Community Risk Reduction Plan: San Francisco

AEP State Conference
May 18-21, 2017
San Francisco, California

Phil Martien, Ph.D.
Bay Area Air Quality Management District
Overview

• Regional perspective on air quality

• Bay Area Air District guidance on assessing air quality impacts

• Community risk reduction planning
  - San Francisco example
Recently Adopted Clean Air Plan:

- Protect air quality & health at regional & local scales
- Eliminate disparities among Bay Area communities from air pollution
- Protect the climate:
  - Align with State targets
Overall Air Pollution Down, but Higher Risks in Some Communities

2005 – Cancer Risk

2015 – Cancer Risk
Bay Area Communities Most Impacted by Air Pollution

- Areas with higher health impacts from particulate matter (PM), ozone, and toxics
- Areas with episodes of higher PM
- Areas with episodes of higher ozone
Infill Development

• Many benefits:
  - Housing
  - Pollution reduction
  - Public transit, walking, biking
  - Green space

• Potential for increased air pollution exposures
  - Traffic-associated adverse health outcomes
  - Highest levels of fine PM & toxics occur near air pollution sources
Air District Guidance and Tools

- Guidance on addressing impacts
- Project-by-project approach:
  - Uncertainty
  - Limited options
  - Inconsistencies
- Community Risk Reduction Plan option
- Air District *Planning Healthy Places* to aid with planning
Community Risk Reduction Plan

• Address potential air pollution risks in long-range local plans rather than on a project-by-project basis
• Develop a community-wide, integrated strategy
• Integrate risk/hazard reduction measures into local planning processes
• Simplify environmental review for infill projects
• Address existing as well as new exposures
• Provide a focal point for healthy-community discussions
San Francisco Plan

- Model particle concentrations and cancer risk from:
  - On-road cars and trucks
  - Permitted stationary sources
  - Rail
  - Ships and harbor craft
  - Transit terminal
  - Large construction projects

- Set thresholds

- Map areas above thresholds

- Develop measures to reduce risk in new and existing developments

- Develop measures to reduce impacts in communities with greatest health burdens from air pollution
Examples of Modeling Results: Fine Particles and Potential Cancer Risk

Fine particulate matter (PM$_{2.5}$) annual concentrations

2014 – Cars and Trucks

Potential cancer risk (lifetime exposure)

2014 - Caltrain

Cancer Risk (per million)
2014

- SF CalTrain
- 20 m receptor spacing
- 0 - 10
- 10 - 20
- 20 - 40
- 40 - 60
- 60 - 80
- 80 - 100
- > 100

Miles
Partnered with SF Planning, DPH on Community Risk Reduction Plan

City adopted thresholds for cancer risk and PM$_{2.5}$ to form **Air Pollutant Exposure Zones**
More Information

• 2017 Clean Air Plan  

• Community Air Risk Evaluation (CARE) Program  
  http://www.baaqmd.gov/CARE/

• Planning Healthy Places  
  http://www.baaqmd.gov/plans-and-climate/planning-healthy-places