ARB Zero and Near Zero Emissions Freight Facilities (ZANZEFF) •\$150m statewide to be expended by 2021 •50% match	ARB solicitation for “transformative” ZE and NZE projects	July 19, 2018

Opportunity	Notes	Application Deadline
<p>Carl Moyer Program</p> <ul style="list-style-type: none"> <li>•\$66m Year 19 funding cycle</li> <li>•\$11m Year 20 funding (mid 2018)</li> <li>•&gt;15% match</li> </ul>	<p>Must destroy replaced engines</p>	<p>Open now, first come first served</p>
<p>PG&amp;E Transportation Electrification Plan, as filed with the CPUC under SB350</p> <ul style="list-style-type: none"> <li>•\$211m total, over 5 years</li> <li>•This is NOT a grant; this is money that PG&amp;E will spend.</li> </ul>	<p>Infrastructure to support heavy-duty fleet electrification, including CHE</p> <p>Project partners must pay for charging hardware and the electric equipment. PG&amp;E can partially fund chargers in Disadvantaged Communities (DAC)</p> <p>Limited to PG&amp;E service areas</p>	<p>Next step is for CPUC to make a decision of PG&amp;E's proposed plan</p>
<p>HVIP: ARB's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)</p> <ul style="list-style-type: none"> <li>•\$128m available at the moment</li> </ul>	<p>Must purchase a new engine or vehicle off a list of approved types</p> <p>On-road vehicles only</p> <p>In a DAC, some EVSE costs covered</p> <p>Cannot be stacked with ZANZEFF funding</p>	<p>Open now, first come first served</p>
<p>Volkswagen Settlement</p> <ul style="list-style-type: none"> <li>•\$25 million Appendix C fund for light duty infrastructure</li> <li>•\$423 million Appendix D NOx mitigation plan</li> </ul>	<p>Proposal includes drayage trucks and off-road equipment. In the proposed guidelines, infrastructure is an allowable expenditure</p> <p>"Funded either on a first-come, first-served basis or through competitive solicitations."</p>	<p>Funding not yet available. Expected to be available late 2018 or early 2019</p>
<p>BAAQMD Transportation Fund for Clean Air</p>	<p>For on-road vehicles: Class 8 drayage trucks and some yard trucks</p> <p>Must destroy replaced engines</p>	
<p>BAAQMD Heavy-Duty Zero-Emissions Vehicle (ZEV) Program</p>	<p>\$5m available in 2018 cycle for on-road trucks</p> <p>Funding proportional to emissions reductions achieved; bonus funding for scrapping old engine</p> <p>Bay Area operation required for 3 years after funding</p>	<p>Solicitation not open yet</p>
<p>ARB Zero-Emission Off-Road Freight Voucher Incentive Project</p> <ul style="list-style-type: none"> <li>•\$40m allocated, not yet available</li> </ul>	<p>Must purchase a new engine or vehicle off a list of approved types</p> <p>Off-road vehicles only</p> <p>In a DAC, some EVSE costs covered</p> <p>Cannot be stacked with ZANZEFF funding</p>	<p>Will be first come first served</p>

