



**BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT**

*Committed to Achieving Clean Air to Protect
the Public's Health and the Environment*

CARE Program: Review and Discussion of Issues Raised

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Bay Area Air Quality Management District

CARE Task Force Meeting

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CARE Program: A Three Phase Design

Phase I	Refine TAC Emissions	
Preliminary TAC Emissions	Phase II	Enhanced Measurements
	Local, Regional Scale Modeling	Phase III
	Enhanced Measurements	Exposure Analysis
Mitigation Measures	Mitigation Measures	Mitigation Measures

Spring '04

Fall '06

Spring '08

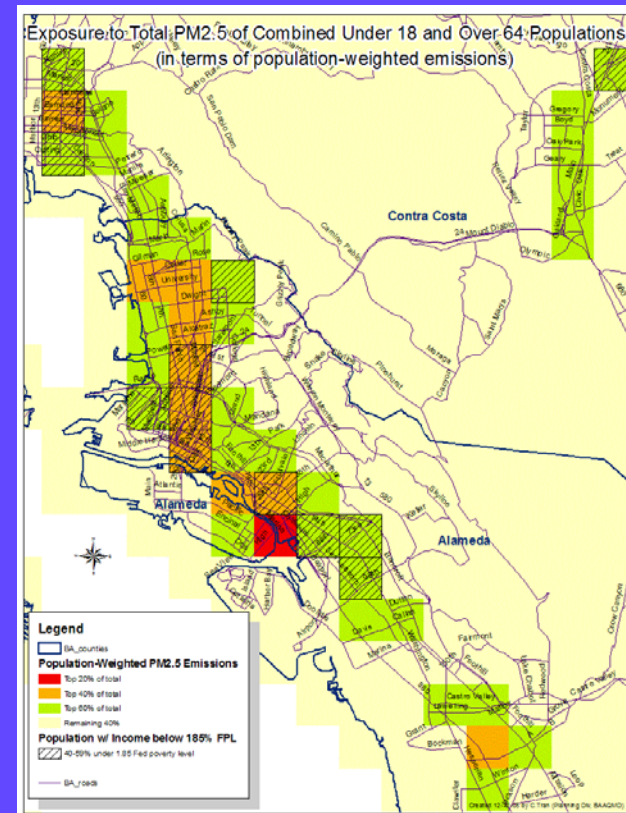
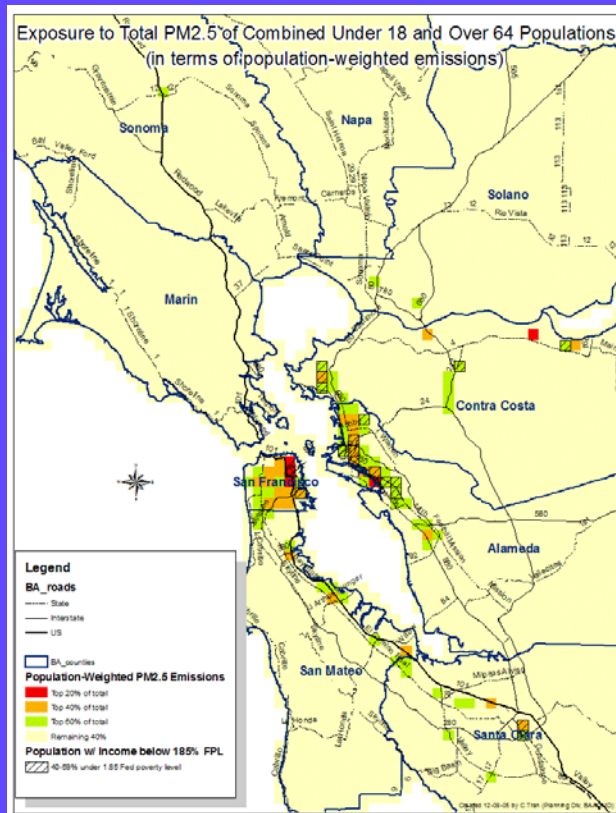
Fall '09

CARE Program Phase I Projects

- Preliminary emissions inventory of toxic air contaminants (TAC)
 - Support studies
 - Residential wood burning survey
 - PM source apportionment study
 - Carbon dating—old vs. new carbon
 - Organic PM speciation
- Demographic & health data

Phase I Mitigation Measure

- Developed target areas for Carl Moyer Grants



Phase I Findings

From the analysis of TAC emissions:

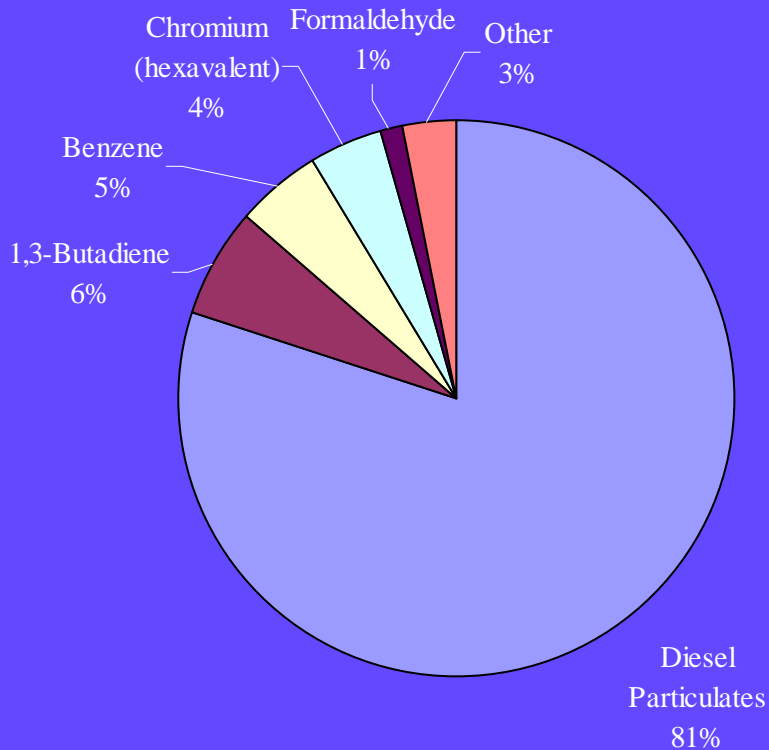
- About 80% of the cancer health risk is from diesel PM
- About 50% of the chronic non-cancer risk is from acrolein
- More than 90% of the acute non-cancer risk is also from acrolein

Phase I Findings (cont.)

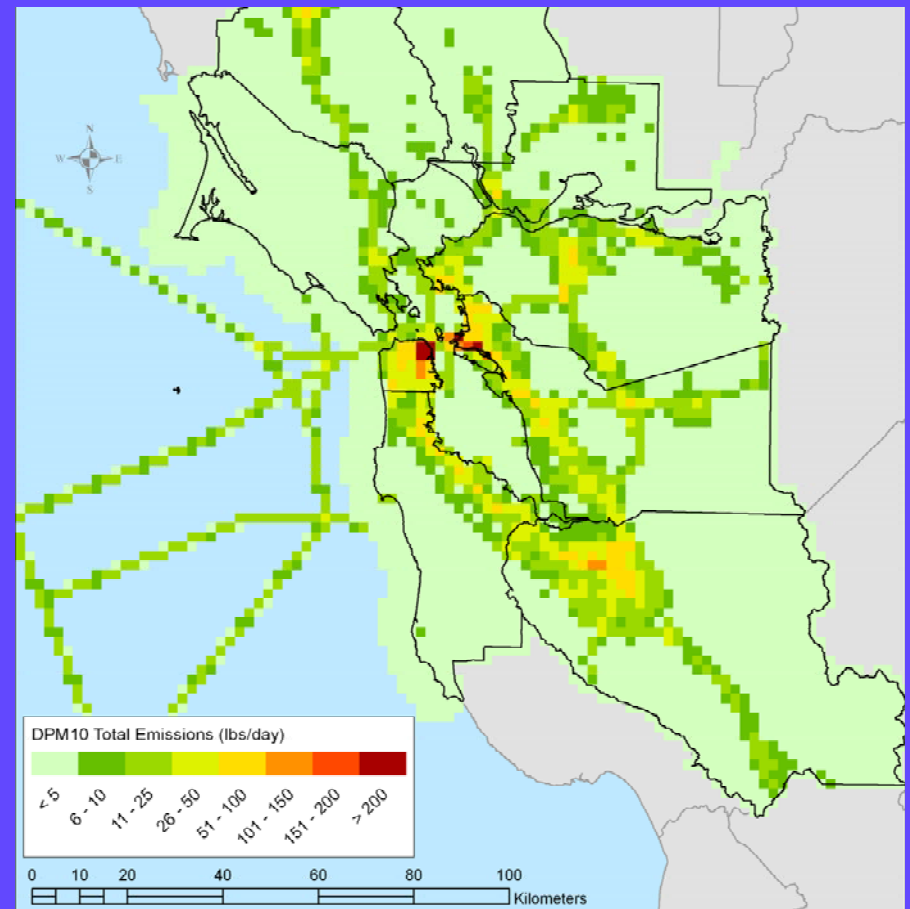
- On-road and off-road diesel emissions—including construction, shipping, rail—are large sources of cancer risk
- Gasoline powered vehicles and aircraft are large contributors to non-cancer risk
- The highest densities of diesel PM and acrolein are in eastern S.F. and western Alameda & Contra Costa counties
- These areas also have large numbers of sensitive people.

80% Cancer Risk from Diesel PM

Risk-weighted Emissions by Pollutant

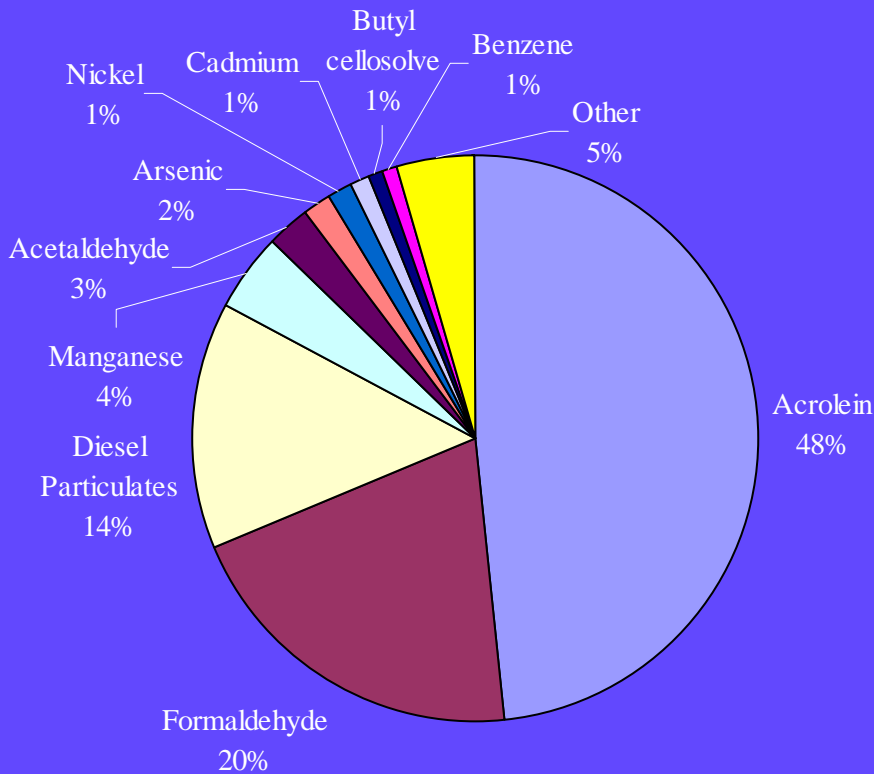


Distribution of Diesel PM Emissions

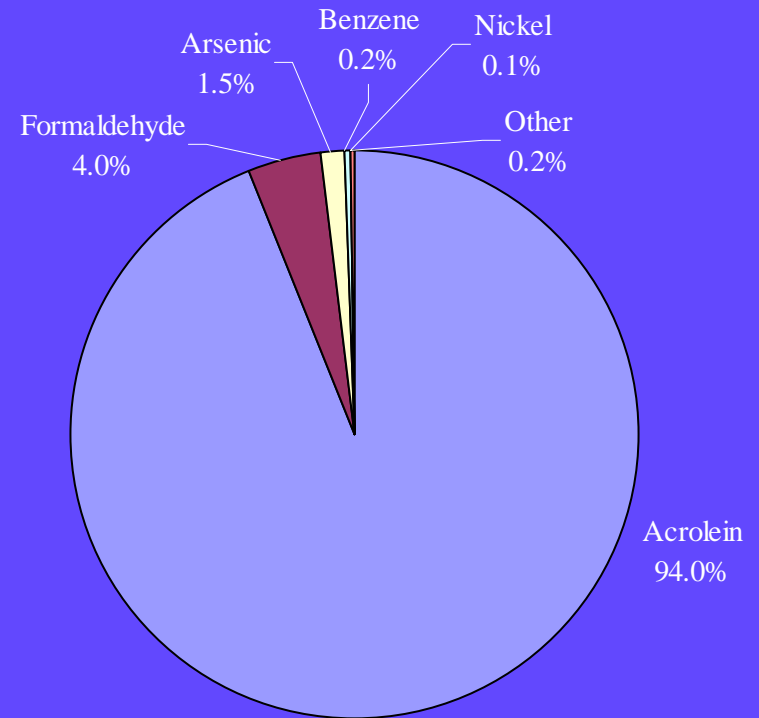


Non-Cancer, Toxicity-weighted Emissions by Pollutant

Chronic Risk



Acute Risk



Policy Recommendations

- Use gridded TAC emission inventory as a surrogate for exposure
- Use available regional demographic data to identify grid cells with sensitive populations
- Target appropriate mitigation measures to areas with high TAC emissions and sensitive populations
- Follow up with more sophisticated techniques to evaluate exposure

Issues Raised

- Diesel particulate matter (PM) emissions, amount and distribution, correct?
 - Changes in on-road diesel PM emissions due to EMFAC changes
 - Diesel PM from construction equipment over-estimated?
- Incorporate uncertainty in unit risk factors and reference concentrations?
 - Acrolein
- Evaluate TAC emissions estimates using observations?