



August 1, 2018

Richard Corey, Executive Officer
California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

**BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT**

RE: Final Submittal, Public Process for Determination of Recommended Communities

Dear Mr. Corey,

Enclosed please find the Bay Area Air Quality Management District's final submittal on "recommended communities" for the state's Community Air Protection Program. The Community Air Protection Program was established by the California Air Resources Board (CARB) to implement Assembly Bill 617 (C. Garcia, Chapter 136, Statutes of 2017). AB 617 directs CARB, in consultation with local air districts, to select communities that have a "high cumulative exposure burden" to air pollution. Once selected, local air districts will partner with communities to work on community emission reduction programs and/or community air monitoring plans.

The Air District's methodology for selecting recommended communities is provided in the enclosed submittal. Also included are the Air District's responses to the specific questions listed in CARB's February 7, 2018 document, *Community Protection Program Draft Process and Criteria for 2018 Community Selections*.

Thank you for the opportunity to participate in the state's Community Air Protection Program. The Air District's recommended communities for year 1 and years 2-5 represent areas in the San Francisco Bay Area that are most impacted by cumulative air pollution and/or experience health vulnerabilities exacerbated by air pollution. We look forward to working with the state, and with our local communities, on the successful implementation of AB 617. If you have any questions, please contact Greg Nudd, Deputy Air Pollution Control Officer for Policy, at (415) 749-4786 or at gnudd@baaqmd.gov.

Sincerely,

Jack P. Broadbent
Executive Officer/Air Pollution Control Officer

Enclosure

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San Francisco Bay Area Community Health Protection Program: Improving Neighborhood Air Quality

Final Submittal: Public Process for Determination of Recommended Communities

August 1, 2018



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Executive Summary

The Bay Area Air Quality Management District is required to prepare a “final submittal” for the California Air Resources Board (CARB) on recommended communities for the first five years of the state’s Community Air Protection Program. The Community Air Protection Program was established by the state to implement Assembly Bill 617 (C. Garcia, Chapter 136, Statutes of 2017), which directs the state, in consultation with local air districts, to select communities that have a “high cumulative exposure burden” to air pollution. Once selected, local air districts will partner with communities to work on community emission reduction programs and/or community air monitoring plans.

Bay Area residents helped Air District staff select all candidate communities, and final recommended communities for years 1 through 5. Since January 2018, residents attended numerous workshops and used online engagement tools to share local air quality concerns and to propose communities for action. Community recommendations, along with air quality and health data, helped us draft a complete set of areas in the Bay Area that would be good candidates for the development of an action and/or monitoring plan. All areas were sent to the California Air Resources Board on April 25, 2018.

To select year 1 through 5 communities, Air District staff considered air quality and health data. Air quality data was obtained from the Air District’s CARE Pollution Index, and also fine particulate matter and toxic air contaminant concentrations measured at San Francisco Bay Area monitoring sites. Health data was obtained from the CARE Vulnerability Index and via life expectancy. We also considered community readiness, historical and on-going community and other monitoring or exposure efforts, concentration of stationary sources, community input, and socio-economic factors and other public health data available via statewide screening tools.

Year 1: West Oakland, Community Action Plan

The Air District recommends West Oakland for an action plan in year 1 of the state’s AB 617 program. The West Oakland Environmental Indicators Project (WOEIP) will be our partner in this effort. They have a long history of community planning and advocacy to reduce residents’ exposure to diesel particulate matter and toxic air contaminants. Maritime-freight industries, rail, large distribution centers, a cement plant, a power plant, metal facilities, small to medium industrial and manufacturing operations, major freeways and busy roadways used as trucking routes all impact the West Oakland community. These sources contribute to high levels of PM_{2.5} concentrations and elevated cancer risk from toxic air contaminants. West Oakland is considered one of the most impacted areas in the San Francisco Bay Area due to the area’s many sources of diesel particulate matter.

Year 1: Richmond, Community Air Monitoring Plan

The Air District recommends the Richmond area for a community monitoring plan in year 1 of the state’s AB 617 program. In Richmond, we have an opportunity to leverage many historic and current monitoring studies. The Richmond area includes most of the City of Richmond and portions of El Cerrito. It also includes communities just north and east of Richmond, such as San Pablo and several unincorporated communities, including North Richmond. There are a complex mix of emission sources in the Richmond area. It is home to a large refinery and chemical plant, a seaport, organic waste and metal facilities, small to medium industrial and manufacturing facilities, high volume freeways and roadways, a railyard and rail lines.

Years 2-5 Communities

The Air District recommends East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, the Tri-Valley area, and Vallejo for years 2-5 in the state's AB 617 program. Over the next several years, we will be working to build capacity in these communities for future planning and/or community air monitoring. Building partnerships and developing a shared understanding of local air quality issues, combined with lessons learned from the year 1 activities, will provide a strong foundation for improving air quality and health in the years 2-5 communities.

Year 6+ Communities

The communities recommended for years 1 through 5 do not represent all Bay Area communities that have high levels of air pollution. The Air District is committed to addressing disproportionate impacts caused by air quality issues, and associated health outcomes, throughout the Bay Area. The Air District will use its permitting, monitoring, education, regulatory, enforcement, grants programs and all other available tools to address air quality issues across the region. This will allow us to improve health outcomes for everyone.

Introduction

This document serves as the as the Bay Area Air Quality Management District's (Air District's) final submittal on "recommended communities" for the first five years of the state's Community Air Protection Program, as required by the California Air Resources Board (CARB). The Community Air Protection Program was established by the state to implement Assembly Bill 617 (C. Garcia, Chapter 136, Statutes of 2017). AB 617 directs the state, in consultation with local air districts, to select communities that have a "high cumulative exposure burden" to air pollution. Once selected, local air districts will partner with communities to work on community emission reduction programs and/or community air monitoring plans

The Air District first initiated a comprehensive program to identify areas that experience regional disparities in air pollution exposure and health effects in 2004. Through the Community Air Risk Evaluation (CARE) program, the Air District identified areas in the San Francisco Bay Area where air pollution disparities are most significant and where populations are most vulnerable to air pollution.

The CARE program served as a starting point for the Air District's work in selecting "candidate communities" for CARB's Community Air Protection Program. On April 25, 2018, the Air District submitted candidate communities to CARB - communities in the San Francisco Bay Area that the Air District identified as having a high cumulative exposure burden. San Francisco Bay Area candidate communities included all the Air District's CARE areas, as well as areas with large sources of air pollution (refineries, seaports, airports, etc.), areas that have been identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas that have low life expectancy.¹

To select recommended communities from all San Francisco Bay Area candidate communities, the Air District considered both air quality and health-based data. Air quality data was obtained from the Air District's CARE Pollution Index,² and also fine particulate matter (PM_{2.5}) and toxic air contaminant concentrations measured at San Francisco Bay Area monitoring sites. The CARE Pollution Index includes both modeled concentrations of cancer risk and fine particulate matter, as well as interpolated concentrations of ozone from monitoring sites. Health data was obtained from the CARE Vulnerability Index³ and life expectancy. The CARE Vulnerability Index includes mortality rates, costs from ER visits and hospitalizations for illnesses aggravated by air pollution. Life expectancy was considered as a public health indicator. We also considered community capacity (community resources and capacity to immediately participate in AB 617), historical and on-going community monitoring efforts or exposure characterization work by communities, concentration of stationary sources, community input, and socio-economic factors and other public health data available via statewide screening tools.⁴

Below are the enumerated responses to the specific questions listed in CARB's *Community Protection Program Draft Process and Criteria for 2018 Community Selections*.⁵ Specifically, included is a description of the Air District's recommended communities, early work in communities, required resources,

¹ See Attachment A for a map of all Air District "high cumulative exposure burden" areas.

² See Attachment B for CARE Pollution Index map

³ See Attachment C for CARE Vulnerability Index map

⁴ See Attachment D for full methodology description.

⁵ Full questions are listed in Attachment E; CARB document available here:

https://ww2.arb.ca.gov/sites/default/files/2018-02/capp_draft_process_and_criteria_for_2018_community_selection_february_2018.pdf

availability of data to prepare community-level emission inventories and the public process used to identify, and then prioritize and select, recommended communities.

1. Description of Year 1 Communities

The Air District recommends West Oakland and the Richmond area as the San Francisco Bay Area's year 1 communities for the state's Community Air Protection Program. We recommend West Oakland for a community emission reduction program (action plan) and the Richmond area for a community air monitoring plan.

West Oakland: Community Emissions Reduction Program

The residential area of West Oakland is generally bounded by the Port of Oakland, the Union Pacific rail yard, and I-580, I-880 and I-980 freeways. Specific geography for the study area will be determined in partnership with the community, i.e. in conjunction with the Community Steering Committee, which will be established as part of the emission reduction program. The study area geography will include the numerous sources that impact West Oakland.

Maritime-freight industries (including the Port of Oakland, the redevelopment of the Oakland Army Base and private facilities), the rail yard and rail lines, large distribution centers, a cement plant, a power plant, metal facilities, small to medium industrial and manufacturing operations, major freeways and busy roadways used as trucking routes all impact the West Oakland community. These sources contribute to high levels of PM_{2.5} concentrations and elevated cancer risk from toxic air contaminants. West Oakland is considered one of the most impacted areas in the San Francisco Bay Area due to the area's many sources of diesel particulate matter. Unknown additional impacts may occur due to the redevelopment of the Oakland Army Base.

Approximately 25,000 people live in the West Oakland area. Nearly 30 percent of the population is African-American and over 25 percent is Latino.⁶ West Oakland is predominantly a low-income and high health-burden community. It is a designated CARE area, has high levels of environmental exposures and experiences social and economic disadvantages. Health burdens that increase vulnerability to environmental exposures are widespread in the West Oakland community. People living in West Oakland experience more asthma emergency room visits, higher rates of cardiovascular disease, greater

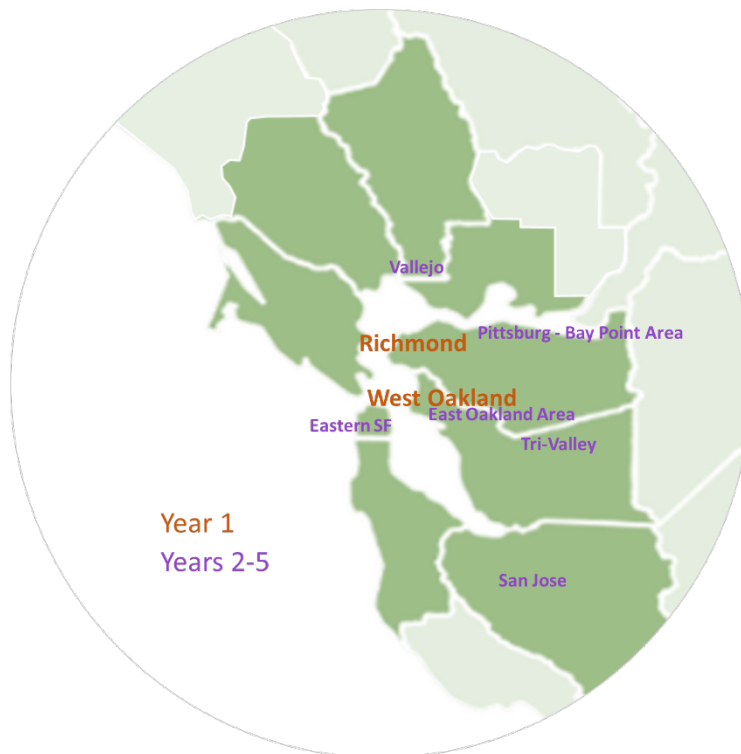


Figure 1. SF Bay Area, Year 1 Communities, Years 2-5 Communities

⁶ U.S. Census Bureau, 2010 Census.

unemployment, lower educational attainment, higher housing cost burden, lower life expectancy and higher incidences of poverty than most other areas in Alameda County.

The Air District, the West Oakland Environmental Indicators Project and other community groups and researchers have spent decades doing monitoring, modeling and planning related work to better understand and address the community's exposure to air pollution.⁷ The body of knowledge and experience of the West Oakland community, as well as the established relationship between the Air District and West Oakland Environmental Indicators Project positions West Oakland as a community most likely to succeed in developing a robust community emission reduction plan given the challenging legislative deadlines. West Oakland Environmental Indicators Project has been instrumental in bringing air pollution and its related health effects to the forefront of research and planning activities in West Oakland, and is uniquely positioned to engage quickly and effectively in an action planning effort that will serve as a model for future action plans.

Richmond: Community Air Monitoring Plan

For the purposes of this submittal, the Richmond area includes the City of Richmond, areas in El Cerrito just south of Richmond, and communities just north and east of Richmond, including portions of San Pablo and several unincorporated communities, such as North Richmond. The specific geography for the study area and the monitoring objectives will be determined in partnership with the community, i.e. in conjunction with the Community Stakeholder Group, which will be established as part of the community air monitoring planning process.

In the Richmond area, which is also a designated CARE area, there is a complex mix of emission sources: a large refinery and chemical plant, a petroleum coke terminal, organic liquid storage and distribution facilities, a seaport, organic waste and metal facilities, small to medium industrial and manufacturing sources, high volume freeways and roadways, a rail yard and rail lines.

Approximately 100,000 people live in the Richmond area.⁸ A variety of communities and neighborhoods make up the Richmond area. Neighborhoods range from 16 to over 33 percent African American; and from 40 to over 56 percent Latino. Many of these areas are low-income and have high health burden that increase vulnerability to environmental exposures. Areas throughout Richmond also experience social or economic disadvantages. People living in the Richmond area, especially North Richmond and the Iron Triangle, experience more asthma emergency room visits, higher rates of cardiovascular disease, greater unemployment, lower educational attainment, higher housing cost burden, lower life expectancy and higher incidences of poverty than in other areas of Contra Costa County.

There are several ongoing monitoring and air quality research projects in the Richmond area. Projects include the expansion of monitoring efforts in Richmond due to the Air District's Regulation 12, Rule 15 (Petroleum Refining Emissions Tracking), a community monitoring project through an EPA STAR grant in which the Air District is partnering with the South Coast Air Quality Management District to build a low-cost sensor guidance document, an air toxics data analysis effort with the City of Richmond through an EPA Community-Scale Air Toxics Monitoring Grant, and other studies by researchers or other government agencies. These projects and studies can be leveraged and will allow a year 1 monitoring plan in Richmond to be more feasible in the legislatively required timeframe. These efforts will also help inform and improve the monitoring efforts in the area, for data collected by all the various project can

⁷ More information about these projects is listed in the Air District response to item 3, *Work Already Started*.

⁸ U.S. Census Bureau, 2010 Census.

be comprehensively reviewed and analyzed and any findings leveraged. The Air District also expects to work with other groups funded by CARB or other organizations to assist with any ongoing monitoring efforts, including ensuring the work is transparent to the public. (More information about these projects is provided below.)

2. Description of Years 2-5 and Year 6+ Communities

Years 2-5 Communities

The Air District recommends East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, the Tri-Valley area, and Vallejo as the San Francisco Bay Area's years 2-5 communities for the state's Community Air Protection Program. These communities rose to the top of many of the air quality and health metrics evaluated by the Air District. The Air District will continue to develop more refined and accurate data on health vulnerability and air pollution exposure. Recommendations for years 2-5 will be re-evaluated each year, as new data to better understand community air quality concerns become available.

East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, the Tri-Valley area, and Vallejo include numerous high health-burden neighborhoods with disproportionately high exposure to air pollution. Many people living in the years 2-5 areas experience more asthma emergency room visits, higher rates of cardiovascular disease, greater unemployment, lower educational attainment, high housing cost burden, lower life expectancy and higher incidences of poverty than other areas of the San Francisco Bay Area.

Table 1 lists the significant stationary and mobile sources of pollution in each of the years 2-5 communities.

Table 1. Emission Sources

Community Area	Stationary Sources	Mobile Sources
East Oakland/San Leandro	Waste facilities, metal facilities, crematory, small to medium industrial and manufacturing operations.	Oakland International Airport, large distribution centers, high-volume freeways and roadways (I-880, I-238, I-580, Highway 92), trucks, transit buses, industrial equipment, freight and passenger rail
Eastern San Francisco	Organics recovery and waste facilities, power plants, and numerous small to medium industrial and manufacturing operations	High-volume freeways and roadways (I-280, I-80, Bay Bridge, Highway 101), trucks, industrial equipment, transit buses, harbor craft, freight and passenger rail, construction equipment
Pittsburg-Bay Point Area	Power plants, chemical plant, landfills, metal and chrome plating facilities, agriculture equipment	Freight rail, high-volume freeways and roadways (Highway 4, Highway 160), industrial equipment, transit buses, harbor craft, ocean going vessels
San Jose	Organics and waste recovery facilities, organic liquids storage and distribution facilities, quarries,	San Jose International Airport, freight and passenger rail, high volume freeways and

	cement and asphalt plants and small to medium industrial and manufacturing operations	roadways (I-880, I-280, I-680, Highway 101, Highway 87), trucks, transit buses, industrial equipment distribution centers
Tri-Valley	Waste facilities, airport, research laboratories, quarries, cement and asphalt plants	High volume freeways and roadways (I-680, I-580), trucks, transit buses, construction and agriculture equipment
Vallejo	Marine terminals, landfills, metal facilities, cement plant (potential)	Freight rail, high-volume freeways and roadways (I-80, Highway 29, Highway 37), trucks, industrial equipment, transit buses, harbor craft, ocean going vessels

Year 6+ Communities

The Air District identified high cumulative exposure burden areas, or candidate communities, in every county in the San Francisco Bay Area. Recommended year 1 and years 2-5 communities have been selected from these areas. Areas recommended for years 6+ are all the San Francisco Bay Area's candidate communities, not identified as a year 1 or years 2-5 community. Years 6+ communities are areas that were identified as having one or more of the following characteristics: within an Air District CARE area, has large sources of air pollution, has been identified via statewide screening tools as areas with pollution and/or health burden vulnerability, or has low life expectancy.

Years 6+ communities in the San Francisco Bay Area are mostly in the region's suburban or semi-rural areas, with some locations in the urban core. In general, communities identified as years 6+ have some level of environmental exposures and/or experience social or economic disadvantages. They may also have health burdens that increase vulnerability to environmental exposures, but to a lesser extent than those identified above. In general, Years 6+ communities may experience higher levels of exposure areas air pollutants, suffer from more air quality related health impacts and higher incidences of poverty than those identified above.

3. Information for Recommended Communities

Work Already Started

The Air District has a long history of working in and with communities to reduce people's exposure to harmful emissions. For over 60 years, the Air District has been passing regulations on large facilities, small to medium industrial sources, diesel engines, fireplaces and many other sources to reduce local exposure to air pollutants. Permitting and enforcement of our regulations ensures exposure reductions are realized. Our monitoring work, including fence-line and other source-oriented monitors, near-roadway monitors and regional fixed-site monitors allow Air District staff to assess and better understand regional and local air pollutant levels. Incentive programs enable the Air District to further reduce emissions and pollutant exposure from the sources we cannot regulate. Trucks, vehicles, locomotives, ships and industrial and construction equipment are often the most significant sources of pollution in our most impacted communities. The CARE program, initiated in 2004, served as the Air District's foundation for identifying and selecting communities most impacted by and vulnerable to health impacts from air pollution for the AB 617 effort.

AB 617 presents an opportunity to continue and expand these programs - to ensure that exposure to air pollutants is reduced in our most impacted communities. Through AB 617, we will build community capacity to better understand the impacts of poor air quality and participate in the AB 617 process. We will build better partnerships, engagement strategies and educational materials to ensure a shared understanding of air quality and related community health. The specific work we are doing in West Oakland and Richmond, and how our work impacts all AB 617 communities is described below.

Year 1 Communities: West Oakland and Richmond

The Air District has been working directly with our recommended year 1 communities to support the development of a community emission reduction program in West Oakland and a community air monitoring plan in Richmond. Our work in West Oakland continues the partnerships we have had with the West Oakland community, especially with the West Oakland Environmental Indicators Project, for well over a decade. It also builds on over thirty years of planning activities. Early plans focused on economic revitalization and transportation access, often addressing specific areas or neighborhoods in West Oakland, such as Seventh Street, the Mandela Parkway, or Acorn-Prescott. Over the past fifteen years, various planning activities have sought to bring jobs, retail and services to the community; to address incompatible land uses; to improve transit, bike, and pedestrian access; to increase mixed-use development; to preserve the existing housing stock; to increase the supply of affordable housing; and to reduce the community's exposure to diesel particulate matter and toxic air contaminants.

West Oakland's exposure to diesel particulate matter and toxic air contaminants, and corresponding health burden has been extensively studied. Beginning with a partnership with the Pacific Institute in 2000, the West Oakland Environmental Indicators Project has been instrumental in bringing air pollution and its related health effects to the forefront of research and planning activities in West Oakland. West Oakland Environmental Indicators Project has led or participated in the following studies: *Neighborhood Knowledge for Change: The West Oakland Environmental Indicators Project (2002)*, *Clearing the Air: Reducing Diesel Pollution in West Oakland (2003)*, *Paying with Our Health: The Real Cost of Freight Transport in California (2006)*, and the *West Oakland Truck Survey (2009)*. In addition, West Oakland Environmental Indicators Project co-chaired the Port of Oakland's 2009 Maritime Air Improvement Plan (MAQIP) and the MAQIP update currently underway. They were an active member of the West Oakland Specific Plan (2014) working group and continue to participate in the Oakland Army Base Stakeholder Group.

These partnerships have also helped to expedite investments to early-retire highly polluting mobile sources impacting the West Oakland community. Between 2008 and 2016 the Air District awarded over \$33 million in grants to retrofit or replace approximately 2000 diesel trucks that move goods from Port of Oakland. During this time, the Air District also awarded more than \$24 million to install shore power infrastructure to reduce pollution from ocean-going vessels at the Port of Oakland. These investments, along with ARB air toxic control measures for mobile sources, have helped significantly reduce diesel emissions in West Oakland, and the region. Since 2016, the Air District awarded more than \$10 million to additional projects to reduce emissions from locomotives, cargo-handling equipment, marine vessels, and on-road trucks. These projects will reduce more than 84 tons of NO_x, 2.7 tons of ROG, and 1.4 tons of diesel PM per year.

Despite this extensive history of planning, research, and grant-funding activities in West Oakland, more work needs to be done. We need to integrate the findings of past studies and implement measures that

reduce criteria air pollutants and toxic air contaminants emissions and exposure to improve health outcomes. To this end, the West Oakland Environmental Indicators Project and the Air District have recently developed a formal partnership to develop a community emission reduction action program for the West Oakland community. We worked together to identify local stakeholders and community members to participate on a steering committee to guide the development of the action plan. The steering committee has formed and has begun meeting.

In the Richmond area, Air District staff is working to establish a group of strong local, community-based organizations to partner with the Air District in leading the effort to develop the community air monitoring plan. We are beginning by building a “bench” of community partners that can bring various skills, knowledge, and capabilities to the partnership. We expect to have community partners on board by late Summer 2018. In parallel, we are preparing a technical assessment and information report for the Richmond area, to share with community partners for their input. We will also work with our community partners to identify local stakeholders and other community members to form a larger stakeholder group.

There are several air monitoring and air quality data analysis efforts ongoing in Richmond. These efforts can be leveraged to ensure the Richmond community air monitoring plan is feasible and successful in the short state-mandated time frame. One such effort is the expansion of the fence-line monitoring systems to include all Bay Area refineries, including expansion of the current system at the Chevron Refinery. Chevron has proposed to expand its fence-line monitoring system to meet the requirements of the Air District’s Regulation 12, Rule 15 (Rule 12-15). Additionally, as part of the Rule 12-15 process, the Air District committed to expand efforts to characterize levels of air pollutants in communities near refineries by adding an additional fixed monitoring site. The Air District is assisting the City of Richmond on an EPA Community Scale Toxics Grant, to evaluate and interpret air toxics data collected at sites near the Chevron Refinery. The Air District is also working with the Asian Pacific Environmental Network community organization to implement a PM_{2.5} community-led sensor project in the Richmond area as one of the Northern California communities participating in an EPA STAR Grant: “Engage, Educate and Empower California Communities on the Use and Applications of “Low-cost” Air Monitoring Sensors” in partnership with the South Coast Air Quality Management District.⁹ Finally, there are current and historical air monitoring projects the Air District worked on with researchers and other governmental organizations that will provide data and other information to inform year 1 monitoring planning efforts.

The Air District has also provided grant funding to incentivize early-emissions reductions from projects in Richmond. Since 2016, the Air District has awarded more than \$3.8 million to eligible projects in Richmond that will reduce air pollution from light-duty vehicles, locomotives, marine vessels, and off-road equipment. These projects will reduce more than 6.8 tons of NO_x, 0.42 tons of ROG, and 0.37 tons of diesel PM emissions per year.

Moving forward, the Air District will continue pursuing funding from all available sources, such as state and federal agencies and settlement funds. These funds will be used to augment the Air District’s traditional grant funding sources, which total approximately \$50 million on an annual basis. Air District’s grant funds are used to support projects that reduce air pollution and improve air quality in the Bay Area and are prioritized for communities that are disproportionately impacted by air pollution.

⁹ More information on EPA Star Grant may be found here: <http://www.aqmd.gov/aq-spec/research-projects>)

Stationary Source Regulations

Many Air District stationary source regulations will directly benefit communities that have oil refineries, cement plants, chemical plants, large facilities, small to medium industrial sources, organic waste facilities and a variety of other sources.¹⁰ Air District rules and programs that will improve facility and/or source emissions, and therefore community exposure to pollutants, are summarized below:

- **Toxics:** The Air District's Regulation 11, Rule 18 (Rule 11-18) is the most stringent health-based air toxics regulation in California. The rule requires health risk screening for all facilities in the Bay Area that report toxic air contaminant emissions. The screening analysis will determine a prioritization score for each facility. The score will be based on the amount of toxic air pollution emitted, the degree of toxicity and the proximity of pollutants to local communities. Facilities that exceed a prioritization score threshold will undergo health risk assessment for all permitted sources that emit toxic air contaminants. Facilities with health risks above a risk action threshold would be required to reduce their risk or meet retrofit control guidelines for all significant risk sources. Facilities with the highest risk levels would be required to submit risk reduction plans by 2020. Risk reductions at the highest risk facilities should be completed during 2020-2025. Others subject facilities should complete risk reductions by 2030.
- **Best Available Retrofit Control Technology:** Additional rules will be put into place to further reduce emissions where there are opportunities for further cost-effective controls. AB 617 required review of a set of eighty facilities, housing over 3,000 sources, throughout the Bay Area. This review resulted in the identification of up to 12 possible new regulations to further reduce emissions from these sources. These include controls on organic liquid storage tanks, petroleum wastewater treatment, Portland cement manufacturing, refinery equipment and boilers, landfills, fiberglass manufacturing and petroleum coke calcining.
- **Petroleum Refineries:** There are five large refineries in the Bay Area with several nearby communities, including Richmond, Crocket and Rodeo, Martinez, Clyde and Benicia. In addition to potential emission reductions due to the implementation of Rule 11-18, there are several other refinery-specific regulations that are being developed or implemented. These regulations will either help characterize emissions from these facilities, characterize cumulative exposure in communities near refineries, or achieve further emission reductions. These requirements include Rule 12-15 Petroleum Refining Emissions Tracking – which requires the refineries to establish air monitoring plans and operate fence line air monitoring systems (<http://www.baaqmd.gov/plans-and-climate/emission-tracking-and-monitoring/fenceline-monitoring-plans>) and Air District planning for the expansion of air monitoring in communities near refineries, using feedback from Spring 2018 public workshops. Rule 12-15 also requires refineries to submit information that will help the Air District improve and standardize emissions estimates from the petroleum refineries.

¹⁰ A stationary source is an individual fixed emitter of air pollutants, such as a boiler. A facility may have multiple individual stationary sources, such as a petroleum refining facility.

- **Woodsmoke:** Many communities in the San Francisco Bay Area are impacted by PM_{2.5} emissions from residential wood burning, including areas in the Sonoma and Napa Valley, Santa Rosa, Marin and other rural communities. For some communities, especially the rural communities tucked into the many valleys of Marin, Sonoma and Napa, residential wood burning is the only significant source of PM_{2.5}. These areas may also have health burdens and high levels of poverty, which air pollution can exacerbate, especially if residents have limited access to health care. Several residents from rural communities in Marin County asked that their communities be included in the Air District's first year recommendations for AB 617 action. Although woodsmoke is a considerable concern in these communities, AB 617 is intended to address cumulative air quality and health burden areas; those areas that are impacted by multiple sources of air pollution, such as large industrial sources, major marine ports, congested freeways and roadways and/or rail.

Although we are not recommending any community exclusively impacted by woodsmoke for the in this submittal, the Air District is committed to reducing woodsmoke in communities impacted by the effects of wood burning. In the past several years, the Air District has both strengthened its rules related to wood burning and offered significant public funding to replace wood-burning equipment with cleaner options. The Air District is expecting to continue to address residential woodsmoke emissions through additional incentive programs that provide funding to residents to help replace older and highly polluting fireplaces and wood-burning stoves with cleaner alternatives. We are also considering further strengthening of our Wood-Burning Devices Rule.

- **Permitting:** The Air District is considering changes to our permitting program to address cumulative impacts. To examine the possibilities, we have created a cross-divisional workgroup to broadly review and recommend changes to the existing permitting system. We are considering all permitting policies and procedures, rules and regulations, local land use permitting guidance and CEQA guidelines.
- **Odors:** The Air District will be amending its odor rule, Regulation 7, to help reduce odors that impact communities. Efforts are underway to strengthen standards that limit odorous compounds and develop strategies to enhance the enforceability of the existing odor rule.
- **Methane:** In 2017, the Air District developed a comprehensive Basin-wide Methane Strategy, an agency-wide effort to better quantify and reduce the region's methane emissions. Rules associated with the strategy will focus on methane specific to organics material handling and to composting. In addition to climate benefits, the Methane Strategy is expected to garner reductions in reactive organic gases, a precursor to ozone formation. There is also the potential for reduction of some toxic volatile organic compounds as a co-benefit.
- **Organics Recovery:** The Air District is developing an Organics Recovery Strategy. Changes in state law will impact San Francisco Bay Area organics recovery, including landfill management, composting, and anaerobic digestion. In addition to possible new or modified rules, the Air District will consider non-regulatory measures to take a lifecycle approach to organics diversion. The regulations and best practices that follow from this effort are expected to reduce emissions of all pollutants associated with this process, including methane and compounds that cause

odor nuisances and/or lead to ozone formation. There is also the potential for reduction of some toxic volatile organic compounds as a co-benefit.

- Particulate Matter (Fugitive Dust): A suite of regulations focusing on particulate matter emissions is going to the Air District Board for consideration in Summer 2018. Following the adoption of those new rules and amendments, implementation would target fugitive dust emissions including those from bulk material handling and from truck trackout. This would primarily help reduce particulate emissions from activities at construction sites, landfills and rock quarries, some of which impact AB 617 communities.

Mobile Source Incentives

The cost to accelerate fleet turnover in the highly impacted communities will likely require significant incentive funding to help fleet owners and operators to make early investments in cleaner technology in the absence of regulations from the state and federal governments who have regulatory authority over mobile sources. As an example, a recent review of the fleet inventory at the Port of Oakland that was developed by Port staff shows that the total cost to replace most of the existing vehicles that service the Port and equipment that is operated at the Port with cleaner alternatives is estimated to exceed \$200 million.

In 2017, the legislature passed Assembly Bill (AB) 134, which appropriated \$250 million in Greenhouse Gas Reduction Funds to achieve early emission reductions in communities most burdened by air pollution. Incentive funds are targeted toward engine replacement, repower, and infrastructure projects in disadvantaged and low-income areas. The San Francisco Bay Area has received \$50 million of these funds. Per legislative requirements, funds will be directed at projects that can deliver “early action” emission reductions in our most disadvantaged communities, including both recommended year 1 communities, most of the recommended years 2-5 communities, and in several year 6+ communities. Funds will be directed to communities along the I-880/I-80 Corridor: Hayward to Richmond including East and West Oakland, Berkeley and Richmond; and in the Refinery Corridor: Rodeo and Vallejo, Martinez to Pittsburg.

Building Capacity in All AB 617 Communities

A wide variety of community capacity building efforts have begun and will continue as we implement AB 617 throughout the region. Capacity building means building respectful and open relationships with community members, establishing partnerships, and sharing information. It means providing the tools and assistance needed for authentic empowered participation in designing the work ahead. We expect to learn about communities, and for communities to learn more about the importance of good air quality and its contribution to community health. We are currently developing curriculum for an “Air Quality Academy,” with the goal building a shared understanding of air quality issues and concerns between the Air District and our community partners. In addition, the Air District is in the process of establishing a Community-led Air Quality Sensing Program, which will seek new and improved ways to partner with community groups in addressing air quality concerns throughout the Bay Area. The Program will provide guidance and resources to ensure communities are successful in their monitoring efforts and is intended to respond to a variety of both internal and external community needs, including assisting with all aspects of community monitoring from inception, monitoring, analysis, and next steps.

Resource Needs

AB 617 is the one of most significant changes in air quality regulation in the last 35 years. Increasing the focus on localized air pollution in overburdened communities is a welcome and necessary initiative for public health and equity in California. However, it requires significant additional resources.

Community

Communities in years 1 through 5 will need funding for a variety of activities to build community readiness to eventually develop an emission reduction programs and/or community air monitoring plan. AB 617 is envisioned as a community-based endeavor, and therefore communities will be at the center of planning and decision-making regarding local priorities for action. However, not all communities are at the same starting point, or level of readiness. At each stage of the process, community organizations will need financial assistance to support their participation. Funding is especially needed for the capacity building, plan development, and plan implementation and evaluation.

- **Capacity Building:** includes stakeholder identification, community surveys, mappings, review of existing plans and data, formation of an AB 617 stakeholder group including local jurisdictions and regulated entities. Build shared understanding about air quality, community concerns, local issues, and about Air District programs and resources.
- **Emission Reduction Program and/or Air Monitoring Plan Development:** Communities co-lead a process with the Air District to develop and adopt a plan for emission reductions or air monitoring consistent with CARB guidance, with local government and other stakeholder involvement.
- **Plan Implementation and Evaluation:** includes implementing community monitoring, actions, or mitigations as described in the plans, review of initial milestones, and assist evaluating metrics for progress as defined in the plans.

The Air District estimates that approximately \$500,000 per year will be required for community capacity building and participation in AB 617 processes. This funding is needed across the Bay Area, not just in the communities identified for years 1-5.

In addition to the community capacity building and participation efforts, some communities may desire to perform their own community-led monitoring efforts, in addition to the community-led monitoring that could be a part of implementing any active AB 617 Community Monitoring Plan. The Air District estimates that each of these community-led monitoring efforts will require \$500,000.

To ensure that the data are useful in moving toward emissions reductions, the Air District will need to provide technical assistance to the communities conducting this monitoring, including study design, monitoring implementation, and data analysis and interpretation. Air District technical staff may have the capacity to assist with one of these projects per year. Therefore, the total annual costs for community-led monitoring in the Bay Area is estimated to be \$500,000 per year. Total cost for community participation in AB 617 is estimated to be \$1 million per year.

Air District

Most of the air pollution impacting overburdened communities is from mobile sources. Addressing the impacts of this pollution will require a cooperative effort between the local air districts and the California Air Resources Board. Since Air Districts can only charge permit fees to stationary sources to address the impacts of their pollution, there is very limited opportunity to raise the needed funds from fees.

The Air District will incur significant start-up costs to set up its new Community Health Protection Program to implement AB 617. During the first year of implementing the state Community Air Protection Program, the Air District will incur nearly \$13 million in initial costs associated with the identification of a prioritized list of impacted communities, development and adoption of a Community Action Plan, development and implementation of a Community Monitoring Plan, development of new state-wide emissions inventory protocols, review of best available retrofit control technology and potential adoption of amended regulations to gain benefits from the technology. Much of this work will become ongoing, including working with impacted communities in advance of the development of additional community action and monitoring plans.

Ongoing, annual costs for specific Air District activities are provided in Table 3.

Table 22. Air District Resource Needs

Program Component	Activity	Cost
Community Monitoring	Staff to maintain equipment, assess and analyze data, and to conduct short-term monitoring studies.	\$5.4 million
	Laboratory equipment and supplies.	
	Assistance to community groups for community-led monitoring.	
	Special studies to measure emissions from large sources using new technology.	
Community Emissions Reduction Plans	Staff to prepare community emission reduction programs, track community progress and prepare annual progress reports to state.	\$5.2 million
	Consultants for conducting CEQA analyses.	
	Additional inspectors to provide enhanced enforcement in AB 617 communities.	
Community Engagement	Staffing to manage community grants and work with community-based organizations to build capacity.	\$0.6 million
Review of Best Available Retrofit Control Technology	Development and implementation of new rules to reduce emissions from large stationary sources.	\$0.8 million
Emissions Reporting Coordination	Ongoing improvement in emissions estimates.	\$0.3 million
Overhead	Executive time to coordinate/oversee program development.	\$1.7 million
	Legal services for CEQA analysis and regulatory development.	
	Administrative overhead for new staff and contracts.	
Total Expected Cost		\$14 million

Community-Level Emission Inventory: Emissions Data Availability

Data for developing a community-level emissions inventory for the areas of West Oakland, Richmond, East Oakland/San Leandro, Eastern San Francisco, Pittsburg-Bay Point-Antioch, San Jose, the Tri-Valley area, and Vallejo are available, but significant work is required to acquire and process these data. For example, an updated emissions inventory is currently being prepared by the Port of Oakland and emissions inventories are available for stationary sources permitted by the Air District. The Air District has also compiled and modeled on-road mobile emissions for *Planning Healthy Places*,¹¹ a tool that helps local governments identify areas in their communities that have high levels of cancer risk from toxics and high concentrations of PM_{2.5}. We are also working to improve our emission inventory as data are generated through monitoring, source testing and other means. In the coming months, we will also begin working with external partners, including CARB, on a uniform methodology for performing community-level emissions inventories in all communities recommended for community emission reduction programs. The Air District looks forward to partnering with CARB in this effort, specifically in the development of mobile source emissions inventories, and especially for off-road mobile sources.

4. Public Process used to Identify, Prioritize and Select Recommended Communities

The Air District developed and implemented an extensive outreach plan to ensure community participation in the identification, prioritization, and then selection of recommended communities for the state's Community Air Protection Program. Outreach consisted predominately of public workshops and online community engagement.

The Air District held a total of eleven workshops throughout the region on AB 617, and specifically on community identification and prioritization. Outreach for workshops include informational flyers posted at libraries, community centers and other popular gathering places, e-blasts, social media posts on Facebook and Twitter, press releases and follow-up media advisories, posts in community calendars, targeted emails to key community stakeholders and Spare the Air Resource Teams, and targeted outreach at community events in target communities (e.g., groundbreaking event at Pittsburg Unified School District).

Table 3. San Francisco Bay Area AB 617 Public Workshops

Date	Workshop Title	Venue	Attendees
January 31, 2018	Landmark Local Air Pollution Legislation - AB 617	Air District Offices, 375 Beale St, Yerba Buena Rm, San Francisco, CA 94105	66
March 28, 2018	New Funding and New Efforts to Curb Local Air Pollution (AB 617)	Hilton Garden Inn, 510 Lewelling Boulevard San Leandro, CA 94579	17
April 24, 2018	AB 617 Community Health Protection Program Public Workshop	Florence Douglas Senior Center, 333 Amador St, Vallejo, CA 94590	29
April 25, 2018	AB 617 Community Health Protection Program Public Workshop	Ambrose Community Center, 3105 Willow Pass Road, Bay Point, CA 94565	13
April 30, 2018	AB 617 Community Health Protection Program Public Workshop	Pleasant Hill Community Center, 320 Civic Drive, Pleasant Hill, CA 94523	11
May 10, 2018	AB 617 Community Health Protection Program Public Workshop	Shannon Community Center, 11600 Shannon Avenue, Dublin, CA 94568	0
May 16, 2018	AB 617 Community Health Protection Program Public Workshop	San Pablo Community Center, 2450 Rd 20, San Pablo, CA 94806	28

¹¹ <http://www.baaqmd.gov/plans-and-climate/planning-healthy-places>

May 21, 2018	AB 617 Community Health Protection Program Public Workshop	Dr. Martin Luther King Jr. Library, 150 E. San Fernando St, San Jose, CA 95112	6
May 24, 2018	AB 617 Community Health Protection Program Public Workshop	Fairfield Community Center, 1000 Kentucky St, Fairfield, CA 94533	8
June 4, 2018	AB 617 Community Health Protection Program Public Workshop	Cal State East Bay Oakland Center, 1000 Broadway Avenue, Oakland, CA 94607	12
June 20, 2018	AB 617 Community Health Protection Program Public Workshop	Air District Offices, 375 Beale St, Yerba Buena Rm, San Francisco, CA 94105	34

Workshop attendees learned about the public health context for addressing air quality concerns at the local level, the goals of AB 617, and the process for identifying, prioritizing and selecting communities. There was opportunity for discussion, where workshop participants could ask questions and share concerns. Following the presentations, Air District staff facilitated interactive sessions where attendees could prioritize communities for selection and early action, speak with local inspectors about local sources of pollution, guide criteria for selection and shape program objectives.

Workshop attendees rated the workshops well. All (100%) of respondents rated the facilitation and overall structure of the workshops as good to excellent. Most rated the clarity of information presented (88%) and the opportunity to ask questions (95%) as good to excellent. They found the following as the most valuable components of the workshops:

- Networking
- Interacting with Air District staff
- Learning about the intent of AB 617 and the data through presentations and handouts
- Interactive stations
- Learning from community residents
- The public health context

Respondents offered the following as opportunities for improvement:

- Better outreach/more resident attendance
- Better link the public health presentation to air quality
- Inform attendees about what selected communities will get out of being selected as an AB 617 community
- More time for Q&A

To ensure participation beyond the workshops, the Air District posted two interactive topics on Open Air Forum, the Air District's online community engagement platform. Each topic included information to inform the public about AB 617, the process for community selection and to provide an opportunity for the community to inform and guide our community selection. The goal of the first topic was to allow our community to weigh in on our community selection criteria; this topic had 254 visitors and 30 responses from the public. The survey asked respondents to rate their level of support for the methods proposed to identify candidate communities. The respondents overwhelmingly strongly support the use of CARE (81%), additional impacts (73%), and other large sources (73%). Respondents were asked to provide additional criteria that the Air District should consider, respondents recommend that we consider:

- Odors and wood smoke
- Areas with heavy idling and proximity to multiple transportation systems
- History of regulatory violations
- Socio-economic status, e.g. income, race, equity

- Historical contamination: military bases & heavy industry

Respondents were also provided the opportunity to recommend a community that was not captured by our proposed methods. Eleven out of the thirty respondents offered recommendations; however, all but one recommended community were included as candidate communities in the Air District's April 26th submittal to CARB on recommended candidate communities. (Benicia, Pittsburg, Vallejo, Mare Island, Pt. Richmond, Rodeo-Crocket, Alviso, and parts of Napa).

The one community not recommended was San Geronimo Valley in Marin County. Although heavily impacted by woodsmoke, San Geronimo Valley was not included because it is not considered a high cumulative exposure burden area. Like many other rural areas in Marin, Sonoma and Napa, woodsmoke is a considerable concern. For some communities, especially the rural communities tucked into the many valleys of Marin, Sonoma, and Napa, residential wood burning is the only significant source of PM_{2.5}. These areas may also have health burdens and high levels of poverty, which air pollution can exacerbate, especially if residents have limited access to health care. However, AB 617 is intended to address cumulative air quality and health burden areas; those areas that are impacted by multiple sources of air pollution, such as large industrial sources, major marine ports, congested freeways and roadways and/or rail. As described on page 9, although we are not recommending any community exclusively impacted by woodsmoke in this submittal, the Air District is committed to reducing woodsmoke in communities impacted by the effects of wood burning. We will continue to address residential woodsmoke through additional incentive programs that provide funding to residents to help replace older and highly polluting fireplaces and wood-burning stoves with cleaner alternatives and we are considering further strengthening of our Wood-Burning Devices Rule.

The second topic included on Open Air Forum closed on June 29th. This topic allowed community members to shape community prioritization for years 2-5. The second topic had 150 visitors and 33 responses from the public.

The survey asked respondents to rate their level of support for the criteria proposed to select communities for action. The respondents' support was variable – 41% somewhat to strongly support our selection criteria, 16% indicated that they were neutral and 44% somewhat to strongly oppose the selection criteria proposed.

Respondents were asked to provide additional criteria that the Air District should consider, respondents recommend that we:

- Include wood smoke
- Consider areas that are out of range of current Air District monitors
- Consider areas within proximity to agricultural pesticides, vehicle exhaust and/or diesel particulate matter
- Prioritize income, access to health care, race, crime rates, access to public transit, access to open spaces and other social determinants of health

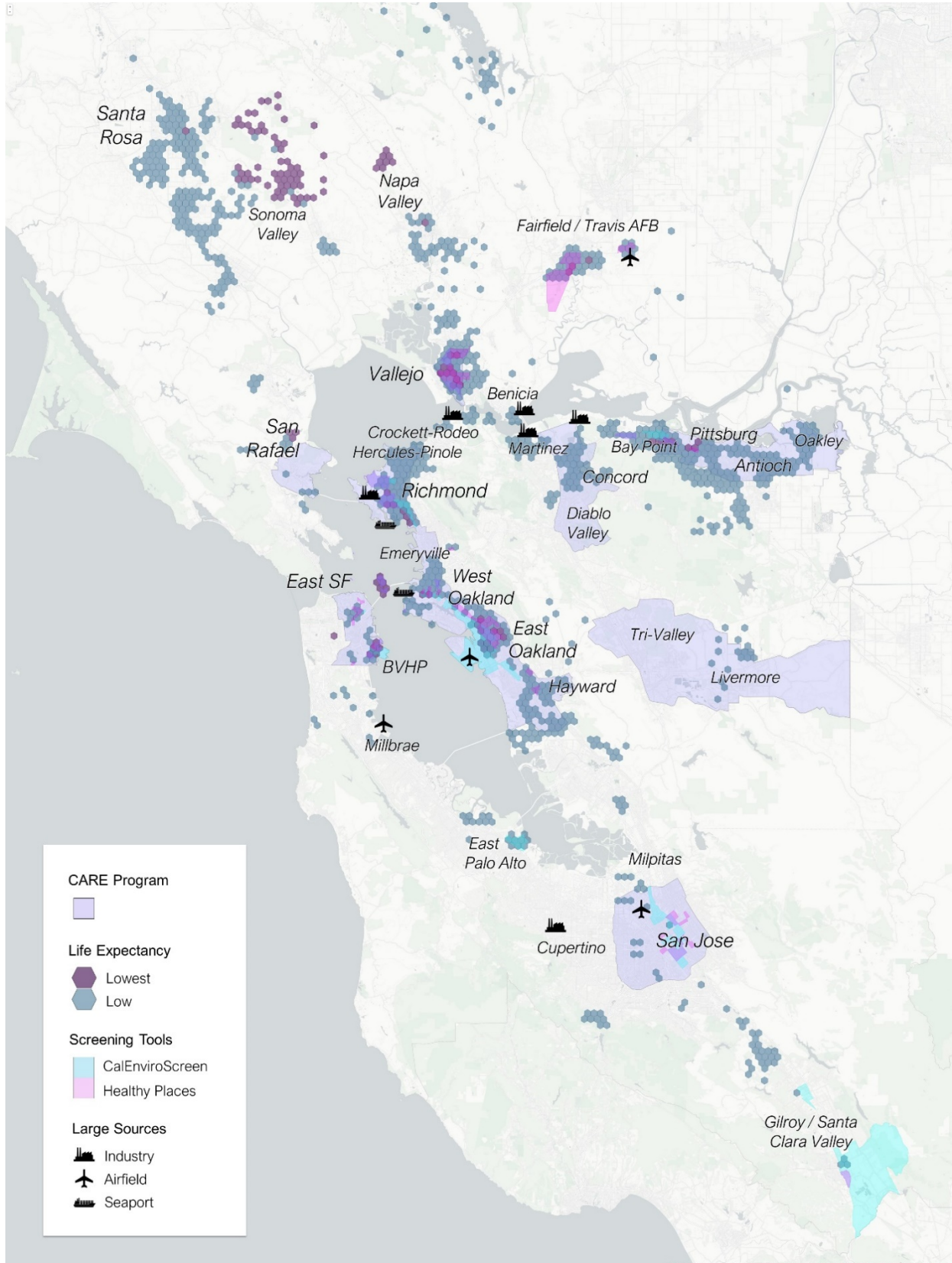
Respondents were also asked to share the sources of air pollution that concern them the most. The most common response was wood smoke, additional responses were:

- Refineries
- Emissions from mobile sources, such as cars in heavily traveled corridors and diesel particulate matter

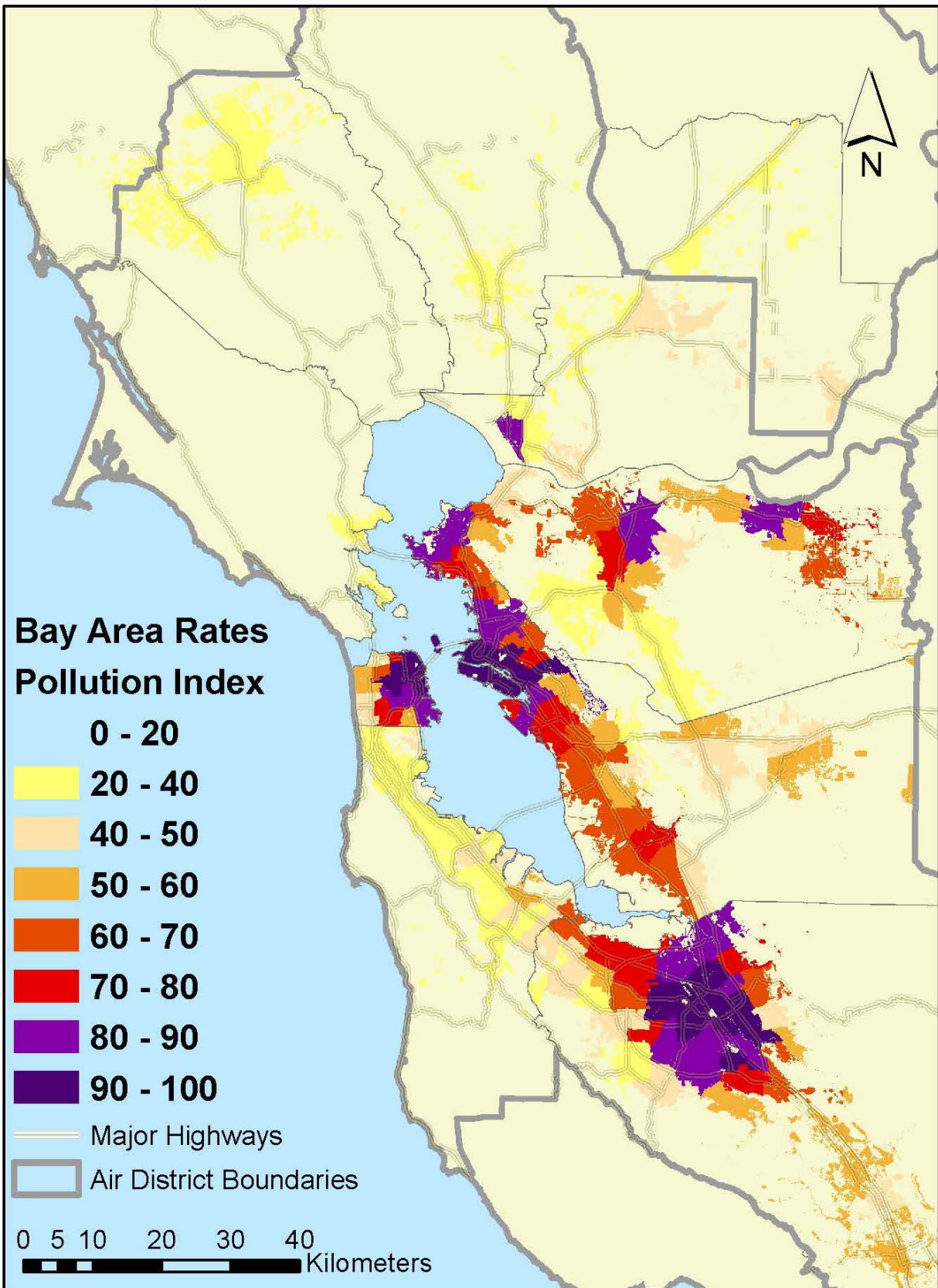
Respondents also shared their largest health concerns from heavy air pollution. The most common responses were:

- Asthma
- Emphysema
- Lung cancer
- Allergies
- Persistent coughs

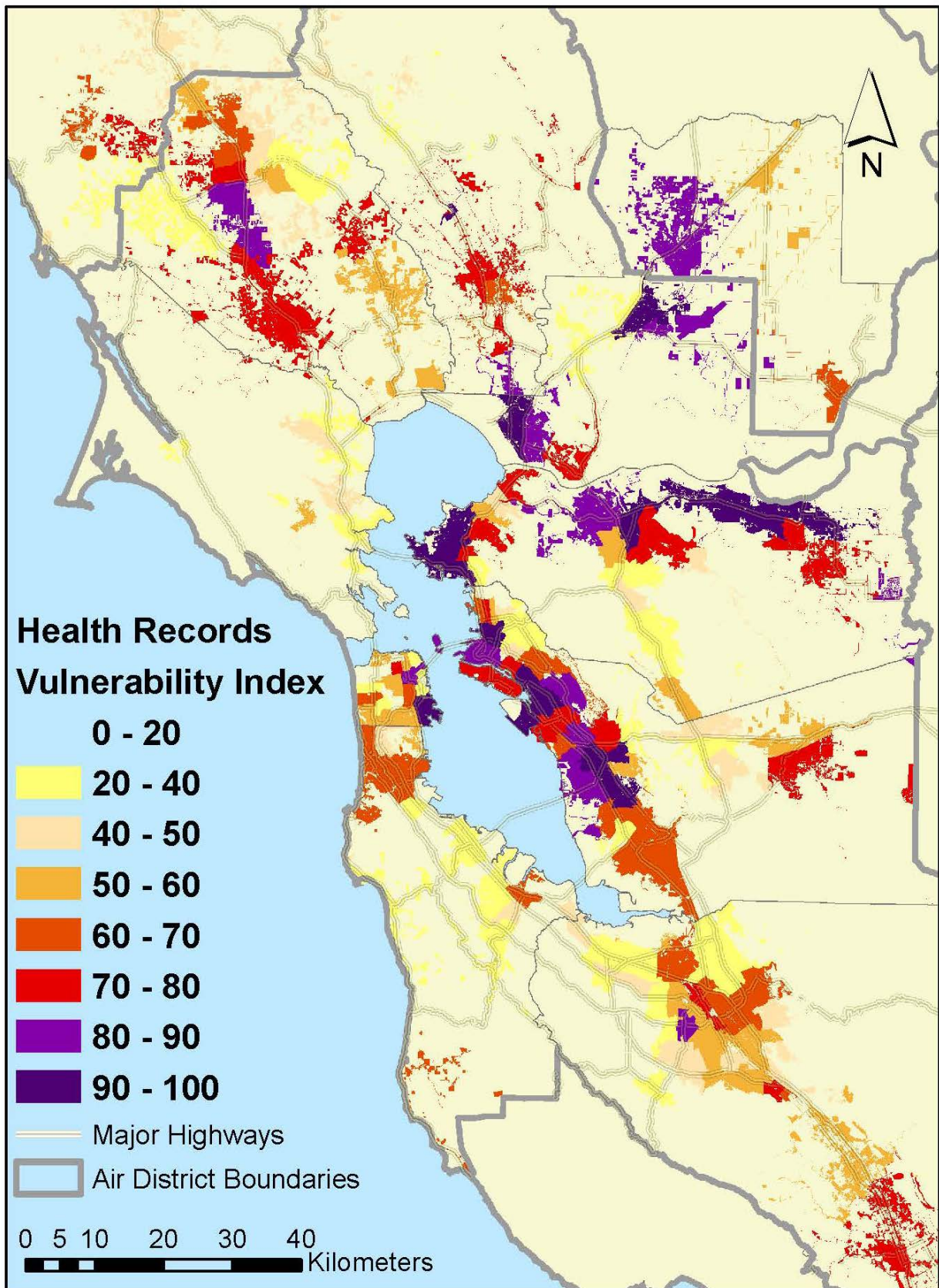
Attachment A. High Cumulative Exposure Burden Communities, SF Bay Area



Attachment B. CARE Pollution Index, SF Bay Area



Attachment C. CARE Health Vulnerability Index, SF Bay Area



Attachment D: Community Prioritization Methodology

Air Quality

Metrics:

1. **CARE Pollution Index:** modeled concentrations of cancer risk, fine PM, and ozone. Air pollution levels are mapped to zip code areas. Regional modeling for toxic air contaminant levels in 2015 were used to estimate cancer risk. Annual average PM_{2.5} above background levels was estimated using regional air quality modeling of representative days in 2010 and 2011, and observations from San Francisco Bay Area monitoring sites. Mean 8-hour ozone above background levels was interpolated from observations in 2010 and 2011 at monitoring sites only.
2. **PM_{2.5} Monitoring Data:** Many metrics describing PM_{2.5} concentrations measured at monitoring sites in the Bay Area from 2013-2017 were evaluated, including: the maximum, mean, and 98th percentile of the 24-hour concentrations each year, the annual means, and the 24-hour and annual design values. Using many metrics helps assess sites that might exhibit differing concentration distributions, such as a few very high values versus a high annual mean. Health research data show that both acute and chronic exposure to PM_{2.5} are issues of concern.
3. **Toxics Monitoring Data:** Annual means of 24-hour concentrations of several key toxic air contaminants (including toluene, m/p-xylene, o-xylene, ethyl benzene, 1,3-butadiene and, benzene) concentration measurements from monitoring sites in the San Francisco Bay Area. Data are for the 2013-2017 period.

Methodology:

- a. Pollution index data by zip codes were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. Air District staff reviewed maps and noted geographic areas that had high, medium and low levels of pollution.
- b. PM_{2.5} monitoring data were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. Air District staff gave geographic areas a high/medium/low ranking based on a combination of PM_{2.5} metrics. Areas of expected high cumulative exposure burden that do not have a PM_{2.5} monitoring site were either extrapolated from a nearby site depending on meteorology and topography, or the PM_{2.5} metric was not used. The latter type of areas was scored only on the available information from CARE.
- c. Toxics (toluene, m/p-xylene, o-xylene, ethyl-benzene, 1,3-butadiene and benzene) monitoring data were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. Air District staff gave each geographic area a high/medium/low ranking based on the data. Areas of expected high cumulative exposure burden that do not have a toxics monitoring site were either extrapolated from a nearby site, depending on meteorology and topography, or the toxics metric was not used. The latter type of areas was scored only on the available information from CARE and, if available, PM_{2.5} monitoring sites.

Health Burden

Metrics:

1. **CARE Vulnerability Index:** Mortality rates, ER visits, and hospitalizations attributed to causes known to be aggravated by air pollution were used to estimate health vulnerability. Death records are for years 2008-2010. Emergency room visits, and hospital records are for years 2009-2011.
2. **Life Expectancy:** Life expectancy data are obtained from the California Healthy Places Index project. Places that scored within the lowest 50 percent are classified as 'low life expectancy,' and those within the lowest 25 percent are classified as 'lowest life expectancy.'

Methodology:

- a. Vulnerability index data by zip codes were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. Air District staff reviewed maps and selected geographic areas that have high, medium and low levels of health vulnerability.
- b. Lowest and low life expectancy data by census tract block groups were analyzed for all San Francisco Bay Area high cumulative exposure burden areas. The life expectancy results were mapped to display concentrations of low life expectancy in the region. Air District staff reviewed maps and selected areas in the AB 617 universe that have high, medium and low levels of life expectancy.

Other Information Used in Understanding High Cumulative Exposure Burden Communities

1. **Community Capacity** – Current levels of community capacity were considered in selecting first year action communities. Community capacity means having relationships with community members, established partnerships and the ability to share information. It means having the tools needed for authentic empowered participation in the work. It also means having some significant levels of knowledge, research and previous planning or other studies that can be leveraged as we moved forward in a community.
2. **Sources** – *Total sources*: Total permitted stationary sources, by size and type; mobile sources, including freeways, roadways, rail, distribution centers.
3. **Cal Enviro Screen 3.0** – CalEnviroScreen is a mapping tool that uses environmental, health, and socioeconomic information from state and federal government sources to identify California communities that are disadvantaged. Disadvantaged communities include those most affected by multiple sources of pollution and those where the population is especially vulnerable to pollution's effects. CalEnviroScreen 3.0 scores are used to rank and map every census tract in the state by percentile. Census tracts in the San Francisco Bay Area that were ranked within the top 25 percent of statewide scores were included in the Air District's recommendation of high cumulative exposure areas. Those areas with the highest scores across all metrics, and individual metrics, including socio-economic, were noted.
4. **Healthy Places Index** – The California Healthy Places Index was developed by the Public Health Alliance of Southern California. The index includes diverse non-medical economic, social, political and environmental factors that influence physical and cognitive function, behavior and disease. The total score is used to screen for places with high health burden. Census tracts in the San Francisco Bay Area that rank within the top 25 percent of statewide scores were included in the Air District's recommendation of high cumulative exposure areas. Those areas with the highest scores across all metrics, and individual metrics including socio-economic and racial demographics, were noted.
5. **Proximity of emissions to sensitive receptors – The Environmental Justice Screening Method (EJSM)** was developed for the California Air Resources Board (CARB) to examine cumulative impacts and social vulnerability within California regions, as well as to identify overburdened communities. The Air district used the hazard proximity portion of this tool to identify the areas that have sensitive receptors near sources of significant emissions since this measure of exposure is not included in the other environmental justice screening tools. More Information about the calculation of the hazard proximity scores is located here: <https://www.arb.ca.gov/research/apr/past/11-336.pdf>.

Final Analysis and Recommendations

The main metrics describing air quality and health issues were combined to reveal a group of geographic areas that showed consistently high air quality and health burdens, including West Oakland, the Richmond area, East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, the Tri-Valley area, and Vallejo. Given the legislatively required deadlines for year one activities, West Oakland and Richmond areas were selected for year 1 action; West Oakland for a community emission reduction program and the Richmond area for a community air monitoring plan. The remaining communities, East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, the Tri-Valley area, and Vallejo are recommended for years 2-5. Note that the recommendations for years 2-5 were based on the best data currently available to the Air District. As we continue to improve our data on health burden and air pollution exposure, the list of recommended communities may change. This list will be re-evaluated every year.

Historical and ongoing activities in West Oakland and Richmond provide opportunities that the Air District and partner communities can leverage to make a successful community emission reduction program and/or community air monitoring plans feasible. In West Oakland, there has been over a decade of monitoring and policy work done to understand and reduce exposure to air pollution in West Oakland, by the Air District, West Oakland Environmental Indicators Project and other community groups, and scientific researchers. This body of knowledge, and the established relationship between the Air District and the West Oakland Environmental Indicators Project positions West Oakland as a community most likely to be able to meet the legislated deadlines for the first community emission reduction program process. There are several air monitoring and air quality data analysis efforts ongoing in Richmond. These efforts can be leveraged to ensure the Richmond community air monitoring plan is feasible and successful in the short state-mandated time frame. One such effort is the expansion of the fence-line monitoring system at the Chevron Refinery. Chevron has proposed to expand its fence-line monitoring system to meet the requirements of the Air District's Regulation 12, Rule 15 (Rule 12-15). Additionally, as part of the Rule 12-15 process, the Air District committed to expand efforts to characterize levels of air pollutants in communities near refineries by adding an additional fixed monitoring site. The Air District is assisting the City of Richmond on an EPA Community Scale Toxics Grant, to evaluate and interpret air toxics data collected at sites near the Chevron Refinery. The Air District is also working with the Asian Pacific Environmental Network community organization to implement a PM_{2.5} community-led sensor project in the Richmond area as one of the Northern California communities participating in South Coast Air Quality Management District's EPA STAR Grant: "Engage, Educate and Empower California Communities on the Use and Applications of "Low-cost" Air Monitoring Sensors".¹² Finally, there are current and historical air monitoring projects the Air District worked on with researchers and other governmental organizations that will provide data and other information to inform year 1 monitoring planning efforts.

¹² More information on EPA Star Grant may be found here: <http://www.aqmd.gov/aq-spec/research-projects>

Attachment E. Final Submittal Requirements, California Air Resources Board

Air District final submittal: Public process for determination of recommended communities

Due: July 31, 2018

Air districts recommending communities for AB 617 2018 Community Selections must provide documentation addressing the following elements in the final submittal:

1) Describe (including geographic boundaries) the communities from the preliminary list that the air district is recommending for inclusion in year one for:

- a) A community air monitoring plan
- b) A community emissions reduction program

2) In accordance with statute, CARB staff are required to return to the Board annually for recommendations on additional communities. Describe the communities from the preliminary list the air district is recommending for inclusion in subsequent years, recognizing that additional data and public input may result in updates to the final recommendations for each year:

- a) Community air monitoring and/or community emissions reduction programs in years 2 through 5
- b) Community air monitoring and/or community emissions reduction programs in years 6 and beyond

3) Provide information on the following questions for each community recommended for year 1 and communities being considered for years 2-5:

- a) Has work already started in the community?
- b) What are the anticipated resource needs for each recommended community for both the air district and the community?
- c) Are emissions data available to develop a community level emission inventory?

4) Describe the public process used to identify, then prioritize and select recommended communities? Provide a brief overall summary of comments received and specify how many attendees were at each workshop or meeting.

5) Any additional information the air district would like to provide, including any community recommendations for future year implementation.