



**South Coast
Air Quality Management District**
21865 Copley Drive, Diamond Bar, CA 91765
(909) 396-2000, www.aqmd.gov

MARINE PORT COMMITTEE MEETING

Committee Members

Council Member Joe Buscaino, Co-Chair
Vice Mayor Rex Richardson, Co-Chair
Supervisor Lisa Bartlett
Senator Vanessa Delgado (Ret.)
Board Member Veronica Padilla-Campos
Mayor Pro Tem Larry McCallon

December 15, 2021 ♦ 9:00 a.m.

Pursuant to Assembly Bill 361, the South Coast AQMD Marine Port Committee meeting will only be conducted via video conferencing and by telephone. Please follow the instructions below to join the meeting remotely.

INSTRUCTIONS FOR ELECTRONIC PARTICIPATION AT THE BOTTOM OF AGENDA

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<https://scaqmd.zoom.us/j/98466767033>

Zoom Webinar ID: 984 6676 7033

Teleconference Dial In

669 900 6833

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Audience will be allowed to provide public comment through telephone or Zoom connection during public comment periods.

PUBLIC COMMENT WILL STILL BE TAKEN

AGENDA

Members of the public may address this body concerning any agenda item before or during consideration of that item (Gov't. Code Section 54954.3(a)). If you wish to speak, raise your hand on Zoom or press Star 9 if participating by telephone. All agendas for regular meetings are posted at South Coast AQMD Headquarters, 21865 Copley Drive, Diamond Bar, California, at least 72 hours in advance of the regular meeting. Speakers may be limited to three (3) minutes each.

CALL TO ORDER

ROLL CALL

INFORMATIONAL ITEMS

1. **Preliminary Analysis of Air Quality Impacts from Recent Port Congestion (10 minutes)**
(No Motion Required)
Staff will provide a summary of their preliminary analysis of near port and inland air quality impacts associated with recent increased throughput and congestion at the ports. Sang-Mi Lee
Program Supervisor
2. **Update on Port MOU Process (30 mins)**
(No Motion Required)
Staff will provide a status update on the Ports MOU progress since the previous Marine Port Committee meeting. Ian MacMillan
Assistant Deputy Executive Officer

OTHER MATTERS

3. **Other Business**
Any member of the Committee, or its staff, on his or her own initiative or in response to questions posed by the public, may ask a question for clarification, may make a brief announcement or report on his or her own activities, provide a reference to staff regarding factual information, request staff to report back at a subsequent meeting concerning any matter, or may take action to direct staff to place a matter of business on a future agenda. (Gov't. Code Section 54954.2)
4. **Public Comment Period**
At the end of the regular meeting agenda, an opportunity is provided for the public to speak on any subject within the Committee's authority that is not on the agenda. Speakers may be limited to three (3) minutes each.
5. **Next Meeting Date: TBD**

ADJOURNMENT

Americans with Disabilities Act and Language Accessibility

Disability and language-related accommodations can be requested to allow participation in the Marine Port Committee meeting. The agenda will be made available, upon request, in appropriate alternative formats to assist persons with a disability (Gov't Code Section 54954.2(a)). In addition, other documents may be requested in alternative formats and languages. Any disability or language-related accommodation must be requested as soon as practicable. Requests will be accommodated unless providing the accommodation would result in a fundamental alteration or undue burden to the South Coast AQMD. Please contact Danielle Escontrias at (909) 396-2422 from 7:00 a.m. to 5:30 p.m., Tuesday through Friday, or send the request to descontrias@aqmd.gov.

Document Availability

All documents (i) constituting non-exempt public records, (ii) relating to an item on an agenda for a regular meeting, and (iii) having been distributed to at least a majority of the Committee after the agenda is posted, are available by contacting Danielle Escontrias at (909) 396-2422 or send the request to descontrias@aqmd.gov.

INSTRUCTIONS FOR ELECTRONIC PARTICIPATION

Instructions for Participating in a Virtual Meeting as an Attendee

As an attendee, you will have the opportunity to virtually raise your hand and provide public comment.

Before joining the call, please silence your other communication devices such as your cell or desk phone. This will prevent any feedback or interruptions during the meeting.

Please note: During the meeting, all participants will be placed on Mute by the host. You will not be able to mute or unmute your lines manually.

After each agenda item, the Chairman will announce public comment.

A countdown timer will be displayed on the screen for each public comment.

If interpretation is needed, more time will be allotted.

Once you raise your hand to provide public comment, your name will be added to the speaker list. Your name will be called when it is your turn to comment. The host will then unmute your line.

Directions for Video ZOOM on a DESKTOP/LAPTOP:

- If you would like to make a public comment, please click on the “Raise Hand” button on the bottom of the screen.
- This will signal to the host that you would like to provide a public comment and you will be added to the list.

Directions for Video Zoom on a SMARTPHONE:

- If you would like to make a public comment, please click on the “Raise Hand” button on the bottom of your screen.

- This will signal to the host that you would like to provide a public comment and you will be added to the list.

Directions for TELEPHONE line only:

- If you would like to make public comment, please dial *9 on your keypad to signal that you would like to comment.

Preliminary Analysis of Air Quality Impacts from Recent Port Congestion

Marine Port Committee
December 15, 2021



South Coast
Air Quality Management District

Observation 1: Port Emissions Have Increased from Recent Port Activity

Under normal conditions, Ocean Going Vessels are a significant source of NO_x, SO_x, and directly emitted PM_{2.5} emissions in the South Coast air basin.

NO_x & SO_x react with other pollutants in the atmosphere to create PM_{2.5} inland

The congested container ships in the Ports of Los Angeles and Long Beach are adding a significant amount of emissions

- Recent NO_x emissions are at least 20 tpd higher*, which is roughly equal to the total emissions from about 6 million passenger cars in South Coast air basin

Additional emissions are expected from the current increase in goods movement from other port sources and the rest of the supply chain in our region, including from trucks, trains, and cargo handling equipment

- This could result in more than 5 tpd additional NO_x**

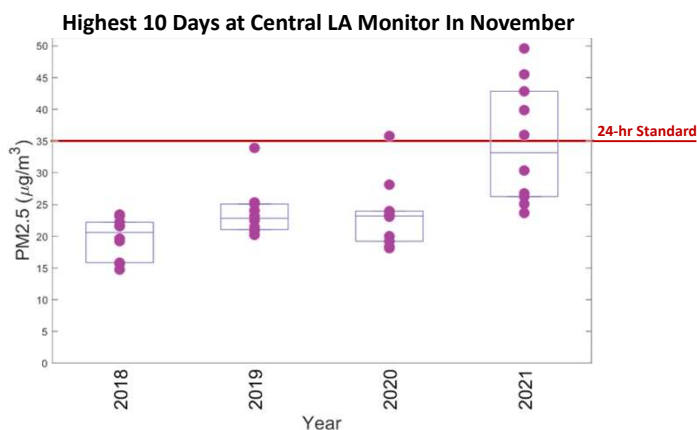
The total extra emissions from the Ports' congestion account for approximately 9% of total Basin emissions. This is a conservative estimate and actual emissions could be much higher

* https://ww2.arb.ca.gov/sites/default/files/2021-11/SPBP_Congestion_Anchorage_Emissions_Final.pdf

** https://ww2.arb.ca.gov/sites/default/files/2021-09/port_congestion_anchorage_locomotives_truck_emissions_final_%28002%29.pdf

Observation 2: Recent PM2.5 Levels are Elevated Compared to Previous Years

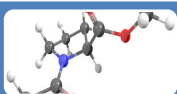
PM2.5 levels observed at the Central Los Angeles monitoring station this November are approximately 10 $\mu\text{g}/\text{m}^3$ higher (~43%) than levels from previous years



South Coast air basin attained the 2006 24-hour PM2.5 in 2020 and was on track to maintain this attainment status until November this year

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Connections Between Emissions from Recent Port Congestion and Elevated PM2.5 Levels



Quantifying the impact is not straightforward due to complex atmospheric chemistry and meteorology



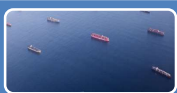
As ships are a significant source of SOx emissions, increased ambient SO2 levels near the Ports are expected and observed compared to pre-pandemic levels



The increased emissions from the ships are expected to increase ambient PM2.5 levels in the Basin



The impact of the ports' congestion is expected to occur not only in the proximity of the Ports but also inland areas which typically have higher PM2.5 levels



The ships located closer to the shore are expected to have a larger air quality impact compared to ships farther away

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PMSA/PMA/Marine Exchange New Queuing Process for Container Vessels Bound For Ports of LA and LB

New process to reduce some vessel loitering and anchorage near the Southern California coast

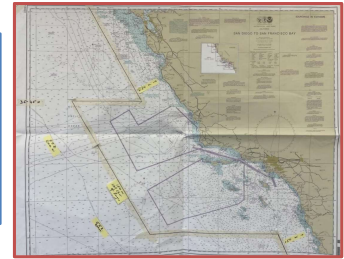
- Program is being phased in since mid-November 2021

The Pacific Maritime Management Services (PacMMS) process

- Container vessels assigned a place in the queue based on when they depart their last port of call before calling LA and LB
- Vessels must stay >50 miles from shore when coming from the south and >150 miles away when coming from the west
- Anchorage areas to remain 40-60% full (25-35 vessels)

Air quality benefit unclear, but overall should result in lower air quality impacts

- Number of loitering ships dropped by 80% within first 3 weeks, but all anchorages still full
- Emissions will remain higher than previous years until backlog cleared



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Ongoing Staff Technical Analysis

- Various data analysis and numerical modeling is underway to estimate the air quality impact from recent port congestion
 - Laboratory data to measure PM chemical components
 - Black carbon and brown carbon data to identify impact of diesel vehicles/engines, biomass burning, and other combustion sources
 - Impact of meteorological factors
 - Sensor based traffic volume data to identify truck activity
 - Analysis of satellite data
- Staff will also reach out to researchers and regulators who are investigating congestion from other ports

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Update on MOU Discussions with Ports of Los Angeles and Long Beach

Marine Port Committee

December 15, 2021

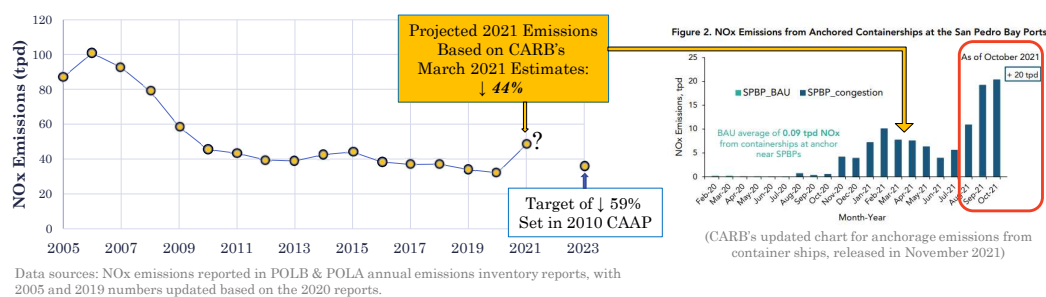
History

- **Decades-long effort to ensure port emissions reductions**
 - Originally a backstop measure
 - 2007 & 2012 AQMPs; Proposed Rules 4001, 4010 & 4020
 - Would have established enforceable emission reduction targets based on various criteria
 - Would have become effective only if targets were not met
 - Rule development on hold with development of 2016 AQMP and 2017 CAAP*
 - 2016 AQMP included a facility-based mobile source measure for marine ports
 - Assists in implementing Further Deployment measures (i.e., “black box” measures)
 - Significant portion of emission reduction needs are associated with port operations
 - Board directed staff to pursue an MOU approach in May 2018
- **Missed opportunities for port projects**
 - China Shipping
 - Southern California International Gateway (SCIG)

*CAAP = San Pedro Bay Ports Clean Air Action Plan

History (cont.)

- Ports' 2010 CAAP set a 2023 NOx target of 59% reduction below 2005 levels
 - Consistent with 'defined measures' from 2007 AQMP, but did not include additional reductions needed from "black box" measures
 - 59% target not updated in 2017 CAAP – "black box" needs remain unaddressed
- A full year of port congestion has reversed progress achieved a decade ago, with relief starting only in recent weeks due to new vessel queueing system
 - If congestion continues, even the insufficient target of 59% may not be met



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Recent Actions

- **In August 2021, the Board directed staff on how to approach port emissions**
 - Only pursue a MOU with the ports of LA and LB for four months
 - Begin internal research on port Indirect Source Rule (ISR) concepts in December if a draft MOU (or draft MOUs) is not ready for full execution by all parties
 - Pivot fully to developing an ISR in February if a MOU is not fully executed
- **Staff initiated weekly conference calls with POLA, POLB, and CARB to discuss potential MOU concepts**
 - Over the past month, more discussions with POLB than with POLA
- **Focus of staff's effort is to identify opportunities to reduce emissions for attainment needs**
 - Including but not limited to implementing the 2017 CAAP

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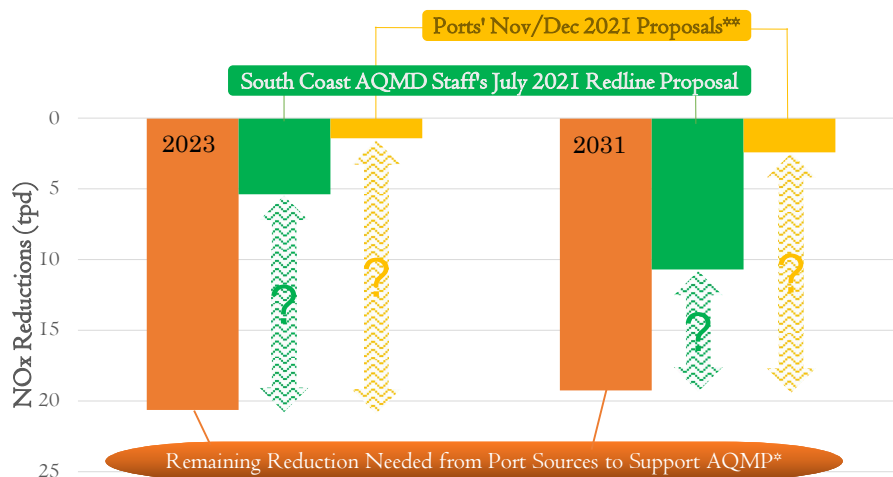
Status Update on MOU Discussions

- POLB and POLA separately submitted offers*, both of which included additional measures beyond those in the previous draft MOU but diverged significantly in content
 - POLB: Proposed draft MOU language dated December 1
 - Advancing funding of \$100 million from Clean Trucks Program to accelerate truck replacement
 - Vessel and cargo handling equipment measures
 - Investments in on-dock rail
 - POLA: Offer letters (no draft MOU language) dated November 18 and December 2
 - \$3 million for early deployment of zero-emission drayage trucks
 - Vessel measures
- Proposals address some measures included in staff's July redline proposal but remain too far from meeting AQMP emission reduction needs
- To date (past the 4-month mark), no draft MOU language has been agreed upon by staff from either port and South Coast AQMD
 - Discussions with both ports are continuing
 - Staff is beginning internal work on port ISR concepts

* <http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/facility-based-mobile-source-measures/comm-ports-wkng-grp>

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Preliminary Estimate of Reductions from Latest MOU Proposals



*Based on the 2016 AQMP reduction needs from port sources and net of projected reductions from adopted and upcoming regulations
 **Including truck (CTP), OGV (VSR), and CHE (yard tractor) measures.

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Key Concerns

Overall, both ports' proposals offer little prospects in meeting AQMP reduction needs and also fall short of the 2017 CAAP, much more so with POLA's offer.

POLB's 12/01 Proposed Draft MOU Language

- Binds the Board from engaging in any rulemaking affecting POLB or its terminal operators until term expiration (end of 2035)
- No obligation to work on developing contingency or substitute measures if POLB is unable to meet an MOU measure or there is an emissions reduction shortfall
 - POLB would meet terms of MOU even if only in substantial compliance, which is broadly defined
- South Coast AQMD solely responsible to U.S. EPA for any emissions reduction shortfall
- Highly restrictive strings attached to the advanced funding of \$100 million:
 - South Coast AQMD must return **all** advanced funds (expected to be transferred in 2022) should we initiate early termination of MOU
 - Must be **matched** by other funding sources

POLA's 11/18 and 12/02 Offer Letters

- No proposed draft MOU language for staff to evaluate
- Would enter into an MOU only if there is neither concurrent nor subsequent rulemaking
- Programs included in the offer are being pursued/developed, even without an MOU
 - A potential MOU would only provide a mechanism to quantify the associated SIP credits
 - South Coast AQMD solely responsible for shortfall in SIP creditable emission reductions

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2017 CAAP Strategies to Address Each Major Source of Emissions



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2017 CAAP Strategies *Heavy-Duty Drayage Trucks*

Goal

- Transition to NZE in early years and to ZE drayage truck fleet by 2035

Strategies

- **Clean Trucks Program (CTP) 2.0**
 - From 2018, *new* trucks entering the ports drayage truck registry (PDTR) must be MY 2014+
 - From 2020, drayage trucks with a loaded container to be charged a fee rate
 - Exemptions for NZE until 2035 and for ZE beyond 2035
 - From 2023 or when NZE emission standards are required, *new* trucks entering the PDTR must be NZE or better

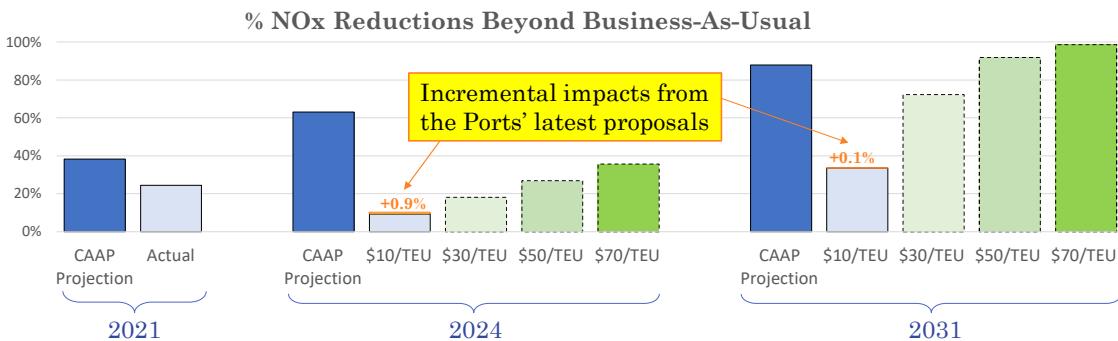
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2017 CAAP vs. Ports Proposals *Heavy-Duty Drayage Trucks*

Strategy Component	Status of Implementation	POLB MOU Proposal	POLA Offer Letter
Newly registered drayage trucks meeting MY 2014+	Implemented in 2018 as scheduled	Included	n.a. (already implemented)
CTP fee rate	Implementation delayed to 2022 from 2020, with fee rate set at \$10/TEU	Included, plus <ul style="list-style-type: none"> • Advance funding of \$100M in 2022 from first years of revenue, with min. \$18.7M for ZE • Revenue to exclusively fund ZE trucks from 2024 • Additionally provide at least 100 ZE truck charging outlets by 2028 	Included, plus <ul style="list-style-type: none"> • \$23M for ZE trucks in 2022 (fund unspecified) • Revenue to exclusively fund ZE trucks and infrastructure
Newly registered drayage trucks meeting NZE+ from 2023	Not yet implemented	Modified: <ul style="list-style-type: none"> • Waive annual registration fee for early ZE adopters by end of 2022 • Newly registered drayage trucks meeting ZE from 2028 (<i>backstop for CARB's Advanced Clean Fleets</i>) 	n.a.

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Preliminary Estimate of Anticipated Result of CTP Revenue*



- 2017 CAAP projected that CTP would result in at least **5%** turnover per year in worst-case scenario
- Staff projects that current CTP @ \$10/TEU will fund about **2%** turnover per year in optimistic scenario

* Notes: CTP assumptions are optimistic while CAAP projections are worst-case scenarios presented in the CAAP.
 Estimate for CTP assumes current program design and:

- \$125,000 incentive for Low NO_x NG trucks
- \$225,000 incentive for ZE trucks scaling down to \$50,000 by 2031 assuming optimistic price reductions
- 800 extra ZE drayage trucks added in 2024 due to state budget/Project 800
- CTP revenue funding trucks only, with ZE infrastructure and POLA's \$3 million early deployment funding coming from non-CTP sources
- Scenarios assume turnover based on funding, not on behavioral changes nor from potential regulations (e.g., Advanced Clean Fleets)

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2017 CAAP Strategies Ocean-Going Vessels (OGV)

Goal

- Further reduce at-berth emissions and transition out the oldest, most polluting ships

Strategies

- Enhance **Vessel Speed Reduction (VSR)** programs
 - Maximize participation for all vessels
 - Implement alternative compliance plans
- Modify **Green Ship Incentives** to include Tier II+ ships, and coordinate incentives with regulatory agencies and/or other ports on the same vessel service strings
- Create a **Clean Ship Program** to charge a higher rate for Tier 0-I ships beginning in 2025 or later
- Assist with implementing CARB's At-Berth Regulation

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2017 CAAP vs. Ports Proposals

Ocean-Going Vessels

Strategy Component	Status of Implementation	POLB MOU Proposal	POLA Offer Letter
VSR enhancements	Not yet implemented	To be implemented by January 2023, plus <ul style="list-style-type: none"> Lower speed limit to 10 from 12 knots 	POLA Board to decide on a proposal by Q2 2022 which may include a lower speed limit and farther distances
Green Ship Incentives	Partially implemented	Including program modifications already adopted by POLB in July 2021	POLA Board to decide in 2022 on: <ul style="list-style-type: none"> Potential modifications to current incentive \$ and design A potential Green Ship Corridor program focusing on decarbonization
Clean Ship Program from 2025 or later	Not yet implemented	n.a.	n.a.
Assist with latest At-Berth Regulation	Partially implemented*	n.a.	n.a.

*Including cost-share of a South Coast AQMD-led demonstration project for tanker emissions capture and control.

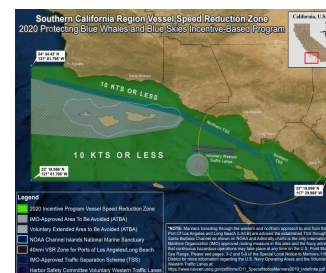
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Incremental Benefits of Ports' Proposed OGV Strategies

- Proposed VSR strategies overlap with the Protecting Blue Whales and Blue Skies (BWBS) VSR program which:
 - Incentivizes slowdown to 10 knots during whale/ozone season
 - Targets *container ships* and *auto carriers* which are designed to travel at much higher speeds (20+ knots) and results in largest emission reductions when slowing down

Selected Major BWBS Sub-region	2020 Season (May 15 – November 15)		2021 Mid-Season (May 15 – August 31)	
	BWBS VSR % Cooperation	Avg. Speed (knots)	BWBS VSR % Cooperation	Avg. Speed (knots)
Santa Barbara Channel	54%	12.0	67%	11.2
POLA/LB VSR Zones	58%	10.3	71%	9.9

- Green Ship Corridor
 - May be overlapping with the Clydebank Declaration
 - Deploying zero carbon newbuild ships does not address emissions from in-service ship fleets and may not necessarily result in NOx co-benefits beyond Tier III compliance



Ports' VSR strategies could further reduce emissions by:

- 1) Increasing cooperation rates
- 2) Expanding beyond current POLA/LB VSR zones

Source of map and program data: courtesy of the BWBS program.

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2017 CAAP Strategies *Cargo-Handling Equipment (CHE)*

Goal

- Transition to ZE CHE by 2030

Strategy

- Beginning in 2019, require terminal operators to submit a CHE inventory and 10-year CHE procurement schedule to be updated annually
- Beginning in 2020, require new CHE purchases to be ZE or cleanest feasible
- Require terminal operators to develop plans to reduce or eliminate unnecessary CHE idling

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2017 CAAP vs. Ports Proposals *Cargo-Handling Equipment*

Strategy Component	Status of Implementation	POLB MOU Proposal	POLA Offer Letter
CHE inventory & procurement schedule	No procurement plans	n.a.	n.a.
New CHE purchases to be ZE or cleanest feasible from 2020	Implementation delayed to later dates	Included. Through negotiation of leases or other agreements <ul style="list-style-type: none"> • Require ZE, low NOx, or hybrid equipment, if operationally feasible and commercially available; otherwise require Tier 4f equipment • Require all yard tractors to be ZE by January 1, 2031 • Require use of renewable diesel fuel for all diesel off-road CHE, effective 6 months after lease execution 	n.a.
Reduce/eliminate CHE idling emissions	Unknown	n.a.	n.a.

May still accelerate NOx reductions ahead of CARB's potential ZE CHE Regulation (implementation: 2026+)

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2017 CAAP Strategies

Rail Locomotives

Goal

- Expand use of on-dock rail to achieve 35% of all cargo leaving the port to go by rail, with a long-term goal of up to 50%

Strategies

- Expand on-dock rail infrastructure
- Demonstrate ZE/NZE locomotive technologies and seek utilization of the cleanest locomotives
- Study the concept of short-haul rail to warehouse and distribution centers

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2017 CAAP vs. Ports Proposals

Rail Locomotives

Strategy Component	Status of Implementation	POLB MOU Proposal	POLA Offer Letter
Expand on-dock rail infrastructure	Ongoing implementation	Includes rail infrastructure projects already underway, totaling \$1B+	n.a.
Demo ZE/NZE locomotives & seek utilization of the cleanest locomotives		Includes ongoing commitments to pursue Tier 4+ switchers and locomotive demonstration projects	Included under ongoing support for ZE demonstration and pilot programs
Short-haul rail study		n.a.	n.a.

Emission reduction benefits cannot be evaluated at this time due to insufficient specifics for proposed strategies.

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2017 CAAP Strategies

Harbor Craft

Goal

- Accelerate the deployment of cleaner engines and operational strategies

Strategies

- Incentivize fleet turnover to Tier 4 or hybrid in the short-term, and upgrade to ZE or alternative fuels in the long term
- Identify operational strategies to reduce wait time and unnecessary travel
- Expand shore power infrastructure
- Assess feasibility to require fleet modernization

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2017 CAAP vs. Ports Proposals

Harbor Craft

Strategy Component	Status of Implementation	POLB MOU Proposal	POLA Offer Letter
Incentivize fleet turnover to cleanest available technologies	To be implemented	Included: <ul style="list-style-type: none"> • Support operators in applying for publicly-funded incentives to turn over to Tier 4 or cleaner 	n.a. (but including ZE tug prototype testing)
Identify operational strategies		Included, with no further specifics	n.a.
Expand shore power infrastructure			n.a.
Fleet modernization requirement			n.a.

Emission reduction benefits cannot be evaluated at this time against CARB's proposed amendments to Commercial Harbor Craft Regulation, due to insufficient specifics for proposed strategies

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Next Steps

Continue under Board directions:

- 1) Seeking emission reductions from all port sources to meet AQMP needs
 - Port-related “black box” needs remain unaddressed in 2017 CAAP
 - Ports’ latest offers fall short of 2017 CAAP
 - Port congestion adds uncertainties to meeting CAAP reduction targets
- 2) Working on potential MOUs
 - Continue ongoing discussion with POLB to address staff’s concerns over proposed draft MOU language
 - Continue to engage POLA
- 3) Concurrently conducting internal work on port ISR concepts

Return to Marine Port Committee for an update in January