

# CALIFORNIA'S AIR TOXICS PROGRAM: IMPROVEMENTS TO ASSESS HEALTH RISK

Update to the  
Air Resources Board  
July 24, 2014



**Air Resources Board**  

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California Environmental Protection Agency

# What changed and what are the impacts?

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- Updated risk assessment guidance
  - New studies on childhood sensitivity
  - New data on exposure
- Impacts of the updates
  - Cancer risk estimates will increase 1.5-3x
  - Greater responsibilities for facilities and agencies to notify public and reduce risk
  - Districts/ARB will re-evaluate toxics programs

# Outline

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- Background
- Challenges
- Overview of new science (OEHHA)
- Air district actions (CAPCOA)
- ARB actions



# California's air toxics programs: risk characterization

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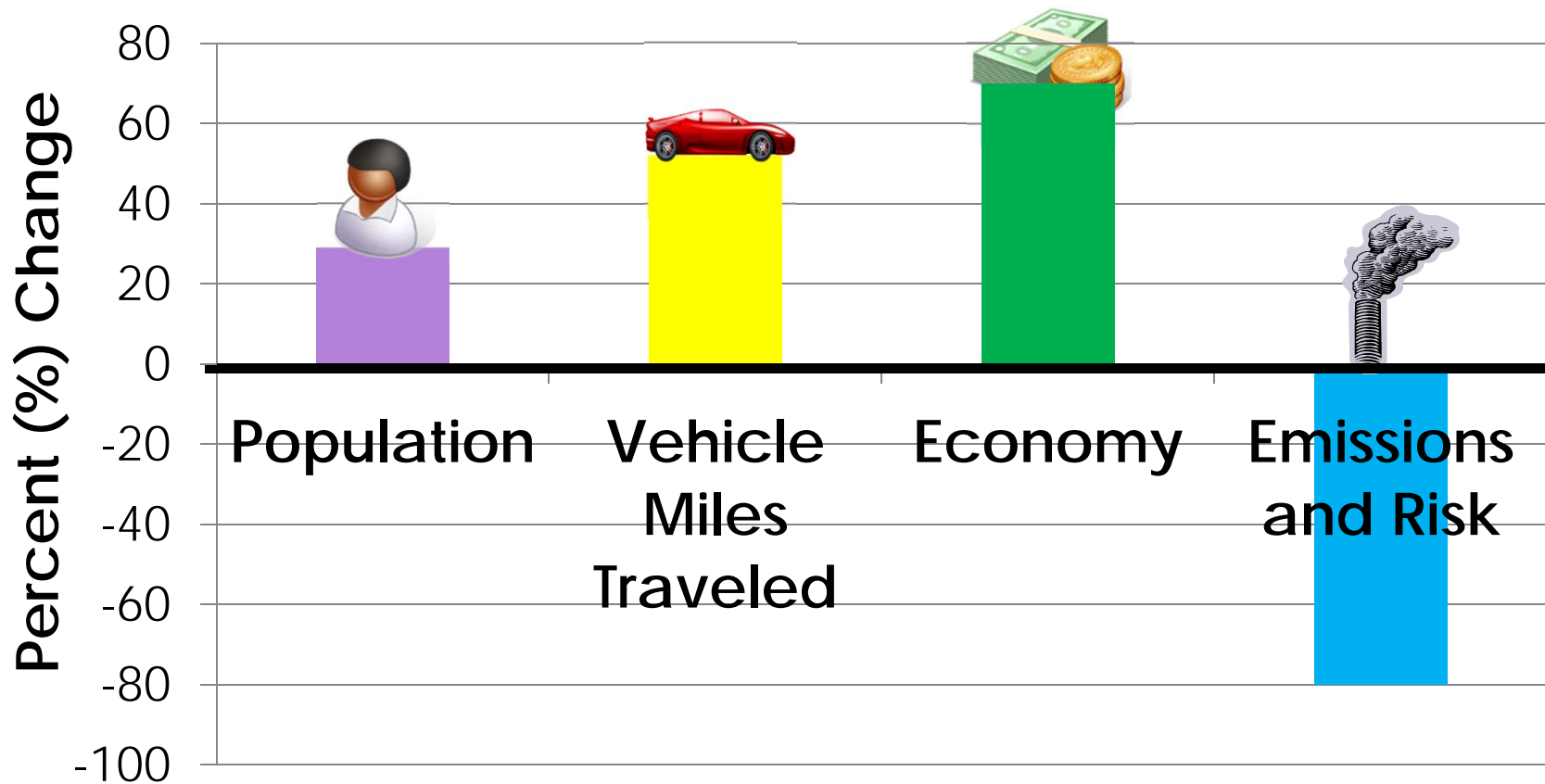
- Risk assessment (OEHHA, Districts, ARB)
- Notification (Districts, Industry)
- Emissions (ARB, Districts, Industry)
- Identification (ARB, OEHHA)
- Air monitoring (ARB, Districts)
- Communication (Districts, ARB, Industry, NGOs)

# California's air toxics programs: risk reduction

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- Facility upgrades & permitting (Districts)
- Risk reduction audits and plans (Districts, Industry)
- Air toxics control measures (ARB, Districts)
- Enforcement (ARB, Districts)
- Incentives (ARB, Districts)

# Progress: 80% reduction in ambient cancer risk statewide since 1990



# OEHHA Guidance Manual: how is it used?

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- Estimate potential health risk
  - “Hot Spots” program (e.g., risk assessment, public notification, and risk reduction)
  - Goods movement and special studies
  - Estimate statewide/community risks
  - District permitting
  - Regulatory development

# Policy consideration

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Example: gasoline service station with best controls installed

District notification level	District risk reduction level	State of the art controls required	Previous cancer risk	New cancer risk
$\geq 10$ chances per million	10-100 chances per million	<ul style="list-style-type: none"><li>• Reform gas</li><li>• Phase I/II &amp; onboard vapor recovery</li></ul>	8 chances per million	22 chances per million



# OEHHA Risk Assessment Guidance Manual

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Melanie Marty, Ph.D.,  
Assistant Deputy Director  
Office of Environmental Health Hazard Assessment



# Overview of the OEHHA changes

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## Cancer Risk =

$$\text{Cancer Potency Factor} \times \text{Age-Sensitivity Factor} \times \text{Inhalation Dose}^* \times \text{Time at Home} \times \text{Exposure Duration}$$

\* (concentration x daily breathing rate)

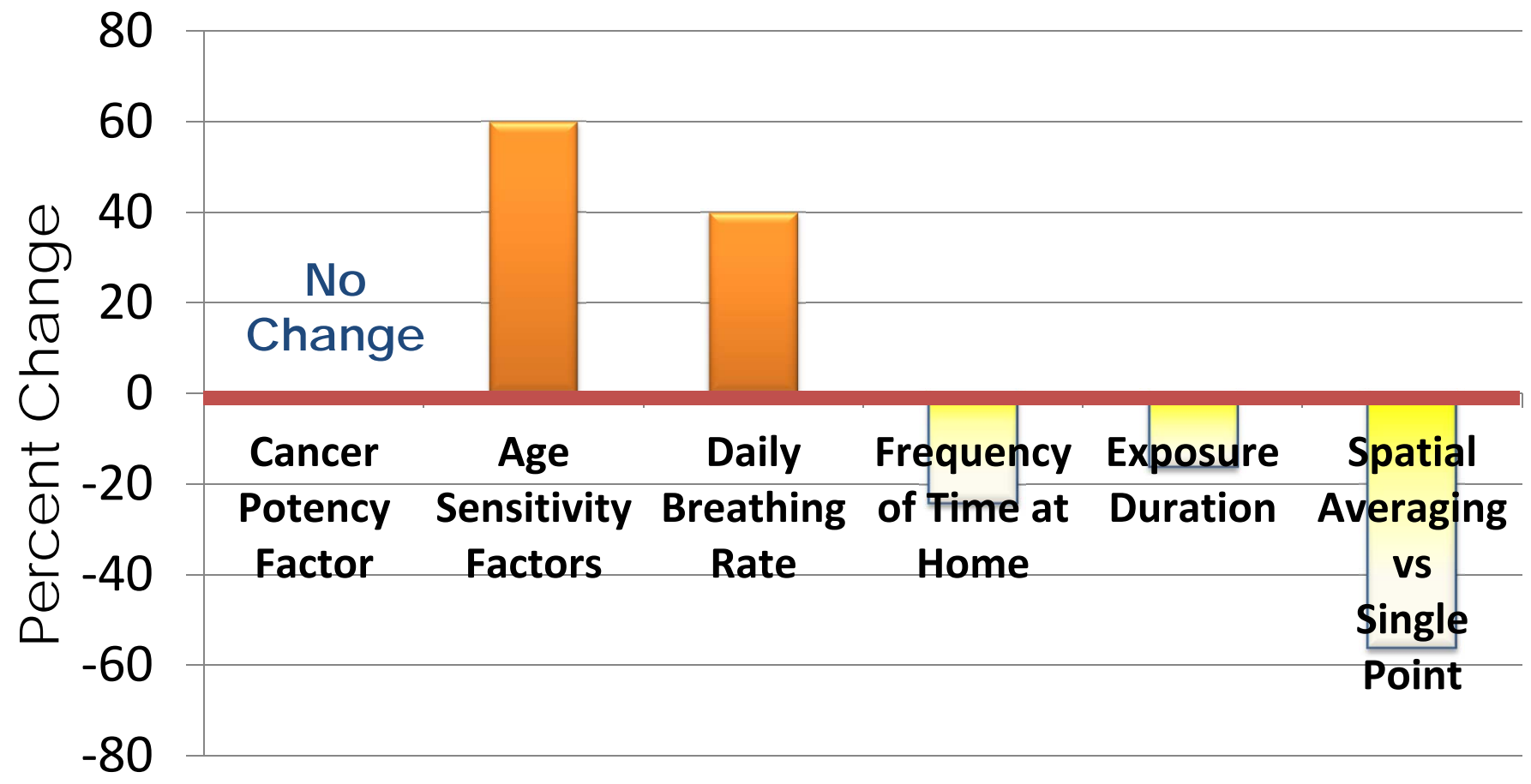
All components in red are affected by updates in the 2014 OEHHA Guidelines

# Updated methodology for estimating potential cancer risk

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- Refines exposure data (e.g., breathing rates) for individuals of all ages (**Inhalation Dose**)
- Provides adjustments for increased childhood sensitivity to air toxics (**Age Sensitivity Factors**)
- Includes refinements to exposure assessment (**Time at Home, Exposure Duration, Spatial Averaging**)
- U.S. EPA uses similar information in its risk guidelines and programs

# Magnitude of risk and dose variables



# Air District Actions

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Barbara Lee

Air Pollution Control Officer

Northern Sonoma Air Pollution Control  
District

representing the  
California Air Pollution Control Officers' Association



# Air districts: review of rules and programs

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- State and federal laws specify local authorities and obligations
  - Consideration of toxic emissions/impacts in permits
  - Establish requirements for new, modified & existing facilities; local discretion setting risk thresholds
- Districts are individually reviewing toxics rules, programs, and policies including notification, risk reduction, and permitting requirements
- CAPCOA is evaluating “Hot Spots”  
Prioritization Guidelines

# Air districts: review of “Hot Spots” impacts

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- Impacts from thousands of facilities will be revised, and potentially tens of thousands will be prioritized for review
- Smaller “industrywide” sources may rely on ARB/CAPCOA developed assessments
- Public notification could impact 700 to 1,200 facilities
- Risk reduction audits & plans may be required at over 350 facilities

# Air districts: coordination and outreach

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- Coordinate with ARB on evaluation and review for source categories
  - Identify industrywide assessments
  - Prioritize control measure reevaluations
- Prepare summaries and outreach materials
- Engage local stakeholders



# Air Resources Board Actions

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**Air Resources Board**  
California Environmental Protection Agency

# Coordination and outreach

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*Previously...*

- CalEPA convened OEHHA, ARB, air districts prior to release of draft Guidance
  - Common messaging document
  - Briefings of industry and environmental representatives
  - Outreach at conferences and workshops

# Coordination and outreach

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*Looking ahead...*

- ARB committed to work with CAPCOA, industry, and environmental advocates
  - Risk communication
  - Risk management guidance
- Public meetings and Board item
  - List serve on website  
<http://www.arb.ca.gov/toxics/toxics.htm>

# Evaluation/update of existing programs in 2014-2015

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- Update Hotspots Analysis and Reporting Program (HARP) software for risk assessments
- Amend emissions reporting regulation
- Identify sources for “industrywide” risk analyses
- Begin updating risk management policy
  - Technical inputs on risk assessments
  - Guidance on district permitting/thresholds
- Prioritize ARB measures for re-evaluation
- Update Land Use Handbook

# ARB's evolving emphasis on air toxics

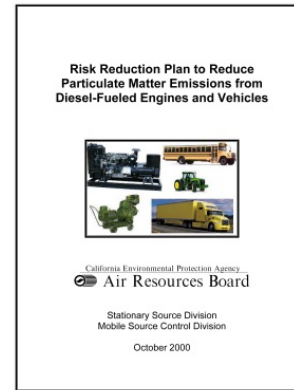
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Industrial



Commercial,  
Fuels/Fueling



Diesel  
Risk  
Reduction

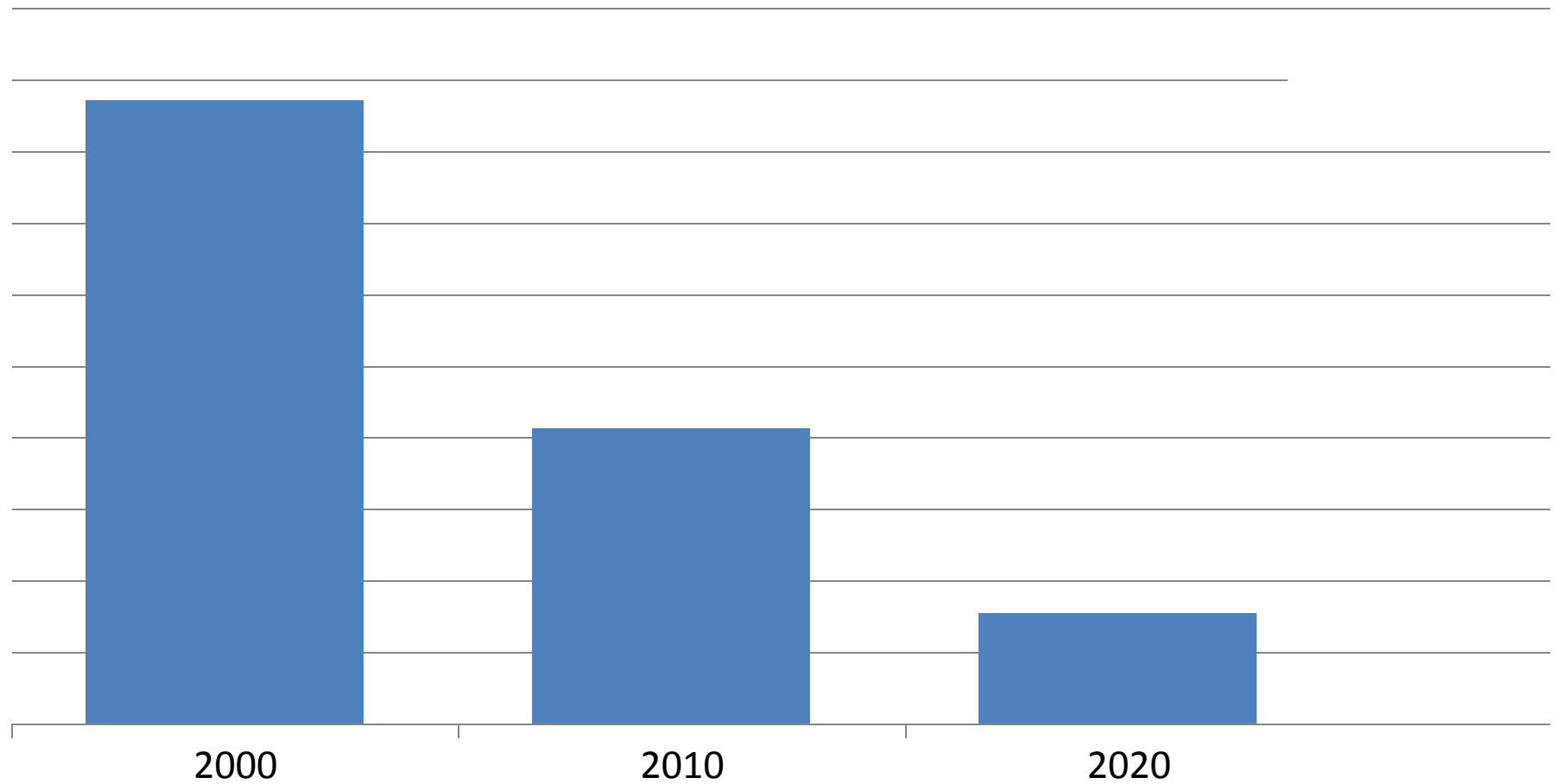


Passenger  
& Freight  
Transportation

# >80% reduction in statewide ambient cancer risk from diesel PM

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# Guiding principles for moving forward

- Protect public health
- Focus on highest risk source categories
- Support continued facility operations to provide critical goods and services
- Require best technology, in consideration of cost and risk
- Support public transparency/access
- Partner with air districts
- Coordinate with industry/environmentalists

# Next steps

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Timeframe	Milestone
Now – Late 2014	<ul style="list-style-type: none"><li>• Hold meeting(s) on risk guidance</li><li>• Identify priorities for industrywide approach</li><li>• Update Board on risk management</li><li>• Present draft Sustainable Freight Strategy</li></ul>
Early 2015	<ul style="list-style-type: none"><li>• OEHHA adopts Guidance Manual and ARB releases HARP software</li><li>• Prioritize existing measures for evaluation</li></ul>
Late 2015+	<ul style="list-style-type: none"><li>• Begin re-evaluating measures and/or developing new measures</li></ul>