November 19, 2021

Nicole Moore
Senior Planner
City of Stockton Community Development Department
345 N. El Dorado
Stockton, California 95202
nicole.moore@stocktonca.gov

Dear Nicole Moore:

Thank you for providing the California Air Resources Board (CARB) with the opportunity to comment on the South Stockton Commerce Center Specific Plan (Project) Draft Environmental Impact Report (DEIR), State Clearinghouse No. 2020090561. The Project is proposed within the City of Stockton (City), California, which is the lead agency for California Environmental Quality Act (CEQA) purposes. The Project proposes the development of up to 6,091,551 square feet of industrial type land uses and 140,350 square feet of commercial land uses on approximately 422 acres of land. Once in operation, the Project is expected to generate approximately 22,633 daily vehicle trips, including 5,552 daily heavy-duty truck trips, along local roadways.

CARB submitted a comment letter, which is attached to this letter, on the Notice of Preparation (NOP) for the DEIR released in September 2020. CARB comments dated November 17, 2020, highlighted the need for preparing a health risk assessment (HRA) for the Project and encouraged the City and applicant to implement all existing and emerging zero emission technologies to minimize exposure to diesel particulate matter (diesel PM) and nitrogen oxides (NOx) emissions for all neighboring communities, and to minimize the greenhouse gases that contribute to climate change. Due to the Project's proximity to residences already disproportionately burdened by multiple sources of pollution, CARB's comments on the NOP expressed concerns with the potential cumulative health risks associated with the construction and operation of the Project. CARB reviewed the DEIR and has the following concerns:

The City Uses Inappropriate Trip Lengths When Modeling the Project's Air Quality Impacts from Mobile Sources

The Project's operational mobile source air pollutant emissions may have been underestimated in the DEIR by using vehicle trip lengths unsupported by substantial evidence. The Project's operational air pollutant emissions were estimated using the California Emissions Estimator Model (CalEEMod). Based on CARB's review of the CalEEMod outputs found in Appendix B.1 (CalEEMod Ouputs) of the DEIR, the City relied on CalEEMod vehicle trip length defaults to estimate the Project's mobile source air pollutant emissions. After applying these defaults, 59 percent of the Project's total vehicle trips would have a

travel distance of 9.5 miles and 41 percent of the Project's total vehicle trips would have a travel distance 7.3 miles.

The DEIR does not specify the distance workers and truck drivers would need to travel to operate the proposed industrial development. The Project is located within a short distance from the Port of Stockton and other industrial warehouses, which the Project could serve. However, the heavy-duty trucks transporting goods to the proposed industrial uses could travel greater distances, such as Port of Oakland or Port of Point San Pablo. Unless the City restricts the Project's truck trip distances to those specified in the Project's air quality analysis, the City must remodel the Project's air quality impacts assuming a truck trip distance supported by substantial evidence.

The DEIR Did Not Account for Air Pollutant Emissions from Heavy Duty Trucks During On-Site Grading

The DEIR did not account for mobile source air pollutant emissions from heavy-duty trucks during the Project's construction grading phase. The Project's description does not specify if the Project would require the export or import of soil to level the side. Also, based on CARB's review of the CalEEMod outputs, found in Appendix B.1 (CalEEMod Outputs) of the DEIR, the City assumed that no heavy-duty truck trips would be required to import or export soil during the on-site grading. However, some of the mitigation measures presented in the DEIR seems to suggest that heavy-duty trucks would be required Project's construction grading phase. For example, Mitigation Measures 3.3-4 requires all heavy-duty trucks leaving the Project site during construction phase to be fully covered, which suggests heavy-duty trucks will be required to either import or export soil from the Project site. If soil must be imported or exported to grade the Project site, the truck trips needed to accomplish that must be accounted for.

The City must remodel the Project's construction air pollutant emissions using accurate heavy duty truck trip estimates. Residences and other sensitive receptors (e.g., daycare facilities, senior care facilities, and schools) located near construction haul routes could be exposed to diesel exhaust emissions that were not evaluated in the DEIR. The FEIR should clearly state the total number of heavy-duty truck trips expected during Project construction so the public can fully understand the potential environmental effects of the Project on their communities.

The DEIR Does Not Analyze Potential Air Quality Impacts from the Project's Transport Refrigeration Units

Although the HRA prepared for the Project evaluated cancer risks from the operation of onsite and off-site TRUs, the City and applicant did not model and report air pollutant emissions from TRUs in the DEIR. The air pollutant emission estimates, found in Table 3.3-6 (Operational Project Generated Emissions) of the DEIR, were modeled using CalEEMod. Although CalEEMod can estimate air pollutant emissions from area, energy, and mobile sources, the current version of CalEEMod does not account for air pollutant emissions from

TRUs. Since a portion of the Project will be used for cold storage, CARB urges the City and applicant to model and report the Project's air pollution emissions from TRUs using CARB's latest emission factors. As indicated above, the City and applicant should assume that a conservative percentage of the Project's truck fleet is equipped with TRUs, as well as a conservative idling duration for each TRU.

The Health Risk Assessment Used Inappropriate Assumptions When Modeling the Project's Health Risk Impacts

The HRA prepared for the Project and presented in Appendix B.3 (Health Risk Assessment) of the DEIR, concluded that residences near the Project site would be exposed to diesel PM emissions that would result in cancer risks of 1.09 chances per million during Project operation. Since the Project's cancer risks are below the San Joaquin Valley Air Pollution Control District's (SJVAPCD) significance threshold of 20 chances per million, the DEIR concluded that the Project would result in a less than significant impact on public health. CARB has reviewed the Project's HRA and is concerned that the Project's cancer risk impacts may have been underestimated for the reasons detailed below.

The cancer risk impacts presented in the HRA should have been based on PM10 idling emissions factors obtained from the latest version of CARB's Emission Factors model (EMFAC). As shown in Table 2 (Emission Source Assumptions) of the HRA, the City used a 0.0035 grams per hour PM10 idling emission factor to calculate the cancer risk impacts while trucks are idling within the Project site. This PM10 idling emission factor was based on idling test data found in the EMFAC2014 Technical Documentation Guidebook. Since the public release of EMFAC2014 in May 2015, CARB has made many updates to the EMFAC model and has released two updated versions: EMFAC2017, released in May 2018, and EMFAC2021, released in January 2021. Some of the updates to the EMFAC model included updates to the heavy-duty truck activity and emission rates, and implementation of CARB's latest regulations. EMFAC2014 underestimated diesel PM emission rates from diesel heavy-duty trucks due to limited in-use test data for engine model year 2010 and newer, thus the Project's mobile source diesel PM emissions are likely underestimated in the DEIR. CARB urges the City and applicant to model and report the Project's air pollution emissions from mobile sources using emission factors found in CARB's latest EMFAC2021. Emission factors can be easily obtained by running the EMFAC2021 Web Database: *https://arb.ca.gov/emfac/emissions-inventory*.

The HRA assumed all TRUs visiting the Project site would not idle longer than 15 minutes. Data obtained by CARB staff indicates that TRUs can operate for as long as two hours per visit, which is well above the 15-minute duration assumed in the HRA. Unless the applicant and City restrict TRU idling durations to less than 15 minutes, the Project's HRA should be revised to assume a TRU idling duration legitimized by substantial evidence.

The HRA prepared for the warehouse/logistics center cold storage scenario assumed 15 percent of the Project's total daily heavy-duty truck traffic would consist of trucks equipped

with TRUs. It is unclear in the HRA how this estimate was derived. Due to the large size of the proposed warehouse development, CARB is concerned that the number of TRUs visiting the Project site may be underestimated in the HRA. CARB urges the City and applicant to provide substantial evidence to support this assumption.

The HRA assumed the TRUs accessing the Project site would have an average power rating of 34 hp. TRUs with a power rating of less than 25 hp have a higher PM emission rate (0.3 g/bhp-hr) than those greater than 25 hp (0.02 g/bhp-hr). Unless the applicant and City prohibit TRUs with a power rating of less than 25 hp from accessing the Project site, the Project's HRA should be revised. The revised HRA should assume a conservative percentage of the TRUs entering the Project site have a power rating of less than 25 hp, legitimized by substantial evidence.

The HRA did not evaluate cancer risk impacts from trucks and trucks with TRUs traveling along local roadways. According to the Project's description, a roadway named Commerce Drive will be constructed through the Project site. This roadway will connect the Project site to Airport Way and State Route 99. There are residences located adjacent to Airport Way that will be expose to diesel PM emissions from trucks and trucks with TRUs traveling to and from the Project site that has the potential to result in a potentially significant cancer risk impact. To fully understand the Project's impact on public health, the revised HRA should evaluate potential cancer risks along local roadways serving the Project site.

Although the HRA did model cancer risk impacts at residences located south and southwest of the Project site, the HRA did not model cancer risk impacts at residences located west of the Project site, across form Airport Way. To fully understand the Project's public health impacts, the HRA should evaluate cancer risks at all residences near the Project.

The City did not evaluate the Project's potential cancer risks impacts in the HRA or provide any other quantitative or qualitative analysis to evaluate the Project's potential impact on public health during its construction. The Office of Environmental Health Hazard Assessment's (OEHHA) guidance, recommends assessing cancer risks for construction projects lasting longer than two months.[1] According to the Chapter 3.3 (Air quality) of the DEIR, the construction of the project would begin in 2021 and last for nearly two decades (i.e., 2040), which is beyond the construction duration that would require a project to prepare a construction HRA. To fully understand the Projects potential impacts on public health, the HRA should be revised to evaluate the Project's construction cancer risk impacts.

Since the Project is expected to be built out over a period lasting two decades, it is likely that portions of the Project could be build out and operational while other portions of the Project site is still being constructed. If this overlap is anticipated to occur, residences near the Project would be exposed to diesel PM emissions from onsite construction equipment and

1 Office of Environmental Health Hazard Assessment (OEHHA). Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. February 2015. Accessed at: *https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf*

heavy-duty trucks serving the proposed industrial development that were not accounted for in the Project's HRA. To account for this potential overlap, the City must evaluate the combined cancer risk impacts from the combined construction and operation of the Project. If no overlap is expected to occur, the FEIR must include a project design measure that prohibits the operation of any industrial uses until the Project is completely built out in the year 2040.

Lastly, the HRA modeled the Project's cancer risk impacts using mobile emission factors obtained from EMFAC2017 assuming a 2040 operational year. The mobile PM10 emission factors in EMFAC will be lower in future years due fleet turnover and the development of cleaner vehicles with lower emissions over time. If a large portion of the proposed industrial development is anticipated to be operational sooner than 2040, such as 2025 or 2030, the mobile emission factors used to model the Project's cancer risk impacts could be underestimated. To conservatively estimate the Project's impact on public health, the cancer risks presented in the revised HRA should be based on mobile emission factors that take into account for early operational years.

The City Must Include Additional Mitigation Measures to Minimize the Project's Significant and Unavoidable Impact on Air Quality

Chapter 3.3 (Air Quality) of the DEIR concludes that nitrogen oxides (NOx) emitted during Project construction and volatile organic compounds (VOC) and NOx emitted during Project operation would exceed the SJVAPCD's significance thresholds. To reduce the Project's impact on air quality, the DEIR included five mitigation measures (MM 3.3-1 through MM 3.3-5). These mitigation measures include requiring the applicant to comply with SJVAPCD's Rule 9510 to mitigate the Project's operational air pollutant emissions, and Rules 8011 through 8081 to mitigate the Project's construction fugitive dust emissions. These measures also require the Project applicant to implement dust control practices identified in the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) to further reduce emissions of fugitive dust emitted during the construction of the Project. After complying with all SJVAPCD's Rules, the City concluded in the DEIR that the Project's impact on air quality would remain significant and unavoidable.

Although complying with local air district rules would reduce the Project's air pollutant and fugitive dust emissions, these rules should not be exclusively relied on to mitigate the Project's impact on air quality. In the DEIR, the City states that the Project would comply with SJVAPCD Rule 9510. This rule requires the applicant to reduce the Project's operational NOx and PM10 emissions by 33.3 and 50 percent, respectively. This rule also requires the applicant to reduce the Project's construction NOx and PM10 emissions by 20 and 45 percent, respectively. To achieve these reductions, the applicant will need to pay into an off-site mitigation fund managed by the SJVAPCD for any emission reductions required by the rule that are not achieved through on-site emission reductions. The City must explain in the DEIR how the rule will achieve the desired emission reductions after all feasible mitigation measures are implemented. The City must list all the Project design features and mitigation

measures that would reduce the Project's operational air pollutant emissions and the amount of money the applicant will pay into SJVAPCD's off-site mitigation fund.

Under CEQA, Projects that will have a significant and unavoidable impact on the environment must implement all feasible mitigation measures to reduce those impacts (see California Public Resources Code§ 21081; 14 CCR§ 15126.2(b)). Based on CARBs review of the DEIR, the City has failed to meet this requirement under CEQA. To meet the minimum requirements of CEQA and protect public health, the City must include meaningful and project-specific mitigation measures in the FEIR to reduce the Project's air pollutant emissions. Appendix A of this letter contains a list of feasible measures that can be applied to the Project to minimize air pollution. The mitigation measures in the FEIR must be fully enforceable and imposed by the City.

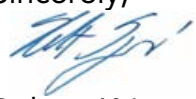
Conclusion

CARB is concerned about the potential public health impacts should the City approve the Project and how those impacts were evaluated in the DEIR. The Project's air quality impact analysis and conclusions are based on heavy-duty truck trip distances and mixes that were not supported by substantial evidence. The DEIR did not account for air pollutant emissions from haul truck trips during onsite grading or trucks with TRUs during Project operation. The cancer risk impacts presented in the Project's HRA were based on unsubstantiated evidence. Lastly, the City did not include meaningful and project-specific mitigation measures in the DEIR to reduce the Project's significant and unavoidable impact on air quality.

Given the breadth and scope of projects subject to CEQA review throughout California that have air quality and greenhouse gas impacts, coupled with CARB's limited staff resources to substantively respond to all issues associated with a project, CARB must prioritize its substantive comments here based on staff time, resources, and its assessment of impacts. CARB's deliberate decision to substantively comment on some issues does not constitute an admission or concession that it substantively agrees with the lead agency's findings and conclusions on any issues on which CARB does not substantively submit comments.

CARB appreciates the opportunity to comment on the DEIR for the Project and can provide assistance on zero-emission technologies and emission reduction strategies, as needed. Please include CARB on your list of selected State agencies that will receive the FEIR. If you have questions, please contact Stanley Armstrong, Air Pollution Specialist via email at *stanley.armstrong@arb.ca.gov*.

Sincerely,



Robert Krieger, Branch Chief, Risk Reduction Branch

Attachment

cc: See next page.

cc: State Clearinghouse
state.clearinghouse@opr.ca.gov

Dillon Delvo, Executive Director, Little Manila Rising
dillon@littlemanila.org

Matt Holmes, Environmental Justice Director, Little Manila Rising
matt@littlemanila.org

Patia Siong, Supervising Air Quality Specialist, San Joaquin Valley Air Pollution Control District
patia.siong@valleyair.org

Diana Walker, Air Quality Specialist, San Joaquin Valley Air Pollution Control District
diana.walker@valleyair.org

Jonathan Pruitt, Environmental Justice Program Coordinator, Catholic Charities of the Diocese of Stockton
jpruitt@ccstockton.org

Mariah Looney, Campaign Coordinator, Restore the Delta
mariah@restorethedelta.org

Morgan Capilla, NEPA Reviewer, U.S. Environmental Protection Agency, Air Division, Region 9
capilla.morgan@epa.gov

Stanley Armstrong, Air Pollution Specialist, Risk Reduction Branch

Attachment A

November 17, 2020

Nicole Moore
Acting Planning Manager
City of Stockton
345 North El Dorado Street
Stockton, California 95202
Submitted via email: nicole.moore@stocktonca.gov

Dear Nicole Moore:

Thank you for providing the California Air Resources Board (CARB) with the opportunity to comment on the Notice of Preparation (NOP) for the South Stockton Commerce Center Project (Project) Draft Environmental Impact Report (DEIR), State Clearinghouse No. 2020090561. The Project proposes the development of a maximum of 140,350 square feet of commercial uses and 6,091,551 square feet of industrial uses on a 437.45-acre site. The proposed Project is within the City of Stockton (City), California, which is the lead agency for California Environmental Quality Act (CEQA) purposes.

Freight facilities, like the one proposed in the Project, can result in high daily volumes of heavy-duty diesel truck traffic and operation of on-site equipment (e.g., forklifts and yard tractors) that emit toxic diesel emissions, and contribute to regional air pollution and global climate change.[1] CARB has reviewed the NOP and is concerned about the air pollution and health risk impacts that would result should the City approve the Project.

I. The Project Would Increase Exposure to Air Pollution in Disadvantaged Communities

The Project, if approved, will expose nearby communities to elevated levels of air pollution. Residences are located south and west of the Project site, with the closest residences situated approximately 930 feet from the Project's western boundary. In addition to residences, the Venture Academy Family of Schools is located within 2 miles of the Project. The communities near the Project are exposed to existing toxic diesel particulate matter (diesel PM) emissions from aircraft operations at the Stockton Metropolitan Airport and vehicular traffic along Interstate 5 (I-5) and State Route 99 (SR-99). Due to the Project's proximity to residences and a school already burdened by multiple sources of air pollution, CARB is concerned with the potential cumulative health impacts associated with the construction and operation of the Project.

[1] With regard to greenhouse gas emissions from this project, CARB has been clear that local governments and project proponents have a responsibility to properly mitigate these impacts. CARB's guidance, set out in detail in the Scoping Plan issued in 2017, makes clear that in CARB's expert view, local mitigation is critical to achieving climate goals and reducing greenhouse gases below levels of significance.

The State of California has placed additional emphasis on protecting local communities from the harmful effects of air pollution through the passage of Assembly Bill 617 (AB 617) (Garcia, Chapter 136, Statutes of 2017). AB 617 is a significant piece of air quality legislation that highlights the need for further emission reductions in communities with high exposure burdens, like those in which the Project is located. Diesel PM emissions generated during the construction and operation of the Project would negatively impact nearby communities, which are already disproportionally impacted by air pollution from aircraft operations at the Stockton Metropolitan Airport and vehicular traffic along I-5 and SR-99.

Through its authority under Health and Safety Code section 39711, the California Environmental Protection Agency (CalEPA) is charged with the duty to identify disadvantaged communities. CalEPA bases its identification of these communities on geographic, socioeconomic, public health, and environmental hazard criteria (Health and Safety Code, section 39711, subsection (a)). In this capacity, CalEPA currently defines a disadvantaged community, from an environmental hazard and socioeconomic standpoint, as a community that scores within the top 25 percent of the census tracts, as analyzed by the California Communities Environmental Health Screening Tool Version 3.0 (CalEnviroScreen). CalEnviroScreen uses a screening methodology to help identify California communities currently disproportionately burdened by multiple sources of pollution. The census tract containing the Project is within the top 5 percent for Pollution Burden[2] and is considered a disadvantaged community; therefore, CARB urges the City to ensure that the Project does not adversely impact neighboring disadvantaged communities.

II. The DEIR Should Quantify and Discuss the Potential Cancer Risks from On-site Transport Refrigeration Units

Since the NOP states the proposed industrial uses could be used for cold storage, it is likely that trucks and trailers visiting the Project site would be equipped with transport refrigeration units (TRU).[3] TRUs on trucks and trailers can emit large quantities of diesel exhaust while operating within the Project site. Residences and other sensitive receptors (e.g., daycare facilities, senior care facilities, and schools) located near where these TRUs could be operating, would be exposed to diesel exhaust emissions that would result in a significant cancer risk.

CARB urges the City to model air pollutant emissions from on-site TRUs in the DEIR, as well as include potential cancer risks from on-site TRUs in the Project's health risk assessment (HRA). The HRA prepared for the Project should account for all potential health risks from Project-related diesel PM emission sources such as backup

---

2. Pollution Burden represents the potential exposure to pollutants and the adverse environmental conditions caused by pollution.
3. TRUs are refrigeration systems powered by integral diesel engines that protect perishable goods during transport in an insulated truck and trailer vans, rail cars, and domestic shipping containers.

generators, TRUs, and heavy-duty truck traffic, and include all the air pollutant reduction measures listed in Attachment A of this comment letter.

In addition to the health risks associated with operational emissions, health risks associated with construction emissions should also be included in the air quality section of the DEIR and the Project's HRA. Construction of the Project would result in short-term diesel emissions from the use of both on-road and off-road diesel equipment. The Office of Environmental Health Hazard Assessment's (OEHHA) guidance (2015 Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments)[4] recommends assessing cancer risks for construction projects lasting longer than two months. Since construction would very likely occur over a period lasting longer than two months, the HRA prepared for the Project should include health risks for existing residences near the Project site during construction.

The HRA prepared in support of the Project should be based on the latest OEHHA guidance. The HRA should evaluate and present the existing baseline (current conditions), future baseline (full build-out year, without the Project), and future year with the Project. The health risks modeled under both the existing and the future baselines should reflect all applicable federal, state, and local rules and regulations. By evaluating health risks using both baselines, the public and City planners will have a complete understanding of the potential health impacts that would result from the Project.

III. Conclusion

To reduce the exposure of toxic diesel PM emissions in disadvantaged communities already disproportionally impacted by air pollution, the final design of the Project should include all existing and emerging zero-emission technologies to minimize diesel PM and oxides of nitrogen (NO_x) emissions, as well as the greenhouse gases that contribute to climate change. CARB encourages the City and applicant to implement the measures listed in Attachment A of this comment letter to reduce the Project's construction and operational air pollution emissions.

Given the breadth and scope of projects subject to CEQA review throughout California that have air quality and greenhouse gas impacts, coupled with CARB's limited staff resources to substantively respond to all issues associated with a project, CARB must prioritize its substantive comments here based on staff time, resources, and its assessment of impacts. CARB's deliberate decision to substantively comment on some issues does not constitute an admission or concession that it substantively agrees with the lead agency's findings and conclusions on any issues on which CARB does not substantively submit comments.

[4.] Office of Environmental Health Hazard Assessment (OEHHA). Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. February 2015. Accessed at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

CARB appreciates the opportunity to comment on the NOP for the Project and can provide assistance on zero-emission technologies and emission reduction strategies, as needed. Please include CARB on your State Clearinghouse list of selected State agencies that will receive the DEIR as part of the comment period. If you have questions, please contact Stanley Armstrong, Air Pollution Specialist, via email at stanley.armstrong@arb.ca.gov.

Sincerely,

Richard Boyd
Assistant Division Chief
Transportation and Toxics Division

Attachment

cc: See next page.

cc: State Clearinghouse
state.clearinghouse@opr.ca.gov

Dillon Delvo
Executive Director
Little Manila Rising
ddelvo@littlemanila.org

Patia Siong
Supervising Air Quality Specialist
San Joaquin Valley Air Pollution Control District
patia.siong@valleyair.org

Jonathan Pruitt
Environmental Justice Program Coordinator
Catholic Charities of the Diocese of Stockton
jpruitt@ccstockton.org

Mariah Looney
Campaign Coordinator
Restore the Delta
mariah@restorethedelta.org

Morgan Capilla
NEPA Reviewer
U.S. Environmental Protection Agency
Air Division, Region 9
capilla.morgan@epa.gov

Stanley Armstrong
Air Pollution Specialist
Exposure Reduction Section
Transportation and Toxics Division
stanley.armstrong@arb.ca.gov

ATTACHMENT A

Recommended Air Pollution Emission Reduction Measures for Warehouses and Distribution Centers

The California Air Resources Board (CARB) recommends developers and government planners use all existing and emerging zero to near-zero emission technologies during project construction and operation to minimize public exposure to air pollution. Below are some measures, currently recommended by CARB, specific to warehouse and distribution center projects. These recommendations are subject to change as new zero-emission technologies become available.

Recommended Construction Measures

1. Ensure the cleanest possible construction practices and equipment are used. This includes eliminating the idling of diesel-powered equipment and providing the necessary infrastructure (e.g., electrical hookups) to support zero and near-zero equipment and tools.

2. Implement, and plan accordingly for, the necessary infrastructure to support the zero and near-zero emission technology vehicles and equipment that will be operating on site. Necessary infrastructure may include the physical (e.g., needed footprint), energy, and fueling infrastructure for construction equipment, on-site vehicles and equipment, and medium-heavy and heavy-heavy duty trucks.

3. In construction contracts, include language that requires all off-road diesel-powered equipment used during construction to be equipped with Tier 4 or cleaner engines, except for specialized construction equipment in which Tier 4 engines are not available. In place of Tier 4 engines, off-road equipment can incorporate retrofits, such that, emission reductions achieved equal or exceed that of a Tier 4 engine.

4. In construction contracts, include language that requires all off-road equipment with a power rating below 19 kilowatts (e.g., plate compactors, pressure washers) used during project construction be battery powered.

5. In construction contracts, include language that requires all heavy-duty trucks entering the construction site, during the grading and building construction phases be model year 2014 or later. All heavy-duty haul trucks should also meet CARB's lowest optional low-oxides of nitrogen (NO_x) standard starting in the year 2022.[1]

[1] In 2013, CARB adopted optional low-NO_x emission standards for on-road heavy-duty engines. CARB encourages engine manufacturers to introduce new technologies to reduce NO_x emissions below the current mandatory on-road heavy-duty diesel engine emission standards for model-year 2010 and later. CARB's optional low-NO_x emission standard is available at: https://www.arb.ca.gov/msprog/onroad/optionnox/optionnox.htm.

6. In construction contracts, include language that requires all construction equipment and fleets to be in compliance with all current air quality regulations. CARB is available to assist in implementing this recommendation.

Recommended Operation Measures

1. Include contractual language in tenant lease agreements that requires tenants to use the cleanest technologies available, and to provide the necessary infrastructure to support zero-emission vehicles and equipment that will be operating on site.

2. Include contractual language in tenant lease agreements that requires all loading/unloading docks and trailer spaces be equipped with electrical hookups for trucks with transport refrigeration units (TRU) or auxiliary power units. This requirement will substantially decrease the amount of time that a TRU powered by a fossil-fueled internal combustion engine can operate at the project site. Use of zero-emission all-electric plug-in TRUs, hydrogen fuel cell transport refrigeration, and cryogenic transport refrigeration are encouraged and can also be included in lease agreements.[2]

3. Include contractual language in tenant lease agreements that requires all TRUs entering the project site be plug-in capable.

4. Include contractual language in tenant lease agreements that requires future tenants to exclusively use zero-emission light and medium-duty delivery trucks and vans.

5. Include contractual language in tenant lease agreements requiring all TRUs, trucks, and cars entering the project site be zero-emission.

6. Include contractual language in tenant lease agreements that requires all service equipment (e.g., yard hostlers, yard equipment, forklifts, and pallet jacks) used within the project site to be zero-emission. This equipment is widely available.

7. Include contractual language in tenant lease agreements that requires all heavy-duty trucks entering or on the project site to be model year 2014 or later, expedite a transition to zero-emission vehicles, and be fully zero-emission beginning in 2030.

[2] CARB's technology assessment for transport refrigerators provides information on the current and projected development of TRUs, including current and anticipated costs. The assessment is available at: https://www.arb.ca.gov/msprog/tech/techreport/tru_07292015.pdf.

8. Include contractual language in tenant lease agreements that requires the tenant be in, and monitor compliance with, all current air quality regulations for on-road trucks including CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation,[3] Periodic Smoke Inspection Program (PSIP),[4] and the Statewide Truck and Bus Regulation.[5]

9. Include contractual language in tenant lease agreements restricting trucks and support equipment from idling longer than five minutes while on site.

10. Include contractual language in tenant lease agreements that limits on-site TRU diesel engine runtime to no longer than 15 minutes. If no cold storage operations are planned, include contractual language and permit conditions that prohibit cold storage operations unless a health risk assessment is conducted, and the health impacts fully mitigated.

11. Include rooftop solar panels for each proposed warehouse to the extent feasible, with a capacity that matches the maximum allowed for distributed solar connections to the grid.

12. Including language in tenant lease agreements, requiring the installing of vegetative walls[6] or other effective barriers that separate loading docks and people living or working nearby.

---

[3] In December 2008, CARB adopted a regulation to reduce greenhouse gas emissions by improving the fuel efficiency of heavy-duty tractors that pull 53-foot or longer box-type trailers. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation is available at: https://www.arb.ca.gov/cc/hdghg/hdghg.htm.

[4] The PSIP program requires that diesel and bus fleet owners conduct annual smoke opacity inspections of their vehicles and repair those with excessive smoke emissions to ensure compliance. CARB's PSIP program is available at: https://www.arb.ca.gov/enf/hdvip/hdvip.htm.

[5] The regulation requires that newer heavier trucks and buses must meet particulate matter filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model-year engines or equivalent. CARB's Statewide Truck and Bus Regulation is available at: https://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm.

[6] Effectiveness of Sound Wall-Vegetation Combination Barriers as Near-Roadway Pollutant Mitigation Strategies (2017) is available at: https://ww2.arb.ca.gov/sites/default/files/classic//research/apr/past/13-306.pdf.