

Public Workshop

**Proposed Screening Method for
Low-Income Communities
Highly Impacted by Air Pollution
for AB 32 Assessments**

Air Resources Board
California Environmental Protection Agency

June 9, 2010

Outline



- Purpose
- AB 32 Requirements
- ARB Screening Method
- Results
- Questions & Comments

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Need for Assessment Method

- *“Consider the potential for direct, indirect, and **cumulative emissions impacts** from these (market) mechanisms, including localized impacts in communities that are already adversely impacted by air pollution.” HSC Section 38570(b)(1)*
- *“Ensure that activities undertaken to comply with the regulations do not disproportionately impact **low-income communities**.” HSC Section 38562(b)(2)*

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Cumulative Emission Impact Assessment

- Identify potential emission impacts of rule, i.e. AB 32
- Identify potential communities where impacts might occur
- Characterize potentially affected communities in the context of existing cumulative emission impacts
- Identify communities with largest cumulative impacts that are also low-income

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Use of EJ Research Screening Method

- Provided a benchmark for cumulative emission impacts due to air quality concentrations, emissions, and population
- ARB Screening Method produces similar results in South Coast
- ARB Screening Method applied statewide
- Expect differences in cumulative impacts compared within regions

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ARB Screening Method: Overview

- Method needed for Cumulative Impacts Analysis
- Identify communities that are highly impacted by air pollution and low-income
- Method integrates low-income status into analysis
- Method uses available data and will be updated

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ARB Screening Method: Description

- **Modifications to EJ Research Screening Method:**
 - *Fit specific scope of AB 32 requirements*
 - *Use metrics with statewide availability*
 - *More data needed to apply proximity factors statewide*
- **Uses indicators for:**
 - *Low-income status*
 - *Health risk and exposure*
 - *Localized diesel risk*
- **Statewide analysis at census tract level**
- **Method to translate results at census tract level to named communities**

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Low-income Status Indicators

- **Definitions for measures of vulnerability**
 - Consistently reference poverty/ income level
- **Single indicator selected**
 - 200% of federal poverty level
- **Sensitivity analysis of indicators produced similar results for “income only” & “full-mix of socio-economic indicators”**

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Health Risk & Exposure Indicators

- **Same as EJ Research Screening Method**
- **Additional exposure metrics**
 - ozone exceedance days; NATA cancer risk
- **Indicators not averaged together**
 - maximum rank of any individual exposure indicator

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Localized Diesel Risk Indicators

- **Pastor et al. Hazard Proximity approach not used**
 - AB 32 focus on air emissions
 - detailed land use data not available statewide
- **Site-specific studies of major ports/rail yards included**
 - accounts for localized diesel risk

ARB Screening Method: Summary of Indicators

Low-Income Status	Health Risk & Exposure	Localized Diesel Risk
<ul style="list-style-type: none"> ■ 200% Federal Poverty Level <p><u>Income Cap:</u></p> <ul style="list-style-type: none"> ■ Statewide MHI ■ Worst 40% of poverty (for census tracts affected by port/rail yard 100-in-a-million diesel risk) 	<ul style="list-style-type: none"> ■ Ozone Concentration ■ Ozone Exceedance days ■ PM_{2.5} Concentration ■ ARB Modeled Diesel Risk Calculation* ■ RSEI Model output (cancer & non-cancer risk indicators) ■ NATA Chronic Respiratory HI ■ NATA Cancer Risk <p><small>* EJ Research Screening Method uses ARB modeled Total Cancer Risk</small></p>	<ul style="list-style-type: none"> ■ ARB Port/rail yard Diesel Risk Studies** <p>- Cancer Risk threshold of 100-in-a-million</p> <p><small>** Instead of the Hazard Proximity approach used in EJ Research Screening Method</small></p>

Note: The bolded fonts represent new variables used in the ARB Screening Method

Basic Methodology: Census Tract Level Low-income and Exposure

- **Individual ranking (1-10):**
 - individual exposure indicators and poverty level
- **Average rank (1-10):**
 - highest ranked exposure indicator with poverty rank
- **Re-rank (1-10):**
 - all census tracts based on the average rank
- **Identify: worst 20% census tracts statewide**

Basic Methodology: Census Tract Level Localized Diesel Risk

- Diesel related cancer risk
 - site specific studies of major ports/ rail yards
 - considers recent emission reductions
- Identify: census tracts
 - impacted by 100-in-a-million cancer risk &
 - within worst 40% of poverty in the region

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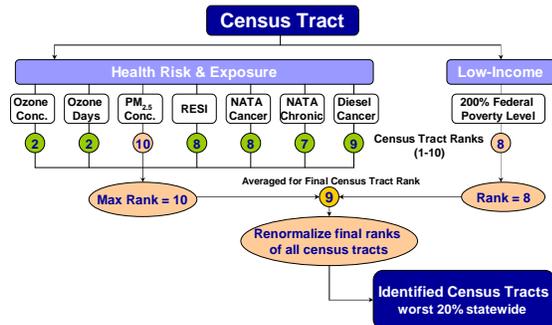
Basic Methodology: Translation from Tracts to Communities

- Community boundary
 - City/CDP; named community; ZIP-code/post-office name
- Identified communities
 - > 50% of community footprint has census tracts that
 - are in the worst 20% statewide; or
 - satisfy set criteria in localized diesel risk analysis
 - Community at or below the statewide MHI

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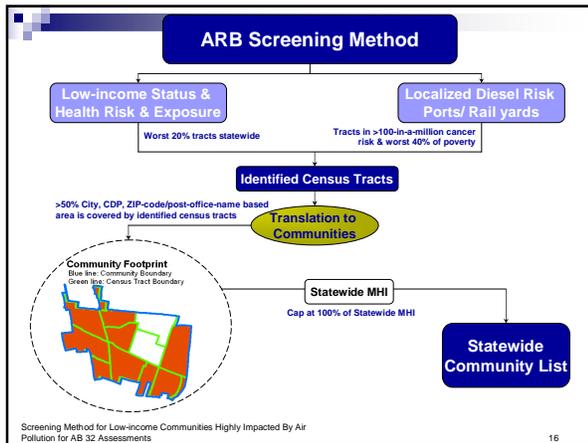
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ARB Screening Method: Individual Census Tract Example



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ARB Screening Method: Results

- **Screening Method applied statewide:**
 - Communities in the South Coast AQMD, San Joaquin Valley APCD, Bay Area AQMD, Downwind Desert Areas Affected by Transported Air Pollution
- **Compared Screening Method results:**
 - EJ Screening Method results where available
 - SCAQMD map of Environmental Justice areas (Carl Moyer Program)

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Comparison of Air Quality 2008

Region	Maximum 8-Hour Ozone	8-hour Ozone Exceedance Days	PM _{2.5} Annual Average Design Value
South Coast	0.131 ppm	119	20.0 ug/m ³
- Mira Loma	0.107 ppm	46	20.0 ug/m ³
San Joaquin Valley	0.132 ppm	127	21.5 ug/m ³
- Corcoran	0.091 ppm	38	17.0 ug/m ³
Bay Area	0.094 ppm	12	11.0 ug/m ³
- Oakland	0.064 ppm	0	-9.5 ug/m ³

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Results: Maps of Affected Census Tracts

- [South Coast AQMD](#)
- [San Joaquin Valley APCD](#)
- [Desert Areas Affected by Transport](#)
- [Bay Area AQMD](#)

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Comparison of Results: Maps of Affected Census Tracts

- [ARB Screening Method & EJ Screening Method](#)
- [ARB Screening Method, EJ Screening Method, & South Coast Carl Moyer EJ Analysis](#)

A description of the proposed method can be found at:
<http://www.arb.ca.gov/cc/ab32publichealth/ab32publichealth.htm>

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Questions & Comments



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