CHAPTER 5A:

ACTIONS TO REDUCE AIR POLLUTION EMISSIONS OR EXPOSURES - OVERVIEW

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Chapter 5a: Actions to Reduce Community Air Pollution

Introduction

The Community Emissions Reduction Plan (CERP) provides an overall path to reducing air pollution in the Wilmington, Carson, West Long Beach community. Through the development of the CERP, the Community Steering Committee (CSC) identified air quality priorities based on sources of air pollution (e.g., refineries, marine ports, and railyards) that are of concern to the community. To reduce air pollution from these sources, the CSC developed a set of actions to be implemented by government agencies, organizations, businesses, and other entities.

Chapter 5a Highlights

- Many new actions will be taken to address the community's air quality priorities
- South Coast AQMD will use a variety of strategies, such as regulations, incentives, outreach, enforcement, monitoring, and collaboration
- Many actions also rely on effective collaborations with other agencies, organizations, businesses, and entities
- The estimated emission reduction targets resulting from actions in this CERP are:
  - NOx: 2,832 to 3,207 tons per year (tpy)
  - VOC: 64 tons per year
  - SOx: 11 tons per year
  - DPM: 20 tons per year

Community Air Quality Priorities

The community of Wilmington, Carson, West Long Beach identified refineries, oil drilling and production, marine ports, trucks, and railyards as air quality priorities. These sources of air pollution are often located close to homes, schools, and other community areas where the public can be exposed to harmful pollutants. As a result, reducing exposure to air pollution at schools, childcare centers, and homes is also a priority for the community.

Ongoing Efforts

The South Coast AQMD, CARB, and U.S. EPA have existing air quality regulations to reduce air pollution from sources such as trucks and refineries. The relevant agencies enforce these regulations. Additionally, the South Coast AQMD and CARB have begun the process of developing new requirements that would further reduce air pollution from sources prioritized by the community.

Opportunities for Action

In addition to the ongoing efforts described above, the CSC developed 18 new actions to reduce air pollution in the community. Each action is to be carried out based on a set of strategies, goals, and timelines. The entity (e.g., government agency or organization) responsible for the actions is

also identified. The actions set forth in this chapter define a path to further reduce air pollution from sources in the Wilmington, Carson, West Long Beach community and provide additional protections at schools to reduce the amount of harmful air pollution exposure for the children who spend time at those schools. In some instances these actions reaffirm ongoing rule development efforts and provide new commitments for localized reductions, sharing of emissions data, timelines, and other related information.

Emissions Reduction Targets

The actions in the CERP prioritize emission reductions in the Wilmington, Carson, West Long Beach community. The CERP includes emission reduction targets for nitrogen oxides (NOx), volatile organic compounds (VOC), sulfur oxides (SOx), and diesel particulate matter (DPM) emissions in the Wilmington, Carson, West Long Beach community that are based on these actions. Table 5a-1 below, provides a list of the overall emission reduction targets for the CERP and the type of actions that contribute to the targets. Baseline emissions refers to expected future emissions without any new action or regulation beyond those already adopted.

Although past monitoring in this community has shown levels below the 24-hour and annual health standards for PM2.5, the actions in this plan will reduce PM2.5 even further. Directly emitted PM2.5 will be addressed through actions to reduce flaring and the actions to reduce PM from mobile sources. Examples include Action 3 in Chapter 5b to reduce flaring emissions from refineries and Action 2 in Chapter 5d to reduce emissions from heavy-duty trucks by replacing older, higher polluting trucks with newer, cleaner technology. In addition, precursors to PM2.5, such as NOx, SOx, and VOC, will be addressed through actions to address community air quality priorities related to petroleum refineries as outlined in Table 5a-2.

Table 5a-1: CERP Emission Reduction Targets by 2024 and 2030 (or Earlier if Feasible)

Emissions[i]	NOx	SOx	VOC	DPM
2017 Emissions (tpy)	10,614	1,437	5,641	120
Projected 2024 Emissions Baseline (tpy)	8,819	1,659	5,306	86
Emission Reductions from CERP, by 2024 (tpy)	606	--	20.6	9
Emission Reductions from CERP, by 2024 (%)	7	--	<1	10
Projected 2029 Emissions Baseline (tpy)	9,250	1,715	5,256	93
Emission Reductions from CERP, by 2030 (tpy)	3,207[ii]	11	64	20
Emission Reductions from CERP, by 2030[ii] (%)	35%[iii]	<1%	<1%	22%

Refineries and Oil Drilling and Production Sites

The CSC identified five (5) different actions to address community air quality priorities related to petroleum refineries. These actions address sources at petroleum refineries, such as, flares, storage tanks, boilers, heaters, fluid catalytic cracking units (FCCUs), sulfur recovery units, and a coke calciner. Emission reductions from these sources will contribute to the overall emission reduction targets for the CERP and a target to reduce NOx, SOx, and VOC emissions from the refineries that are located in this community by 50%. Table 5a-2 below, provides a list of actions that will result in emission reductions from refineries and contribute to the overall emission reduction targets for the CERP by 2030.

[i] Per CARB guidance, the emissions baseline was estimated for 2017, and milestone years 2024 and 2029. However, the emission reductions in this table target a 2030 completion date, due to the complexity of the efforts. While the baseline emissions were not calculated for 2030, staff expect the emissions to be similar to the 2029 estimates (details presented in Appendix 3B).

[ii] Based on maximum NOx emission reductions that may be reduced from Action 5 in Chapter 5b that is designed to achieve further reductions from refinery equipment through adoption of Rule 1109.1 – Refinery Equipment

[iii] Percent calculated based on 2029 emissions baseline

Table 5a-2: Estimated Emission Reductions from Actions at Refineries and Oil Drilling and Production Sites by 2030

Title of Action	Timeline[iv]	Implementing Entity	Emission Reduction Targets (tpy)[v]		
			NOx	SOx	VOC
Initiate Rule Development to Amend Rule 1118 – Control of Emissions from Refinery Flares	beginning 2020	South Coast AQMD	19	11	1
Initiate Rule Development to Amend Rule 1178 - Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities	beginning 2021	South Coast AQMD	N/A	N/A	TBD
Achieve Further Reductions through Adoption of Proposed Rule 1109.1 – Refinery Equipment	beginning 2019	South Coast AQMD	1,095 to 1,460	N/A	N/A
Evaluate the Feasibility to Amend Rule 1148 Series and Rule 1173 to Reduce Emissions and Require Additional Monitoring	beginning 2020	South Coast AQMD	N/A	N/A	TBD

Several actions in this chapter also emphasize emission reductions from fugitive emissions sources. For example, an action to reduce leaks from oil wells require enhanced air monitoring along with follow-up strategies (e.g., rule development and enforcement activities) to quantify and target reductions from fugitive emissions. Based on the information currently available, the resulting emission reductions from these actions cannot be estimated at this time. However, the CSC has determined that these sources of fugitive emissions should be addressed by the CERP to improve air quality in the Wilmington, Carson, West Long Beach community.

Mobile Sources – Neighborhood Truck Traffic, Ports and Railyards

Implementation of the CERP is estimated to reduce 1,700 tons per year (tpy) of NOx and 20 tpy of DPM emissions from mobile sources. These emission estimates are based on future statewide mobile source measures from CARB and potential mobile source incentive projects to benefit this community as outlined by the actions in this chapter. Future statewide mobile source measures that contribute to the estimated emission reductions in this community include the CARB Shore Power for Ocean-Going Vessels At-Berth Rule, Advanced Clean Truck Rule, Heavy-Duty Low NOx

[iv]Please refer to Chapters 5b and 5e for details on the timeline for each action

[v]Emission reduction targets that are TBD will be determined upon implementation of the action and based on available information, such as, air monitoring data gathered from the Wilmington, Carson, West Long Beach Community Air Monitoring Plan

Rule, and Heavy-Duty Inspection and Maintenance. These measures support actions in the CERP that address Neighborhood Truck Traffic, Ports, and Railyards. Table 5a-3 below, provides a list of the statewide measures with expected decision dates, implementation periods, and estimated emission reductions.

Table 5a-3: Estimated Emission Reductions from Mobile Source Incentives and Statewide Mobile Source Regulations by 2024 and 2030

Mobile Source Measure	Timeline[vi]	Implementing Entity	Emission Reduction Targets 2024/2030 (tpy)			
			NOx	VOC	DPM	PM2.5[vii]
Shore Power for Ocean-Going Vessels At-Berth[viii]	2019	CARB	431.2/ 1,268	20.6/ 62	7.2/ 19	6.7/28.0
Heavy-Duty Vehicle Inspection and Maintenance[ix]	2020	CARB	108/ 153	N/A	0.9/1.3	0.93/1.3
Advanced Clean Trucks Regulation[x]	2019	CARB	0.4/ 10.1	N/A	0.0/0.3	0.011/.22
Heavy-Duty Low NOx Rule[xi]	2020	CARB	22/ 246	N/A	N/A	-/-
Mobile Source Incentives resulting from the CERP Actions	2020	South Coast AQMD	40-50/ 40-50	N/A	0.5-0.6/ 0.5-0.6	-/-

[vi]Timeline based on first CARB Board hearing dates for each measure or beginning of implementation for mobile source incentives.

[vii]Figure 3 in Chapter 3b shows that over three quarters of PM2.5 emissions are from fuel combustion, miscellaneous processes, and petroleum production and marketing. Not all of these sources were not identified as air quality priorities by the CSC. Nonetheless, PM2.5 will be reduced by the Statewide Mobile Source Regulations.

[viii]CARB's existing At-Berth Regulation already requires a large number of ships to connect to shore power when at-berth; hence, reducing emissions impacting the community. CARB is working through a public process to consider further reducing ship emissions at-berth by strengthening the regulation to cover more vessel visits and types of ships.

[ix]CARB's current inspection programs include the roadside Heavy-Duty Vehicle Inspection Program and the fleet Periodic Smoke Inspection Program. These regulations require heavy-duty vehicles operating in California to be inspected for excessive smoke and make repairs where applicable.

[x]CARB is working through the public process to develop and consider proposals for new approaches and strategies that may transition zero-emission technology to those truck fleets that operate in urban centers, have stop and go driving cycles, and are centrally maintained and fueled.

[xi] This rule would set new statewide engine standards for NOx emission reductions from trucks by 2026, and additional reductions including and after 2027. More information is available at: https://www.arb.ca.gov/msprog/hdlownox/hdlownox.htm.

As mentioned above, the estimated overall emissions reduction targets for this community also consider potential future mobile source incentive projects described by the actions in this chapter. For example, Chapter 5d – Neighborhood Truck Traffic includes an action to reduce emissions from heavy-duty trucks. This action will be implemented by measures that require outreach to the owners and operators of heavy-duty trucks in the community. The CERP contains six different measures focused on outreach efforts to incentivize the replacement of older, higher polluting equipment with newer, lesser polluting equipment. These measures are coupled with commitments from South Coast AQMD staff to conduct ten public outreach events in the community to recruit potential applicants for incentives. The estimated emission reductions for mobile source incentive projects in this community are estimated to be between 40 and 50 tpy of NOx and 0.5 to 0.6 tpy of DPM emissions.

CHAPTER 5C:

PORTS

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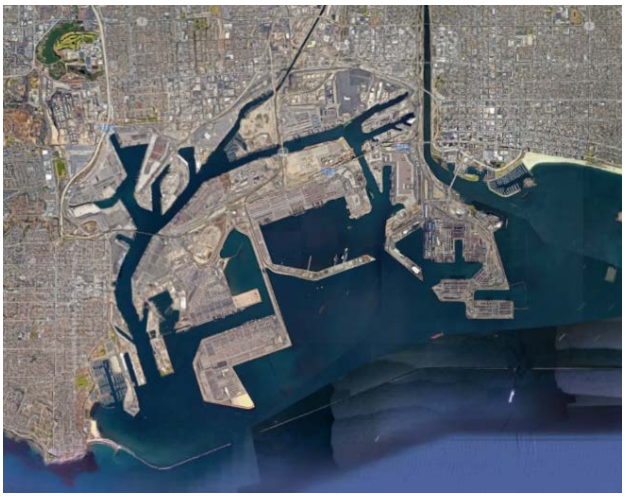
Chapter 5c: Ports

Background

The Ports of Los Angeles and Long Beach (Ports) combined are the busiest ports in the United States and the ninth busiest port complex in the world. Almost 40% of containers imported to the United States pass through the Ports. As a result, the Ports are important to the local and regional economy and support hundreds of thousands of jobs.

Figure 5c-1: Satellite view of the Ports of Los Angeles and Long Beach



Cargo is delivered to and from the Ports by ships, trucks, and trains. In 2018 the Ports handled 48,000 containers (i.e., twenty-foot container units) of goods per day (or 17.5 million containers per year). Containerized volume of goods has grown by almost 11% between 2012 and 2016. The overall volume of cargo activity at the Ports is expected to increase more than 200% by 2035.

Community Air Quality Priorities – Zero- and Near-Zero Technology, Oil Tanker Leaks, and Targeted Enforcement

The Wilmington, Carson, West Long Beach community identified the Ports as an air quality priority. Sources of air pollution at the Ports include, ocean-going vessels, commercial harbor craft (e.g., ferries, tugboats, fishing boats), cargo handling equipment (e.g., yard trucks, forklifts, reach stackers), drayage trucks, and other equipment. The Community Steering Committee (CSC) recommended the following to reduce emissions from these sources:

- Implementation of zero- (preferred when available) and near-zero emission technologies through incentive opportunities and regulation,
- Targeted or enhanced enforcement of existing CARB regulations (e.g., Drayage Truck and Ocean-Going Vessels Fuel Regulation), and
- Detection of leaks from oil tankers at-berth.

Ongoing Efforts

Ongoing efforts to reduce emissions from the Ports, include CARB regulations and measures in the Ports 2017 Clean Air Action Plan (CAAP). Information about these efforts is provided below.

South Coast AQMD's Facility-Based Mobile Source Measure (FBMSM)

South Coast AQMD staff has initiated a public process to develop a Memorandum of Understanding (MOU) with the Ports. The MOU is intended to reduce emissions from implementing elements of the 2017 CAAP and requires approval by the South Coast AQMD Governing Board and the Ports.

Annual Emissions Reporting

The Ports each develop an annual emissions inventory. These inventories serve as the primary tool to track the Ports' efforts to reduce emissions through the implementation of state, federal, and international regulations and measures in the Ports CAAP. The emissions inventories cover port-related mobile sources including ocean-going vessels, cargo handling equipment, commercial harbor craft, heavy-duty trucks, and locomotives. The Port of Los Angeles has conducted an annual emissions inventory since 2005 starting with a 2001 baseline.[1] The Port of Long Beach has also conducted an annual emissions inventory since 2005 and also did a special baseline report for 2002.[2]

State Actions (CARB)

CARB's Drayage Truck Regulation[3]

This regulation reduces air toxics and criteria pollutant emissions from drayage trucks. A drayage truck is any in-use on-road vehicle with a gross vehicle weight rating of greater than 26,000 pounds used for transporting cargo to and from ports and intermodal railyards. The regulation requires all drayage trucks to operate with an engine that is a 2007 model year or newer. Drayage trucks must also meet the requirements of the CARB Truck and Bus Regulation, which requires that all drayage trucks must have 2010 model year or newer engines by January 1, 2023.

Figure 5c-2: Example of a drayage truck

CARB's Mobile Cargo Handling Equipment (CHE) Regulation[4]

The Mobile Cargo Handling Equipment Regulation was developed to reduce diesel particulate matter (PM) and nitrogen oxides (NOx) emissions from diesel-fueled mobile CHE at California's ports and intermodal railyards. This equipment can be used to lift or move containers, bulk or liquid cargo, or to perform routine or predictable maintenance and repair activities. CHE includes equipment such as yard trucks, top handlers, side handlers, reach stackers, forklifts, rubber-tired gantry cranes, aerial lifts, and other types of equipment used in maintenance operations. The existing CHE regulation, which was fully implemented in December 2017, required cleaner diesel equipment for existing fleets of equipment.

In March 2018, CARB presented a plan to begin developing a new regulation to minimize emissions and further reduce community health impacts from CHE. CARB is assessing the availability and performance of zero-emission technologies. The new regulation is expected to be considered for adoption in 2022. These regulatory updates would potentially take effect in 2026. CARB would prioritize the earliest implementation in or adjacent to the communities most impacted by air pollution.

Figure 5c-3: Mobile cargo handling equipment

CARB's Commercial Harbor Craft Regulation[5]

The Commercial Harbor Craft Regulation reduces NOx and PM emissions from diesel engines on commercial harbor craft vessels. The regulation applies to all commercial harbor craft vessels including, but not limited to, ferries, excursion vessels, tugboats (including ocean-going tugs), towboats, push boats, crew and supply vessels, barge and dredge vessels, work boats, pilot vessels, and commercial and charter fishing boats. The existing regulation requires certain existing commercial harbor craft to meet specific engine standards established by U.S. EPA (e.g., Tier 2 or Tier 3 standard) for main and auxiliary engines. A number of harbor craft operating at the Ports have been voluntarily repowered with cleaner engines through incentive funding programs designed to reduce emissions (e.g., Carl Moyer program[6]).

Figure 5c-4: Example of a tugboat

CARB's At-Berth (Shore Power) Regulation[7]

The At-Berth (Shore Power) Regulation reduces PM and NOx emissions from auxiliary engines on ocean-going vessels while at-berth at California ports. Fleets affected by the regulation include those composed of container vessels, passenger vessels, or refrigerated cargo vessels. The At-Berth Regulation phased in over time and fleets were required to meet 50% reductions in 2014,

and 70% reductions in 2017. By January 1, 2020, more stringent requirements will be in effect, reaching 80% reductions.

Fleets at-berth must limit or reduce emissions with one of two options: the Reduced Onboard Power Generation Option (relies on the use of shore-based electrical power), or the alternative Equivalent Emissions Reduction Option. Under the Reduced Onboard Power Generation Option, fleets must reduce their total auxiliary engine power at-berth by 80% with shore power, while also using shore power on at least 80% of their vessel calls. Under the Equivalent Emission Reduction Option, fleets must reduce their total NOx and PM emissions at-berth by 80% with shore power or another approved alternative technology. These control measures include the use of one or more emission control techniques, such as grid-based shore power, natural gas-fueled engines, emission controls installed on the vessels (e.g., particulate control traps, selective catalytic reduction units, alternative fuels, etc.), or emission controls installed at the wharf (e.g., a bonnet emission capture and treatment system).

CARB staff is currently developing a replacement regulation for Ships At-Berth that would require more stringent compliance rates for regulated vessels and the addition of other vessel types.

CARB's Ocean-Going Vessels - Fuel Rule[8]

Ocean-Going Vessels - Fuel Rule requires the use of low sulfur marine distillate fuels in order to reduce PM, diesel PM, NOx, and SOx from ocean-going vessels within 24 nautical miles of the California coast. The sulfur content limits for marine fuels used in ocean-going vessel main (propulsion) diesel engines, auxiliary diesel engines, and auxiliary boilers were phased in from 2009 to the current limit of 0.1% sulfur which went into effect in January 2014.

San Pedro Bay Ports Clean Air Action Plan (CAAP)[9] *- Port of Long Beach and Port of Los Angeles*

Since the adoption of the original CAAP in 2006, the CAAP strategies in conjunction with state, federal and international regulations have reduced PM, NOx, and SOx emissions from the Ports. The recently updated 2017 CAAP provides new strategies to further reduce pollution from sources operating in and around the Ports (e.g., ships, trucks, trains, harbor craft, and cargo handling equipment). Ships are the largest source of NOx emissions at the Ports. To address ship emissions, the Ports provide financial incentives for ships with the cleanest engines or ships equipped with emission-reducing technologies. The Ports also provide funding for ships participating in a technology demonstration program through the joint Technology Advancement Program (TAP).[10] In addition, the Ports implement the Vessel Speed Reduction (VSR) Program[11, 12] by providing financial incentives for ships to reduce speeds within 40 nautical miles of Point Fermin which results in less emissions from the ship's main engines.

The 2017 CAAP includes a Clean Trucks Program. Beginning in 2020, under this program, all heavy-duty trucks will be charged a rate to enter the Ports' terminals, with exemptions for trucks that are certified to meet or exceed the near-zero standard. By 2035, only trucks that are certified to meet zero-emissions will be exempt from the rate. Initiation of the truck rate is contingent on

certain elements (e.g., an economic study to establish the rate).[13] Implementation of this rate will provide a source of funding to further invest in clean trucks, as well as provide incentives for truck owner/operators to use cleaner vehicles. The Ports will also work with terminal operators through the terminals' procurement planning process to promote and require the use of near-zero and zero-emission terminal equipment. CARB will also be considering a Zero-Emissions Drayage Truck Rule[14] in 2022.[15] The implementation of this rule will likely begin in 2026 or later.

Additional Efforts by The Ports

The Ports have several near-zero and zero-emission demonstration projects in progress. The South Cost AQMD and both ports are co-funding several on- and off-road vehicles and equipment technology demonstration projects (e.g., zero-emission locomotives, Daimler's Zero-Emission Heavy-Duty Trucks). The Ports have also received grants from CARB and CEC for other technology demonstration projects. Additionally, the Port of Long Beach and Southern California Edison are collaborating on pilot electric infrastructure projects on terminals.

Opportunities for Action

In addition to the ongoing efforts described in this chapter, the CSC identified specific actions to address community priorities related to addressing the committee's concerns around emissions from sources at the Ports. The actions are described below.

Action 1: Reduce Leaks from Oil Tankers
Course of Action:
• Use optical gas imaging technology, air measurements, and other available emissions information to identify potential fugitive emission leaks from oil tankers and conduct targeted enforcement of Rule 1142 – Marine Tank Vessel Operations • Evaluate opportunity to amend South Coast AQMD Rule 1142 to require marine vessels to calibrate and maintain pressure relief devices and require recordkeeping, with the goal of minimizing fugitive emission leaks
Strategies:
• Air Monitoring • Enforcement • Collaboration
Goal(s):
• Conduct surveillance and air measurements that focuses on looking at coastal sources of pollution and evaluate data on a regular basis to identify potential leaking vessels • Provide quarterly or semiannual updates to the CSC on South Coast AQMD enforcement activities regarding fugitive emission leaks from oil tankers

• Collaborate with CARB and United States Coast Guard to evaluate pressure relief valve calibration and maintenance methods, and effectiveness in preventing fugitive emission leaks	
Estimated Timeline(s):	
• Beginning mid-2020, provide the CSC with quarterly updates on surveillance and air measurement activities for oil tanker leaks • Beginning 2020, commence evaluation of pressure relief valve calibration and maintenance methods for possible rule amendment	
Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibility:
South Coast AQMD	Use optical gas imaging technology to identify oil tankers with fugitive leaks and board marine vessels to evaluate potential violations with Rule 1142. Evaluate opportunities to improve Rule 1142 through a potential rule amendment
CARB	Conduct enhanced inspections to ensure compliance with CARB's regulations
Tenants of the Ports (Los Angeles and Long Beach)	Work with South Coast AQMD, CARB, and the Ports' tenants to facilitate contact between the regulatory agencies and tenants to arrange inspections of the terminals
Additional Information:	
Requirements for Rule 1142 (Marine Tank Vessel Operations): http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1142.pdf	

Action 2: Reduce Emissions from Ships and Harbor Craft
Course of Action:
• Work with the Ports to engage in outreach to shipping lines and harbor craft owners to provide information about existing and new incentive programs for cleaner technologies for ships and harbor craft • Identify additional incentive funding opportunities to accelerate adoption of cleaner technologies for ships and harbor craft • Conduct demonstration projects for retrofit technologies for ships and harbor craft to inform the development of new incentive programs • Support CARB's rule development for the proposed At-Berth Regulation and future updates to Commercial Harbor Craft Regulation
Strategies:
• Incentives • Public Information and Outreach

• Rules and Regulations	
Goal(s):	
• Engage in one outreach event per year in the Ports area to provide information about incentives • Complete technology demonstration for retrofitting ships (ocean-going vessels, OGVs) • Work with authorities in Asia to collaborate on a Pacific Rim clean vessel incentive program • Participate in CARB rule development • Emission Reductions Target: emissions reduced from this action contribute to the mobile source incentives and statewide mobile source regulation measures	
Estimated Timeline(s):	
• Beginning 2020, engage in incentive outreach events, when incentive programs are open for applications • Beginning 2019, engage in outreach for a Pacific Rim clean vessel incentive program (PRIMER initiative) • By 2020, sign agreement for joint clean vessel incentive program with Asian ports • December 2019, provide updates on demonstration projects for ships and harbor craft • CARB regulations: - 2020, CARB's Commercial Harbor Craft Regulation - December 2019, CARB's At-Berth Regulation	
Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibility:
South Coast AQMD	• Provide incentives for cleaner ships and harbor craft through the Carl Moyer Program and AB 617-related incentive funds, and work with Ports on outreach • Identify additional incentive funding opportunities • Conduct technology demonstration projects for retrofit technologies for ships and harbor craft • Support CARB's rule development of the proposed At-Berth Regulation and updates to the Commercial Harbor Craft Regulation
Ports	Work with South Coast AQMD to conduct outreach and education regarding new technologies and fuels available to reduce emissions in the operations of ocean-going vessels
CARB	Continue rule development for the proposed At-Berth Regulation and future updates to Commercial Harbor Craft Regulation

Additional Information:
PRIMER program is currently under development, additional information is available at: http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/AgendaItems/4_primer.pdf?

Action 3: Reduce Emissions from Port Equipment (Cargo Handling Equipment) and Drayage Trucks
Course of Action:
• Support CARB's rule development for future updates to Cargo Handling Equipment Regulation, Drayage Truck Regulation, development of a mandatory near-zero standard for heavy-duty trucks, and encourage CARB to adopt zero-emission requirements by 2035 or sooner • Support Ports' implementation of Clean Air Action Plan (CAAP) measures for trucks and cargo handling equipment • Enforcement of existing Drayage Truck Regulation • Identify additional incentive funding opportunities to accelerate adoption of cleaner port equipment and drayage trucks • Continue developing Facility Based Mobile Source Measure (FBMSM) for Ports through a Memorandum of Understanding (MOU)
Strategies:
• Rules and Regulations • Incentives • Collaboration • Enforcement
Goal(s):
• Provide semiannual updates on CARB's rule developments for drayage trucks and cargo handling equipment, Ports' CAAP measures, and FBMSM for Ports, and seek community input on progress
Estimated Timeline(s):
• Beginning 2022, support CARB's Drayage Truck Regulation and CARB's Cargo Handling Equipment Regulation • Beginning 2020, implement Ports' Clean Truck Program as described in the CAAP (based on feasibility assessment study for trucks and truck rate study and the promulgation of near-zero emission manufacturing standards by CARB) • Beginning in 2020, implement Ports' clean cargo handling equipment purchasing program as described in the CAAP (based on feasibility assessment study for cargo handling equipment)

• Beginning in Fall 2019, update the CSC on CARB's enforcement of the existing Drayage Truck Regulation • Beginning in Fall 2019, identify additional incentive funding opportunities for cleaner port equipment and drayage trucks • Continue development of FBMSM for Ports through a MOU	
Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibility:
South Coast AQMD	• Support CARB's rule development for Cargo Handling Equipment Regulation and Drayage Truck Regulation • Support CARB's development of a mandatory near-zero standard for heavy-duty trucks and encourage CARB to adopt zero-emission requirements by 2035 or sooner • Support Ports' implementation of the CAAP • Identify additional incentive funding opportunities to accelerate adoption of cleaner port equipment and drayage trucks • Continue development of FBMSM through a MOU and engage in outreach to CSC for FBMSM working groups, workshops, and meetings
CARB	• Conduct enhanced enforcement of existing Drayage Truck Regulation • Continue rule development for Cargo Handling Equipment and Drayage Truck Regulations • Engage in outreach to CSC for rule update workshops
Ports	• Solicit input from the CSC on when and where dray-offs are occurring and conduct targeted enforcement sweeps based on the input • Implement the Clean Truck Program and clean cargo handling equipment purchasing program as described in the CAAP (based on feasibility assessments for trucks and cargo handling equipment and truck rate study)
Additional Information:	
• San Pedro Bay Ports Clean Air Action Plan 2018 Feasibility Assessment for Drayage Trucks: http://polb.com/civica/filebank/blobdload.asp?BlobID=15011 • San Pedro Bay Ports Clean Air Action Plan Draft 2018 Feasibility Assessment for Cargo-Handling Equipment: http://www.cleanairactionplan.org/documents/draft-2018-feasibility-assessment-for-cargo-handling-equipment.pdf/ • FBMSM: 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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CHAPTER 5D:

NEIGHBORHOOD TRUCK TRAFFIC

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Chapter 5d: Neighborhood Truck Traffic

Background

The community of Wilmington, Carson, West Long Beach is home to the Port of Long Beach and Port of Los Angeles (Ports). The Ports serve as a gateway for the world's markets through the movement of goods. These goods are transported to and from the Ports by ships, trains, and heavy-duty trucks. Trucks are not only used to deliver goods directly to and from the Ports, but also to railyards, warehouses, and retail stores. Trucks travel along freeways (e.g., I-710, I-110, I-405, and I-91) that pass through the Wilmington, Carson, West Long Beach community. Also, trucks often travel near and through local neighborhoods to reach their destinations thus exposing residents to harmful air pollutants.

The amount of freeway and neighborhood truck traffic in the Wilmington, Carson, West Long Beach community is likely to increase as a result of the expected increase in goods movement activities in Southern California. These activities are largely driven by the anticipated growth in the volume of goods that are imported and exported through the Ports.[1] This growth may lead to additional community air quality impacts resulting from increases in traffic volumes through local neighborhoods and freeway corridors.

Community Air Quality Priorities – Idling Trucks, Enhanced Enforcement of Existing Regulations, Air Pollution from High Volume of Trucks and Cleaner Technology Options

The Wilmington, Carson, West Long Beach Community Steering Committee (CSC) identified air pollution from heavy-duty diesel trucks and passenger cars traveling on local neighborhood streets and freeways as an air quality priority. To address these air quality impacts, the CSC prioritized the following:

- Increased enforcement of CARB's Truck and Bus[2] and Idling[3] Rules to reduce diesel emissions (including during non-business hours)
- Accountability for truck owners and truck drivers, when trucks violate CARB idling regulations
- Additional outreach to commercial fleets, warehouses, and other facilities that operate heavy-duty diesel trucks and additional incentives for truck retrofits or truck replacements with zero-emission technologies once they become feasible, and near-zero technologies until that time
- Evaluate designated truck routes
- Improving the complaint systems designed to report illegal truck idling or truck travel on local roadways
- New regulations that require the use of zero-emission trucks as soon as they become available

Ongoing Efforts

U.S. EPA and Statewide Efforts

CARB's Airborne Toxic Control Measure (ATCM) places limits on idling of diesel-fueled trucks.[3] This regulation is enforced by CARB and South Coast AQMD, and will be a focal point of the enforcement activities in AB 617 communities. CARB continues to address truck diesel emission reductions through existing and upcoming regulations, such as the Drayage Truck Regulation[4] and the Truck and Bus Regulation,[5, 2] which include emission standards. CARB is also responsible for enforcing the Commercial Vehicle Idling Regulation, where commercial vehicles (gross vehicle weight rating greater than 10,000 pounds) are prohibited from idling for more than five minutes.[6] In addition, to help cities address idling, CARB has developed an "Options for Cities to Mitigate Heavy-Duty Vehicle Idling" guidance document which includes options for cities to address heavy-duty vehicle idling emissions in their communities.[7]

CARB continues to work towards reducing residual public health risk from Transport Refrigeration Units (TRU)[8, 9] near distribution centers and other facilities where TRU activity is focused, and achieve emission reductions while in transit, especially near the most impacted communities. Improving freight efficiency and transitioning to zero-emission technologies will help reduce toxic air contaminant emissions, criteria pollutant emissions, and greenhouse gas emissions. CARB has created advisories[10] and forms[11] to assist TRU owners in understanding compliance requirements and to ensure that all regulated entities (e.g., TRU owners, TRU operators, facilities that support TRU use) are aware of their responsibilities under this regulation.

Several requirements from the Ports and from CARB have modernized the port trucking industry and reduced truck-related air pollution by phasing out the oldest, dirtiest trucks. The three main requirements[i] include: 1) no truck can enter the ports with an engine older than 2007,[4] 2) nearly all trucks in California must be no older than 2010 by 2023,[5] 3) new trucks entering the Ports' Drayage Truck Registry must have a 2014 engine model year or newer.[12]

Many new requirements are also being considered that would further reduce emissions from trucks. The table below illustrates the key upcoming activities from U.S. EPA, CARB, and the Ports.

[i] The vehicle's drive engine must be certified to a particular emission standard that is noted by the engine's model year.

Table 5d-1: Upcoming Rule Development/Activities from U.S. EPA, CARB, and the Ports

Agency	Upcoming Action	Expected Decision	Expected Phase-in Period
U.S. EPA	Cleaner Truck Initiative[13] – In response to a petition from South Coast AQMD, U.S. EPA has committed to updating its truck engine standard to reduce NOx emissions.	2020-2021	2024
CARB	Transport Refrigeration Unit Regulation[8] – Measure to reduce residual risk from TRUs by transitioning to zero-emission technologies.	2019	2025-2030
CARB	Drayage Truck Rule[4] – Updated regulation to transition to zero-emission trucks.	2022	2026
CARB	Advanced Clean Truck Rule[14] - Requires truck manufacturers to sell an increasing percentage of zero-emission trucks by 2030 (up to 15% or 50%, depending on truck type). Also will require one-time fleet reporting for large businesses.	2019	2024-2030
CARB	Zero-Emission Fleet Rule[15] – Would require fleets to transition to zero-emissions.	2022	2024
CARB	Heavy-Duty Low NOx Rule[16] – Would set new statewide engine standards for NOx reduction from trucks by 2026, and additional reductions including and after 2027.	2020	2024
Ports	Clean Truck Program[12] – Will establish a rate that trucks need to pay to enter the Ports beginning in 2020 if they are not near-zero emissions. Only zero-emission trucks will be exempt from payment of the rate by 2035.	2019	2020-2035

South Coast AQMD Efforts

The South Coast AQMD also funds projects to help develop zero-emission technologies for heavy-duty Class 7-8 trucks[ii] (e.g., battery electric, fuel cell). These projects are in the design and demonstration phase and the technologies are not yet commercially available. Additionally, the South Coast AQMD administers incentive programs for truck owners and operators to replace older more polluting trucks with ones that are cleaner than required.[17] For example, South Coast AQMD's Voucher Incentive Program (VIP) is designed for smaller businesses with fleets of 10 or fewer vehicles that primarily operate within California.[18] VIP helps truck owners with older trucks to purchase newer trucks meeting the current emissions standards. The Carl Moyer Program[19] is another resource for truck owners to obtain cleaner trucks that would achieve emission reductions that are above and beyond the regulations.

[ii] The Federal Highway Administration categorizes Class 7-8 trucks under the "Heavy Duty (>26,001 lbs)" gross vehicle weight rating

Opportunities for Action

The CSC's strategy to reduce the community's exposure to air pollution from trucks is described in the actions below.

Action 1: Reduce Truck Idling
Course of Action:

• Conduct focused enforcement for idling trucks in high traffic areas with the highest priority for areas near schools and residential areas
  – Other areas prioritized by the CSC include areas near distribution centers, high traffic corridors on Wilmington Avenue, Lomita Boulevard, Santa Fe Avenue, Figueroa Street, Pacific Coast Highway, Anaheim Street, Harry Bridges Boulevard, the Alameda corridor, and Lakme Avenue
• Collaborate with the CSC to inform community members how to report idling trucks
• Engage in community outreach on existing city, CARB, and South Coast AQMD complaint systems on reporting idling trucks
  – If existing complaint/response system is determined to be ineffective, assess where improvements are feasible
• Work with CARB and local entities or agencies to establish "no truck idling" signage with locations prioritized by the CSC and work to assess the feasibility of sign placement

Strategies:
• Enforcement • Collaboration • Public Information and Outreach
Goal(s):
• Conduct, at minimum, quarterly idling sweeps and focused inspections for one calendar year, to be evaluated thereafter with community input • Engage in two outreach events within the span of implementation of this plan to inform community members how to report idling trucks
Estimated Timeline(s):
• Beginning Fall of 2019, provide quarterly updates to the CSC • Beginning Fall 2019, begin planning outreach events to inform the community members how to report idling trucks • Beginning Fall of 2019, work with CARB's enforcement team (and CHP) to coordinate, at a minimum, quarterly idling sweeps and focused inspections for a period of one year   – Beginning January 2020, based on findings from idling sweeps, the CSC identified Community Priorities List, and additional community observations/input from CSC meetings, CARB will adjust enforcement in the

community to address the identified concerns and report back to the CSC bi-annually for future adjustments • Beginning Fall 2019, work to establish "no truck idling" signage with locations prioritized by the CSC	
Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibilities:
South Coast AQMD	• Conduct idling sweeps (which may require coordination with local law enforcement), focusing on high priority areas • Collaborate with the CSC to inform community members how to report idling trucks • Engage in community outreach on complaint systems on reporting idling trucks • Work with local entities and CARB to establish "no truck idling" signage
California Air Resources Board (CARB)	• Conduct and coordinate idling truck inspections with the California Highway Patrol • Based on findings from idling sweeps, the CSC identified Community Priorities List, and additional community observations/input from CSC meetings, CARB will adjust enforcement in the community to address the identified concerns and report back to the CSC bi-annually for future adjustments • Work with South Coast AQMD to establish "no truck idling" signage
CSC	• Work with South Coast AQMD and other local entities to disseminate information on how to report idling trucks in the community (e.g., outreach events and flyers) • Prioritize locations for "no truck idling" signage
Additional Information:	
• CARB requirements for idling trucks: https://www.arb.ca.gov/enf/diesel.htm • City of Los Angeles - Trucks on Residential Streets: https://ladot.lacity.org/what-we-do/operations/neighborhood-services/trucks-residential-streets • City of Carson - Truck Routes and Truck Parking Areas: http://ci.carson.ca.us/publicworks/truckroutes.aspx • City of Long Beach - Oversized Vehicle Restrictions: http://longbeach.gov/press-releases/public-notice-oversized-vehicle-restrictions/	

Action 2: Reduce Emissions from Heavy-Duty Trucks
Course of Action:
• Collaborate with local businesses, agencies, and organizations and engage in outreach to truck owners and operators in this community to provide information about available incentive programs, community ordinances, restricted truck routes, and trucking regulations • Identify additional and new incentive funding opportunities to replace and accelerate adoption of cleaner heavy-duty trucks (including drayage trucks), prioritizing zero-emission technologies when technologically feasible and commercially available, and near-zero emission technologies until that time • Participate in CARB's rule development for future amendments to their truck regulations • Continue to develop Facility Based Mobile Source Measures (see Chapter 5c – Ports and Chapter 5f – Railyards), including an Indirect Source Rule (ISR) for warehouses • Work with the local city or county agencies to evaluate potential designated truck routes away from sensitive receptors (e.g., schools, residents) and identify resources to enforce these routes • Work with local agencies to provide data on locations within the community with high truck pollution impacts • Identify the appropriate agency (e.g., Los Angeles Department of Transportation) to collaborate on assessing the feasibility of physical interventions to prevent truck traffic from entering residential neighborhoods • Target incentive funds for local small businesses and independent owner/operator (e.g., Voucher Incentive Program) • Conduct focused enforcement of CARB's TRU Regulation, Drayage Truck Regulation, and Truck and Bus Regulation
Strategies:
• Incentives • Public Information and Outreach • Collaboration • Rules and Regulations • Enforcement
Goal(s):
• Engage in two incentive outreach events and provide semiannual updates to the CSC • Provide semiannual updates on CARB's rule development for truck regulations, and seek community input on progress • Coordinate with CARB staff on using community priorities to focus future enforcement efforts • Identify agencies with the jurisdiction to implement physical barriers to neighborhood truck traffic

• Provide quarterly or semiannual updates to the CSC • Achieve emission reductions through mobile source incentives and statewide mobile source regulation measures as specified in Chapter 5a	
Estimated Timeline(s):	
• Beginning 2020, when incentive programs are available, begin engaging in incentive outreach events and collaborating with local businesses, agencies, and organizations to provide information about incentive programs, community ordinances, restricted truck routes, and trucking regulations • Continue to identify additional and new incentive funding opportunities to replace and accelerate the adoption of cleaner heavy-duty trucks • Continue to develop Facility Based Mobile Source Measures (see Chapters 5c – Ports and 5f – Railyards), including an ISR for warehouses • Beginning first quarter of 2020, work with the city or the county to evaluate potential designated truck routes and identify resources to enforce these routes and identify agencies to collaborate with on feasibility of physical barriers to mitigate neighborhood truck traffic • Beginning 2020, when incentive programs are available target incentive funds for small businesses and independent owner/operator • CARB's New Regulations phase-in: 2024-2030	
Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibilities:
South Coast AQMD	• Collaborate with local businesses, agencies, and organizations and engage in targeted outreach for truck incentive programs, community ordinances, restricted truck routes, and trucking regulations • Identify other additional or new funding opportunities to accelerate the adoption of cleaner heavy-duty and drayage trucks • Support CARB on rule development for future truck amendments • Continue to develop Facility Based Mobile Source Measures • Work with the local city or county agencies to evaluate potential designated truck routes and identify resources to enforce these routes • Work with local agencies to provide data on locations within the community with high truck pollution impacts • Identify agencies with jurisdiction over physical barriers for truck traffic

	• Identify incentive funds for local small businesses and independent owner/operator and encourage the submission of applications • Provide updates to CSC, including truck incentive projects that have been submitted and are being considered for Community Air Protection Incentive funding • Provide training to community leaders or organizations that provide application assistance for incentive programs
CARB	• Continue rule development for amendments to truck regulations • Conduct enhanced roadside enforcement of existing Drayage Truck, TRU, and Truck and Bus regulations
Cities of Los Angeles, Long Beach, and Carson	• Collaborate with South Coast AQMD to evaluate potential designated truck routes and identify resources to enforce these routes
CSC members (including businesses, community organizations, and agencies)	• Work with South Coast AQMD to engage in outreach to truck owners and operators • Provide application assistance to potential applicants for incentive programs – Seek funding support to provide this service, (e.g., through CARB Community Air Grants)
Additional Information:	

• CARB Drayage Truck Regulation: https://www.arb.ca.gov/msprog/onroad/porttruck/porttruck.htm
• CARB Truck and Bus Regulation: https://ww2.arb.ca.gov/our-work/programs/truck-and-bus-regulation
• CARB Community Air Grants: https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/community-air-grants
• City general plans:
  – City of Los Angeles (Wilmington)
  ▪ General Plan: http:// planning.lacity.org/GP_elements.html
  ▪ Wilmington-Harbor City Community Plans Update: http://www.harborlaplans.org/wilmington-harbor-city1.html
  ▪ Transportation Element: https://planning.lacity.org/cwd/gnlpln/transelt/TE/T1Intro.htm
  – City of Carson General Plan: http://ci.carson.ca.us/communitydevelopment/generalplan.aspx	

- City of Long Beach
  - General Plan Update: http://www.longbeach.gov/pages/city-news/long-beach-general-plan-update-is-here/
  - Mobility Plan: http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=4112

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CHAPTER 5F:

RAILYARDS

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Chapter 5f: Railyards (On-site Emissions)

Background

Railyards are used to store, sort, or load and unload railroad cars. Common loads include containers (stacked or on trailers), tankers with chemical or petroleum products, and bulk products such as construction materials or grain. Containers can be transported to and from marine terminals for import and export, or to and from warehouses for storage and sorting before reaching their final destination. Regional rail container volumes are projected to increase between 2012-2040 in response to growing international trade.[1]

Figure 5f-1: Union Pacific Intermodal Container Transfer Facility (ICTF)/Dolores

BNSF Railway Company (BNSF) and Union Pacific (UP) Railroad Company, operate many railyards[2] throughout California. Two are located next to residential areas within the Wilmington, Carson, West Long Beach community, including BNSF Watson and UP Intermodal Container Transfer Facility (ICTF)/Dolores (Figures Figure 5f-1 and 5f-2). Several other on-dock railyards operate at the ports of Los Angeles and Long Beach at various marine terminals.[i, 3]

Community Air Quality Priority – Emissions from Railyards

Air pollution is generated by equipment and vehicles that are used for railyard operations. These vehicles and equipment move containers and railcars around the railyard to load, unload, and transport goods in and out of the railyard. Emissions can also be generated during maintenance activities (e.g., load testing of locomotives). Examples of equipment that is used for railyard operations include:

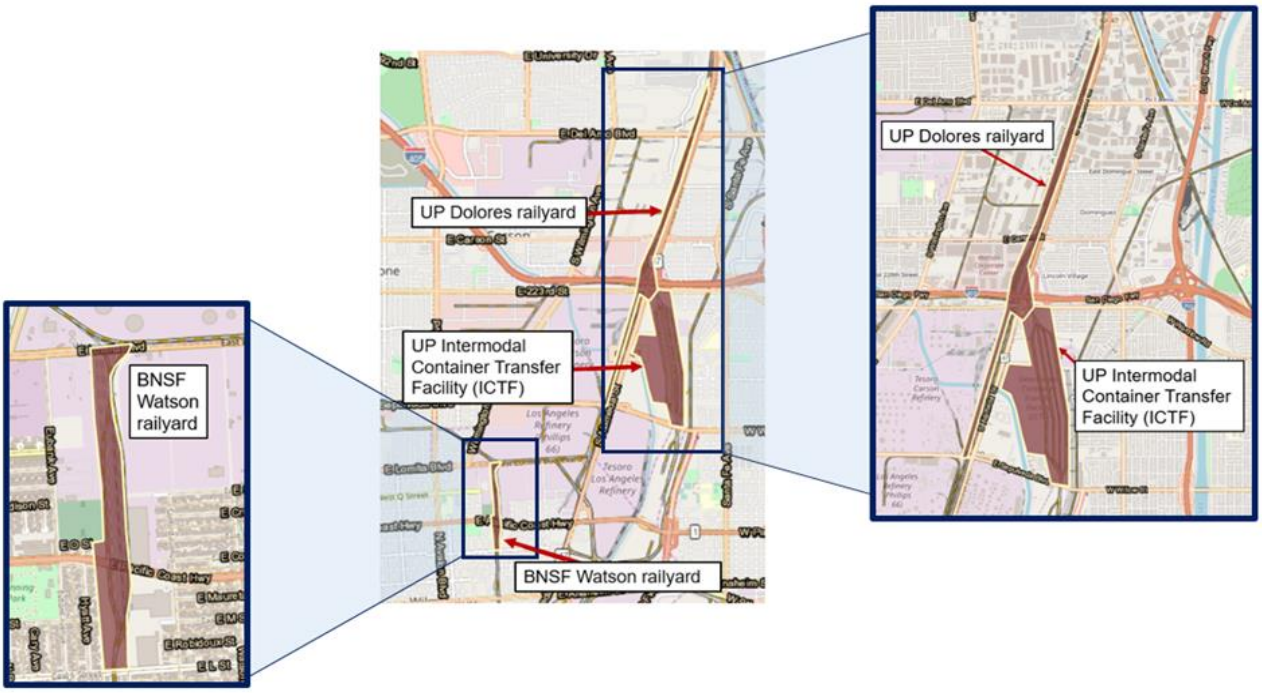
- Locomotives (including 'switchers' that build and deconstruct trains, often within railyards, and larger 'line-haul' locomotives that pull trains hundreds of miles between railyards)

[i] Port of Los Angeles railyards are located at Berth 200, Pier 300, Pier 400, TraPac, West Basin Container Terminal, and Everport/Yusen terminals (TICTF) (https://www.portoflosangeles.org/business/supply-chain/rail).
Port of Long Beach railyards are located at Pier A, Pier B, Pier E/Middle Harbor, Pier G, Pier J, and Pier T. (http://www.polb.com/civica/filebank/blobdload.asp?BlobID=13281). These railyards are addressed as part of the Ports actions.

- Drayage trucks (i.e., on-road tractors that pull trailers loaded with containers, often from the ports)
- Cargo handling equipment (e.g., gantry cranes, top picks, and off-road yard trucks)
- Transportation Refrigeration Units (e.g., truck refrigeration units and refrigerated railcars)
- Miscellaneous (e.g., fuel trucks)

The Community Steering Committee (CSC) prioritized air pollution from railyards within the community based on concerns about diesel particulate emissions from trains and other diesel equipment at the BNSF Watson[ii] and UP ICTF/Dolores railyards. Potential opportunities to reduce emissions from diesel equipment used at railyards include replacing older equipment with newer less polluting equipment (e.g., replacing diesel-fueled yard trucks with electric yard trucks), and ensuring that the replacement or repower of equipment is based on the cleanest technology available.

Figure 5f-2: Two off-port railyards within the Wilmington, Carson, West Long Beach



Ongoing Efforts

A short summary is provided below of the key regulations and programs that are in place or are being developed at the national, state, and local level to address emissions from railyards.

Federal Actions

[ii] The BNSF Watson yard does not have drayage trucks, cranes, top picks, or off-road yard trucks.

Railroad operations are regulated at the federal level primarily by the Federal Railroad Administration and the Surface Transportation Board, while locomotive emissions are regulated by the U.S. EPA. These agencies' regulatory authority preempt certain federal, state, and local regulatory authorities. However, U.S. EPA has used its authority under the Clean Air Act to require new diesel locomotives to be built to meet the cleanest emission standard (also known as Tier 4).[4] This requirement also applies to certain locomotives that are remanufactured.[iii] These regulations require the installation of devices that reduce idling on newly manufactured[iv,5] and remanufactured locomotives.[6] These regulations do not require railroads to reduce their usage of older, higher-emitting locomotives. Locomotives must meet federal emissions standards when they are remanufactured, and may become cleaner at that time. In 2017, CARB also petitioned U.S. EPA to develop a new regulation requiring engine manufacturers to meet a cleaner Tier 5 emission standard for new engines.

In 2017, CARB petitioned the U.S. EPA to update emission standards for new and remanufactured locomotives, establishing a cleaner Tier 5 standard for new engines.[7,v] The petition asked that the new emission standards go into effect in 2023 for remanufactured locomotives, and 2025 for new locomotives. South Coast AQMD supported the petition by sending a letter of support. The U.S. EPA acknowledged the receipt of the petition, but has not provided any update or plans for further action. Because locomotive engines can last over 30 years, locomotive fleet turnover is slow, so even if the U.S. EPA were to develop a Tier 5 emission standard, it would not result in immediate emission reductions.

State Actions (CARB)

CARB has two agreements[8,9] with BNSF and UP to reduce locomotive emissions in and around railyards. An agreement in 1998 required BNSF and UP to meet a fleet average of Tier 2 for their locomotive engines operated in the South Coast Air Basin every year between 2010 and 2030. Both railroads have met this commitment every year. The second agreement in 2005 focused on railyards and required: implementation of an idling-reduction program, maximizing the use of ultra-low sulfur diesel fuel, preparation of health risk assessments, evaluation of measures to further reduce diesel particulate emissions, and an assessment of remote sensing technology to identify high-emitting locomotives. Both railroads have met the requirements from the 1998 and 2005 agreements. CARB has discussed the potential for two new regulations that would reduce emissions from locomotives, including regulation to reduce idling activity and a regulation to address non-preempted locomotive use in the state through retrofit, replacement and other actions. Also, CARB staff plans to develop amendments to the Cargo Handling Equipment

[iii] Remanufacturing can include activities like replacing an old engine in a locomotive with a new engine. The useful life of a locomotive is typically at least ten years.

[iv] The U.S. EPA defines newly manufactured as freshly manufactured.

[v] Even if the U.S. EPA were to update the emission standards in response to the petition, the new standards would only apply to new and remanufactured locomotive engines. Given the slow turnover of the railroads' fleet, emissions reductions would not be immediate.

Regulation, Transportation Refrigeration Unit Regulation, and its Drayage Truck Regulation to begin the transition to zero-emission technology starting in 2026.[10]

South Coast AQMD

South Coast AQMD previously adopted rules[11] that would have required railroads to reduce idling, conduct recordkeeping, and prepare emissions inventories and health risk assessments for railyards. However, the railroads sued South Coast AQMD, and the courts determined that the rules cannot currently be enforced as they are preempted by federal law. South Coast AQMD is evaluating potential strategies to reduce emissions from railyards, including developing a potential regulation affecting railyards called an Indirect Source Rule (ISR), and/or other potential partnering strategies that could reduce emissions.[12] This ISR was initially intended to address regional air pollution, in particular through reducing NOx emissions. The CSC has made it clear that an ISR must also focus on reducing localized impacts from railyards. The railroads have participated in workshops related to Facility Based Mobile Source Measures (FBMSM) and will continue to work with South Coast AQMD staff and the community.

South Coast AQMD also funds projects to help develop technology that can lower emissions from locomotives (e.g., natural gas hybrid, battery electric, and fuel cell). These projects are in the design and demonstration phase and not yet commercially available. Additionally, the South Coast AQMD provides incentives for rail operators that purchase technologies for locomotives[13] and cargo handling equipment[14] that is cleaner than required.

Opportunities for Action

The South Coast AQMD continues to seek opportunities to reduce air pollution from railyards. The actions below have been identified by the CSC to reduce emissions from railyards.

Action 1: Reduce Emissions from Railyards
Course of Action:
• Pursue strategies to reduce air pollution from railyards through the development of Indirect Source Rule (ISR) requirements, including reducing localized emissions and exposures • Work with CARB on the development of new requirements to reduce air pollution from railyards • Work with local utilities and state agencies (e.g., California Energy Commission and the Public Utilities Commission) to encourage the installation of infrastructure needed to fuel/charge zero-emissions vehicles and equipment • Continue to support CARB's petition[vi] to the U.S. EPA for new national locomotive emission standards for near-zero and zero-emission locomotives

[vi] CARB Locomotive Petition to U.S. EPA (April 2017): https://ww2.arb.ca.gov/resources/documents/carb-petitions-us-epa-strengthen-locomotive-emission-standards.

• Work with railyards in the Wilmington, Carson, West Long Beach community to replace diesel fueled equipment with cleaner technologies[vii] • Use emissions inventory and air monitoring information to identify opportunities for emission reductions
Strategies:
• Rules and Regulations • Incentives • Collaboration • Air Monitoring
Goal(s):
• Provide semiannual updates on new requirements being developed by CARB and South Coast AQMD to the CSC • Prioritize reducing air pollution from railyards located in environmental justice communities, such as, Wilmington, Carson, West Long Beach • Replace diesel equipment at railyards through incentive funding programs • Achieve emission reductions through mobile source incentives and statewide mobile source regulation measures as specified in Chapter 5a
Estimated Timeline(s):

• In 2020, South Coast AQMD to consider new ISR on railyards
• Between 2020 and 2022, CARB to consider new regulations and/or other measures:
  – Between 2020 and 2022, for locomotives
  – By 2022, CARB to consider amending its regulations for zero-emission drayage trucks and cargo handling equipment
  – By 2020, CARB to consider amending its regulation for zero-emission transport refrigeration units (TRUs)
• 2020, begin working with local utilities and state agencies (e.g., California Energy Commission and the Public Utilities Commission) to encourage the installation of infrastructure needed to fuel/charge zero-emissions vehicles and equipment
• Continue to support CARB's petition to the U.S. EPA for new national locomotive standards
• Second quarter 2020, South Coast AQMD will provide incentive information to railyards to work towards replacing diesel-fueled equipment with cleaner technologies at railyards located in the Wilmington, Carson, West Long Beach community
• When available, use emissions inventory and air monitoring information to identify opportunities for emission reductions

[vii] A variety of technology assessments have been conducted to assist in this effort. Examples include: https://ww2.arb.ca.gov/resources/documents/technology-and-fuels-assessments and http://www.cleanairactionplan.org/documents/draft-2018-feasibility-assessment-for-cargo-handling-equipment.pdf

Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibilities:
South Coast AQMD	• Pursue indirect source requirements for railyards, and improve community access to rule development process by holding a working group meeting in this community • Work with CARB on the development of new requirements to reduce air pollution from railyards • Work with local utilities and state agencies to encourage the installation of infrastructure needed to fuel/charge zero-emissions vehicles and equipment • Continue to support CARB's petition to the U.S. EPA for new national locomotive emission standards • Allocate incentive funding to replace on-site diesel equipment with zero-emission technologies • Use emissions inventory and air monitoring information to identify opportunities for emission reductions • Provide the CSC with updates on the development of indirect source requirements for railyards
CSC Members	Participate in CARB and South Coast AQMD rulemaking process (e.g., attending working group meetings, providing comments on draft rule materials, etc.) for regulations affecting railyards
CARB	• Pursue regulations to achieve additional emission reductions at railyards • Prioritize enforcement and seek new financial incentives for railyards
BNSF Watson and UP Intermodal Container Transfer Facility (ICTF)/Dolores	Participate in the CARB and South Coast AQMD rulemaking process
Additional Information:	
• Carl Moyer Program: http://www.aqmd.gov/home/programs/business/business-detail?title=heavy-duty-engines&parent=vehicle-engine-upgrades • CARB's proposed regulations to reduce emissions from locomotives: https://ww2.arb.ca.gov/resources/documents/evaluation-and-potential-development-regulations-reduce-emissions-locomotives	

- CARB's actions to minimize community health impacts from freight and estimated timelines: https://www.arb.ca.gov/board/books/2019/032119/19-3-2pres.pdf
- CARB's Locomotive Petition to U.S. EPA: https://ww2.arb.ca.gov/resources/documents/carb-petitions-us-epa-strengthen-locomotive-emission-standards

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CHAPTER 5G:

SCHOOLS, CHILDCARE CENTERS, AND HOMES

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Chapter 5g: Schools, Childcare Centers, and Homes – Exposure Reduction

Background

The Wilmington, Carson, West Long Beach community identified children's exposure to harmful air pollutants while at school and childcare centers as a priority. A major pollutant of concern in this community is diesel particulate matter (DPM), which can cause health problems. Many environmental justice communities experience a disproportionately high level of exposure to these pollutants, especially when there are schools, homes, and other locations where people spend a lot of time (e.g., parks) that are close to air pollution sources. Children, seniors, and people with certain medical conditions are especially sensitive to the impacts of air pollution. Steps such as installing high performance air filtration systems inside school buildings and notifying the public when air quality is unhealthy can reduce a child's exposure to harmful air pollutants.

Community Air Quality Priorities – Reducing Exposures at Schools, Childcare Centers, Homes, or Where Sensitive Populations Spend Time

Community Steering Committee (CSC) members identified hospitals, senior centers, and schools as places where the South Coast AQMD should focus on reducing exposure to harmful air pollutants. The CSC provided examples, such as the idling of diesel trucks and locomotives near schools or parks that provide exposure to harmful air pollutants found in diesel exhaust. The CSC members also shared instances where students and other sensitive populations near sources of air pollution experienced health problems.

To address community concerns about the health impacts of air pollution, the CSC members prioritized community outreach and engagement as a way to reduce exposure to harmful air pollutants. This includes providing information to schools, childcare centers, and when outdoor air pollution levels are unhealthy, and suggest steps that can be taken to reduce exposure when air quality is unhealthy. Other input received includes increasing the amount of green space, such as planting trees around the community.

The CSC also identified school and residential air filtration as another effective way to reduce exposure to air pollution, particularly for residents who live in areas close to major sources of diesel emissions. The South Coast AQMD does not currently have a program to provide residential filtration systems[i]; however, the agency will work with its partners to identify opportunities for residential filtration systems and share this information with the CSC.

[i] The South Coast AQMD will work with CARB's Indoor Air Quality program and its contractor to identify effectiveness and opportunities for residential filtration and share this information with the CSC.

Ongoing Efforts

School Air Filtration

The installation of air filtration systems in schools can reduce exposure to air pollution inside school buildings. There are certain types of air filtration systems (high efficiency air filters) that are effective in filtering very small particles like those from diesel engines. These small particles can be inhaled deep into the lungs and cause health problems. These filtration systems may be beneficial to schools located near freeways, truck routes, ports, rail yards, and other sources[1] of diesel emissions.

South Coast AQMD has administered the installation of air filtration systems at schools in the Los Angeles Unified School District since 2006. To date, these systems have been installed at 24 schools within the Wilmington, Carson, West Long Beach community. Figure 5g-1 and Table 5g-1 summarizes the location and list of schools that have air filtration systems installed within this community. The map and table show only schools that have had air filtration systems installed through funds administered by the South Coast AQMD. Other school districts may have installed high efficiency air filtration systems through other funding sources. For example, Long Beach Unified School District received funding from the Port of Long Beach to install stand-alone air filtration systems. Table 5g-2 lists the schools in West Long Beach that have had air filtration systems installed through funding from the Port of Long Beach.

Environmental Justice Community Partnership (EJCP)[2] Clean Air Ranger Education (CARE)[3]

The EJCP is designed to build relationships with community members and organizations to achieve clean air and healthy, sustainable communities. The Clean Air Ranger Education (CARE) Pilot Program is a program designed for elementary school education and includes topics on air pollution and health, air quality flags, and zero-emissions equipment demonstrations.

Why Air Quality Matters (WHAM) High School Education Program

The South Coast AQMD is implementing Why Air Quality Matters (WHAM), a Science, Technology, Engineering and Math (STEM) and experiential learning based curriculum, in high schools located within environmental justice communities. WHAM will increase teacher and student awareness on air quality issues in their communities and beyond through activities and experiments, including measuring particulate matter using low-cost, hand-held sensors.

Figure 5g-1: Map of schools in Wilmington, Carson, West Long Beach with air filtration systems installed through funds administered by the South Coast AQMD

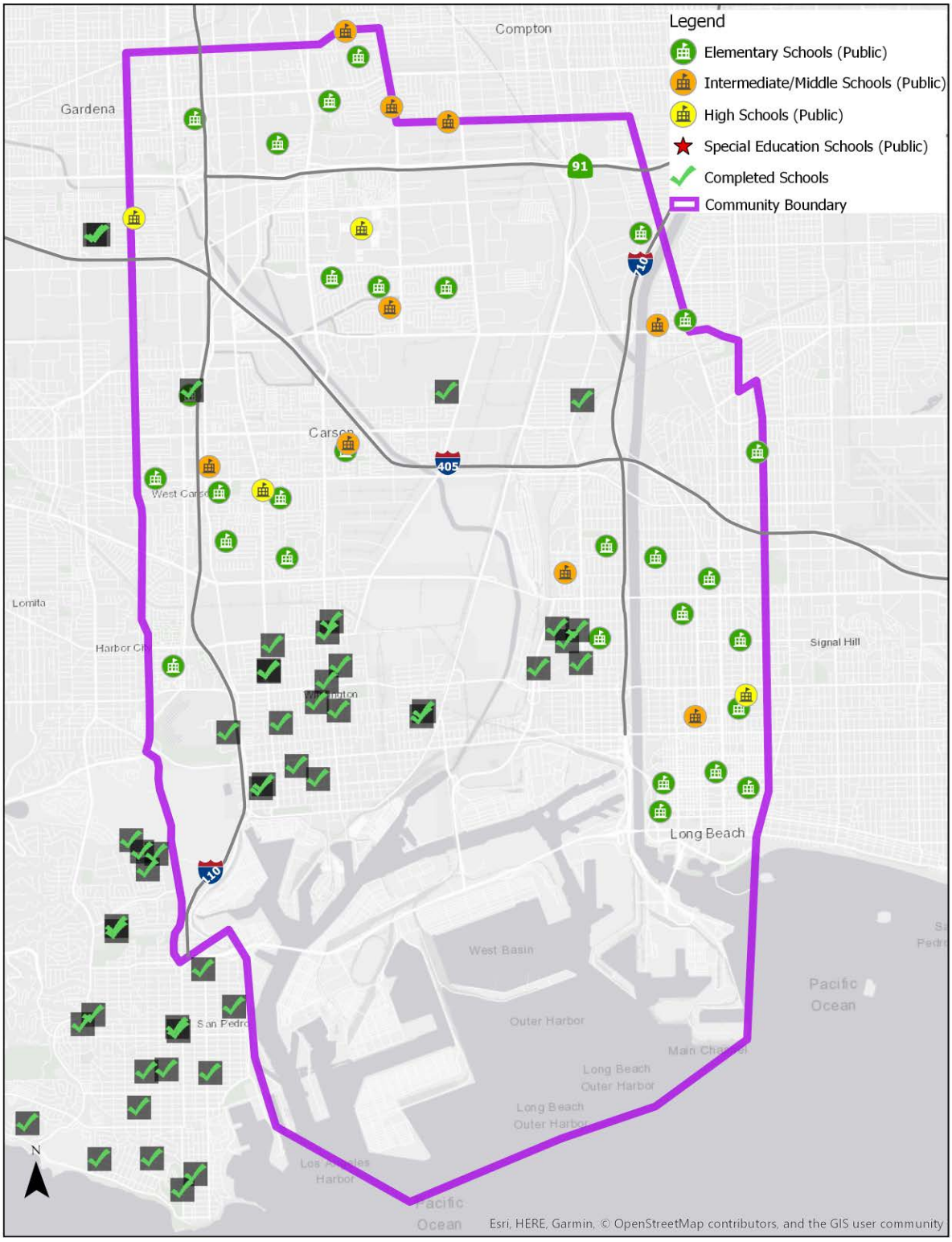

Table 5g-1: List of schools in Wilmington, Carson, West Long Beach with air filtration systems installed through funds administered by the South Coast AQMD

Name of School	
Avalon High School	Hawaiian Ave Early Education Center
Bethune Elementary School	Hawaiian Ave Elementary School
Broad Ave Elementary School	Hudson Elementary School
Cabrillo High School	Pacific Harbor Christian School K-12
Del Amo Elementary School	Phineas Banning High School
Dominguez Elementary School	Reid High School
Fries Ave Elementary School	Saints Peter and Paul K-8
George De La Torre Elementary School	Saint Lucy K-8
Gulf Ave Elementary School	Wilmington Christian School K-8
Happy Harbor Preschool	Wilmington Middle School
Harbor Teacher Preparatory High School	Wilmington Park Early Education Center
Harry Bridges Span K-8	Wilmington Park Elementary School

Table 5g-2: List of schools in West Long Beach with stand-alone air filtration systems installed through funding from the Port of Long Beach

Name of School	
Birney Elementary School	Los Cerritos Elementary School
Edison Elementary School	Muir K-8
Garfield Elementary School	Robinson K-8
George Washington Middle School	Stephens Middle School
Lafayette Elementary School	Webster Elementary School

Opportunities for Action

In addition to filtration systems at schools, the CSC prioritized education and outreach as a way to reduce exposure to harmful air pollutants. Strategies to reduce the exposure to these pollutants are described below.

Action 1: Reduce Exposure to Harmful Air Pollutants through Public Outreach to Schools and Childcare Centers
Course of Action:
• Provide air quality related programs to schools, including the Environmental Justice Community Partnership (EJCP) Clean Air Ranger Education (CARE) program and Why Air Quality Matters (WHAM) program • Partner with local school districts to provide information on programs such as Safe Routes to School or ridesharing • Partner with community-based organizations such to share information or engage in outreach to schools for asthma related programs • If funding sources and partnering agencies are identified, work with appropriate agencies to implement direct public health interventions (e.g., asthma management programs) • Partner with the Los Angeles County and City of Long Beach Departments of Public Health on providing information on how to receive air quality advisories, and how to reduce exposure to air pollution, particularly for sensitive populations. Work with the school districts to provide this information to local schools and childcare centers
Strategies:
• Public Information and Outreach • Collaboration
Goal(s):
• Engage in two public outreach events (e.g., health fairs, Earth week event) at schools or childcare centers on information relating to air quality and reducing exposure • Provide information relating to air quality effects on young children and reducing exposure to facilities where children are located (e.g., schools, childcare centers, etc.) Outreach will be prioritized based on CSC input during the implementation period of this CERP • Implement EJCP CARE program and WHAM program in at least two schools, with the possibility of continuing for up to three years[ii] • Collaborate with community-based organizations to engage in outreach meetings • Encourage school districts to reduce the number of vehicle miles traveled and/or participate in programs such as Safe Routes to Schools

[ii] Number of schools and duration of program is contingent upon renewing funding source for subsequent years.

Estimated Timeline(s):	
• Early 2020, begin outreach efforts with school districts to provide air quality related programs to schools • Early 2020, begin outreach efforts with school districts to provide information on programs, such as, Safe Routes to School or ridesharing • Early 2020, begin outreach efforts with community-based organizations • Fourth quarter of 2019, begin working with health departments on developing outreach materials • Continue to identify funding sources or partnering agencies to work on direct public health interventions	
Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibility:
South Coast AQMD	• Implement the EJCP CARE program and WHAM program to schools • Partner with local school districts to provide information on programs such as Safe Routes to School or ridesharing, (e.g., prepare flyer and/or infographic to provide to school districts (students and parents) about rideshare benefits and programs) • Partner with community-based organizations and Departments of Public Health to engage in outreach to schools for asthma related programs and air quality advisories that inform the community about proactive steps to reduce exposure to harmful air pollutants • If funding sources and partnering agencies are identified, work with appropriate agencies to implement direct public health interventions (e.g., asthma management programs)
Los Angeles County and Long Beach Departments of Public Health	Partner with South Coast AQMD on developing notifications to schools for air quality advisories
Community Based Organizations (with asthma related programs)	Partner with South Coast AQMD to share information and/or engage in outreach to school districts for asthma related programs
Additional Information:	
• Clean Air Ranger Education (CARE) Program: http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/2019-ejcp-agenda-june-5.pdf	

Action 2: Reduce Exposure to Harmful Air Pollutants at Schools	
Course of Action:	
• Continue the installation of school air filtration systems[iii] with priority given to schools near truck routes, railyards, and/or major freeways • Explore opportunities for additional schools and funding to provide filter replacements for schools already equipped with high efficiency filtration systems	
Strategy:	
• Exposure Reduction	
Goal(s):	
• Installation of air filtration systems in schools identified by CSC members.[iv] Schools with priority given to schools near truck routes, railyards, and/or major freeways • Provide filter replacements for up to a five year period	
Estimated Timeline(s):	
• Starting mid-2020, through the implementation of the CERP, begin installation of air filtration systems in schools • 2019 through 2025, extend replacement filters at schools with existing high efficiency replacement systems • Beginning 2020, provide CSC with semiannual updates on number of schools that have had filtration systems installed	
Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibility:
South Coast AQMD	• Installation of air filtration systems in schools • Explore opportunities for additional schools and funding to provide filter replacements for schools already equipped with high efficiency filtration systems • Provide CSC with updates on school filtration systems
School Districts within the Wilmington, Carson, West Long Beach community	Partner with South Coast AQMD on installation of school air filtration systems and/or filter replacement programs
Additional Information:	
Air filtration systems in schools: https://www.aqmd.gov/docs/default-source/ceqa/handbook/aqmdpilotstudyfinalreport.pdf	

[iii] Some schools or community centers have had air filtration systems previously installed; however, filter replacements may be needed. Replacement filters will continue to be provided to schools that have had air filtration systems installed. Given that these projects are dependent on available funding, the CSC will need to prioritize which schools receive air filtration systems.

[iv] Public schools, including charter schools, childcare centers, and public community centers, are eligible for the South Coast AQMD program.

Action 3: Reduce Exposure to Harmful Air Pollutants in Homes[v,vi]	
Course of Action:	
• Identify new or existing technologies, programs, and funding sources that can provide the most effective air filtration systems in homes[vii]	
Strategies:	
• Incentives • Public Information and Outreach	
Goal(s):	
• Identify and partner with other entities to determine new or existing programs that can provide home filtration systems • If funding or programs become available, share information with CSC members	
Estimated Timeline(s):	
• Mid-2020, consult with CSC members and appropriate stakeholders to identify any new or existing air filtration programs in homes	
Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibility:
South Coast AQMD	• Identify new or existing sources or programs that can provide resources for air filtration in homes • Engage in outreach and share information with CSC members, when opportunities are available
Homeowners	When funding sources or programs are identified and available, apply for and install air filtration systems based on the guidelines outlined by the funding source
Additional Information:	
Not applicable	

[v] Air filtration systems will generally be less effective due to lower energy efficiency in older, pre-2006 homes typically found in Environmental Justice or disadvantaged communities. Limited research on the efficiency of high performance air filtration systems in older homes suggests a 25% - 30% lower efficiency for PM2.5 and ultrafine PM is expected, which is comparable to having open doors and windows. Most data collected on efficiency of high performance air filtration systems has been on 2006 and new homes, showing an average removal efficiency of 90% for PM2.5 and ultrafine PM.

[vi] CARB has not approved AB 617 funds for residential air filtration systems. The South Coast AQMD plans to continue to work with CARB to establish a protocol where residential air filtration systems can be installed using CARB funds.

[vii] If a funding source is identified, South Coast AQMD will provide information on such funds. Homeowners should install residential air filtration based on the guidelines outlined by the funding source.

Action 4: Increase Green Space in Areas Where People Spend Time	
Course of Action(s):	
• Identify new or existing sources or programs that can provide funding for tree planting and the expansion of green space using native, drought tolerant plants	
Strategies:	
• Public Information and Outreach	
Goal(s):	
• Partner with other agencies or entities (e.g., Los Angeles County Department of Public Health) to determine new or existing sources or programs that can provide funding to coordinate tree planting (prioritizing areas with sensitive populations) and increase green space with native, drought tolerant plants • If funding or programs become available, share information with CSC members	
Estimated Timeline(s):	
• Mid-2020, consult with CSC members and appropriate stakeholders to identify any existing funding sources for tree planting or increasing green space	
Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibility:
South Coast AQMD	• Partner with agencies or entities to identify new or existing sources or programs that can provide funding for tree planting and green space expansion • Engage in outreach and share information with CSC members, when opportunities are available
Local city or county agencies/entities (e.g., Los Angeles Department of Public Health)	Work with South Coast AQMD to identify new or existing sources or programs that can provide funding for tree planting and green space expansion
CSC Members (e.g., community based organizations, businesses, etc.)	When funding sources or programs are identified and available, apply for and incorporate green spaces and tree planting within the community
Additional Information:	
Not applicable	

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CHAPTER 5H:

IMPLEMENTATION SCHEDULE

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Chapter 5h: Implementation Schedule

The CERP addresses air quality priorities identified by the Wilmington, Carson, West Long Beach Community Steering Committee (CSC). To reduce air pollution from sources that contribute to these priorities, the CSC developed a set of actions to be implemented by government agencies, organizations, businesses, and other entities. The implementation period of the actions in this CERP is expected to be approximately five years. The actions will occur during the timeframe of the plan; however, some actions by South Coast AQMD are ongoing (e.g., certain regulatory, enforcement, and incentive activities). Rules that are adopted or amended will continue to be in effect beyond the implementation period of the CERP and will continue to be enforced to ensure that facilities maintain compliance. Additionally, some actions in the CERP are designed to allow for minor adjustments when new information becomes available. For example, based on initial air monitoring results, the CSC may refine specific strategies to focus on sources that show elevated emissions. Moreover, allowing these types of adjustments will facilitate successful implementation.

Each action in the CERP provides goals that include metrics designed to measure the progress of the CERP. Examples of these metrics are quarterly enforcement sweeps and emission reduction targets. Beginning in 2021, the South Coast AQMD staff will provide an annual update to the CSC on the goals for each action in the CERP.

An overview of the schedule for implementing the actions in the CERP is shown in Figure 5h-1: Implementation Timeline for Rule Development and Implementation Activities and Figure 5h-2: Implementation Timeline for Air Monitoring, Enforcement, Outreach, and Other CERP Actions. Figure 5h-1 covers rule development activities to address air quality priorities in the CERP, and Figure 5h-2 provides a timeline for air monitoring, enforcement, incentives, outreach, and other activities.

Figure 5h-1: Implementation Timeline for Rule Development and Implementation Activities

	2019	2020	2021-2022	2024-2030
South Coast AQMD	• Rule development for Rule 1109.1 • Rule 1180 implementation • Continue development of Facility-Based Mobile Source Measures (FBMSM) for Ports through a MOU	• Consider Railyard Indirect Source Rule and Rule 1109.1 • Initiate rulemaking for: o Rule 1118 o Rule 1148 series o Rule 1173	• Initiate rulemaking for: o Rule 1142 o Rule 1178 • On-going rule development efforts and implementation, for example, working group process for rules initiated in 2020 • Participate in CARB's rule development efforts specified in this plan	
CALIFORNIA AIR RESOURCES BOARD	• CARB to consider At-Berth Regulation	• CARB to consider: o Heavy-Duty Low NOx Rule o Commercial Harbor Craft Regulation o Transport Refrigeration Unit (TRU) Regulation	• CARB to consider: o Drayage Truck Rule o Zero-Emission Fleet Rule o Cargo Handling Equipment Rule o Potential new locomotive regulations	• Phase-in CARB Regulations including: o Drayage Truck Rule o Advanced Clean Truck Rule o Zero-Emission Fleet Rule o Heavy-Duty Low NOx Rule
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY		• U.S. EPA to release Draft Clean Truck Initiative		• Phase-in U.S. EPA's Cleaner Truck Initiative

Figure 5h-2: Implementation Timeline for Air Monitoring, Enforcement, Outreach, and Other CERP Actions

		2019	2020	2021
Air Monitoring	Refineries	• Begin air measurement surveys at refineries • Begin periodic updates to the CSC on refinery air monitoring efforts identifying and addressing VOC leaks	• Conduct periodic measurements to establish a VOC emissions baseline for all refineries	• Establish a VOC emissions baseline for all refineries, using air measurements such as fenceline and mobile air measurements (Action 2)
	Ports	• Begin oil tanker leak surveillance air measurements		
	Truck Traffic	• Begin air measurements to identify air pollution hot spots • Start evaluating data to assess the impact of idling truck emissions on community exposure		
	Oil Drilling and Production	• Begin to use data from DOGGR to identify the active, idle, and abandoned wells in this community	• Begin air measurements around oil drilling and production locations o Prioritize locations identified by the CSC o Post data on a dedicated webpage on the South Coast AQMD website within 30 days • Provide CSC members with periodic updates on these efforts	
	Railyards	• Use emissions inventory and air measurement information to identify opportunities for emission reductions • Begin air measurement activities at railyards to identify activities that may increase levels of air pollution in nearby communities		
	Sensitive Receptors	• Begin air measurements at and near schools and other sensitive receptors • Share preliminary data with the CSC to identify specific receptors for more detailed air measurements		

Figure 5h-2: Implementation Timeline for Air Monitoring, Enforcement, Outreach, and Other CERP Actions

		2019	2020	2021
Enforcement	South Coast AQMD	• Begin idling truck focused inspections[i] • Conduct follow-up inspections[i] at refineries, as needed, based on air measurement results	• Begin providing the CSC members periodic updates on inspection or complaint investigations[i] on fugitive emissions and odors from oil drilling and production sites • Work with the CSC to identify the top priority oil drilling and production locations in this community • Begin offshore ship investigations[i]	
	CARB	• Update the CSC on CARB's enforcement of the existing Drayage Truck Regulation • Work with the South Coast AQMD (and CHP) to coordinate, at a minimum, quarterly idling sweeps and focused inspections for a period of one year	• Conduct enhanced roadside inspections utilizing CSC input to locate areas of concern • Conduct enhanced roadside enforcement of existing Drayage Truck and Truck and Bus regulations • Begin to provide updates on CARB's enforcement of truck regulations • Based on findings from idling sweeps, the CSC identified Community Priorities List, and additional community observations/input from CSC meetings, CARB will adjust enforcement in the community to address the identified concerns and report back to the CSC bi-annually for future adjustments	

[i] South Coast AQMD staff cannot provide updates on ongoing investigations.

Figure 5h-2: Implementation Timeline for Air Monitoring, Enforcement, Outreach, and Other CERP Actions

		2019	2020	2021
Incentives	Ports	• Funding opportunities for cleaner port equipment and drayage trucks	• Sign agreement for joint clean vessel incentive program with Asian ports • Conduct outreach for cleaner technologies incentive ships, harbor craft, trucks • Conduct incentive outreach events, when incentive programs are open for applications	
	Neighborhood Trucks		• Begin conducting incentive outreach events and provide quarterly or semiannual updates to the CSC conduct outreach to truck owners and operators[ii] • Conduct outreach for cleaner technologies incentives for trucks	
	Railyards		• Provide incentive information to railyards to work towards replacing diesel-fueled equipment with cleaner technologies at railyards located in this community	
	Schools, Childcare Centers, Homes		• Consult with CSC members and appropriate stakeholders to identify any existing funding sources for tree planting or increasing green space	

[ii] When incentive programs are available

Figure 5h-2: Implementation Timeline for Air Monitoring, Enforcement, Outreach, and Other CERP Actions

		2019	2020	2021
Outreach	Refineries		• Work with local public health departments to develop informational outreach materials for the community to describe the risks posed by emissions from refinery flaring, and how to reduce exposures • Begin working with local public health departments to develop fact sheets that provide guidance on reducing exposure to oil drilling and production site activities	• Hold workshops in the community to provide training on how to use flaring notification systems
	Ports	• Conduct outreach for the Pacific Rim clean vessel incentive program • Conduct outreach for FBMSM rule development meetings		
	Trucks	• Conduct outreach to inform community members how to report idling trucks	• Provide training to community leaders or organizations that provide application assistance for incentive programs for heavy-duty trucks	
	Oil Drilling and Production			• Implement improvements to notifications and organize community workshops and training on how to subscribe to and use notifications
	Schools, Childcare Centers, & Homes	• Begin working with health departments on developing outreach materials for schools, childcare centers, homes	• Begin outreach efforts with school districts to provide air quality related programs to schools • Begin outreach efforts with school districts to provide information on programs, such as, Safe Routes to School or ridesharing • Begin school, childcare center, home outreach efforts with community-based organizations to share information or provide outreach to schools for asthma related programs	

Figure 5h-2: Implementation Timeline for Air Monitoring, Enforcement, Outreach, and Other CERP Actions

		2019	2020	2021
Other	Refineries	• Provide a summary of flare emissions data from the Rule 1118 quarterly reports • Provide an inventory of refinery boilers and heaters, size, fuel type, emissions, whether they have CEMS, the type of controls, and whether they are being considered for BARCT	• Begin providing CSC members updates on efforts for refinery flaring event notifications • Begin compiling the number of Rule 1118 flare events at each refinery from 2008 to 2018 • Explore Smart LDAR technologies and programs, begin evaluating mobile, fenceline and other air monitoring results, and begin working with refineries to develop a fugitive emission reduction plan to achieve emission reductions of 25% by 2024 and 50% by 2030	
	Ports	• Begin to provide updates on demonstration projects for ships and harbor craft	• Implement Ports' Clean Truck Program[i] as described in the CAAP • Implement Ports' clean cargo handling equipment purchasing program as described in the CAAP[ii]	
	Schools, Childcare Centers, & Homes	• Semiannual updates on CARB's rule development for truck regulations, and seek community input on progress • Extend replacement filters at schools with existing high efficiency replacement systems throughout implementation of this plan	• Begin installation of air filtration systems in schools[iii] • Consult with CSC members and appropriate stakeholders to identify any new or existing air filtration programs in homes	
	Railyards		• Begin working with local utilities and state agencies to encourage the installation of infrastructure needed to fuel/charge zero-emissions vehicles and equipment	

i Implementation of Ports' Clean Truck Program as described in the San Pedro Bay Ports' Clean Air Action Plan is dependent on feasibility assessment study for trucks and truck rate study and the promulgation of near-zero emissions manufacturing standards by CARB
ii Based on feasibility assessment study for cargo handling equipment
iii Number of schools to receive air filtration systems is dependent on amount of funding and funding sources