

## Appendix G

# Feather River Air Quality Management District Construction Equipment Emission Controls and Exhaust Emissions Offsets

---

Feather River Air Quality Management District (FRAQMD) recommends the following construction phase Standard Mitigation Measures if the operational emissions of a project do not exceed the District's operational thresholds—25 lbs/day of reactive organic gases (ROG), 25 lbs/day of nitrogen oxides (NO<sub>x</sub>), 80 lbs/day of particulate matter less than or equal to 10 microns in diameter (PM<sub>10</sub>)—and the construction emissions of NO<sub>x</sub> or ROG do not exceed the 25 lbs/day averaged over the length of the project or the PM<sub>10</sub> emissions do not exceed 80 lbs/day (Feather River Air Quality Management District 2010).

1. Implement the Fugitive Dust Control Plan for the project.
2. Construction equipment exhaust emissions shall not exceed FRAQMD Regulation III, Rule 3.0, Visible Emissions limitations (40 percent opacity or Ringelmann 2.0).
3. The contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of onsite operation.
4. Limiting idling time to 5 minutes - saves fuel and reduces emissions. (State idling rule: commercial diesel vehicles- 13 California Code of Regulations [CCR] Chapter 10 Section 2485 effective 02/01/2005; off road diesel vehicles- 13 CCR Chapter 9 Article 4.8 Section 2449 effective 05/01/2008)
5. Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
6. Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
7. Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require California Air Resources Board (ARB) Portable Equipment Registration with the State or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with the ARB or the District to determine registration and permitting requirements prior to equipment operation at the site.

If the operational emissions of a project do not exceed the operational thresholds, but the construction phase emissions exceed the construction thresholds of 25 lbs/day of NO<sub>x</sub> or ROG averaged over the length of the project and 80 lbs/days of PM<sub>10</sub>, the District recommends the Standard Mitigation Measures listed above in addition to the following Best Available Mitigation Measures for Construction Phase:

1. All grading operations on a project should be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures.

2. Construction sites shall be watered as directed by the Department of Public Works or Air Quality Management District and as necessary to prevent fugitive dust violations.
3. An operational water truck should be available at all times. Apply water to control dust as needed to prevent visible emissions violations and offsite dust impacts.
4. Onsite dirt piles or other stockpiled particulate matter should be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce wind blown dust emissions. Incorporate the use of approved non-toxic soil stabilizers according to manufacturer's specifications to all inactive construction areas.
5. All transfer processes involving a free fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions.
6. Apply approved chemical soil stabilizers according to the manufacturers' specifications, to all inactive construction areas (previously graded areas that remain inactive for 96 hours) including unpaved roads and employee/equipment parking areas.
7. To prevent track-out, wheel washers should be installed where project vehicles and/or equipment exit onto paved streets from unpaved roads. Vehicles and/or equipment shall be washed prior to each trip. Alternatively, a gravel bed may be installed as appropriate at vehicle/equipment site exit points to effectively remove soil buildup on tires and tracks to prevent/diminish track-out.
8. Paved streets shall be swept frequently (water sweeper with reclaimed water recommended; wet broom) if soil material has been carried onto adjacent paved, public thoroughfares from the project site.
9. Provide temporary traffic control as needed during all phases of construction to improve traffic flow, as deemed appropriate by the Department of Public Works and/or Caltrans and to reduce vehicle dust emissions. An effective measure is to enforce vehicle traffic speeds at or below 15 mph.
10. Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access. Provide appropriate training, onsite enforcement, and signage.
11. Reestablish ground cover on the construction site as soon as possible and prior to final occupancy, through seeding and watering.
12. Disposal by Burning: Open burning is yet another source of fugitive gas and particulate emissions and shall be prohibited at the project site. No open burning of vegetative waste (natural plant growth wastes) or other legal or illegal burn materials (trash, demolition debris, et. al.) may be conducted at the project site. Vegetative wastes should be chipped or delivered to waste to energy facilities (permitted biomass facilities), mulched, composted, or used for firewood. It is unlawful to haul waste materials offsite for disposal by open burning.

In addition to the Standard Mitigation Measures and Best Available Mitigation Measures listed above, the following mitigation measure may be used to further reduce and, if necessary, offset exhaust emissions to below FRAQMD construction thresholds.

The proponent shall assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that will be used an aggregate of 40 or more hours for the construction project and apply the following mitigation measure:

The project shall provide a plan for approval by FRAQMD demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 5 percent ROG reduction, 20 percent NO<sub>x</sub> reduction and 45 percent particulate reduction compared to

the most recent CARB fleet average at time of construction. A Construction Mitigation Calculator (MS Excel) may be downloaded from the SMAQMD [Sacramento Metropolitan Air Quality Management District] web site to perform the fleet average evaluation. The results of the Construction Mitigation Calculator shall be submitted and approved by FRAQMD prior to beginning work.

Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary offsite mitigation projects, provide funds for air district offsite mitigation projects, and/or other options as they become available. The District should be contacted to discuss alternative measures.

The project shall provide a monthly summary of heavy-duty off-road equipment usage to the District throughout the construction of the project.

## G.1 References Cited

Feather River Air Quality Management District. 2010. *Indirect Source Review Guidelines, Chapter 4 Construction*. Available: <https://www.fraqmd.org/ceqa-planning>. Accessed: May 17, 2017.