BAY AREA AIR QUALITY MANAGEMENT DISTRICT

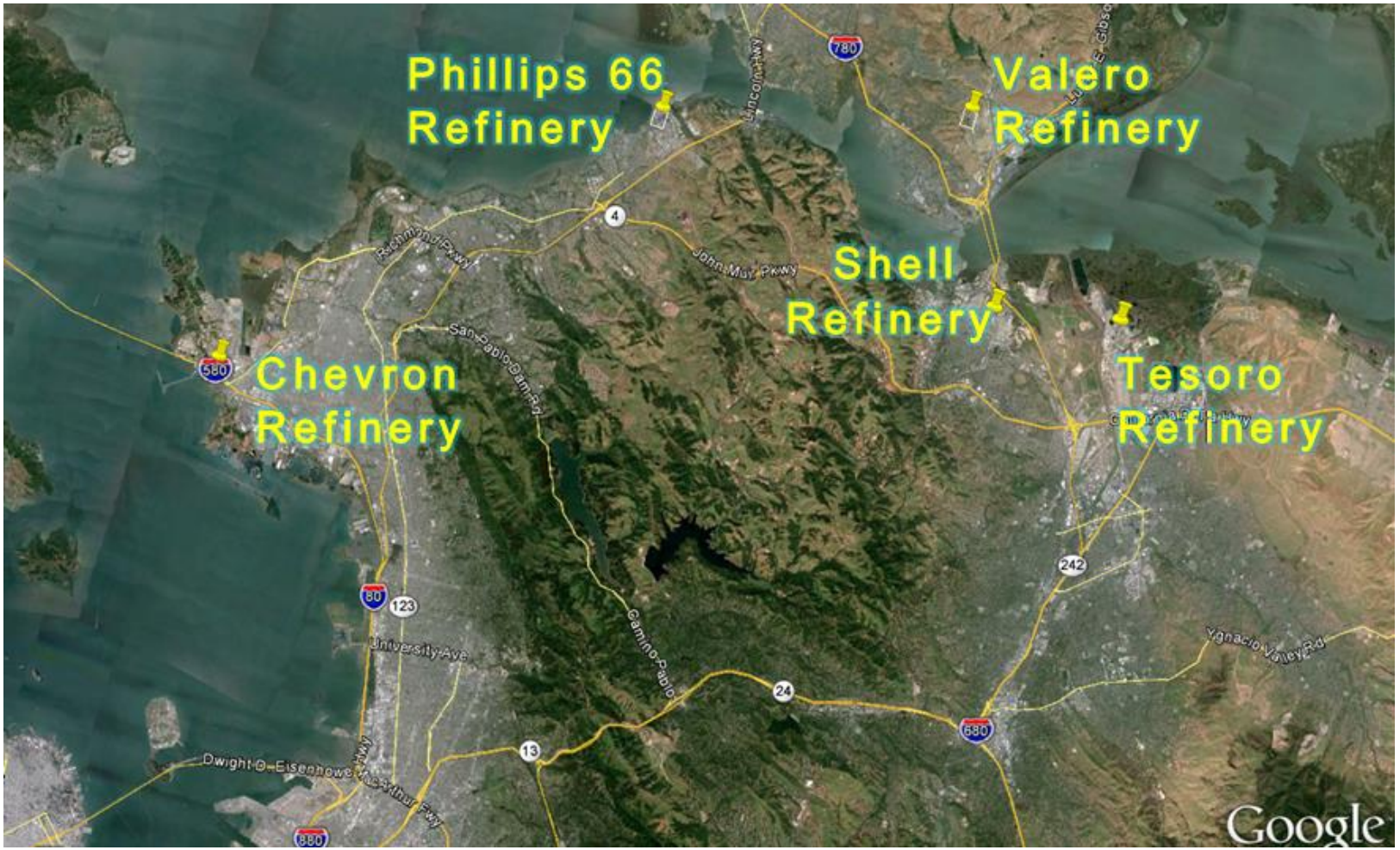
AGENDA: 13

Set Public Hearing: Petroleum Refining Emissions Tracking Rule

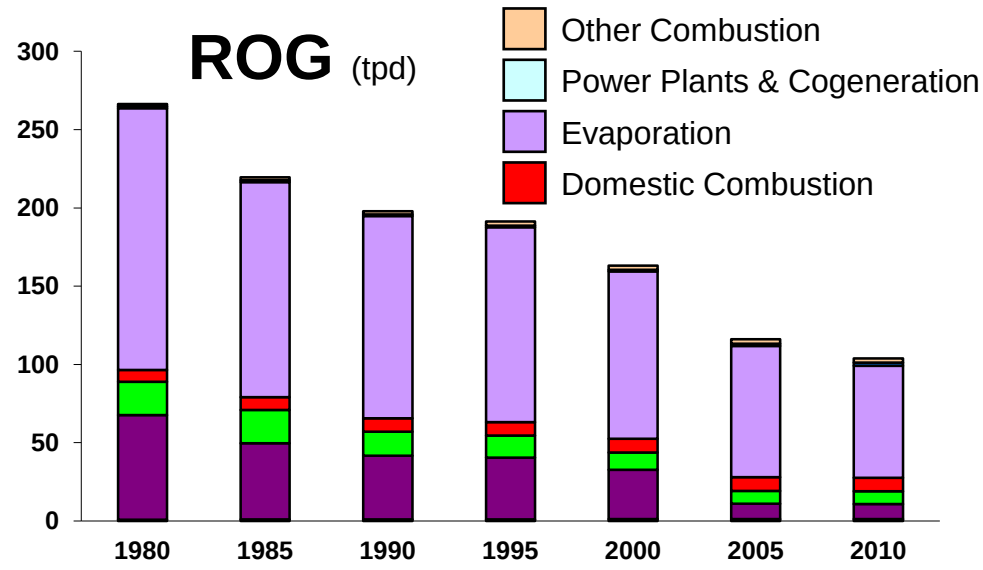
Board of Directors Regular Meeting September 3, 2014

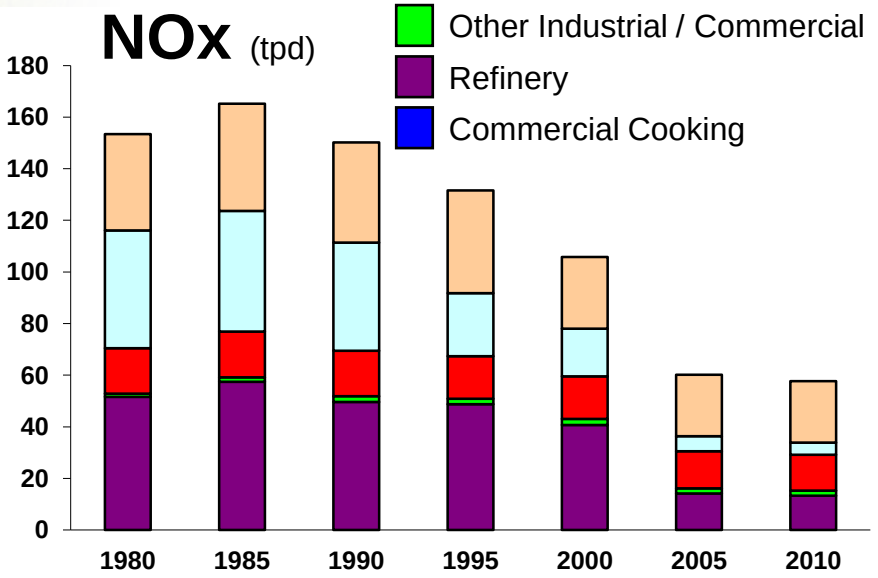
Jean Roggenkamp
Deputy APCO

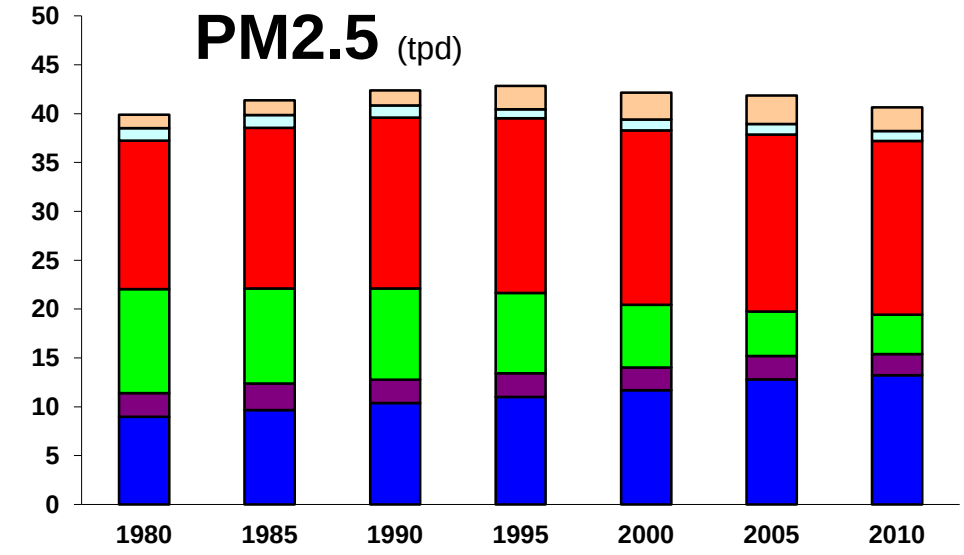
Bay Area Refineries

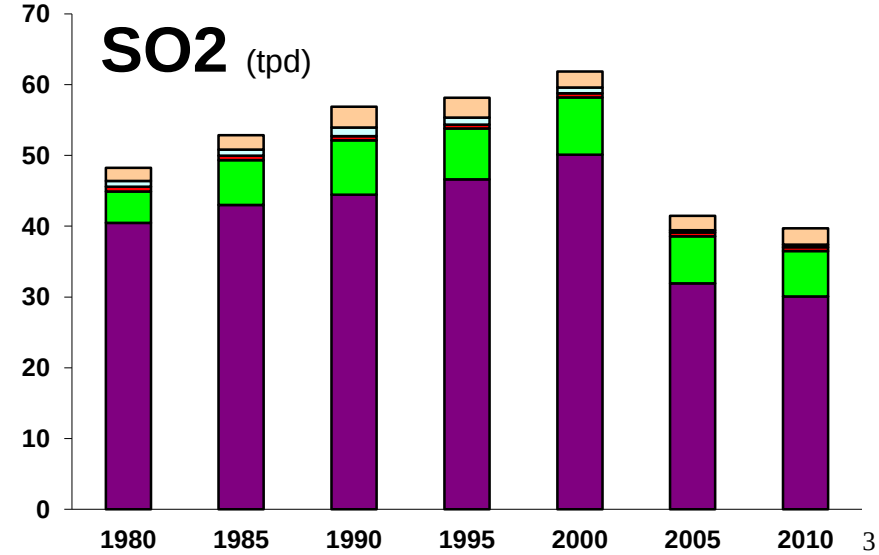


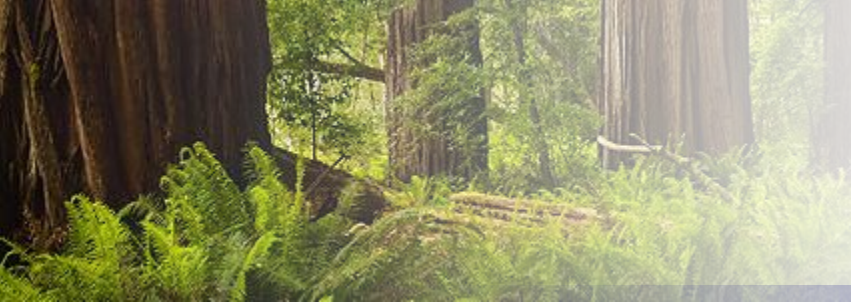
Stationary Source Emission Trends 1980-2010











Factors Affecting Bay Area Refineries

The following factors prompt our current regulatory effort to track refinery emissions:

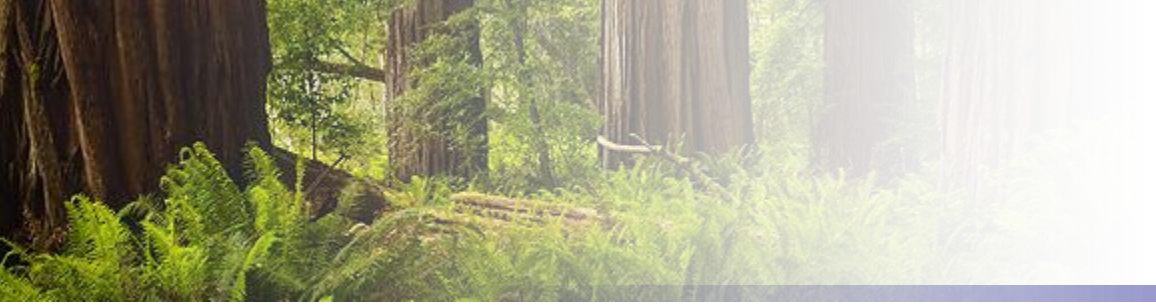
- Changes in crude oil stock processed at Bay Area refineries
- Changes in refinery processes to address other agency requirements (reduced sulfur content, safety, cap & trade)
- Upcoming changes in health risk assessment methodologies

Proposed Rule Elements

- Report on-going ***annual emissions inventories*** of all regulated air pollutants based on upgraded methods, including emissions from cargo carriers
- Establish ***Petroleum Refinery Emissions Profile (PREP)***, and require that on-going inventories include comparisons with PREP
- Report on-going ***crude oil quality characteristics*** with annual emissions inventories (e.g. sulfur, nitrogen content, API gravity, Total Acid Number)

Proposed Rule Elements (continued)

- Update refinery-wide ***Health Risk Assessments (HRA)*** with enhanced emissions inventories and revised OEHHA HRA guidelines
- ***Enhance fence line monitoring systems and establish community air quality monitoring systems***
- ***Develop fee structure*** to recover costs



Next Steps

- **Set Public Hearing:** Move forward with adoption of Regulation 12-15 to improve information and transparency regarding refinery emissions, crude oil characteristics, health risks, and air quality monitoring
- **Seek Additional Emission Reductions:** Examine ways to achieve additional emissions reductions from refineries
- **Bring recommendations to Board of Directors**

Recommendation

Staff recommends that the Board of Directors set the Public Hearing for considering adoption of Regulation 12, Rule 15: Petroleum Refining Emissions Tracking for the Board of Directors meeting on November 5, 2014.

AGENDA: 14

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Report on CalEnviroScreen: CalEPA's Method for Identifying Disadvantaged Communities

Phil Martien, Ph.D.

Board of Directors Meeting

September 3, 2014

Overview

- SB 535 (De León, 2012): Prioritizes Cap-and-Trade funding to disadvantaged communities
- CalEnviroScreen: CalEPA method used to identify disadvantaged communities
  - Overlooks many disadvantaged communities
  - Including many in the Bay Area
- Air District Recommendations & Outreach
- Upcoming Opportunities for Comment

Cap-and-Trade Auction Proceeds

- Within California's Global Warming Solutions Act (AB 32)
  - California Air Resources Board (ARB) sells greenhouse gas emissions "allowances" at auction under the Cap-and-Trade program
  - ARB allocates the auction revenues to projects that support AB 32 objectives
- Revenues from Cap-and-Trade projected at about $15 billion through 2020

Senate Bill 535 Defines Disadvantaged Communities

- Disadvantaged communities include ***either:***

(a) Areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure, or environmental degradation ***or***

(b) Areas with concentrations of people that are of low income, high unemployment, low levels of homeownership, high rent burden, sensitive populations, or low levels of educational attainment

Senate Bill 535 Requirements

Funds from State proceeds from Cap-and-Trade auctions must:

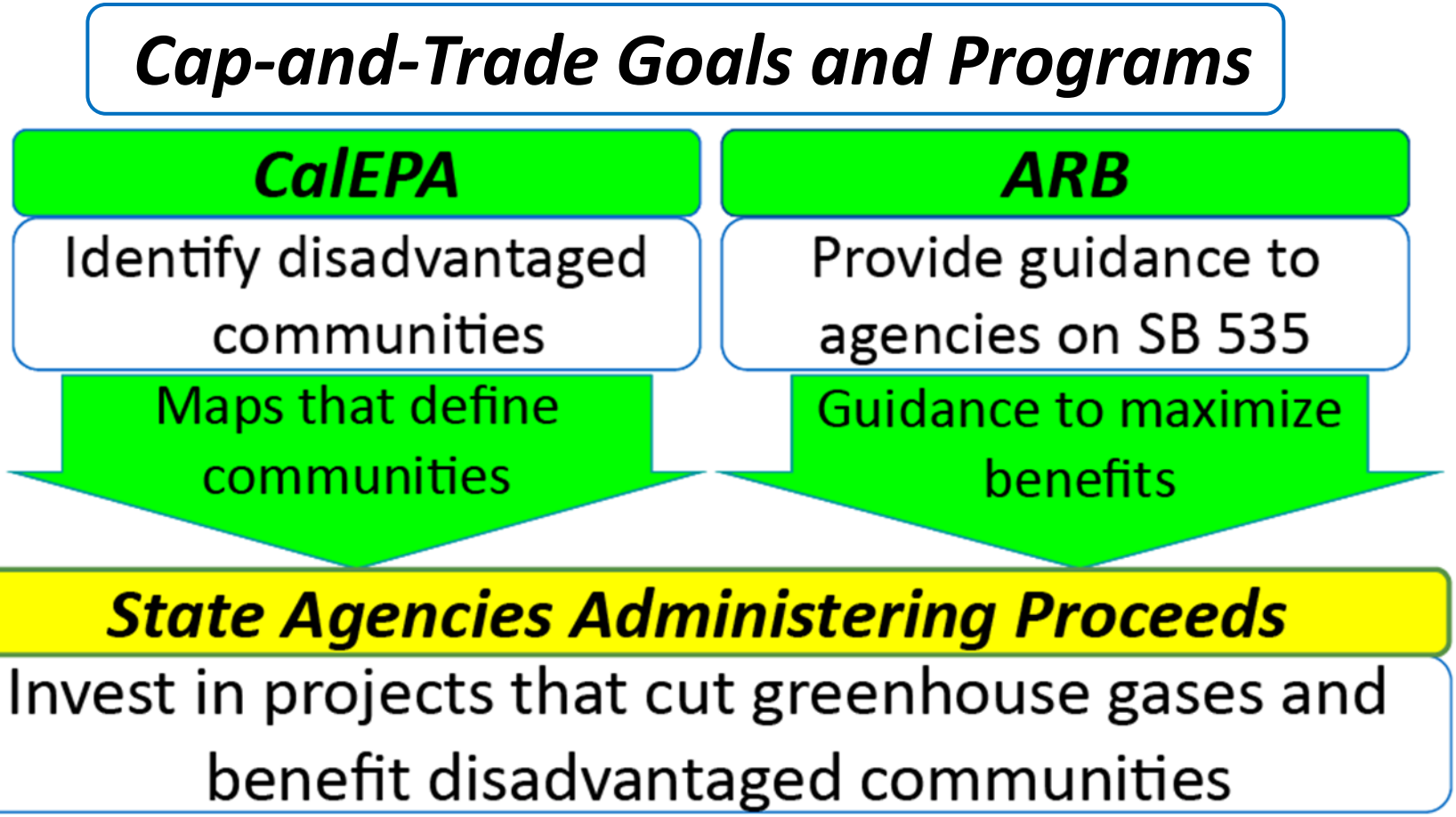
- Maximize benefits to disadvantaged communities
- Allocate at least 10% of funds to projects ***located in*** disadvantaged communities
- Allocate at least 25% of funds to projects ***benefitting*** disadvantaged communities
- Allocate much higher percentages for some types of projects

Examples of Projects

Cap-and-Trade auction proceeds will help fund:

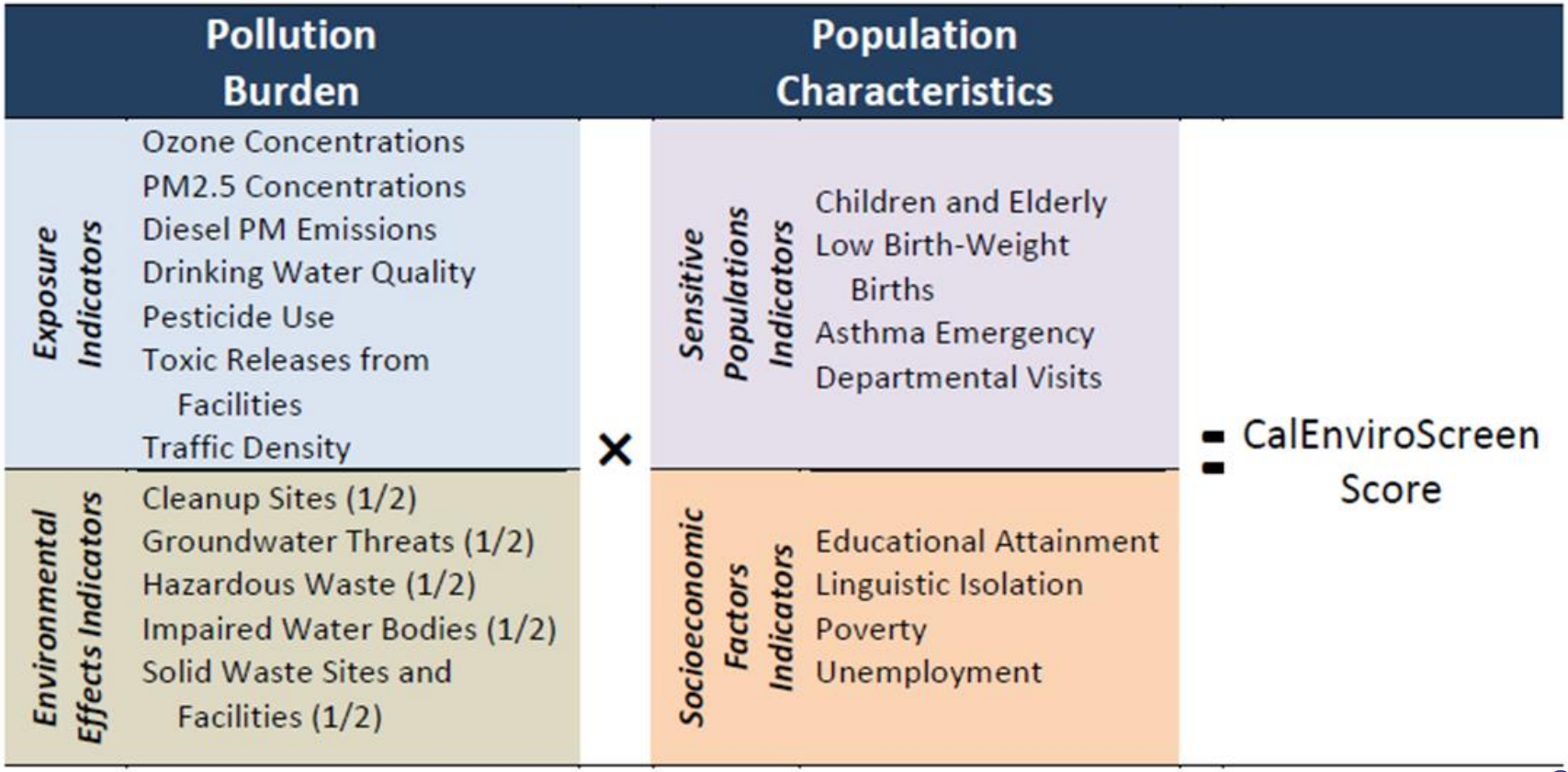
- **Improved Transit:**
  - Enhanced bus service, electric commuter rail, and high-speed rail
  - Zero- and low-emission cars, truck, and freight technology
- **Housing Upgrades and Retrofits:**
  - Energy system upgrades, better insulation, improved lighting, improved water-use efficiency, and urban tree planting
  - New affordable housing near transit centers

State Agency Roles to Implement SB 535



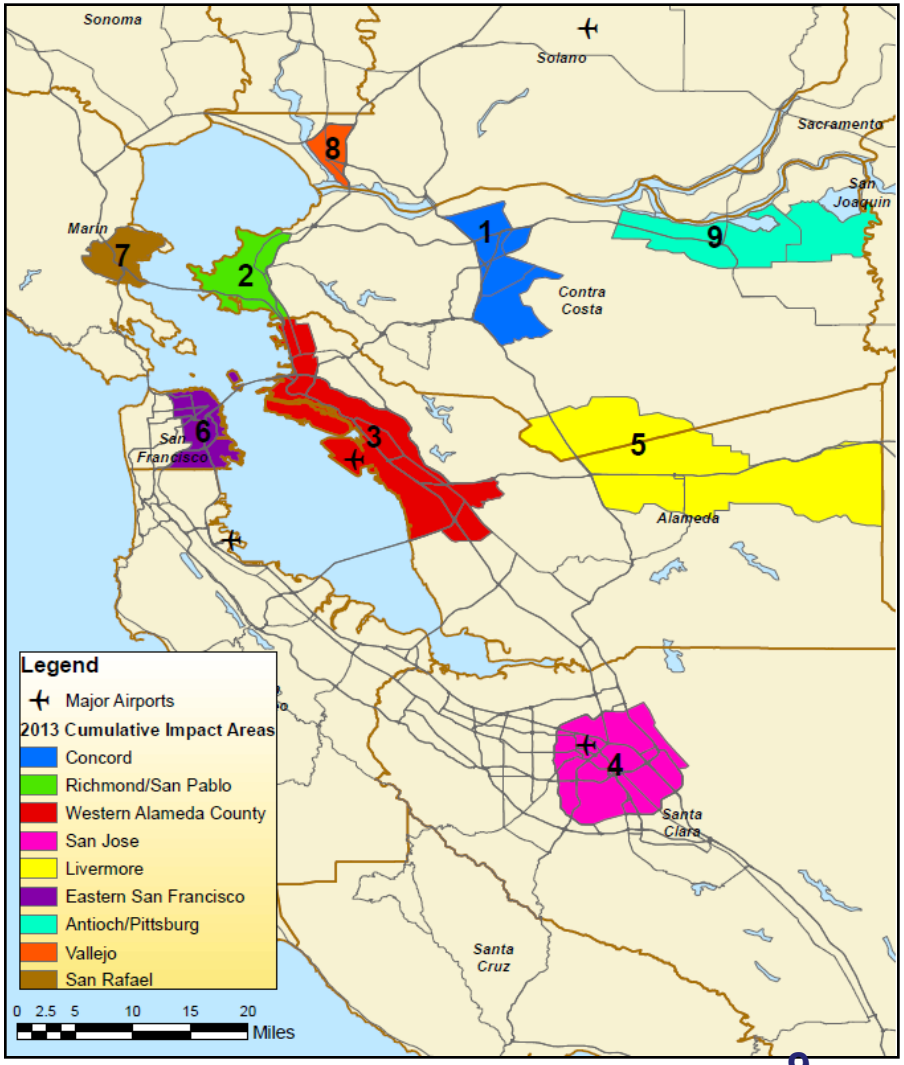
CalEnviroScreen:

- Tool selected by CalEPA to identify disadvantaged communities
- Includes 19 indicators for California census tracts

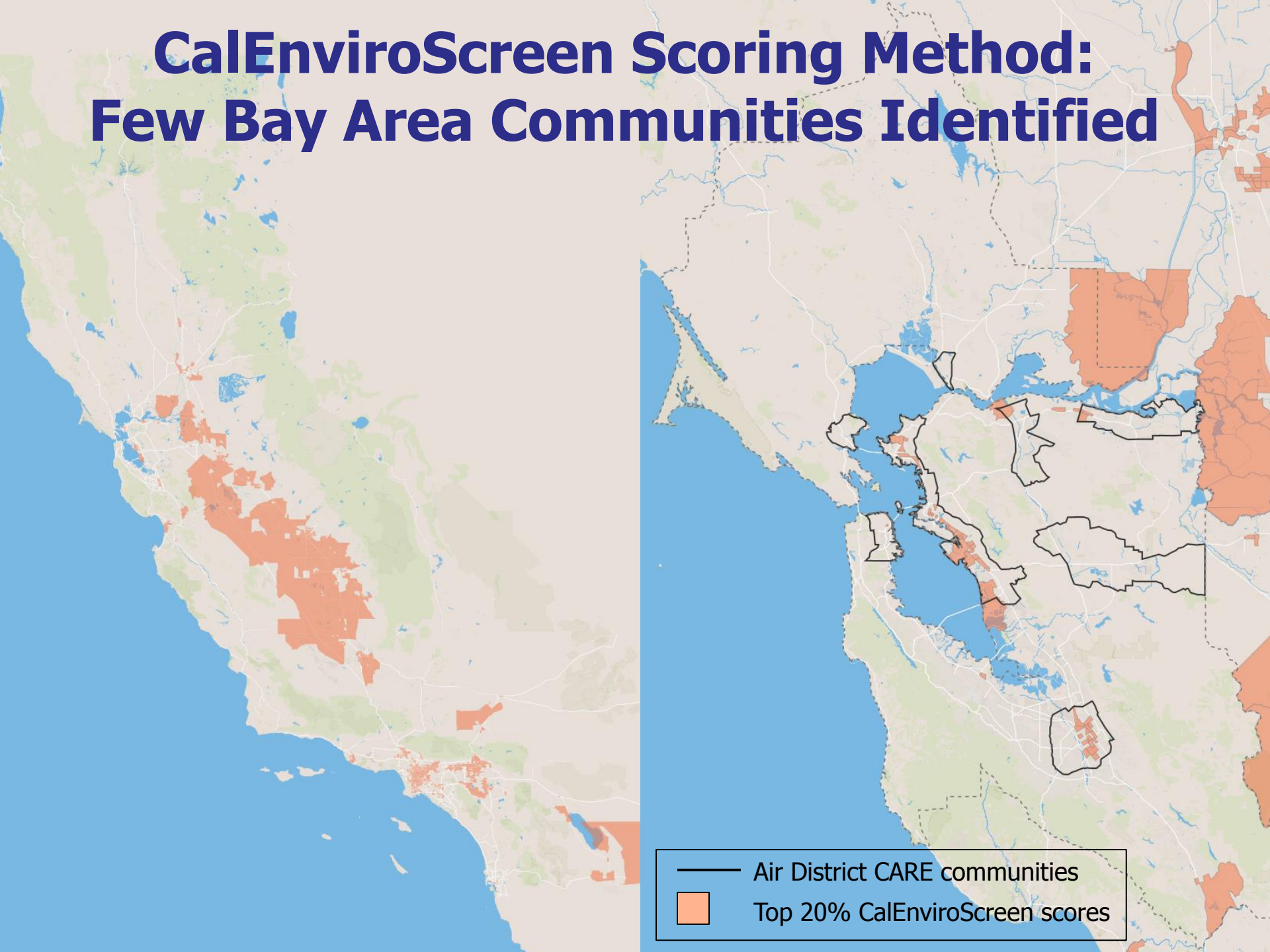


Air District Set Example: Prioritizing Resources in Impacted Areas

- Community Air Risk Evaluation (CARE) program identified areas with greatest health impacts from air pollution
- Considered community health and air pollution levels
- Staff participated in statewide workgroup on CalEnviroScreen



CalEnviroScreen Scoring Method: Few Bay Area Communities Identified



ARB Interim Guidance

- Areas identified by CalEnviroScreen determine whether a project is ***located in*** a disadvantaged community (at least 10% of funding)
- A project
  - Within ½ mile of,
  - Within a zip code adjacent to, or
  - On an impacted corridor adjacent to

  areas identified by CalEnviroScreen determine if a project would ***benefit*** a disadvantaged community (at least 25% of funding)

Concerns about Scoring Method

Air District strongly supports goals of SB 535, but

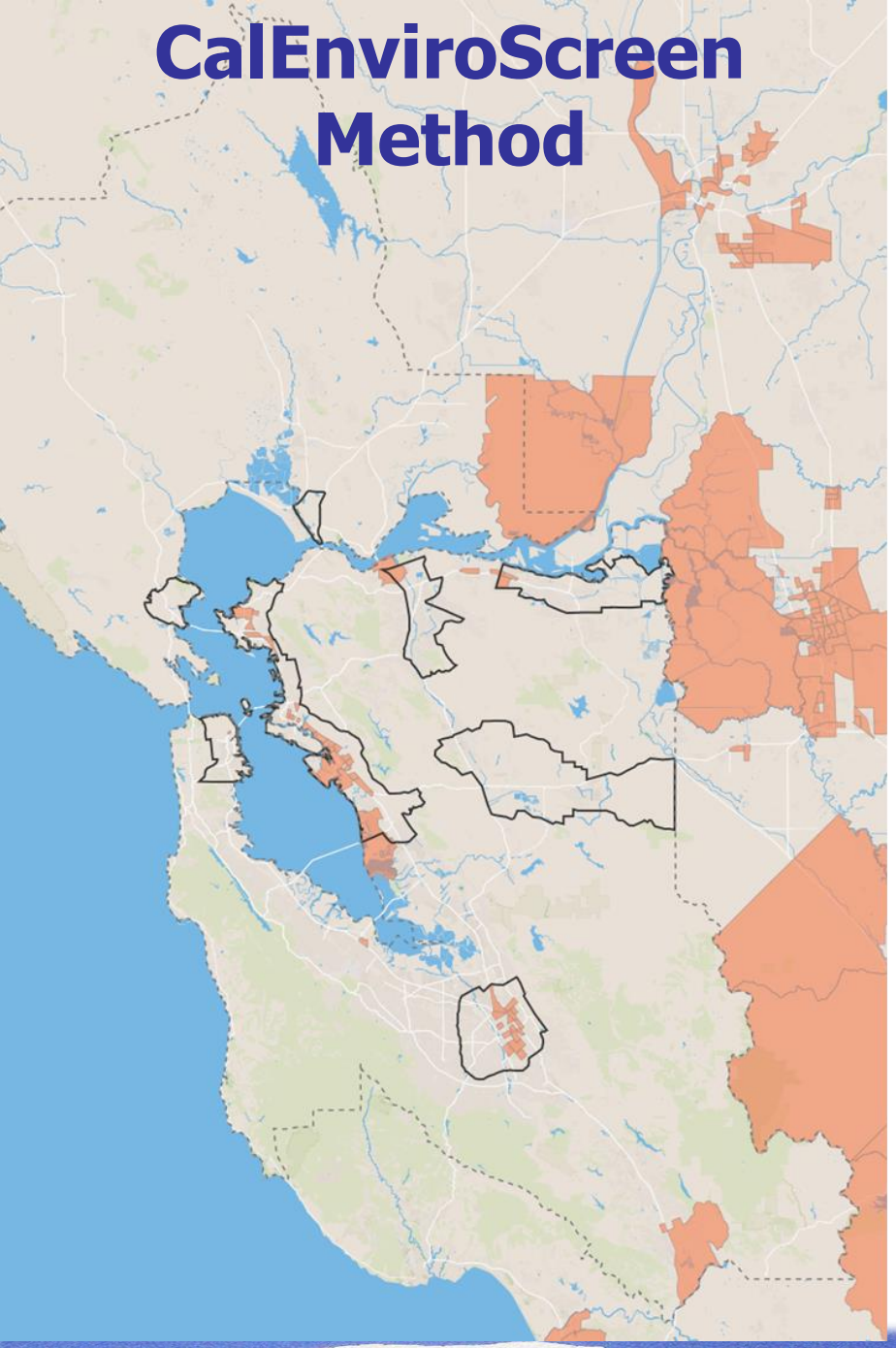
- CalEnviroScreen scoring methods fail to identify many disadvantaged communities
  - The top 20% of CalEnviroScreen scores include only 3% of Bay Area census tracts (vs. nearly 50% of those in the San Joaquin Valley)
- CalEnviroScreen scoring *averages* indicators
  - Favors areas with many moderately high indicators
  - Under counts areas (like the Bay Area) that rank highest for a few indicators
  - Inconsistent with SB 535 goal to benefit ***either*** pollution burden ***or*** economic/health burden

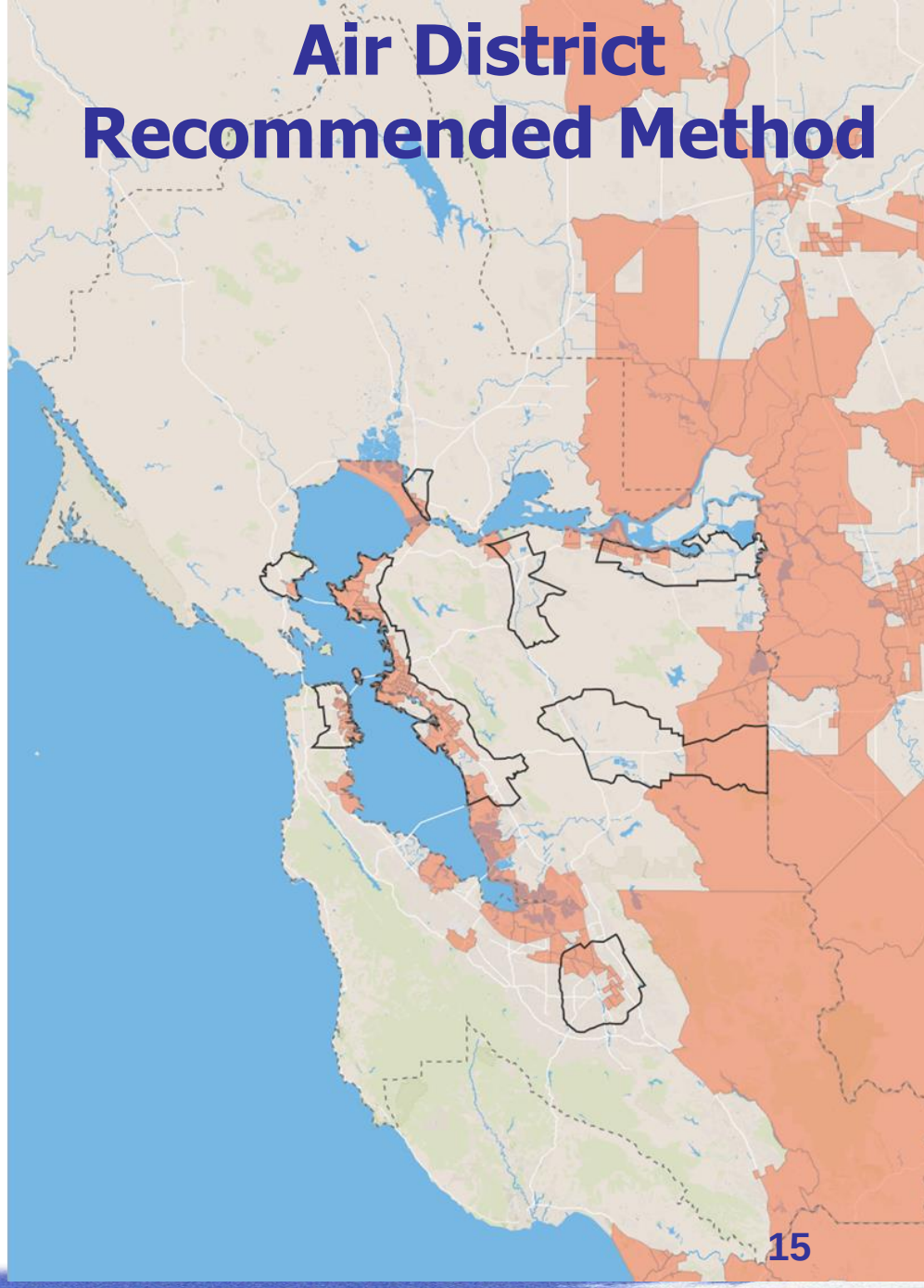
Concerns about Indicator Weighting and Missing Data

- No weighting of indicators to account for health impacts of pollution indicators
  - Example: Diesel PM has greater health impacts than ozone, but is given equal weight
- No accounting for regional differences in cost of living in the Poverty indicator
- Agricultural pesticide applications are included in the Pesticides indicator, but not urban applications

Recommended Changes to CalEnviroScreen

- Air District staff developed a scoring method that ensures areas with highest scores on a few indicators are identified
- Weight indicators to account for relative health impacts
- Account for cost of living
- Include urban pesticide applications, or remove Pesticides indicator


CalEnviroScreen
Method


Air District
Recommended Method

Extensive Outreach by Air District Staff

- Met with Secretary of CalEPA and staff
- Provided information to State Legislators
- Held discussions with
  - Community groups
  - Stakeholders
  - Regional partners
- Provided written comments

Opportunities to Comment

- SB 535 Workshop:
  - September 3rd, 6-8 p.m., Oakland
- Written comments to the Air Resources Board by September 15
- Air Resources Board Meeting
  - September 18, Sacramento

AGENDA: 16

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

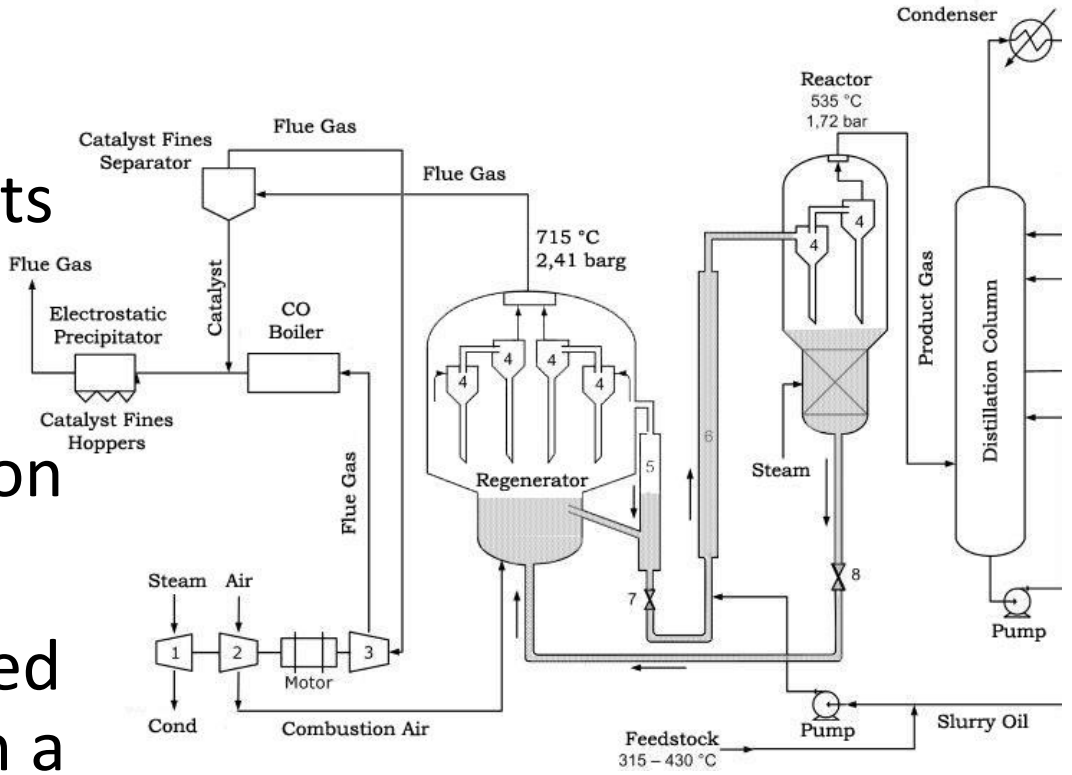
Testing Method Evaluations for Fluid Catalytic Cracking Units

Board of Directors
September 3, 2014

Eric Stevenson
Director of Technical Services

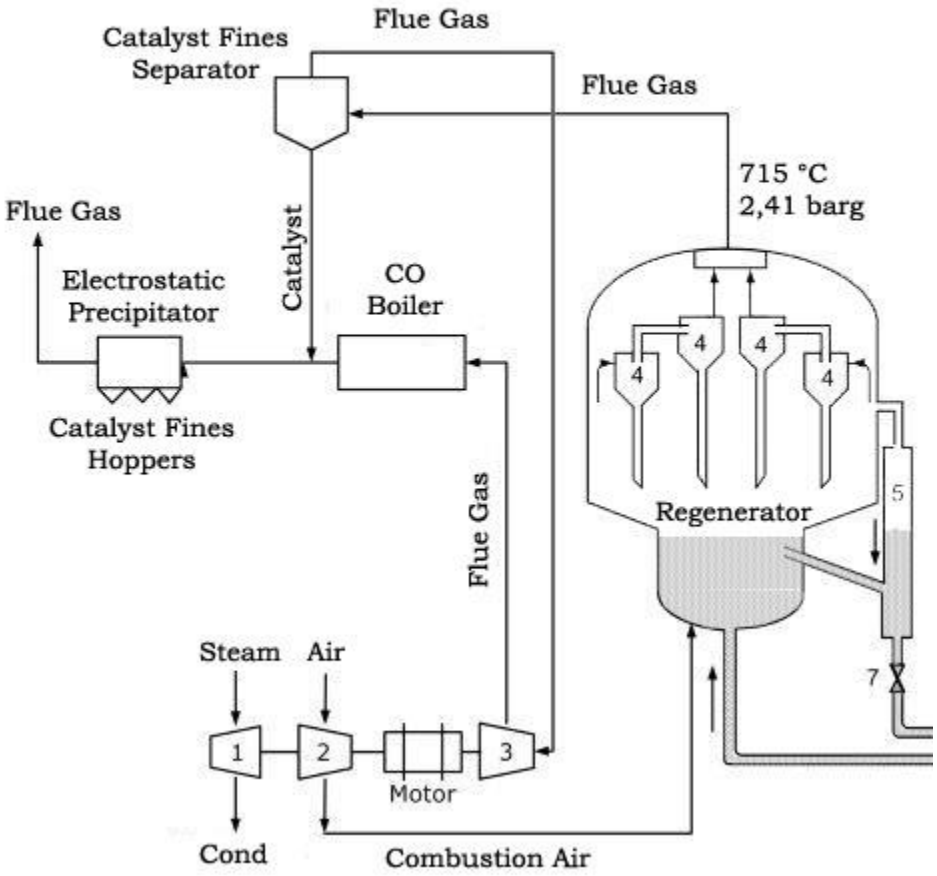
Background

- Fluid Catalytic Cracking Units (FCCUs) convert high boiling, high molecular weight hydrocarbons to more marketable products
- Uses a catalytic process that produces coke as a byproduct that deposits on the catalyst
- The coke must be removed from the catalyst through a regeneration process



Background

- Regeneration produces particulate matter (PM)
- PM is removed from the regeneration process stream and sent to an electrostatic precipitator (ESP) where ammonia can be injected to aid further PM removal
- Exhaust gas is at high temperature and high flow rate



PM Components

- *PM from FCCUs can be categorized into three types:*
  - **Filterable PM** is particulate matter in the exhaust stack, and can be captured on a filter in the exhaust stream
  - **Condensable PM** is a gas while in the exhaust, and condenses into particulate matter immediately after discharge from the stack.
  - **Precursor Gasses,** such as SO_2, in the exhaust can later form **Secondary PM** through atmospheric chemical reaction

Source Testing Issues for Condensable PM

- Originally, regulations and testing methods only applied to filterable PM
- When testing methods for condensable PM were first developed, the method significantly inaccurately over-estimated condensable PM emissions
- Since 2011, EPA requires testing for condensable PM with a revised method to establish emission limits in applicable Prevention of Significant Deterioration (PSD) and New Source Review (NSR) permits **only**
- Concerns regarding the revised method (Method 202)

PM Component Emission Limits

- **Filterable PM** is measured by filter and permit limited by mass
- **Condensable PM** is currently regulated during PSD and NSR permitting for new and modified sources
- **Precursor Gasses** are measured by CEM and permit limited by mass and concentration, thus limiting **Secondary PM**

Current Actions

- Method 202 requires modifications to existing testing infrastructure at FCCUs
- Independently investigate the issues with Method 202
- Investigate if a new FCCU rule should address condensable PM

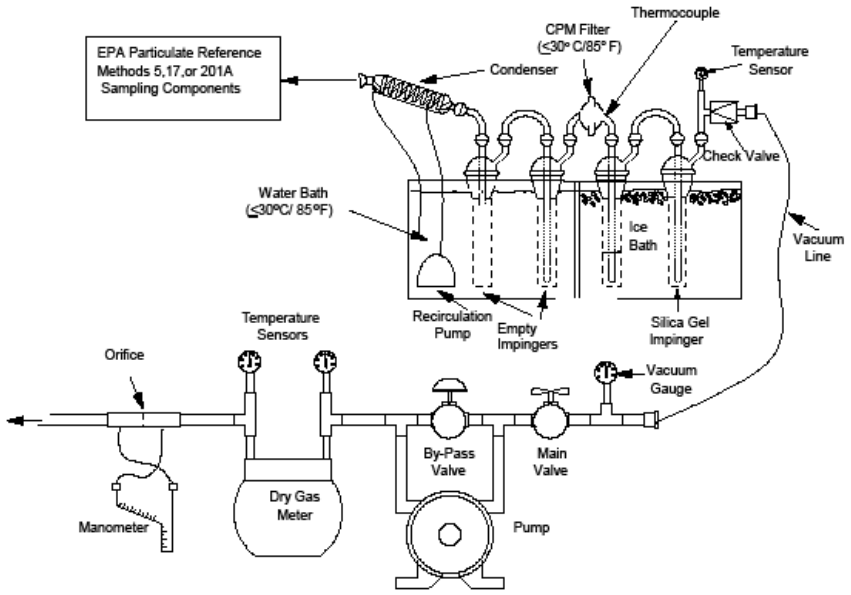


Figure 1. Schematic of Condensable Particulate Sampling Train

Next Steps

- Hire independent party to oversee investigation
  - Evaluate and provide input in hiring an outside testing firm to perform Method 202
- Air District staff/Outside testing firm perform Method 202 at same sources
- Independent party will evaluate results and provide input on applicability of Method 202 in new rule development
- EPA and the public will be invited to participate

Summary of Ozone Seasons

Year	National 8-Hour	State 1-Hour	State 8-Hour
2011	4	5	10
2012	4	3	8
2013	3	3	3
2014	3	2	7

Spare the Air Alerts: 5/12, 5/13, 5/14, 6/8, 6/9, 7/25, 8/1

Days > 0.075 ppm 8-hour NAAQS: 4/30, 5/1, 5/14