# AB32 Community Screening Approach

## - Concepts for Discussion -

**AB32 Public Health Working Group Meeting**

**July 6, 2009**

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## AB32 Specifies That...

- **Prior to market mechanism...**

- **Consider direct, indirect, and cumulative emission impacts...**

- **In communities already adversely impacted by air pollution**

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## Discussion Today

- **Screening approach - concepts**
  - e.g., overlay GIS map layers

- **Examples - indicators of air pollution exposure**

- **Discussion of concepts**

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# Examples of Data Layers for Use in Screening Approach

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## Ozone Exceedance Data

- **Average of 3 years**

- **Interpolated from monitors to census tracts**

- **Values and/or days that exceed federal 8-hour ozone standard**

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## Ozone: Concentration in Excess of Standard
### (ARB's EJ contract: 5-equal-bins approach)



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## Ozone: Days Exceeding Standard
### (ARB Ozone Analysis and Thresholds)



8-Hr Ozone
3-yr Avg of Exceedance Days
2006 (04-06)

Legend
Site
Air Basin
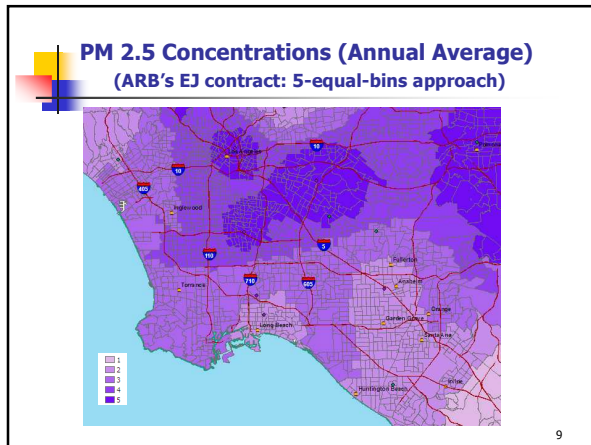County
0 - 5
6 - 15
16 - 50
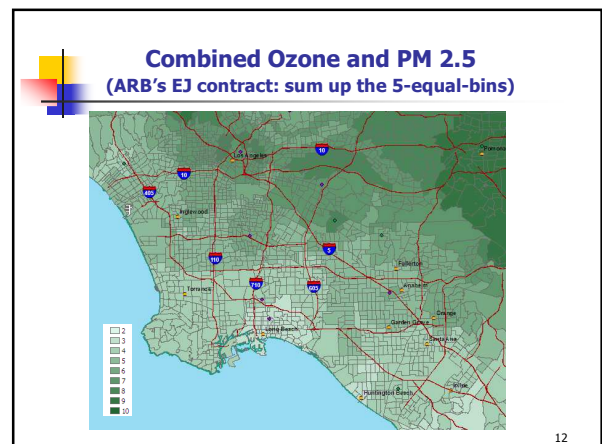51 - 100
101+

07/02/09

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## PM 2.5 Concentrations

- **Average of 3 years**

- **Interpolated from monitors to census tracts**
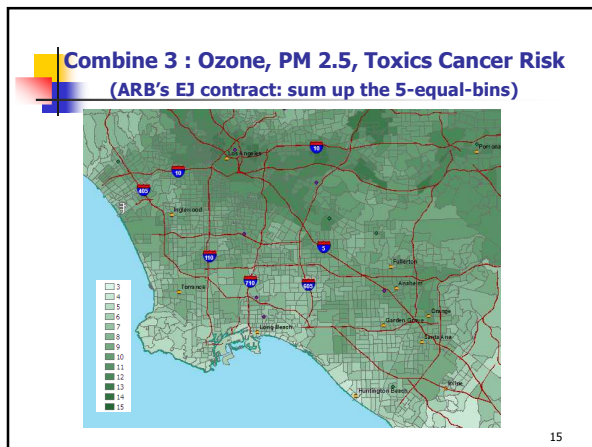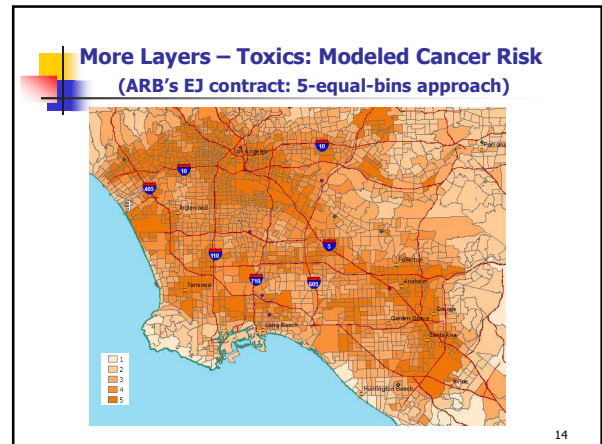
- **Measured air concentrations of fine PM**

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## PM 2.5 Concentrations (Annual Average)
### (ARB's EJ contract: 5-equal-bins approach)



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## Considerations for Breakpoints

- **ARB's EJ research contract uses 5 equal bins**
  - Ranking of values, 1 to 5  (quintile approach)

- **Health considerations for breakpoints**
  - Threshold effects observed in literature

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# Combining Layers on Maps

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## Combined Ozone and PM 2.5
### (ARB's EJ contract: sum up the 5-equal-bins)



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## Slide 13

**Combined Ozone and PM 2.5**
*(ARB's EJ contract: sum bins + re-normalize)*



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## Slide 14

**More Layers – Toxics: Modeled Cancer Risk**
*(ARB's EJ contract: 5-equal-bins approach)*



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## Slide 15

**Combine 3 : Ozone, PM 2.5, Toxics Cancer Risk**
*(ARB's EJ contract: sum up the 5-equal-bins)*



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## Slide 16

**Combine 3 : Ozone, PM 2.5, Toxics Cancer Risk**
*(ARB's EJ contract: sum bins + re-normalize)*



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## Slide 17

**Considerations for Combining Layers**

- **ARB's EJ research contract sums the 1-5 bins across all layers**

- **Health considerations for combining layers**
  - Relative weighting of layers, health impacts
  - Differing health endpoints, target organs
  - Sensitive age groups

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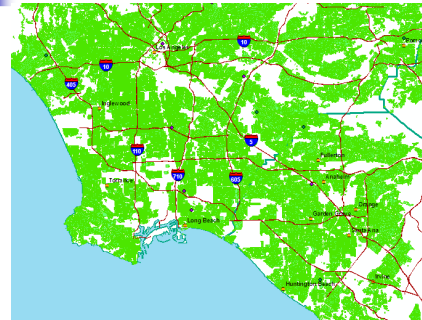## Slide 18

# Other Considerations

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## Land Use Layers

- **Data quality varies by region**

- **<u>Residential</u> zoning and/or population density**

- **<u>Sensitive</u> land uses**
  (e.g., schools, hospitals, child care…)

- **Proximity to <u>hazardous</u> land uses**
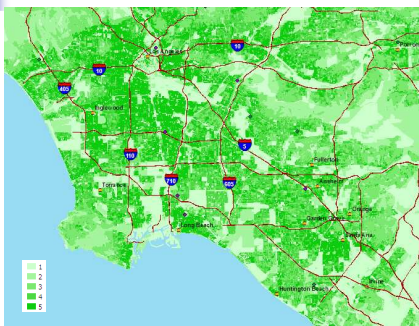  (e.g., ports, railyards, major facilities)

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## Residential Land Use Zones
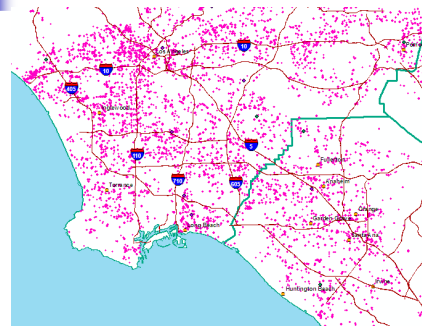### (ARB's EJ contract: Residential zoning only)



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## Population Density
### (Census Data – shown in 5-equal-bins)



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## Sensitive Land Uses (Schools, Hospitals…)
### (ARB's EJ contract: Count hazards near sensitive people)



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## Considerations for Residential Population

- **Residential land zoning - used in EJ contract**
  - Some population is not addressed

- **Population density**

- **Other options?**

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## Seeking Work Group Input

- **Appropriate indicator layers & breakpoints**

- **Combining layers**

- **Relative weighting**

- **Residential population density/land use options**

- **Hazard proximity methods for sensitive populations**

- **Other**

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**END**

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