CALIFORNIA
AIR RESOURCES BOARD

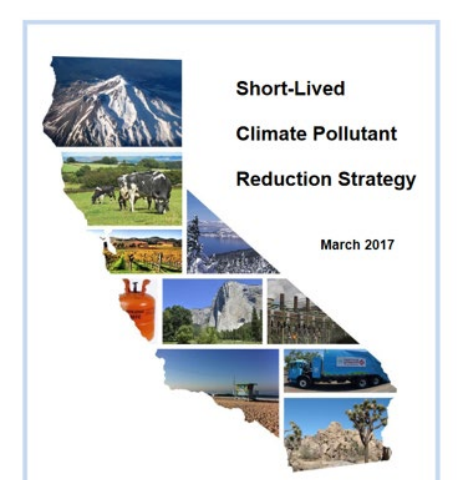
# Expanded Health Analysis of CARB's Air Quality and Climate Programs
# April 23, 2020

# Health Benefits for all CARB Regulations

- Health analysis informs the benefits of CARB regulations, plans and programs.
- Currently:
  - Quantifies small subset of full suite of benefits
  - Currently non-quantifiable benefits not included
- Goal: A more complete evaluation of the health benefits of CA's air quality & climate actions

# Currently Rely on Key But Narrow Analysis for PM2.5

- Cardiopulmonary mortality
- Hospitalizations for heart and lung causes
- Emergency room visits for asthma

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# We Could Include a Spectrum of Additional Health & Economic Benefits

Lung health benefits

Brain health benefits

Healthy birth outcomes

Improved life expectancy

Less stress on healthcare systems

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# Health Analysis: Looking to Qualitative Outcomes and Expanded Quantification

Quantitative

- Reduced cases of illness and premature death
- Lower costs of health care, climate pollution
- New information & outcomes

Qualitative

- Community resilience
- Greater mobility & physical activity
- Better health equity & quality of life

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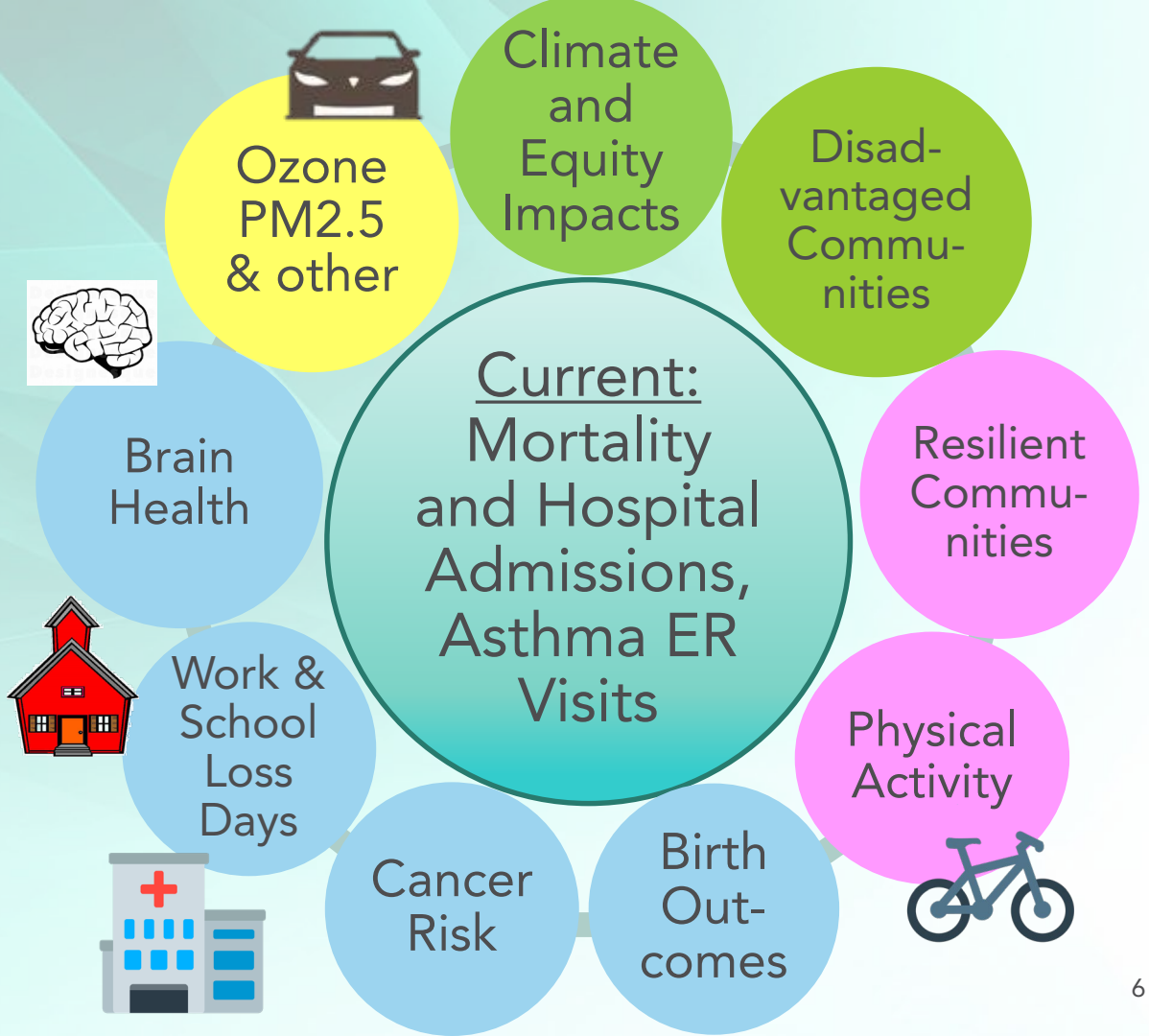
# Expanded Approach:

Use health analysis methods that more completely capture full benefits

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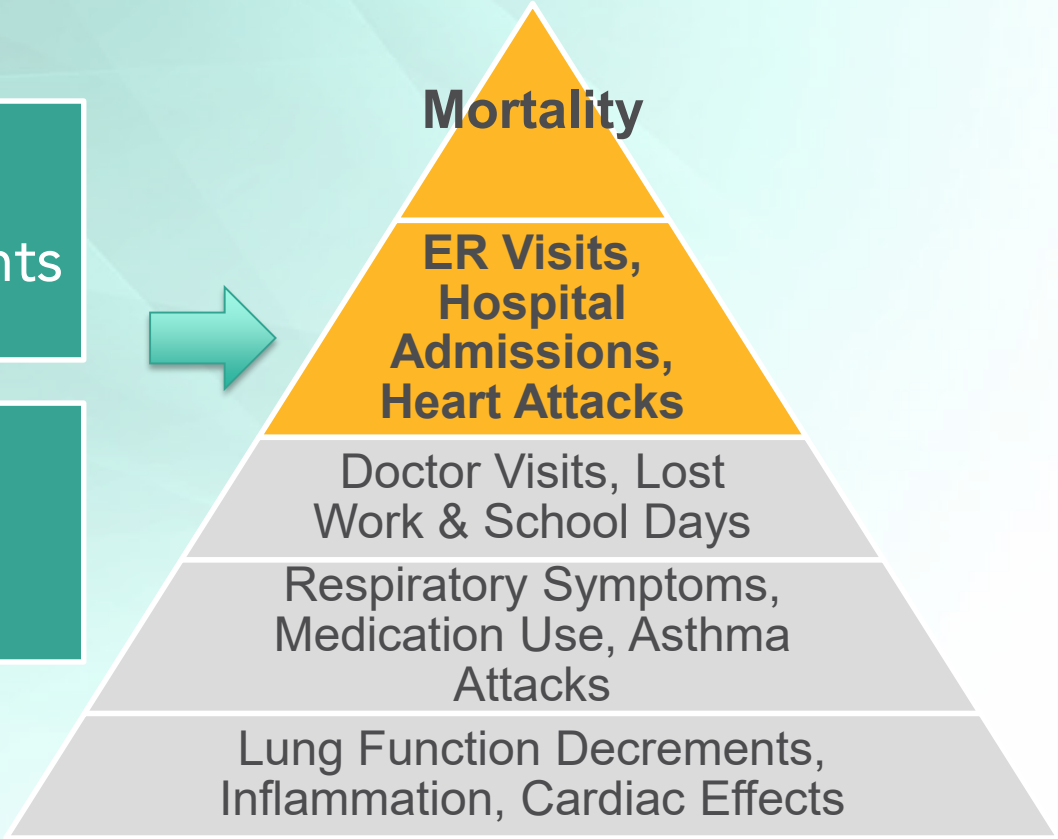
# This Allows Us to Capture More Pollutants

- Ozone
- Toxic Air Contaminants
- Sulfates
- Organic Aerosols




Graphic adapted from EPA BenMAP website

# And More Health Outcomes

- Asthma Exacerbations*
- Work Loss Days*
- School Loss Days
- Brain Health
- Birth Outcomes*
- Cancer Risk

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*CARB research underway

# Allows Us to Better Capture Linked Climate & Air Pollution Benefits

- Sustainability
- Physical Activity
- Green Space
- Resiliency
- Equity
- Quality of Life

- Pollution
- Sprawl
- Vehicle Trips
- Freight Impacts
- Petroleum Dependence

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# And Assess Impact of Climate Change on Health and Equity

| | | | |
|---|---|---|---|
| Air pollution & increasing allergens | Extreme heat | Severe weather | Degraded environment |
| Poor living conditions & social inequities | Vector-borne illnesses | Water & food supply impacts | Water quality impact |

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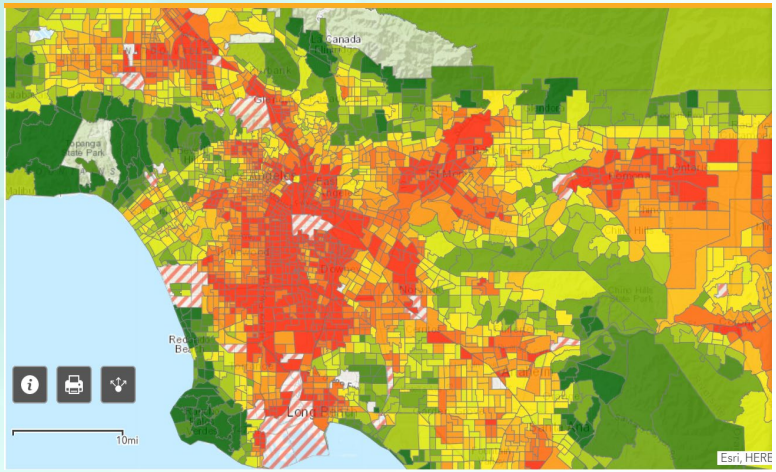
# Allows Us To Better Assess and Include Benefits In Disadvantaged Communities

- Include benefits from reduced exposures in disadvantaged communities
  - Could target and result in more reductions
- Include higher susceptibility in different communities and groups




Source: OEHHA CalEnviroScreen 3.0

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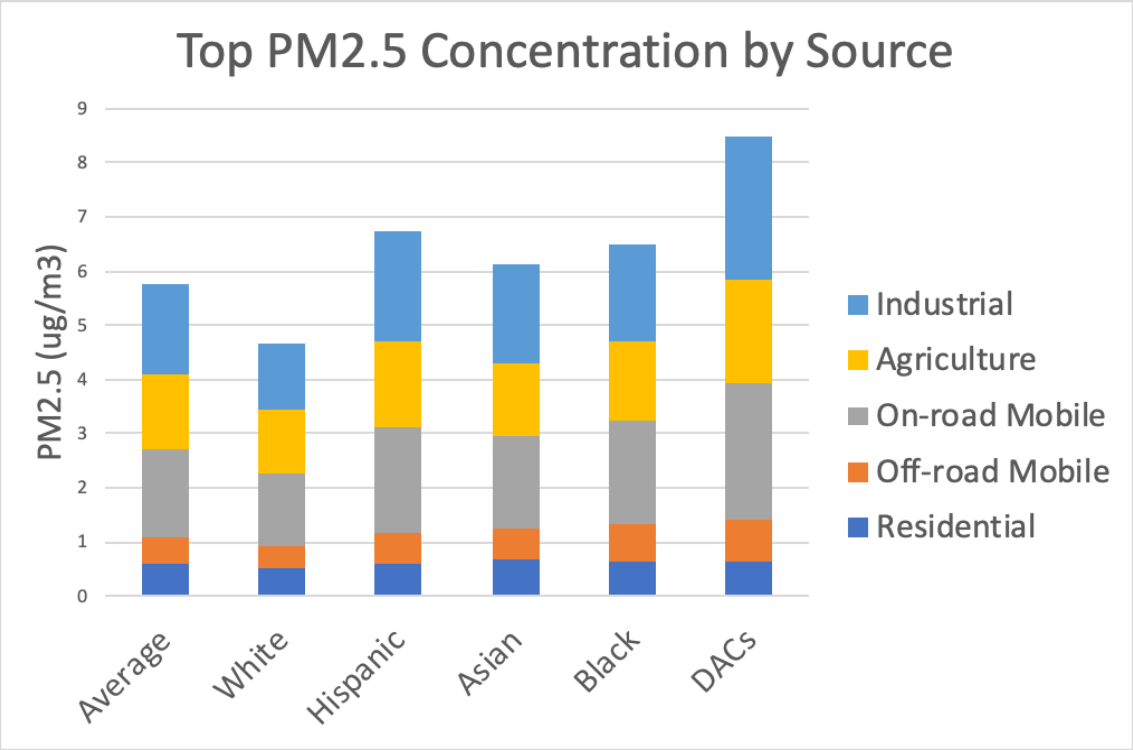
# New Approaches: Include Community Footprints Of Sources and Exposures




Source:
Joshua Apte,
UT Austin

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# Incorporate New Health Tools

| Physical Activity and Chronic Disease Reduction | Greenspace and Mental Health Benefits | Life Expectancy |
| --- | --- | --- |
| • Healthy Mobility Options | • Natural and Working Lands Tool* | • Healthy Places Index |

*Under development

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# Next Steps for Expanded Health Analysis

- ❑ Update and expand current analysis
- ❑ Stakeholder and public outreach on expanded approaches
  - Include health experts, academics, air districts, agencies
- ❑ Public workshops
- ❑ Report back to CARB Board
- ❑ Incorporation into CARB analyses (e.g. Scoping Plan)

# Air Pollution, Like COVID-19, Causes More Than Respiratory Outcomes

Los Angeles Times

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By MELISSA HEALY | STAFF WRITER

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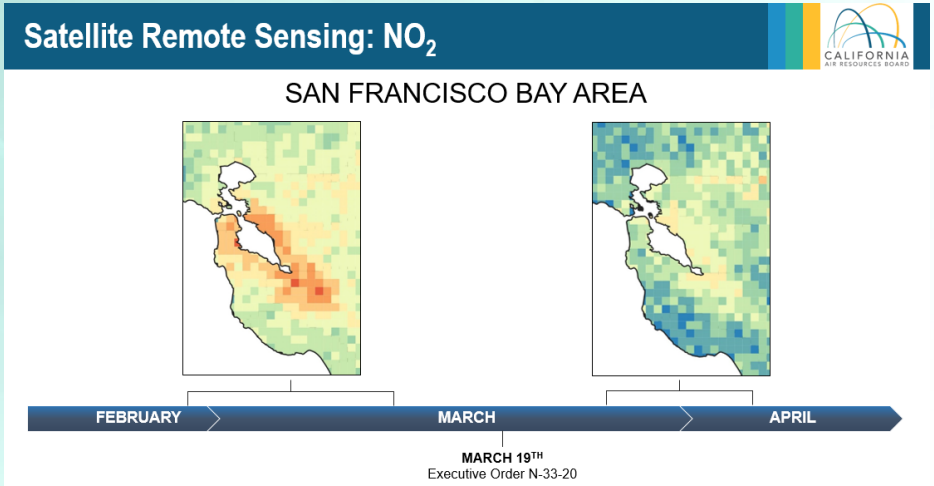
# California COVID-19 Air Quality and Health Research

Underway

- Traffic counts/VMT & freight activity
- On-road emissions by VMT
- AQ pre/post COVID-19

Planned

- Air pollution link to COVID-19 death & illness in California

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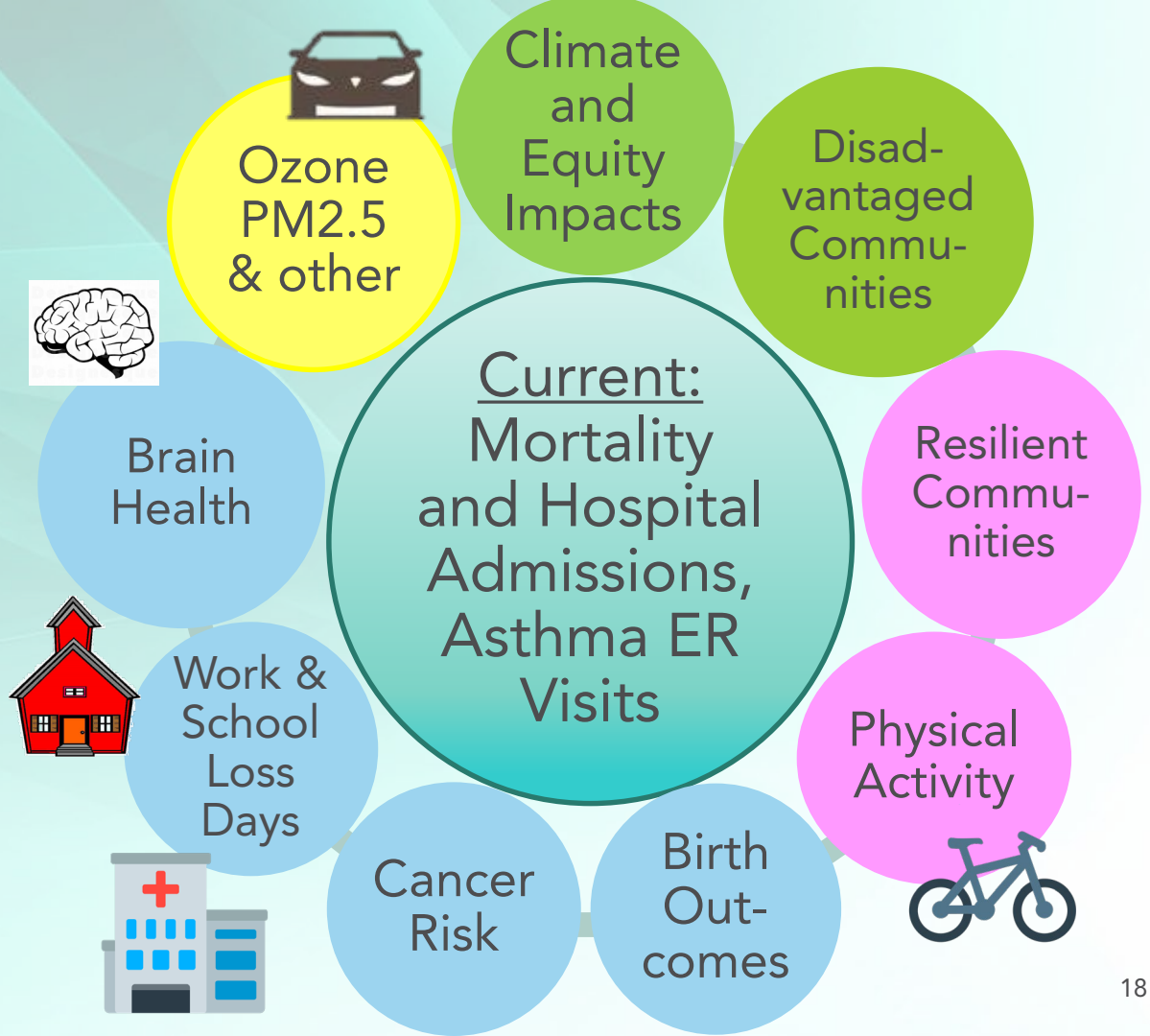
# Our Goal:

A more complete evaluation of the health benefits of California's air quality and climate actions

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# Thank You

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