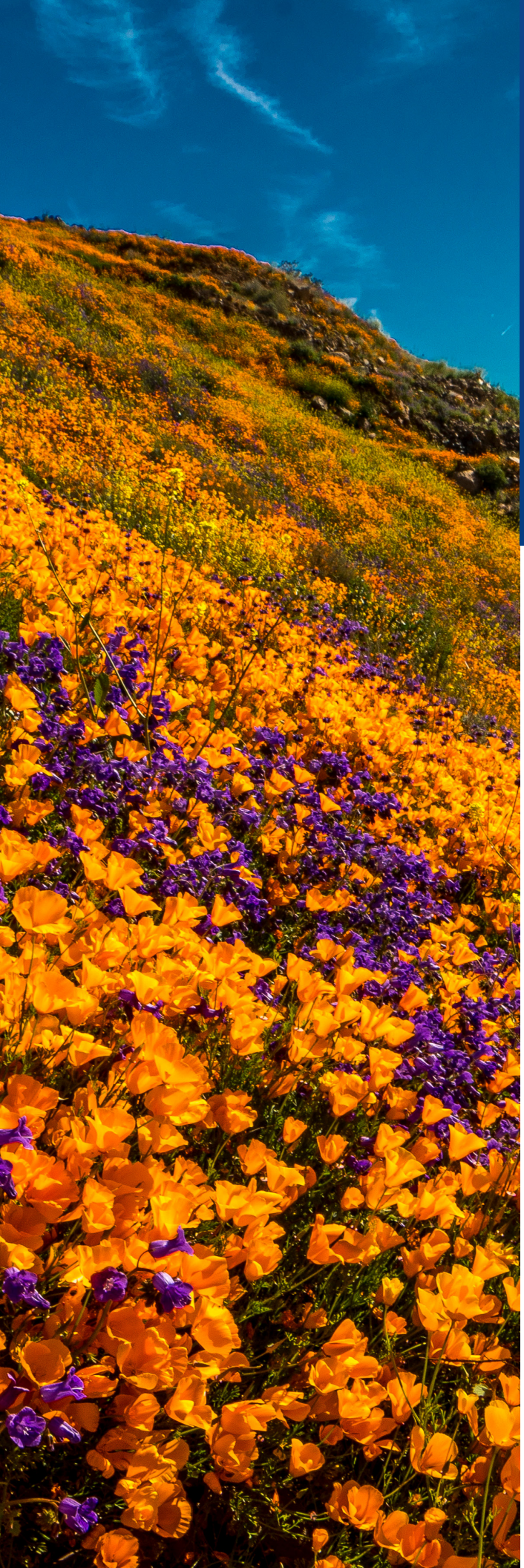

CHAPTER 7

Environmental Justice

- **The impacts of air pollution are not distributed equitably throughout the South Coast Air Basin, with some communities bearing much higher air pollution burdens.**

- **The PM2.5 Plan includes control measures to reduce the levels of PM2.5, a regional pollutant in the entire Basin to meet the annual PM2.5 NAAQS. South Coast AQMD, however, addresses disproportionate impacts of local air pollution in disadvantaged communities through the AB 617 program.**

- **Environmental Justice (EJ) communities typically experience higher PM2.5 levels and higher cancer risks from toxic air pollutants than other regions in the Basin.**

- **Measures associated with the PM2.5 Plan will help reduce air pollution in disproportionately impacted areas.**

- **In the implementation of both existing and future incentive programs, South Coast AQMD will continue to prioritize EJ areas to address the issues of the most disadvantaged communities.**

Introduction

Environmental Justice (EJ) communities are disproportionately impacted by various types of pollution and experience health, social, and economic inequities. These inequities can also make residents of EJ communities more vulnerable to the effects of environmental pollution. These communities are often located near multiple air pollution sources including both mobile sources and commercial and industrial facilities. For example, communities adjacent to ports, rail yards and warehouses are exposed to higher levels of emissions from the associated ships, trains, and trucks, including diesel particulate matter, a carcinogen. Communities near refineries and other industries can also suffer from higher levels of air pollution.

The California Office of Environmental Health Hazard Assessment (OEHHA) developed the California Communities Environmental Health Screening Tool (CalEnviroScreen) to identify disadvantaged communities across California based on pollution exposure and population characteristics. This information can be used to advise and assist South Coast AQMD in protecting and improving public health in the most impacted communities through the reduction and prevention of air pollution. While there is no universal definition for what constitutes an EJ community, one that is commonly used is the Senate Bill (SB) 535 definition of disadvantaged communities (DACs)[1]. These are defined as:

1. Census tracts receiving the highest 25 percent of overall scores in CalEnviroScreen 4.0 (1,984 tracts).
2. Census tracts lacking overall scores in CalEnviroScreen 4.0 due to data gaps, but that receive the highest 5 percent of CalEnviroScreen 4.0 cumulative pollution burden scores (19 tracts).
3. Census tracts identified in the 2017 DAC designation as disadvantaged, regardless of their scores in CalEnviroScreen 4.0 (307 tracts).
4. Lands under the control of federally recognized Tribes.

All calculations and maps in this section that refer to EJ communities are consistent with this definition. The map of EJ communities alongside major roads within the Basin are presented in Figure 7-1.

[1] Monserrat, Laurie. "SB 535 Disadvantaged Communities." OEHHA, 20 Nov. 2015, https://oehha.ca.gov/calenviroscreen/sb535.

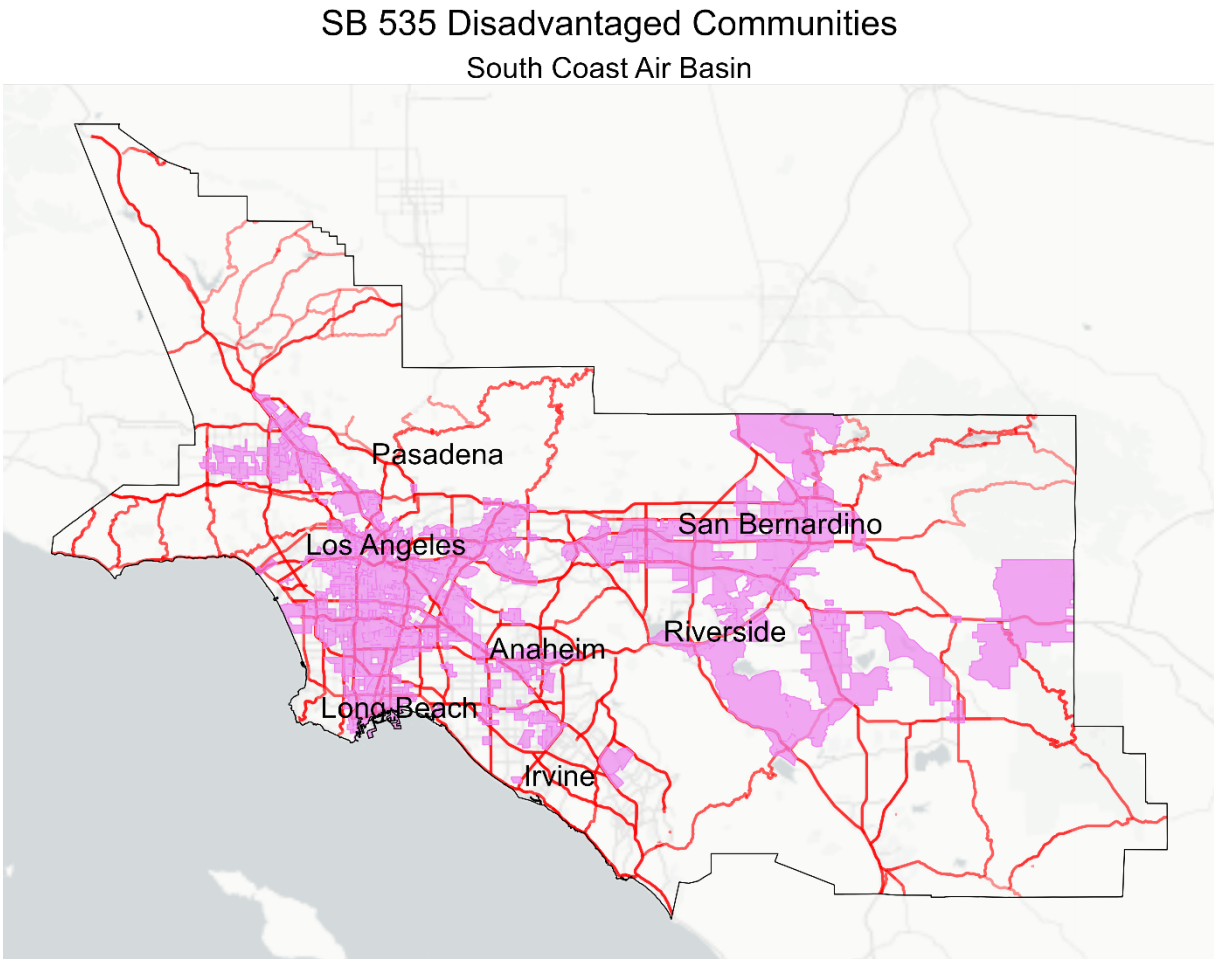

FIGURE 7-1
MAP OF ENVIRONMENTAL JUSTICE COMMUNITIES (VIOLET) WITHIN THE SOUTH COAST AIR BASIN. PRIMARY AND SECONDARY ROADS ARE IN RED

The PM2.5 Plan focuses on steps needed to attain the 2012 annual PM2.5 standard. As further described in this chapter, environmental justice communities typically experience worse levels of PM2.5 than other areas in the Basin. The control strategy proposed in this Plan, which includes transitioning to zero emission technologies where feasible and the cleanest available technologies where zero emission technologies are not feasible, will substantially reduce PM2.5 emissions. This includes diesel particulate matter, a powerful cancer-causing pollutant, and other mobile source pollutants that go on to form PM2.5, such as nitrogen oxides. As shown in Figure 7-2 below, the highest levels of air toxics risk are around our ports, rail yards, and major transportation corridors, where many of our EJ communities are located. About 88 percent of those risks are from pollutants associated with mobile sources, with diesel particulate matter alone accounting for about half of those risks. Cleaning up emissions from truck, ship, locomotive, and aircraft fleets will therefore substantially reduce health risks from air pollution in impacted communities, while also putting the region on a path to meet federal air quality standards.

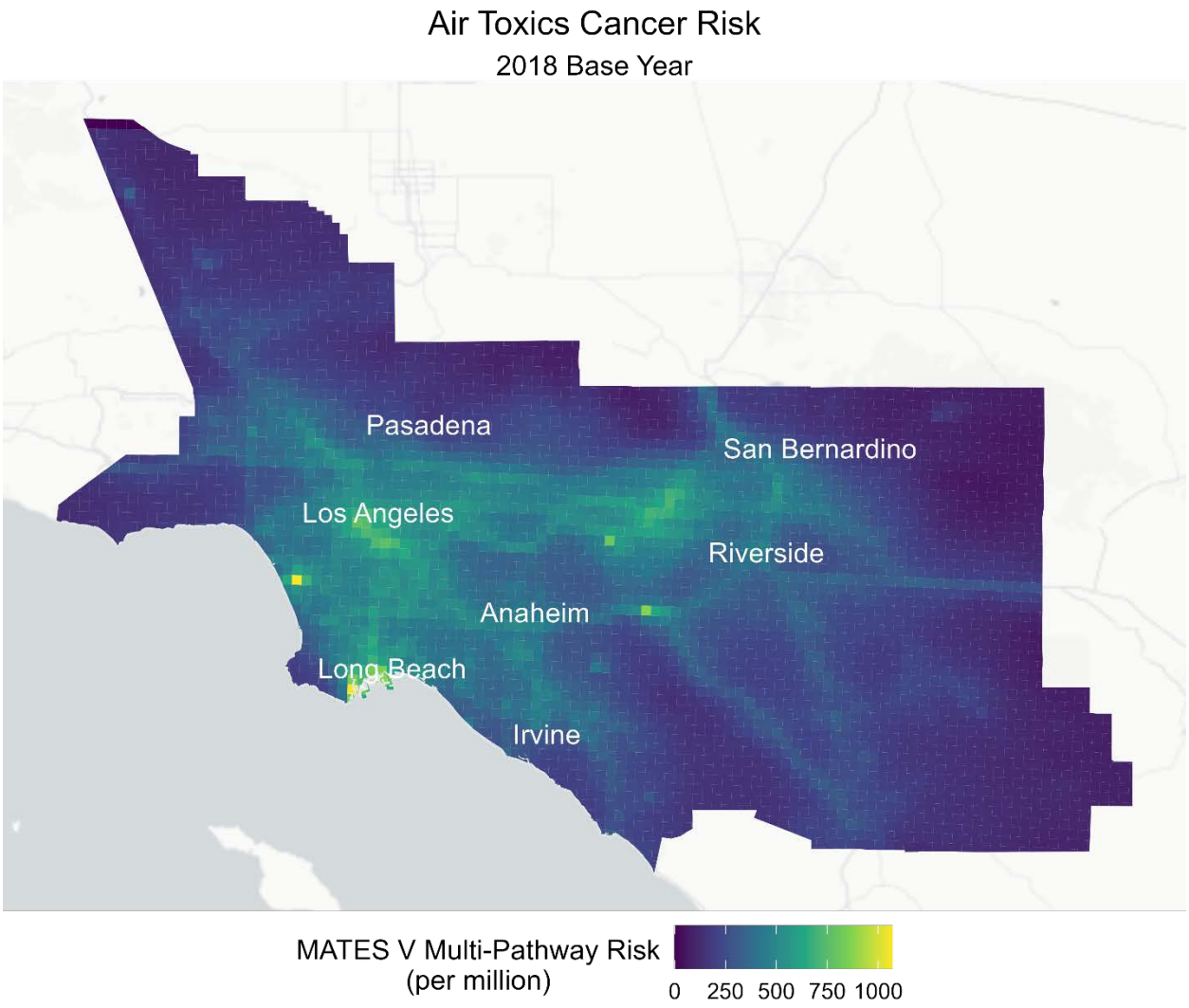

FIGURE 7-2
MODELED MULTI-PATHWAY AIR TOXICS CANCER RISK FROM MATES V IN THE SOUTH COAST AIR BASIN[2]

[2] South Coast AQMD. Multiple Air Toxics Exposure Study in South Coast AQMD. South Coast Air Quality Management District, Aug. 2021, https://www.aqmd.gov/docs/default-source/planning/mates-v/mates-v-final-report-9-24-21.pdf?sfvrsn=6.

The purpose of this chapter is to describe air quality impacts experienced in EJ communities and projected future air quality and attainment of the 2012 annual PM2.5 standard. While the work described in this chapter will help reduce localized impacts, South Coast AQMD understands that work is ongoing, and much more will need to be done to address historic environmental injustice. South Coast AQMD is committed to continuing work with impacted communities, listening to their concerns, and to the greatest extent possible, addressing their concerns. Environmental justice principles center the importance of public participation in decision-making. To that end, as highlighted in chapter 8, public participation and outreach are critical to the development of the PM2.5 Plan. Relevant stakeholders in the development of the PM2.5 Plan include environmental justice organizations, environmental advocacy groups, and members of the public. Outreach occurs in-person and remote participation at Advisory Group Meetings, South Coast AQMD Governing Board Meetings, and Regional Public Hearings. For these programs, South Coast AQMD releases Spanish-language versions of meeting notices, agendas, and presentations alongside live Spanish translation.

Environmental Justice Communities

Environmental Justice, or "EJ" has been defined by South Coast AQMD as "equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution." While there are many approaches for identifying EJ communities, throughout this PM2.5 Plan, we consider EJ communities as the disadvantaged communities defined under SB 535.[3] By that definition, approximately 42 percent of South Coast Air Basin residents are in EJ communities. Race and ethnicity are not included in the CalEnviroScreen population indicators, but as discussed in the OEHHA Analysis of Race/Ethnicity and CalEnviroScreen results,[4] people of color disproportionately reside in highly impacted communities in California. These disparities are also clear in the South Coast Air Basin, reflecting the impact of institutional and structural racism that has created unequal pollution burdens and health impacts for different groups (Figure 7-3). Mental and physical disabilities are not considered in this analysis since they are not accounted for in the CalEnviroScreen.

[3] Refer the 2nd paragraph of this chapter for the definition of EJ community

[4]OEHHA. Analysis of Race/Ethnicity and CalEnviroScreen 4.0 Scores. California Office of Environmental Health Hazards Assessment, Oct. 2021.

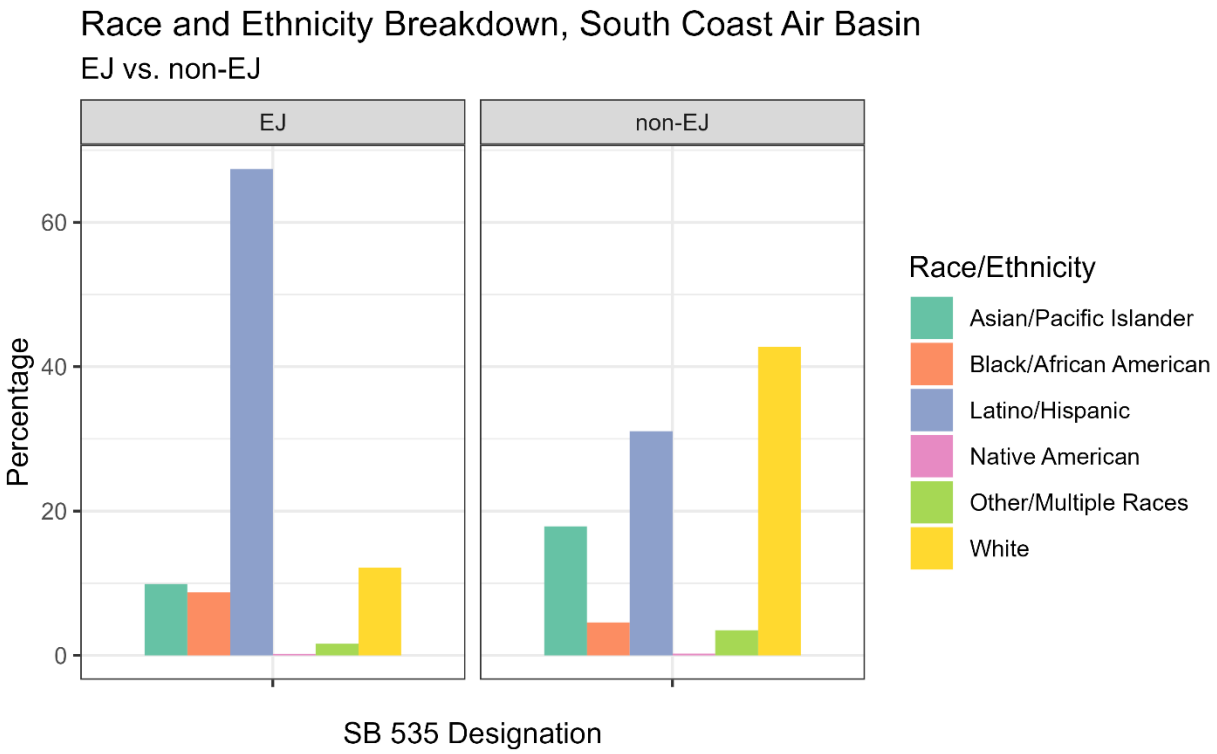

FIGURE 7-3
RACIAL AND ETHNIC MAKEUP OF EJ AND NON-EJ COMMUNITIES IN SOUTH COAST AIR BASIN (2021)

Assembly Bill 617

The PM2.5 Plan is designed to address regional air pollution, however, South Coast AQMD recognizes there is still much work to be done to reduce local exposures within EJ communities. Statewide and South Coast AQMD environmental justice efforts, such as the Assembly Bill 617 (AB 617)[5] program, seek to collaboratively address environmental challenges in communities that are disproportionately impacted by pollution and more vulnerable to the health effects of pollution.

[5] California Health and Safety Code § 44391.2

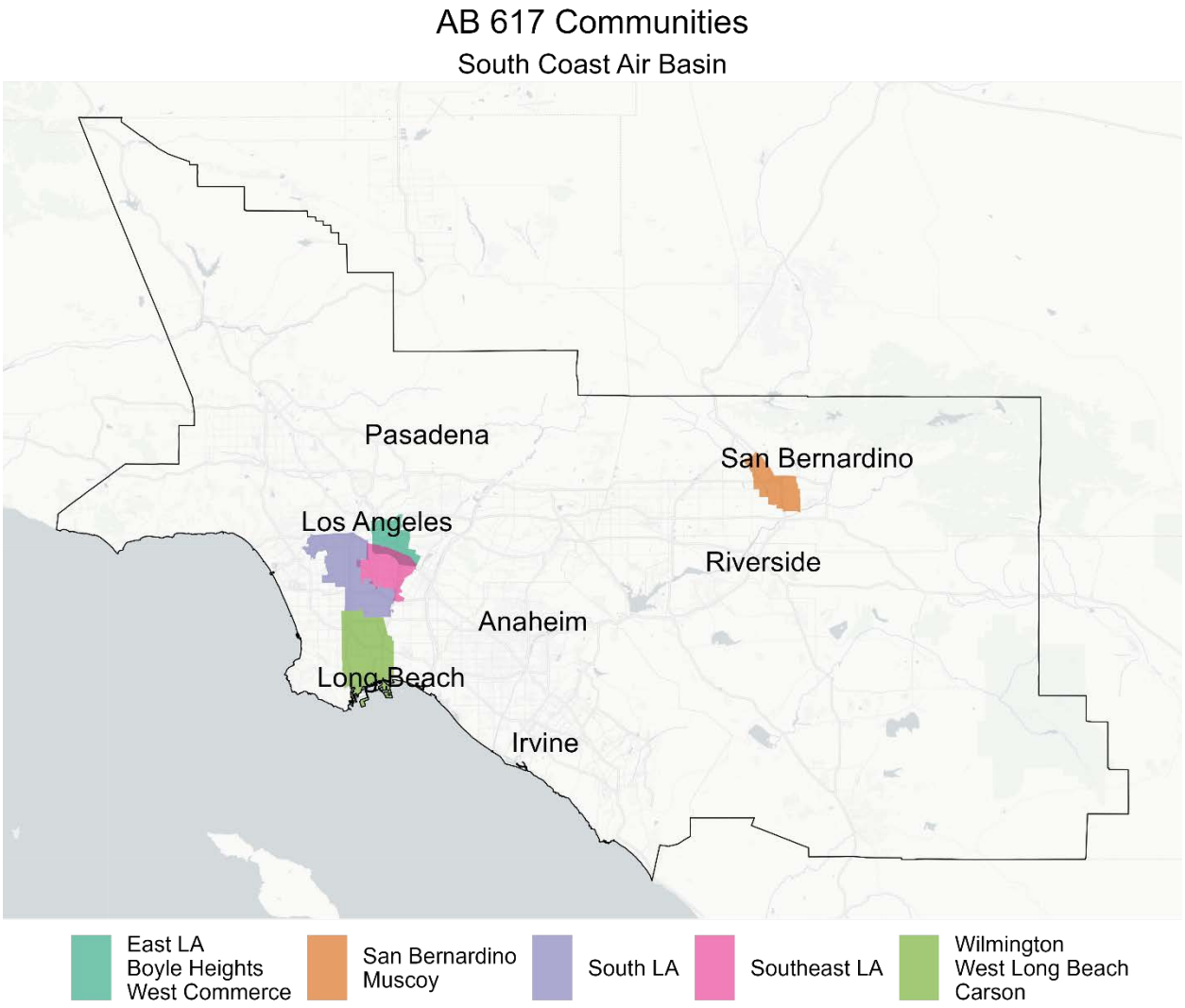

FIGURE 7-4
MAP OF AB 617 COMMUNITIES WITHIN THE SOUTH COAST AIR BASIN

AB 617 was signed into California law on July 26, 2017, and focused on addressing disproportionate impacts of local air pollution in EJ communities. The AB 617 program requires local air districts and California Air Resources Board (CARB) to reduce air pollution in disproportionately burdened communities, improve accountability and transparency, and promote collaborative partnerships with community stakeholders. AB 617 communities are designated by CARB, and they specify the plan(s) for the community as either an emission reduction program, air monitoring program, or both.

To meet the emission reduction program requirements, South Coast AQMD works with the communities to develop and implement Community Emission Reduction Plans (CERPs). CERPs are specific to each AB 617 community and are intended to address air quality related impacts in those communities. Similarly, for the air monitoring program requirements, South Coast AQMD works with the communities to develop and deploy Community Air Monitoring Plans (CAMPs). Both the measures associated with the PM2.5 Plan and the elements of AB 617 CERPs will help reduce air pollution in disproportionately impacted areas. More detail on the AB 617 program can be found on South Coast AQMD's AB 617 Community Air Initiatives webpage.[6]

To date, there are six designated AB 617 communities in the South Coast AQMD jurisdiction. These communities are the East Los Angeles/Boyle Heights/West Commerce (ELABHWC) community, San Bernardino/Muscoy community (SBM) and Wilmington/Carson/West Long Beach community (WCWLB) designated in 2018; the Southeast Los Angeles community (SELA) and Eastern Coachella Valley (ECV) designated in 2019; and the South Los Angeles community (SLA) designated in 2020. All of these communities, with the exception of ECV are located within the South Coast Air Basin and shown in Figure 7-4.

Air Quality in Environmental Justice Communities

The impacts of air pollution are not distributed equitably throughout South Coast AQMD jurisdiction, with some communities bearing much higher air pollution burdens. In this section, results from the recently released CalEnviroScreen 4.0 are used to show the distribution of air pollution across the South Coast Air Basin.

Figure 7-5 shows levels of PM2.5 concentrations in AB 617 communities, in EJ and non-EJ areas in the South Coast Air Basin, and the overall basin-wide levels. As described in the CalEnviroScreen 4.0 report, average annual PM2.5 concentrations in each census tract were calculated using 2015-2017 ambient air monitoring data combined with satellite observations in a land-use regression model. For AB 617 communities, estimates were generated using the census tracts in each community. Boxes indicate the interquartile range (25th to 75th percentile), and the bold line indicates the median concentration (50th percentile). The two ends of the whiskers represent 1.5 multiplied by the interquartile range added and

[6] South Coast AQMD. "AB 617 Community Air Monitoring." South Coast AQMD, https://www.aqmd.gov/nav/about/initiatives/environmental-justice/ab617-134/ab-617-community-air-monitoring. Accessed 2 Jan. 2024.

subtracted to the median. The dashed line represents the 12 µg/m^3 standard. The dotted line represents the basin median (11.9 µg/m^3) concentration. Colors of the bars for each AB617 community correspond to map locations illustrated in Figure 7-4. While estimated annual average PM2.5 concentrations span a wide range of concentrations in EJ and non-EJ areas, PM2.5 concentrations are generally higher in EJ areas and some AB 617 communities in the South Coast Air Basin. The observed disparities within the basin are likely driven by local sources of directly emitted PM2.5 such as freeways and industrial facilities, that tend to be concentrated in disadvantaged communities. These sources also contribute to higher levels of diesel particulate matter, a powerful air toxic, in EJ communities.

Importantly, PM2.5 is one of the many air pollution challenges that these communities face. All five communities contain census tracts that rank in the CalEnviroScreen 4.0 top 25 percent most impacted tracts across California. Estimated PM2.5 concentrations for three EJ communities in the Basin are above the median concentration of 11.9 µg/m^3 of all Basin tracts, as estimated by CalEnviroScreen.

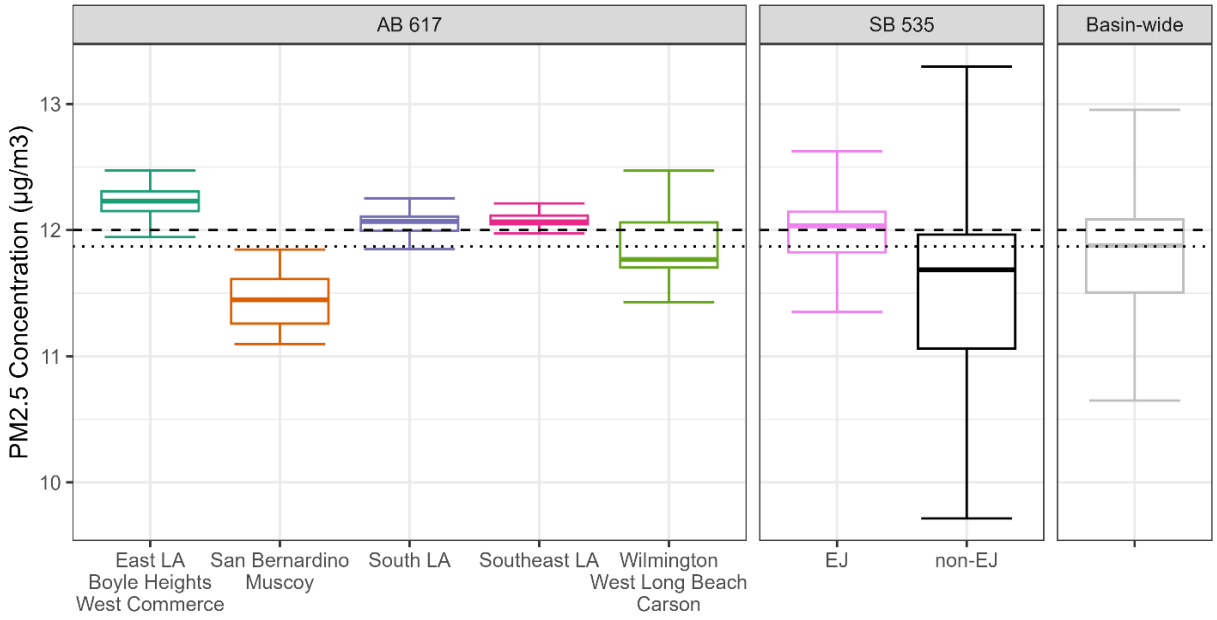

FIGURE 7-5
ESTIMATED PM2.5 CONCENTRATIONS IN AB 617 COMMUNITIES (LEFT) AND SB 535-DEFINED EJ COMMUNITIES (MIDDLE) AND OVERALL PM2.5 CONCENTRATIONS (2021) IN THE SOUTH COAST AIR BASIN (RIGHT)

Exposure to air toxics is also an important driver of health risks in AB 617 communities. The Multiple Air Toxics Exposure Study V (MATES V)[7] found a substantial decrease in estimated cancer risk in each of the AB 617 communities from 2012 to 2018[8]. Figure 7-6 shows the air toxic risk in the AB617 communities, and in EJ and non-EJ communities. Boxes indicate the interquartile range (25th to 75th percentile), and the bold line indicates the median concentration (50th percentile). The two ends of the whiskers represent 1.5 multiplied by the interquartile range added and subtracted to the median. Colors of the bars for the AB617 communities correspond to map locations illustrated in Figure 7-4.

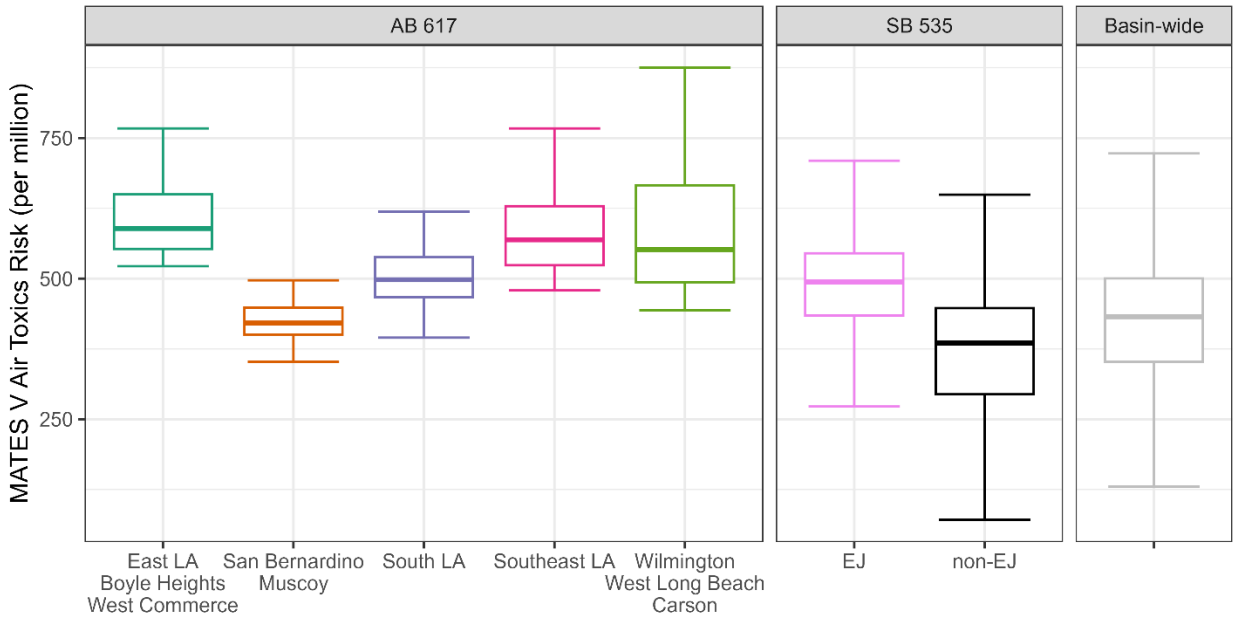

FIGURE 7-6
MATES AIR TOXIC RISK IN AB 617 COMMUNITIES (LEFT) AND SB 535-DEFINED EJ COMMUNITIES (CENTER) AND OVERALL AIR TOXIC RISK IN THE SOUTH COAST AIR BASIN, PER MATES V (2021) (RIGHT)

[7] South Coast AQMD. Multiple Air Toxics Exposure Study in South Coast AQMD. South Coast Air Quality Management District, Aug. 2021, https://www.aqmd.gov/docs/default-source/planning/mates-v/mates-v-final-report-9-24-21.pdf?sfvrsn=6.

[8] South Coast AQMD. Multiple Air Toxics Exposure Study in South Coast AQMD. South Coast Air Quality Management District, Aug. 2021, https://www.aqmd.gov/docs/default-source/planning/mates-v/mates-v-final-report-9-24-21.pdf?sfvrsn=6.

As shown in Figure 7-6, non-EJ areas have the lowest toxics air risk as modeled in MATES V. In comparison, the median air toxic risk among AB 617 communities and EJ areas is higher than the median risk for non-EJ areas. This is likely due to these communities' proximity to air toxics sources. As shown on Figure 7-4, there is a significant toxics risk hotspot near the ports of Los Angeles and Long Beach. This is due to the activity associated with shipping, handling and transporting cargo in the region. The related activity extends up the 710 freeway, where many of the AB 617 communities are located. In addition to freeways and shipping activity, some AB 617 communities, such as Wilmington/West Long Beach/Carson, East Los Angeles/Boyle Heights/West Commerce, and Southeast LA are homes to heavy industry that contribute to higher air toxic risk. Consequently, AB 617 communities suffer the highest concentrations of cancer-causing pollutants, such as diesel particulates, due to the proximity of AB617 communities to sources of these pollutants. South Coast AQMD plans to conduct MATES VI in near future to assess the progress in air quality improvement in recent years.

Annual PM2.5 Attainment in AB 617 and Environmental Justice Communities

Air quality simulations to demonstrate future attainment of the PM2.5 standard are an integral part of the planning process to achieve clean air. These simulations evaluate the changes in PM2.5 concentrations over time and in response to various emissions and development scenarios. Figure 7-7 summarizes the results of the PM2.5 simulations in each of South Coast AQMD's AB 617 communities for the 2018, 2030 baseline, and 2030 attainment scenarios. In this analysis, model simulations were run across the entire South Coast Air Basin domain. Model results were then cropped to the boundaries illustrated in Figure 7-1 (DACs) and Figure 7-4 (AB 617 communities). Within each community, we calculated a distribution of PM2.5 levels in the future that would result after the implementation of the Plan. We compared these summary statistics to the 2012 annual PM2.5 standard of 12 $\mu g/m^3$, which is marked in Figure 7-7 by the dotted line.

As shown in Figure 7-7, all AB617 communities and EJ areas have higher mean PM2.5 concentrations than the basin-wide average, and the maximum annual PM2.5 concentrations occur in EJ communities. While parts of the Basin that include portions of AB617 and EJ communities were not in attainment in 2018 and are not expected to be in attainment under the 2030 baseline conditions, all the AB 617 communities and EJ areas will attain the standard when the Plan is fully implemented.

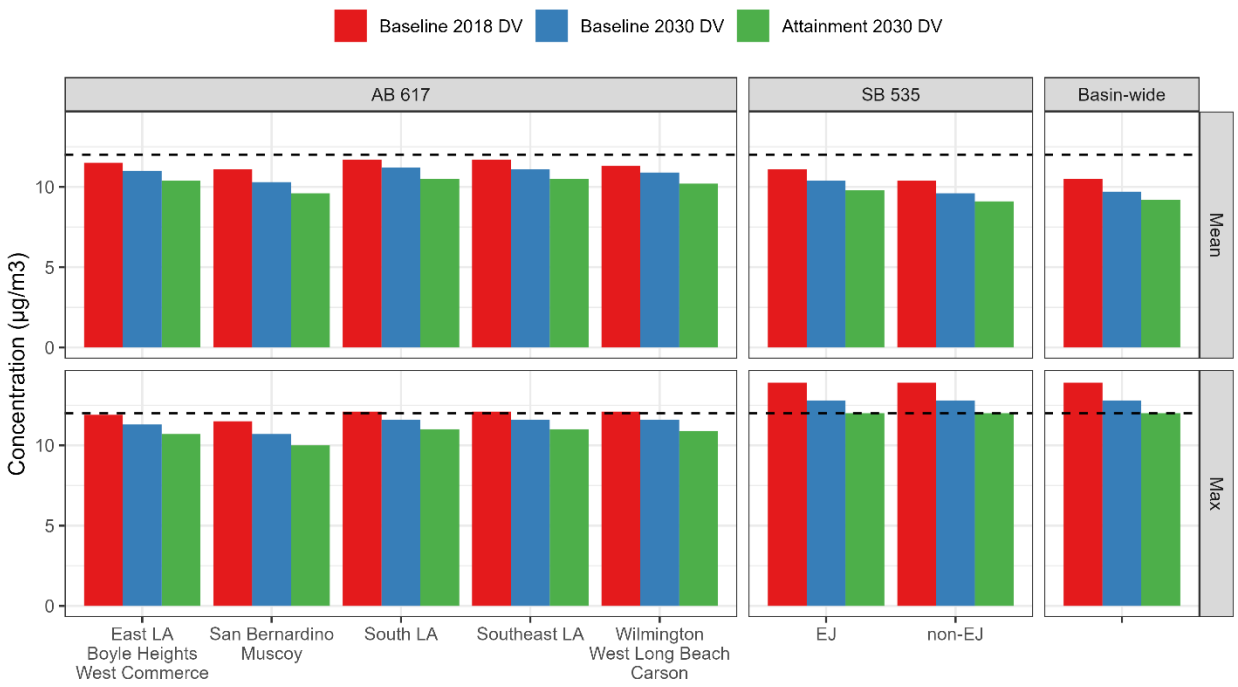

FIGURE 7-7
MODEL-PREDICTED MEAN (TOP) AND MAXIMUM (BOTTOM) ANNUAL DESIGN VALUES IN SOUTH COAST AQMD'S AB 617 (LEFT) AND SB 535-DESIGNATED EJ AND NON-EJ COMMUNITIES (CENTER), AND BASIN-WIDE (RIGHT)

Design values are calculated under three scenarios: 2018 baseline (red), 2030 baseline (blue), and 2030 attainment (green). The dashed line represents the 12 µg/m^3 standard.

Incentives and Funding in Environmental Justice Communities

Incentives and funding will continue to be a critical component in implementing the control strategies in the PM2.5 Plan. Among the 2022 AQMP control measures required to attain the 2015 8-hour ozone standard by 2037, this PM2.5 Plan included selected measures that can be implemented and achieve emission reductions prior to 2030. The 2022 AQMP commits both traditional regulatory and incentive funding-based approaches to achieve emission reductions needed to meet the federal ozone standard. Incentives and funding for EJ communities will be pursued to implement both the 2022 AQMP and this PM Plan commitments.

Incentive funding can be used to subsidize low-emitting or zero emission equipment purchases and help promote deployment of clean technologies for both stationary and mobile sources. For mobile sources, incentive funds can facilitate the replacement of older, high-emitting vehicles and equipment with the cleanest vehicles and equipment commercially available. South Coast AQMD has been implementing a

number of incentive programs to accelerate the deployment of clean technologies with a particular emphasis on benefits to EJ communities. For example, under the Lower-Emission School Bus Program, the Carl Moyer Program and other diesel mitigation programs, not less than 50 percent of the funds appropriated are expended in a manner that directly reduces air contaminants and/or associated public health risks in disadvantaged and low-income communities. Notably, programs may employ different definitions of disadvantaged in their implementation. The Lower-Emission School Bus Program allows individual agencies to develop their own individual criteria in consultation with CARB, but by default recommends uses the percentage of students in a public school district participating in the free and reduced-lunch meal program.[9] South Coast AQMD frequently uses SB 535 to define disadvantaged communities. In their implementation of the Lower-Emission School Bus Program, they include an additional low-income criterion.[10] The Carl Moyer program uses a combination of racial and ethnic composition alongside income in their definition of disadvantaged.[11] In implementing existing incentive programs and for the development of future programs, South Coast AQMD will continue to prioritize incentive funding in EJ areas and seek opportunities to expand funding to benefit the most disadvantaged communities, which is frequently defined using the DACs under SB535.

For stationary sources, incentives can help promote the transformation to zero emission technologies for small commercial and residential combustion sources such as water heaters and furnaces. Incentive programs will be of particular importance for measures regarding zero emission buildings. Programs to change out gas appliances, heaters and boilers may be cost-effective, but not necessarily affordable. First, there is the cost of replacing the appliances themselves – which would not be insignificant for many smaller businesses or residential households. Second, many buildings will likely need additional electrical panel upgrades and other infrastructure to support the increased electrical load needed to power the replacement appliances. These infrastructure upgrades can be far more costly than the cost of replacing gas appliances. These issues are further magnified in economically disadvantaged communities, where switching from gas to electrical appliances may be cost-prohibitive unless a substantial portion of those costs are covered by other programs.

Existing rebate programs, such as South Coast AQMD's Clear Air Furnace program, funded by Rule 1111 mitigation fees, provides rebates to those installing a residential electric heat pump to replace a natural gas furnace. In addition, a specific percentage of the funding was dedicated to those applying from a disadvantaged community. This program can be further funded to enhance the existing rebate program or expanded to include other building appliances such as water heaters. In addition, partnerships with other organizations, such as Technology and Equipment for Clean Heating (TECH) Clean California or

[9] CARB. 2008 Lower-Emission School Bus Program Guidelines. California Air Resources Board, 15 Apr. 2008, https://ww2.arb.ca.gov/sites/default/files/2022-02/2008_LESBP_Guidelines-with-Advisories.pdf.
[10] South Coast AQMD. Issue Program Announcement for Lower School Bus Emissions Program, Oct 2020. https://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2020/2020-oct2-006.pdf?sfvrsn=2
[11] Legislature, Cal. Cal. Health & Safety Code § 43023.5. https://california.public.law/codes/ca_health_and_safety_code_section_43023.5. Accessed 2 Jan. 2024.

Southern California Edison, with similar programs and directives could assist in providing more rebate money to further incentivize early deployment of cleaner technologies. Therefore, evaluating funding needs and sourcing funding to support control measures associated with zero emission building measures will be critical. But a much larger issue will be structuring incentive/rebate programs in a way that is equitable and does not leave economically disadvantaged communities behind. Stationary source control measures (BCM-01, BCM-02, BCM-03, BCM-04, ECC-02 and ECC-03, see Table 7-1) target emission reductions from residential buildings and include incentive components as part of the proposed control approach.

TABLE 7-1
SELECTED SOUTH COAST AQMD PROPOSED STATIONARY SOURCE MEASURES

Number	Title [Pollutant]
BCM-01	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Water Heating [PM2.5, NOx]
BCM-02	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Space Heating [PM2.5, NOx]
BCM-03	Emission Reductions from Residential Cooking Devices [PM2.5, NOx]
BCM-04	Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Other Combustion Sources [PM2.5, NOx]
ECC-02	Co-benefits from Existing and Future Residential and Commercial Building Energy Efficiency Measures [All Pollutants]
ECC-03	Additional Enhancements in Reducing Existing Residential Building Energy Use [All Pollutants]

In addition, mitigation fees will be considered where appropriate under BCM-04. The mitigation fee collected would be utilized as incentives to accelerate the adoption of zero emission units or utilized to assist in panel upgrades or infrastructure at residences in disadvantaged communities. In developing these incentive programs, South Coast AQMD will seek community input and evaluate ways to prioritize distribution of funding to benefit the most disadvantaged communities. South Coast AQMD will ensure that environmental justice areas are able to access advanced technologies while benefiting from the transition to zero emission technologies.

Summary

PM2.5 air pollution and air toxics risk impact residents in the South Coast Air Basin disproportionately. EJ communities often contend with higher PM2.5 concentrations, elevated cancer risks from toxic air pollutants, and exposure to multiple pollution sources than the average levels in the Basin. The PM2.5 Plan incorporates control measures aimed at reducing PM2.5 levels in the entire South Coast Air Basin and meeting the federal 2012 annual PM2.5 standard. These measures will help reduce air pollution in disproportionately impacted areas as well.

Efforts to address environmental injustices extend beyond the PM2.5 Plan, with initiatives like the AB 617 program which focuses on reducing local air pollution exposure, promoting transparency, accountability, and community engagement. Collaborative partnerships, emission reduction programs, and air monitoring initiatives are integral components of AB 617, aiming to reduce air pollution and improve public health outcomes in disproportionately impacted areas.

Incentives and funding mechanisms are pivotal in facilitating the implementation of control measures, ensuring accessibility to clean technologies, and promoting the transition to zero emission solutions. South Coast AQMD is committed to prioritizing EJ areas in existing and future incentive programs, striving for equitable distribution of resources and fostering community engagement. Ongoing collaboration with impacted communities, coupled with community input and evaluation, will guide the development of inclusive incentive programs, ensuring that economically disadvantaged communities are not left behind. Moving forward, South Coast AQMD remains dedicated to addressing historic environmental injustices, improving public health, and creating a more equitable and sustainable future for all residents.