



SAN PEDRO BAY PORTS

Update on CAAP Implementation MOU Working Group Meeting #3

July 24, 2019

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Overview

An aerial photograph of a city and harbor, likely San Francisco, showing the city grid, the bay, and various industrial and residential areas. A semi-transparent teal box is overlaid on the center of the image, containing a list of strategies. The background image shows a dense urban area on the left, a large body of water in the center and right, and various industrial and residential structures scattered throughout.

TERMINAL EQUIPMENT

ON-ROAD TRUCKS

OCEAN-GOING VESSELS

HARBOR CRAFT

LOCOMOTIVES

EFFICIENCY IMPROVEMENTS

2017 CAAP Update Strategies

San Pedro Bay Ports Air Quality Improvements (2005-2017)

Diesel Particulate
Matter:
DOWN

88%

2023
77%

Nitrogen Oxides:
DOWN

56%

2023
59%

Sulfur Oxides:
DOWN

97%

2023
93%

Greenhouse Gases
Equivalent:
DOWN

18%

2050
80%
from 1990

12%
TEUs
UP

Terminal Equipment

Goal of 100% Zero Emissions Terminal Equipment by 2030

- Technical Feasibility Assessments – Draft Released 4/26
- Zero Emission Technology Demonstrations - Underway
- Zero Emission Infrastructure Planning – EV Blueprint Completed 6/2019
- Zero Emission Equipment Planning – Conversations with Terminal Operators Underway



Draft CHE Feasibility Assessment

- Snapshot in time, 2018-2021
- Assessed for technical viability, commercial availability, operational feasibility, infrastructure availability, economic workability
- Only hybrid rubber-tired gantry cranes fully feasible today
- Battery electric RTGs, battery-electric and near-zero-emissions yard tractors may be feasible soon
- Final expected to be released Q3 2019



Terminal Equipment Demonstrations

- Yard tractors, top handlers, rubber-tired gantry cranes, forklifts
- 180 pieces of equipment
- 10 marine terminals
- Deployment 2019-2022



West Basin Container Terminal
ZE CHE:
 • 10 BE Yard Tractors
Start Date: June 2018
Est. End Date: Mar 2022

Pasha Terminals ("Green Omni")
ZE CHE:
 • 4 BE Yard Tractors
 • 2 BE Forklifts
 • 1 BE Top Pick
Start Date: June 2017
Est. End Date: Feb 2019

SSA, Pier C and Shippers Transport ("Start" Phase 1)
ZE CHE:
 • 33 BE Yard Tractors
 • 1 BE Top Handler

LBCT Pier E / ITS Pier G
ZE / NZE CHE:
 • 12 BE Yard Tractors
 • 9 Grid Electric RTGs
Start Date: Jan 2018
Est. End Date: Apr 2020

Total Terminal Int'l Pier T ("PAVE")
ZE CHE:
 • 6 BE Yard Tractors
 • Charging, infrastructure, battery storage
Start Date: July 2018
Est. End Date: Mar 2022

LBCT Pier E and SSA Pier J ("C-PORT")
ZE CHE:
 • 3 Electric Tip Picks
 • 1 Electric Yard Tractor
 • 1 Fuel Cell Yard Tractor
Start Date: Aug 2017
Est. End Date: Feb 2021

Everport Terminal
ZE / NZE CHE:
 • 22 NG Yard Tractors
 • 8 BE Yard Tractors
 • 2 BE Top Picks
Start Date: June 2017
Est. End Date: May 2020

APM Terminals Pier 400
ZE CHE:
 • 1 BE Top Pick
Start Date: July 2017
Est. End Date: Oct 2019

Snapshot of Active CHE Demonstration Projects within the SPB Ports – Fall 2018



ZE Infrastructure Planning

- In-port charging and fueling infrastructure needs
- Evaluating anticipated demand and capacity
- Need to develop terminal design plans



Clean Trucks Program

Goal of 100% Zero Emissions Trucks by 2035

- Technical Feasibility Assessments – Complete
- New Registration Requirements – Complete
- Clean Truck Fund Rate – Underway
- Demonstration Projects and Early Action for Near-Zero-Emissions Trucks – Underway
- Other Strategies: Reservation System, Efficiency Improvements, Pilot Smog Check Program



Truck Feasibility Assessment

- Snapshot in time, 2018-2021
- Assessed for technical viability, commercial availability, operational feasibility, infrastructure availability, economic workability
- No technologies fully feasible today
- Near-zero natural gas trucks and battery-electric trucks could be feasible soon



Economic Study for CTP Rate

- Goals:
 - Analyze range of rates
 - Evaluate anticipated effect on cargo diversion, local drayage industry, and potential revenues
 - Expected Fall 2019

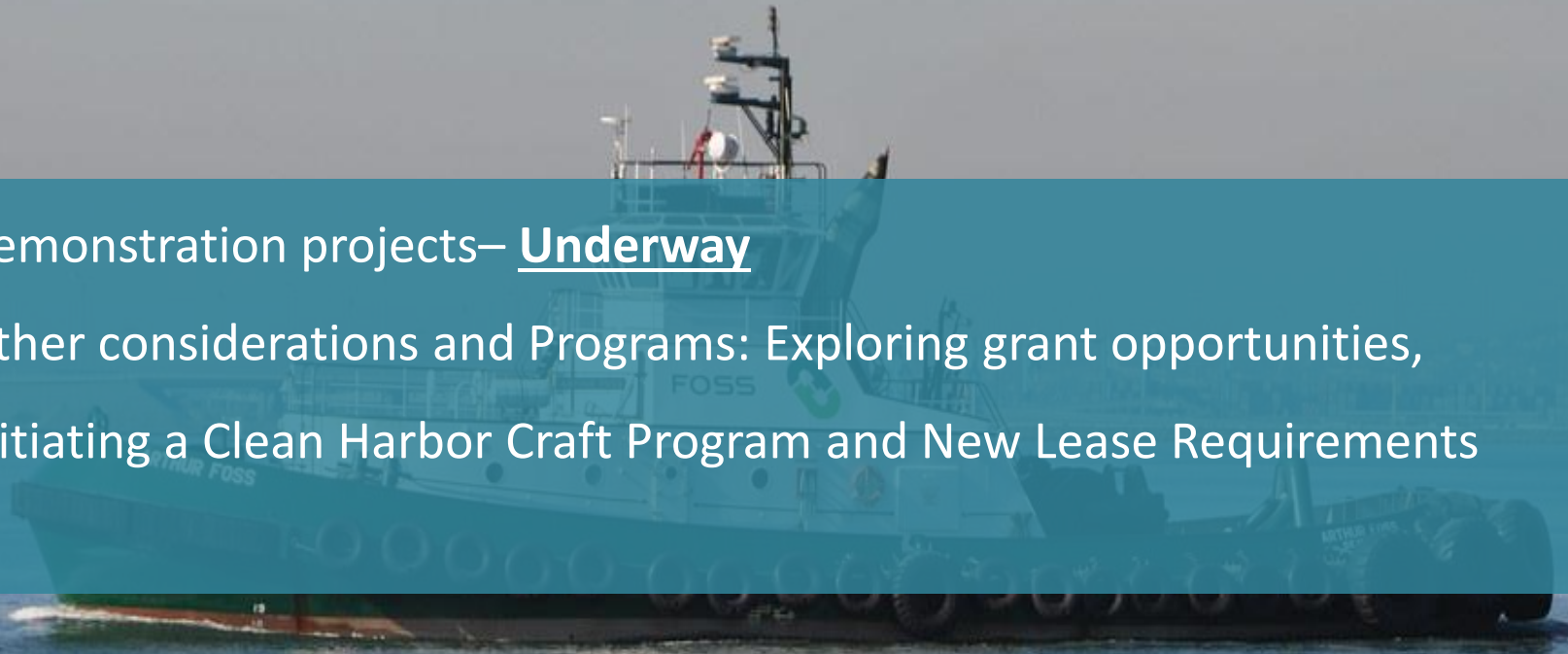


Rate Collection Mechanism

- Request for Statement of Qualifications issued February
- Proposals under evaluation by both Ports
- Contracts anticipated to be considered by respective Boards in summer

Harbor Craft

- Demonstration projects– Underway
- Other considerations and Programs: Exploring grant opportunities, initiating a Clean Harbor Craft Program and New Lease Requirements



Ocean Going Vessels

- Vessel Incentive Programs - Underway
- At-Berth Infrastructure Assessments - Underway
- Demonstration and TAP projects - Underway
- Other considerations and Programs: Vessel Speed Reduction and Ship Incentive Programs Enhancements, West Coast Ship Incentive Collaboration, Clean Ship Differential Rate Program

Locomotives

- Capital Improvements for On-Dock Rail - Underway
- Demonstration projects— Underway



An aerial photograph of a large industrial port area, likely a major shipping hub, featuring numerous piers, docks, and large storage yards filled with containers. The port is situated along a large body of water, with a city skyline visible in the background under a clear blue sky. A semi-transparent teal banner is overlaid across the center of the image, containing the website address.

www.cleanairactionplan.org