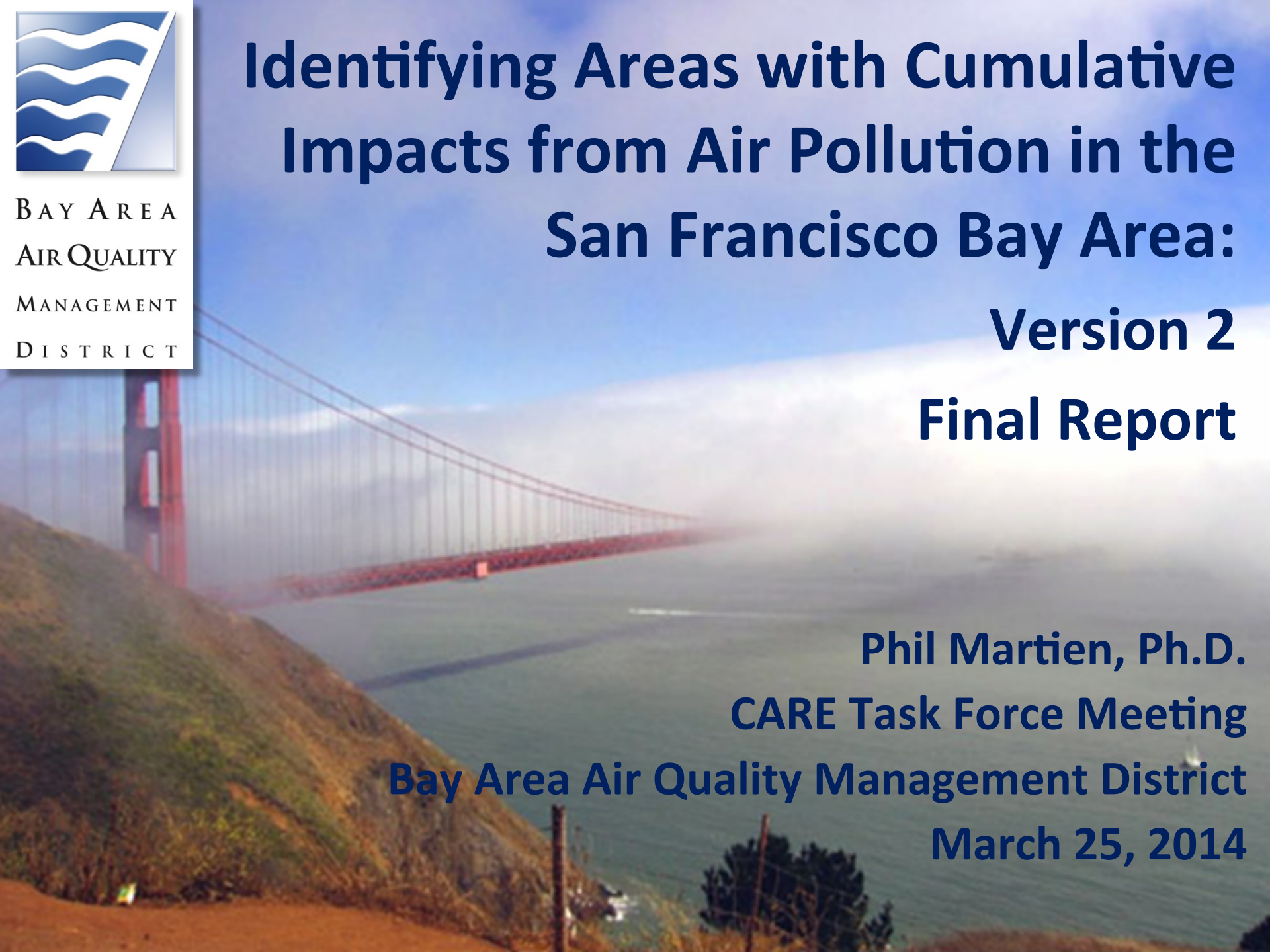




BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area: Version 2 Final Report

Phil Martien, Ph.D.
CARE Task Force Meeting
Bay Area Air Quality Management District
March 25, 2014



Overview

- Review updated method
- Review comments received on the draft methodology report

Identifying Areas with
Cumulative Impacts from Air Pollution
in the San Francisco Bay Area



Version 2
March 2014

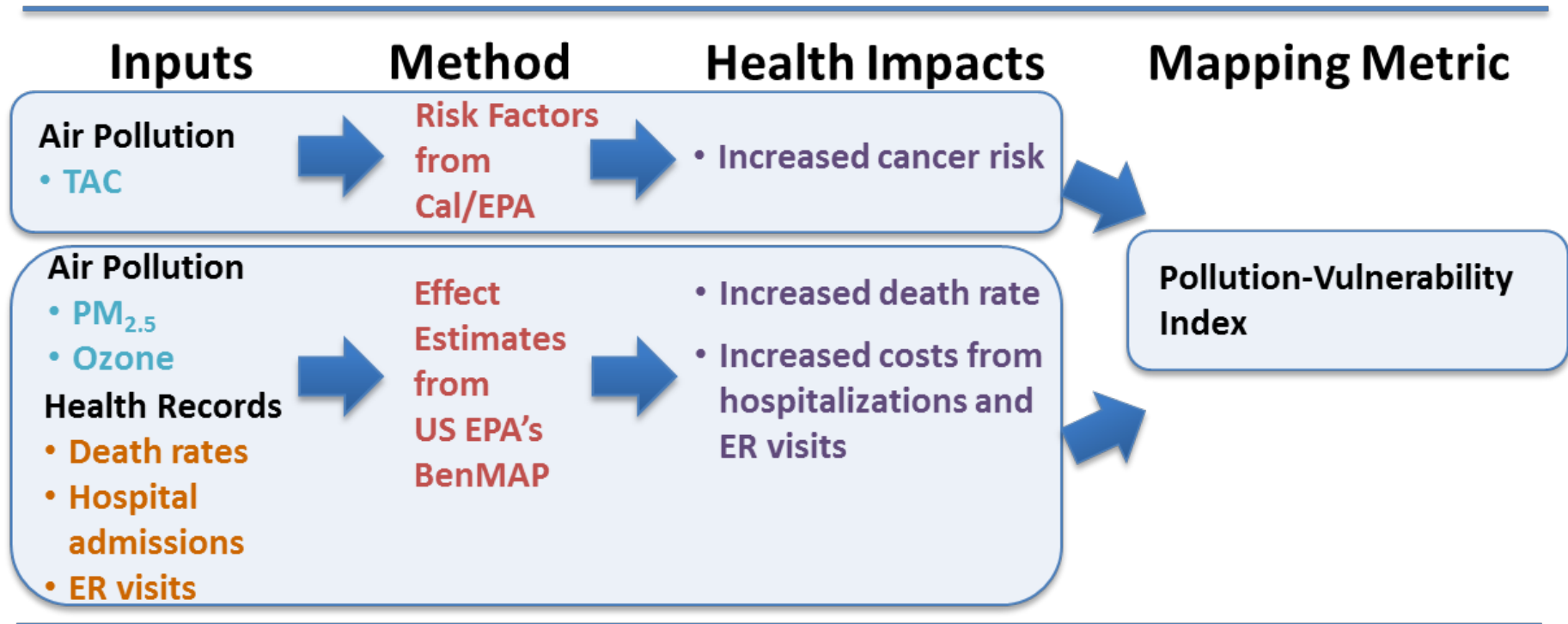


Why Update Maps?

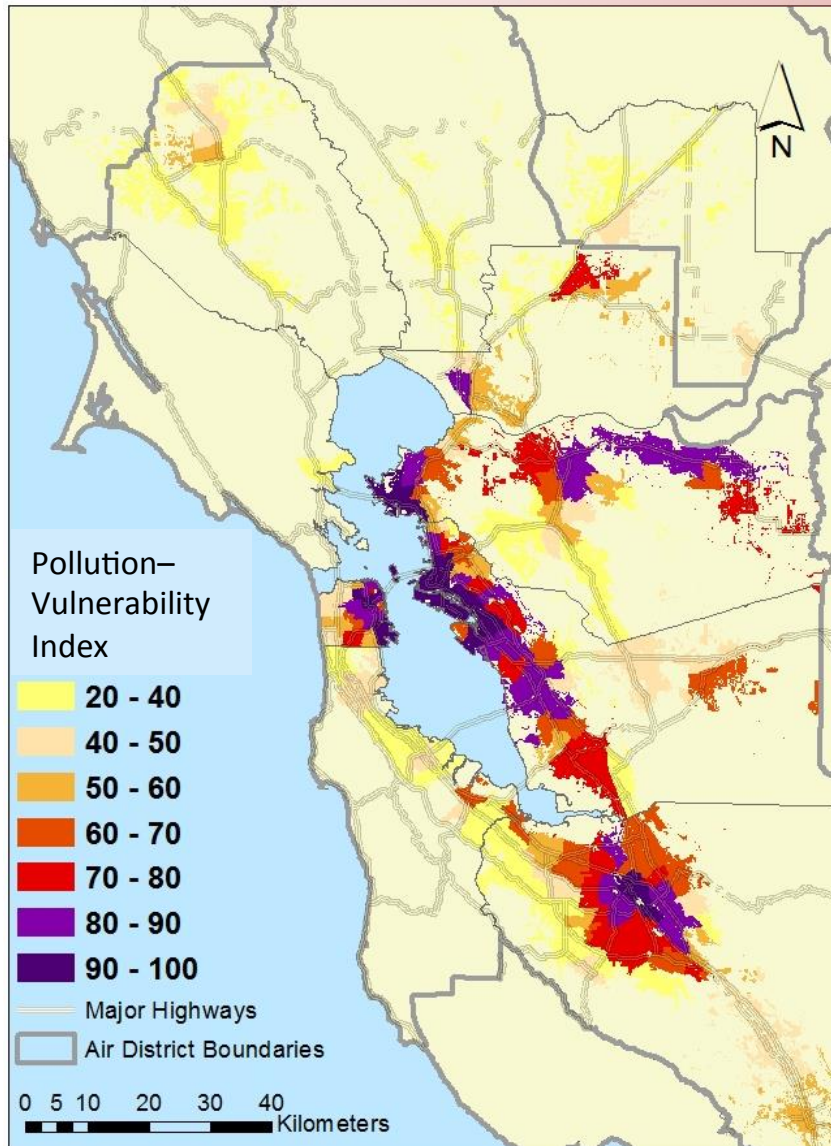
- Same goal as before:
 - Focus actions/engagement where most needed
- Use latest data
- Consider additional air pollutants
 - In addition to toxics: fine particles and ozone
- Use new methods
 - Estimate health outcomes from air pollution
 - Use health records to reflect vulnerability

New Method for Identifying Cumulative Impacts

- Considers air pollution levels and community health

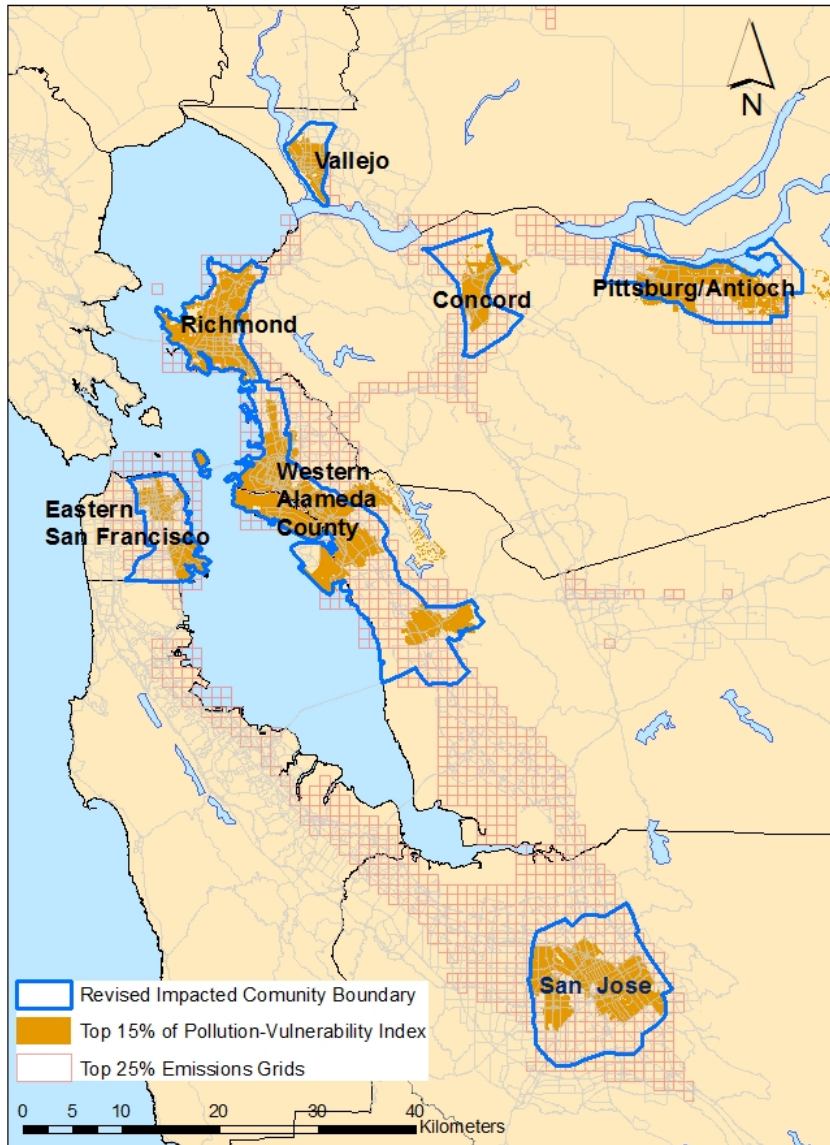


Cumulative Impacts from Multiple Factors



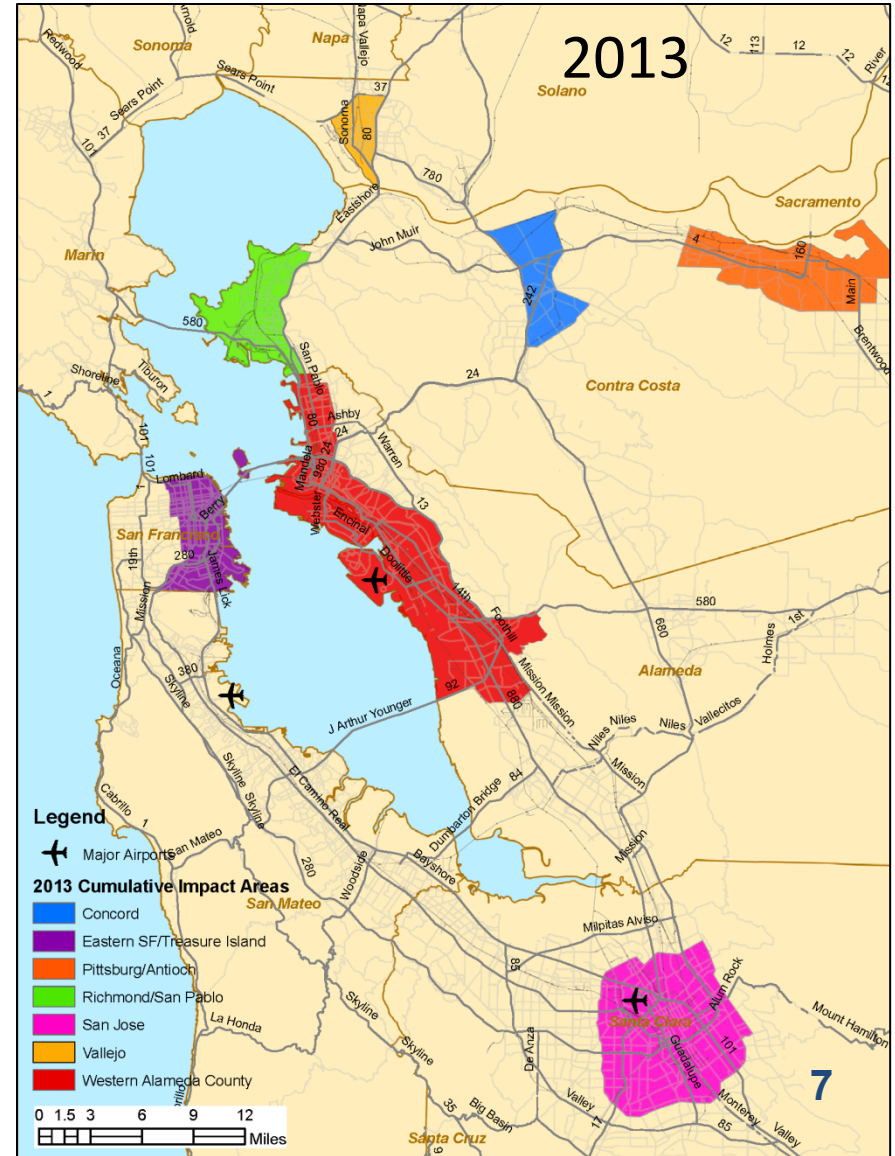
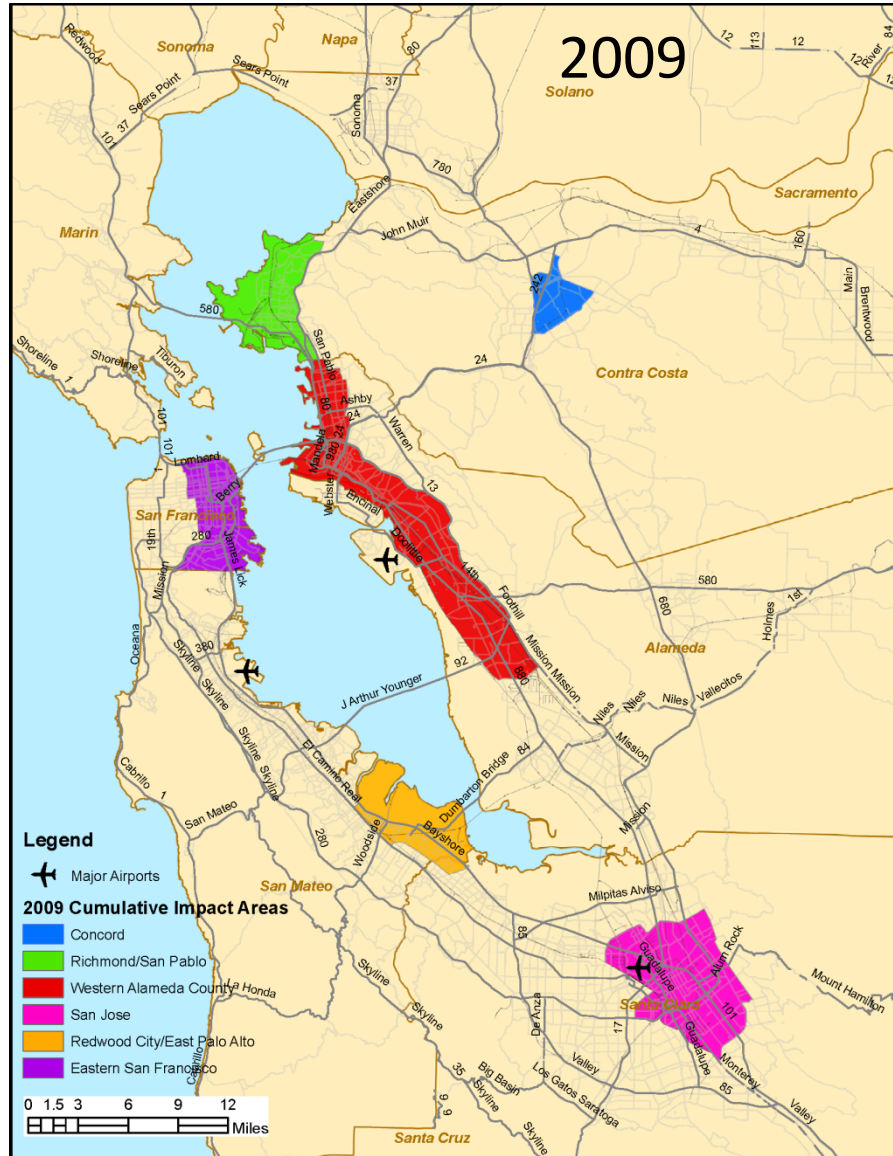
- Increased cancer risk
- Increased death rate
- Increased health costs
- Considers health records in each zip code
- Cumulative impacts higher where combined factors overlap

Mapping Impacted Areas



- Map areas with greatest impact
- Develop boundaries to encompass areas with highest impacts
- Consider where emissions are also high
- Use major roadways, geographical features to form boundaries

Update to Cumulative Impact Areas



Questions & Comments on the Method

- Has the Air District/Task Force shifted their focus away from race considerations to health considerations only? If so, why?
- Add more discussion of why socio-economic factors were not used.
- The version-2 method is an improvement because it ties the identification of impacted communities more directly to the health impacts of air pollution.

Questions & Comments on the Method (2)

- What impacts does age adjustment have? Can alternatives be explored to address the greater sensitivity of youth to asthma from air pollution?
- Why use the top 15% of the pollution vulnerability index? Why the top 25% of emissions?
- State what the health impacts of particulate matter (PM) are relative to the impacts of ozone.
 - For health costs, PM represents about 90% of the impacts compared to 10% from ozone.
 - For mortality, PM represents about 95% of the impacts compared to 5% from ozone.

Question on Characterizing Impacted Areas

- Add more discussion of why the maps change (version 1 to version 2).
- In comparing to CalEnviroScreen, note the different purposes of the maps.
- How many people live in the impacted areas?
 - For version 1: About 1.8 million or 24% of Bay Area population.*
 - For version 2: 2.2 million or 29% of Bay Area population.*

*2010 US Census

Comments & Questions on Uses of the Maps

- Where are the policies that apply to impacted areas?
- Apply stricter regulations in impacted areas.
- Continue to address race and other socio-economic factors in actions to reduce impacts, even though the method does not use socio-economic factors.
- Mitigations for climate change were not discussed.

Impacts from Episodes of Higher Air Pollution

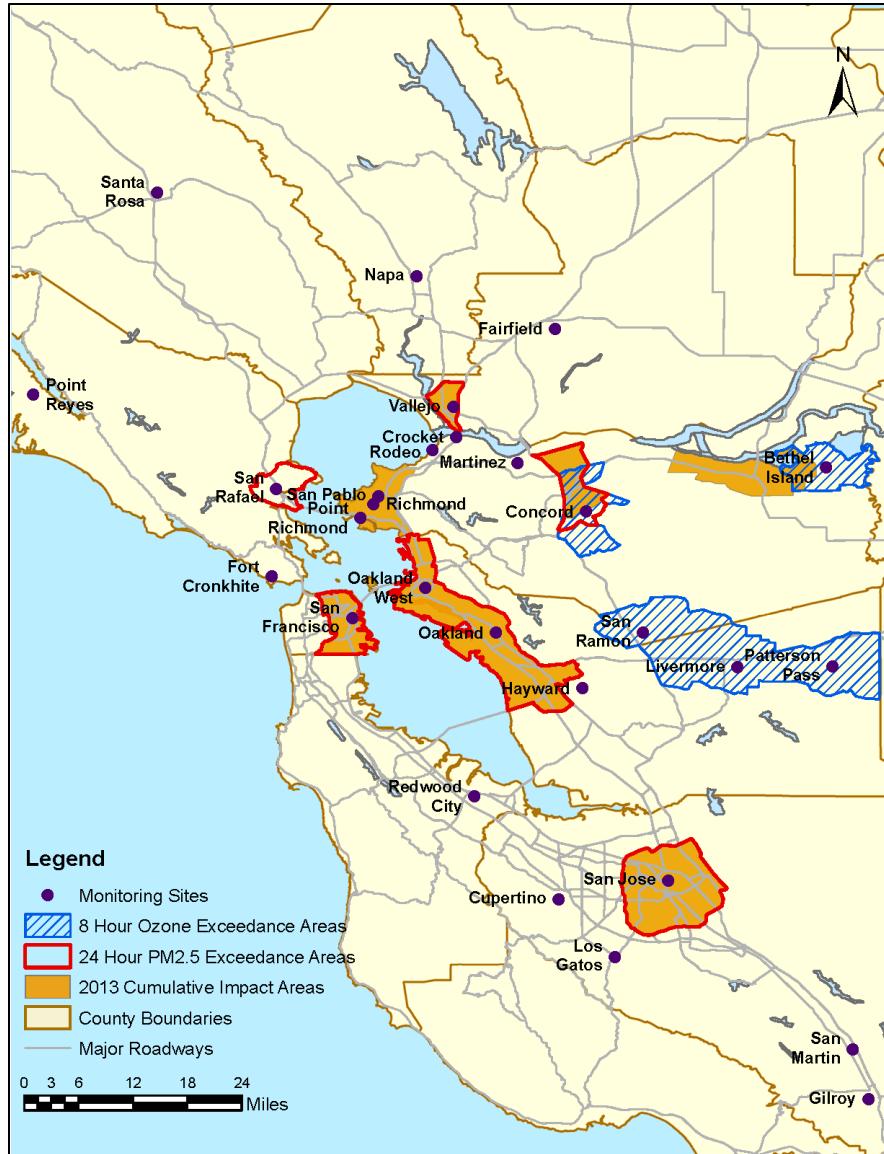
PM_{2.5} Exceedance Areas



Ozone Exceedance Areas



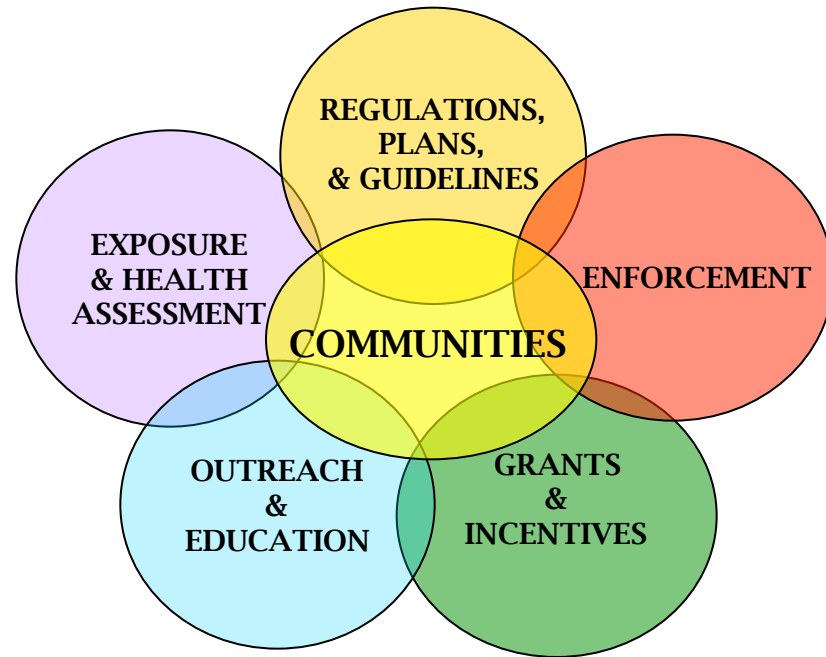
Uses of Maps



- Cumulative impact maps support and focus localized mitigation activities
 - Clean Air Communities Initiative
- Exceedance maps support and focus regional mitigation activities
 - Clean Air Plan policies and programs
 - Identify and reduce upwind sources of precursor emissions
 - Public outreach

Reducing Health Impacts

- Prioritize grant funding
- Focus outreach and education
- Focus enforcement activities
- Coordinate planning efforts
- Develop regulations targeted to source categories
- Prioritize local-scale measurement and modeling studies



Clean Air Communities Initiative