

## AIR QUALITY EMISSION MODELS

<b>Construction Emission Model</b>	<b>Prescribed Fire Emission Model</b>
<p>Most current EIRs analyze emissions through a Construction Emission Model. Every Air District within California has a Significance Threshold Criteria for Construction Emissions. Emissions from this model are derived from exhaust combustion sources (ie Heavy Equipment, Vehicles, etc.) This model sufficiently predicts emissions for projects that are construction like in nature. Within the VTP the following exhaust combustion emission aspects of activities could be accurately captured:</p> <ul style="list-style-type: none"> <li>• Mechanical</li> <li>• Manual</li> <li>• Herbicide</li> <li>• Herbivory</li> <li>• Prescribed Fire</li> </ul> <p>Under the Construction Emission Model the following emissions are the regulated:</p> <ul style="list-style-type: none"> <li>• Carbon Monoxide (CO)</li> <li>• Oxides of Nitrogen (NO<sub>x</sub>)</li> <li>• Reactive Organic Gasses (ROG)</li> <li>• Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)</li> </ul> <p>However this model does not sufficiently take into the account the emissions created by prescribed fire.</p>	<p>No current Programmatic EIRs, that analyze Air Quality, have a prescribed fire element. The Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) both acknowledge the benefit of prescribed fire emissions in combating wildfire emissions. However, there are no Threshold Criteria for Prescribed Fire Emissions like those outlined for Construction Emissions. All determinations about Prescribed Fire emission significance is made privately by the California Air Resources Board taking into account current weather and air conditions. Therefore there is no standard Prescribed Fire Emission Model that has been developed for EIRs.</p> <p>Prescribed Fire Emissions regulations are concerned with the following emissions:</p> <ul style="list-style-type: none"> <li>• Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)</li> <li>• Carbon Monoxide (CO)</li> <li>• Volatile Organic Compounds (VOC)</li> </ul> <p>However prescribed fire accounts for the largest amount of emissions produced within the VTP and this model does not accurately account for emissions produced by exhaust combustion sources.</p>
<b>VTP-EIR Emission Model</b>	
<p>Due to the diversity of activities under the VTP, two project types emerge under air quality emission standards thresholds: construction and prescribed fire. Therefore the VTP analyzes all emissions produced by Prescribed Fire under a Prescribed Fire Emission Model, where significance is determined by the same acre burning in wildfire. The VTP then analyzes all emissions produced by Mechanical, Manual, Herbicide, and Herbivory activities under a Construction Emission model. Using the Prescribed Fire Emission Model only for Prescribed Fire activities allows the CEQA analysis to accurately account for and determine significance using realistic criteria. The Construction Emission model provides a more representative criterion to accurately accounting for and determining significance for Mechanical, Manual, Herbicide, and Herbivory activities under the VTP. While not all activities under the Construction Emission model fit perfectly it provides a basis for the analysis under CEQA and is the best fit under the available models.</p>	

## **AIR QUALITY SUMMARY**

Air Quality Concerns for activities within the VTP EIR:

1. Emissions of Criteria Air Pollutants and Precursors
2. Fugitive Dust
3. Naturally Occurring Asbestos (NOA)
4. Toxic Air Contaminants (TAC) Emissions
5. Objectionable Odors

### **Emissions of Criteria Air Pollutants and Precursors**

Due to the diversity of activities under the VTP, two project types emerge under air quality emission standards thresholds: construction and prescribed fire.

**Construction Phase Emissions** are defined as those activities that utilize combustion producing emission equipment. While the activity of prescribed fire does utilize combustion producing emission equipment, all emissions related to prescribed fire activities are analyzed under prescribed fire. Construction Phase Emissions of concern are Carbon Monoxide (CO), Oxides of Nitrogen (NO<sub>x</sub>), Reactive Organic Gasses (ROG), and Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>). The amount of emissions that meet the Threshold of Significance varies widely for each air district based on attainment status (Table 4.12-4 in the VTP). The VTP analyzed the number of units within each air district and placed project restrictions based off the most stringent air district standards to minimize air quality impacts throughout the state.

**Prescribed Fire Emissions** are emissions related to the burning of organic material. The Environmental Protection Agency (EPA) and California Air Resources Board (CARB) both acknowledge that emissions created by prescribed fire are very different than those created by construction projects. EPA's AP 42: Compilation of Air Pollutant Emission Factors' Fifth Edition identifies that prescribed fire emissions are typically much less than those created by wildfire due to less "available fuel" (combustible material that will be consumed by fire under specific climatic conditions) during prescribed burning. Prescribed Fire Emissions of concern are Carbon Monoxide (CO), Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>), Volatile Organic Compounds (VOC), and Oxides of Nitrogen (NO<sub>x</sub>). There are no published Thresholds of Significance for Prescribed Fire Emissions for any Air Quality Districts in California because that determination is made on a daily basis by CARB based off of current weather and air conditions. However CEQA requires an analysis, therefore the VTP analyzes significance based off the same acre burning in a wildfire (Table 4.12-5 in the VTP); with the understanding that the CARB and the local air district will provide final approval for each Prescribed Fire project under the VTP.

**Emissions created by the VTP are minimized through AIR-1 – AIR-2 – AIR-3 – AIR-4 – AIR-10 – AIR-11 – AIR-12 – MM AIR-1.**

### **Fugitive Dust**

Fugitive Dust is a Particulate Matter (PM) comprised of soil minerals that are suspended in the air by wind action and/or human activities. Fugitive dust, or dust not coming from a combustion source, accounts for 90% of all primary PM<sub>10</sub> emissions in California. Fugitive Dust creation is regulated by Section 41700 of Health and Safety Code, with individual air districts further regulating through Fugitive Dust Rules. Many Fugitive Dust Rules prohibit the transport of dust off a property and require that a project "take every reasonable precaution to minimize emissions" (CARB).

The California Air Resources Board (CARB) recommends that the impacts of Fugitive Dust can be minimized by:

- “Reducing Speed Limits on unpaved surface to 10-15 mph for well-traveled areas and heavy vehicles, never to exceed 25 mph for any vehicle on any unpaved surface”, and
- “Water and/or Sweep often enough to ensure that vehicle traffic is not pickup up dust for wind action and carryout.”

**Fugitive Dust created by the VTP are minimized through AIR-1 – AIR-5 – AIR-6 – AIR-7 – AIR-8.**

### **Naturally Occurring Asbestos (NOA)**

Naturally Occurring Asbestos (NOA) is contained in some serpentinite or other ultramafic rock and soil within California. Asbestos is classified as a known human carcinogen by state, federal, and international agencies, and as a toxic air contaminant by the Air Resources Board. The California Code of Regulations, Title 17, Section 93105, Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations (ATCM), applies to earthwork that disturbs, or potentially disturbs, naturally-occurring asbestos. Ground-disturbing treatment activities within the VTP shall not be performed in areas identified as “moderately likely to contain naturally occurring asbestos (NOA)” according to maps and guidance published by the California Geological Survey (CGS), unless an Asbestos Dust Control Plan is prepared by the Operational Unit and approved by the air district(s) with jurisdiction over the project site.

**Disturbance of NOA by the VTP would be minimized through AIR-9.**

### **Toxic Air Contaminants (TAC) Emissions**

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). Vegetation treatment activities that would be implemented under the VTP would not result in the operation of new stationary sources of TACs and would not include development of any new sensitive receptors (e.g., residences, schools, hospitals). Equipment emissions from certain treatment activities could, however, result in short-term exhaust emissions of diesel PM from on-site heavy-duty equipment such as plows, rotary mowers, and tractors used to clear land. Diesel PM has been identified as a TAC by ARB since 1998.

**TAC Emissions created by the VTP are minimized through AIR-10 – AIR-11 – NSE-4 – NSE-5.**

### **Objectionable Odors**

Vegetation treatment activities could include the temporary generation of objectionable odors associated with diesel equipment exhaust. Treatment activities approved under the VTP would not include the development of any new sensitive land uses or of any new major odor sources (e.g., wastewater treatment plant, landfill). However, multiple SPRs would limit exposure of sensitive receptors to excessive levels of odorous emissions generated by vegetation treatment-related activities.

**Objectionable Odors created by the VTP are minimized through AIR-10 – AIR-11 – NSE-4 – NSE-**