State of California
AIR RESOURCES BOARD

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

Release Date: April 21, 2010

California Environmental Protection Agency
AIR RESOURCES BOARD

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INTRODUCTION

The Air Resources Board (ARB) staff has developed a method to identify low-income communities that are highly impacted by air pollution for the purposes of meeting the requirement of California's Global Warming Solutions Act of 2006 (AB 32), specified in Health and Safety Code (HSC) Section 38570(b)(1). Prior to the inclusion of market-based compliance mechanisms in AB 32 regulations, ARB is required to do the following:

> "Consider the potential for direct, indirect, and cumulative emissions impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution." HSC Section 38570(b)(1)

This requirement will be addressed as part of the broader environmental review process for ARB's proposed cap-and-trade regulation. Staff intends to use available emissions data and forecasts, which include the benefits of California's air pollution control programs, as the foundation of the cumulative emissions impacts analysis. To help address the requirement to look at any "localized impacts in communities already adversely impacted by air pollution," ARB staff intends to use a community screening process. A screening approach developed as part of an ARB environmental justice research contract forms the conceptual basis for staff's screening method. The purpose of applying a screening method for communities as part of the cumulative impact analysis is to ensure that the communities most highly impacted by air pollution are considered. The method uses low-income status as an indicator of relative vulnerability to the impacts of air pollution.

While California's air quality is improving statewide, some regions and communities experience much greater air pollution exposures than others. Highly impacted communities face multiple types of air pollution exposure including persistent high ozone or fine particulate pollution levels, exposure to diesel particulate pollution and other air toxics, or a combination of these air pollution exposures. This method is designed to capture multiple types of harmful air pollution exposures so that highly impacted communities statewide are identified in this process.

The method integrates data on high exposures to air pollution with indicators of low-income status. Considering these indicators together provides a means to identify low-income communities that are also highly impacted by air pollution. It is important to keep in mind that this is a screening method to identify highly impacted communities for purposes of assessing the impacts of ARB climate change regulations. More detailed analyses may be necessary depending upon the nature of the assessment, and the potential location of any impacts.

As ARB adopts regulations to implement AB 32, the Board is also required, to the extent feasible and in furtherance of achieving the statewide greenhouse gas emission limit, to:

> "Ensure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities." HSC Section 38562(b)(2)

In implementing HSC Section 3856(b)(2), staff intends to consider the communities identified using this screening process. In addition, staff may consider potential disproportionate impacts on other low-income communities independent of current air quality status for various program purposes.

BACKGROUND

Staff evaluated existing research studies and approaches that could be used to identify highly impacted communities. The most relevant work that combines indicators of air pollution risk with social and health vulnerability is an environmental justice screening approach developed through an ARB sponsored research contract. The report for this work is entitled "Air Pollution and Environmental Justice: Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability into Regulatory Decision-Making". The authors are Manuel Pastor (University of Southern California), Rachel Morello-Frosch (UC Berkeley) and James Sadd (Occidental College).

This environmental justice screening approach is a visual mapping tool and scoring procedure that examines cumulative impacts in neighborhoods. The screening approach incorporates a number of indicators of cumulative impact, reflecting research on air pollution, public health, and environmental justice. The researchers consider their work a screening approach, not a neighborhood assessment method, which would require more detailed studies. The screening approach was designed to be useful for policy development, including prioritization of regulatory activities, as well as to provide input to land use and zoning decisions.

The screening approach was developed primarily using data for Southern California and the San Francisco Bay Area, but further work is underway. The screening incorporates indicators for three categories of potential impact and vulnerability:

1) Potential health risk and exposures to air pollution

    - Monitored concentrations of ozone and fine particulate matter (PM2.5)
    - ARB modeled cancer risk
    - Chronic non-cancer hazard index associated with respiratory effects from air toxics, derived from the US EPA National Air Toxics Assessment (NATA)
    - U.S. EPA's Risk Screening Environmental Indicators model output for cancer and non-cancer risk indicators using data from the federal Toxics Release Inventory facility data

2) Indicators of social and health vulnerability

    - Race/ethnicity, 200 percent of the federal poverty level, homeownership, median house value, educational attainment, age less than 5 years, age over 60 years, linguistic isolation, voter turnout, and birth outcomes

3) Hazard proximity to sensitive land uses

- Residential land use information
- Locations of sensitive land uses including schools, day care centers, playgrounds, parks and healthcare facilities
- Spatial proximity to potential air pollution sources
- Locations of hazardous waste treatment, storage and disposal facilities
- Locations of railways and associated facilities, airports and intermodal facilities

The environmental justice screening approach integrates the indicators using statistical analysis, ranking, and averaging methods applied with a Geographic Information System (GIS) approach. Mapping of the results is done using census tracts. In general, for each census tract, the individual indicators in each category are ranked from 1 to 5 with higher scores representing greater impact. The ranked scores within each category are then averaged and re-normalized. This results in three numerical scores, (one for each category) for each census tract. The census tract scores for each category are then averaged, resulting in a single final score for each tract between 3 and 15.

A description of the research project and mapping results for Southern California can be found at http://college.usc.edu/pere/projects/cumulative_impacts.cfm.
The researchers recognize that this screening approach can be modified to change indicators or scoring approaches. Staff used this screening approach, with modifications, as the base methodology for integrating air pollution and socio-economic indicators.

DESCRIPTION OF ARB SCREENING METHOD

ARB staff developed the following method for identifying low-income communities highly impacted by air pollution, based on the environmental justice screening approach developed by the research team of Manuel Pastor, Rachel Morello-Frosch, and James Sadd. In developing the method, staff used the team's research screening approach to explore the interactions and correlations among various indicators to determine if comparable results could be achieved using a few key indicators. Also, given California's regional diversity, it was important to evaluate the results of the screening approach on a statewide basis. Based on these evaluations, staff's method uses slightly different indicators and averaging methods. Also, the method moves beyond the census tract level to enable identification of communities in a way understandable to the public. Lastly, it is important to note that this screening method would not rank communities with a numerical score, instead it incorporates criteria that would put a group of communities in a category considered highly impacted.

Since AB 32 references both low-income status and air pollution impacts in various provisions, staff focused on these two key indicators. This is consistent with California law regarding environmental justice, as well as ARB's environmental justice policies, which include references to low-income status. Staff also reviewed definitions of disadvantaged status used in other government programs and found that nearly all include a measure of poverty or income. While other socio-economic parameters could be included, using this

single indicator produced results comparable to using the full mix of socio-economic parameters included in the environmental justice screening approach developed by Manuel Pastor, Rachel Morello-Frosch, and James Sadd. This comparison was done for the South Coast Air District, the region with the most complete data set.

Health Risk and Exposure to Air Pollution

The ARB method relies on the following health risk and exposure indicators:

1) Indicators for ozone and particulate matter air pollution exposure:

    - Monitored concentrations of ozone and fine particulate matter (PM2.5)
    - Annual number of days exceeding the federal 8-hour ozone standard

2) Indicators for toxic air contaminant exposure:

    - Cancer risk and chronic non-cancer hazard index associated with respiratory effects from air toxics, derived from the US EPA National Air Toxics Assessment (NATA)
    - U.S. EPA's Risk Screening Environmental Indicators model output for cancer and non-cancer risk indicators using data from the federal Toxics Release Inventory facility data
    - ARB modeled cancer risk for diesel particulate matter
    - Diesel-related risk assessment data from ARB site-specific studies for major ports and rail yards in California

ARB staff's health risk and exposure indicators include two additional data sets not used in the environmental justice screening approach. One is the addition of a second indicator for ozone air pollution exposure that accounts for the frequency of high ozone days. The other is use of risk assessment results from ARB analyses of major ports and rail yards. This information captures the high toxic risk from diesel particulate matter not reflected in US EPA's National Air Toxics Assessment database. When this localized air toxics risk is taken into account, staff's screening method produces results for southern California similar to those of the environmental justice screening approach without the more complicated hazard proximity approach. Further work on the proximity approach would be useful for land use decision making, but is not essential in order to proceed with the identification of communities highly impacted by air pollution for AB 32 assessments.

Indicators of Low-Income Status

The method uses low-income indicators as the key measure of socio-economic status. Common references used in various programs are the federal poverty level and median household income (MHI). Staff used both measures, federal poverty at the census tract level and MHI on a statewide basis. Given the relatively higher cost of living in California, simply using the federal poverty level may not be the most appropriate metric for California. The environmental justice screening tool and other programs use the percent of a census tract's population below twice the federal poverty level. Staff's method takes

the same approach at the census tract level, based on an evaluation that found that using twice the federal poverty level better reflects low-income status in some areas. MHI data for communities as a whole is used to gauge income/poverty on a statewide basis.

APPLICATION OF SCREENING METHOD

The ARB screening method was applied statewide to focus on the communities that are exposed to the highest levels of measured air pollution and that are also low-income. This analysis identified communities in the South Coast Air District, San Joaquin Valley, and downwind desert areas affected by transported air pollution from these regions. Considering localized impacts utilizing data from ARB's port and railyard studies, additional communities in the South Coast and Bay Area regions were identified.

Community Screening Method

To capture communities that are exposed to high air pollution and that are also low-income, a GIS approach is used to rank and overlay a series of indicator layers on a map of California. For this step in the analysis, these are the indicators:

Health Risk and Exposure Indicators for Ranking

- Monitored concentrations of ozone and fine particulate matter (PM2.5)
- Annual number of days exceeding the federal 8-hour ozone standard
- Modeled cancer risk for diesel particulate matter
- Cancer risk and chronic non-cancer hazard index associated with respiratory effects from air toxics, derived from the US EPA National Air Toxics Assessment (NATA)
- U.S. EPA's Risk Screening Environmental Indicators model output for cancer and non-cancer risk indicators using data from the federal Toxics Release Inventory facility data

Economic Indicator for Ranking

- Percent of population below 200% of federal poverty level in each census tract

For each census tract, the individual indicators for exposure in each census tract are placed in one of ten ranks. The highest (worst) ranked indicator for each census tract is then selected. For example, some census tracts rank highest based on ozone concentrations, while others rank high based on PM2.5 levels or toxic risk. Once the highest rank for a health risk and exposure indicator is determined, it is averaged with the socio-economic rank for that census tract. Once the exposure and socio-economic indicators are combined, all of the census tracts are re-ranked based on this averaged value. Using this final ranking, the highest ranked (worst) 20 percent of the census tracts in the state is identified.

Because AB 32 assessment requirements refer to communities, a method is needed to translate results from a census tract ranking to a list of identifiable communities. The staff's method recognizes existing city boundaries, named communities within large cities, and US Postal Service ZIP code information. In order to ensure that the method effectively captures the low-income areas that are most heavily impacted on a community-wide basis, ARB staff included an additional step in the screening process. Communities were included on the list of highly impacted communities if approximately 50 percent or more of the city or ZIP code based area is covered by census tracts that fall in the highest rank (i.e., worst 20 percent of census tracts in the state), and the community as a whole is at or below the statewide median household income.

Accounting for Localized Risks

The environmental justice screening approach includes a component the researchers refer to as "hazard proximity and land use", which requires detailed, local land use classification data that are not readily available statewide. This component also uses a complex method for counting various types of "hazardous" sources at a specified distance from residential receptors, as a surrogate for ranking potential risk from these sources. Instead of attempting to use this approach for AB 32, staff is including additional information on localized toxic risks from diesel particulates to supplement other sources of information on toxic air emissions.

Staff created modeled cancer risk map layers with diesel-related risk data from ARB's site-specific studies of major ports and railyards in California. Staff looked at communities that were affected by cancer risks exceeding 100 chances in a million. The socio-economic status of these census tracts varies widely so an economic cut point is needed. Census tracts impacted by 100 in a million risk that also fall within the worst 40 percent of poverty in the region are identified. The method takes into account the emission reductions achieved with the recent regulatory and incentive programs to reduce health risk from diesel engines and equipment. The port and railyard information is used to supplement the list of low-income, highly impacted communities derived from the statewide ranking. Communities as a whole are evaluated for inclusion if they are at or below the statewide median household income.

LIST OF IDENTIFIED COMMUNIITIES

ARB staff has completed the application of the screening method across the state. The list of identified communities is provided in Appendix A. Appendix B provides maps of the identified communities and census tracts in the South Coast Air District, San Joaquin Valley, downwind desert areas, and the Bay Area. The table found in Appendix C provides the key underlying data that contributed to the identification of each of the named communities.

Appendix A

April 21, 2010

List of Communities Highly Impacted by Air Pollution with Low-Income Neighborhoods

San Joaquin Valley APCD		
Alpaugh	Goshen	Planada
Armona	Hanford	Poplar-Cotton Center
Arvin	Home Garden	Porterville
August	Huron	Raisin City
Avenal	Ivanhoe	Reedley
Bakersfield (Portions of)	Kerman	Richgrove
Biola	Kettleman City	Riverdale
Buttonwillow	Lamont	San Joaquin
Calwa	Lanare	Sanger
Cantua Creek	Laton	Selma
Caruthers	Le Grand	Shackelford
Coalinga	Lindsay	Shafter
Corcoran	London	South Dos Palos
Cutler	Lost Hills	South Taft
Del Rey	Madera	Stratford
Delano	Madera Acres	Strathmore
Dinuba	Maricopa	Taft Heights
Dos Palos	McFarland	Taft Mosswood
Ducor	Mendota	Terra Bella
Earlimart	Merced	Tipton
East Orosi	Oildale	Tranquillity
East Porterville	Orange Cove	Traver
Easton	Orosi	Tulare
Farmersville	Parksdale	Wasco
Ford City	Parkwood	Weedpatch
Fowler	Parlier	Woodlake
Fresno	Pixley	Woodville

Notes:

- A community is listed if approximately 50% or more of the city or ZIP code based area is covered by census tracts that fall in the worst 20% of census tracts in the state, or if it is impacted by risk of 100 in-a-million in available diesel health risk assessment studies for major ports and rail yards and within the worst 40% poverty for the region. In any case, the community as a whole must be at or below the statewide median household income.

- The worst 20% of census tracts are determined by averaging the ranked economic indicator for each tract (% of population below 200% poverty), with the worst ranked exposure indicator for the tract (ozone, PM2.5, diesel risk, RSEI, NATA cancer risk or NATA chronic hazard).

- This list will be periodically updated.

Appendix A

April 21, 2010

List of Communities Highly Impacted by Air Pollution with Low-Income Neighborhoods

South Coast AQMD		
Baldwin Park	Inglewood	Rialto
Bell	Lake Elsinore	Rosemead
Bell Gardens	Lakeland Village	Rubidoux
Bloomington	Lawndale	San Bernardino
Colton	Lennox	San Jacinto
Commerce	Lynwood	Santa Ana
Compton	Maywood	Sedco Hills
Cudahy	Mira Loma	South El Monte
East Compton	Montebello	South Gate
East Los Angeles	Muscoy	Walnut Park
El Monte	Ontario	West Athens
Florence-Graham	Pacoima	Westmont
Fontana	Panorama City	Willowbrook
Highgrove	Paramount	Wilmington
Homeland	Perris	Winchester
Huntington Park	Pomona	
Desert Areas Affected By Transport		
Adelanto	Lake Isabella	Palmdale East
Barstow	Lake Los Angeles	Squirrel Mountain Valley
Bodfish	Lenwood	Thousand Palms
Coachella	Mecca	Twentynine Palms
Desert Hot Springs	Mojave	Victorville
Inyokern	Morongo Valley	Weldon
Joshua Tree	Mountain Mesa	Wofford Heights
Kernville	Onyx	Yucca Valley
Bay Area AQMD		
Emeryville	South Richmond (Iron Triangle)	West Oakland

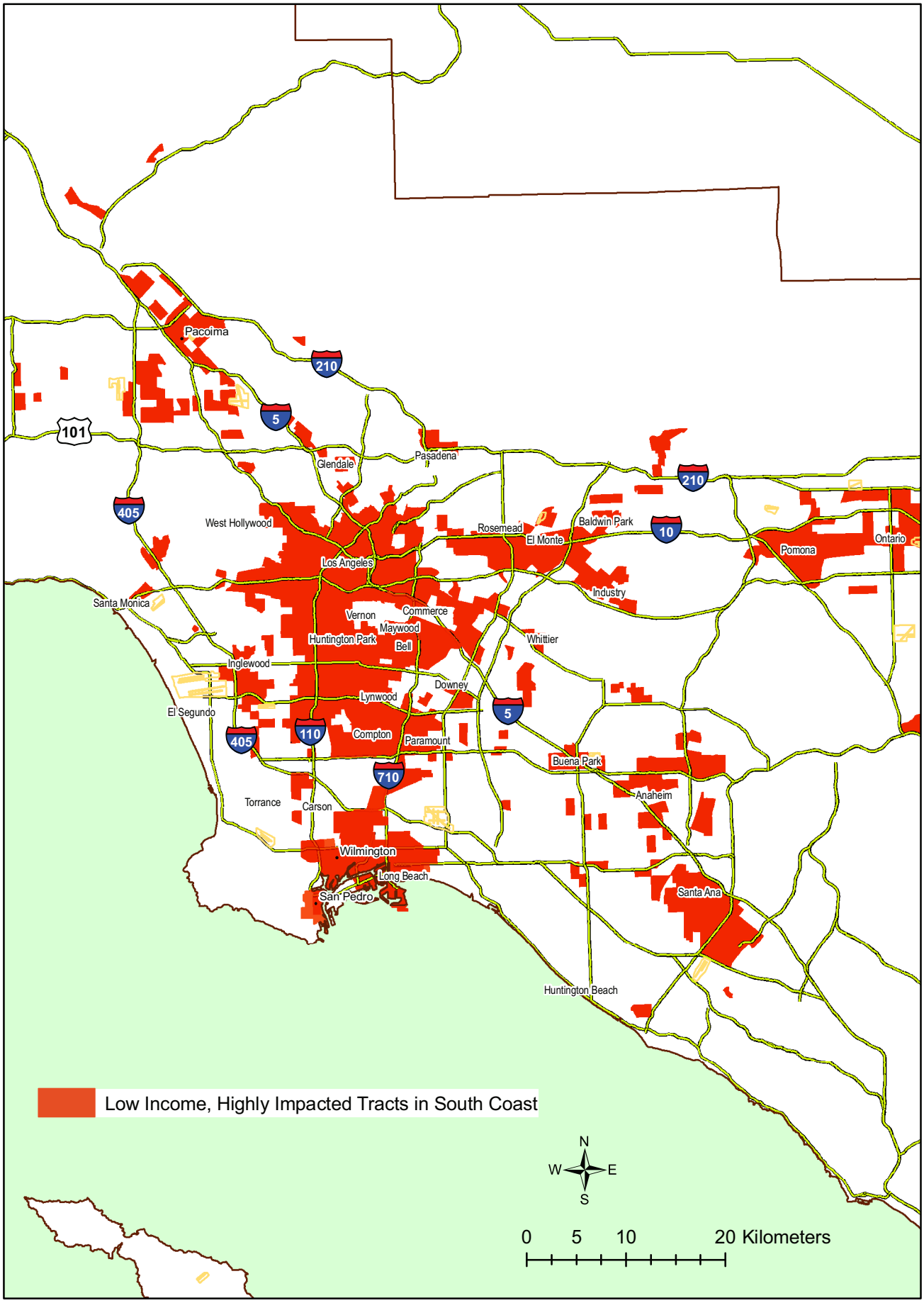
Notes:

- A community is listed if approximately 50% or more of the city or ZIP code based area is covered by census tracts that fall in the worst 20% of census tracts in the state, or if it is impacted by risk of 100 in-a-million in available diesel health risk assessment studies for major ports and rail yards and within the worst 40% poverty for the region. In any case, the community as a whole must be at or below the statewide median household income.

- The worst 20% of census tracts are determined by averaging the ranked economic indicator for each tract (% of population below 200% poverty), with the worst ranked exposure indicator for the tract (ozone, PM2.5, diesel risk, RSEI, NATA cancer risk or NATA chronic hazard).

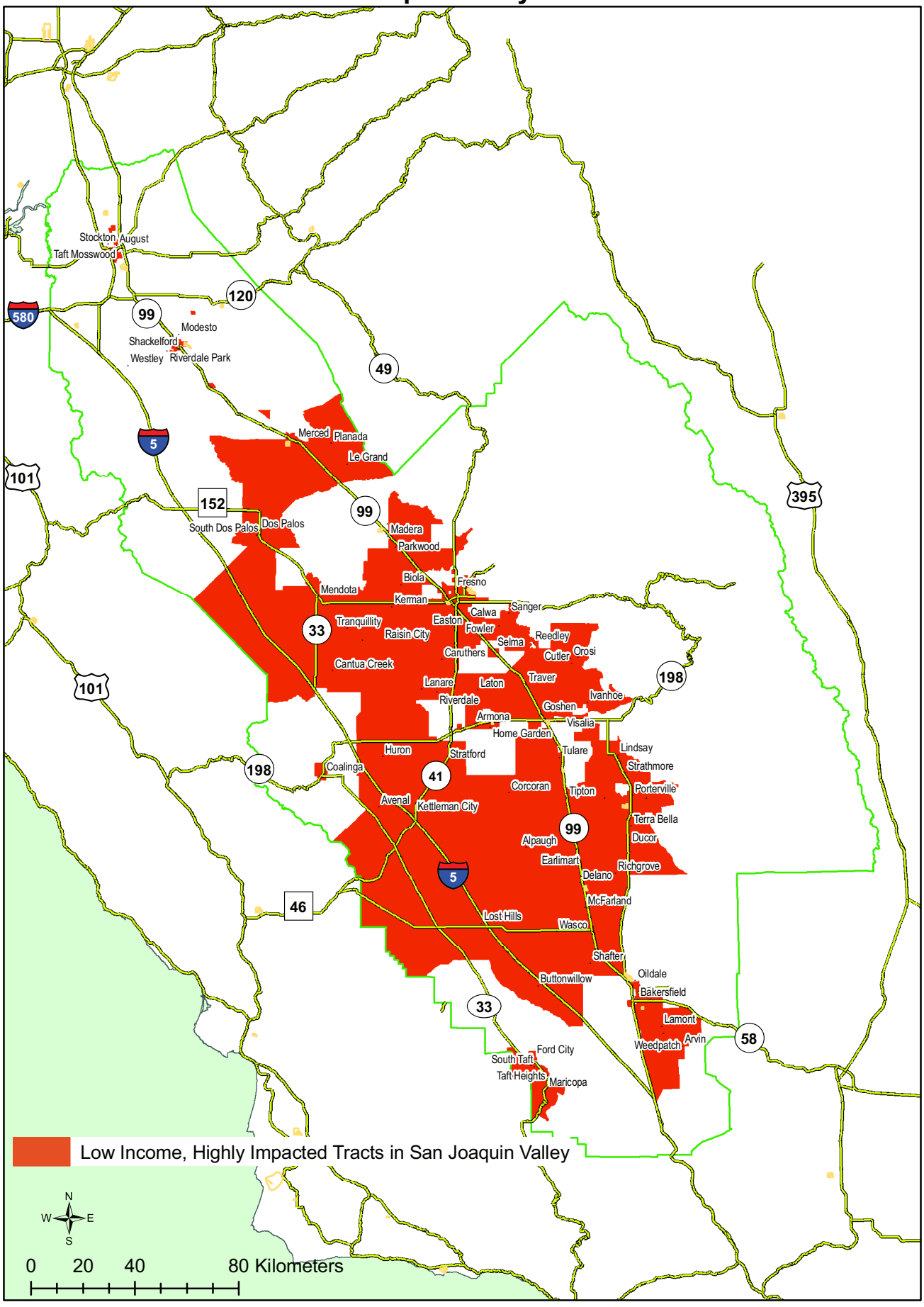
- This list will be periodically updated.

Appendix B.1
Low-Income Areas Highly Impacted by Air Pollution for Consideration in AB 32 Cumulative Impact Assessments
-- South Coast AQMD --



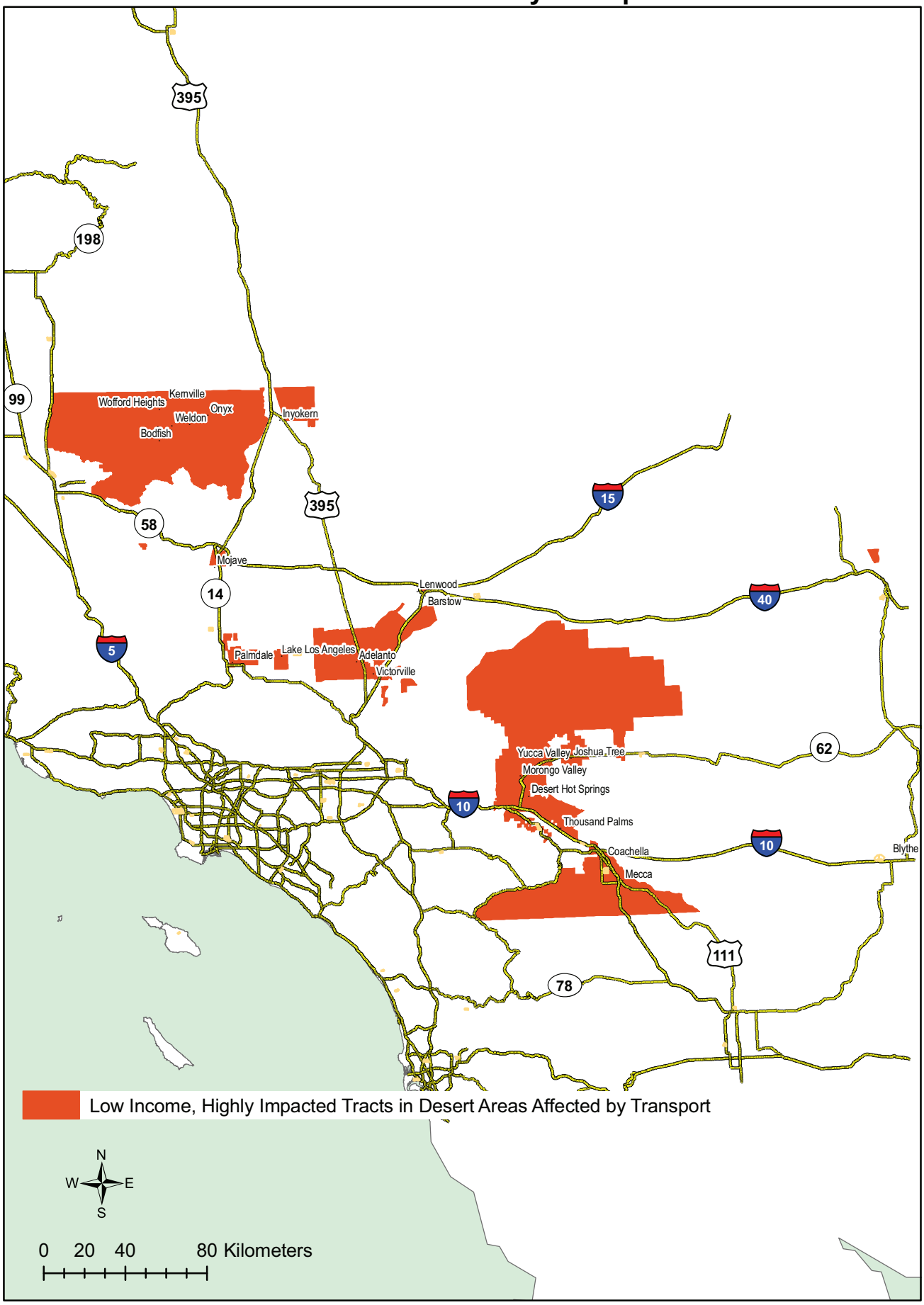
ARB.AppdxB1.4-20-10

Appendix B.2
Low-Income Areas Highly Impacted by Air Pollution for Consideration in AB 32 Cumulative Impact Assessments
-- San Joaquin Valley APCD --



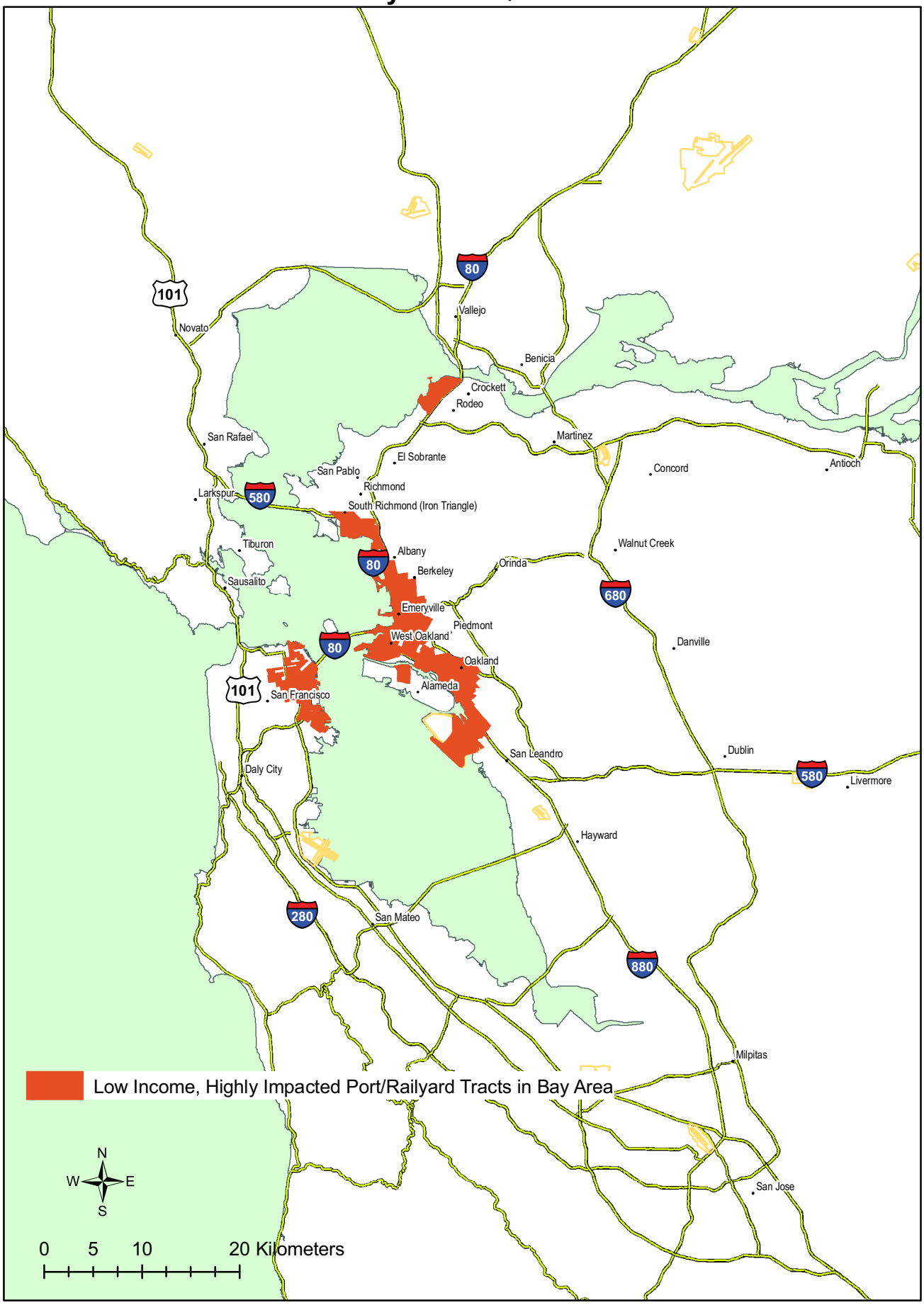
ARB.AppdxB2.4-20-10

Appendix B.3
Low-Income Areas Highly Impacted by Air Pollution for Consideration in AB 32 Cumulative Impact Assessments
-- Desert Areas Affected by Transport --



ARB.AppdxB3.4-20-10

Appendix B.4
Low-Income Areas Highly Impacted by Air Pollution for Consideration in AB 32 Cumulative Impact Assessments
-- Bay Area AQMD --



ARB.AppdxB4.4-20-10

Appendix C

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Community Name	% Tract Population Below 200% Poverty	Days Over Ozone Std.	Annual Average $PM_{2.5}$ (ug/m3)	ARB Diesel Risk Calculation	Risk Screening Environmental Indicators (RSEI)	NATA Chronic Respiratory Hazard	NATA Cancer Risk	ARB Port & Rail Risk Assessment
	Max Value for any Census Tract in the Worst 20%			Communities with Census Tracts in the Worst 20%				
San Joaquin Valley APCD								
Alpaugh	76	46	20					
Armona	61	30	19					
Arvin	76	96	19					
August	54	5	13		✓			
Avenal	72	41	20					
Bakersfield (Portions of)	87	92	21	✓			✓	
Biola	47	21	18					
Buttonwillow	72	47	20					
Calwa	65	31	19					
Cantua Creek	75	31	18					
Caruthers	55	37	19					
Coalinga	49	7	20					
Corcoran	72	45	20			✓		
Cutler	76	50	18					
Del Rey	75	47	18					
Delano	76	68	21			✓		
Dinuba	78	50	19					
Dos Palos	66	26	17					
Ducor	76	53	21			✓		
Earlimart	80	48	20					
East Orosi	58	50	16					
East Porterville	74	73	19			✓		
Easton	51	36	19					
Farmersville	70	48	18			✓		
Ford City	58	48	19		✓			
Fowler	67	46	19					
Fresno	90	55	20	✓	✓		✓	
Goshen	55	45	18					
Hanford	68	33	19					
Home Garden	68	29	19					
Huron	72	37	20					
Ivanhoe	57	51	17			✓		

- Minimum value for a census tract to fall in the worst 20 percent of census tracts statewide:
  For poverty: 64
  For ozone days: 45 days over the ozone standard of 0.075 ppm;
  For average annual PM2.5 concentration: 18 ug/m3 (annual standard is 15 ug/m3)

- Ozone and PM2.5 data are based on data from the statewide monitoring network and represents interpolation between monitors averaged over three years 2004-2006. The values may differ from individual monitoring site data within a region.

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Community Name	% Tract Population Below 200% Poverty	Days Over Ozone Std.	Annual Average $PM_{2.5}$ (ug/m3)	ARB Diesel Risk Calculation	Risk Screening Environmental Indicators (RSEI)	NATA Chronic Respiratory Hazard	NATA Cancer Risk	ARB Port & Rail Risk Assessment
Kerman	78	35	18					
Kettleman City	76	46	20			✓		
Lamont	76	70	19					
Lanare	54	37	19					
Laton	54	37	19					
Le Grand	67	28	17					
Lindsay	73	62	17			✓		
London	74	45	19					
Lost Hills	76	47	20					
Madera	79	37	18				✓	
Madera Acres	46	27	18					
Maricopa	52	47	18					
McFarland	73	50	20					
Mendota	78	31	18					
Merced	83	29	17		✓			
Oildale	76	56	20					
Orange Cove	78	50	18					
Orosi	76	50	17					
Parksdale	79	25	18				✓	
Parkwood	57	25	18					
Parlier	75	48	18					
Pixley	76	46	20			✓		
Planada	67	26	17					
Poplar-Cotton Center	70	67	19			✓		
Porterville	100	73	19			✓		
Raisin City	55	35	18					
Reedley	65	48	18					
Richgrove	76	46	20					
Riverdale	72	37	20					
San Joaquin	72	35	18					
Sanger	67	46	18					
Selma	67	43	18					
Shackelford	75	14	14					
Shafter	73	50	20					
South Dos Palos	66	19	17					
South Taft	52	47	19		✓			

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Stratford	72	35	20					
Strathmore	65	73	17			✓		
Taft Heights	52	47	19		✓			
Taft Mosswood	60	5	13		✓			
Terra Bella	76	67	21			✓		
Tipton	72	45	19			✓		
Tranquillity	75	31	18					
Traver	74	42	19					
Tulare	74	59	19			✓		
Wasco	77	50	20					
Weedpatch	74	70	19					
Woodlake	69	64	15			✓		
Woodville	70	45	19			✓		
South Coast AQMD								
Baldwin Park	56	16	17	✓	✓	✓	✓	
Bell	73	3	17	✓	✓	✓	✓	
Bell Gardens	72	3	17	✓	✓	✓	✓	
Bloomington	57	60	21	✓	✓		✓	
Colton	71	60	20		✓		✓	
Commerce	71	5	18	✓	✓	✓	✓	✓
Compton	75	0	18	✓	✓	✓	✓	
Cudahy	73	2	17	✓	✓		✓	
East Compton	70	0	17	✓	✓	✓	✓	
East Los Angeles	71	7	18	✓	✓	✓	✓	
El Monte	80	9	18	✓	✓	✓	✓	
Florence-Graham	92	2	18	✓	✓	✓	✓	
Fontana	61	60	21	✓	✓		✓	
Highgrove	58	58	20	✓			✓	
Homeland	56	52	16					
Huntington Park	80	3	17	✓	✓	✓	✓	
Inglewood	78	1	17	✓		✓	✓	
Lake Elsinore	60	47	17					
Lakeland Village	53	45	14					
Lawndale	58	0	17	✓		✓	✓	
Lennox	76	0	17	✓		✓	✓	

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Community Name	% Tract Population Below 200% Poverty	Days Over Ozone Std.	Annual Average $PM_{2.5}$ (ug/m3)	ARB Diesel Risk Calculation	Risk Screening Environmental Indicators (RSEI)	NATA Chronic Respiratory Hazard	NATA Cancer Risk	ARB Port & Rail Risk Assessment
Lynwood	79	0	18	✓	✓	✓	✓	
Maywood	69	3	17	✓	✓	✓	✓	
Mira Loma	54	51	19					
Montebello	63	5	18	✓	✓	✓	✓	
Muscoy	67	66	19		✓			
Ontario	71	46	19	✓	✓		✓	
Pacoima	82	38	15			✓	✓	
Panorama City	76	37	15		✓		✓	
Paramount	71	1	17	✓	✓	✓	✓	
Perris	67	51	19		✓			
Pomona	73	27	19		✓			
Rialto	61	61	20		✓			
Rosemead	79	8	18	✓		✓	✓	
Rubidoux	70	60	21		✓		✓	
San Bernardino	87	66	19		✓			
San Jacinto	70	60	13					
Santa Ana	77	6	16	✓		✓	✓	
Sedco Hills	44	45	14					
South El Monte	80	6	18	✓		✓	✓	
South Gate	73	2	18	✓	✓	✓	✓	
Walnut Park	74	1	17	✓	✓	✓	✓	
West Athens	63	0	17	✓		✓	✓	
Westmont	80	0	17	✓		✓	✓	
Willowbrook	85	0	18	✓	✓	✓	✓	
Wilmington	95	0	16	✓	✓	✓	✓	✓
Winchester	56	52	14					
Desert Areas Affected by Transport								
Adelanto	52	47	10		✓		✓	
Barstow	70	38	10		✓		✓	✓
Bodfish	52	63	4					
Coachella	85	37	10					
Desert Hot Springs	67	62	8					
Inyokern	70	68	6					

- Minimum value for a census tract to fall in the worst 20 percent of census tracts statewide:
  For poverty: 64
  For ozone days: 45 days over the ozone standard of 0.075 ppm;
  For average annual PM2.5 concentration: 18 ug/m3 (annual standard is 15 ug/m3)

- Ozone and PM2.5 data are based on data from the statewide monitoring network and represents interpolation between monitors averaged over three years 2004-2006. The values may differ from individual monitoring site data within a region.

Appendix C

April 21, 2010

Community Name	% Tract Population Below 200% Poverty	Days Over Ozone Std.	Annual Average $PM_{2.5}$ (ug/m3)	ARB Diesel Risk Calculation	Risk Screening Environmental Indicators (RSEI)	NATA Chronic Respiratory Hazard	NATA Cancer Risk	ARB Port & Rail Risk Assessment
Joshua Tree	52	61	8					
Kernville	52	68	4					
Lake Isabella	52	68	4					
Lake Los Angeles	49	42	7					
Lenwood	70	19	10					✓
Mecca	78	37	10					
Mojave	61	25	6		✓			
Morongo Valley	53	62	8					
Mountain Mesa	52	63	4					
Onyx	52	68	4					
Palmdale East	54	48	8					
Squirrel Mountain Valley	52	63	4					
Thousand Palms	50	55	8					
Twentynine Palms	57	58	8					
Victorville	64	47	11		✓		✓	
Weldon	52	68	4					
Wofford Heights	52	68	4					
Yucca Valley	50	62	8					
Bay Area AQMD								
Emeryville	59	0	11					✓
South Richmond (Iron Triangle)	64	0	11					✓
West Oakland	72	0	11					✓

- Minimum value for a census tract to fall in the worst 20 percent of census tracts statewide:
  For poverty: 64
  For ozone days: 45 days over the ozone standard of 0.08 ppm;
  For average annual PM2.5 concentration: 18 ug/m3 (annual standard is 15 ug/m3)

- Ozone and PM2.5 data are based on data from the statewide monitoring network and represents interpolation between monitors averaged over three years 2004-2006. The values may differ from individual monitoring site data within a region.

- The communities of Coachella, Lake Los Angeles, Mecca, and Mojave were identified based on ozone concentration.