

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 warehouses for storage and sorting before reaching their final destination. Regional rail volumes are projected to more than double between 2012-2040 in response to growing international trade,¹ however the potential amount of growth at railyards in this community is unknown.

BNSF Railway Company (BNSF) and Union Pacific (UP) Railroad Company, operate many railyards² throughout California. There are five major railyards in the ELABHWC Emissions Study Area: Union Pacific Railroad Los Angeles Transportation Center Railyard (UP LATC Railyard), Union Pacific Commerce Railyard, BNSF Hobart Railyard, BNSF Commerce Eastern Railyard, and BNSF Sheila Mechanical railyard (see Figure 5-1 for a map of railyards in this community). There are also several additional smaller rail facilities operated by BNSF and UP, as well as stations and maintenance facilities for passenger rail services run by LA Metro, Amtrak, and Metrolink.

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 into and 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). Examples of equipment 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)
- 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), and
- Miscellaneous equipment (e.g., fuel trucks)

The Appendix provides additional information about on-road and off-road equipment and related emissions.

¹ Southern California Association of Governments, 2016 RTP, Goods Movement Appendix

² California Air Resources Board, Railyard Maps, March 2013,

<https://www.arb.ca.gov/railyard/community/map.htm>, Accessed May 1, 2019.

The CSC prioritized addressing air pollution from railyards in the CERP. Specifically, the CSC expressed concerns about diesel emissions from trains and other diesel equipment at the Union Pacific Railroad Los Angeles Transportation Center Railyard, Union Pacific Commerce Railyard, BNSF Hobart Railyard, BNSF Commerce Eastern Railyard, and BNSF Sheila Mechanical 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 lower or zero-emission yard trucks, capturing and controlling emissions from locomotive load testing), and ensuring that the replacement or repower of equipment is based on the cleanest technology commercially available.

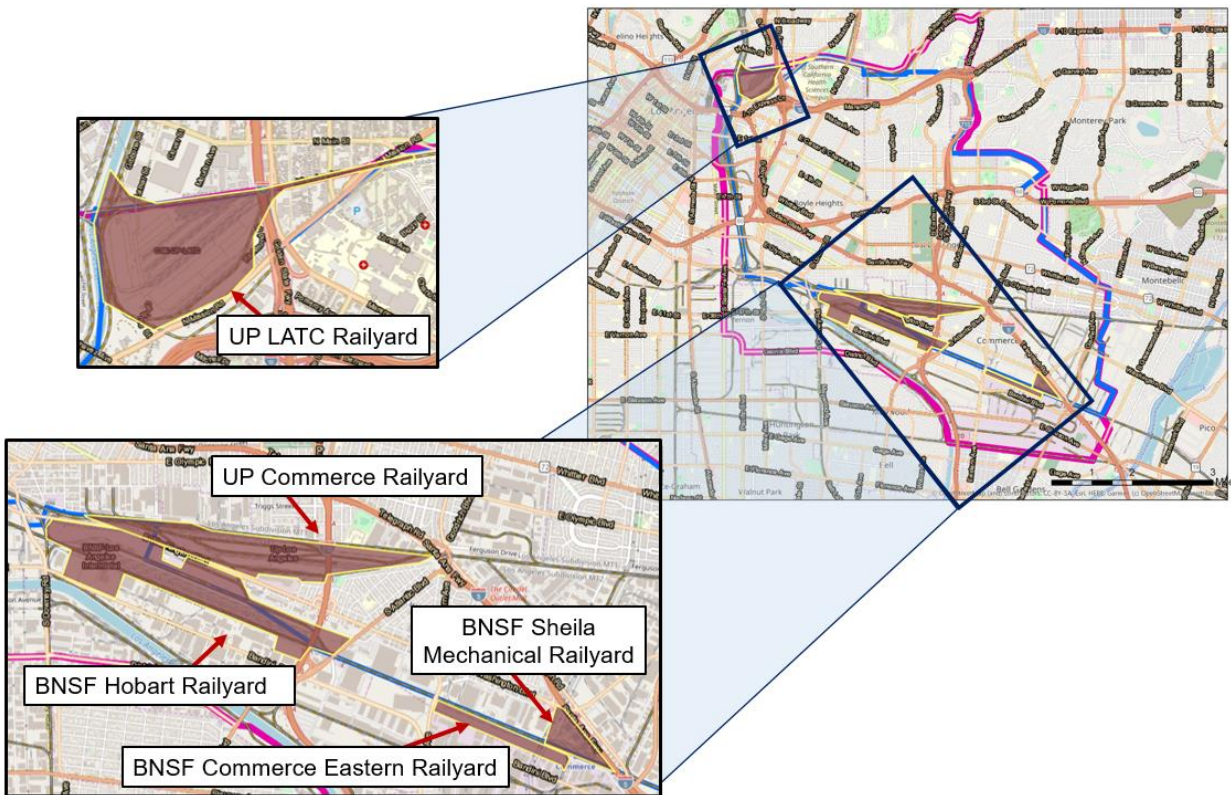


Figure 5-1. Five Railyards within the East Los Angeles, Boyle Heights, West Commerce Community

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

Railroads are regulated at the federal level primarily by the Federal Railroad Administration and the Surface Transportation Board. These agencies' regulatory authority preempt certain federal, state, and local regulatory authorities. However, the 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).³ This requirement also applies to certain locomotives that are remanufactured.⁴ These regulations limit idling for both new and remanufactured locomotives⁵ and mandate the use of ultra-low sulfur diesel fuel.⁶ However, these regulations do not require railroads to reduce their use of existing older, higher-emitting locomotives. In 2017, CARB also petitioned the U.S. EPA to develop a new regulation requiring engine manufacturers to meet a cleaner Tier 5 emission standard for new engines. The U.S. EPA has not yet acted on this petition.

State Actions (CARB)

CARB has two agreements⁷ 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 locomotives 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. 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 Regulation, Transportation Refrigeration Unit Regulation, and its Drayage Truck Regulation to begin the transition to zero-emission technology starting in 2026.⁸

South Coast AQMD

South Coast AQMD previously adopted rules⁹ that would have required railroads to reduce idling, conduct recordkeeping, and prepare emissions inventories and health risk assessments for railyards. However, the railroads sued the South Coast AQMD, and the courts determined that the rules cannot currently be enforced as the rules 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

³ U.S. EPA, Regulations for Emissions from Locomotives, <https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-emissions-locomotives>, Accessed May 1, 2019.

⁴ 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.

⁵ U.S. EPA, Control of Emissions from Idling Locomotives, <https://nepis.epa.gov/Exe/ZyPdf.cgi?Dockey=P100HP4Q.pdf>, Accessed May 1, 2019.

⁶ U.S. EPA, Diesel Fuel Standards and Rulemakings, <https://www.epa.gov/diesel-fuel-standards/diesel-fuel-standards-and-rulemakings#nonroad-diesel>, Accessed May 1, 2019.

⁷ California Air Resources Board, 1998 Tier 2 Fleet Average in the South Coast Air Basin Agreement: <https://www.arb.ca.gov/railyard/1998agree/1998agree.htm>

2005 Statewide Rail Yard Agreement: <https://www.arb.ca.gov/railyard/2005agreement/2005agreement.htm>

⁸ California Air Resources Board, <https://www.arb.ca.gov/gmp/sfti/sfti.htm>, Accessed June 5, 2019.

⁹ Regulation XXXV: <http://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/regulation-xxxv>

potential partnering strategies that could reduce emissions.¹⁰ The 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.

South Coast AQMD 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 locomotives¹¹ and cargo handling equipment¹² that is cleaner than required.

Identifying 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.

¹⁰ South Coast AQMD, Railyards & Intermodal Facilities Working Group, <http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/facility-based-mobile-source-measures/rail-fac-wkng-grp>, Accessed May 1, 2019.

¹¹ South Coast AQMD, Locomotives, [http://www.aqmd.gov/home/programs/business/carl-moyer-memorial-air-quality-standards-attainment-\(carl-moyer\)-program/locomotives](http://www.aqmd.gov/home/programs/business/carl-moyer-memorial-air-quality-standards-attainment-(carl-moyer)-program/locomotives), Accessed May 31, 2019.

¹² South Coast AQMD, Off-Road Compression-Ignition Equipment – Cargo Handling Equipment (CHE), [http://www.aqmd.gov/home/programs/business/carl-moyer-memorial-air-quality-standards-attainment-\(carl-moyer\)-program/che-off-road-compression-ignition-equipment](http://www.aqmd.gov/home/programs/business/carl-moyer-memorial-air-quality-standards-attainment-(carl-moyer)-program/che-off-road-compression-ignition-equipment), Accessed May 31, 2019.

Action 1: Reduce Emissions from Railyards

Course of Action(s):

- Continue to pursue strategies to reduce air pollution from railyards through the development of indirect source requirements and/or other measures, 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 like the California Energy Commission and the Public Utilities Commission to encourage the installation of infrastructure needed to fuel/charge zero emissions vehicles and equipment, and onsite equipment at the railyards
- Continue to support CARB’s petition¹³ to the U.S. EPA for new national locomotive emission standards
- Work with the railyards in the East Los Angeles, Boyle Heights, West Commerce community to replace diesel-fueled equipment with cleaner technologies¹⁴
- Conduct fenceline and/or mobile monitoring around railyards to identify activities that may cause increased levels of air pollution. Mobile measurements (and fixed monitoring, when appropriate) will extend into the community to assess how railyard related emissions may contribute to the overall air pollution burden in this community. Work with railyards in the East Los Angeles, Boyle Heights, West Commerce community to replace diesel fueled equipment with cleaner technologies¹⁵
- Use emissions inventory and monitoring information to identify opportunities for emission reductions

Strategies:

- Rules and Regulations
- Incentives
- Collaboration
- Monitoring

Goals:

- Provide bi-annual updates and engage the CSC on new requirements and/or other measures being developed by CARB and South Coast AQMD
- Provide quarterly or annual updates to the CSC on air monitoring results

¹³ California Air Resources Board, CARB Locomotive Petition to U.S. EPA, April 2017, <https://ww2.arb.ca.gov/resources/documents/carb-petitions-us-epa-strengthen-locomotive-emission-standards>, Accessed June 5, 2019.

¹⁴ 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> <http://www.cleanairactionplan.org/documents/draft-2018-feasibility-assessment-for-cargo-handling-equipment.pdf/>

¹⁵ 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>

<ul style="list-style-type: none"> • Replace XX pieces of diesel equipment at the railyards through incentive funding programs 	
Estimated Timeline:	
<ul style="list-style-type: none"> • In the second half of 2019, South Coast AQMD to conduct air monitoring at railyards and nearby communities • In 2020, South Coast AQMD to consider new ISR and/or other measures on railyards • Between 2020 and 2022, CARB to consider new regulations and/or other measures for locomotives • By 2020, CARB to consider amending its regulation for zero emissions refrigeration units (TRUs) • By 2022, CARB to consider amending its regulations for zero emission drayage trucks and cargo handling equipment 	
Implementing Agency, Organization, Business or Other Entity:	
Name:	Responsibilities:
South Coast AQMD	<ul style="list-style-type: none"> • Continue to pursue indirect source requirements and/or other measures for railyards, and improve community access to rule development process by holding a working group meeting in or near this community • Provide the CSC with updates on the development of indirect source requirements and/or other measures for railyards • Work with railroads to provide updates to the CSC on emission reduction progress within the Union Pacific Railroad Los Angeles Transportation Center Railyard (UP LATC Railyard), Union Pacific Commerce Railyard, BNSF Hobart Railyard, BNSF Commerce Eastern Railyard, and BNSF Sheila Mechanical Railyard • Allocate incentive funding to replace on-site diesel equipment with the cleanest technologies, based on commercial availability • Conduct air monitoring in communities near the railyards and provide updates to the CSC • Work with CARB to identify opportunities for new financial incentives in this community
CSC	Participate in the 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	<ul style="list-style-type: none"> • Pursue regulations and/or other measures to achieve additional emission reductions at railyards • Prioritize enforcement and identify opportunities for new financial incentives in this community

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References:

- For more information on Indirect Source Rule: <http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/facility-based-mobile-source-measures/rail-fac-wkng-grp>
- For more information on the Carl Moyer Program: <http://www.aqmd.gov/home/programs/business/business-detail?title=heavy-duty-engines&parent=vehicle-engine-upgrades>
- For more information on CARB's proposed regulations to reduce emissions from locomotives: <https://ww2.arb.ca.gov/resources/documents/evaluation-and-potential-development-regulations-reduce-emissions-locomotives>¹⁶
- [Additional information on CARB's actions to minimize community health impacts from freight and estimated timelines is available at :](https://www.arb.ca.gov/board/books/2019/032119/19-3-2pres.pdf) <https://www.arb.ca.gov/board/books/2019/032119/19-3-2pres.pdf>

¹⁶ California Air Resources Board, Evaluation and Potential Development of Regulations to Reduce Emissions from Locomotives, <https://ww2.arb.ca.gov/resources/documents/evaluation-and-potential-development-regulations-reduce-emissions-locomotives>, Accessed May 30, 2019.