

BOARD MEETING DATE: November 5, 2021

AGENDA NO. 9

REPORT: Execute Agreement with California High-Speed Rail Authority Setting Forth Framework for Development of Future Contract to Reduce Construction Emissions and Satisfy General Conformity for Burbank to Los Angeles Segment of California High-Speed Rail Project

SYNOPSIS: The California High-Speed Rail Authority must demonstrate General Conformity to receive federal funding through the Federal Railroad Administration's High-Speed Intercity Passenger Rail program. In order to demonstrate General Conformity, construction emissions must be below de minimis emissions thresholds. The California High Speed Rail Authority seeks to sign and execute a letter with the South Coast AQMD to agree to negotiate a future contract to reduce construction emissions and to provide funding to the South Coast AQMD for mitigation of the remaining emissions. The agreement would apply to the electrically-powered Burbank to Los Angeles Segment of California High-Speed Rail Project. This action is to approve execution of an agreement with the California High-Speed Rail Authority setting forth a framework for development of a future contract to reduce construction emissions for General Conformity for the Burbank to Los Angeles Segment of the California High-Speed Rail Project.

COMMITTEE: Administrative, October 8, 2021; Recommended for Approval

RECOMMENDED ACTION:

Authorize the Chairman to execute an agreement with the California High-Speed Rail Authority setting forth a framework for development of a future contract to reduce construction emissions for General Conformity for the Burbank to Los Angeles Segment of the California High-Speed Rail Project.

Wayne Nastri
Executive Officer

Background

The California High-Speed Rail Authority (Authority) is seeking federal grant funds through the Federal Railroad Administration for the construction of one segment of its passenger rail project, the Burbank to Los Angeles Segment. Under the federal General Conformity Rule (Title 40 Code of Federal Regulations Part 93, Subpart B), federal agencies must determine conformance of proposed projects that are federally funded or require federal approval with applicable air quality standards to ensure the federal action will not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emission reductions towards attainment. The construction emissions for the Burbank to Los Angeles Segment exceed General Conformity de minimis emissions thresholds and are subject to the General Conformity Rule. The Burbank to Los Angeles Segment is the first segment within the South Coast AQMD's jurisdiction that needs to satisfy general conformity in order to meet federal funding requirements, which is currently scheduled to be considered by the California High-Speed Rail Authority's Board of Directors meeting in January 2022. The agreement will be reviewed by the Federal Railroad Administration (FRA) and will be subject to FRA's final approval.

Request to Execute an Agreement

The California High-Speed Rail Authority is working with air districts within the state for letters of agreements to satisfy the general conformity requirements to be eligible for federal funding. Staff is seeking Board approval to execute a letter of agreement setting forth a framework for development of a future contract with the California High-Speed Rail Authority to commit to reducing construction emissions and to provide funding to the South Coast AQMD to mitigate all remaining construction emissions through incentive programs. This agreement is limited to the Burbank to Los Angeles Segment only and will not include the Palmdale to the Burbank Segment or the Los Angeles to Anaheim Segment, the latter of which includes the proposed BNSF Colton railyard.

Key elements of the agreement include:

- Commitment for both agencies to work together to ensure the lowest levels of construction emissions are generated through implementation of the California High-Speed Rail Authority's green construction policy and onsite mitigation measures with priority given first to the use of zero-emission technologies such as electric construction equipment and then to near-zero technologies;
- Commitment to completely mitigate all remaining emissions to zero through South Coast AQMD emission reduction programs, which may include state or federal incentive programs; and
- Commitment that California High-Speed Rail Authority will contribute funds for the selected emission reduction program(s) projects to achieve the necessary emission reductions and provide the South Coast AQMD actual administrative costs, including staffing to administer these emission reduction programs.

Based on the Draft Environmental Impact Report/Environmental Impact Statement for the Burbank to Los Angeles Segment, the estimated NOx emissions range from 12 to 22 tons per year during the first five years of construction. For informational purposes, based on a currently proposed cost-effective rate of \$200,000 per ton of NOx reduced for near-zero emission technologies and \$500,000 per ton of NOx reduced for zero-emission technologies by CARB¹, staff estimates that approximately \$18 million to \$46 million for the Burbank to Los Angeles Segment could be needed for staff to implement emission reduction projects to address construction emissions for this segment.

Resource Impacts

The South Coast AQMD will administer the emission reduction projects and verify the successful implementation, which includes administrative and staffing costs. The Authority agrees to provide funding for the South Coast AQMD actual administrative costs. Respective responsibilities between the High-Speed Rail Authority and the South Coast AQMD in that effort and related emissions quantification/verification needs will be defined in a contractual agreement closer to the start of actual construction, which will be brought to the Board for approval.

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¹ California Air Resources Board. November 19, 2021. Available at: https://ww2.arb.ca.gov/sites/default/files/2021-09/2017_g1_chapter_4%20strikeout%20Proposed%20Changes%20092421%20%28ADA%20Hearing%20Notice%20Attachment%29.pdf.

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GENERAL CONFORMITY DETERMINATION LETTER, OCTOBER 2021

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General Conformity Determination Letter, October 2021

October 19, 2021

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

Re: General Conformity for the Burbank to Los Angeles Section of California High-Speed Rail

Dear South Coast AQMD,

Thank you for your active participation with the California High-Speed Rail Authority (Authority) to address the General Conformity requirements of the California High-Speed Rail Burbank to Los Angeles Project Section of the California High-Speed Rail (HSR) System, which is located within the jurisdiction of the South Coast Air Quality Management District (South Coast AQMD or District). The High-Speed Rail (HSR) System will provide intercity, high-speed service on more than 800 miles of guideway throughout California, connecting the major population centers of Sacramento, the San Francisco Bay Area, the southern Central Valley, Los Angeles, the Inland Empire, Orange County and San Diego.

Air Quality and Public Health Benefits of the High-Speed Rail System

The HSR System will use 100 percent renewable electrically-powered, zero emission high-speed trains and is identified in the California Air Resources Board's 2017 Scoping Plan as part of a sustainable statewide transportation system necessary to achieve the state's climate goals. With HSR, the Authority states that total statewide greenhouse gas (GHG) emissions in 2040 would be less than 2015 GHG levels, with HSR predicted to help achieve that goal by reducing 2040 GHG emissions by approximately 1.1 to 1.7 million metric tons. The Authority also states that the HSR System would result in a net reduction of criteria pollutant emissions. Phase 1 of the HSR System, which consists of distinct sections from San Francisco in the north to Los Angeles and Anaheim in the south, is expected to result in reductions to nitrogen oxides (NOx) emissions of approximately 1,140-1,150 tons per year, particulate matter (PM) emissions of approximately 500-700 tons per year, and reactive organic gases (ROG) emissions of 130-150 tons per year compared to the No HSR System Project Alternative in 2040.

As part of its first phase, the Burbank to Los Angeles Project Section (also referred to as the Project) is critical to bringing the HSR System to Southern California. Operation of the HSR System within the South Coast region would result in a net regional decrease in emissions of criteria pollutants and associated public health impacts, and emission levels would be less than the general conformity *de minimis* levels. This overall net decrease in operational emissions would help the South Coast Air Basin (Basin) meet its attainment goals of federal ambient air quality standards for Ozone (O₃) by reducing precursor emissions of NOx, ROG and PM and will result in long-term air quality and public health benefits.

However, the construction of the HSR System is expected to result in a net increase in criteria pollutant emissions of NOx beyond *de minimis* thresholds during construction years. As such,

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the Authority and the South Coast AQMD have agreed to the commitments in this letter to track and mitigate construction emissions from the Project to meet General Conformity Requirements.

General Conformity Rule

The General Conformity Rule, as codified in Title 40 Code of Federal Regulations Part 93, Subpart B, establishes the process by which federal agencies determine conformance of proposed projects that are federally funded or require federal approval with applicable air quality standards. This determination must demonstrate that a Proposed Project would not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions towards attainment. The Authority, as the Project proponent, is receiving federal grant funds through the Federal Railroad Administration's (FRA) High-Speed Intercity Passenger Rail program. The Project may also receive FRA safety approvals. Because of the federal funding and potential safety approvals, the Project in relation to the Burbank to Los Angeles Section of the HSR System is subject to the General Conformity Rule; and because construction-phase emissions (without mitigation) would exceed General Conformity *de minimis* emission thresholds, the Project is not exempt and must demonstrate conformity.

Emission Reductions vs. Emission Mitigation

The Authority has not yet secured construction funding for the Burbank to Los Angeles Section of the HSR System and has not yet set a firm construction schedule for this section. The Authority explains that the emission numbers provided in the Authority's EIR/EISs are reasonable estimates based on the available information to date. The methodology used in creating these estimates is similar to what was used for estimating the emissions for the Merced to Fresno and Fresno to Bakersfield project section environmental documents. After seven years of construction in the central valley it has become clear that the estimates in the EIR/EIS are conservative and actual emissions from construction are currently lower than estimates by 50-70%. It is therefore difficult for the Authority to currently engage with South Coast AQMD on implementing available or future mechanisms for the reduction of construction emissions. While the construction schedule has not been firmly established for this section, the Authority agrees with South Coast AQMD's encouragement to reduce emissions locally by avoiding and minimizing emissions from construction, before funding incentive programs to fully mitigate remaining construction emissions.

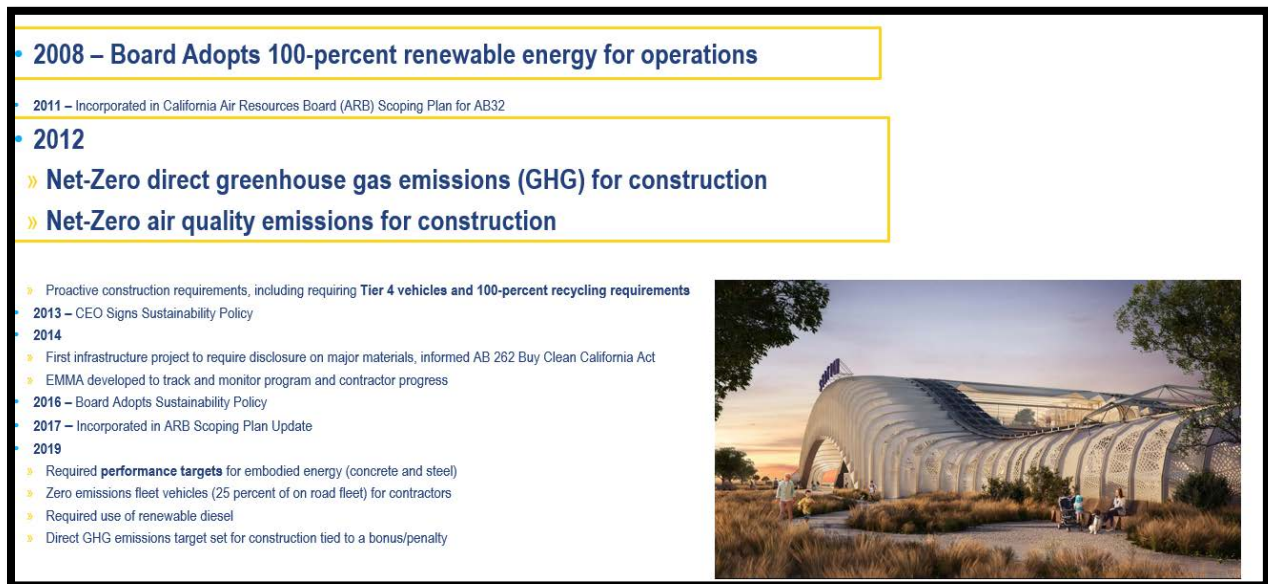
The Authority has a long history of being proactive towards reducing construction emissions. As shown in

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Figure 1, the Authority has continually updated its policies and procedures to ensure that the project embraces and pushes the boundaries towards reducing emissions.

Figure 1 - History of Environmental Commitments Designed to Reduce Emissions



Impact Avoidance and Minimization Features

Avoiding and minimizing emissions is a strategy that is consistent with the net-zero greenhouse gas objectives of the Authority’s Sustainability Policy. As such, based on the Draft Environmental Impact Report/Draft Environmental Impact Statement, the Authority has incorporated the following Impact Avoidance and Minimization Features (IAMFs) into the Burbank to Los Angeles Section of the HSR System:

- **AQ-IAMF#2: Selection of Coatings:** The contractor would use lower VOC content paint than that required by South Coast AQMD Rule 1113.
- **AQ-IAMF#4: Reduce Criteria Exhaust Emissions from Construction Equipment:** All heavy-duty off-road construction diesel equipment used during the construction phase would meet Tier 4 engine requirements.

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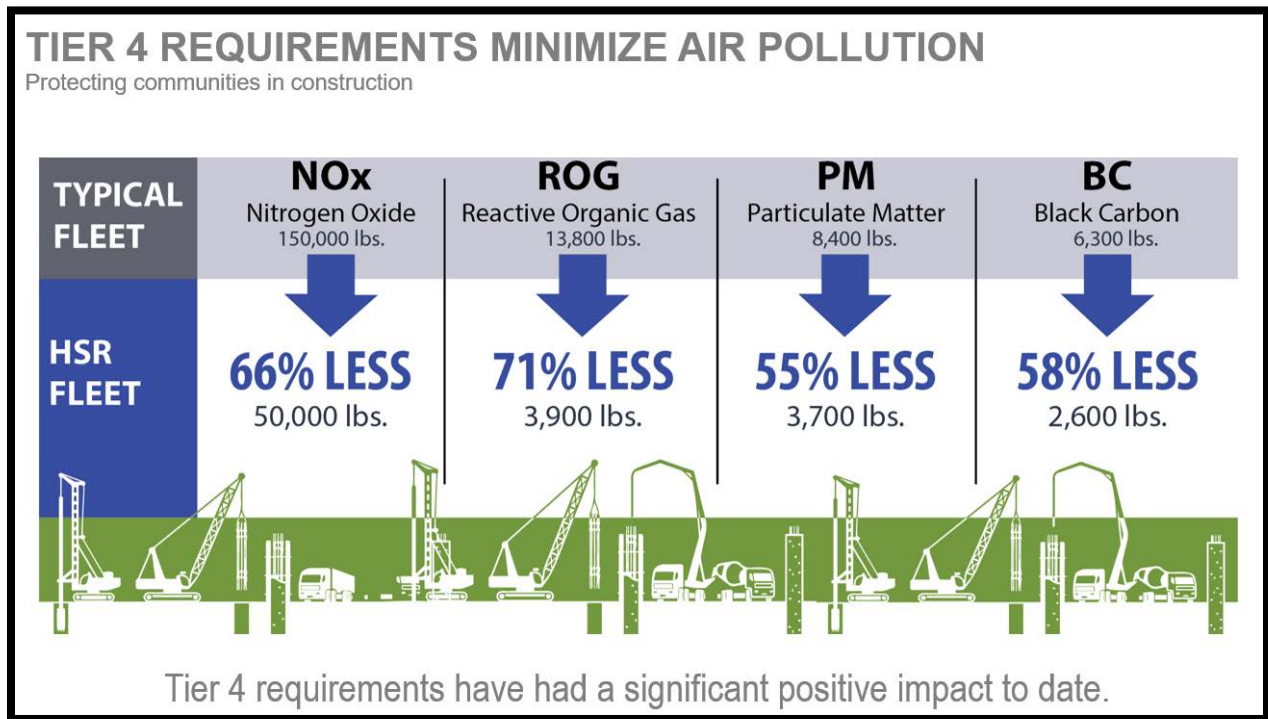
- **AQ-IAMF#5: Reduce Criteria Exhaust Emissions from On-Road Construction Equipment:** All on-road trucks would consist of model year 2010 or newer.
- **AQ-IAMF#6: Reduce the Potential Impact of Concrete Batch Plants:** The contractor would prepare a technical memorandum documenting the concrete batch plant siting criteria, including locating the plant at least 1,000 feet from sensitive receptors, and utilization of typical control measures.
- **AQ-IAMF#1: Fugitive Dust Emissions:** The contractor would employ several control measures to minimize and control fugitive dust emissions and prepare a fugitive dust control plan for each distinct construction segment.
- **AQ-IAMF#3: Renewable Diesel:** The contractor would use renewable diesel fuel to minimize and control exhaust emissions from all heavy-duty diesel-fueled construction diesel equipment and on-road diesel trucks.

According to the Authority, these IAMFs have helped to reduce the construction emissions generated by the HSR project sections that are located outside the South Coast AQMD's jurisdiction. For example, Figure 2 highlights the significant criteria pollutant emission reductions demonstrated by the project due to the IAMF#4.

Figure 2 - Emission Savings due to Tier 4 Equipment in 2020

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Mitigation Measures

The Authority is continually incorporating mitigation measures that would reduce the generation of construction emissions in construction contracts and practices. For example, the Authority recently incorporated the following mitigation measure into the environmental documentation and is already incorporating portions of this measure into existing contracts.

AQ-MM - Construction Emissions Reductions – Requirements for use of Zero Emission (ZE) and/or Near Zero Emission (NZE) vehicles and off-road equipment

This mitigation measure would reduce the impact of construction emissions from the use of on-road vehicles and off-road equipment for the Burbank to Los Angeles Section of the HSR System. All remaining emissions after implementation of this measure would be mitigated with emission reduction programs required under Mitigation Measure AQ-MM#1.

The Authority and all project construction contractors shall require that by the start of construction a minimum of 25 percent, with a goal of 100 percent, of all light-duty on-road vehicles (e.g., passenger cars, light-duty trucks) associated with the construction activities for the Burbank to Los Angeles Section of the HSR System (e.g., on-site vehicles, contractor vehicles) use zero emission (ZE) or near-zero emission (NZE) technology.

The Authority and all project construction contractors shall have the goal that by the start of construction a minimum of 25 percent of all heavy-duty on-road vehicles (e.g., for

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hauling, material delivery and soil import/export) associated with the construction activities for the Burbank to Los Angeles Section of the HSR System use ZE or NZE technology.

The Authority and all project construction contractors shall have the goal that by the start of construction a minimum of 10 percent of off-road construction equipment be ZE which includes electric technologies or NZE during the construction activities for the Burbank to Los Angeles Section of the HSR System.

If local or state regulations mandate a faster transition to ZE and/or NZE vehicles and off-road equipment at the time of construction for the Burbank to Los Angeles Section of the HSR System, the more stringent regulations will be required and applied. For example, Executive Order (EO) N-79-20 currently states the following:

- Light duty and passenger car sales be 100% ZEV by 2035
- Full transition to ZEV short haul/drayage trucks by 2035
- Full transition to ZEV heavy-duty long-haul trucks, where feasible, by 2045
- Full transition to ZE off-road equipment by 2035, where feasible.

The Authority has a goal of surpassing the requirements of these or other future regulations as a mitigation measure.

The Authority claims that it already mandates that all such equipment meet the highest emission standard codified by the U.S. Environmental Protection Agency (EPA) —Tier 4. This has had a significant positive impact on emission reductions, as 172,000 pounds of criteria air pollutants to date would have otherwise been released. This implementation strategy will go further, mandating that by 2030, 10 percent of off-road equipment be ZEV, not just Tier 4, at start of construction, and sets the goal of 100 percent ZEV for such equipment by 2035.

This is the most recent step the Authority is taking to ensure California High-Speed Rail System is the greenest infrastructure project in both operation and construction. The Authority has captured or avoided more than 180,000 tons of greenhouse gas emissions through planting more than 6,000 trees and other forest projects. The HSR System has also prevented more than 180,000 tons of construction materials from being sent to landfills with its 97 percent construction waste recycling rate.

The Authority will continue to work with contractors to encourage and mandate the use of ZE vehicles and off-road equipment. In addition, the Authority will encourage contractors to utilize available tools that will aid decision makers in their purchases of new equipment and include the use of ZE technologies in applicable bid documents, purchase orders, and contracts with contractors. For example, a current tool that the Authority has presented to contractors is Argonne National Laboratory's Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool (<https://greet.es.anl.gov/afleet>). This tool examines both the

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environmental and economic costs and benefits of alternative fuel and advanced vehicles and provides output to the user quantifying specific case scenarios based on user input (Figure 3).

Figure 3 - AFLEET Sample Output

Annual Simple Payback Calculator Output - Energy Use and Emissions						
	Gasoline	Diesel	Gasoline HEV	Gasoline PHEV	Gasoline EREV	EV
Annual Well-to-Wheels Petroleum Use (barrels)						
Small Equipment Petroleum Use						
Large Equipment Petroleum Use						
Annual Well-to-Wheels GHGs (short tons)						
Small Equipment GHGs						
Large Equipment GHGs						
Annual Vehicle Operation Air Pollutants (lb)						
Small Equipment - Commercial Turf Equipment						
CO						
NOx						
PM10						
PM2.5						
VOC						
SOx						
Large Equipment - Forklifts						
CO						
NOx						
PM10						
PM2.5						
VOC						
SOx						

Future Steps

The Authority will continue to pursue construction methods, materials and equipment that will reduce the generation of air pollutants. Even with these measures however, some pollution will be emitted during the construction phase. To ensure that the Burbank to Los Angeles Section of the HSR System meets all the General Conformity requirements, the following steps will be taken once construction funding is established.

- A construction schedule will be developed.
- Based on the new schedule, a construction plan will be developed and analyzed to determine the emission burdens generated by construction.

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- At the time of the analysis, the IAMFs and mitigation measures will be revisited and updated as discussed above, and in consultation with the South Coast AQMD, to include technologies and methodologies that were not considered in the earlier analysis. This review and implementation of updated measures will aid the Burbank to Los Angeles Section of the HSR System in reducing the generation of emissions due to construction.
- Once emission estimates are calculated using the revised IAMFs and mitigation measures, it will be determined if the estimates are above the applicable General Conformity *de minimis* thresholds.
- The South Coast AQMD will be notified via email or letter of the emission levels and consulted to determine if emission reduction programs could be applied as needed prior to the start of construction activities for the Burbank to Los Angeles Section of the HSR System.
- If emission reduction programs are required, the Authority will present a detailed plan, developed with the South Coast AQMD, to ensure that the program has in place a procedure to adequately account for and reduce emissions generated by the Burbank to Los Angeles Section of the HSR System. The emission accounting program the Authority currently uses to track emissions for the segments currently being constructed will be presented as a possible mechanism to quantify the construction emissions generated by the Burbank to Los Angeles Section of the HSR System.

Emissions Tracking and Mitigation

The Authority has stated its intent to reduce and/or mitigate construction emissions in the environmental document for the Burbank to Los Angeles Section of the HSR System in the mitigation section of the EIR/EIS with the following mitigation measure:

AQ-MM: Mitigate Project Construction Emissions through Off-Site Emission Reduction Programs—The Authority will enter into contracted agreements with the South Coast AQMD to mitigate projected emissions from construction equipment and vehicle exhaust emissions of volatile organic compound (VOC), and Oxides of Nitrogen (NO_x) from construction activities for the Burbank to Los Angeles Section of the HSR System, based on calculations presented to the South Coast AQMD after receipt by the Authority of construction funding but prior to the start of construction.

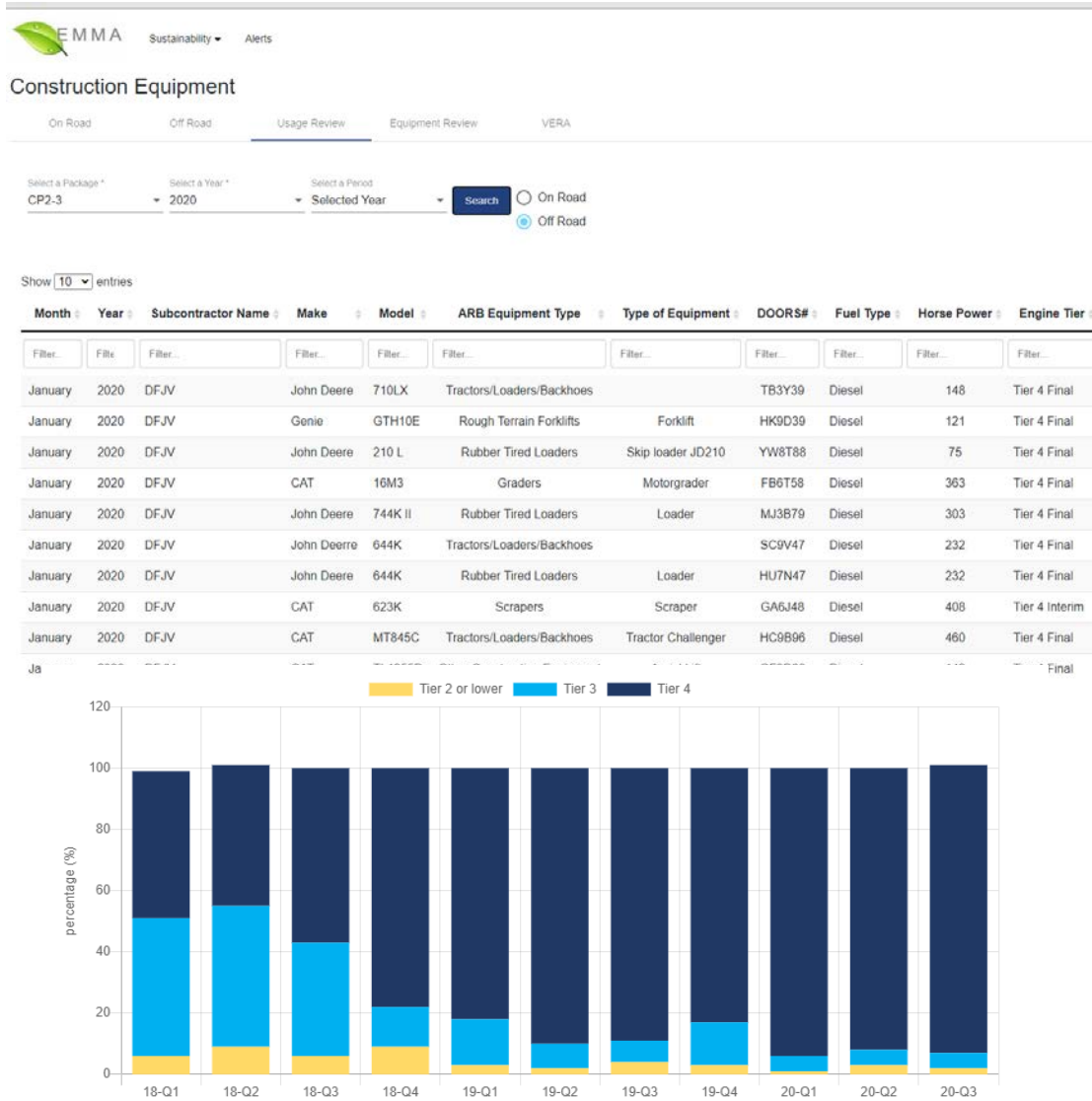
The Authority currently mitigates emissions in the San Joaquin Valley through a Voluntary Emission Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District (SJVAPCD). Through the use of the Environmental Mitigation Management Application (EMMA) tool, developed by the Authority, construction activity is input by the contractor and applicable emission rates are applied to calculate the emission burdens generated by off-road and on-road construction equipment and activity. Figure 4 highlights some of the

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data input and calculated through EMMA. As previously noted, actual emission burdens have been significantly lower than the burdens estimated in the corresponding EIR/EIS.

Figure 4 - EMMA tracking tool – Sample data and Infographics



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Conclusion

The Authority is committed to serving as a model of sustainable development. The HSR System was recently recognized with a Platinum Envision level award. The Platinum Envision award achieved by the Authority and its program partners demonstrates that sustainability is achievable across large-scale and complex transportation systems.

Given the documented history of the HSR System's successful implementation of emission reduction strategies that the Authority has demonstrated for sections outside the South Coast AQMD's jurisdiction, the robust emission tracking and mitigation program, along with the Authority's vision for the California High-Speed Rail System being the greenest infrastructure project in operation and construction in the country, it is the Authority's firm commitment to partner with the air district to ensure that all General Conformity requirements are met.

By signing this letter, the South Coast AQMD agrees to work with the Authority, using available mechanisms as appropriate, to reduce construction emissions and satisfy General Conformity for the Burbank to Los Angeles Section of the HSR System.

- The Authority will work with the South Coast AQMD in order to ensure that the lowest levels of construction emissions are generated through the use of IAMFs and mitigation measures outlined in this document and rolling review of best available technologies, with priority given first to the use of zero emission (ZE) technology such as electric construction equipment and then to near-zero emission (NZE) technology.
- After receipt of construction funding but prior to construction start, the Authority will review emission estimates, revise if warranted, and present a final estimate for review and use by the District for purposes of emission reduction contributions and monitoring for the Burbank to Los Angeles Section.
- If emissions exceed General Conformity *de minimis* thresholds, all remaining emissions after implementation of the IAMFs and onsite mitigation measures will be completely mitigated to zero through the District's emission reduction programs. Applicable emission reduction programs may include state or federal incentive programs that achieve emissions reductions by providing incentive funds for the incremental cost of cleaner than required engines and equipment. The Authority agrees to provide funding at the cost-effectiveness level or amount established by the program(s) mutually selected by the District and the Authority.
- After receipt of construction funding but prior to construction start, the Authority and the District will enter into a contractual agreement to fully mitigate construction emissions exceedances to zero for the Burbank to Los Angeles Section, as required by General Conformity regulations, by providing funds for the selected emission reduction program(s) to fund grants for projects that achieve the necessary emission reductions.
- The Authority and the District will work together to identify opportunities and mechanisms to prioritize use of Authority funds for emission reductions local to where

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the construction activities for the Burbank to Los Angeles Section takes place; and, to the extent local emission reductions are unavailable, the parties will work together to develop other strategies.

- The Authority will contribute to the District’s actual costs of administration for implementation of the necessary emissions reductions for the HSR Burbank to Los Angeles Section, and the District will seek and implement the necessary emission-reduction measures, using Authority funds;
- The District will serve in the role of administrator of the emission reduction projects and verifier of the successful mitigation effort; respective Authority and District responsibilities in that effort and related emission quantification/verification needs will be defined in a contractual agreement.
- The commitments in this letter are independent of any requirements related to any future District facility-based mobile source measure regulating freight rail yards or other, similar non-zero emission rail operations.
- The contractual agreement developed pursuant to this letter will be limited to the HSR System’s Burbank to Los Angeles Section general conformity determination.

Thank you for your continuing partnership with the Authority to advance the California High-Speed Rail System.

Ben Benoit, Chair
South Coast AQMD

Brian Kelly, CEO
California High Speed Rail Authority

Date:

Date: