Bay Area Air Quality Management District

Community Air Risk Evaluation (CARE) Status Report

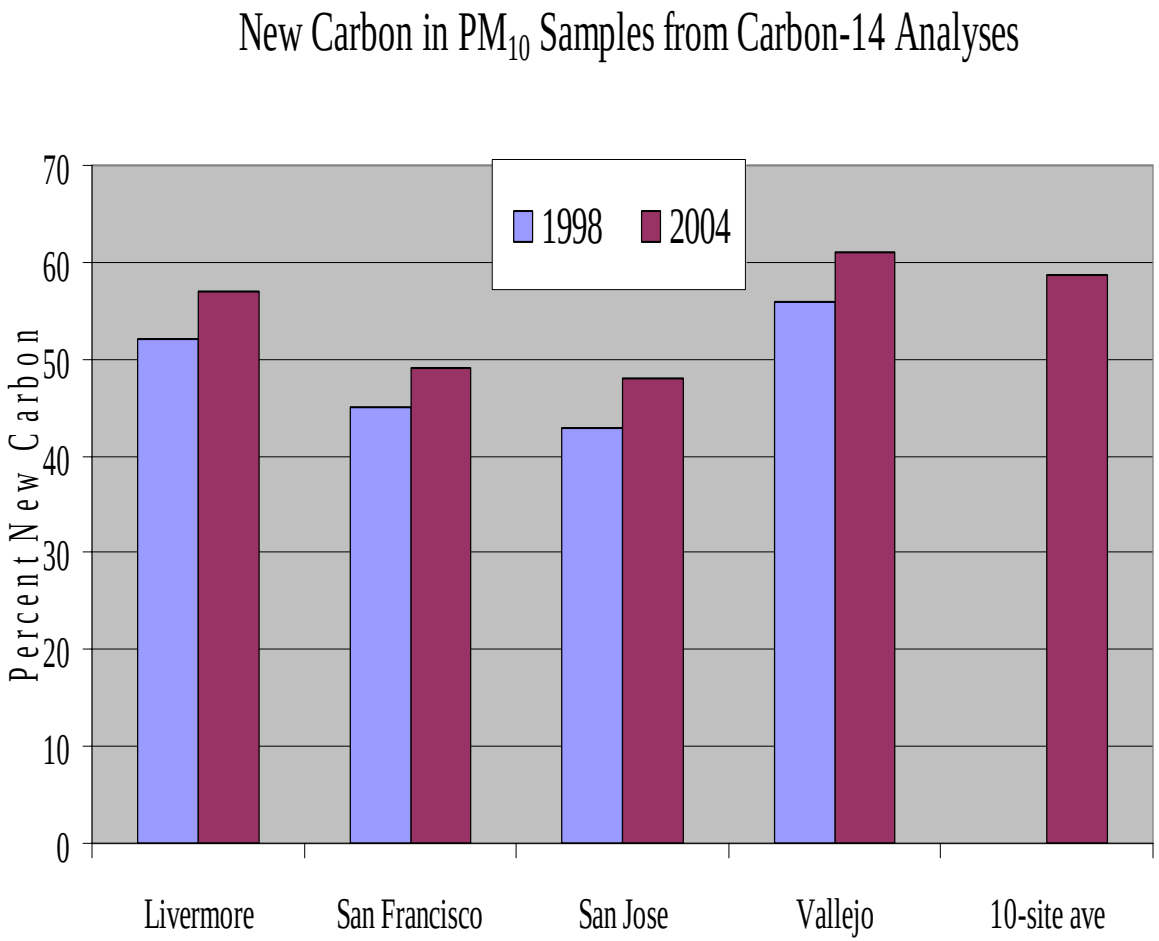
CARE Task Force

February 23, 2006

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

CARE Status Report

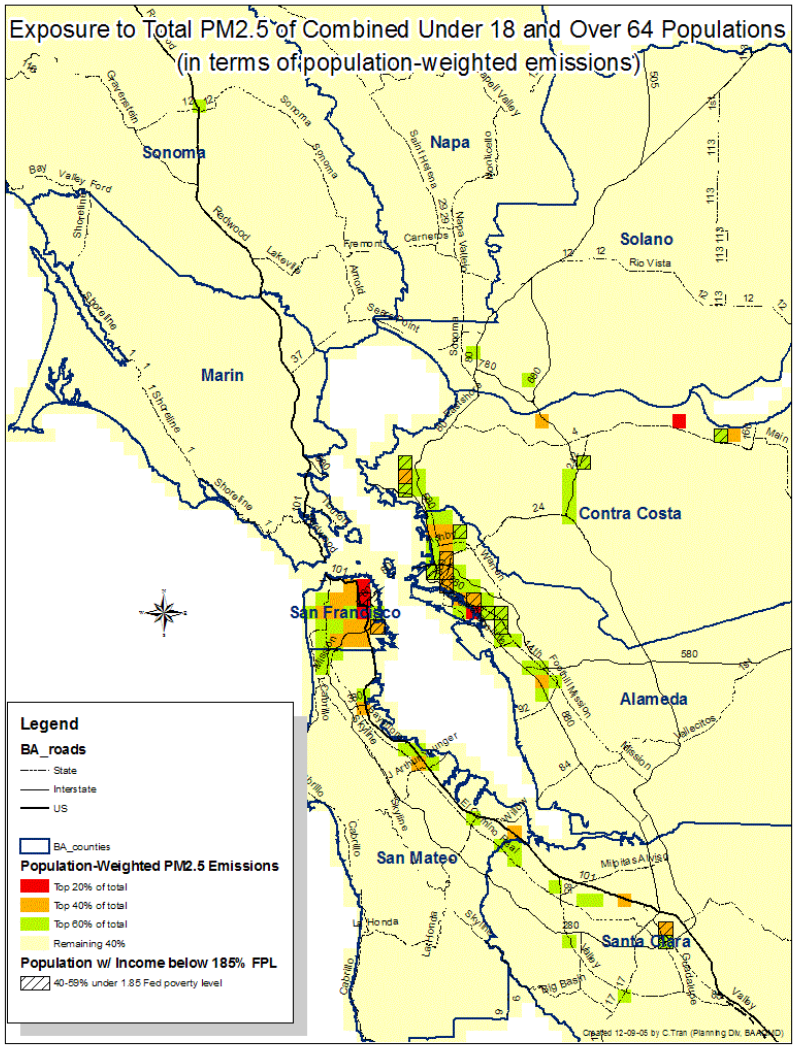
Carbon-14 analyses indicate that new carbon sources (wood smoke, etc.) are more significant than previously believed, and may be increasing in significance relative to old carbon sources (fossil fuel burning) due to controls on diesel PM, etc. ⇨

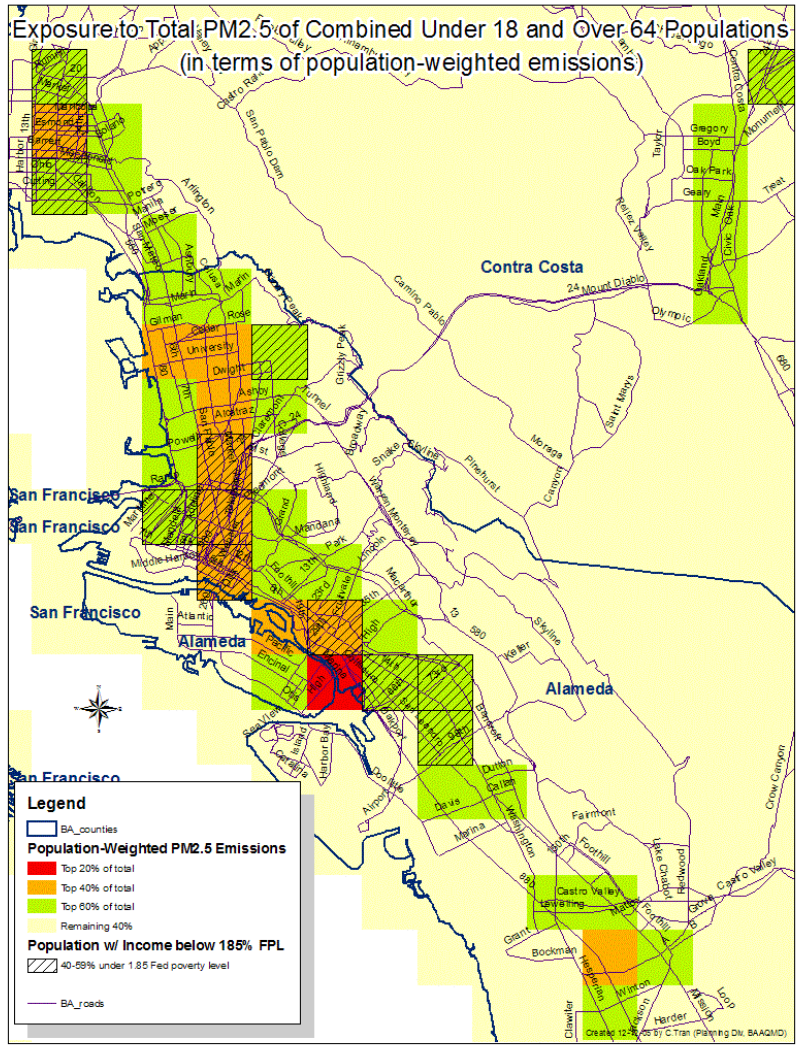


BAY AREA AIR QUALITY MANAGEMENT DISTRICT

CARE Status Report

Maps for Carl Moyer Grants





BAY AREA AIR QUALITY MANAGEMENT DISTRICT

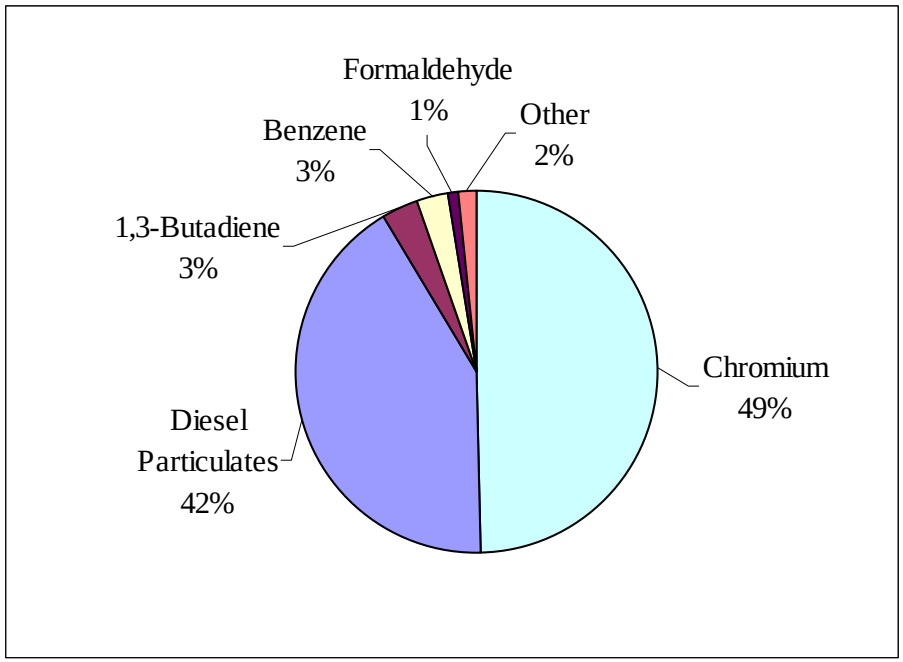
CARE Status Report

Chromium Corrected Cancer Risk Weighted Emissions

Includes Point, Area and On-road Mobile Sources

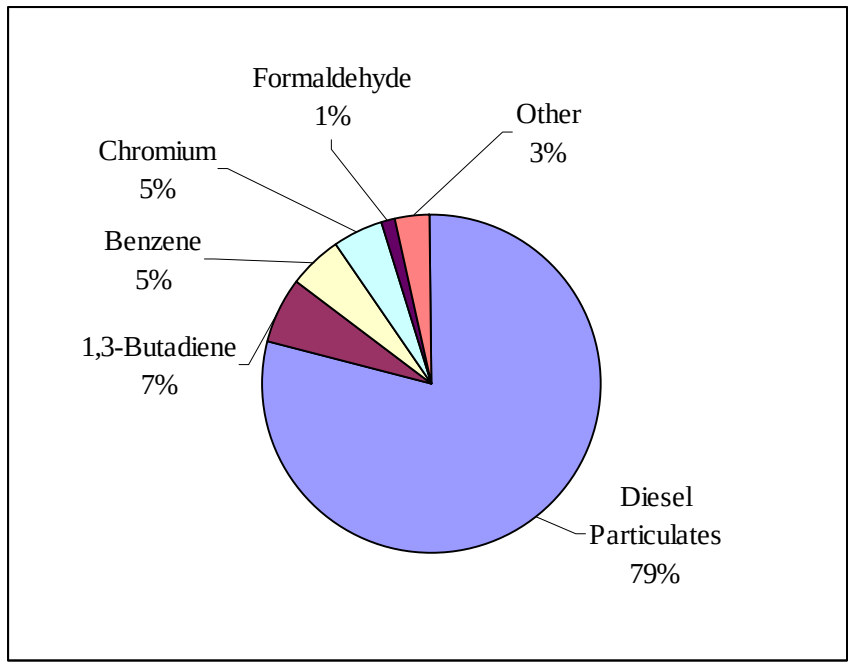
Initial Estimate

Area & On Road Mobile Source emissions assumed to be 100% Chrome VI



Estimate After Correction

Area & On Road Mobile Source emissions corrected to 5% Chrome VI



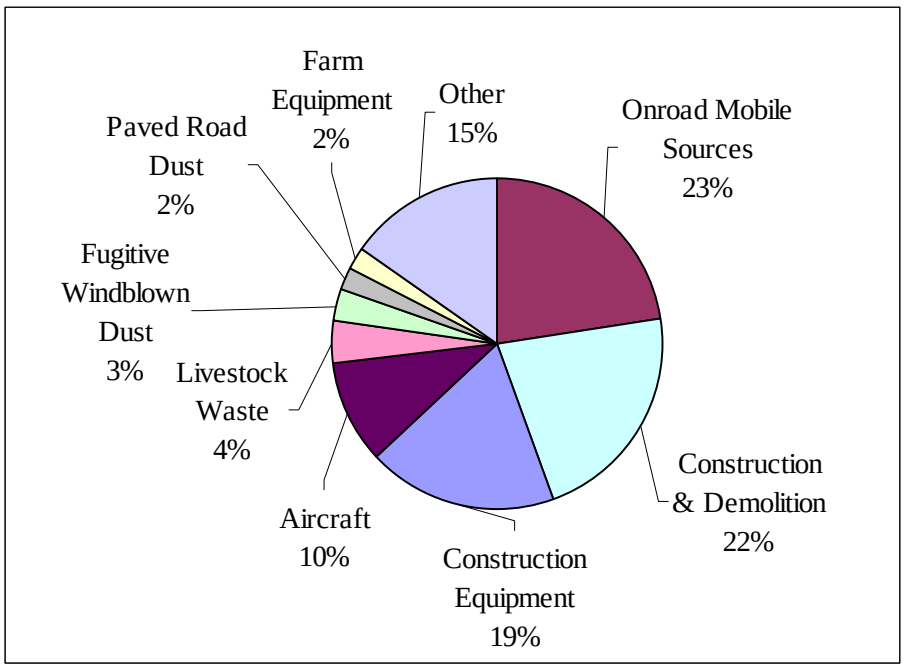
BAY AREA AIR QUALITY MANAGEMENT DISTRICT

CARE Status Report

Chromium Corrected Cancer Risk Weighted Emissions by Source Category

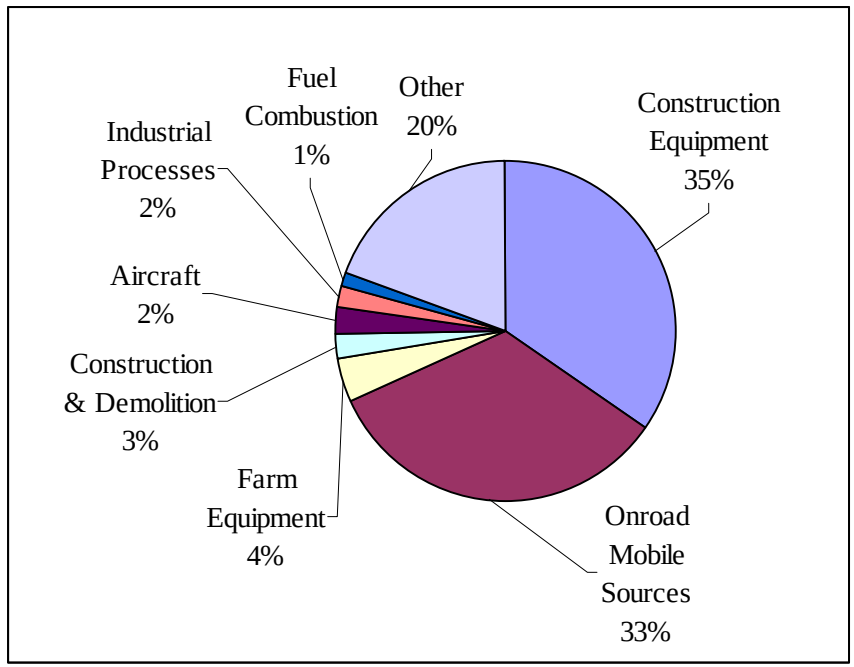
Initial Estimate

Area & On Road Mobile Source emissions assumed to be 100% Chrome VI



Estimate After Correction

Area & On Road Mobile Source emissions corrected to 5% Chrome VI



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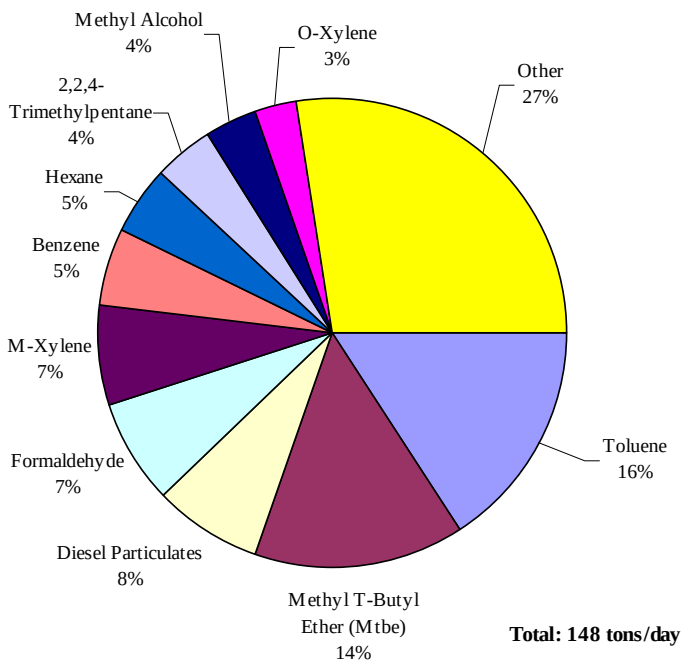
CARE Status Report

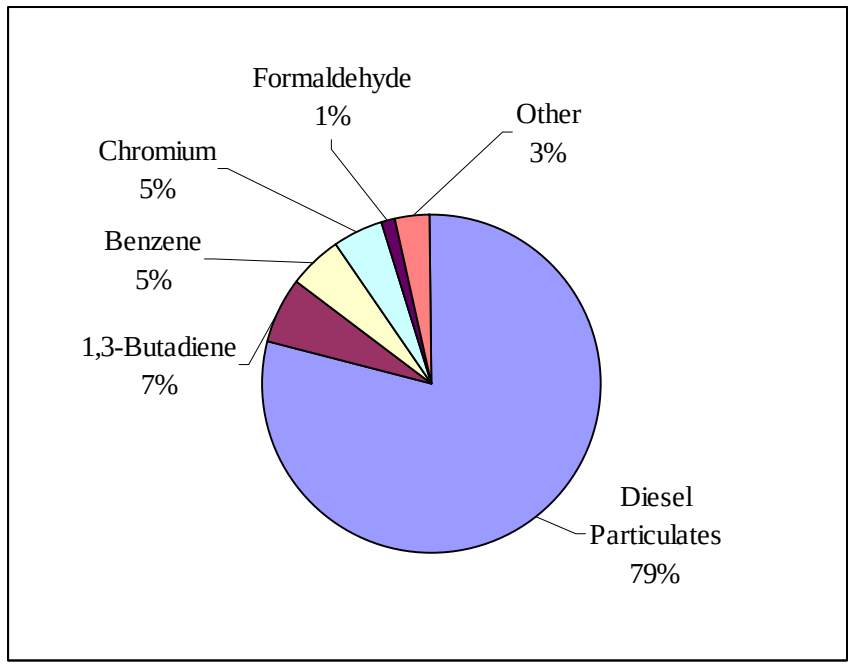
Daily Toxic Air Contaminant Mass Emissions vs. Chromium Corrected Cancer Risk Weighted Emissions

Total Daily TAC Emissions



Total: 148 tons/day

Risk Weighted Daily TAC Emissions



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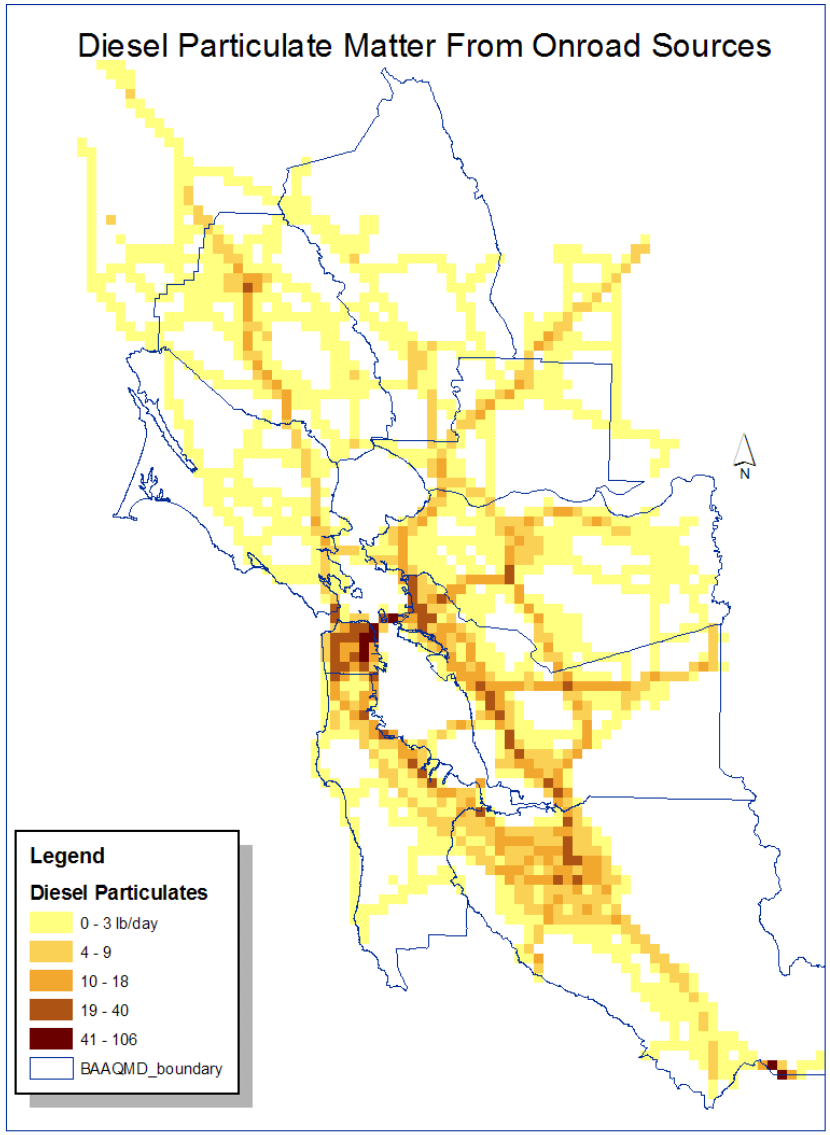
Hydrocarbon Analyses

- Desert Research Institute (DRI) performed organic analyses on District $PM_{2.5}$ filters to identify the presence of organic tracers (hydrocarbons, or HC) using gas chromatography/mass spectrometry (GS/MS).
- Recent developments in source apportionment models have employed selective organic compounds, called molecular markers, as fingerprints for source attribution calculations.
- District staff are evaluating the results of the DRI analyses to learn more about the relative contributions of various sources to PM actually measured in the field.
- This work is complementary to the C_{14} and EC/OC studies of particulates captured on District filters.

CARE Status Report

TAC Inventory Maps – Diesel PM

- Diesel particulate matter (PM) has the highest toxicity-weighted emissions.
- ARB's model for on-road mobile source emissions uses the same county-wide fleet composition for each road segment in the county. Fleet composition is the percentage of each vehicle type, including light duty gasoline, heavy duty diesels, buses, motorcycles, etc. ⇨
- Further study of Diesel PM inventory is underway.



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CARE Status Report

Future Rules – 1,3 Butadiene, Benzene & Perchloroethylene

Based on

- The relative contributions of 1,3 butadiene (2nd), benzene (3rd), and perchloroethylene (7th) to total risk, and
- The Air District's stationary source regulatory authority

District staff will consider future regulatory activity for sources of those emissions such as gasoline marketing (bulk terminals and gas stations) and dry cleaners.

- Perchloroethylene: Dry cleaner air toxic control measure (ATCM) up for ARB review, ban on new Perchloroethylene machines is likely.
- Benzene, 1,3 Butadiene: District has a proposed control measure for bulk plants (gasoline marketing) in the 2005 Ozone Strategy

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Wood Smoke Survey

- Gridded wood smoke emissions from the mapped preliminary TAC inventory appear to be too high in San Francisco based on ARB's county-wide area source emission inventories.
- District recently completed a residential wood burning survey
- District staff will analyze the survey results and use the information to update the wood smoke emission inventory