# RISK ASSESSMENT METHODS AND ADDRESSING CUMULATIVE IMPACTS

SB 673 Cumulative Impacts Symposium

March 27, 2017

South Coast AQMD

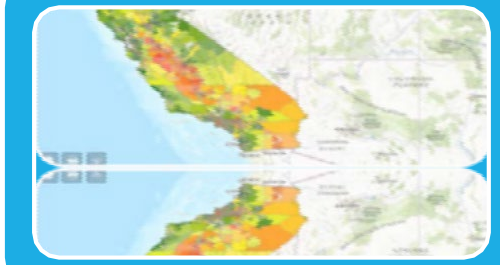
# Risk Assessment Methods

## Facility Based

- Purpose: Predict future impacts from specific equipment
- Example: Permitting

## Site Based

- Purpose: Evaluate how historical impacts to specific site could affect future
- Example: Site Clean-up



## Receptor Based

- Purpose: Evaluate total impact to a receptor
- Example: CalEnviroScreen, EJScreen, NATA, MATES, etc.*

**Some of these tools are not traditional risk assessments*

# Regulatory Health Risk Assessments


- Same basic approach across agencies, but many underlying variables differ
  - Pollutant Toxicity
    - Toxicity criteria available from OEHHA, EPA, literature, etc.
  - Dose
    - Receptor exposures scenarios
    - Childhood sensitivity multipliers
    - Modeled concentrations vs. actual measurement
  - Many others…

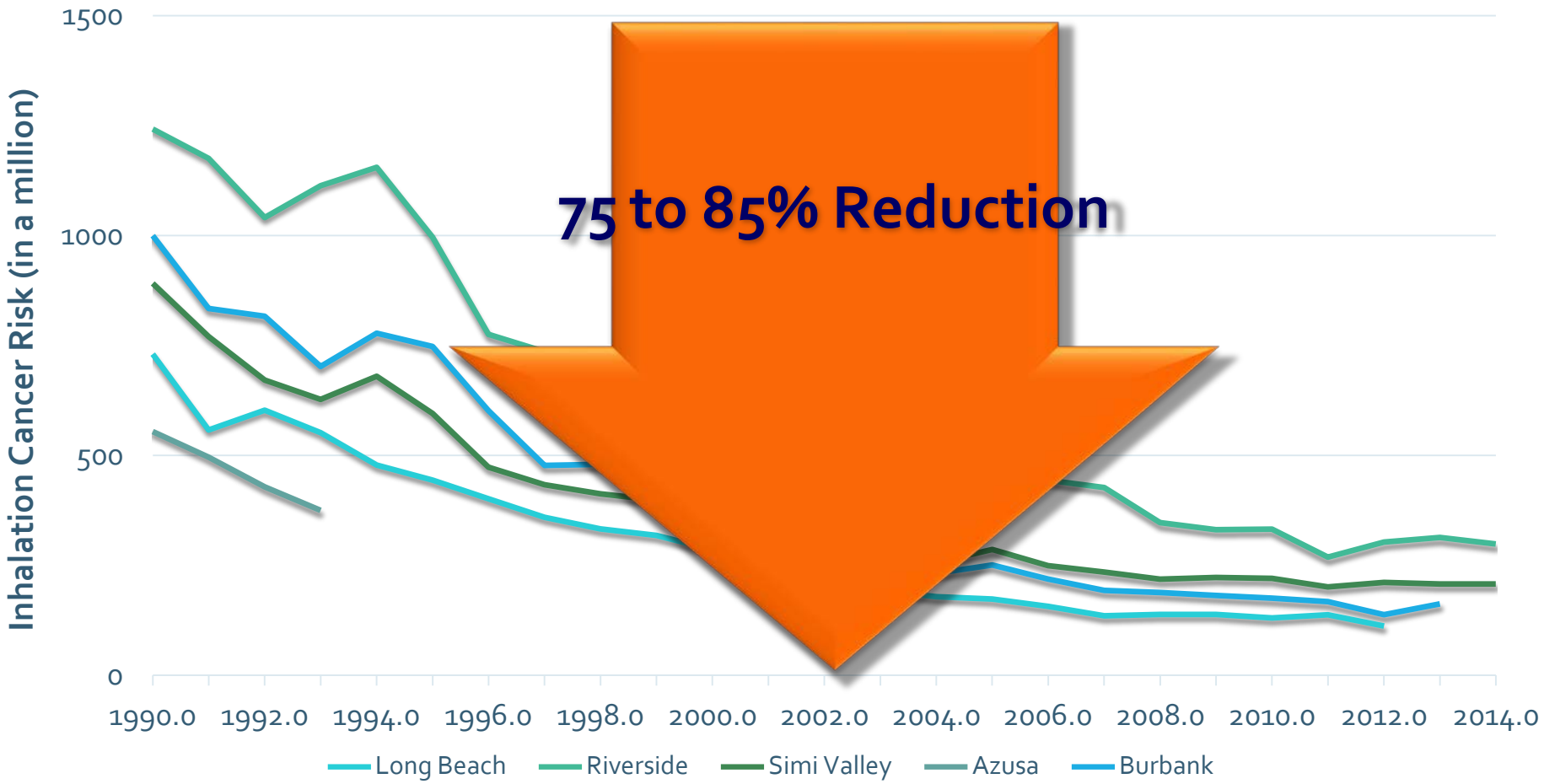
# Air Quality Health Risk Assessments

- Facility-based HRAs are required by regulation when:
  - New equipment is permitted – New Source Review
  - Entire facility is evaluated under AB 2588 Air Toxics Hot Spots Act
    - OEHHA Guidance required by Health and Safety Code
  - Projects are approved under CEQA
    - Cumulative impacts assessed
    - Baseline conditions subtracted out of project impact
    - Many schools required to conduct receptor-based air quality HRA

# SCAQMD History of Addressing Cumulative Impacts

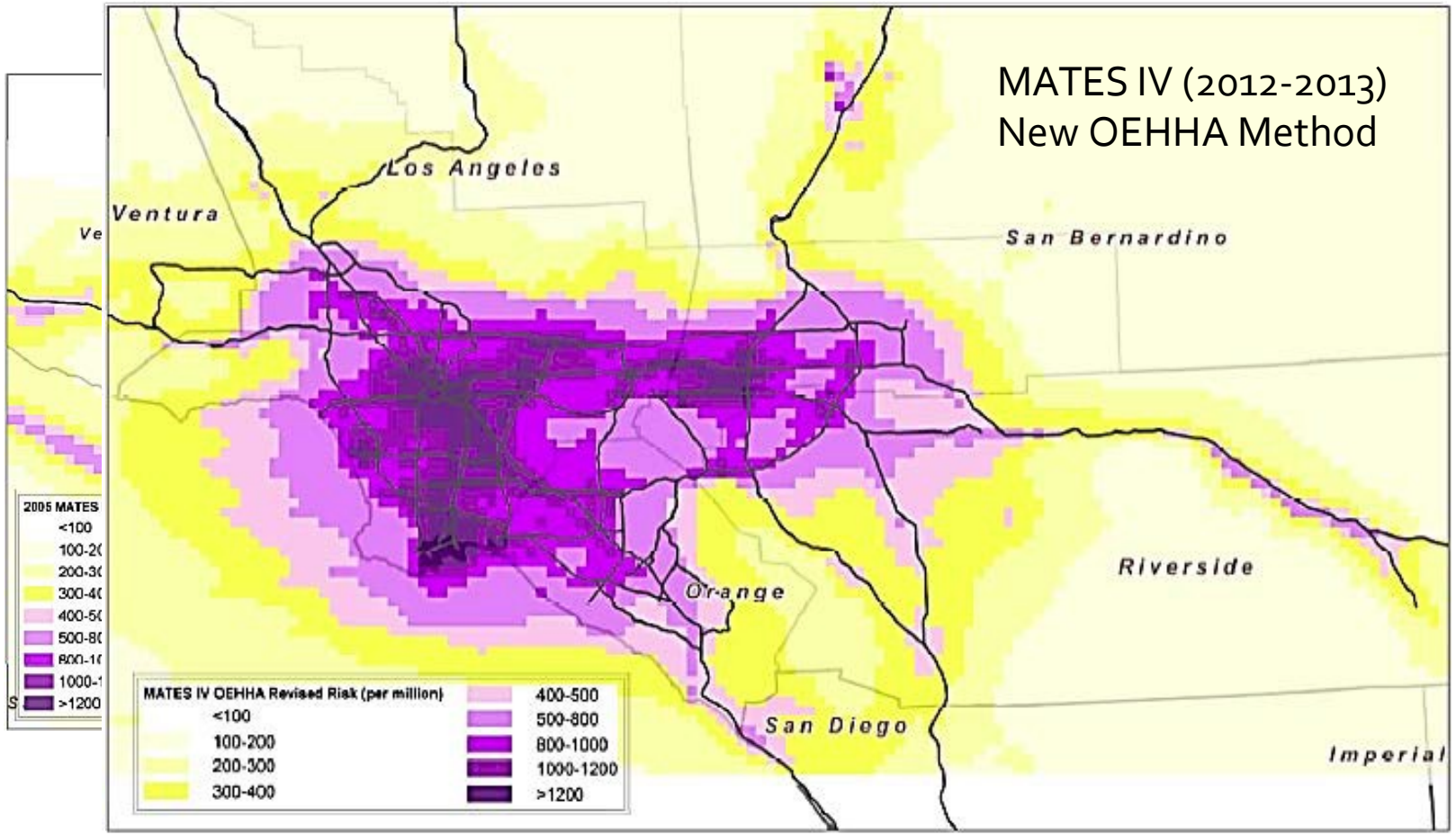
- Air Quality Management Plan (1991, 1994, 1997, 1999, 2003, 2007, 2012, 2017)
- Environmental Justice Initiatives (1997)
- Cumulative Impacts White Paper (2003)
  - Cumulative Impacts Working Group page
- AirToxics Control Plans (2000, 2004), Clean Communities Plan (2010)
- Multiple Air Toxics Exposure Study (1987, 2000, 2008, 2015)

# Trends in Air Toxic Cancer Risk Since 1990 (Excludes Diesel PM)



# SCAQMD Actions to Address Cumulative Impacts – MATES Study

- Comprehensive monitoring and modeling assessment of all toxic air pollution sources in SCAQMD
- Study has identified new sources of pollution



# SCAQMD Actions to Address Cumulative Impacts – Air Monitoring

- Air Quality Monitoring
  - Provides insight into total air pollution impact at a location
  - New monitoring approaches emerging
    - Lower cost instruments - AQ-SPEC Homepage
    - Remote sensing technologies
- Example: City of Paramount
  - Multiple sources of hexavalent chromium found through monitoring
  - Coordinated approach
    - Within SCAQMD – enforcement, legal, monitoring, etc.
    - Outside agencies
    - Public

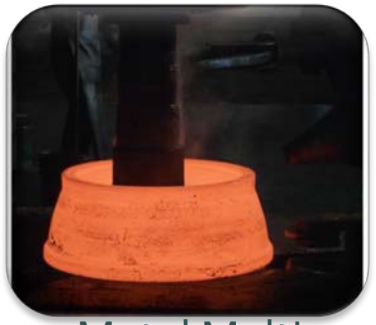
# SCAQMD Actions to Address Cumulative Impacts - Regulations

- Comprehensive rule strategy to address most significant sources of emissions
- Provide extra protection to sensitive populations
  - Residences
  - Schools

## Examples of Source-Specific Rules


Asbestos Removal


Perchloroethylene Dry Cleaning


Metal Melting and Heating


Gasoline Dispensing


Diesel Engines


Lead Facilities


Metal Plating


Cooling Towers

# SCAQMD Actions to Address Cumulative Impacts – Funding

- SCAQMD administers federal, state, and local funding to help businesses implement lower emission technologies
  - Carl Moyer Program
  - Prop. 1B
  - Rule 2202 Air Quality Investment Program
  - "SOON" Program for Off-Road Vehicles
  - Clean Fuels Fund
  - Low Emissions School Bus Incentive Program
- Funding level varies, but typically ~$100+ million/year

# Conclusion

- Many ways to assess cumulative risks
  - Some technical challenges
- Primary focus of SCAQMD is to reduce cumulative risk
  - Regulations + Incentives
- Working with partners critical