WORKSHOP REPORT

JULY 2009

Proposed Amendments to:

Regulation 2: Permits, Rule 5: New Source Review of Toxic Air Contaminants

Appendix C:

Guidelines for Designation of Priority Communities

Priority Communities

The Community Air Risk Evaluation (CARE) program was initiated in 2004 to identify Bay Area communities that have both high exposures to toxic air contaminants (TAC) and populations that may be particularly sensitive to the adverse health effects of TAC. The CARE program seeks then to implement mitigation measures focused on reducing TAC emissions that affect these impacted communities.

Starting in 2006, the District developed gridded TAC emissions inventories and compiled demographic information that were used to identify priority communities for the purposes of distributing grant and incentive funding. In 2009, the District completed regional modeling of TAC on a one kilometer by one kilometer grid system. This modeling was used to estimate cancer risk and TAC population exposures for the entire District. The information derived from the modeling was then used to update and refine the identification of priority communities.

Specifically, one kilometer modeling yielded estimates of annual concentrations of five key compounds—diesel particulate matter, benzene, 1,3-butadiene, formaldehyde, and acetaldehyde—for year 2005. These concentrations were multiplied by their respective unit cancer risk factors, as established by the State's Office of Environmental Health Hazard Assessment (OEHHA) to estimate the expected excess cancer risk per million people from these compounds.

The datasets compiled to identify impacted communities were determined as follows:

- **Exposure of sensitive populations:** Sensitive populations from the 2000 U.S. Census database were identified as youth (under 18) and seniors (over 64) and mapped to the same one kilometer grid used for the toxics modeling. Excess cancers from TAC exposure were determined by multiplying these sensitive populations by the model-estimated excess risk to establish a data set representing sensitive populations with high TAC exposures.

- **TAC emissions:** TAC emissions (year 2005) were mapped to the one kilometer grid and also scaled by their unit cancer risk factor to provide a data set representing source regions for TAC emissions.

- **Poverty-level:** Block-group level household income data from the U.S. Census database were used to identify block groups with family incomes where more than 40% of the population was below 185% of the federal poverty level (FPL).

These datasets were used following the methodology defined below to create polygons of priority communities:

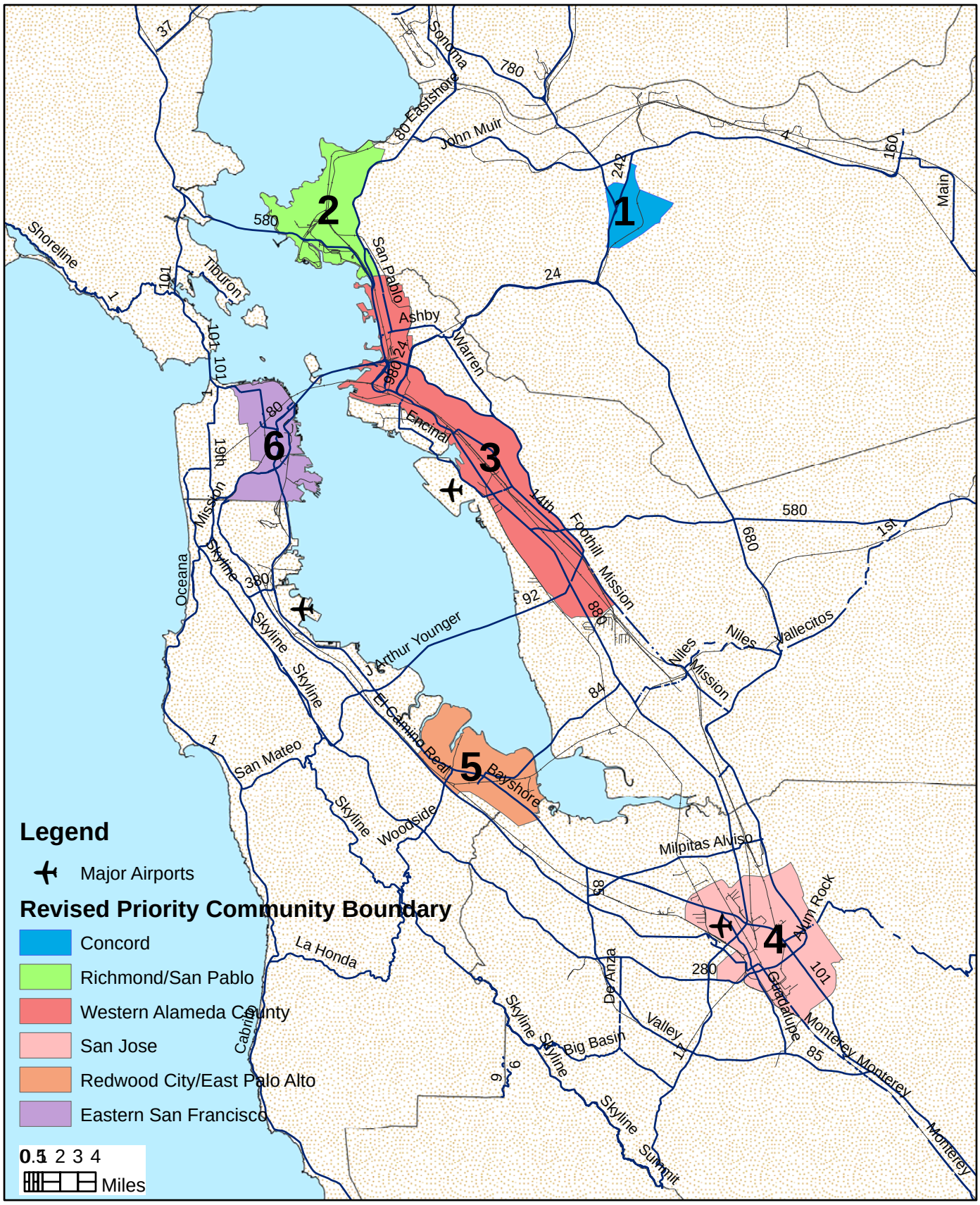
1. The three datasets were mapped to a common projection and plotted together.
2. The top two quartiles of sensitive population exposure data were plotted as shaded grid cells.
3. The top quartile of emissions was plotted as outlined grid cells.
4. The poverty level data were plotted as shaded block-group polygons.
5. Poverty-level polygons that intersect high (top 50%) exposure cells and are within one grid cell of a high emissions (top 25%) cell were used to identify impacted areas.
6. Boundaries were constructed along major roads or highways that encompass nearby high emission cells and low income areas.
7. Knowledge of local areas was used to make judgments in selecting bounding roadways, recognizing that emissions, modeling, demographic data may not perfectly reflect true conditions.

This method identified the following six areas as priority communities:

1. Portions of the City of Concord;
2. Western Contra Costa County (including portions of the Cities of Richmond and San Pablo);
3. Western Alameda County along the Interstate-880 corridor (including portions of the Cities of Berkeley, Oakland, San Leandro, San Lorenzo, Hayward;
4. Portions of the City of San Jose.
5. Eastern San Mateo County (including portions of the Cities of Redwood City and East Palo Alto); and
6. Eastern portions of the City of San Francisco;

Bay Area Air Quality Management District

Priority Communities



March 25, 2009

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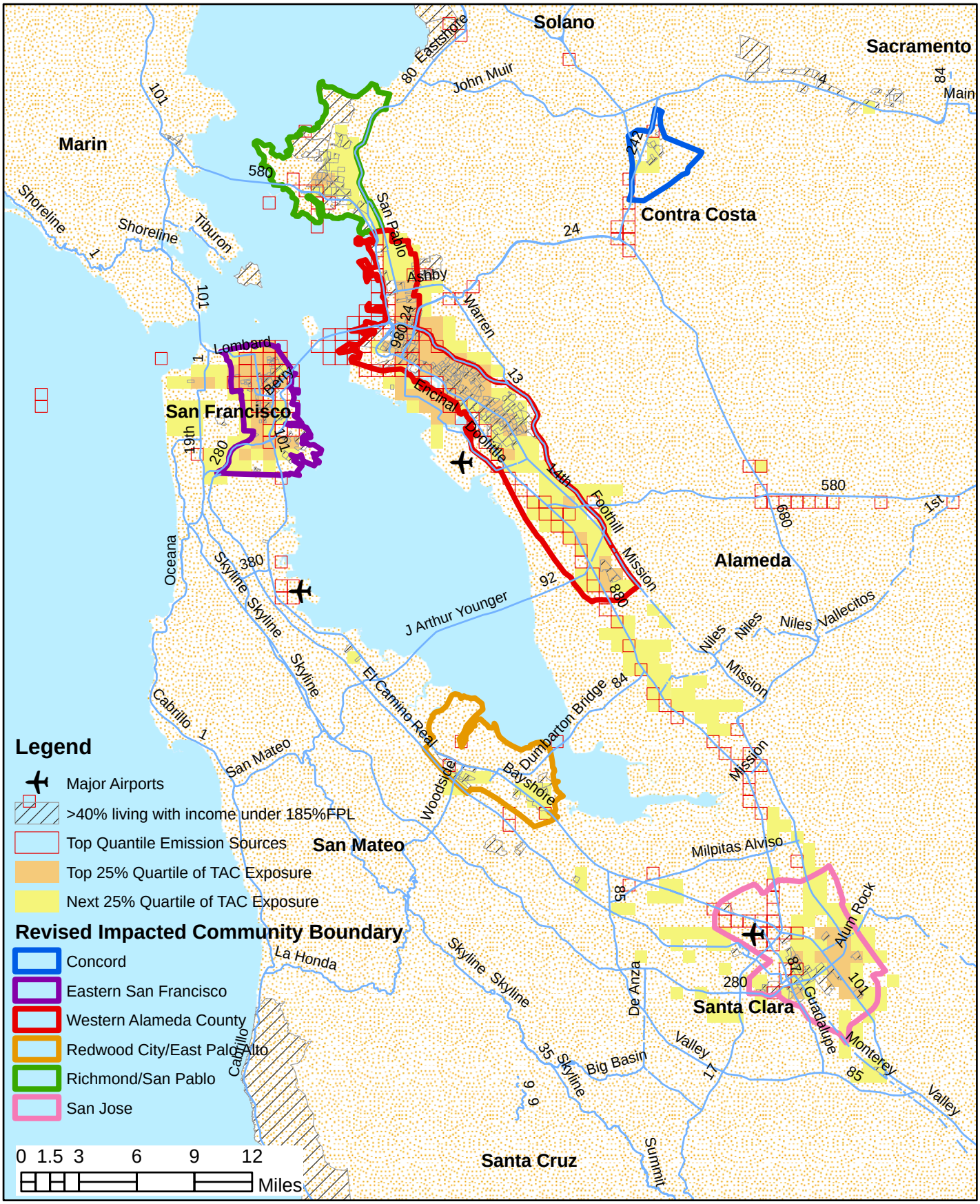
Bay Area Air Quality Management District

Exposure to Toxic Air Contaminants of Sensitive Populations in Bay Area Counties
in the Year 2005 Based on a Weighted Product of Population and Emissions

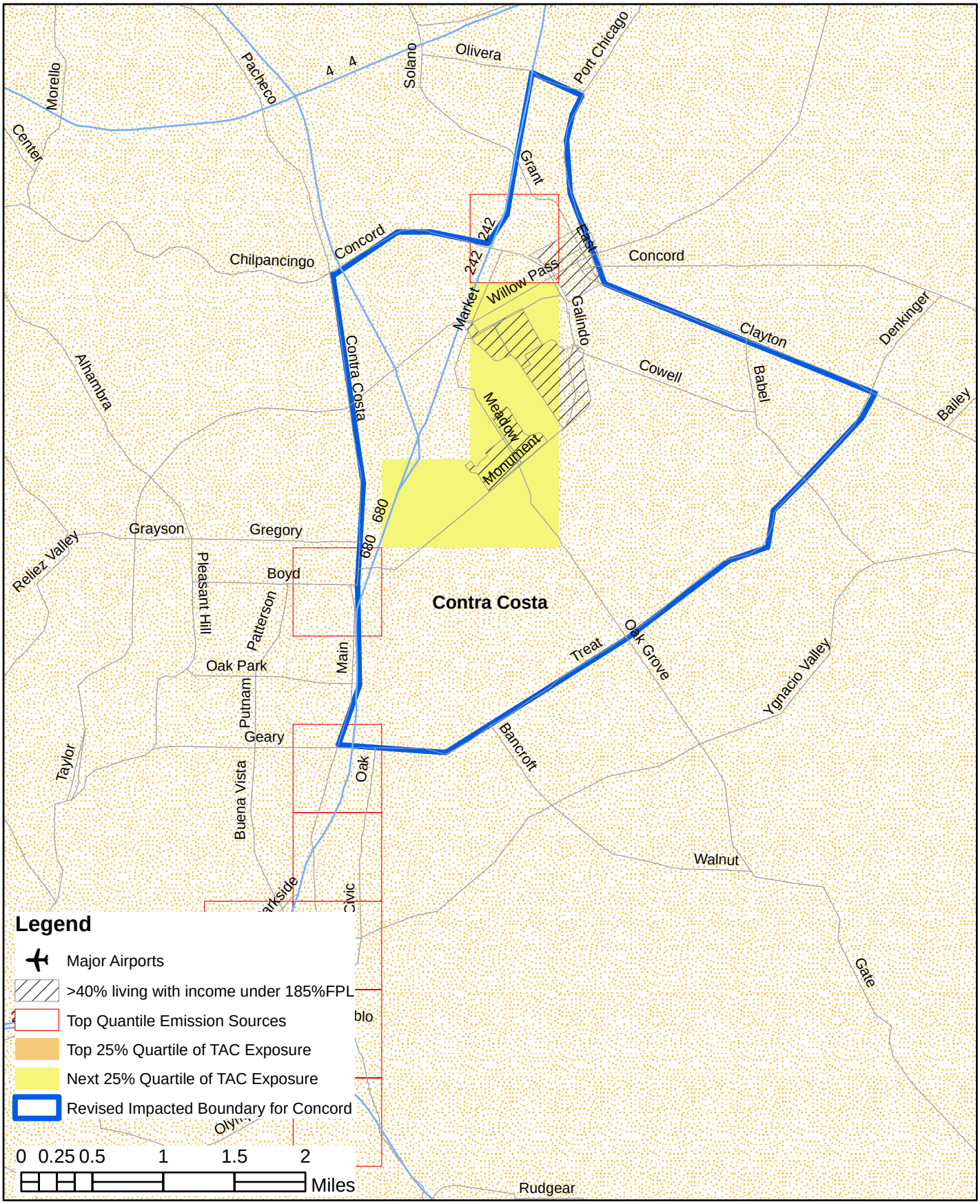


Note: Sensitive population includes people under the age of 18 and over 64 years old.
Toxic air contaminants include diesel PM, 1,3-butadiene, formaldehyde, and acetaldehyde.

April 17, 2009

Bay Area Air Quality Management District

Exposure to Toxic Air Contaminants of Sensitive Populations in Concord
in the Year 2005 Based on a Weighted Product of Population and Emissions



Note: Sensitive population includes people under the age of 18 and over 64 years old.
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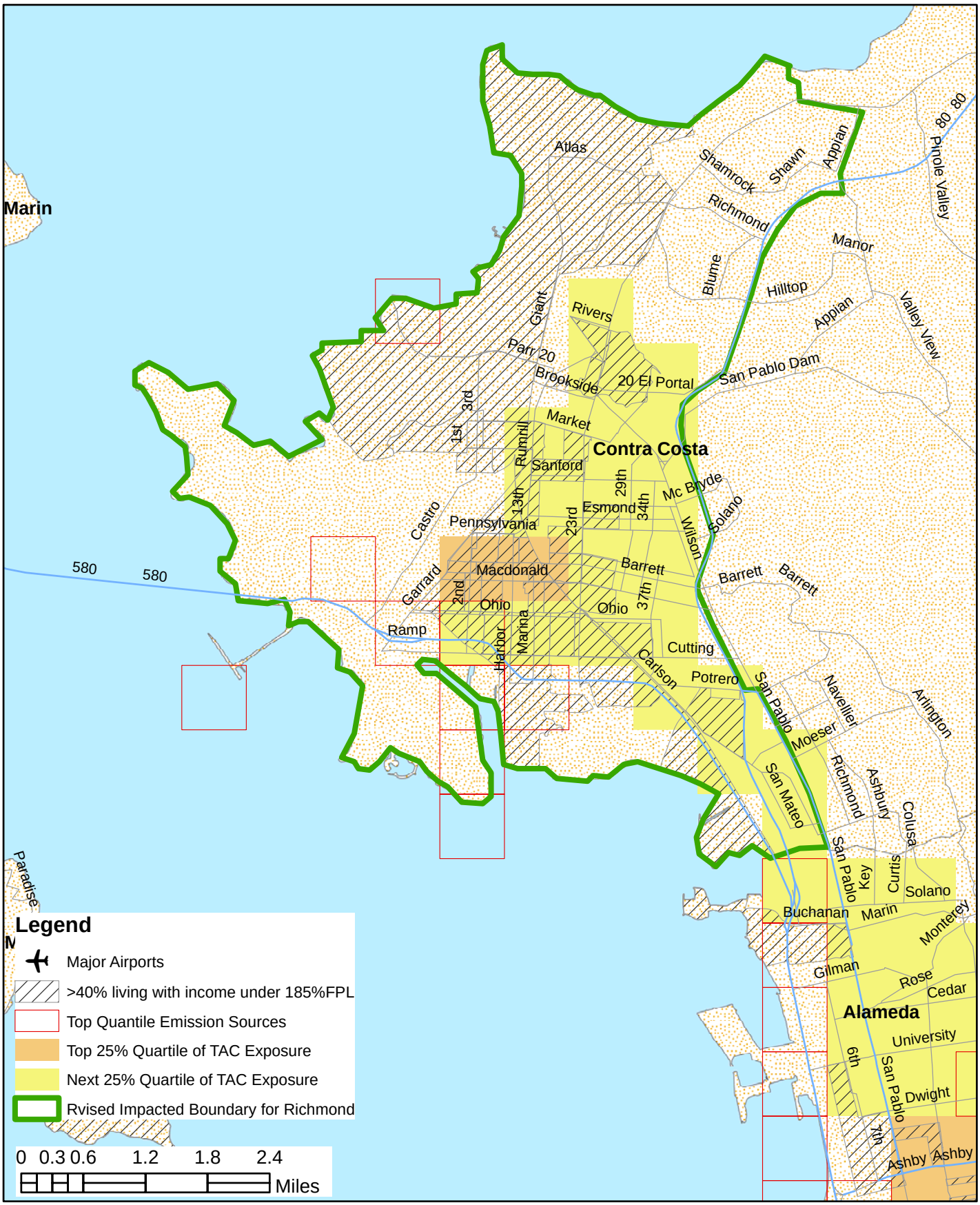
April 17, 2009

Bay Area Air Quality Management District

Exposure to Toxic Air Contaminants of Sensitive Populations in Richmond/San Pablo
in the Year 2005 Based on a Weighted Product of Population and Emissions



Note: Sensitive population includes people under the age of 18 and over 64 years old.
Toxic air contaminants include diesel PM, 1,3-butadiene, formaldehyde, and acetaldehyde.

April 17, 2009

Bay Area Air Quality Management District

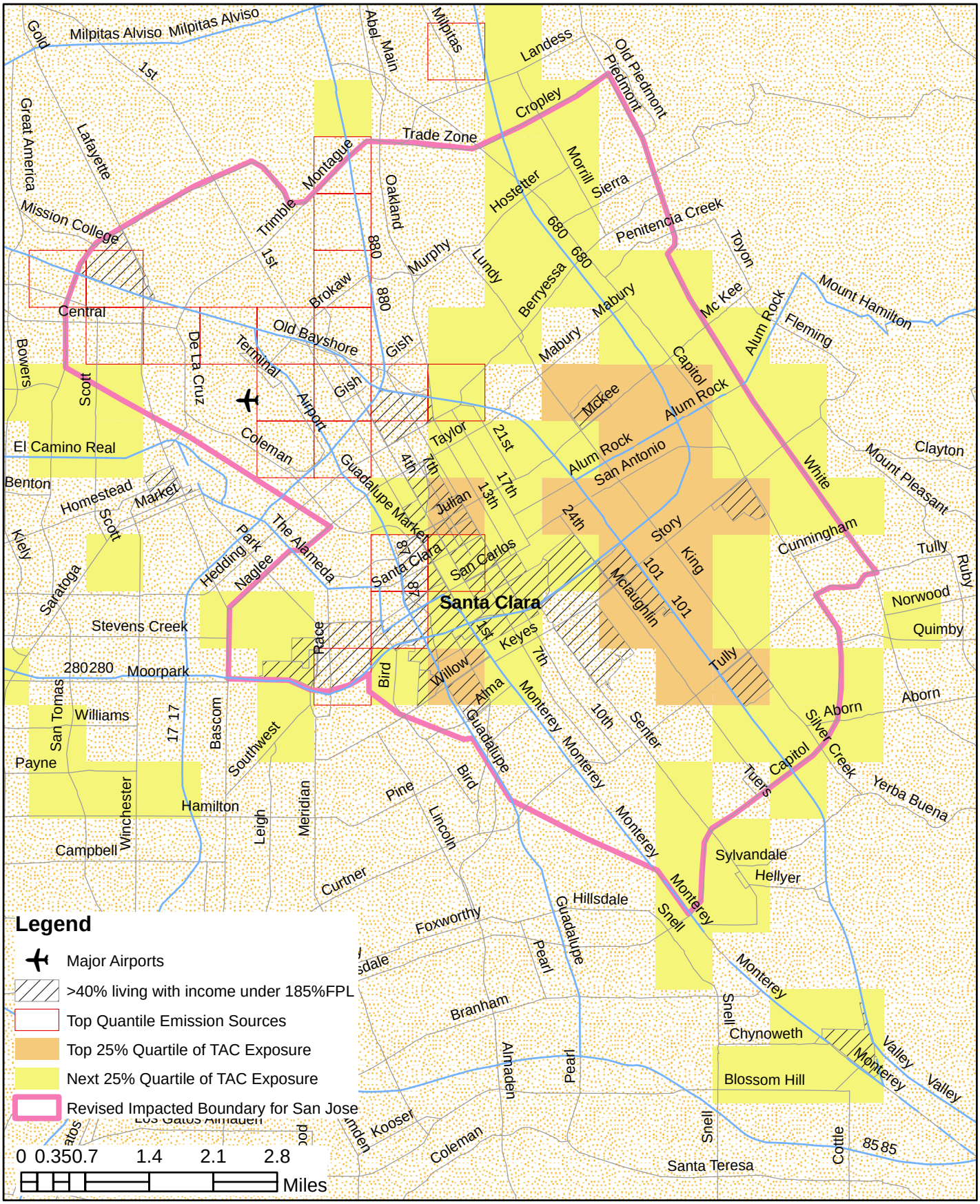
Exposure to Toxic Air Contaminants of Sensitive Populations in Western Alameda County
in the Year 2005 Based on a Weighted Product of Population and Emissions

Note: Sensitive population includes people under the age of 18 and over 64 years old.
Toxic air contaminants include diesel PM, 1,3-butadiene, formaldehyde, and acetaldehyde.

April 17, 2009

Bay Area Air Quality Management District

Exposure to Toxic Air Contaminants of Sensitive Populations in San Jose
in the Year 2005 Based on a Weighted Product of Population and Emissions



Note: Sensitive population includes people under the age of 18 and over 64 years old.
Toxic air contaminants include diesel PM, 1,3-butadiene, formaldehyde, and acetaldehyde.

April 17, 2009

Bay Area Air Quality Management District

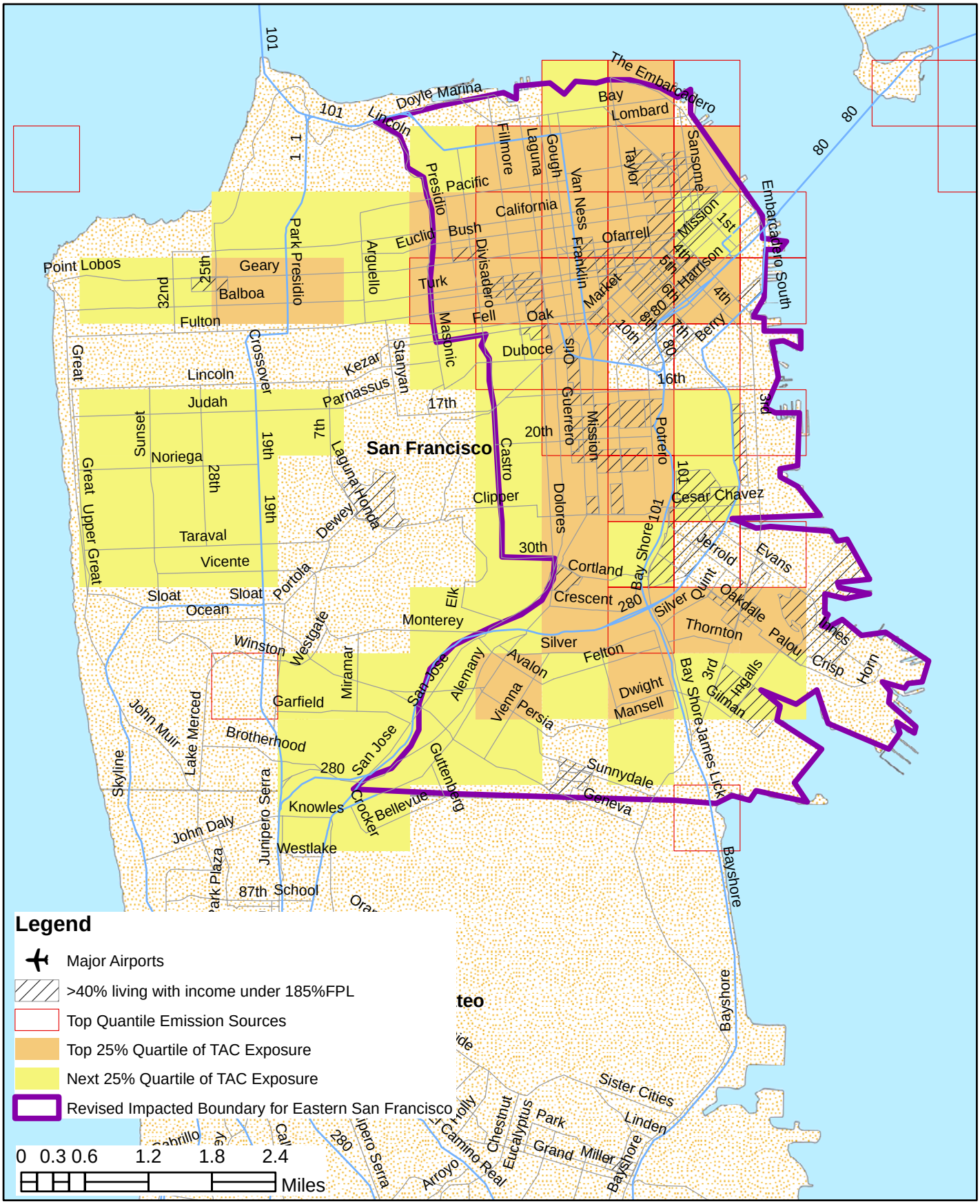
Exposure to Toxic Air Contaminants of Sensitive Populations in Redwood City/East Palo Alto in the Year 2005 Based on a Weighted Product of Population and Emissions

Note: Sensitive population includes people under the age of 18 and over 64 years old.
Toxic air contaminants include diesel PM, 1,3-butadiene, formaldehyde, and acetaldehyde.

April 17, 2009

Bay Area Air Quality Management District

Exposure to Toxic Air Contaminants of Sensitive Populations in San Francisco
in the Year 2005 Based on a Weighted Product of Population and Emissions



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April 17, 2009