Multiple Air Toxics Exposure Study V (MATES V): Overview of Results and Major Changes

Jo Kay Ghosh
Health Effects Officer

MATES V Technical Advisory Group Meeting
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MATES Program Overview

- Board Environmental Justice Initiative
- Focuses on regional air toxics impacts

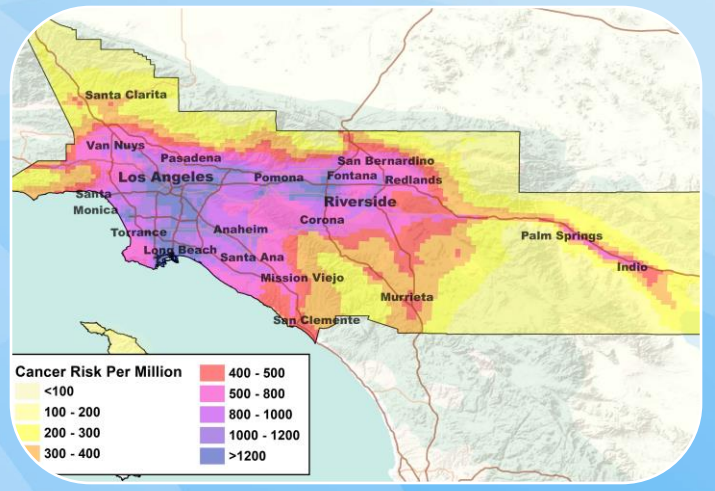
How MATES data is used:

- Provide public information about air toxics and health risks
- Evaluate progress in reducing air toxics exposure
- Provide direction to future toxics control programs

MATES V Report Components

Air Monitoring

Emissions Inventory

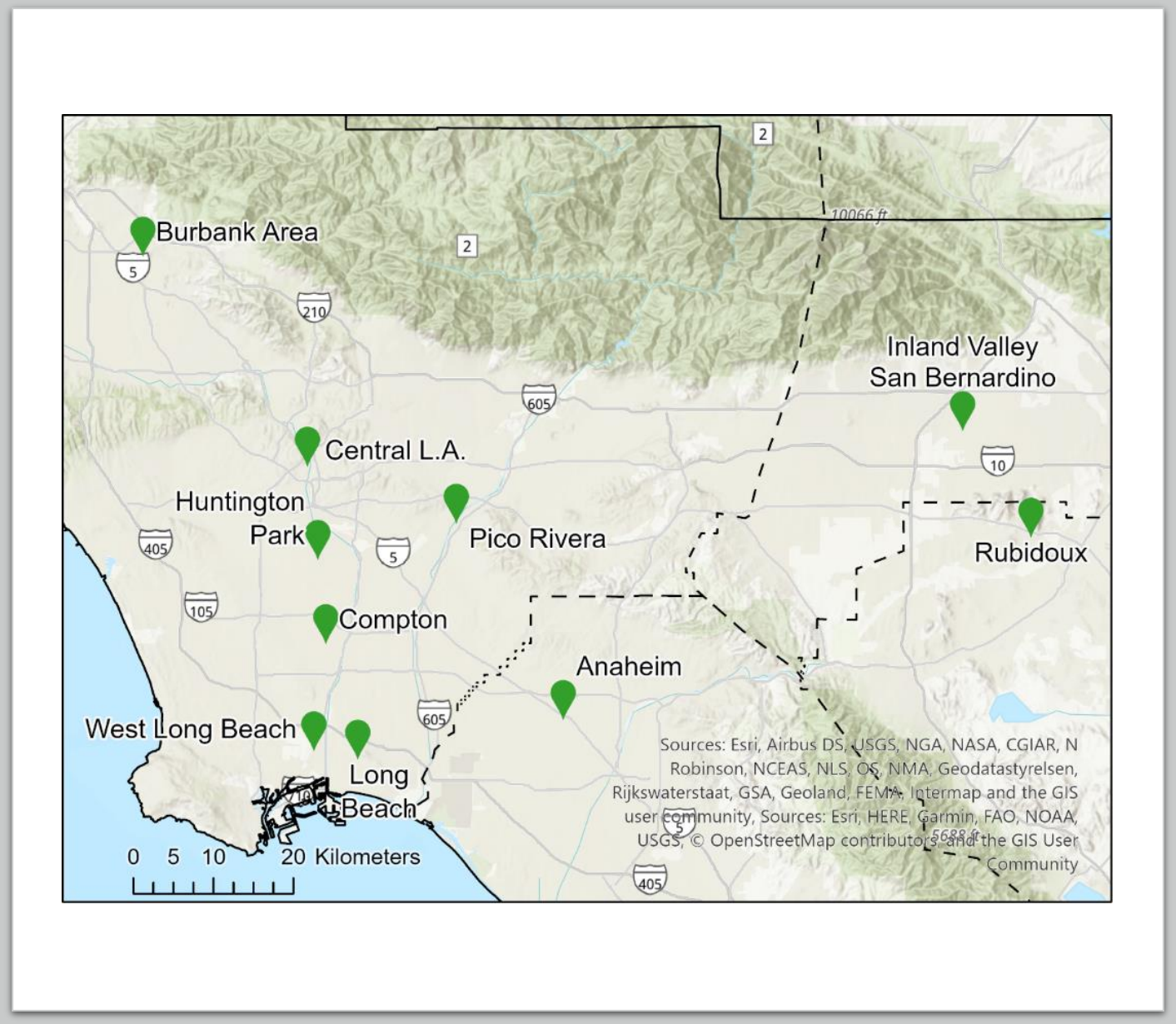


Health Risk Modeling

MATES V Advanced Monitoring will be described in a separate report

MATES V Overview

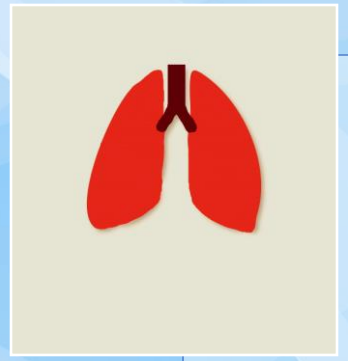
- Time period:
  - May 1, 2018-April 30, 2019
- Modeling domain:
  - SCAB
  - Most of Coachella Valley
- Monitoring stations:
  - 10 fixed sites
  - >100 pollutants measured



What's New in MATES V

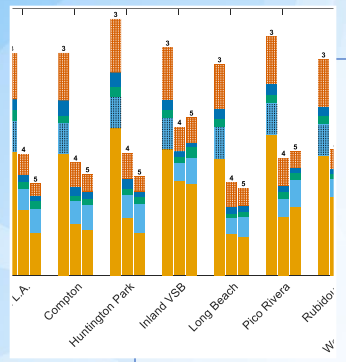
Modeling improvements

- Real-time sensor data for on-road traffic and OGVs
- Emissions from biogenic sources

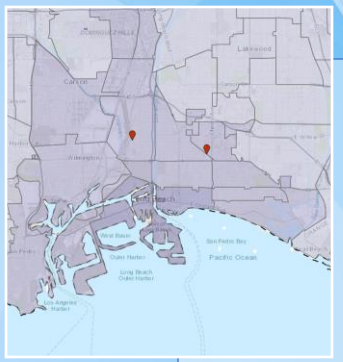


Health risk estimates

- Multiple exposure pathways
- Chronic non-cancer risk (hazard index)



Improved statistical methods for trend analysis



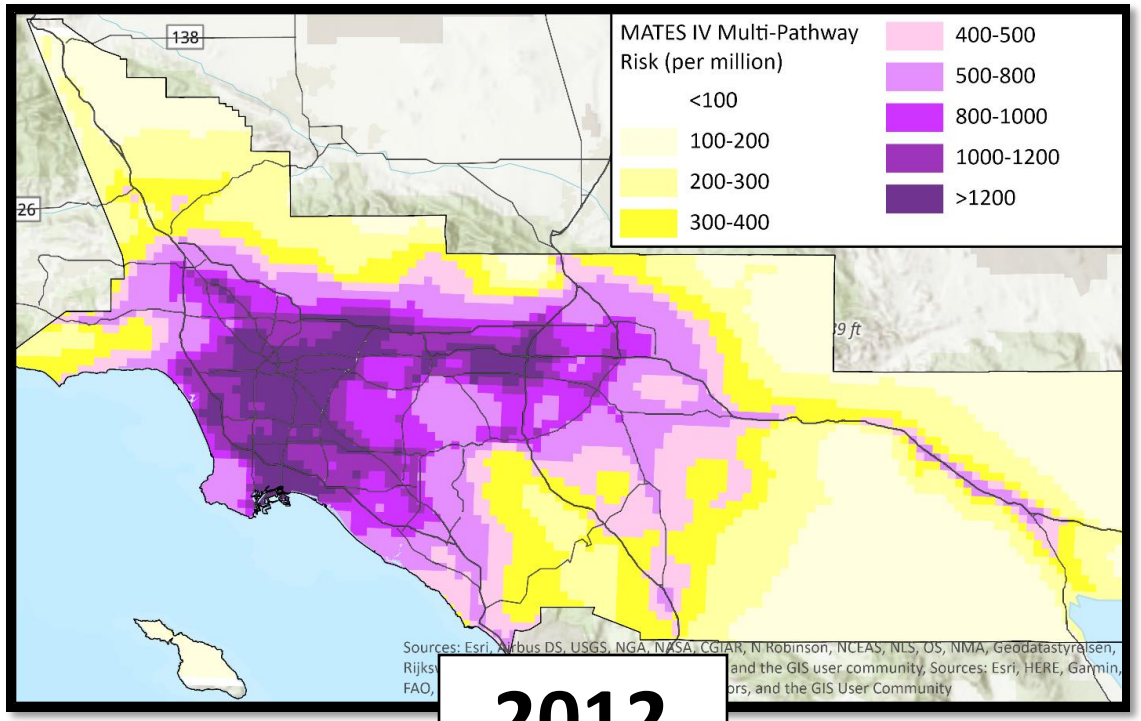
Data visualization tools

- Monitoring data dashboard
- Interactive tools

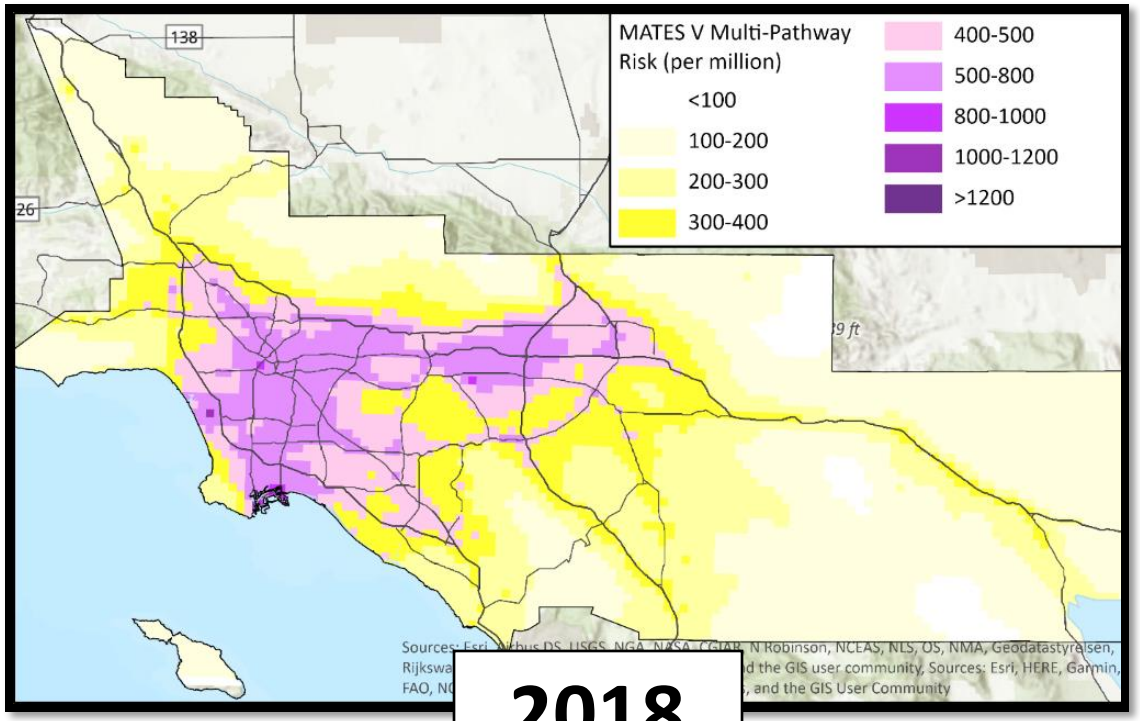
Air Toxics Cancer Risk – Modeling Data

MATES IV Air Toxics Cancer Risk (Basin Average):
997-in-a-million

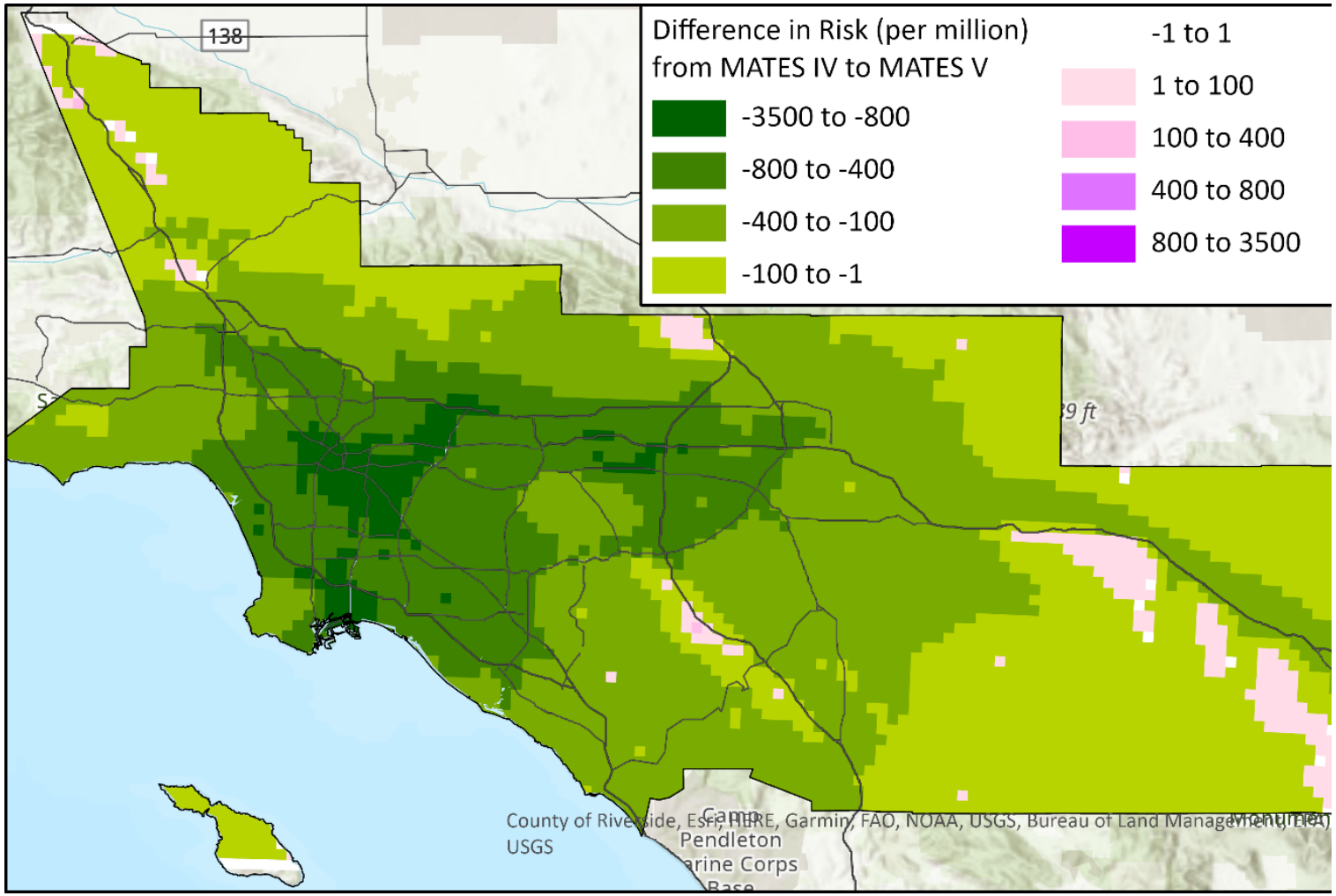
MATES V Air Toxics Cancer Risk (Basin Average):
454-in-a-million



2012

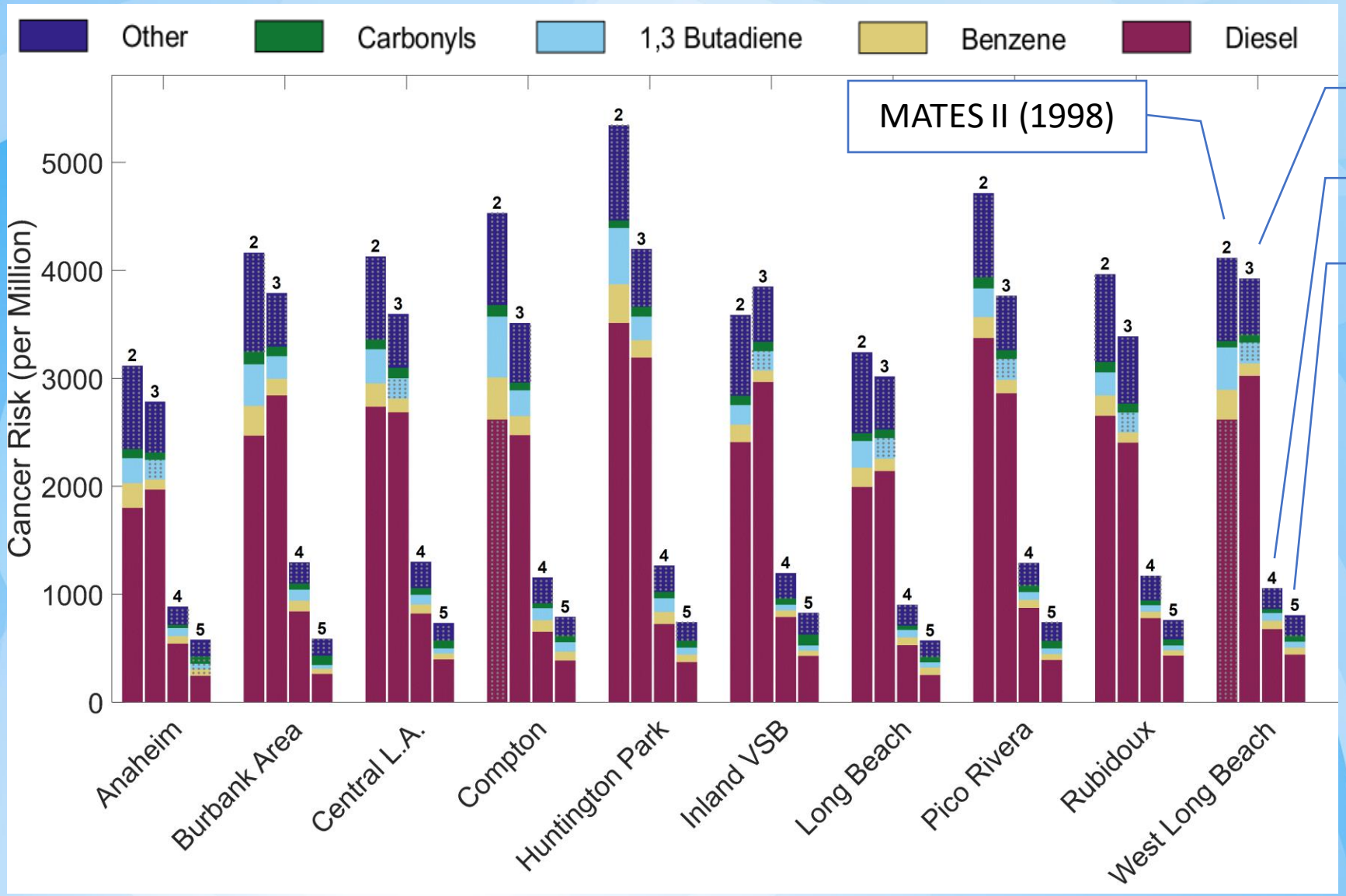


2018



Differences in Air Toxics Cancer Risk from MATES IV to MATES V (Modeling Data)

Air Toxics Cancer Risk – Monitoring Data



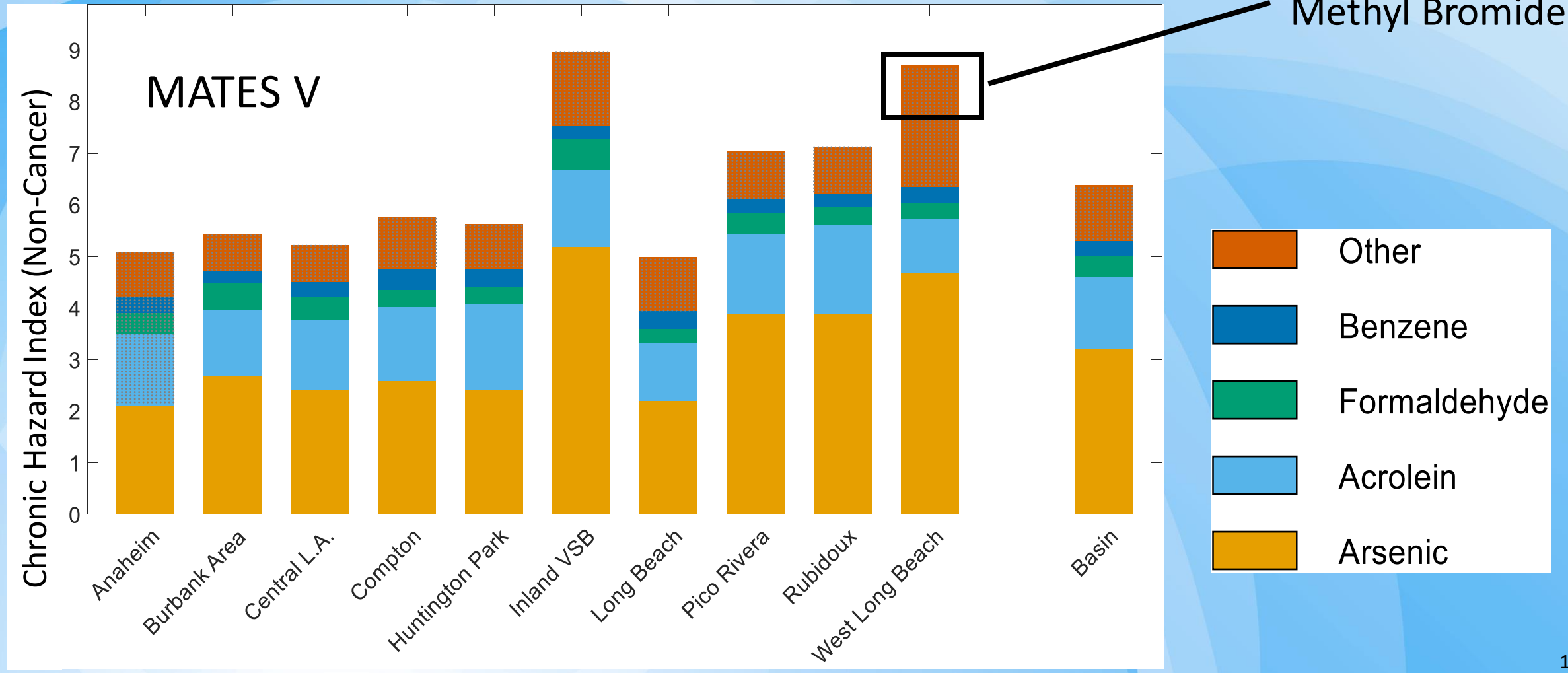
Key Takeaways:

- Diesel PM remains the main risk driver
- Cancer risk decreased at every station (overall 38% decrease)
- Station with highest risk is Inland Valley San Bernardino

Impact of Multiple Exposure Pathways on Estimates of Air Toxics Cancer Risk (Modeling Data)

	Multiple exposure pathways			Inhalation pathway only		
	Air Toxics Cancer Risk (per million)			Air Toxics Cancer Risk (per million)		
	MATES IV	MATES V	Change	MATES IV	MATES V	Change
South Coast Air Basin	997	454	-54%	897	423	-53%
Coachella Valley	357	249	-30%	339	238	-30%

Chronic Non-Cancer Risk – Monitoring Data



Summary

- Air toxics cancer risk has decreased by about 50% since MATES IV (2012), based on modeling data
- MATES V Basin average multi-pathway air toxics cancer risk: 454-in-a-million
  - Highest risk locations are LAX and ports area
- Diesel PM continues to be the major contributor to air toxics cancer risk
- Goods movement and transportation corridors have the highest air toxics cancer risks
- Chronic non-cancer risk was estimated for the first time, with a chronic hazard index of 5-9 across the 10 stations

Next Steps

- April 16 – Mobile Source Committee presentation
- April 16 – release Draft Report, open comment period
- May 5 – close comment period
- Late May – release Draft Final Report
- June 4 – Board presentation

MATES V Report will be posted on this website: http://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies/mates-v