

Bayview Hunters Point / Southeast San Francisco

Public Review Draft: Community Emissions Reduction Plan



Bay Area
Air District

September 2026

Land Acknowledgement

The land that makes up the nine-county Bay Area region is home to diverse groups of Indigenous peoples with unique cultures and deeply rooted relationships to the land for over 10,000 years. This land is unceded Indigenous land and the territories, or counties, the Bay Area Air District (Air District) represents are of the Indigenous people. To acknowledge this history of our country – that this nation was built on genocide, the exclusion and erasure of Indigenous people – grounds our work in truth. The Air District acknowledges the Ohlone as the traditional caretakers of the land – including the water and air that makes up the Bay Area. We honor their connection to the land and the deep respect they hold for this region.

Ohlone is the most commonly used term for the predominant Indigenous group of the Bay Area, who are made up of linguistically similar but ethnically diverse Native American tribes. These tribes include the Chochenyo and the Karkin of the East Bay, the Ramaytush of San Francisco, the Yokuts of the South Bay and Central Valley, and the Muwekma tribe from throughout the region. Other Indigenous groups in the region distinct from the Ohlone linguistic group including the Coast Miwok and Southern Pomo of the Graton Rancheria community; the Kashaya, Patwin and Mishewal Wappo of the North Bay; and the Bay Miwok of the East Bay.

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Executive Summary

Signed into law in 2017, the California State Legislature passed Assembly Bill 617 (AB 617) requiring the California Air Resources Board (CARB) and local air districts to produce Community Emissions Reduction Plans (CERPs). These plans aim to reduce exposure to emissions in communities overburdened by air pollution. Through the Community Health Protection Program, the Bay Area Air District (Air District) is responsible for implementing AB 617 by collaborating with community members and organizations, local agencies, and key stakeholders to develop strategies and actions for reducing harmful air pollutants and improving community health outcomes.

In September of 2022, the Marie Harrison Community Foundation and the Bayview Hunters Point Community Advocates submitted a comprehensive community self-nomination request to the Air District, calling for the greater Bayview Hunters Point area and Southeast San Francisco (BVHP/SESF) to be selected for beginning the CERP development process in 2023. This request included a defined community boundary consisting of 17 census tracts in BVHP/SESF, extending along and east of the US-101 freeway, into Potrero Hill to the north, Excelsior to the west, and Visitacion Valley to the southwest.

The self-nomination included an assessment of cumulative environmental and health impacts using CalEnviroScreen 4.0 socioeconomic indicators and air quality modeling based on the Air District's regional 2018 emissions inventory. It also described key community concerns, including instances of conflicting land uses and zoning practices that allow polluting industries near residences, schools, and community gathering spaces. Community-identified pollution sources in BVHP/SESF include the Naval Shipyard, auto body repair shops, wastewater treatment facilities, recycling plants, material handling operations, and medium- to heavy-industrial and manufacturing facilities. The area also includes truck routes and major transportation corridors such as US-101 and Interstate 280 freeways.

In November of 2022, the Air District Board of Directors unanimously voted to approve the self-nomination and recommended BVHP/SESF to CARB for the AB 617 Community Air Protection Program. In the 2023 Fifth Annual Community Air Protection Program Recommendations Staff Report, CARB supported the nomination of BVHP/SESF and recommended its selection for the development and implementation of a CERP. In February 2023, CARB approved the selection of BVHP/SESF for CERP development.

Through a three-party partnership, the Air District, the Marie Harrison Community Foundation, and the Bayview Hunters Point Community Advocates (up to December 2025) worked together as Co-Leads to begin developing the BVHP/SESF CERP Process. The Co-Leads led the recruitment and selection of Community Steering Committee (CSC) members and held an orientation in August 2023 to align on roles and responsibilities in guiding the development of a CERP to address air quality and environmental justice issues in BVHP/SESF. The CSC is a diverse group of individuals consisting of up to 25 members who live, work, or own businesses in the community. Members include leaders of community-based organizations, both multigenerational and newer residents, youth, seniors, and individuals from local businesses. Together, they represent the social diversity and character of the community.

During the early stages of the CERP process, the CSC participated in a community mapping activity to identify sources of air pollution and areas of concern within BVHP/SESF. This activity helped develop a list of community-identified air quality issues and informed the final community boundary. The community map for the activity included the locations of permitted sources, monitoring sites or air sensors, Naval Shipyard parcel boundaries, highways, and major thoroughfares. Based on the information provided on the map, CSC members were asked to place stickers on sources of air pollution that are a concern, sources of air pollution not identified on the map, areas known by the community to have poor air quality, and locations where the members most sensitive to air pollution in the community

live, work, and spend time outdoors. In August of 2024, the CSC voted to expand the community boundary further north up to 16th Street, increasing the total number of census tracts from 17 to 25.

To ensure the inclusion of community perspective in the air quality analysis for the CERP, the CSC created a Sources, Emissions, and Data Gaps (SEDG) subcommittee to evaluate key findings related to emissions sources in BVHP/SESF. The air quality issues identified through a nuanced review of emissions data conducted by the SEDG subcommittee, along with input from the CSC on challenges affecting daily life in BVHP/SESF, were used to establish the six CERP focus areas.

Focus areas are the overarching categories of the BVHP/SESF community's pollution concerns that organized CERP strategy development (Chapter 8: Focus Areas, Strategies, and Actions). These include:

Permitting and Enforcement: BVHP/SESF community members are exposed to air pollution from a range of commercial and industrial sources. These stationary sources can contribute to poor health outcomes if not properly regulated. This focus area aims to reduce harmful emissions through stronger permitting, compliance, and enforcement actions.

Traffic and Transportation: BVHP/SESF is heavily impacted by vehicle traffic through the neighborhood and, problematically, on residential streets. The Production, Distribution, Repair (PDR) land use designation also gives rise to truck-attracting businesses that increase truck traffic on local roads. Many of these roadways are located near sensitive areas such as schools, parks, and residential neighborhoods. This focus area works to reduce emissions from transportation sources and improve road safety conditions for community members, as well as consider ways to create more connected and vibrant economic corridors that connect BVHP/SESF and the rest of the city.

Particulate Matter (PM), Dust, and Construction Impacts: BVHP/SESF community members are disproportionately exposed to PM and fugitive dust due to nearby industrial activities and ongoing construction. These exposures contribute to respiratory and cardiovascular health issues and can limit the ability to safely spend time outdoors. This focus area looks for opportunities to reduce exposure to local particulate matter and fugitive dust sources in BVHP/SESF.

Monitoring and Data: Existing data does not fully capture air pollution conditions in BVHP/SESF. Pollution levels can vary across the community depending on nearby sources and weather conditions. This focus area aims to expand monitoring and improve data to better understand local air quality and inform actions such as rule development, permitting, enforcement, and incentives.

Community Health Impacts: BVHP/SESF residents experience health disparities, including asthma and respiratory illness, in part due to exposure to environmental toxins and cumulative pollutant emissions from local polluting activities. Members of the community have expressed concerns about having limited access to healthcare resources, as well as goods and services and nature-based amenities. This focus area centers on reducing exposure to air pollution, improving air quality indoors, and improving overall community health.

Production, Distribution and Repair (PDR) and Land Use: BVHP/SESF community members have raised concerns about the concentration of PDR land uses and how they interface with residential neighborhoods. In some areas, there is limited separation between industrial and residential uses. This focus area explores opportunities to correct problematic land use patterns that underlie air pollution and air pollution exposures and to improve health protections through changes in land use policy and more environmentally informed and just decision-making.

The focus areas have served as an organizing framework for developing strategies and actions that can reduce air pollution, air pollution exposures, and health impacts in BVHP/SESF. Each focus area includes problem statements that reflect community-identified concerns and describe the challenges associated with poor air quality conditions.

To support the identification and understanding of air quality challenges, the CERP includes a comprehensive technical assessment of pollution sources and their associated emissions (Chapter 5: Air Quality Overview). This chapter includes an analysis of Criteria Air Pollutants (CAPs) and Toxic Air Contaminants (TACs) from approximately 216 permitted sources within the CERP community boundary area and BVHP/SESF zip codes. Also included is an overview of enforcement findings (Chapter 6: Compliance Enforcement Overview and Findings), which provides important context and history of compliance and enforcement in the BVHP/SESF area. This includes detailed information on enforcement programs and activities led by CARB to achieve compliance with all adopted regulations. An overview of Air Permitting describes the permitting process and provides information on opportunities for community involvement during permit review (Chapter 7: Air Permitting Overview). This chapter provides data on the number of permitted facilities in BVHP/SESF by facility type, the total number of permit applications, and information on non-permitted facilities. These assessments help connect technical findings to the concerns identified by the community, supporting the development of strategies and actions.

All strategies and actions were developed through an iterative process which involved co-creation with CSC members, the CSC's Planning and Strategies (P&S) subcommittee, and representatives from relevant agencies/academic partners that served as a Technical Advisory Group (TAG), including the Port of San Francisco, the San Francisco Planning Department (SF Planning), the San Francisco Department of Public Health (SFDPH), the California Office of Environmental Health Hazard Assessment (OEHHA), and University of California San Francisco (UCSF). Representatives from other relevant agencies also participated as implementing leads.

Through the implementation of strategies and actions, the CERP aims to accomplish six (6) overarching goals in BVHP/SESF, which include accelerating emission reductions for fine particulate matter and Toxic Air Contaminants (TACs), advancing health equity, incentivizing projects, holding polluters accountable, better understanding local air pollution, and fostering transparency (see Chapter 3: Vision, Principles, and Goals, for full text). The Air District will continue to work with the Co-Lead and CSC during CERP implementation and will lead interagency collaboration to ensure partner agencies make progress towards the CERP's goals. Each year, the Air District will engage with the Co-Lead, the CSC, and partner agencies to prepare a report on CERP implementation. These annual reports will evaluate progress made and provide an opportunity for the community to reassess priorities. At the five-year implementation milestone, the Air District will draw from these progress reports to reflect on key accomplishments and determine whether the goals of the CERP have been achieved and where further action is required.

Translations of the Executive Summary are available at the [Air District website](#) in Spanish, Traditional Chinese, Tagalog, Vietnamese, Tongan, and Samoan.¹ Translations of the Public Review draft CERP are available in Spanish and Traditional Chinese. To request translation of the Executive Summary or the Public Review Draft CERP in additional languages, please send an email to planning@baaqmd.gov. For any other language access questions, please get in touch with the Air District Non-Discrimination Coordinator at non-discriminationcoordinator@baaqmd.gov.

¹ Bay Area Air District, Bayview Hunters Point / Southeast San Francisco Community Emissions Reduction Plan. 2026. <https://www.baaqmd.gov/en/community-health/community-health-protection-program/bayview-hunters-point-community-emissions-reduction-plan>

Chapter 1: Introduction

In 2017, the California State Legislature passed Assembly Bill 617 (AB 617), establishing the Community Air Protection Program (CAPP). The program requires the state's air districts to work in partnership with selected communities to address air quality disparities in overburdened areas, reduce health burdens, and improve transparency, access to information, public engagement, and education through the development of Community Emissions Reduction Plans (CERPs). The Bayview Hunters Point/Southeast San Francisco (BVHP/SESF) area is one of the communities selected under AB 617. This community includes the Bayview Hunters Point and Visitacion Valley neighborhoods, as well as portions of Portola, Bernal Heights, the Mission District, McLaren Park, and Excelsior in the City and County of San Francisco (City).

Under the direction of the California Air Resources Board (CARB), the Bay Area Air District (Air District) partnered with local community-based organizations the Marie Harrison Community Foundation (MHCF), and the Bayview Hunters Point Community Advocates (collectively known as the Co-Leads) to form a Community Steering Committee (CSC). The CSC is composed of up to 25 members who live, work, or own businesses in BVHP/SESF and provide guidance throughout the CERP process to address local air quality and environmental justice concerns. The CERP is developed in collaboration with communities disproportionately impacted by air pollution.

Through an ongoing process of community engagement and shared learning of the local air pollution problems and challenges, the CERP outlines objectives, strategies, and actions to address community-identified air quality concerns and reduce cumulative air pollution burdens. It is a community-driven plan shaped by the input and leadership of CSC members and community partners to reflect local priorities and lived experiences.

The strategies and actions will be implemented over a five-year period by state, regional, and local agencies. The Air District will track implementation progress and provide annual reports throughout this period. The CERP is a community-driven plan shaped by the input and leadership of CSC members and community partners to reflect local priorities and lived experiences. They will also continue to build and maintain relationships with the community during implementation and will coordinate with agency partners to support the successful implementation of CERP strategies and actions.

BVHP/SESF CERP Chapter Overview

Chapter 1: Introduction summarizes the origin of the AB 617 legislation and describes the purpose of a CERP, highlighting community involvement as a central component of the planning process.

Chapter 2: Community Partners, Outreach, and Engagement provides background on the Co-Leads and the CSC who guided the CERP development process and conducted outreach to the broader community. It also describes the subcommittees formed to support more focused discussions and technical work. Finally, it also touches on the history of activism in the community and includes interviews with several CSC members.

Chapter 3: Vision, Principles, and Goals outlines the outcomes that the community would like to achieve in pursuing the objectives of the CERP. It explains how the community collaborated to determine shared ambitions to guide the development of the CERP.

Chapter 4: Community Description provides the history of environmental justice and longstanding community efforts in advocacy and organizing to advance equity and justice. It describes the socioeconomic, health, and land use conditions in BVHP/SESF.

Chapter 5: Air Quality Overview provides an assessment of air quality conditions in BVHP/SESF, using Air District monitoring data from monitoring sites, a local-scale emissions inventory, and air dispersion modeling to understand impacts on exposures. It includes information on criteria air pollutants (CAPs), toxic air contaminants (TACs), and ultrafine particles (UFPs).

Chapter 6: Compliance Enforcement Overview and Findings identifies the responsibility of the Air District and the CARB in carrying out enforcement duties, such as inspections, to ensure stationary and mobile sources comply with applicable regulations.

Chapter 7: Air Permitting Overview explains the Air District's permitting requirements for stationary sources that emit air pollution and outlines opportunities for BVHP/SESF community members to participate in the permitting process.

Chapter 8: Focus Areas, Strategies, and Actions explains how the Co-Leads, the CSC, and partner agencies collaborated to prepare strategies and actions to achieve the plan-level goals. It details the framework for strategy development and community-selected focus areas: Permitting and Enforcement (P&E), Traffic and Transportation (T&T), Particulate Matter, Dust, and Construction Impacts (PM&D), Monitoring and Data (M&D), Community Health Impacts (CHI), and , Production, Distribution, and Repair District and Land Use (PDR and Land Use) . It lays out CERP strategies and actions arranged by focus area.

Chapter 9: CARB Statewide Strategies, written by CARB staff, explains CARB's air quality and climate plan strategies for reducing emissions and addressing pollution concerns specific to BVHP/SESF.

Chapter 10: Implementation and Reporting outlines the approach for implementing the CERP and providing annual updates to the CSC, Air District Board of Directors, and CARB.

Chapter 11: CERP Glossary includes definitions of key terms and acronyms used throughout the CERP.

Appendix A: Community Steering Committee, Public Process, and Community Outreach lists all CSC members and their affiliations, as well as a summary of the public process that describes the approach for community outreach throughout CERP development.

Appendix B: Community Steering Committee Charter outlines the purpose and objectives of the CERP and lists the roles and responsibilities for the CSC members, Co-Leads, and Co-Chairs (CSC's elected leadership), as well as meeting procedures and a list of the CSC members.

Appendix C: CalEnviroScreen (CES) 4.0 Scores provides CES scores and percentiles for each census tract within the BVHP/SESF Community Boundary.

Appendix D: Air Pollution Overview Supplemental Information provides additional air monitoring data analysis, emissions inventory data, and modeling results.

Appendix E: Enforcement Overview and Findings Supplemental Information provides a summary of air quality complaints in BVHP/SESF between 2022-2025, Notices of Violation and Notices to Comply in BVHP/SESF between 2022-2025, and the Permitted Facilities List in BVHP/SESF.

Appendix F: Applicability Analysis for California Environmental Quality Act provides an analysis documenting that the adoption of the CERP is exempt from the California Environmental Quality Act (CEQA).

Appendix G: CSC/Co-Lead Created Materials includes the problem areas and solutions identified by MHCF, as well as the Sources, Emissions, and Data Gaps (SEDG) Final Report.

Chapter 2: Co-Lead Partnership, Community Outreach, and Community Steering Committee

History of Activism

This section is in memory of and honors the enduring legacy of community leaders Marie Harrison and Karen Jean Pierce, whose lifelong commitment to Environmental Justice helped shape the Bayview Hunters Point/Southeast San Francisco community. Their passing from respiratory illnesses underscores the continued need to improve air quality, protecting public health and addressing environmental health inequities. The Community Emissions Reduction Plan (CERP) carries forward their legacy by advancing community-driven strategies to reduce air pollution, improve health outcomes, and create a healthier future for Bayview Hunters Point/Southeast San Francisco.

<Photos forthcoming for Marie Harrison and Karen Pierce>

At the heart of Bayview Hunters Point/Southeast San Francisco's environmental justice movement were Marie Harrison and Karen Pierce, whose tireless advocacy advanced economic, social, and environmental justice and transformed their community.

Marie Harrison was a fierce champion for environmental health, driven by the high rates of asthma, respiratory illness, and cancer affecting her own family and neighbors. She was known to many as "The Mother of the Movement for Environmental Justice." Working closely with grassroots networks, Harrison was a central organizer in the community's campaign to force the closure of the PG&E power plant in 2006. For decades, she advocated for a transparent, 100% complete cleanup of the naval shipyard, while helping establish local air monitoring networks to protect the community's right to breathe clean air.²

Karen Jean Pierce, dedicated more than two decades of public service to advancing Environmental Justice and improving public health in San Francisco. As the San Francisco Department of Public Health's first environmental justice Manager, she helped shape groundbreaking policies and program that addressed health inequities, air quality, toxic exposure, and community health disparities throughout San Francisco. She worked alongside residents, advocates, health professional, community organization and public agencies including the Bay Area Air District, to improve air quality, advance equity in Bayview Hunters Point and southeastern neighborhoods of San Francisco. A guiding force behind Bayview Hunters Point Community Advocates, a respected mentor to generations of community leaders, Karen left a lasting legacy of Environmental Justice, public health, and community empowerment.³

Together, Marie Harrison, Karen Jean Pierce, and generations of environmental justice leaders, advocates, and residents helped lay the foundation for community action to advance environmental justice and protect the health and well-being of residents of the Bayview Hunters Point/Southeast San Francisco community.

² Tom Molanphy, "Remembering the Bayview Activist Who Fought for Community's Health and Dignity," San Francisco Public Press, January 13, 2026, <https://www.sfpublishpress.org/remembering-the-bayview-activist-who-fought-for-communitys-health-and-dignity/>

³ Bay Area Air District Board of Directors, Proclamation Honoring Karen Jean Pierce, Board of Directors Regular Meeting, July 1, 2026, https://baha.granicus.com/player/clip/23893?meta_id=504509

Co-Lead Partnership and Community Outreach

In November 2022, the Air District Board of Directors approved the self-nomination from the Marie Harrison Community Foundation (MHCF) and the Bayview Hunters Point Community Advocates (BVHPCA) to select Bayview Hunters Point/Southeast San Francisco (BVHP/SESF) to be the fourth AB 617 community in the San Francisco Bay Area. In February 2023, the California Air Resources Board (CARB) approved the Air District's recommendation to designate BVHP/SESF as the next AB 617 community to develop a Community Emissions Reduction Plan (CERP) in the Bay Area.

The Air District partnered with the two environmental justice organizations due to their deep ties in the community and collective experience in outreach, air quality, and environmental justice. MHCF is an environmental and social justice organization created to honor the legacy and dedication of Marie Harrison, known to many locally as "The Mother of the Movement for Environmental Justice." BVHPCA is an environmental justice organization focused on building community capacity for social change and was a Co-lead during the CERP development process through December 2025.

As Co-leads, MHCF and BVHPCA were responsible for supporting the Air District with the outreach and application process for Community Steering Committee (CSC) members, CSC onboarding and training, meeting preparation, and broad community engagement. The Co-leads also worked with the Air District to conduct outreach to increase engagement of the BVHP/SESF community, including attending community events. To learn more about the Community Outreach process, please see Appendix A: Community Steering Committee, Public Process and Community Outreach.

Community Steering Committee

The CSC consists of up to 25 members who live, work, or own businesses in the community with the majority representation from community residents. CSC members represent a wide range of sectors, including community-based organizations (CBOs), local businesses, and residents. In 2023, community members and stakeholders were selected to join the CSC through a broadly promoted application process. To ensure the CSC consisted of a diverse group, the application included questions regarding neighborhood residency, community affiliation, and strategy areas of interest. During selection, the Co-leads determined that the maximum number of participants for the CSC would be 25. During CSC recruitment, the Co-leads established a Technical Advisory Group (TAG) made up of representatives from local and state agencies, and academia with expertise in science, health, and policy to support CERP development. Public agencies represented in the TAG include the San Francisco Planning Department (SF Planning), San Francisco Department of Public Health (SFPDH), Port of San Francisco (Port), and the California Office of Environmental Health Hazard Assessment (OEHHA). Academic institutions represented on the TAG include the University of California, San Francisco (UCSF).

Starting in January of 2024, the BVHP/SESF CSC met monthly in person in Bayview Hunters Point. Public meetings were consistently held on the third Tuesday of the month from 5:00 PM to 7:30 PM. As one of the first orders of business, the CSC adopted a Charter that lays out their statement of purpose and objectives, roles and responsibilities, and meeting procedures. For more information on the Charter, see Appendix B: Community Steering Committee Charter.

The CSC elected Co-Chairs Nina Omomo (February 2024–present), Tacora Hollins (February 2024–June 2024), and Chalam Tubati (July 2024–present) to provide guidance to the Co-leads and the CSC on the CERP development process. Throughout the process, Co-Chairs met with Co-leads regularly to set agendas, review meeting materials, develop sub-committees, and provide input on monthly meetings.

The Air District ensured accessibility of the CSC meetings and the meeting materials, including agendas and presentations. All materials were posted on the Air District webpage in English, Spanish, and Chinese. To provide required third-party, neutral facilitation, coordination of logistics, required language

access services, and support of monthly meeting operations, the Air District partnered with local facilitation and logistics consultants.

Subcommittees

To support the work on more complex topics outside of monthly CSC meetings, the CSC formed two subcommittees. Participation in each subcommittee was on a volunteer basis.

Sources, Emissions, and Data Gaps Subcommittee

The Sources, Emissions, and Data Gaps Subcommittee (SEDG) was established by the CSC at the June 18, 2024 CSC meeting and first convened on June 24, 2024. The SEDG Subcommittee met until June 30, 2025. The SEDG Subcommittee consisted of seven CSC members. The goal of the SEDG Subcommittee was to inform the community map of sources of pollution and sensitive receptors and thoroughly review the Air District's planning inventory of the emissions dataset for BVHP/SESF AB 617 project area. They also gathered and analyzed additional data from the Air District and CARB. At the conclusion of the SEDG subcommittee's work, the subcommittee members prepared a final report of their findings and presented their work to the CSC. The SEDG subcommittee report was provided at CSC meetings during the strategy brainstorm phase of the CERP development process.

Planning and Strategies Subcommittee

The Planning and Strategies (P&S) subcommittee was established at the March 18, 2025 CSC meeting and first convened on April 10, 2025. The P&S subcommittee included seven CSC members and was tasked with working in partnership with Air District and agency partners to develop strategies and actions (see Chapter 8: Focus Areas, Strategies, and Actions). Air District staff, CARB staff, TAG members, Co-leads, and Co-Chairs were invited to attend the P&S subcommittee meetings. P&S subcommittee members were assigned to lead each of the six focus areas alongside an Air District captain. P&S subcommittee members met with Air District captains and technical staff, local government, and other agency staff during the strategy and action development process; provided early review and direction on the strategies and actions; and helped lead in presenting and receiving feedback on strategies and actions from the CSC. The P&S subcommittee continued to meet through completion of the strategies and actions found in Chapter 8: Focus Areas, Strategies, and Actions.

To learn more about the CSC, please see Appendix A: Community Steering Committee, Public Process, and Community Outreach.

Community Spotlight

In Spring 2026, CSC members were interviewed to share their experiences living in BVHP, including how air pollution has impacted their quality of life. CSC members highlighted the challenges of living with air pollution and provided first-hand accounts of health issues as a result.

Arieann Harrison, Co-lead Partner

Arieann Harrison is deeply rooted in Southeast San Francisco. Her family has lived in several places throughout the Southeast San Francisco community for generations, including Portero Hill, Sunnydale, Visitation Valley, Dogpatch, and Bayview Hunters Point. As the daughter of Marie Harrison, Arieann continues her family's long legacy of community advocacy as the Executive Director of the Marie Harrison Community Foundation for Social and Environmental Justice.

Arieann is deeply concerned about the cumulative impacts of air pollution from stationary sources, mobile sources, superfund sites, and industry that is right next to homes. She emphasizes that these environmental hazards directly correlate to astronomical local health disparities. Her advocacy is fueled by direct personal experience. Her sister was diagnosed with breast cancer at the age of 18, and Arieann herself has tested high for toxic chemicals. Her mother died from chronic lung disease, which she believes is linked to the mix of pollutions sources her mother was exposed to in the neighborhood.

As a Co-Lead of the Community Steering Committee, Arieann is a strong force for action, playing an instrumental role in organizing community support around the selection of BVHP/SESF as an AB617 community. She is encouraged by the program's ability to bring together diverse communities, implementing science-based data tracking, and building bridges of communication with health departments to address negative health outcomes. Throughout the CERP development process, Arieann is a voice for strict rule enforcement, community oversight on unpermitted polluters, and programs that get local youth into the sciences. For Arieann, achieving true environmental justice means ensuring that the community is not just beautified for outsiders, but that long-time residents can afford to stay, thrive, and build their own future.

"More than anything I want something my parents would be proud of, and something that makes a better place to be, and live and thrive."



Agustin (Augie) Angel Bernabe, CSC Member

Agustin is a dedicated leader, community organizer, and environmental advocate who migrated to the United States from Corral Falso, Guerrero, Mexico. He is a Bayview Hunters Point resident and has worked in Southeast San Francisco for twelve years, a journey that began as a researcher in college. Augie's extensive background in community engagement ranges from providing vital personal protective equipment, vaccine distribution, medical and food assistance to community members during the pandemic to facilitating local environmental justice academies for youth. Over the past decade, he has worked with local environmental justice organizations within Bayview Hunters Point Community.

Driven to expand the capacity of Southeast San Francisco community residents, Augie co-founded the nonprofit organization Leaders for Environmental Activism Reclaiming Their Health (Leaders4EARTH), which empowers youth and families to spearhead environmental solutions within their respective communities. Through a partnership with the Marie Harrison Community Foundation, Leaders4EARTH co-leads a Community-Led Environmental Air Research Bayview Project to build workforce pathways by training young people to deploy air monitors, gather field data, and report environmental insights directly back to their neighbors.

Over the years, Augie has experienced the health impacts of localized construction dust, idling trucks, and the pervasive sewage odors that plague the area on hot days. He works tirelessly to address these challenges by advocating for holistic community health strategies, youth engagement, workforce development, and transforming empty lots into vibrant urban green spaces. Augie envisions a future where community organizations, residents, and public agencies work together to advance environmental equity, strengthen community health, and create lasting environmental improvements for future generations.

"The beauty about the steering community is every day a lot of residents share their experiences, living here in Bayview Hunters Point, as well as being able to hear some of the expertise from our TAG (Technical Advisory Group). It shows how different stakeholders, community members, residents and TAG can come together to create opportunities for growth and get our strategies across."



Jun Zhong, CSC Member

Jun Zhong is a dedicated advocate for environmental justice through policy and planning who has lived in the Bayview community for over twenty years after immigrating from China. He brings a deep commitment to strategic civic engagement, serving as a mayoral appointee on the Bayview Hunters Point Citizens Advisory Committee, Second Vice President of the Bayview Hills Neighborhood Association, and a board member for the College Track Young Professionals Board. Jun works to build dialogue between civic leaders and neighborhood residents, especially emphasizing the importance of elevating the voices of the Asian American and Pacific Islander communities and uniting diverse communities across racial and socioeconomic lines.

Through his work on the CSC, and particularly the Sources, Emissions, and Data Gaps (SEDG) Subcommittee, Jun has found there to be a disconnect between available emissions data and lived experiences and realities for community residents. He is concerned about untracked fugitive dust from material handling centers and industrial facilities that operate right next to residential neighborhoods that provide inadequate buffer zones. Jun is particularly alarmed by the heavy toll of air pollution on families, visible by the black soot that constantly collects on street-facing windowsills along major transit thoroughfares, including his family's living room windows.

To create a healthier neighborhood, Jun advocates for robust, long-term city planning that has true "teeth," emphasizing transit-oriented development, wider and enforced buffer zones, safe housing infrastructure that's free of mold and particulate matter, and workforce training programs that create green jobs for community residents. He believes upzoning along major Bayview transit corridors is a critical lever for this transformation—enabling denser, healthier housing where residents benefit from reduced car dependency, developers can more feasibly meet environmental and air quality standards, and local businesses and local jobs thrive from a larger customer base.

"I really like specific interagency strategies and actions... because we don't want the CERP to be a 10-year or five-year event. We want it to build long, everlasting relationships between the community and civic actors—Department of Environment, or the SFPUC, or the port, or SF, Department of Public Works, MTA—all the actors being able to come together and work on something."



Makayla Scott, CSC Member

Makayla Scott is a lifelong community resident and dedicated health educator who brings a vital front-line medical perspective to local air quality advocacy. She shares a deep generational connection to Southeast San Francisco, having grown up in Visitation Valley with roots in Sunnydale and family throughout Hunters Point. Born with asthma and living near Recology, Makayla experienced firsthand environmental health disparities confronting local families, recognizing that her neighborhood shoulders the highest asthma rates in the city. Her early introduction to toxic exposures came as a teenager, learning from her father about the radiation coming from radioactive materials buried in the soil in the shipyard.

As a program manager with the grassroots organization Safer Together, Makayla conducts hands-on, in-home environmental asthma trigger assessments for Medi-Cal patients and builds and distributes air filters to local families. On the CSC, she advocates for expanding localized, accessible respiratory clinical care directly within the community, alongside practical resources that empower neighbors to take immediate, effective action against environmental illnesses. Makayla is highly enthusiastic about mobile monitoring strategies, particularly the tracking vehicle project spearheaded by the Marie Harrison Community Foundation and the Air District, which will offer the localized capacity to measure air quality variations beyond standard stationary networks.

Reflecting on her time on the committee, Makayla expresses a deep sense of pride in the intense, rigorous, and demanding effort required by the group to design a plan that truly captures the priorities and lived realities of Southeast San Francisco residents.

"The amount of, I mean, I think it's like the pressure of like trying to make something really good and make sure that you have something that captures everything of like what people's priorities as well as just like their concerns are... once it's gonna be finished, it's gonna be something that is like, you know, complete and that you actually can work off of and reference and that we can use down the line in the future."



Uzuri Pease-Greene, CSC Member

Uzuri Pease-Greene is a community leader who has lived in the neighborhood for over fifty years. She remembers when kids could play outside, and the parent collective would keep the neighborhood children in line. She remembers when mothers would carry brown paper bags to help with respiratory distress before inhalers were made available.

Uzuri is a recovering addict of 18 years who earned her G.E.D., B.A. and M.P.A. She founded and leads Community Awareness Resource Entity (CARE), a resident-founded nonprofit that provides an assortment of community services including harm reduction programs, hygiene facilities, employment support, meals for kids, and other services as needed. Having spent her life navigating the cross-pollinating neighbors among the Bayview and the Fillmore, she brings a deep, multi-generational perspective to local advocacy. Uzuri remembers the long history of families fighting rancid odors from local power plants, witnessing her own sister, brother, and granddaughter suffer from asthma in a neighborhood heavily impacted by systemic and historical neglect.

Through her active participation as a CSC member, Uzuri focuses on holding major housing developments accountable for air pollution, noting how community pressure has successfully forced projects to keep construction debris watered and covered. She is deeply committed to environmental education and power sharing, such as actively empowering residents to utilize tools like Purple Air monitors.

Uzuri envisions the CERP as a vital historical record to prevent further systemic harm and is dedicated to training the next generation of youth to write policies, run for leadership positions, and protect the environmental health of their community.

"I've learned a lot just being part of the CSC, which showed me the different things to look out for and then the different questions to ask and then empowering both youth and residents to be able to ask the same questions."



Chapter 3: Vision, Principles, and Goals

Development and Use of Vision and Principles

The vision statement describes the community's shared hopes and aspirations for clean air in Bayview Hunters Point/Southeast San Francisco (BVHP/SESF) and reflects ideas uninhibited by restraints or practicality. It helps define what the community desires from the Community Emissions Reduction Plan (CERP). The principles are specific core values to guide CERP development. Though these guiding statements were developed and voted upon by the Community Steering Committee (CSC), all partners in the CERP process are accountable for upholding the vision and principles and for using them to ensure that the CERP achieves the community's vision.

Throughout CERP development, the vision and principles function as touchpoints for ensuring integrity with the community's core values and intent.

To begin developing and discussing the vision statement and principles, the CSC participated in an activity during Meeting #7 where participants wrote ideas and thoughts on sticky notes for the overall vision, describing what they hope the CERP will achieve, and key principles or values. Through this collaborative process, CSC members participated in a discussion where they reviewed all the notes and began to synthesize ideas to inform the assembled vision and principles statements. A report back took place during Meeting #8 in August 2024, where the CSC discussed their key takeaways from the activity, and at Meeting #16, they determined next steps for further refinement by the Co-leads and Air District. The CSC voted to approve the vision and principles during Meeting #20 held in September 2025.

Once the CERP has been approved and adopted, the vision and principles will provide the blueprint for maintaining alignment with the community's ethos and priorities. The vision captures the CSC's aspirations for the future of the community. The principles guide how the CSC, Co-leads, Co-Chairs, and partner agencies advance environmental justice, foster meaningful collaboration among stakeholders, and center community perspectives in efforts to achieve restorative change and improved air quality outcomes in BVHP/SESF.

Vision

The following statement written by the CSC describes the community's vision for BVHP/SESF:

"Our vision centers on seeing our community enjoy fresh air and more green space. Where our people, especially the younger and elderly, are not afraid to go outside, exercise, or play. Where there are fewer diesel truck trips through neighborhoods and more services provided to the community. Where we look out and do not see or smell air pollution.

We envision a community free of air pollution from legacy industrial sources, where decisions are made so our community can enjoy clean air, healthy living standards, and the same outcomes as all other neighborhoods in San Francisco.

We want future generations to be protected from illnesses such as asthma and cancers that disproportionately plague the community now because we believe that everyone is entitled to a healthy environment wherever they live."

Principles

The CSC, Co-leads, Co-Chairs, and partner agencies are committed to the following principles written by the CSC as a foundation for collaboration and establishing a BVHP/SESF CERP that demonstrates:

Valued Community: The voice and values of the community will be uplifted in the CERP. The plan will acknowledge past environmental injustices and harms. The plan will acknowledge that everyone is entitled to a healthy environment wherever they live.

Engage, Partner, and Collaborate: The plan will be developed through authentic and informed communication and collaboration. The plan will actively engage and educate all members of the community, from youth to elders, in active dialogue. The plan will center knowledge from elders and ensure youth start learning about the environment at an early age.

Accountability and Transparency: The plan will seek to hold the biggest polluters accountable. It will empower the community to drive transparency and accountability in enforcement and permitting.

Promote Intergenerational Health and Community Wellness: The plan will deliver tangible outcomes and benefits that will reduce chronic illnesses and improve community health and wellbeing.

Trusted and Accessible Data: The plan will seek to improve community confidence in available air quality information. The plan will promote better accessibility, sharing, and coordination of air quality information.

Plan-Level Goals

Plan-level Goals help define the ambition of the CERP as a whole and describe the overall outcomes or end results to be achieved during CERP implementation. Progress towards the goals will be evaluated annually and at the 5-year implementation milestone.

1. **Accelerate emission reductions** for fine particulate matter (PM_{2.5}) and Toxic Air Contaminants (TACs) in BVHP/SESF with a focus on sources that contribute to local exposure so that community can breathe cleaner air, live healthier lives, and enjoy a safer environment.
2. **Advance health equity** by reducing air pollution exposures and cumulative health impacts. Achieve year-by-year declines in asthma hospitalizations and asthma-related emergency department visits, with the goal of reaching rates comparable to the citywide average by 2037.
3. **Incentivize projects** that reduce air quality emissions and pollution exposure via funding for cleaner transportation technologies, healthier homes and schools, and community greening. Make investments totaling \$10M in BVHP/SESF by 2032.
4. **Hold polluters accountable** by enhancing enforcement for both stationary and mobile sources of air pollution across the community. Effectively prioritize inspections, strengthen enforcement, improve the complaint program, and increase interagency coordination to address the community's concerns and deter future violations.
5. **Better understand local air pollution** in BVHP/SESF by combining community lived-experience with data-driven insights from air monitoring and improved emissions estimates to empower residents with knowledge, tools, and data to increase awareness and advocate for healthier neighborhoods.
6. **Foster transparency** and shared accountability among government agencies, businesses, and community so that information about air pollution, and decisions affecting air quality, are open, understandable, and responsive to community needs.

Chapter 4: Community Description

Location and Geography

The Bayview Hunters Point/Southeast San Francisco (BVHP/SESF) Community Boundary was approved by the Community Steering Committee (CSC) and is located in the southeastern part of San Francisco. This area covers about 9.2 square miles and has an estimated population of 86,952 people.⁴ Third Street is a major commercial corridor and one of the primary transportation routes serving multiple communities in the area. Highways US-101 and I-280 bisect the community and carry freight trucks and large numbers of commuters traveling between the South Peninsula and downtown San Francisco.

As shown in Figure 4-1, the BVHP/SESF Community Boundary includes the entirety of the Bayview Hunters Point and Visitacion Valley neighborhoods. It also extends north into much of Potrero Hill; west into large portions of Portola, a smaller section of Bernal Heights, and a small part of Mission District; and southwest into a few blocks of McLaren Park and Excelsior. **In this chapter, all references to BVHP/SESF specifically refer to the area within this boundary.**

Most of the BVHP/SESF lies within San Francisco Supervisorial District 10, with smaller portions located in District 9 and a few blocks in District 6.

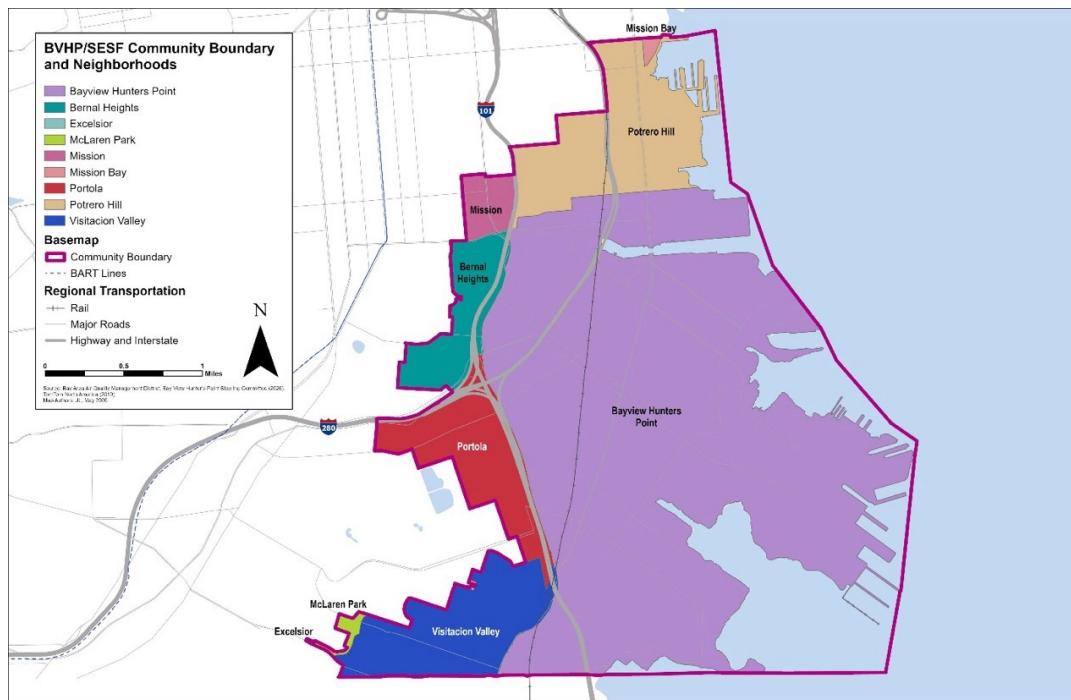


Figure 4-1. This map shows the BVHP/SESF Community Boundary, which includes the entire Bayview Hunters Point and Visitacion Valley neighborhoods and extends into portions of the Potrero Hill, Portola, Bernal Heights, Mission District, McLaren Park, and Excelsior neighborhoods. The BVHP/SESF Community Boundary is highlighted with a bold dark magenta outline. Sources: See the reference list at the end of this chapter.

⁴U.S. Census Bureau. (2023). American Community Survey 5-Year Estimates, Table B03002, Hispanic or Latino Origin by Race. Retrieved from <https://data.census.gov/>.

The BVHP/SESF Community Boundary includes the entire geographic area of ZIP code 94124, and portions of three additional ZIP codes: 94107, 94110, and 94134.^{5,6,7}

The table below lists the ZIP codes within the BVHP/SESF Community Boundary and identifies the primary neighborhood associated with each. Because neighborhood boundaries do not align exactly with ZIP code boundaries, the neighborhood shown reflects the primary area associated with that ZIP code rather than a one-to-one match.

Table 4-1. ZIP Codes and their Corresponding Neighborhoods within BVHP/SESF.

ZIP Code	Primary Neighborhood
94107	Potrero Hill
94110	Bernal Heights and Mission
94124	Bayview Hunters Point
94134	Visitacion Valley and Portola

In addition to the ZIP codes listed above, the BVHP/SESF Community Boundary includes 25 Census Tracts that fall entirely within its limits.⁸ A complete list of these Census Tracts is provided in Appendix C: CalEnviroScreen (CES) 4.0 Scores.

Important landmarks in the community include the Hunters Point Shipyard, which sits on a peninsula mostly created from a 493-acre landfill site, and Candlestick Point, another landfill-based peninsula with about 2.5 miles of shoreline along the San Francisco Bay. The Shipyard is separated from Candlestick Point by Yosemite Slough and the South Basin. Candlestick Point is best known as the former site of Candlestick Park sports stadium. Other key features there include the 154-acre Candlestick Point State Recreation Area, established in 1977, and the Alice Griffith public housing complex.⁹ Originally built in 1962, the Alice Griffith public housing complex was demolished as part of a redevelopment effort that began in 2016. The new five-story housing complex was completed in 2018.¹⁰

⁵ Although ZIP code 94188 falls within the CERP Community Boundary, the most recent American Community Survey estimates report a population of zero for this ZIP code. Source: U.S. Census Bureau. (2023). American Community Survey 5-Year Estimates, Table B03002, Hispanic or Latino Origin by Race. Retrieved from <https://data.census.gov/>.

⁶ Although ZIP code 94158 technically falls within the CERP Community Boundary, it covers only a few blocks associated with UCSF Medical Center at Mission Bay. Including 94158 in population or health estimates would therefore significantly skew the results.

⁷ To view a map of ZIP codes, please visit the "San Francisco ZIP Codes" map on the San Francisco Open Data portal at <https://data.sfgov.org/-/San-Francisco-ZIP-Codes/srq6-hmpi>.

⁸ Census Tract #06071 was excluded from this list. Although a small triangular portion of the tract falls within the BVHP/SESF Community Boundary, that area includes only two buildings, which appear to be medical offices located next to the Chase Center. Including the entire tract in the analysis would substantially distort demographic, socioeconomic, and health estimates presented in this chapter, as most of the tract lies outside the community boundary.

⁹ SF Planning, "Hunters Point Shipyard Area Plan | San Francisco General Plan," adopted June 2010, amended July 2018. https://generalplan.sfplanning.org/Hunters_Point_Shipyard.htm

¹⁰ SFHDC. Alice Griffith Phase I and III. Accessed July 8, 2026. <https://sfhdc.org/portfolio-item/alice-griffith-phase-i-and-iii/>.

Community History

Environmental racism harms Black, Indigenous, and People of Color (BIPOC) communities in many ways. Dr. Robert Bullard, considered "The Father of Environmental Justice," defines environmental racism as "any policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race."¹¹

Across the U.S., BIPOC communities face higher levels of air pollution, no matter their income. Research shows that, even though air quality in the U.S. has generally improved in recent decades, Black and Latinx/Hispanic Americans are still exposed to more air pollution than the national average.¹² For many years, racist policies and practices, including discriminatory siting of hazardous facilities, have led these communities to live in areas with high pollution levels. BIPOC communities often live near major roads, toxic waste sites, landfills, or chemical plants. They are also more likely to live in lower-quality housing, which means greater exposure to harmful conditions.¹³ Over time, high pollution burdens contribute to serious health risks. These inequalities, like many other environmental justice issues, come from a long history of systemic racism and exclusion.

To better understand the root causes of racial and place-based inequities in pollution burdens and health outcomes, it is important to study the history of policymaking and development that have contributed to these disparities. It is equally important to recognize the long history of community resistance and activism in response to these injustices. Highlighting these efforts not only honors the leadership and resilience of impacted communities but also helps inform more just and effective solutions moving forward.

With this context, the following timeline presents a brief history of BVHP/SESF. It is intended to offer a snapshot of selected historical moments, policy decisions, and community actions, while acknowledging that a far richer and more extensive history exists beyond the scope of this chapter.

¹¹ Bullard, Robert D. "Environment and Morality: Confronting Environmental Racism in the United States." United Nations Research Institute for Social Development, 2004. <https://www.csu.edu/cerc/documents/EnvironmentandMorality-ConfrontingEnvironmentalRacismInTheUnitedStates-Bullard2004.pdf>.

¹² Lane, Haley M., Rachel Morello-Frosch, Julian D. Marshall, and Joshua S. Apte. "Historical Redlining Is Associated with Present-Day Air Pollution Disparities in U.S. Cities." *Environmental Science and Technology Letters* 9, no. 4 (April 12, 2022): 345–50. <https://pubs.acs.org/doi/10.1021/acs.estlett.1c01012>.

¹³ Kaufman, Joel D., and Anjum Hajat. "Confronting Environmental Racism." *Environmental Health Perspectives* 129, no. 5 (May 20, 2021). <https://ehp.niehs.nih.gov/doi/10.1289/EHP9511>.

Timeline

Prior to colonization: The land around Candlestick Cove is home to the Yelamu, a group of the Ramaytush Ohlone people, who live along the southeastern shoreline of what is now San Francisco.¹⁴ Despite enduring violence, forced labor, and systematic attempts to erase their identity, the Ohlone persist. Their culture and traditions continue to thrive, and they carry on their ongoing struggle for sovereignty.¹⁵

1867: The California Dry Dock Company opens the Hunters Point dry docks on approximately 30 acres, supporting the region's growing ship repair industry.¹⁶

1868: The State of California authorizes San Francisco to designate the northern part of Bayview, later known as "Butchertown" for large-scale meat processing.¹⁷ Since then, the neighborhood has hosted the city's most polluting industries. These industries included steel manufacturing, ship repair, junkyards, and auto wrecking facilities.¹⁸

1930s: Federal housing policies and discriminatory lending practices such as redlining create de facto racial segregation across U.S. cities. In San Francisco, African Americans were excluded from most neighborhoods and largely restricted to Western Addition, Fillmore, and the Bayview Hunters Point neighborhood (Figure 4-2). Redlining also suppressed investment in the Bayview Hunters Point neighborhood, contributing to long-term disinvestment and a strong culture of self-reliance.¹⁹

1940: The U.S. government acquires the Hunters Point dry docks, displacing a thriving Chinese fishing community, to establish a permanent naval base at Hunters Point Naval Shipyard.²⁰ During World War II, the shipyard's primary purpose was the construction, repair, and maintenance of Navy vessels.²¹

¹⁴ SFMTA, "Bayview Community Based Transportation Plan," adopted February 18, 2020. <https://www.sfmta.com/projects/bayview-community-based-transportation-plan>.

¹⁵ Stanford University. "First Inhabitants: The Ohlone of the Peninsula." Cantor Arts Center. Accessed March 4, 2025. <https://museum.stanford.edu/exhibitions/melancholy-museum-love-death-and-mourning-stanford/first-inhabitants-essay>.

¹⁶ Casey, Conor. 2007. "Butchertown's Beginnings." FoundSF. https://www.foundsf.org/Butchertown%27s_Beginnings.

¹⁷ SF Planning, "Hunters Point Shipyard Area Plan | San Francisco General Plan," adopted June 2010, amended July 2018. https://generalplan.sfplanning.org/Hunters_Point_Shipyard.htm.

¹⁸ Ibid.

¹⁹ SFMTA, "Bayview Community Based Transportation Plan," adopted February 18, 2020.

²⁰ Ibid.

²¹ United States Nuclear Regulatory Commission. "Hunter's Point Naval Shipyard." Accessed March 3, 2026. <https://www.nrc.gov/info-finder/decommissioning/complex/hunters-point-naval-shipyard>.

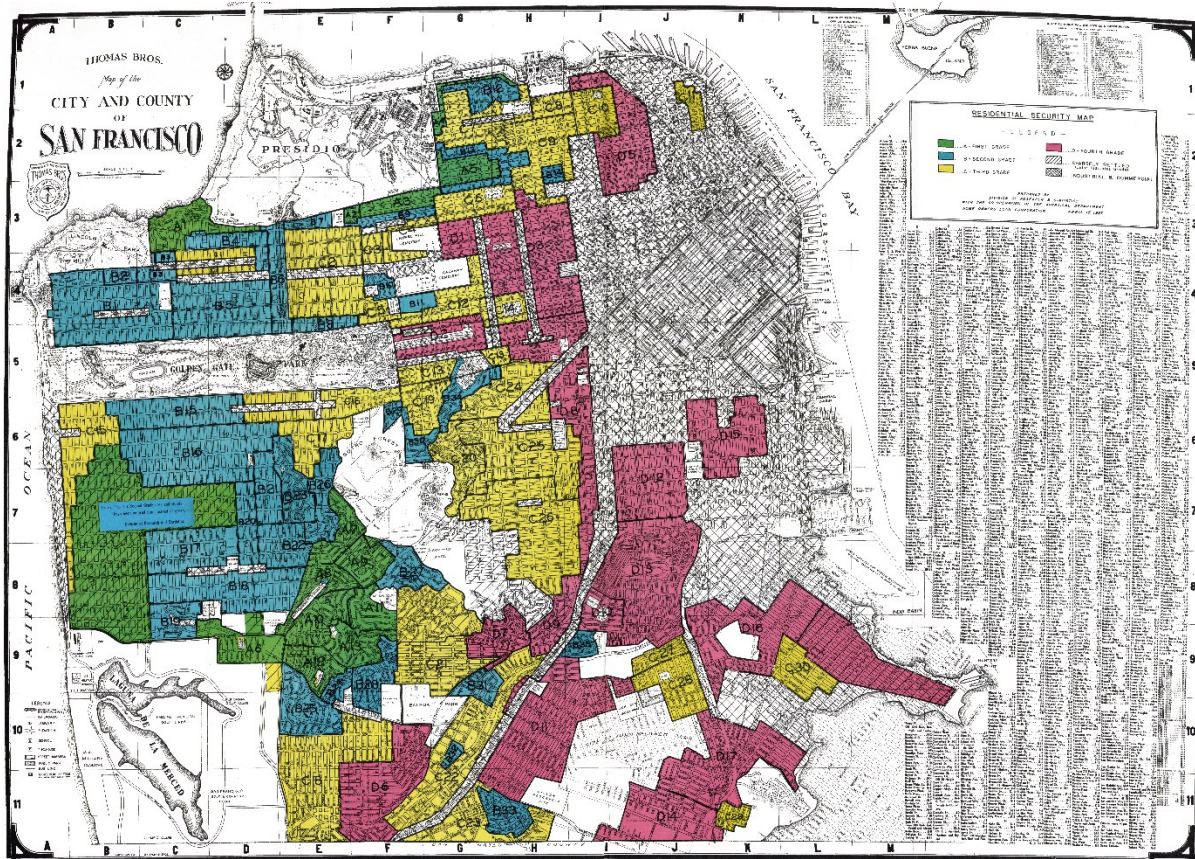


Figure 4-2. This map shows how neighborhoods were rated by the Historical Home Owners' Loan Corporation (HOLC) Redlining Map of San Francisco. Areas outlined in red were labeled as "high-risk" or "Hazardous," a practice known as redlining. Source: Nelson, Richard K., LaDale C. Winling, et al. 2023. *Mapping Inequality: Redlining in New Deal America*. Digital Scholarship Lab. <https://dsl.richmond.edu/panorama/redlining>.

1940s (World War II era): The Hunters Point Naval Shipyard spurs rapid industrial and residential growth. The area becomes widely known as the Bayview Hunters Point District.²² This transition brings a large influx of blue-collar workers and transforms Bayview Hunters Point into a busy industrial area centered on the Third Street corridor.²³

During this same period, the San Francisco Housing Authority enforces racial segregation in public housing, keeping Black and white residents separate. Wartime housing for shipyard workers is built near Bayview Hunters Point, Candlestick Point, and Potrero Hill. Facilities for African American workers are constructed from less durable materials. After the war, these temporary barracks become low-quality, segregated public housing, one of the few options for thousands of African American families displaced from the Western Addition and Fillmore by urban renewal.²⁴

²² SFMTA, "Bayview Community Based Transportation Plan," adopted February 18, 2020. <https://www.sfmta.com/projects/bayview-community-based-transportation-plan>.

²³ SF Planning, *Hunters Point Shipyard Area Plan | San Francisco General Plan*, adopted June 2010, amended July 2018. https://generalplan.sfplanning.org/Hunters_Point_Shipyard.htm

²⁴ San Francisco Planning, *Racial and Social Equity Analysis: San Francisco Family Zoning Plan*, 2025. <https://sfplanning.org/sf-family-zoning-plan>.

At the same time, jobs at the Hunters Point Shipyard and in relatively integrated industries like the railroad and postal service draw African Americans migrating from the South during the Great Migration.²⁵

1946: The Navy establishes the Naval Radiological Defense Laboratory (NRDL) at the Hunters Point Naval Shipyard to study the effects of nuclear weapons and to develop protective measures against radiation. NRDL would come to be operated until 1969.²⁶

1950s–1960s: Despite wartime growth, Bayview Hunters Point faces chronic disinvestment, limited public resources, and persistent economic inequality.²⁷

Urban renewal programs in San Francisco displace many African American families from the Western Addition and Fillmore, relocating them to Bayview Hunters Point. Discriminatory housing policies, restrictive covenants, and the San Francisco Housing Authority's "neighborhood pattern" further bar African American families from living in much of the city until 1968.²⁸

By the 1960s, Bayview Hunters Point had become one of the few areas where African American families could purchase homes, resulting in the highest rate of African American homeownership in San Francisco.²⁹ At the same time, Bayview Hunters Point also was becoming increasingly isolated from the rest of San Francisco due to freeway construction. By 1968, the neighborhood was bordered by two major regional highways: U.S. Highway 101 (the James Lick/Bayshore Freeway) and Interstate 280 (the John F. Foran Freeway). While these freeways improved regional transportation, they also created significant physical barriers that separated Bayview Hunters Point from neighboring communities. Their construction required the demolition of homes and severed many of the streets that had historically connected the neighborhood to Bernal Heights, Portola, and other surrounding areas.³⁰

1963: Author and activist James Baldwin meets with members of San Francisco's African American community, escorted by Youth for Service Executive Director Orville Luster. Baldwin aims to shed light on the actual conditions facing Black residents in the city, rather than the image San Francisco wants to project. The visit was documented in [Take This Hammer](#), a short documentary film produced by KQED.³¹

1974: The Hunters Point Naval Shipyard is closed, resulting in the immediate loss of approximately 5,100 jobs and destabilizing the local economy. The closure created long-term economic challenges for the Bayview Hunters Point community.³² Shipyard operations left behind environmental

²⁵ SFMTA, "Bayview Community Based Transportation Plan," adopted February 18, 2020. <https://www.sfmta.com/projects/bayview-community-based-transportation-plan>.

²⁶ United States Nuclear Regulatory Commission. "Hunter's Point Naval Shipyard." Accessed March 3, 2026. <https://www.nrc.gov/info-finder/decommissioning/complex/hunters-point-naval-shipyard>.

²⁷ SFMTA, "Bayview Community Based Transportation Plan," adopted February 18, 2020.

²⁸ Ibid.

²⁹ Ibid.

³⁰ San Francisco Redevelopment Agency (SFRA). Bayview Hunters Point Area B Survey: Historic Context Statement. 2010. <https://sfplanning.org/project/sf-histories-historic-context-statements#completed>.

³¹ PBS. 1964. *Take This Hammer*. The WNET Group Archives. <https://www.pbs.org/video/thirteen-specials-take-hammer/>.

³² SF Planning, "Hunters Point Shipyard Area Plan | San Francisco General Plan," adopted June 2010, amended July 2018. https://generalplan.sfplanning.org/Hunters_Point_Shipyard.htm

contamination, including radioactive and toxic waste, which continues to hinder redevelopment and raise public health concerns.³³

1979: After sustained activism, Southeast San Francisco communities secure a community center at 1800 Oakdale Avenue to mitigate the impacts of the Southeast Wastewater Treatment Plant. Led by the “Big Six”—Dr. Espanola Jackson, Eloise Westbrook, Harold Madison, Ethel Garlington, Alex Pitcher, and Shirley Jones—community members successfully advocated for the project. Built by the San Francisco Public Utilities Commission, the Southeast Community Facility remains a neighborhood hub, supporting workforce development and honoring a legacy of community leadership.³⁴

1988: The U.S. Navy officially decommissions the Hunters Point Naval Shipyard, formally ending its operations at Hunters Point.³⁵

1989: The Navy’s activities at the Hunters Point Naval Shipyard caused contamination in soil and groundwater at the site, as well as in nearby surface water and bay sediments in San Francisco Bay.³⁶ Studies conducted in 1986 identified both hazardous chemical contamination and low-level radiological contamination, bringing increased attention to environmental conditions at the shipyard. In response, the U.S. Environmental Protection Agency (U.S. EPA) added the shipyard to the National Priorities List in 1989 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA also known as Superfund), a federal program that guides the cleanup of contaminated sites to help protect human health and the environment from hazardous waste.³⁷ Cleanup, monitoring, and remediation of the contaminated site are ongoing. The Navy leads the investigation and cleanup. The U.S. EPA is the primary regulatory agency, and both the U.S. EPA and California EPA oversee and enforce the Navy’s cleanup actions.³⁸

³³ SFMTA, “Bayview Community Based Transportation Plan,” adopted February 18, 2020. <https://www.sfmta.com/projects/bayview-community-based-transportation-plan>.

³⁴ Ibid.

³⁵ SF Planning, “Hunters Point Shipyard Area Plan | San Francisco General Plan,” adopted June 2010, amended July 2018. https://generalplan.sfplanning.org/Hunters_Point_Shipyard.htm

³⁶ City and County of San Francisco. “Hunters Point Naval Shipyard: Learn More about the Shipyard and the Agencies Involved in the Cleanup Efforts.” Accessed March 3, 2026. <https://www.sf.gov/hpns-cleanup-learn>.

³⁷ United States Nuclear Regulatory Commission. “Hunter’s Point Naval Shipyard.” Accessed March 3, 2026. <https://www.nrc.gov/info-finder/decommissioning/complex/hunters-point-naval-shipyard>.

³⁸ U.S. EPA. “Hunters Point Naval Shipyard Site Profile.” Overviews and Factsheets. Accessed March 3, 2026. <https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.cleanup&id=0902722>.

1990s: Even as San Francisco's overall African American population is declining, Bayview Hunters Point emerges as the neighborhood with the city's largest African American community. Between 1980 and 1990, Bayview's African American population rose from 15,769 to 17,395, making it the only district in the city to experience an increase in its African American population during this period. By 1990, Bayview Hunters Point had surpassed the Western Addition as the center of San Francisco's African American community.³⁹



Figure 4-3 Photo showing a section of the mural *Navigating the Historical Present: Bayview Hunters Point*, created by mural artist Kenyatta A.C. Hinkle. The artwork emerged from Hinkle's year-long collaboration with multiple generations of Bayview Hunters Point residents, along with extensive research conducted in the *Shades of Bayview* archive at the San Francisco Public Library. Source: [San Francisco Arts Commission](https://www.sanfranciscoartscommission.org/).

2004: The Navy transfers the first 75 acres of the Hunters Point Naval Shipyard, also known as Parcel A, to the City and County of San Francisco (City). This land is intended for housing, parks, and commercial developments. The remaining portions of the shipyard will be transferred to the City on a parcel-by-parcel basis as environmental cleanup is completed.⁴⁰

2007: The T Third Street Muni rail line begins service between Bayview Hunters Point and downtown San Francisco, restoring rail service to Third Street for the first time since 1940. Although the T line is the city's first fully ADA-accessible light rail line, it faces reliability and travel-time challenges compared with the 15-Third bus it replaced.⁴¹

³⁹ SF Planning, "Hunters Point Shipyard Area Plan | San Francisco General Plan," adopted June 2010, amended July 2018. https://generalplan.sfplanning.org/Hunters_Point_Shipyard.htm.

⁴⁰ U.S. Navy. "Former Naval Shipyard Hunters Point." Accessed March 3, 2026. <https://www.bracpmo.navy.mil/BRAC-Bases/California/Former-Naval-Shipyard-Hunters-Point/>.

⁴¹ SFMTA, "Bayview Community Based Transportation Plan," adopted February 18, 2020. <https://www.sfmta.com/projects/bayview-community-based-transportation-plan>.

2008: The San Francisco Board of Supervisors rezones much of the city's industrial areas into Production, Distribution, and Repair (PDR) districts, with the intent of creating buffers between industrial and residential neighborhoods.⁴²

2015: Candlestick Park, the sports stadium where San Francisco's iconic football and baseball teams—the 49ers and the Giants—once played, is demolished.⁴³

2010s: Major redevelopment at Candlestick Point, the former shipyard site, and India Basin moves forward, including plans for thousands of new housing units, commercial development, roadway improvements, and expanded transit service. Delays in fully remediating contaminated soil create uncertainty around construction timelines and the delivery of public investments.⁴⁴

2018: After years of community advocacy and organizing, the Bayview Hunters Point neighborhood is officially designated an African American Arts and Cultural District by the San Francisco Board of Supervisors. The district works to celebrate African American culture while advancing equity, cultural stability, vibrancy, and economic vitality.⁴⁵

2020: The Marie Harrison Community Foundation and Bayview Hunters Point Community Advocates submit a self-nomination letter to the Air District requesting that BVHP/SESF be considered for the 2023 round of Community Emissions Reduction Plans (CERPs) under Assembly Bill 617 (AB 617).⁴⁶

2022: The Air District Board of Directors unanimously approves supporting the BVHP/SESF community nomination to the California Air Resources Board (CARB).⁴⁷

2023: CARB approves the Air District's partnership with the Marie Harrison Community Foundation and the Bayview Hunters Point Community Advocates to carry out a CERP process to improve air quality in BVHP/SESF.⁴⁸

⁴² SFMTA, "Bayview Community Based Transportation Plan," adopted February 18, 2020. <https://www.sfmta.com/projects/bayview-community-based-transportation-plan>.

⁴³ CBS News. 2015. "Demolishing Candlestick Park." <https://www.cbsnews.com/pictures/san-franciscos-candlestick-park-undergoes-demolition/>.

⁴⁴ Ibid.

⁴⁵ SFMTA, "Bayview Community Based Transportation Plan," adopted February 18, 2020.

⁴⁶ Marie Harrison Community Foundation and Bayview Hunters Point Community Advocates. 2020. "RE: AB 617 Community Self-Nomination Submittal for Bayview Hunters Point." September 21. https://www.baaqmd.gov/~media/files/ab617-community-health/bayview-hunters-point/documents/bvhp-colead-community-self-nomination-letter-to-baaqmd-ocr-pdf.pdf?rev=a16bd7025d364ff097889af509ac08f1&sc_lang=en.

⁴⁷ Bay Area Air District. 2022. "Assembly Bill (AB) 617 Community Emissions Reduction Plan Recommendation for Bayview Hunters Point/Eastern San Francisco." Board of Directors Meeting, November 2. https://www.baaqmd.gov/~media/files/board-of-directors/2022/bod_presentation_110222_op-pdf.pdf?rev=30408f4569cb4d4a906a214b2a95cc78&sc_lang=en.

⁴⁸ Bay Area Air District. 2023. "State Approves Bayview Hunters Point / Southeast San Francisco for AB 617 Funding to Expand Emissions Reduction Work." February 27. <https://www.baaqmd.gov/en/news-and-events/page-resources/2023-news/022723-bvhp-ab-617>.

Cumulative Impacts, CalEnviroScreen, and Senate Bill 1000

Many low-income communities, like BVHP/SESF, continue to face a disproportionate burden of pollution. These communities often experience additional hardships, such as socioeconomic stressors and pre-existing health conditions, which increase their vulnerability to the impacts of pollution.⁴⁹

According to the Office of Environmental Health Hazard Assessment (OEHHA), cumulative impacts mean the "exposures and public health or environmental effects from all sources of pollution in a geographic area. Cumulative impacts also take into account groups of people that are especially sensitive to pollution's effects, such as young children and people with asthma, and socioeconomic factors, such as poverty, race and ethnicity, and education."⁵⁰

The U.S. EPA defines cumulative impacts as "the totality of exposures to combinations of chemical and non-chemical stressors and their effects on health, well-being, and quality of life outcomes."⁵¹ Chemical and non-chemical stressors can come from the built, natural, and social environments. Chemical stressors affect people through exposure to pollutants in the air, water, and land, while non-chemical stressors impact individuals and communities by limiting access to essential social determinants of health, such as safe housing, healthy food, and green spaces. Non-chemical stressors also include the negative effects of extreme weather events, such as heatwaves, flooding, and wildfires, which are becoming more frequent and severe due to climate change.⁵²

Cumulative impacts take into account the "totality of exposures" experienced over a person's lifetime. Some communities may face a higher concentration of stressors—like pollution, limited healthcare access, poverty, or inadequate housing—compared to others. Cumulative impacts can affect people both directly and indirectly. They can be assessed within specific geographic areas (such as neighborhoods or cities), or across distinct population groups (such as those defined by age, race, or income).⁵³

To help address the cumulative impacts facing California communities, OEHHA developed [CalEnviroScreen](#).⁵⁴ CalEnviroScreen evaluates indicators across pollution, health, and socioeconomic factors, designating the top 25% of census tracts statewide as DACs. These designations guide funding from California's Cap-and-Invest Program, prioritize toxic site cleanup, and support sustainable economic development.⁵⁵ This tool uses a place-based cumulative impacts framework to identify overburdened communities across the state, guiding the development and implementation of targeted

⁴⁹ "CalEnviroScreen 4.0." 2021. Office of Environmental Health Hazard Assessment. <https://oehha.ca.gov/media/downloads/calenviroscreen/report/calenviroscreen40reportf2021.pdf>.

⁵⁰ About CalEnviroScreen. "What Are Cumulative Impacts?" Office of Environmental Health Hazard Assessment (OEHHA). Accessed March 17, 2025. <https://oehha.ca.gov/calenviroscreen/about-calenviroscreen>.

⁵¹ Ibid.

⁵² Ibid.

⁵³ Ibid.

⁵⁴ State of California Office of Environmental Health Hazard Assessment. "CalEnviroScreen 4.0". 1 May 2023. <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>.

⁵⁵ California Environmental Justice Alliance and Placeworks. 2018. SB 1000 Implementation Toolkit: Planning for Healthy Communities. July. <https://calgreenzones.org/sb-1000-toolkit/>.

policies, investments, and programs designed to reduce pollution burdens for the most vulnerable and marginalized communities.

Within the BVHP/SESF community, nearly half of the census tracts, 12 out of 25, have CalEnviroScreen 4.0 scores at or above the 70th percentile, the threshold the Air District uses to designate Overburdened Communities in the Bay Area.⁵⁶

A complete list of BVHP/SESF census tracts and their CalEnviroScreen 4.0 scores is provided in Appendix C: CalEnviroScreen (CES) 4.0 Scores.

San Francisco Environmental Justice Communities

California Senate Bill 1000 (SB 1000), also known as the Planning for Healthy Communities Act, was authored in 2016 by Senator Connie Leyva and co-sponsored by the California Environmental Justice Alliance and the Center for Community Action and Environmental Justice. The law requires cities and counties containing Disadvantaged Communities (DACs) to incorporate environmental justice policies into their General Plan. These policies aim to reduce the disproportionate health risks faced by communities affected by pollution, unsafe housing, limited access to healthy food, inadequate public facilities, and other environmental justice issues. SB 1000 mandates that local jurisdictions rely on CalEnviroScreen to identify DACs.⁵⁷

In San Francisco, Bayview Hunters Point (ZIP code 94124), South of Market, Treasure Island, and Tenderloin neighborhoods are officially recognized as DACs. However, community members and City agencies have noted that other areas facing significant environmental and health challenges are not captured by the current CalEnviroScreen criteria. To address this gap, and in line with SB 1000 and guidance from the Governor's Office of Land Use and Climate Innovation (LCI), San Francisco Planning Department conducted additional analysis. The result is the EJ Communities Map (Figure 4-4), which identifies Environmental Justice Communities using a gradient of pollution and social vulnerability.⁵⁸

This map builds on CalEnviroScreen data, supplemented with local data to better reflect conditions in San Francisco. Areas shown in red on the map represent the top one-third of cumulative environmental hazards in the city. These areas largely overlap with southern and eastern San Francisco, including the Bayview Hunters Point neighborhood, Mission District, Visitacion Valley, and Potrero Hill. The map also highlights areas with high pollution burdens that are not included in CalEnviroScreen 4.0 due to missing data or low population, shown with a red-and-white hatch pattern.⁵⁹

⁵⁶ Air District Rule 2-1 defines an Overburdened Community as an area located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0, as having an overall CalEnviroScreen score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract. Learn more at <https://www.baaqmd.gov/en/news-and-events/page-resources/2021-news/121521-permit-rule>.

⁵⁷ California Environmental Justice Alliance and Placemarks. *SB 1000 Implementation Toolkit: Planning for Healthy Communities*. July 2018. <https://calgreenzones.org/sb-1000-toolkit/>.

⁵⁸ San Francisco Planning. 2023. *San Francisco Environmental Justice Communities Map: Technical Documentation*. <https://citypln-m-extn.sfgov.org/SharedLinks.aspx?accesskey=8d8d840a49816b53aa7206cb3d48aaec054b075ca7f76f995c40f2babaca4967&VaultGUID=A4A7DACD-B0DC-4322-BD29-F6F07103C6E0>.

⁵⁹ Ibid.

In the following three sections of this chapter, we examine local conditions in BVHP/SESF— including socioeconomic factors, health outcomes, land use patterns, and transportation infrastructure—that contribute to and reflect the cumulative impacts experienced in the community.

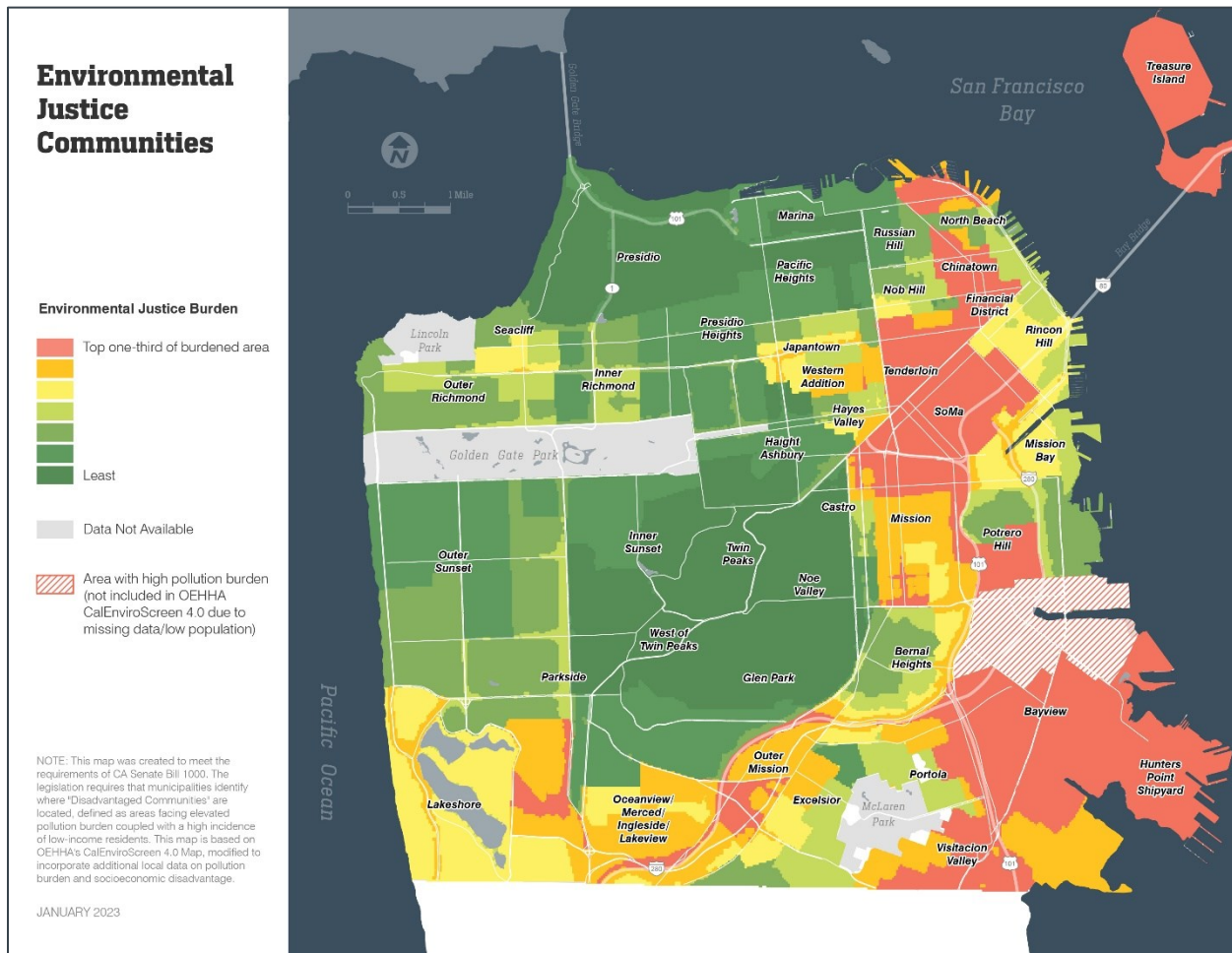


Figure 4-3. This map shows areas of San Francisco designated as Environmental Justice Communities under Senate Bill 1000. Areas shown in red represent the top one-third most burdened communities in the city. Source: SF Planning (2023). https://generalplan.sfplanning.org/images/environmental-justice-framework/Environmental_Justice_Communities-Map.pdf.

Population and Economic Profile

The data in this section are from the 2019–2023 American Community Survey 5-year estimates and are analyzed at the census tract level. As noted in "Location and Geography," the BVHP/SESF Community Boundary includes 25 census tracts entirely within its limits. Therefore, the estimates presented here reflect only the population living within the BVHP/SESF Community Boundary. A full list of these census tracts is provided in Appendix C: CalEnviroScreen (CES) 4.0 Scores.

Age Distribution

About 86,952 people live in BVHP/SESF.⁶⁰ This is 10.4% of San Francisco's total population of approximately 836,321 people.⁶¹

The age distribution of the BVHP/SESF population highlights the presence of groups that are particularly susceptible to air pollution-related health impacts. As shown in Figure 4-5, approximately 5% of the population is under the age of five, while about 15% is 65 years of age or older. These age groups are especially important because young children and older adults are among the most sensitive to the health effects of air pollution. An additional 16% of the population is between the ages of five and 19, and 21% is between the ages of 50 and 64.

Compared to San Francisco, BVHP/SESF has a larger proportion of children under the age of 5, as well as children and adolescents under the age of 19 (Figure 4-5). A younger population can indicate elevated community vulnerability to air pollution, since children are among the most sensitive groups to health impacts (see "Built Environment" below).

Seniors are also highly susceptible to air pollution. In BVHP/SESF, the proportion of adults aged 65 and older is smaller, while the proportion of adults aged 50-64 is higher compared with San Francisco overall (Figure 4-5). Several factors may explain this pattern, for example: adults of working age may be moving out of BVHP/SESF upon retirement; seniors may be facing challenges aging in place due to housing quality or limited supportive infrastructure and thus may be forced to move out; or fewer adults may be living past the age of 65 because of the cumulative impacts in BVHP/SESF that contribute to elevated mortality rates and a lower median age at death (see "Health Outcomes Related to Air Pollution" below for more details).

Population Distribution by Age Groups in BVHP/SESF, San Francisco, and the Bay Area (2019-2023)

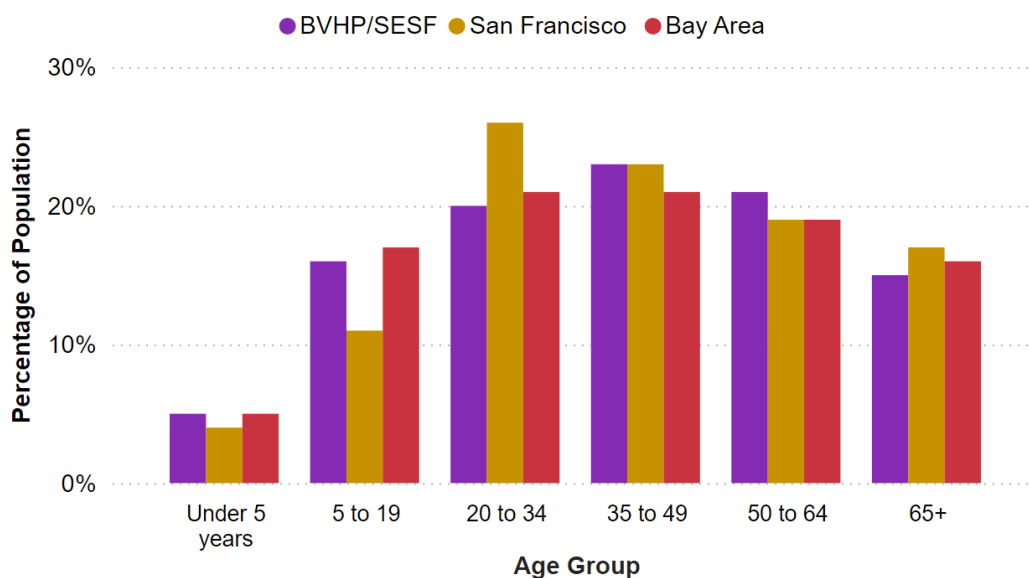


Figure 4-4. This chart shows the percentage of the population in BVHP/SESF, San Francisco, and the Bay Area by age group. Source: U.S. Census Bureau. (2023). American Community Survey 5-Year Estimates, Table S0101, Age and Sex. Retrieved from <https://data.census.gov>.

⁶⁰ U.S. Census Bureau. (2023). American Community Survey 5-Year Estimates, Table B03002, Hispanic or Latino Origin by Race. Retrieved from <https://data.census.gov/>.

⁶¹ Ibid.

Race and Ethnicity

BVHP/SESF is predominantly a BIPOC community, compared to San Francisco and the Bay Area overall (Figure 6). Asian residents make up 42% of the BVHP/SESF population, compared to 35% in San Francisco and 28% across the Bay Area. Latinx/Hispanic residents account for 23% of the population in BVHP/SESF, similar to the Bay Area overall (25%) and somewhat higher than San Francisco (16%). Black or African American residents make up 13% of the population in BVHP/SESF—notably higher than both San Francisco (5%) and the Bay Area (6%). White residents represent 17% of the community, compared to 38% in San Francisco and 36% regionwide. Native Hawaiian and Other Pacific Islander and American Indian and Alaska Native residents represent less than 1% of the population in all three areas.

BIPOC communities are disproportionately likely to live in neighborhoods like BVHP/SESF, where pollution exposure and related health burdens are higher. The racial and ethnic diversity in BVHP/SESF, particularly its higher proportions of Black or African American, Latinx/Hispanic, and Asian community members, highlights the environmental justice concerns this plan seeks to address.

Racial and Ethnic Composition of the Population in BVHP/SESF, San Francisco, and the Bay Area (2019-2023)

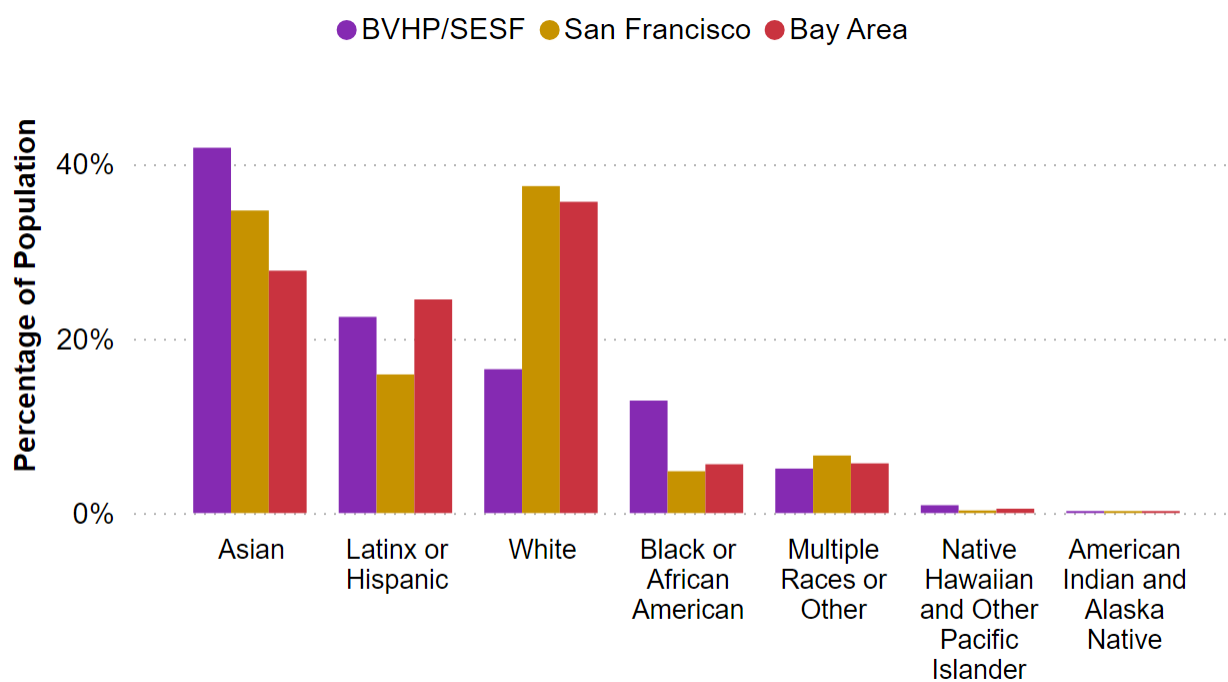


Figure 4-5. This chart shows the percentage of people from different racial and ethnic backgrounds living in BVHP/SESF, San Francisco, and the Bay Area. Categories from left to right are: Asian, Latinx or Hispanic, White, Black or African American, Multiple Races or Other, Native Hawaiian and Other Pacific Islander, and American Indian and Alaska Native. Source: U.S. Census Bureau. (2023). American Community Survey 5-Year Estimates, Table B03002, Hispanic or Latino Origin by Race. Retrieved from <https://data.census.gov/>.

Educational Attainment

Census data on educational attainment highlights the economic disparities affecting BVHP/SESF (Figure 4-7). Educational attainment, defined as the highest level of education an individual has completed, is widely used as an indicator of economic opportunity, since higher levels of education are generally associated with higher earnings and more stable employment.⁶²

In BVHP/SESF, adults ages 25 and older have lower levels of educational attainment compared to San Francisco and the Bay Area overall. Approximately 21% of adults lack a high school diploma, nearly double the 11% in both San Francisco and the Bay Area. An additional 19% have only a high school diploma, compared to 11% in San Francisco and 15% in the Bay Area.

At the higher end of the educational attainment spectrum, 37% of adults in BVHP/SESF hold a bachelor's degree or higher—substantially lower than the 60% in San Francisco and 51% in the Bay Area. Meanwhile, 23% of adults in BVHP/SESF have some college education or an associate degree, similar to the Bay Area (23%) and slightly higher than San Francisco (17%).

Overall, these patterns indicate that among adults aged 25 and older, a smaller proportion in BVHP/SESF hold a bachelor's degree compared with adults in San Francisco and the Bay Area overall. In contrast, a larger proportion of adults in BVHP/SESF have either some college education or an associate's degree, a high school diploma, or have not completed high school, relative to San Francisco and the broader region.

Educational Attainment in BVHP/SESF, San Francisco, and the Bay Area (2019-2023)

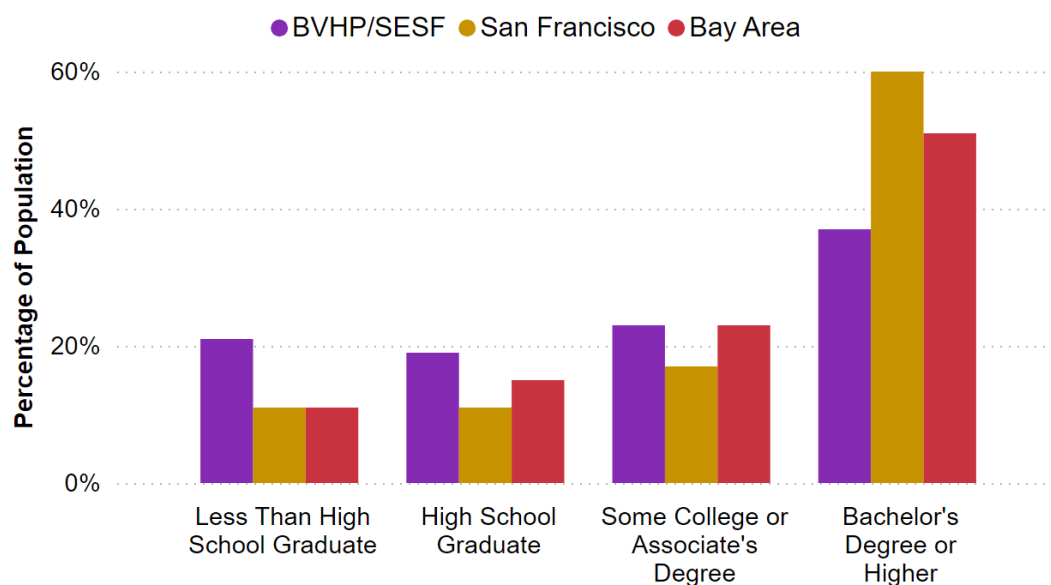


Figure 4-6. This chart shows the educational attainment of adults aged 25 and older in BVHP/SESF, San Francisco, and the Bay Area. Source: U.S. Census Bureau. (2023). American Community Survey 5-Year Estimates, Table S1501, Educational Attainment. Retrieved from <https://data.census.gov>.

⁶² The Census measures educational attainment among adults who are at least 25 years of age.

Poverty

Low-income individuals and families living in poverty, defined as earning incomes at or below 200% of the federal poverty level, experience limited access to necessities and fewer opportunities to live healthy lives. Limited financial resources constrain housing options, making it more difficult to secure safe and stable housing and increasing the likelihood of living in polluted or disinvested communities or working in hazardous conditions. Poverty also limits access to nutritious food, education, employment opportunities, transportation, and health insurance. Consequently, poverty is associated with higher rates of chronic diseases such as diabetes and heart disease, increased acute and chronic stress, and a greater risk of premature death.⁶³

Community members in BVHP/SESF experience higher levels of economic hardship than residents of San Francisco and the Bay Area overall. Approximately 29% of the population in BVHP/SESF lives below 200% of the federal poverty level, compared to 21% in San Francisco and 18% in the Bay Area (Figure 4-8).

Population Living at or Below 200% of the Poverty Level in BVHP/SESF, San Francisco, and the Bay Area (2019-2023)

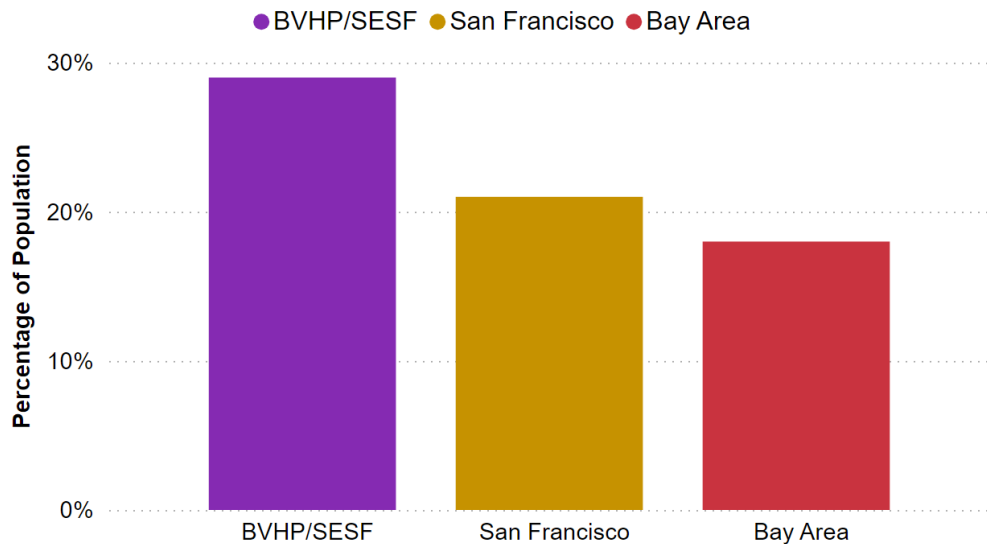


Figure 4-7. This chart shows the percentage of residents living at or below 200% of the federal poverty level in BVHP/SESF, San Francisco, and the Bay Area. Source: U.S. Census Bureau. (2023). American Community Survey 5-Year Estimates, Table C17002, Ratio of income to poverty level in the past 12 months. Retrieved from <https://data.census.gov>.

Unemployment

Unemployment is associated with poorer mental and physical health outcomes, including depression, anxiety, low self-esteem, chronic illness, and increased mortality. Unemployed individuals report worse overall health and higher rates of risky behaviors such as smoking and alcohol misuse. Job loss can limit access to essential goods and services and may lead to the loss of benefits such as health insurance,

⁶³ California Department of Public Health (CDPH), Office of Health Equity. 2019. *Healthy Communities Data and Indicators Project: Poverty Rate (200% Federal Poverty Level)*. <https://data.chhs.ca.gov/dataset/poverty-rate-by-california-regions/resource/56fc8a93-e356-412d-9a1d-07d016ae8137>.

further worsening health outcomes. These effects often extend beyond the individual, impacting family members as well. The health risks of unemployment are especially severe for people living in or near poverty, and longer periods of unemployment increase the likelihood of negative health effects.⁶⁴

The unemployment rate within the BVHP/SESF area is higher at 7.6%, compared to 5.6% in San Francisco and 5.2% in the Bay Area, highlighting the economic hardship faced by the community (Figure 4-9).

The unemployment rate represents the percentage of people aged 16 and over in the labor force who are unemployed.⁶⁵ According to the U.S. Census Bureau, people are considered unemployed if they are 16 or older and (A) did not work during the "reference week," (B) were actively looking for a job in the past four weeks, and (C) were available to start working. This also includes people who were laid off and waiting to return to their job, as long as they were available to work.⁶⁶

Unemployment Rates in BVHP/SESF, San Francisco, and the Bay Area (2019-2023)

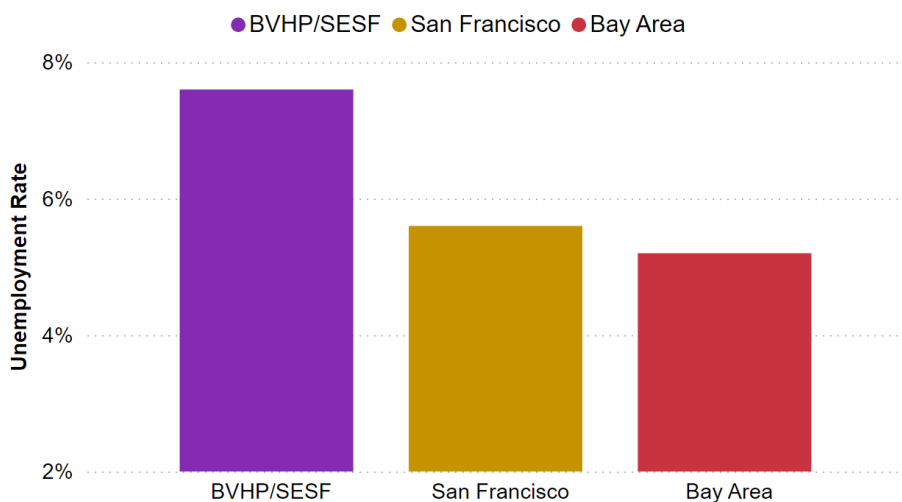


Figure 4-8. This chart shows the percentage of people aged 16 and older in the workforce who are unemployed in BVHP/SESF, San Francisco, and the Bay Area. Source: U.S. Census Bureau. (2023). American Community Survey 5-Year Estimates, DP03, Selected Economic Characteristics. Retrieved from <https://data.census.gov/>.

⁶⁴ California Department of Public Health (CDPH), Office of Health Equity. 2021. *Healthy Communities Data and Indicators Project: Unemployment and Health*. https://www.cdph.ca.gov/Programs/OHE/CDPH%20Document%20Library/HCI/Unemployment/ADA_HCI_Unemployment_fact_sheet_2021_v2.pdf.

Let's Get Healthy California. 2016. *Creating Healthy Communities: Reducing Unemployment*. <https://letsgethealthy.ca.gov/goals/creating-healthy-communities/reducing-unemployment/>.

⁶⁵ The unemployment rate does not include people who are not part of the workforce, such as students, stay-at-home parents, retired individuals, seasonal workers not looking for work during the off-season, people in institutions, or those doing unpaid family work for less than 15 hours in the "reference week."

⁶⁶ The "reference week" is the calendar week just before the date when the Census survey was completed or the interview took place. Source: U.S. Census Bureau. "American Community Survey and Puerto Rico Community Survey 2023 Subject Definitions," 2023. https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2023_ACSSubjectDefinitions.pdf.

Health Outcomes Related to Air Pollution

This section presents local public health data from San Francisco Department of Public Health (SFDPH) to describe health conditions linked to air pollution in BVHP/SESF. For a more comprehensive discussion of health outcomes and community well-being indicators, please refer to the latest [San Francisco Community Health Assessment \(CHA\)](#) created by SFDPH.⁶⁷

Decades of research have shown that air pollution can worsen lung and heart diseases and contribute to other serious health issues.⁶⁸ When people inhale air pollution, harmful pollutants can enter the nose, throat, and lungs, and in some cases travel to other organs, causing short-term and/or long-term damage over time.⁶⁹

Chapter 5: Air Quality Overview, provides a detailed look at the sources of air pollution in BVHP/SESF and the health effects of specific pollutants. For example, the Overview of Air Pollution and Health Effects section discusses how particulate matter (PM) is a major health concern. Fine particulate matter (PM_{2.5}) can travel deep into the lungs and bloodstream, contributing to serious conditions such as heart disease, emphysema, and even premature death. Short-term effects may include bronchitis and asthma attacks. The section also highlights concerns about toxic air contaminants (TACs), also known as air toxics, which are pollutants linked to cancer and other serious health issues affecting the nervous, reproductive, developmental, cardiovascular, and respiratory systems.

Some people face higher risks of illness or premature death from air pollution due to increased exposures, greater vulnerability, or both. A person's vulnerability to air pollution is shaped by various factors, including activity levels, genetics, pre-existing health conditions, nutrition, and social and economic circumstances. The social and economic factors are often shaped by systemic racism, which affects access to healthcare and reinforces racial segregation. As a result of systemic racism, BIPOC communities are more likely to live in more polluted areas that have historically lacked government investment in services and infrastructure. For example, research shows that BIPOC communities and low-income communities experience higher exposure to air pollution and, as a result, face an increased risk of negative health effects.⁷⁰ Children, seniors, pregnant women, and individuals with pre-existing heart and lung conditions are especially vulnerable to the harmful effects of air pollution.⁷¹

For a detailed discussion of air pollution in BVHP/SESF, including how it impacts health, please refer to Chapter 5: Air Quality Overview.

⁶⁷ SFDPH, "San Francisco Community Health Assessment (CHA)" 2024. <https://www.sf.gov/san-francisco-community-health-reports-and-plans>.

⁶⁸ United States Environmental Protection Agency (US EPA). "Research on Health Effects from Air Pollution," October 28, 2020. <https://19january2025snapshot.epa.gov/air-research/research-health-effects-air-pollution/index.html>

⁶⁹ "Common Air Pollutants." California Air Resources Board. Accessed March 12, 2025. <https://ww2.arb.ca.gov/resources/common-air-pollutants>.

⁷⁰ US EPA. "Study Finds Exposure to Air Pollution Higher for People of Color Regardless of Region or Income," September 20, 2021. <https://19january2025snapshot.epa.gov/sciencematters/study-finds-exposure-air-pollution-higher-people-color-regardless-region-or-income/index.html>.

⁷¹ US EPA. "Research on Health Effects from Air Pollution," October 28, 2020. <https://19january2025snapshot.epa.gov/air-research/research-health-effects-air-pollution/index.html>.

Note on Health Data Sources

All public health data in this section were obtained from SFDPH and are reported at either the ZIP code or census tract level, depending on data availability and privacy protections.

ZIP code-level data extends beyond the BVHP/SESF Community Boundary, which includes all of ZIP code 94124 and portions of ZIP codes 94107, 94110, and 94134. Consequently, ZIP code-level estimates reflect populations and areas outside the defined Community Boundary. In addition, neighborhood names are provided for reference only and do not represent a one-to-one geographic match, as neighborhood and ZIP code boundaries do not fully align, except for ZIP code 94124, which closely matches the Bayview Hunters Point neighborhood boundary.

In contrast, census tract-level data align more closely with the BVHP/SESF Community Boundary because the boundary follows census tract lines. This allows for more geographically precise estimates that exclusively reflect the population living within the BVHP/SESF Community Boundary.

Note on the Impact of the COVID-19 Pandemic

The COVID-19 pandemic placed significant strain on city systems and worsened existing health inequities. At the same time, it revealed the resilience of San Francisco's communities. Community members mobilized quickly to provide essential resources, including food and masks. As a result, San Francisco achieved one of the lowest COVID-19 mortality rates in the nation and maintained some of the highest sustained vaccination rates nationally. These outcomes reflect the community's strong commitment to health.⁷²

Despite these successes, the pandemic deepened long-standing health disparities that continue to inequitably affect San Franciscans. It also negatively impacted social determinants of health—such as income inequality and access to healthcare, which significantly influence overall health and well-being.⁷³

This section of the Community Description includes health data from 2017 through 2023, reflecting the immediate impacts and longer-term consequences of the pandemic.

Median Age at Death

Median age at death is a measure of mortality and an indicator of the overall health of a population. It represents the 50th percentile age at death, meaning that half of the deaths occur among people younger than this age and half occur among people older. The median age at death is calculated by ordering all recorded deaths by age and identifying the midpoint of the distribution.⁷⁴

Between 2019 and 2023, the median age at death for San Francisco residents was four years higher than for community members in BVHP/SESF. During this period, a total of 31,541 deaths were recorded in San Francisco, including 3,074 deaths in BVHP/SESF (Table 4-2). Among these recorded deaths, the median age at death was 75.0 years in BVHP/SESF, compared with 79.0 years for the San Francisco population

⁷² SFDPH, *Community Health Needs Assessment (CHA)*. 2024.

https://media.api.sf.gov/documents/San_Francisco_Population_Health_CHA_2024_2025-04.cleaned.pdf.

⁷³ Ibid.

⁷⁴ New Jersey Department of Health. "Complete Health Indicator Report: Age at Death." Accessed March 24, 2026.

<https://www-doh.nj.gov/doh-shad/indicator/complete/AvgAgeAtDeath.html>.

overall (Table 4-2). These findings suggest that community members in BVHP/SESF tended to die at younger ages than residents across San Francisco.⁷⁵

Differences in the median age at death across geographic areas may reflect a range of factors, including exposure to environmental pollution, such as air pollution, access to healthcare, socioeconomic conditions, and other social determinants of health.⁷⁶

Table 4-2. Comparison of Median Age at Death Between BVHP/SESF and San Francisco for Deaths Occurring from 2019 to 2023.

Population group	Total # of deaths	Median (50th percentile)
San Francisco	31,541	79 years
BVHP/SESF	3,074	75 years

Source: San Francisco Department of Public Health, Population Health Division – Center for Data Science, with data from the California Department of Public Health (CDPH), Vital Records Business Intelligence System (VRBIS).

Data Note: Median age at death is based on data from the 25 census tracts located entirely within the BVHP/SESF Community Boundary.

Asthma Emergency Department Visits and Hospitalizations

Asthma is a chronic disease that causes inflammation in the lungs and airways, affecting over 25 million people in the U.S., including 4 million children.⁷⁷ An asthma attack occurs when the airways become swollen and clogged, making it difficult to breathe. These attacks can range from mild to life-threatening, and chronic asthma can impact a child's physical, cognitive, social, and emotional development. Environmental triggers such as secondhand smoke, dust mites, mold, air pollution, pet dander, and pests like cockroaches can worsen asthma or cause attacks. Air pollution can both exacerbate existing asthma and increase the risk of developing it.⁷⁸

Asthma does not affect all groups equally. Some of the most impacted populations include children, older adults, BIPOC communities, and individuals with lower incomes. These disproportionate impacts may result from environmental factors associated with socioeconomic status, such as housing conditions or living in close proximity to pollution sources.⁷⁹

Data Note: Rates of asthma emergency department visits and hospitalizations among children under age four and all-age groups are based on data reported at the ZIP code level for the four ZIP codes that intersect the BVHP/SESF Community Boundary (see "Location and Geography" above). Only ZIP code 94124 falls entirely within BVHP/SESF, while ZIP codes 94107, 94110, and 94134 extend beyond it.

⁷⁵ San Francisco Department of Public Health, Population Health Division – Center for Data Science. 2026. *Air District Data Pull*.

⁷⁶ Ibid.

⁷⁷ US EPA. "Indicators of Environmental Health Disparities: Childhood Asthma," 2024. <https://19january2025snapshot.epa.gov/environmentaljustice/indicators-environmental-health-disparities-childhood-asthma/index.html>

⁷⁸ Ibid.

⁷⁹ Ibid.

Therefore, these ZIP code-level estimates reflect populations and geographic areas outside the BVHP/SESF Community Boundary.

Children Age 4 and Under

Asthma is especially concerning for young children due to their small and still developing airways. Children also breathe faster and take in more air for their size than adults. Across the country, children of color have higher rates of asthma and asthma-related emergencies. These disparities are also shaped by systemic inequities, such as limited access to medical care, living closer to pollution sources, poor housing conditions, and higher levels of chronic stress.⁸⁰

Young children living in ZIP codes corresponding to the Bayview Hunters Point and Visitacion Valley neighborhoods experience higher rates of asthma emergencies than children across San Francisco. Between 2017 and 2021, about 31 out of every 1,000 children under age 4 in the Bayview Hunters Point neighborhood visited the emergency department due to asthma, compared with 20 out of every 1,000 children in Visitacion Valley, and 11 out of every 1,000 children in San Francisco (Figure 4-10). Asthma hospitalizations showed a similar pattern: 11 out of every 1,000 children in the Bayview Hunters Point neighborhood and 7.5 per 1,000 in Visitacion Valley were hospitalized for asthma, compared with 3.5 per 1,000 children across San Francisco (Figure 4-11). In other neighborhoods within BVHP/SESF, asthma emergency department visits and hospitalizations among young children were generally similar across San Francisco.

These higher rates suggest that systemic factors and environmental conditions in these neighborhoods may contribute to more frequent asthma attacks and hospitalizations for young children. This considerable difference highlights health inequities and reinforces what many in the community have long understood: that children in BVHP/SESF experience higher exposure to environmental causes of asthma and asthma attacks, as well as limited access to preventive care, and/or other systemic challenges related to asthma onset and management.

⁸⁰ US EPA. "Coordinated Federal Action Plan to Reduce Racial and Ethnic Asthma Disparities." May 2012. <https://19january2025snapshot.epa.gov/asthma/coordinated-federal-action-plan-reduce-racial-and-ethnic-asthma-disparities>.

Asthma-Related Emergency Department Visits Among Children Ages 0-4 in San Francisco and BVHP/SESF by ZIP Code (2017–2021)

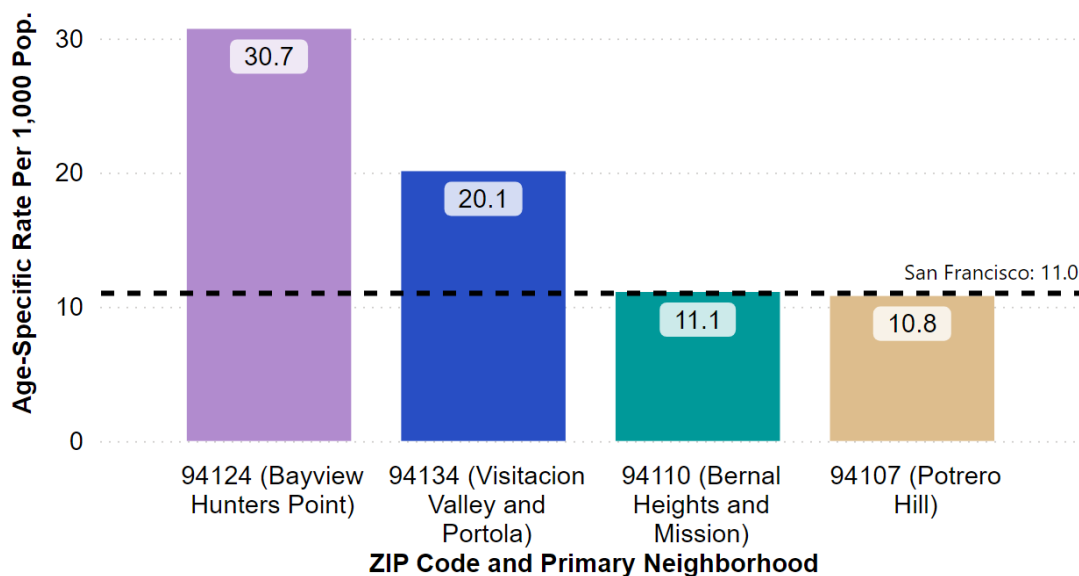


Figure 4-9. This chart shows rates of emergency department visits for asthma among children aged 4 and under, measured per 1,000 children, by ZIP code and primary neighborhood. Source: San Francisco Department of Public Health - Maternal, Child and Adolescent Health (MCAH) Division, with data from the 2023-2024 Health Needs Assessment.

Asthma-Related Hospitalizations Among Children Ages 0-4 in San Francisco and BVHP/SESF by ZIP Code (2017–2021)

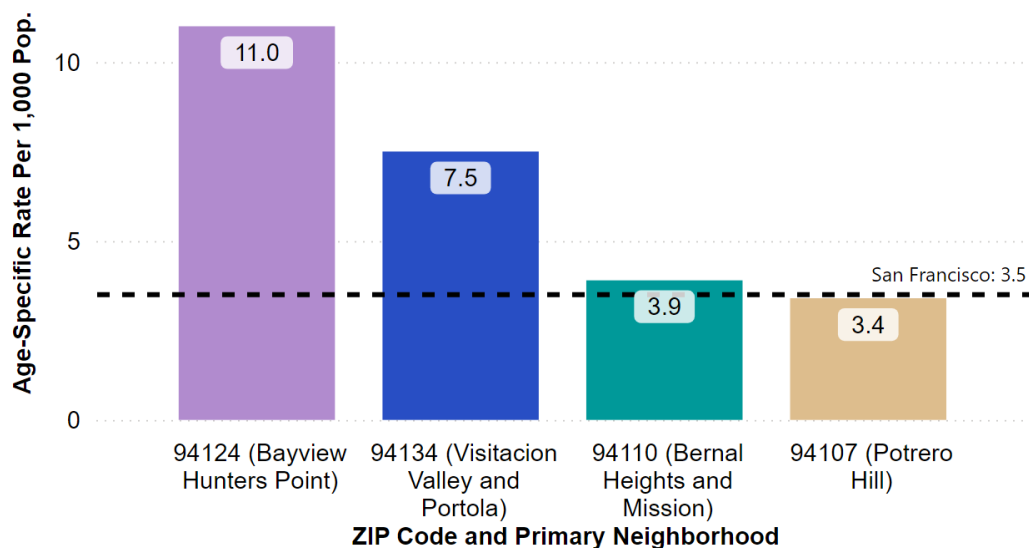


Figure 4-10. This chart shows rates of hospitalizations for asthma among children aged 4 and under, measured per 1,000 children, by ZIP code and primary neighborhood. Source: San Francisco Department of Public Health - Maternal, Child and Adolescent Health (MCAH) Division, with data from the 2023-2024 Health Needs Assessment.

All Age Groups

Asthma is strongly linked to age, so the rates in Figures 4-12 and 4-13 are "age-adjusted." This helps to see whether areas like BVHP/SESF may have higher asthma rates due to factors other than having a younger population.

Between 2019 and 2023, the age-adjusted rate of asthma-related emergency department visits across all age groups in San Francisco was 16.9 per 10,000 people (Figure 4-12). In comparison, ZIP code 94124, which corresponds to the Bayview Hunters Point neighborhood, had a rate of 41.1 visits per 10,000 people—more than twice the San Francisco rate.

In fact, Figure 4-12 also shows that all ZIP codes within BVHP/SESF discussed in this chapter (see Table 4-1) experienced higher age-adjusted rates for emergency department visits due to asthma than San Francisco overall. For example, ZIP code 94134, which includes portions of Visitation Valley and Portola, had about 23 emergency department visits per 10,000 residents, compared with about 17 per 10,000 residents across San Francisco.

Figure 4-13 shows a similar pattern of disparity when examining asthma-related hospitalizations. Between 2019 and 2023, the age-adjusted rate for asthma-related hospitalizations across all age groups in San Francisco was 4.0 per 10,000 residents. In comparison, ZIP code 94124, which corresponds to the Bayview Hunters Point neighborhood, had a rate of 10.4 hospitalizations per 10,000 residents—more than twice the San Francisco rate.

Other ZIP codes within BVHP/SESF also showed elevated rates (Figure 4-14). ZIP code 94134, which includes portions of Visitation Valley and Portola, as well as ZIP codes 94107 (Potrero Hill) and 94110 (Bernal Heights and the Mission), had similar hospitalization rates of 5.9, 5.8, and 5.6 hospitalizations per 10,000 residents, respectively. Each of these rates exceeded the San Francisco rate.

The disparities demonstrated in this data suggest that systemic factors, including environmental conditions in BVHP/SESF, may be contributing to higher rates of asthma attacks requiring emergency care or hospitalization.

Asthma-Related Emergency Department Visits Among All Age Groups in San Francisco and BVHP/SESF by ZIP Code (2019–2023)

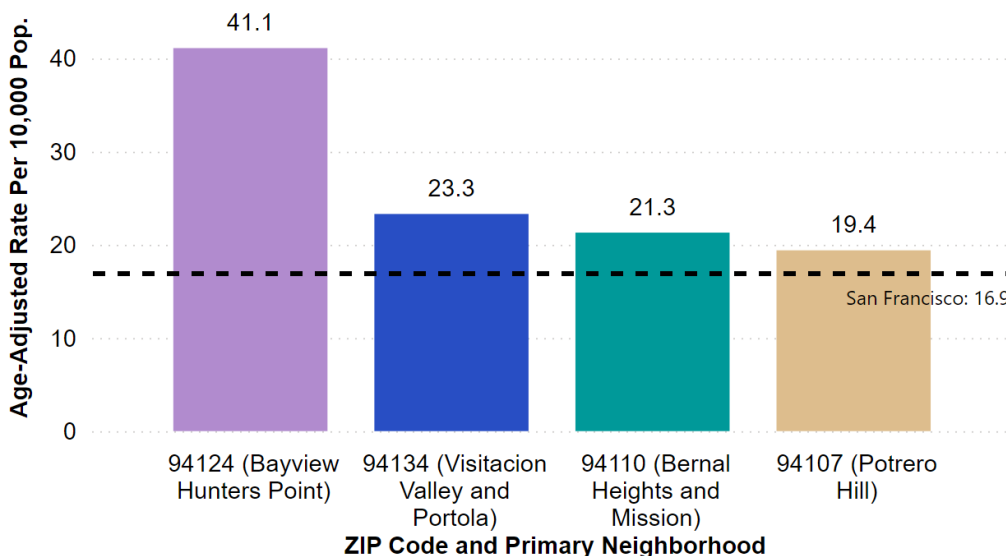


Figure 4-11. This chart shows rates of emergency department visits for asthma among all age groups, measured per 10,000 people, by ZIP code and primary neighborhood. Source: San Francisco Department of Public Health, Population Health Division – Center for Data Science, with data from the California Department of Health Care Access and Information (HCAI).

Asthma-Related Hospitalizations Among All Age Groups in San Francisco and BVHP/SESF by ZIP Code (2019–2023)

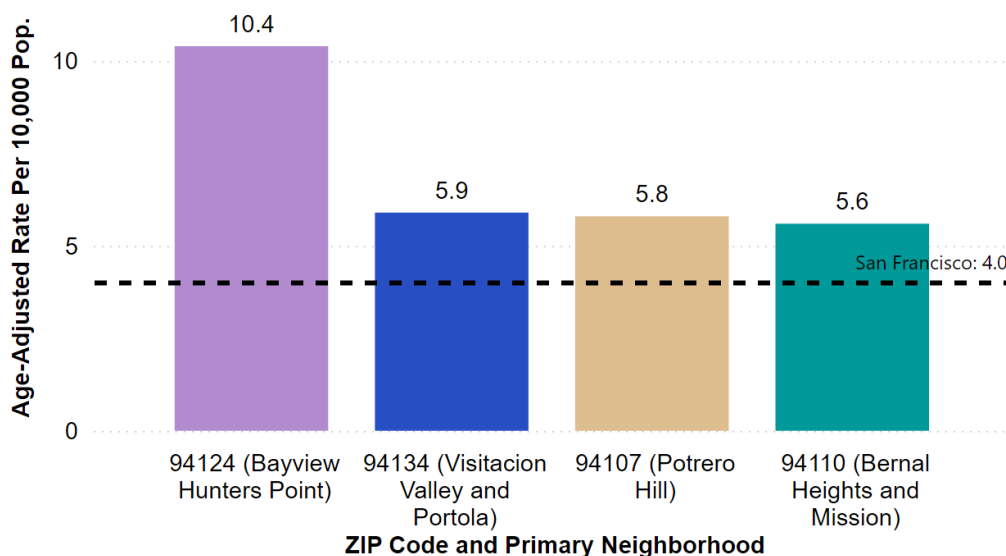


Figure 4-12. This chart shows rates of hospitalizations due to asthma attacks among all age groups, measured per 10,000 people, by ZIP code and primary neighborhood. Source: San Francisco Department of Public Health, Population Health Division – Center for Data Science, with data from the California Department of Health Care Access and Information (HCAI).

Mortality Rates

Mortality rates refer to the number of deaths in a specific population over a set period of time, usually expressed per 100,000 people. Communities facing social inequalities, like poverty or limited access to quality healthcare, often experience higher mortality rates. Lower mortality rates typically suggest a healthier community with better access to resources and care. Like asthma, mortality rates are closely linked to age. To make meaningful comparisons between different areas, mortality rates can also be age-adjusted.

This section contains charts of age-adjusted mortality rates for selected health conditions. These conditions have been linked to air pollution through extensive research. While air pollution is not the only cause of these conditions, its impact is especially concerning in communities already overburdened by other forms of environmental pollution and socioeconomic factors that increase vulnerability.

- Cardiovascular disease:** Cardiovascular disease is a broad term for conditions that affect the heart and blood vessels. One example is **ischemic heart disease**, also known as coronary heart disease or coronary artery disease,⁸¹ which occurs when reduced blood flow limits the amount of oxygen delivered to the heart. This can lead to chest pain (angina) or heart attacks. It also includes problems with blood vessels in the brain, which can also lead to reduced blood flow, or to bleeding (strokes).⁸² Research by the U.S. EPA and others has found that exposure to increased concentrations of fine particulate matter (PM_{2.5}) over a few hours to weeks can trigger cardiovascular disease-related heart attacks and death. Longer-term exposure can lead to increased risk of cardiovascular mortality and decreases in life expectancy.⁸³
- Lung, tracheal, and bronchial cancers (Lung Cancer):** Malignant tumors that develop in the respiratory tract, most often originating in the bronchial airways. These cancers are among the most commonly diagnosed in the United States and have a relatively low five-year survival rate.⁸⁴ Long-term exposure to many toxic air contaminants, such as diesel particulate matter (DPM), is known to increase the risk of developing cancers, including though not limited to lung cancer.
- Chronic Obstructive Pulmonary Disease (COPD):** Also known as chronic lung disease, COPD affects the lungs by damaging lung tissue or blocking airflow in the airways that lead to the air sacs. The most common types of COPD are chronic bronchitis and emphysema.⁸⁵ Short-term exposure to particulate matter has been linked to worsening COPD symptoms, leading to hospitalizations and emergency department visits.⁸⁶

⁸¹ Centers for Disease Control (CDC). "About Coronary Artery Disease (CAD)." <https://www.cdc.gov/heart-disease/about/coronary-artery-disease.html>.

⁸² Centers for Disease Control (CDC). "Cardiovascular Disease." <https://www.cdc.gov/cdi/indicator-definitions/cardiovascular-disease.html>.

⁸³ U.S. Environmental Protection Agency (EPA). "Air Pollution and Cardiovascular Disease Basics." 2024. <https://19january2025snapshot.epa.gov/air-research/air-pollution-and-cardiovascular-disease-basics/index.html>

⁸⁴ San Francisco Department of Public Health, Air District Data Request: Comparison of Bayview Hunters Point/Southeast San Francisco and Citywide San Francisco, unpublished report, February 2026, shared via email.

⁸⁵ U.S. EPA. "Chronic Obstructive Pulmonary Disease Prevalence and Mortality." 2015. <https://cfpub.epa.gov/roe/indicator.cfm?i=76>.

⁸⁶ California Air Resources Board (CARB). "Inhalable Particulate Matter and Health." 2025. <https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health>.

Rates of Mortality from Ischemic Heart Disease and Other Heart Diseases in BVHP/SESF and San Francisco (2019–2023)

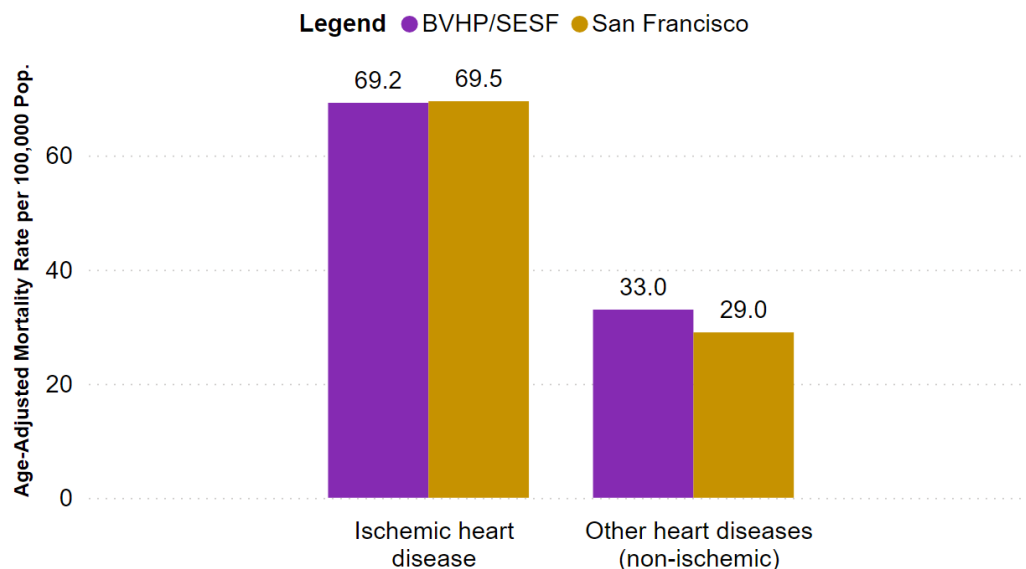


Figure 4-13. This chart shows the mortality rates (per 100,000 people) due to cardiovascular disease in BVHP/SESF and San Francisco. Source: San Francisco Department of Public Health, Population Health Division – Center for Data Science, with data from the California Department of Public Health (CDPH), Vital Records Business Intelligence System (VRBIS).

Rates of Mortality from Lung Cancer and COPD in BVHP/SESF and San Francisco (2019–2023)

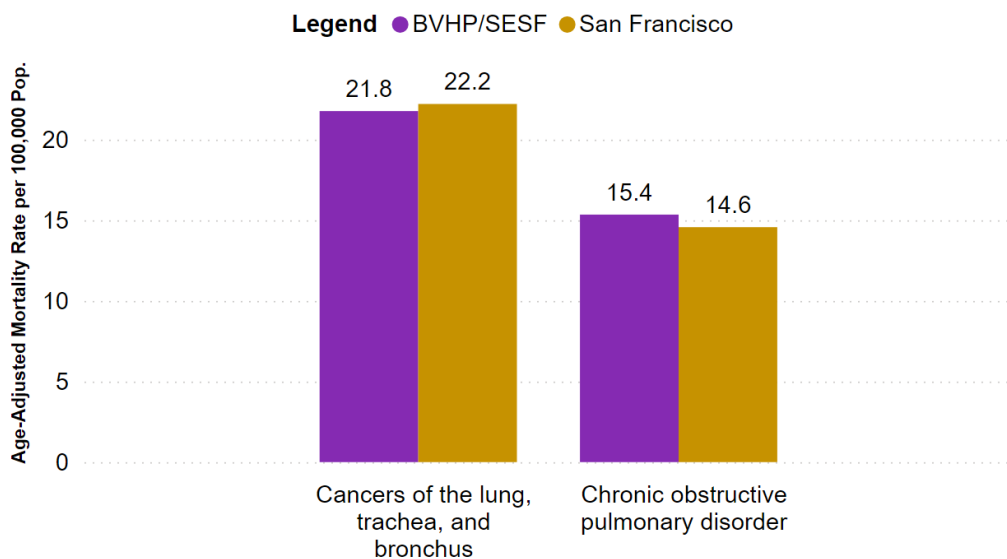


Figure 4-14. This chart shows the mortality rates (per 100,000 people) due to lung cancer and COPD in BVHP/SESF and San Francisco. Source: San Francisco Department of Public Health, Population Health Division – Center for Data Science, with data from the California Department of Public Health (CDPH), Vital Records Business Intelligence System (VRBIS).

Of the conditions listed above, ischemic heart disease was the leading cause of death in BVHP/SESF between 2019 and 2023. During this time period, BVHP/SESF had the highest age-adjusted mortality rate for ischemic heart disease at 69 deaths per 100,000 people (Figure 4-14), a rate that is very similar to San Francisco overall. However, it is worth noting that the mortality rate for "Other (non-ischemic) heart diseases" is slightly higher in BVHP/SESF than in San Francisco.⁸⁷ It is important to note that these mortality rates are based on data from the 25 census tracts that make up the BVHP/SESF Community Boundary.

As shown in Figures 4-14 and 4-15, mortality rates within BVHP/SESF for the four health conditions examined in this chapter are similar to those observed across San Francisco. This likely reflects the size and demographic composition of the BVHP/SESF Community Boundary, which differs from the Bayview Hunters Point neighborhood. In prior analyses, SFDPH found that residents of the Bayview Hunters Point neighborhood (ZIP Code 94124) experienced higher mortality rates than residents in other parts of the city.⁸⁸

As described in "Location and Geography," the BVHP/SESF Community Boundary consists of 25 census tracts. To better understand mortality patterns within BVHP/SESF, SFDPH compared mortality rates in the 11 census tracts comprising the Bayview Hunters Point neighborhood with mortality rates in the remaining 14 census tracts within the BVHP/SESF Community Boundary, which include the Visitacion Valley neighborhood and portions of Portola, Bernal Heights, the Mission, and Potrero Hill.

As shown in Figures 4-16 and 4-17, community members in the Bayview Hunters Point neighborhood experience higher mortality rates across all four health conditions compared with residents in the remaining census tracts of the BVHP/SESF Community Boundary. The largest disparity is observed for ischemic heart disease, where the age-adjusted mortality rate in the Bayview Hunters Point neighborhood is approximately 47% higher than in the rest of the BVHP/SESF Community Boundary.⁸⁹

While these findings do not establish a causal relationship, the disparities may be influenced by environmental exposures as well as other social determinants of health.⁹⁰

⁸⁷ San Francisco Department of Public Health, Air District Data Request: Comparison of Bayview Hunters Point/Southeast San Francisco and Citywide San Francisco, unpublished report, February 2026, shared via email.

⁸⁸ Ibid.

⁸⁹ Ibid.

⁹⁰ Ibid.

Mortality Rates from Ischemic Heart Disease and Other Heart Diseases: Bayview Hunters Point Neighborhood Census Tracts vs. All Other BVHP/SESF Census Tracts (2019–2023)

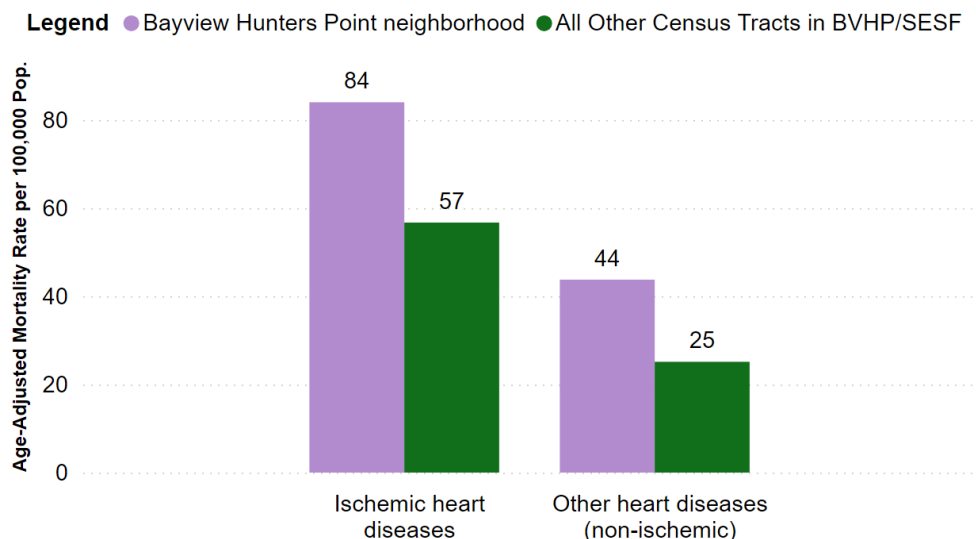


Figure 4-15. This chart shows mortality rates (per 100,000 people) due to cardiovascular disease in Bayview Hunters Point neighborhood census tracts compared to the remaining census tracts of the BVHP/SESF Community Boundary. Source: San Francisco Department of Public Health, Population Health Division – Center for Data Science, with data from the California Department of Public Health (CDPH), Vital Records Business Intelligence System (VRBIS).

Mortality Rates from Lung Cancer and Chronic Obstructive Pulmonary Disorder (COPD): Bayview Hunters Point Neighborhood Census Tracts vs. All Other BVHP/SESF Census Tracts (2019–2023)

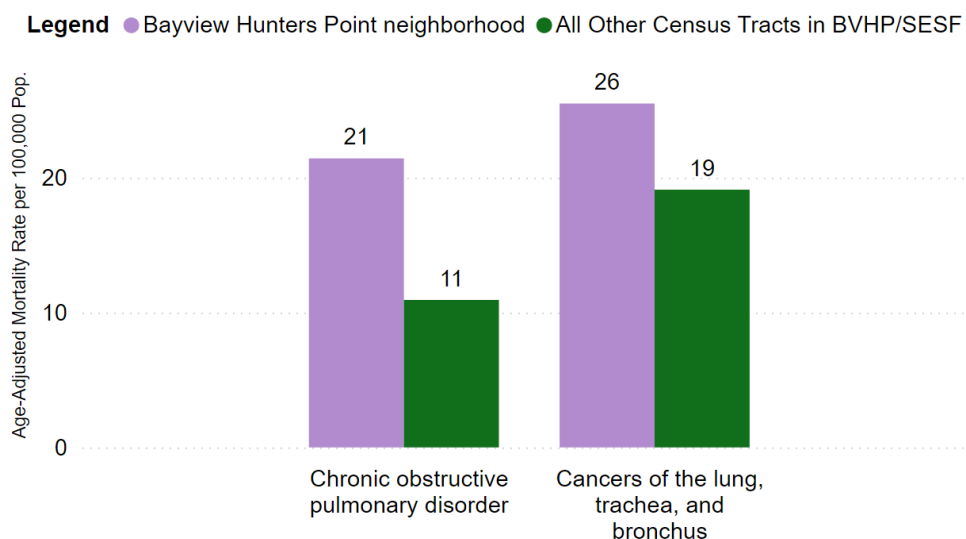


Figure 4-16. This chart shows the mortality rates (per 100,000 people) due to lung cancer and COPD in Bayview Hunters Point neighborhood census tracts compared to the remaining census tracts of the BVHP/SESF Community Boundary. Source: San Francisco Department of Public Health, Population Health Division – Center for Data Science, with data from the California Department of Public Health (CDPH), Vital Records Business Intelligence System (VRBIS).

Birth Outcomes

Low birth weight and premature births are important community health indicators, as they can signal underlying health disparities and environmental stressors.

A premature birth, also known as preterm birth, is when a baby is born before 37 weeks of gestation. Birth weight is considered "low" if the baby weighs less than 5 pounds and 8 ounces (2,500 grams).⁹¹ Both premature birth and low birth weight are linked to a range of health problems that can affect the child from infancy into adulthood. These issues can include trouble with breathing, feeding, development, and even hearing or vision.⁹²

Many factors can lead to premature birth and low birth weight, such as the mother's health conditions and lack of prenatal care. According to the U.S. EPA, environmental exposures may also contribute to low birth weight, including maternal exposures to lead and exposures to toxic substances in air, water, or food. Research also suggests that pollutants like PM_{2.5}, carbon monoxide (CO), and nitrogen oxides (NO_x) may contribute to premature birth and low birth weight.⁹³

Between 2020 and 2022, 11.8% of babies born in the Bayview Hunters Point neighborhood were preterm (Figure 4-18)—nearly 12 out of every 100 births. In San Francisco, the rate was 8.1%, or about 8 out of every 100 births. The higher rate in Bayview Hunters Point suggests that systemic factors in the neighborhood may contribute to more frequent premature births. In other ZIP codes and neighborhoods within the BVHP/SESF Community Boundary, preterm birth rates were similar to the San Francisco average.

A similar pattern is seen for low birth weight. As Figure 4-19 shows, nearly 10 out of every 100 babies born in the Bayview Hunters Point neighborhood had low birth weight, compared with about 7 out of 100 in San Francisco. This is significant because infants born with low birth weight face a higher risk of adverse health conditions, some of which can increase their vulnerability to environmental pollution later in life.⁹⁴ Other areas within the BVHP/SESF Community Boundary had low birth weight rates compared to San Francisco.

Data Note: Rates of low birth weight and premature births are based on data reported at the ZIP code level for the four ZIP codes that intersect the BVHP/SESF Community Boundary (see "Location and Geography"). Only ZIP code 94124 falls entirely within BVHP/SESF, while ZIP codes 94107, 94110, and 94134 extend beyond it. Therefore, these ZIP code-level estimates reflect populations and geographic areas outside the BVHP/SESF Community Boundary.

⁹¹ United States Environmental Protection Agency (US EPA). "Indicators of Environmental Health Disparities: Underweight and Pre-Term Births," 2025. <https://19january2025snapshot.epa.gov/environmentaljustice/indicators-environmental-health-disparities-underweight-and-pre-term-births/index.html>.

⁹² *Ibid.*

⁹³ *Ibid.*

⁹⁴ Office of Environmental Health Hazard Assessment (OEHA). "CalEnviroScreen 4.0," October 2021. <https://oehha.ca.gov/media/downloads/calenviroscreen/report/calenviroscreen40reportf2021.pdf>.

Rates of Pre-Term Births in San Francisco and BVHP/SESF, by ZIP Code (2020-2022)

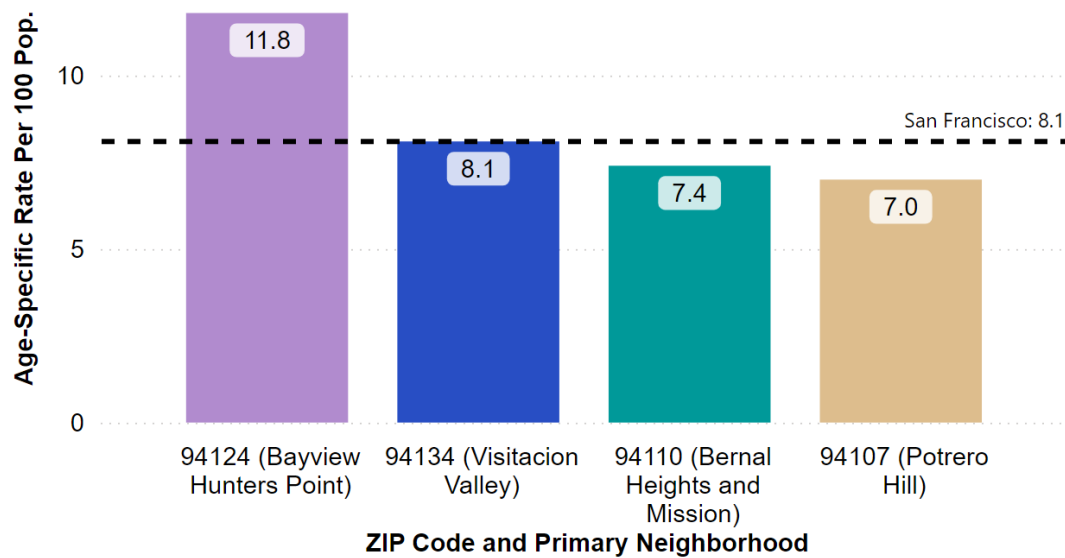


Figure 4-17. This chart shows rates of pre-term birth for San Francisco overall and for the ZIP codes and neighborhoods within the BVHP/SESF Community Boundary. Source: San Francisco Department of Public Health - Maternal, Child and Adolescent Health (MCAH) Division, with data from the 2023-2024 Health Needs Assessment.

Rates of Low Birth Weight in San Francisco and BVHP/SESF, by ZIP Code (2020-2022)

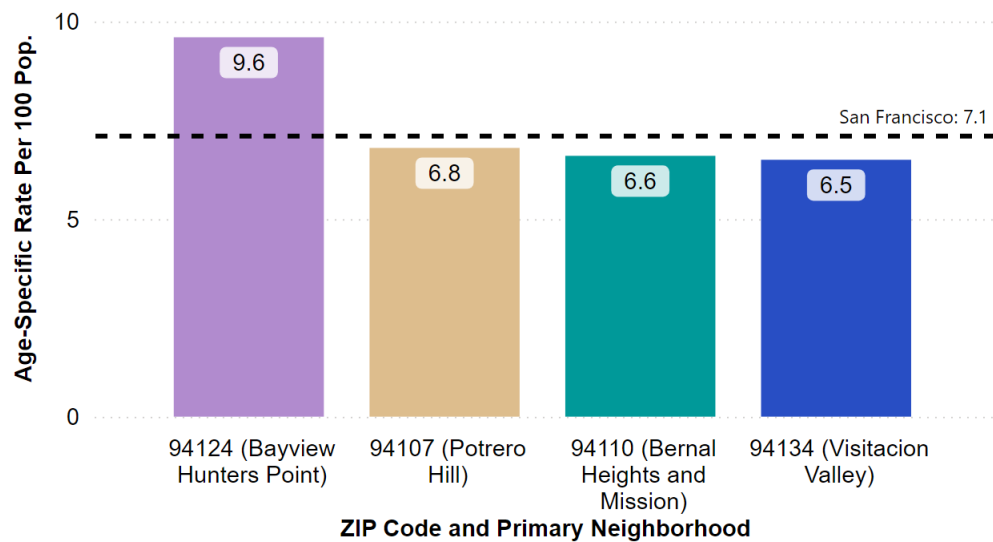


Figure 4-18. This chart shows low birth weight rates for San Francisco overall and for the ZIP codes and neighborhoods within the BVHP/SESF Community Boundary. Source: San Francisco Department of Public Health - Maternal, Child and Adolescent Health (MCAH) Division, with data from the 2023-2024 Health Needs Assessment.

Built Environment

This section provides a description of BVHP/SESF's built environment and its characteristics. It lists zoning designation and land use types in the community, primarily focusing on Production, Distribution and Repair (PDR) districts. Describing the built environment and its characteristics is an important precursor to understanding air pollutant sources and exposure in certain areas of the BVHP/SESF community.

Zoning & Land Use

Zoning is a tool cities and counties use to regulate how land can be used in different parts of a city or county, and it can play an important role in protecting public health. By separating residential land uses from sources of pollution like industrial facilities or busy highways, zoning can reduce local exposures to harmful air pollution. It can also promote healthier communities by making space for parks, grocery stores, clinics, and safe housing. In this way, zoning helps shape the conditions that support or harm people's health where they live, work, and play.

Some land uses are incompatible with others, such as heavy industries that affect the health, safety, and well-being of community members. Although zoning changes in BVHP/SESF has reduced these conflicts in recent decades, several residential areas are still adjacent to and potentially impacted by industrial uses.⁹⁵

The BVHP/SESF community has long served as a center of San Francisco's industrial and maritime economy. As noted in "Community History," this history spans from 19th-century slaughterhouses to 20th-century shipbuilding and operations at the Hunters Point Naval Shipyard, and continues today through production, construction, and distribution businesses. Each historical period has generated industrial jobs, related businesses, and housing for employees. However, the disproportionate environmental burdens experienced in BVHP/SESF today are also closely tied to this industrial legacy.

Since the mid-1990s, the Bayview Hunters Point Area Plan (Area Plan) has been amended repeatedly to limit polluting manufacturing uses and encourage lighter, cleaner, and emerging industries. During this time, from the mid-1990s onward, most large-scale, heavy manufacturing businesses left San Francisco due to high operating costs and broader economic changes. San Francisco also worked to phase out industrial ("M") districts. M districts allow a broad range of industrial uses, and housing is generally not permitted. The M-1 district is generally intended for smaller-scale industrial uses and includes more regulatory controls than M-2. The M-2 district permits heavier industrial uses such as cement plants, rendering plants, cargo imports, and other maritime operations. Most of the remaining M districts near Piers 80-96 are under the jurisdiction of the Port of San Francisco. Lands under Port jurisdiction are state lands held in trust by the Port and are restricted to certain uses subject to the Public Trust Doctrine for the benefit of the people of California.⁹⁶ Accordingly, Port lands are reserved for purposes of water-oriented commerce, navigation, open space, natural habitat, fishing, and other recreational purposes.

⁹⁵ City and County of San Francisco. 2011. Bayview Hunters Point Area Plan. https://generalplan.sfplanning.org/Bayview_Hunters_Point.htm.

⁹⁶ Benson, Brad, and Diane Oshima. 2013. "Memorandum from Port of San Francisco to Piers 30-32 Citizen's Advisory Committee ('CAC') Land Use Subcommittee." January 10. <https://www.sfport.com/sites/default/files/FileCenter/Documents/5248-Public%20Trust%20%20BCDC%20memo%2001-10-13.pdf>.

The Bayview Hunters Point Community Revitalization Concept Plan (2002),⁹⁷ led by the community, called for extensive environmental remediation and monitoring in the Bayview Hunters Point neighborhood while promoting industrial activity to create local jobs. Many of the Concept Plan's goals were incorporated into the Area Plan. The 2008 update of the Area Plan formalized a balance between supporting industrial job opportunities and core economic activities, while protecting residential quality of life and environmental health.

In 2008, the City rezoned large portions of its industrial areas, changing their designation from M districts (i.e., heavy industrial zones) to new PDR districts in some areas and to mixed-use districts that accommodate housing in others. Figure 4-20 shows the zoning districts within the BVHP/SESF Community Boundary.

PDR districts are intended to accommodate new and evolving industrial activities that require flexible operating space, freight loading, and uncovered storage areas. The PDR districts prohibit many of the heaviest industrial land uses. Other uses that were once permitted as-of-right in M districts now require a conditional use authorization from the Planning Commission. PDR districts do not allow residential uses (except shelters) or other uses that are incompatible with industrial activity. Within the BVHP/SESF Community Boundary, there are three categories of PDR districts, which are fully described in the City and County of San Francisco Planning Code, Section 210.3 PDR Districts:

- **PDR-1-B District (Light Industrial Buffer):** The PDR-1-B district is intended for parcels between other PDR-1 districts and residential areas. As the most restrictive PDR district, PDR-1-B permits only light manufacturing and small storage yards, sometimes subject to minimum setbacks from residences or maximum size limits. These uses generate lower levels of noise, odors, and truck traffic than those permitted in PDR-2 districts. Small-scale retail and office uses are allowed, along with other activities that help buffer existing residential neighborhoods from areas of more intensive industrial operations.
- **PDR-1-G District (General):** The PDR-1-G permits a broader range of production, distribution, and repair activities than PDR-1-B and PDR-1-D, but fewer and less intensive uses than PDR-2.⁹⁸ The PDR-1-G district prohibits uses that may generate substantial noise, smoke, dust, or other environmental impacts or pollution, such as junkyards, auto wrecking facilities, hazardous waste facilities, and the most intensive manufacturing activities (categorized as Heavy Manufacturing-3).
- **PDR-2 District (Core Production, Distribution, and Repair):** As the least restrictive of the PDR districts, the PDR-2 district allows for a wide range of light and contemporary industrial activities. Certain uses, such as automobile assembly and junkyards, are permitted outright. However, auto wrecking operations, the most intensive manufacturing uses (classified as Heavy Manufacturing-3), hazardous waste facilities, and shipyards require approval from the Planning Commission as conditional uses within this district. Many areas that were historically used for intensive industrial activities are now zoned as PDR-2.

⁹⁷ Bayview Hunters Point Project Area Committee (PAC) and San Francisco Redevelopment Agency (SFRA). 2002. *Bayview Hunters Point Community Revitalization Concept Plan*. <https://sfocii.org/completed-project-areas/bayview-hunters-point>.

⁹⁸ The PDR-1-D district is intended to support less-intensive production, distribution, and repair uses, particularly existing design-related businesses. Along with the light manufacturing and storage yard uses allowed in PDR-1-B, this district also permits activities such as metalworking shops, grain elevators, and low-impact processing of agricultural goods. Examples include bottling plants, breweries, and cereal production facilities.

The map also shows Public ("P") zoning districts (shown in grey). San Francisco's largest wastewater treatment facility, the Southeast Treatment Plant (built in 1952), is located on a parcel zoned as a P district and is located near residential areas.⁹⁹

Many of the stationary sources regulated by the Air District are located in PDR districts. For a more comprehensive discussion of permitted sources, including location and air pollution information, please refer to Chapter 5: Air Quality Overview.

For a discussion of community-raised land use concerns, see the PDR and Land Use Focus Area in Chapter 8: Focus Areas, Strategies, and Actions.

⁹⁹ San Francisco Public Utilities Commission. "Southeast Treatment Plant Maintenance Buildings." Accessed March 11, 2026. <https://www.sfpuc.gov/construction-contracts/construction-projects/SEPBuildings>.

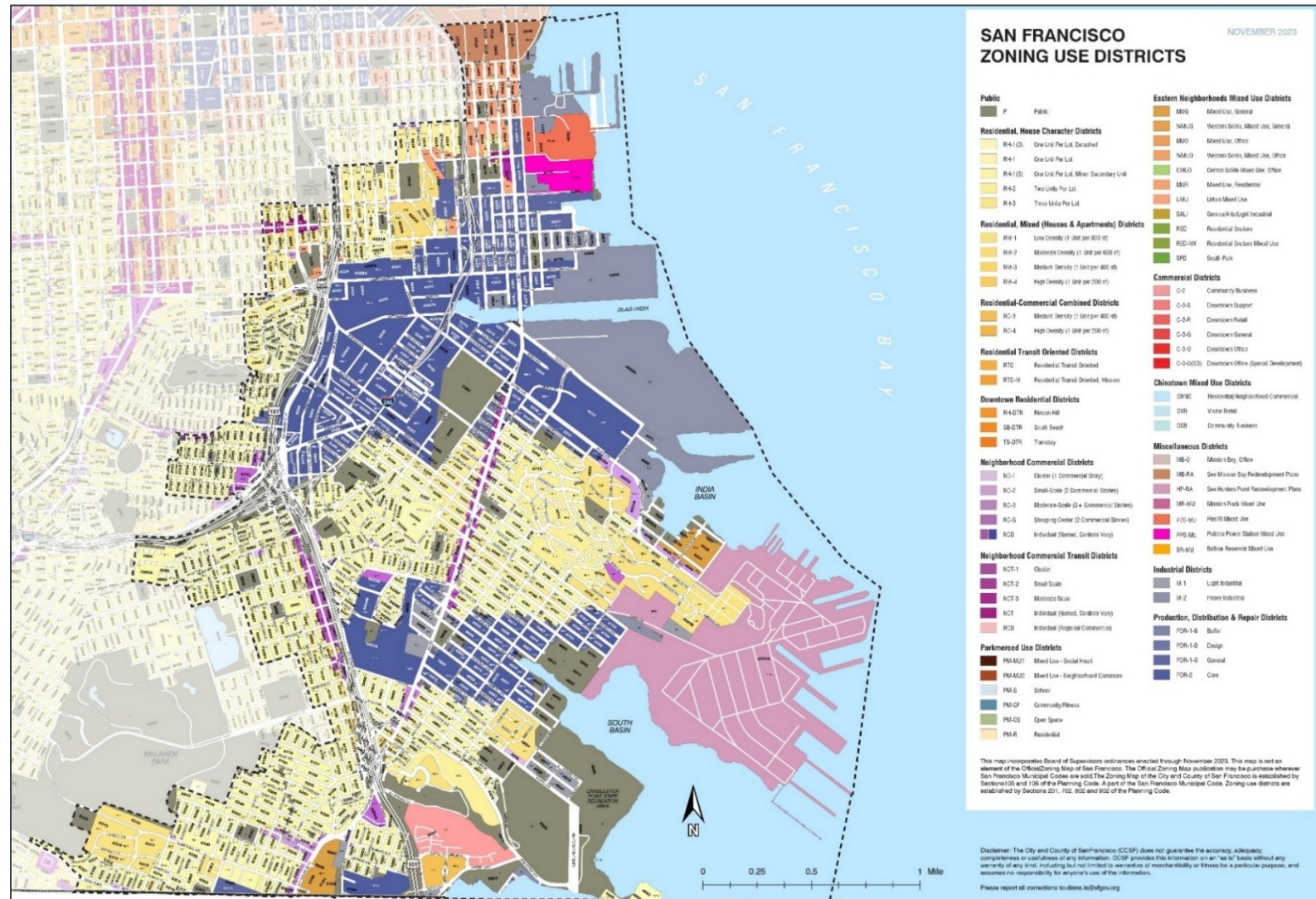


Figure 4-19. This map shows the San Francisco Zoning Use Districts. Traditional color conventions are used throughout: Residential (yellow), Neighborhood Commercial (purple), Industrial (blue/gray), and Mixed-Use (light orange). An interactive online version of this map can be found at: https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_zoningmaps/0-0-0-339. Source: SF Planning.

The Port of San Francisco and Stewardship of the Waterfront

Most of the San Francisco Bay shoreline within the BVHP/SESF Community Boundary is under the jurisdiction of the Port of San Francisco, extending from India Basin Waterfront Park north to 16th Street.¹⁰⁰ BVHP/SESF includes several regionally important maritime facilities including the Pier 92-96 cargo terminals, Pier 80, and the Pier 70 Shipyard. This section provides background on Port-managed lands.¹⁰¹

When California became part of the United States, it received ownership of its sovereign tidelands, submerged lands, and navigable waterways. These lands are held in trust for the public. The California State Lands Commission serves as the primary trustee.

Under the Burton Act, the state transferred certain waterfront lands to the City in 1968. As a condition of this transfer, the City created the Port Commission to manage these lands in accordance with public trust obligations. The Commission is responsible for operating, regulating, and managing the Port in accordance with the Burton Act.

Pursuant to the Burton Act, the Port's mission includes supporting navigation, fisheries, waterborne commerce, public access, and environmental stewardship along San Francisco Bay. It also manages the Harbor Fund, which consists of Port-generated revenues and can only be used for Port-related purposes such as operations, maintenance, and capital improvements.

Although the Port functions similarly to other City departments, it is distinct in that it must serve statewide public trust interests, not just local priorities. As a result, Port lands are subject to specific land use restrictions tied to their waterfront location, and which are meant to benefit all Californians. The Piers 80-96 facilities are particularly significant, as they represent the Port's last remaining deepwater cargo terminals. These regionally important facilities are located within the San Francisco Port Priority Use Area, as designated by the San Francisco Bay Area Seaport Plan developed by the San Francisco Bay Conservation and Development Commission (BCDC). The Seaport Plan designates Priority Use Areas for water-oriented activities to preserve sufficient waterfront space for the region's current and future maritime needs while minimizing the need for additional Bay fill.¹⁰²

The Port of San Francisco Waterfront Plan sets the rules for how public trust lands are used, designed, and improved. The plan was first adopted in 1997 and most recently updated on April 11, 2023, through Port Commission Resolution 23-15. Since its original adoption, the plan has guided major changes along the waterfront. It has helped open many piers to the public while continuing to support and strengthen maritime activities. The Port has also made progress in environmental stewardship by reducing air pollution, improving water quality, and enhancing natural shoreline areas along San Francisco Bay.¹⁰³ The Waterfront Plan area includes the Maritime Eco-Industrial Center, which is located within BVHP/SESF.

¹⁰⁰ To view a map of land under the jurisdiction of the Port of San Francisco, visit the "Port Jurisdiction" map on the San Francisco Open Data portal at <https://data.sfgov.org/Geographic-Locations-and-Boundaries/Port-Jurisdiction/hi6k-yz7r>.

¹⁰¹ San Francisco Bay Conservation and Development Commission. 2023. *San Francisco Bay Area Seaport Plan*. <https://www.bcdc.ca.gov/wp-content/uploads/sites/354/2024/03/seaport-plan.pdf>.

¹⁰² Ibid.

¹⁰³ Port of San Francisco. 2023. *Waterfront Plan*. Adopted through Port Commission Resolution 23-15. https://www.sfport.com/files/2024-01/waterfront_plan_jan2024_final_web_version.pdf.

Maritime Eco-Industrial Center

Piers 80-96 are part of the Maritime Eco-Industrial Center, located along San Francisco's southeastern waterfront from Mission Bay to Candlestick Point.¹⁰⁴ This area is one of the city's last major industrial zones, even as it faces pressure from new residential and commercial development.

Since 2001, planning efforts have aimed to preserve essential industrial zones, including on Port lands, while integrating compatible uses such as transportation infrastructure, open space, and public access.

The Maritime Eco-Industrial Center is a shared hub where maritime and industrial activities are co-located to improve efficiency and sustainability, with goals that include promoting resource sharing, incorporating green technologies, reducing environmental impacts, supporting local jobs, and providing public open space and access to habitat.

Piers 80-96: Transition to Bulk Cargo

This section provides a high-level overview of the historical development of shipping activities at Piers 80-96 and their role in shaping today's Maritime Eco-Industrial Center.

By the mid-1990s, container shipping at the Port of San Francisco declined as larger, more competitive facilities on the West Coast (especially the Port of Oakland) expanded. Container operations in San Francisco ended in 2006.

The Port adapted by focusing on breakbulk cargo at Pier 80 and bulk materials (such as aggregate, sand, rock, and other raw materials) at Piers 94-96. These materials are primarily imported from British Columbia and are essential to Bay Area construction projects, including major infrastructure projects like the Transbay Terminal.

By 2015, the Port handled nearly 1.7 million metric tons of aggregate annually. Transporting these materials by ship instead of truck eliminated approximately 35,000 truck trips per year on local streets, reducing traffic congestion and emissions.¹⁰⁵

These facilities also use low-emission equipment and stormwater capture/reuse systems, and provide stable, living-wage local jobs.

Southern Waterfront Community Benefits and Beautification Policy

In 2007, the Port Commission adopted the Southern Waterfront Community Benefits and Beautification Policy.¹⁰⁶ This policy outlines clear expectations for tenants in the Southern Waterfront, including: maintaining and improving the appearance of the site; following a good neighbor policy; supporting local job training and hiring; and operating in an environmentally responsible way, such as by using low-emissions equipment and incorporating green infrastructure.

¹⁰⁴ Port of San Francisco. 2016. Piers 80-96: Maritime Eco-Industrial Center Strategic Plan. https://www.sfport.com/files/2022-01/031116_Piers%2080-96%20Strategic%20Plan.pdf.

¹⁰⁵ Ibid.

¹⁰⁶ Port of San Francisco. 2007. *Policy for Southern Waterfront Community Benefits and Beautification*. <https://www.sfport.com/sites/default/files/Item%2010a%20Attachment%20-%20Policy%20for%20Southern%20Waterfront%20Beautification.pdf>.

To support these goals, the Port allocates a portion of tenant rent to the Southern Waterfront Community Benefit and Beautification Fund. This fund supports projects that can enhance quality of life in neighborhoods like Bayview Hunters Point, including improvements to open spaces, pier removal, wetland restoration, and public art installations.

Proximity of Sensitive Community Members to Sources of Pollution

Certain groups of people are more susceptible to the harmful effects of air pollution. These individuals, to whom we refer as "sensitive community members," are more likely to experience adverse health effects because their bodies are less able to defend against or cope with pollutants.¹⁰⁷

Sensitive community members include, but are not limited to:

- **Children** – Their lungs are still developing, and they breathe more air relative to their body weight than adults, making them more susceptible to pollution.
- **Older adults** – Aging can weaken the body's ability to fight off the effects of air pollution.
- **People with respiratory diseases (e.g., asthma, bronchitis)** – Air pollution can worsen their conditions and make breathing more difficult.
- **People with cardiovascular diseases** – Pollutants can increase the risk of heart attacks or strokes.
- **Pregnant people** – Exposure to certain pollutants during pregnancy can affect fetal development.

In addition to sensitive community members themselves, there are "high priority locations" of concern where these community members congregate. These include hospitals, schools, daycare centers, community centers, senior centers, parks, and densely populated residential areas. Figure 4-21 shows the locations of childcare centers, hospitals, healthcare centers, schools, elder care facilities, and parks. The map uses the following symbols: purple triangles for childcare centers, red hearts for hospitals, red crosses for healthcare centers, blue and gold building icons for schools, blue hexagons for elder care facilities, and green shaded areas for parks. The source of this data can be found in the Reference List at the end of this chapter.

As shown in Figure 4-21, many places where sensitive community members gather, such as schools, daycare centers, and health clinics, are situated near, and in some cases within, Industrial Zoning Use Districts in BVHP/SESF. This proximity raises concerns about disproportionate air pollution exposure among sensitive community members who use or visit these locations.

In addition, the Air District has developed a new online interactive map of BVHP/SESF using publicly available data. The map includes information on local emissions sources, high-priority locations, and zoning use districts, and can be used to identify areas where high-priority locations are in close proximity to sources of pollution. The map is available on the Air District's website.¹⁰⁸

¹⁰⁷ California Air Resources Board (CARB). "Sensitive Receptor Assessment." Accessed May 4, 2026. <https://ww2.arb.ca.gov/capp/cst/rdi/sensitive-receptor-assessment>.

¹⁰⁸ Bay Area Air District. 2025. "Bayview Hunters Point/Southeast San Francisco Geospatial Data and Map Tool." https://experience.arcgis.com/experience/3ac387a7115f4832a40cfa326d2cfde7/#data_s=id%3AdataSource_5-19857add64c-layer-16-19857a19085-layer-7%3A13.

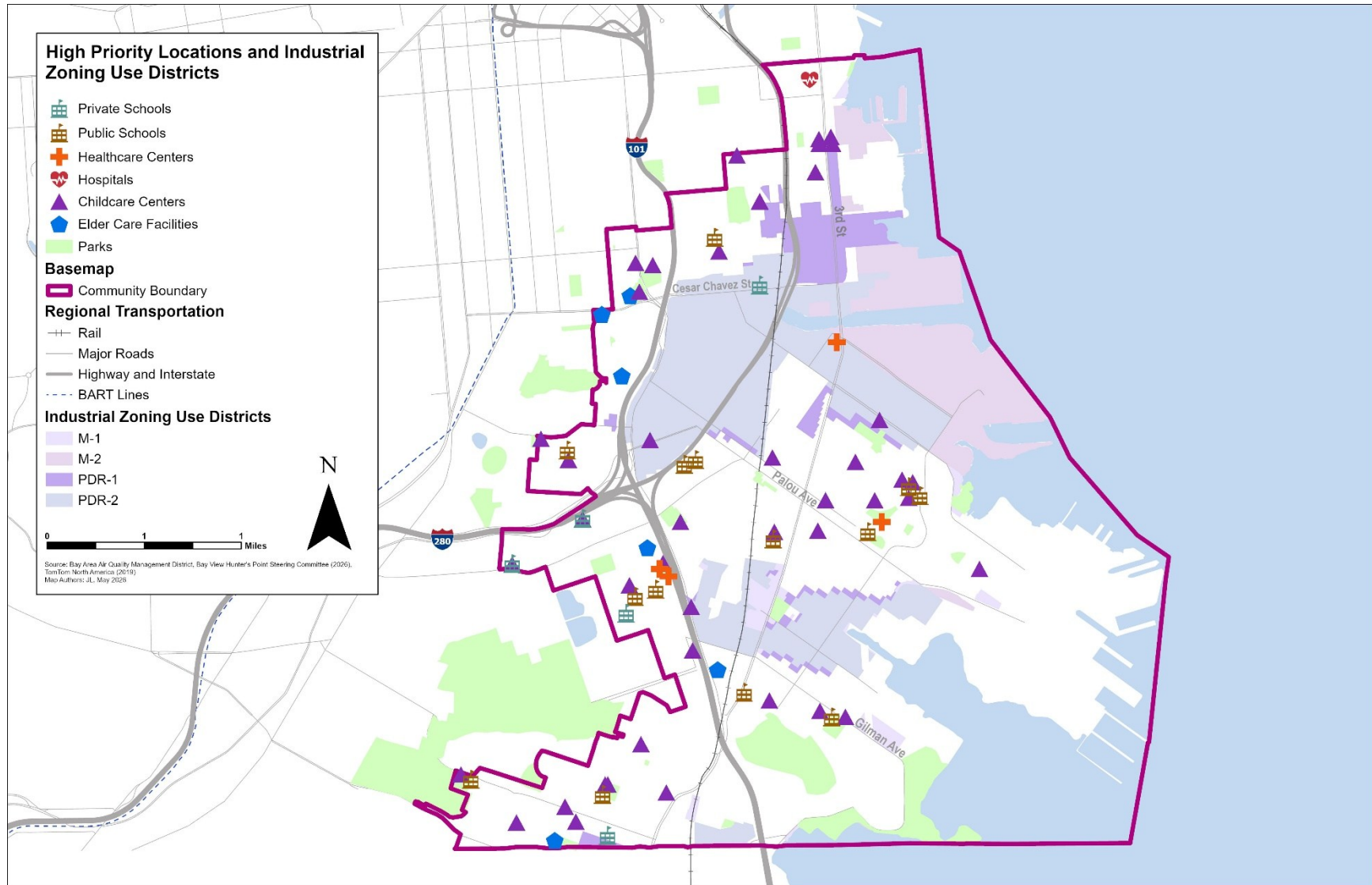


Figure 4-20. This map shows places in BVHP/SESF where sensitive community members gather, alongside Industrial Zoning Use Districts. Sources: See the reference list at the end of this chapter.

Air Pollutant Exposure Zone

San Francisco Health Code Article 38 established the Air Pollutant Exposure Zone (APEZ) in 2008 to identify areas with poor air quality based on health-protective criteria. These criteria include estimated cancer risk, exposure to fine particulate matter, proximity to freeways, and the presence of particularly vulnerable populations. Article 38 also requires the APEZ map to be updated every five years to reflect changes in air pollution emissions and population exposures.¹⁰⁹

SF Planning and SFDPH use the APEZ map to require protections for residents, childcare and K-12 schools, and workers in affected areas. Pursuant to [San Francisco Health Code article 38](#), new residential construction projects within the APEZ must install high-efficiency air filtration.¹¹⁰ Additionally, requirements to use cleaner construction equipment apply to certain construction projects.¹¹¹ As shown on Figure 4-22, much of the area within the BVHP/SESF Community Boundary is within the APEZ (shaded in purple), though some areas are not.

The APEZ has been updated over time based on comprehensive, citywide assessments of cumulative air pollution exposures. In 2014, the San Francisco Departments of Public Health and Planning partnered with the Air District to develop a citywide inventory of air pollution emissions and assess community exposures to identify areas meeting the APEZ criteria.¹¹² In 2020, SF Planning and SFDPH, again in partnership with the Air District, completed a Citywide Air Quality Health Risk Assessment. The assessment evaluated air pollution from stationary sources (e.g., wastewater treatment plants, backup generators, and gas stations), mobile sources (e.g., cars, trucks, and rail), and maritime sources (e.g., ferries, ships, and port-related activities) to identify areas of San Francisco with elevated air pollution levels and update the APEZ accordingly.¹¹³

The most recent update occurred in 2025. To learn more about the APEZ map, please visit SF Planning's [Air Quality Review](#) webpage.¹¹⁴

¹⁰⁹

San Francisco Health Code, art. 38, sec. 3806, "Air Pollutant Exposure Zone and Air Pollutant Exposure Zone Map," accessed July 8, 2026.

¹¹⁰ City and County of San Francisco Health Code, Section 3807 Enhanced Ventilation Requirement. Accessed March 25, 2026. https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_health/0-0-0-6098.

¹¹¹ City and County of San Francisco Environment Code, Section 2505 Requirements Within Air Pollutant Exposure Zones. Accessed March 25, 2026. https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_environment/0-0-0-46974.

¹¹² San Francisco Planning. 2025. *Air Quality and Greenhouse Gas Analysis Guidelines*. <https://citypln-m-extnl.sfgov.org/SharedLinks.aspx?accesskey=ac7ae6c9956af1a8126fecf6f1663eba4a88e8e536ba4899502503bf69c1ae51&VaultGUID=A4A7DACD-BoDC-4322-BD29-F6F07103C6E0>.

¹¹³ San Francisco Planning. "Air Quality Review." City and County of San Francisco. Accessed February 19, 2026. <https://sfplanning.org/air-quality>.

¹¹⁴ Ibid.

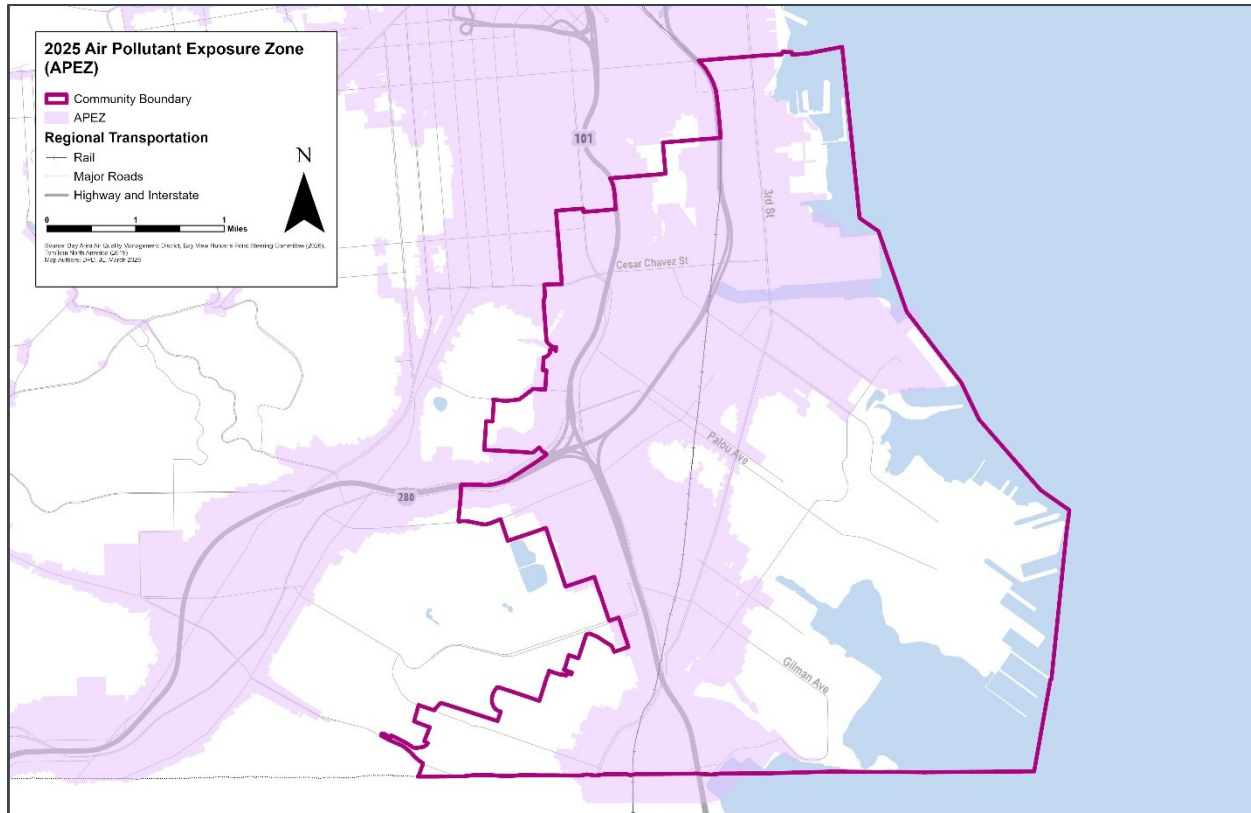


Figure 4-21. This map shows the 2025 Air Pollutant Exposure Zone (APEZ) overlaid within the BVHP/SESF Community Boundary, with the APEZ boundary shaded in purple. Source: See the reference list at the end of this chapter.

Transportation

The BVHP/SESF Community Boundary contains a dense mix of industrial, commercial, residential, and recreational land uses. Piers and distribution centers, industrial corridors, neighborhood retail along Third Street, low-density housing, parks such as Candlestick Point, and major redevelopment areas all require different types of transportation access. As a result, neighborhood streets must simultaneously accommodate trucks, commuters, pedestrians, and cyclists—creating ongoing conflicts and strain on the transportation system.¹¹⁵

The Bayview Hunters Point neighborhood lacks a direct freeway connection that allows trucks to access industrial areas without traveling along residential streets or through the Third Street commercial corridor. Limited connectivity between I-280 and the Bay Bridge forces many trucks onto congested surface streets, making freight traffic a persistent community concern.¹¹⁶ Further, a limited road network

¹¹⁵ City and County of San Francisco. 2011. Bayview Hunters Point Area Plan. https://generalplan.sfplanning.org/Bayview_Hunters_Point.htm.

¹¹⁶ Ibid.

funnels traffic onto a small number of streets, creating bottlenecks at freeway interchanges and bridges while concentrating air pollution.¹¹⁷

Residential areas are impacted by heavy traffic from nearby freeways (I-280 and US-101), major corridors like Third Street, Bayshore Boulevard, and Cesar Chavez Street, and truck-attracting businesses such as produce distribution centers, warehouses, and port terminals. Public transit options are limited, and sidewalks and pedestrian connections can be poor, therefore access to goods and services can be challenging. As a result, many community members rely on cars to get around. Nearly half of households in the Bayview Hunters Point neighborhood own two or more vehicles—almost double San Francisco's average.¹¹⁸

In addition, an Air District analysis of California Department of Motor Vehicles (DMV) data showed that ZIP code 94124 (Bayview Hunters Point neighborhood), had the highest number of older,¹¹⁹ high-emission vehicles than any other ZIP code in San Francisco. Older vehicles usually produce more pollution than newer, cleaner cars. As a result, the higher number of vehicles, especially older ones, means the BVHP/SESF community is likely exposed to higher levels of transportation-related pollution.

Conclusion

Communities in BVHP/SESF face disproportionate pollution and health risks that are further compounded by socioeconomic stressors. These disparities are driven by cumulative impacts from chemical and non-chemical sources, including environmental, social, and climate-related factors. The land use and transportation patterns in BVHP/SESF reflect a long history of discriminatory policies, such as redlining and urban renewal, that have disproportionately exposed BIPOC community members to environmental hazards. Today, industrial contamination from the Hunters Point Shipyard, air pollution from the US-101 and I-280 highways, and heavy industry continue to affect daily life and contribute to higher rates of asthma, heart disease, and other illnesses. The strategies and actions in this Plan aim to reduce these disproportionate health risks by lowering emissions and addressing air pollution concerns raised by the CSC and the BVHP/SESF community.

¹¹⁷ SFMTA, "Bayview Community Based Transportation Plan," adopted February 18, 2020. <https://www.sfmta.com/projects/bayview-community-based-transportation-plan>.

¹¹⁸ Ibid.

¹¹⁹ "Older" is defined as model year 2000 or earlier.

Reference List of Map Data Sources

All of the datasets listed below are available for download and fully documented in the Air District's [Open Data Catalog](#).¹²⁰

Figure 4-1

- Bay Area Air District. "BVHP/SESF CERP Community Boundary."

Figure 4-21

- California Department of Education (CDE). "Private Schools."
- California Department of Education (CDE). "Public Schools."
- California Department of Public Health (CDPH). "Licensed and Certified Healthcare Facilities."
- California Department of Social Services (CDSS). "Child Care Centers."
- California Department of Social Services (CDSS). "Residential Care Facilities for the Elderly."

Figure 4-22

- City and County of San Francisco. "Air Pollutant Exposure Zone (APEZ)."

¹²⁰ Bay Area Air District, "BAAQMD Public Data Catalog," accessed August 5, 2026, <https://datacatalog.baaqmdsf.org/>

Chapter 5: Air Quality Overview

Introduction

To support the development of the Community Emissions Reduction Plan (CERP), the Air District worked closely with the Community Steering Committee (CSC) to develop a common understanding of the community's air quality issues. This effort involved compiling and assessing a wide variety of information to identify factors contributing to air quality conditions in Bayview Hunters Point/Southeast San Francisco (BVHP/SESF). This analysis was informed by the community's lived experience, air quality monitoring data, emissions inventory data, and air quality modeling results.

This chapter begins with an overview of air pollution and health effects, air quality monitoring, emissions inventory development, and air quality modeling, and concludes with a section on connecting insights from these technical tools to specific community concerns to help provide a basis for the strategies and actions outlined in Chapter 8: Focus Areas, Strategies, and Actions. Some of the key findings discussed in this chapter include:

- The currently available monitoring data collected in BVHP/SESF are limited in both geographic coverage and in the types of pollutants measured, and the Bay Area Air District's (Air District) monitoring site at 16th Street and Arkansas Street is not representative of air pollution levels in BVHP/SESF.
- Current information about some types of emissions from sources of concern identified by community members is uncertain or is not included in the emissions inventory. These include emissions of fugitive dust, fugitive volatile organic compounds, or short-duration spikes in emissions. Many of these types of facilities are often clustered together and may be contributing to increases in cumulative impacts.
- Due to the presence of a high density sources of air pollution within BVHP/SESF and different types of meteorological patterns throughout the year, the Air District expects that pollutant concentrations, especially over certain short time periods, could be higher within BVHP/SESF than those measured at the San Francisco monitoring site, and those elevated concentrations may vary significantly from place-to-place depending on proximity to nearby sources and the wind speed and direction. Data from previous short-term studies highlight the potential for these conditions.
- Air monitoring data from the Air District's San Francisco monitoring site show that while concentrations of fine particulate matter (PM_{2.5}) and Nitrogen Dioxide (NO₂) have been in compliance with federal air quality standards, those concentrations have not improved over the last ten years.
- Data from Air District's monitoring sites located near busy roadways and from numerous studies show levels of black carbon, ultrafine particles (UFP), and other pollutants associated with traffic are higher than levels in suburban or rural areas that are further away from busy roadways.
- Air monitoring projects planned in BVHP/SESF will continue to provide additional information about how air quality can vary from place to place and how specific sources of concern in the community impact air quality.
- A 2022 emissions inventory for BVHP/SESF shows that key PM_{2.5} sources include residential fuel combustion, construction activities, road dust, and commercial cooking.

- Fugitive dust sources such as cement plants, roadways, and construction projects are significant sources of particulate matter (PM), and other sources of fugitive dust are likely missing from the inventory or underestimated (e.g., dust from unpaved areas, bulk material handling, and transport).
- Mobile sources such as cars, trucks, ocean-going vessels, and construction equipment are significant sources of several key toxic air contaminants (TACs) in BVHP/SESF, including diesel particulate matter (DPM), 1,3-butadiene, benzene, and acrolein.
- Exposure analyses highlight the importance of source locations relative to populated areas, which can be seen in comparisons between source contributions to emissions levels vs. modeled human exposures (e.g., on-road vehicles have a higher impact on exposures than their emissions levels would suggest due to the presence of heavily traveled roadways in and around residential areas).

Background and Community Concerns

The Air District supported the community nomination for BVHP/SESF to develop CERP due to the high health burden of residents in San Francisco's southeast neighborhoods, who experience disproportionately high exposure to air pollution. Emissions sources such as waste recycling facilities, concrete and aggregate operations, wastewater treatment facilities, large warehouse distribution centers, numerous autobody shops, and high-volume freeways and roadways (US-101, I-280, 3rd Street, Bayshore Boulevard, and Cesar Chavez Street) all contribute to the pollution burden of the area.

Upon the selection of the BVHP/SESF CSC in 2023, the Air District and the CSC began the process of developing a shared understanding of local air quality issues, which is fundamental to the CERP process. A list of community concerns was developed with CSC input, as described in Chapter 4: Community Description. Chapter 8: Focus Areas, Strategies, and Actions, provides a summary of these community concerns, each of which provides an area of focus for the development of CERP strategies and actions.

Many of these sources of concern are located within close proximity to areas where vulnerable populations live, work, or spend time, and they potentially contribute to elevated concentrations of criteria air pollutants (CAPs) and TACs. This combination of community and Air District information indicates that there is likely disproportionate exposure to poor air quality in BVHP/SESF to warrant the strategies and actions to reduce emissions and exposure, as described in later chapters. There remain limitations in our quantitative information about air pollutant emissions, concentrations, and exposure from current air monitoring and modeling efforts, so Chapter 8: Focus Areas, Strategies, and Actions, outlines additional actions that will continue to improve the understanding of the community's exposure to harmful air pollution. The information presented in this chapter represents what we know about air quality from community lived experience and the currently available air quality data and does not fully reflect the complexity of air quality issues in BVHP/SESF.

Overview of Air Pollution and Health Effects

This section provides general information on sources of air pollution and related health effects. The air community members breathe includes a mix of pollutants emitted from different sources within BVHP/SESF and from sources in nearby communities and regions in addition to pollutants formed through chemical reactions of different pollutants after they are emitted. Meteorological (weather) conditions further determine the transport of pollutants from one area to another and whether pollution will remain concentrated near the ground where people breathe. Sources of air pollution are wide-ranging and include anthropogenic sources (caused by human activity) like commercial and industrial facilities, motor vehicles, trains, ships, and residences (e.g., using wood-burning devices), as well as

natural sources like wildfires and airborne sea salt. Certain pollution sources or operations produce multiple pollutants at the same time, such as burning fuels or other materials.

This section begins with a discussion of the two main categories of air pollutants: CAPs and TACs. It then provides more detailed information on PM, including PM_{2.5}, black carbon, and UFP. Finally, it includes a description of TACs.

Categories of Air Pollutants

There are several categories and subsets of air pollutants. Two main categories of air pollutants are CAPs and TACs, as summarized in Table 5-1. CAPs are six common air pollutants that harm human health and are pollutants that the U.S. Environmental Protection Agency (U.S. EPA) sets standards for under the Clean Air Act, called the National Ambient Air Quality Standards (NAAQS).¹²¹ California also has established air quality standards (CAAQS) for several air pollutants.¹²² TACs are pollutants that are known to or are suspected to cause cancer or other serious health effects.¹²³ Of these pollutants, PM and various TACs are of greater concern due to their health impacts and the close proximity of sources of these pollutants to places where people live, work, and spend time in BVHP/SESF. PM includes both inhalable particles with diameters of 10 micrometers or smaller (PM₁₀) and PM_{2.5}.

Table 5-1. Categories and examples of air pollutants.

Pollutant Category	Description	Pollutants in this Category
Criteria Air Pollutants (CAPs)	Six common air pollutants that harm human health and have NAAQS set by the U.S. EPA	• Ozone (O₃) • Particulate matter (PM_{2.5} and PM₁₀) • Carbon monoxide (CO) • Nitrogen dioxide (NO₂) • Sulfur dioxide (SO₂) • Lead (Pb)
Toxic Air Contaminants (TACs)	TACs include over 200 pollutants identified by the CARB that are known or suspected to cause cancer or other serious health effects	Examples of TACs: • Benzene, toluene, ethylbenzene, xylene (BTEX), which are volatile organic compounds (VOCs) found in gasoline and released through combustion of fossil fuels • Diesel particulate matter (DPM), resulting from combustion of diesel fuel • Metals such as mercury, chromium, and arsenic

¹²¹ U.S. EPA webpage on Criteria Air Pollutants: <https://www.epa.gov/criteria-air-pollutants>

¹²² CARB webpage for the California Ambient Air Quality Standards: <https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards>

¹²³ CARB webpage on Toxic Air Contaminants: <https://ww2.arb.ca.gov/resources/documents/carb-identified-toxic-air-contaminants>

Particulate Matter

PM comes in many shapes, sizes, and compositions, as summarized in Table 5-2. PM₁₀ refers to inhalable particles with diameters of 10 micrometers (μm) or smaller, and PM_{2.5} refers to fine inhalable particles with diameters of 2.5 μm or smaller.^{124, 125} PM_{2.5} is much smaller than the width of a human hair, as illustrated in Figure 5-1, and can travel deep into the lungs and bloodstream, where they can cause or contribute to short-term health effects like bronchitis and asthma attacks, and long-term effects like heart disease and respiratory conditions like emphysema. Chapter 4: Community Description, contains more information related to health outcomes in BVHP/SESF. PM is emitted from many sources and can be directly emitted into the air (referred to as primary PM) or can form in the air through complex reactions of other pollutants that are emitted as gases (often referred to as secondary PM). Smaller particles, such as PM_{2.5}, are emitted more from combustion sources, including the combustion of fossil fuels for industrial operations; by cars, trucks, and other on-road mobile sources; and off-road mobile sources such as airplanes, trains, and construction equipment. Other combustion sources of PM_{2.5} include residential wood stoves and fireplaces, certain restaurants, and diesel generators. Secondary PM is also primarily composed of particles in the PM_{2.5} size fraction. Non-combustion sources of PM, such as dust from unpaved surfaces, facilities with sand, gravel, and metal operations, tend to emit particles of larger sizes, such as PM₁₀. Brake and tire wear from vehicles, and road dust generally, are also sources of PM. Natural sources of PM include wind-blown dust and sea salt, and biogenic sources (natural sources) that contribute to particle formation.

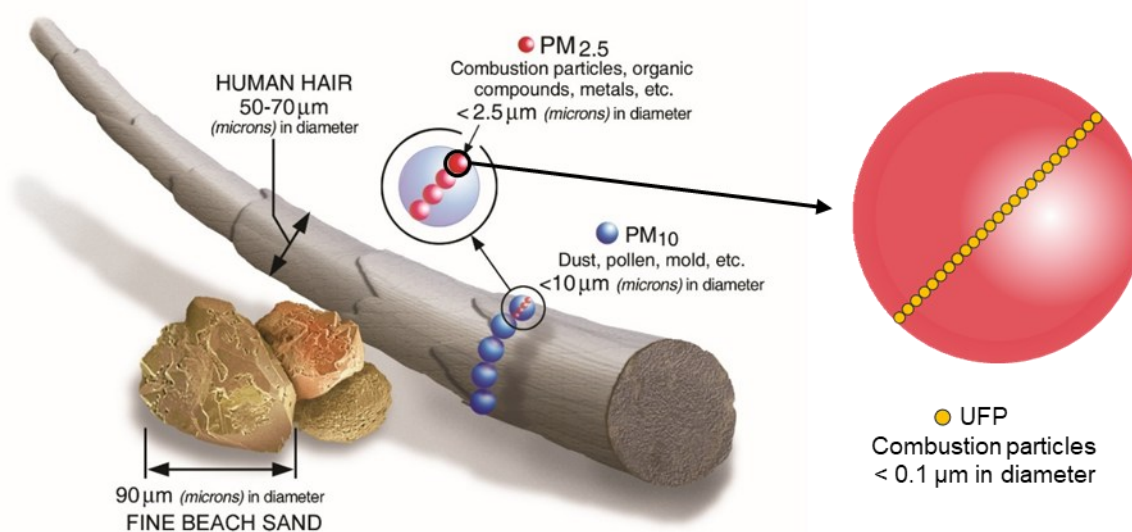


Figure 5-1. Illustration of size comparisons for types of particulate matter (PM). Image reproduced and adapted from U.S. EPA.

¹²⁴ CARB webpage on Inhalable Particulate Matter and Health (PM_{2.5} and PM₁₀): California Air Resources Board. <https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health>.

¹²⁵ U.S. EPA webpage on Particulate Matter (PM) Basics: <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>.

Table 5-2. Types of PM and examples of sources and health impacts. Many pollution sources produce multiple types of PM. In addition to PM emitted directly from sources, PM can also form in the atmosphere due to reactions of other pollutants, referred to as secondary PM.

Pollutant	Description / Examples	Example Sources	Notable/Example Health Impacts
Inhalable particulate matter (PM₁₀)	Smaller than 10 µm (1/5 th the thickness of a human hair).	- Dust, including from construction sites, unpaved surfaces, landfills, waste burning, and industrial and commercial sources - Brake and tire wear - Combustion of fuels (gasoline, oil, diesel) and wood (including wildfires)	- Asthma development, asthma attacks, difficulty breathing, bronchitis, heart disease, heart attacks, strokes, neurological (brain) disease, lung cancer, low birth weight, lost days of work and/or school. - Increased emergency room visits, medicine usage, hospital admissions, and premature deaths/ years of life lost.
Fine inhalable particulate matter (PM_{2.5})	Smaller than 2.5 µm (1/20 th the thickness of a human hair). Smaller size makes it easier to inhale and be deposited in lungs.	- Combustion of fuels (gasoline, diesel, and natural gas) and wood (including wildfires) - Industrial and commercial sources - Brake and tire wear - PM_{2.5} also forms in the air through complex reactions of other pollutants that are emitted as gases (known as secondary PM)	
Black carbon	Soot; a component of PM _{2.5} ; correlated with diesel particulate matter (DPM)	Combustion of fuels (gasoline, oil, diesel) and wood (including wildfires)	
Ultrafine particulate matter (UFPs)	Particles with diameter smaller than 0.1 µm.	- Exhaust from gasoline, diesel fuel, etc., being burned in engines (including airplanes) - Brake and tire wear, road dust - UFPs also form in the air through complex reactions of other pollutants	

Black carbon, commonly known as soot, is a component of PM. Black carbon is correlated with DPM, which is of particular health concern because of its toxicity. Another category of PM is UFPs, which are particles with diameters of less than 0.1 micrometers. UFPs have many sources and are emitted primarily from fuel combustion, including diesel, gasoline, and jet engines. Concentrations of UFPs are highly variable over time and from location to location and are strongly influenced by proximity to sources that emit UFPs directly, secondary formation of UFPs resulting from chemical reactions in the atmosphere, and meteorological conditions. Higher concentrations of UFPs near high traffic roadways and airports have been well documented in several measurement studies.^{126, 127, 128} UFPs may cause adverse health effects, including respiratory and cardiovascular issues. The health effects of different components and sizes of PM is an active and evolving area of scientific research.¹²⁹

Toxic Air Contaminants

TACs, also referred to as air toxics, are pollutants that are known or suspected to cause cancer and other serious health effects such as neurological, reproductive, developmental, cardiovascular, or respiratory conditions. Chapter 4: Community Description, contains more information related to health outcomes in BVHP/SESF. There are over 200 substances or groups of substances in the list of TACs as defined by CARB. Some examples of TACs include DPM; particulate metals such as arsenic, lead, manganese, and chromium; and volatile organic gases such as benzene and formaldehyde. Sources of different TACs vary, and many TACs co-occur in ambient air. The California Office of Environmental Health Hazard Assessment (OEHHA) maintains Reference Exposure Levels (RELs) for non-cancer health impacts¹³⁰ for chronic, 8-hour, and acute (1-hour) exposures for many TACs, which can be compared with measured or modeled TAC concentrations.¹³¹ These values are used by regulatory agencies to inform actions taken to reduce people's exposure to air pollution. At higher levels, exposure to TACs can cause acute health effects such as headaches, nausea, respiratory irritation and asthma episodes, and irritation of the eyes, nose, throat, and skin.

¹²⁶ South Coast AQMD MATES V Final Report, Appendix VII: Ultrafine Particle Measurements at Fixed Sites: https://www.aqmd.gov/docs/default-source/planning/mates-v/appendixvii_final.pdf?sfvrsn=9b20ae61_4.

¹²⁷ South Coast AQMD Final Report: General Aviation Airport Air Monitoring Study: Follow-up Monitoring Campaign at the Santa Monica Airport: <https://www.aqmd.gov/docs/default-source/air-quality/air-quality-monitoring-studies/general-aviation-study/supplemental-monitoring-campaign-at-the-santa-monica-airport.pdf>.

¹²⁸ G.S.W. Hagler, R.W. Baldauf, E.D. Thoma, T.R. Long, R.F. Snow, J.S. Kinsey, L. Oudejans, B.K. Gullett, Ultrafine particles near a major roadway in Raleigh, North Carolina: Downwind attenuation and correlation with traffic-related pollutants, *Atmospheric Environment*, Volume 43, Issue 6, 2009, Pages 1229-1234, ISSN 1352-2310, <https://doi.org/10.1016/j.atmosenv.2008.11.024>.

¹²⁹ For more information on the health effects of ultrafine particles (UFP), see: U.S. EPA. Integrated Science Assessment (ISA) for Particulate Matter (Final Report, Dec 2019). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-19/188, 2019; <https://assessments.epa.gov/risk/document/&deid=347534>; <https://www.nature.com/collections/bjjiefcddb>; <https://link.springer.com/article/10.1007/s00038-019-01202-7> or <https://www.liebertpub.com/doi/abs/10.1089/o89426802320282310>.

¹³⁰ Examples of non-cancer chronic health effects include damage to the respiratory, nervous, immune, and reproductive systems and neurological and development disorders.

¹³¹ OEHHA's Summary of Acute, 8-hour and Chronic Reference Exposure Levels (RELs): <https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary>.

Air Quality Monitoring

This section contains an overview of air monitoring data. It includes a discussion of trends and variability in air monitoring data for different CAPs and TACs. It also provides comparisons with air quality standards and other health-based thresholds using data collected at Air District air monitoring sites. Furthermore, it offers insights from additional air monitoring projects in BVHP/SESF.

Ambient air quality monitoring provides information on the outdoor air we breathe in our neighborhoods and communities. There are several methods for monitoring ambient air quality, each with different purposes, strengths, and limitations. However, no single monitoring system can inform every aspect of air quality, and air monitoring is not feasible in all places at all times and for all pollutants. Air monitoring data reflects the total levels of air pollution in the air and is a combination of direct pollution emissions from sources of air pollution, influences from meteorological conditions, and chemical reactions in the atmosphere.

The Air District operates a multi-pollutant network of long-term regulatory air monitoring sites across the Bay Area.¹³² Data provided by the Air District's network can help characterize long-term air quality trends and is used for comparison with health-based standards, in particular, the NAAQS set by the U.S. EPA.¹³³ This network includes one monitoring site in San Francisco, as shown in Figure 5-2. Table 5-3 provides additional information about the information collected at the site.

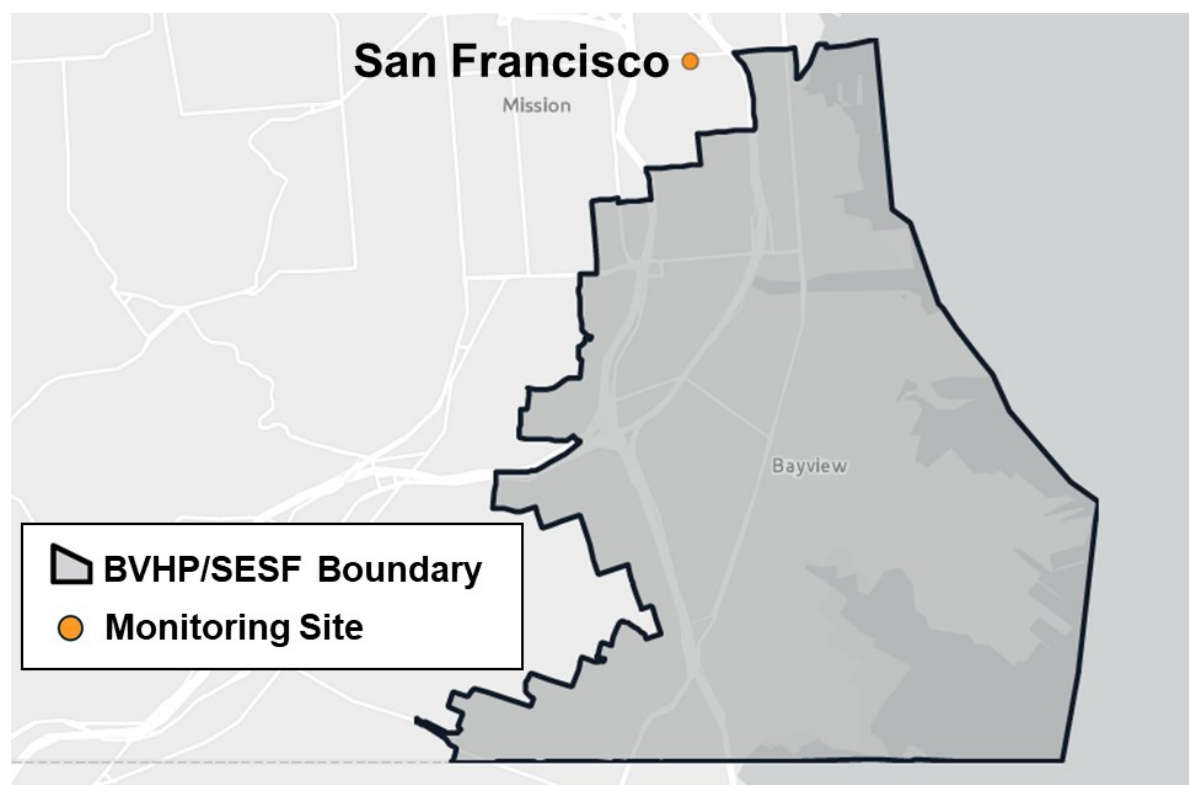


Figure 5-2. Map of air monitoring sites in San Francisco.

¹³² The Air District's Ambient Air Monitoring Network webpage: <https://www.baaqmd.gov/about-air-quality/air-quality-measurement/ambient-air-monitoring-network>.

¹³³ Description of U.S. EPA's health-based NAAQS: <https://www.epa.gov/air-trends/air-quality-design-values>.

Table 5-3. Air District monitoring in San Francisco.

Monitoring Site	Pollutants Monitored	Location Notes
San Francisco	PM _{2.5} , PM ₁₀ , ozone, NO ₂ , carbon monoxide (CO), toxic air contaminants	The site is in the Potrero Hill neighborhood of San Francisco, located near the corner of 16 th and Arkansas St. The site is located between the US-101 and I-280 highways, near light industrial activities and residential neighborhoods.

Trends and Variability in Criteria Air Pollutants

One way to assess air quality in terms of health impacts is to compare measured concentrations of different pollutants to U.S. EPA's health-based NAAQS. This comparison uses a statistic called a design value. For each CAP, a design value is calculated each year using data collected over the previous three years.¹³⁴ Tracking how design values change over time provides information on whether levels of a pollutant are improving, worsening, or holding steady relative to the NAAQS, and helps illustrate how design values vary between locations and for different pollutants.

Design values for annual average and 24-hour PM_{2.5}, 8-hour ozone, and 1-hour NO₂ for the San Francisco monitoring site are shown in Table 5-4. The most recent design values in San Francisco (for the 2022-2024 period) are below their respective NAAQS levels.¹³⁵

Table 5-4. Design values (2021-2023) for PM_{2.5}, ozone, NO₂ for the San Francisco air monitoring site. Units are in micrograms per cubic meter (µg/m³), parts per million (ppm), or parts per billion (ppb), depending on pollutant.

NAAQS	Level of the NAAQS	San Francisco 2022-2024 Preliminary Design Value
Annual PM _{2.5} (2024 standard)	9.0 µg/m ³	6.7 µg/m ³
24-hour PM _{2.5} (2006 standard)	35 µg/m ³	19 µg/m ³
8-hour Ozone (2015 standard)	0.070 ppm	0.042 ppm
1-hour NO ₂ (2010 standard)	100 ppb	39 ppb

¹³⁴ EPA Air Quality Design Values website: <https://www.epa.gov/air-trends/air-quality-design-values>.

¹³⁵ Data from 2015 through September 30, 2023 was obtained from the U.S. EPA AQS system. Preliminary data was used for all pollutants beginning on August 1, 2023 through the end of 2024. Preliminary data has not gone through complete quality assurance checks and may be subject to change.

The design value for annual PM_{2.5} evaluates long-term, or chronic, exposure to PM_{2.5} over the course of a year, and the design value for 24-hr PM_{2.5} evaluates exposure to shorter-duration PM_{2.5} episodes (e.g., wildfires or when stagnant weather conditions allow pollution levels to build up). In February 2024, U.S. EPA strengthened the NAAQS for annual average PM_{2.5} from 12.0 µg/m³ to 9.0 µg/m³.¹³⁶ Design values for annual PM_{2.5} at the San Francisco monitoring site were between 6.7 µg/m³ and 10.0 µg/m³ over the past ten years, as shown in Figure 5-3. This site is located outside, but adjacent to, the BVHP/SESF boundary and may not capture potentially elevated concentrations in BVHP/SESF from local sources of pollution, but does provide information on PM_{2.5} concentrations from more regional sources and is likely representative of typical levels in residential areas in other parts of San Francisco that have similar land uses and proximity to similar sources to the areas around 16th and Arkansas Street. Between 2019-2021 and 2022-2024 periods, the San Francisco monitoring site measured the lower annual PM_{2.5} design values than San Pablo, West Oakland, and East Oakland monitoring sites. While the design value for annual PM_{2.5} at the San Francisco monitoring site is currently below the NAAQS, a broad scientific literature base has demonstrated that additional reductions in PM_{2.5} can have health benefits, especially in overburdened communities that can be more vulnerable to air pollution.¹³⁷

The 24-hour PM_{2.5} design value, as opposed to the annual PM_{2.5} design value, is much more strongly affected by shorter-term air quality events, such as smoke from wildfires. In recent years, wildfire smoke contributed to numerous occurrences of high 24-hour PM_{2.5} concentrations across the Bay Area, leading to design values above the NAAQS (Figure 5-4) from 2018-2020. Outside of recent years with severe wildfire events, the 24-hour PM_{2.5} design values were below the current 24-hr PM_{2.5} NAAQS.

Design values for 8-hour ozone (Figure 5-5) and 1-hour NO₂ (Figure 5-6) have been well below the NAAQS at the San Francisco monitoring site for the last decade. This means that ozone and NO₂ concentrations are in compliance with federal health-based air quality standards. Ozone forms in the atmosphere from reactions of other pollutants, especially under sunny, hot weather conditions. In the Bay Area, ozone levels are generally higher farther inland from the coast and Bayshore. NO₂ and other nitrogen oxides (NO_x) react with other pollutants to form both PM and ozone.

As noted previously, in addition to the NAAQS established by U.S. EPA, California established the CAAQS for several pollutants. However, some of the CAAQS, including for PM_{2.5}, are now less stringent than the NAAQS, and recent monitoring data for different pollutants measured at the San Francisco monitoring site are all below their respective CAAQS. The World Health Organization (WHO) has also developed air quality guidelines for several pollutants.¹³⁸ Those guidelines use different methodologies for comparison with air monitoring data and therefore are not directly comparable to the data presented in this section, which are summarized for comparison with the NAAQS.

¹³⁶ EPA Final Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (PM): <https://www.epa.gov/pm-pollution/final-reconsideration-national-ambient-air-quality-standards-particulate-matter-pm>.

¹³⁷ U.S. EPA. Integrated Science Assessment (ISA) for Particulate Matter (Final Report, Dec 2019). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-19/188, 2019: <https://assessments.epa.gov/risk/document/&deid=347534>.

¹³⁸ World Health Organization air quality guidelines: <https://www.who.int/news-room/feature-stories/detail/what-are-the-who-air-quality-guidelines>.

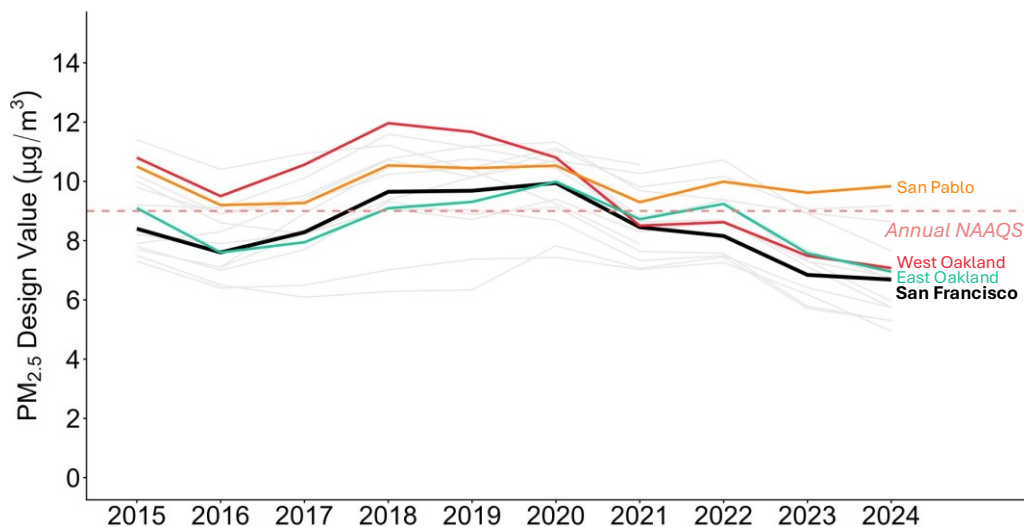


Figure 5-3. Design values for annual $PM_{2.5}$ at Air District monitoring sites. The y-axis shows $PM_{2.5}$ concentrations and the x-axis shows years from 2015 to 2024. Each line on the plot represents design values at a different monitoring site, which is the three-year average of the annual mean for each year in the three-year period. Grey lines denote design values for other Air District monitoring sites in the Bay Area that are not otherwise labeled. In 2024, the $PM_{2.5}$ annual NAAQS was lowered from $12.0 \mu\text{g}/\text{m}^3$ to $9.0 \mu\text{g}/\text{m}^3$. The revised NAAQS of $9.0 \mu\text{g}/\text{m}^3$ is shown in the figure for reference.

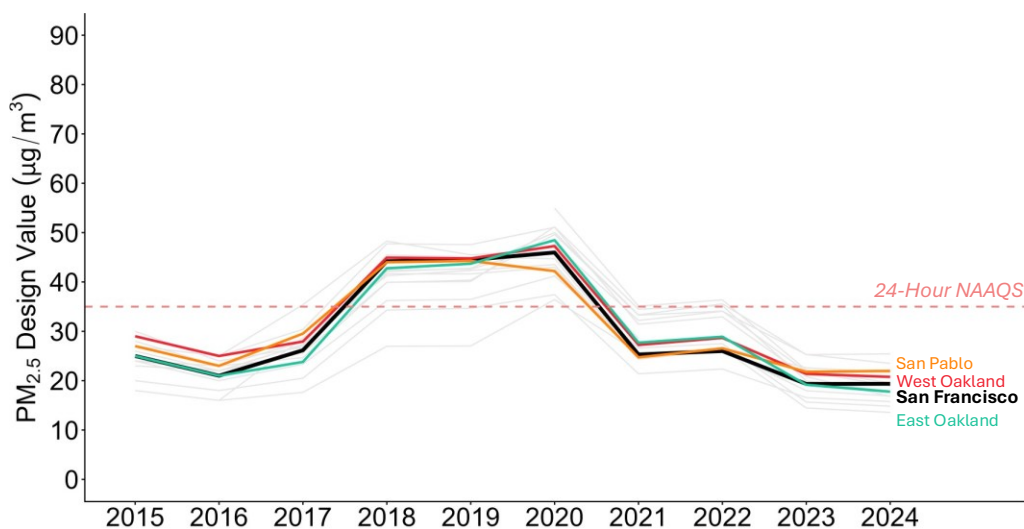


Figure 5-4. Design values for 24-hr $PM_{2.5}$ at Air District monitoring sites. The y-axis shows $PM_{2.5}$ concentrations and the x-axis shows years from 2015 to 2024. Each design value represents the three-year average of the ranked 98th percentile concentration for each year in the three-year period. Grey lines denote design values for other Air District monitoring sites in the Bay Area that are not otherwise labeled. Smoke from wildfires was a main cause for increases in 24-hr $PM_{2.5}$ design values from 2017 to 2020.

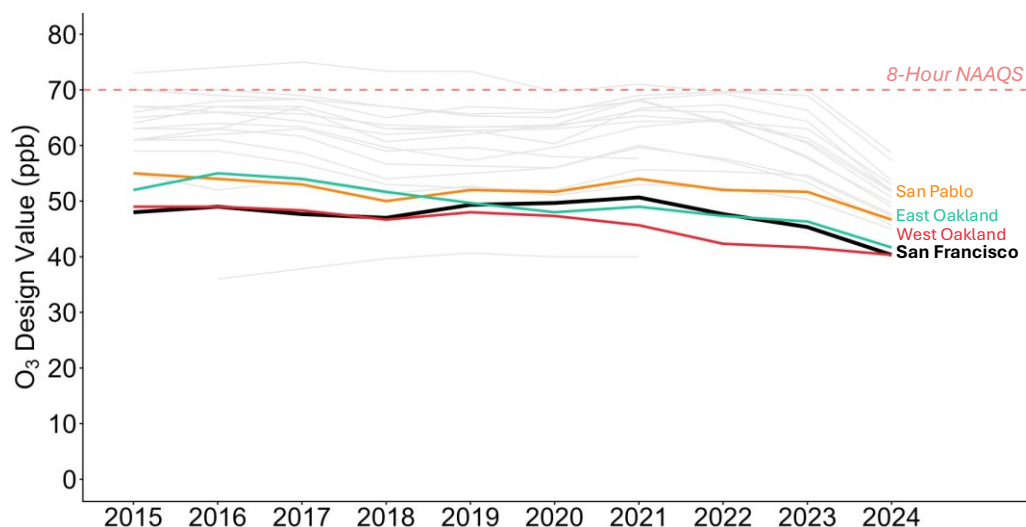


Figure 5-5. Design values for 8-hr ozone (O_3) at Air District monitoring sites. The y-axis shows ozone concentrations and the x-axis shows years from 2015 to 2024. Grey lines denote design values for other Air District monitoring sites in the Bay Area that are not otherwise labeled. Design values for 8-hr O_3 at the San Francisco monitoring site have remained well below the NAAQS for the past ten years.

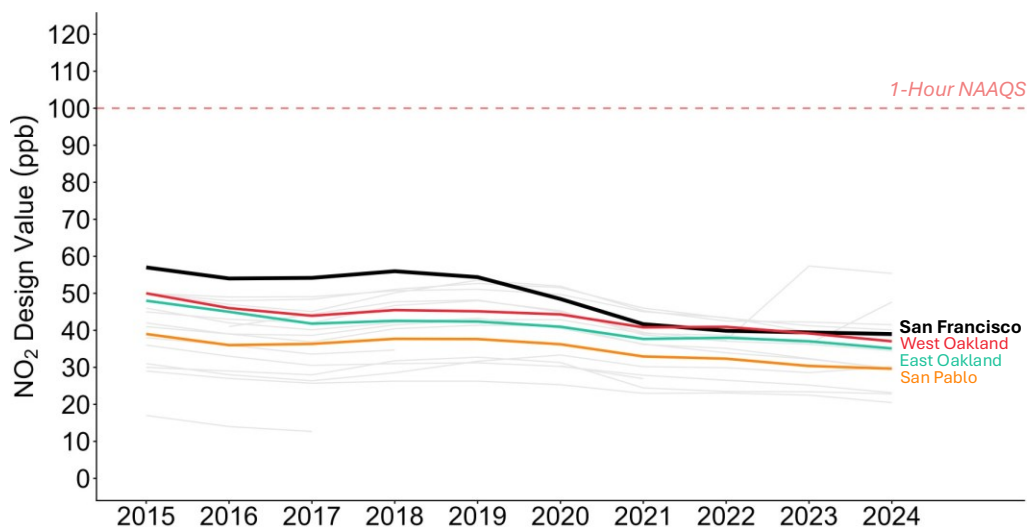


Figure 5-6. Design values for 1-hr nitrogen dioxide (NO_2) at Air District monitoring sites. The y-axis shows NO_2 concentrations and the x-axis shows years from 2015 to 2024. Grey lines denote design values for other Air District monitoring sites in the Bay Area that are not otherwise labeled. Design values for 1-hr NO_2 at the San Francisco monitoring site have remained well below the NAAQS for the past ten years.

Public health concerns also include smoke from wildfires, which has caused periods of unhealthy air quality in BVHP/SESF and throughout the Bay Area in recent years. Figure 5-7 shows 24-hour average (midnight to midnight) PM_{2.5} concentrations at the Air District's San Francisco monitoring site from 2020 to 2024. The bold blue line indicates data from 2024 to highlight the variability in PM_{2.5} concentrations over a year, and the gray shaded area represents the range of daily PM_{2.5} concentrations that were measured during the 2020 to 2024 period. The fluctuations in PM_{2.5} concentrations from day to day are driven largely by changes in meteorology (wind patterns, mixing and ventilation) and in emissions. The highest PM_{2.5} concentrations occurred during wildfire periods, during which the daily average PM_{2.5} NAAQS of 35 µg/m³ was exceeded on numerous occasions. Because wildfire smoke contains high concentrations of PM_{2.5}, and it is a pollutant with known severe health effects, PM_{2.5} is the pollutant of highest concern for public health, but smoke also contains numerous other pollutants, including CO, NO_x, and various TACs that may be harmful to human health at the levels occurring in smoke (see Figure 5-7). The U.S. EPA's AirNow program¹³⁹, CARB¹⁴⁰, and the Air District¹⁴¹ have websites with information and resources on wildfire smoke and steps to take to reduce exposure to wildfire smoke. The AirNow Fire and Smoke Map website displays real-time PM_{2.5} data from air quality agencies (such as the Air District) as well as data from PurpleAir lower-cost sensors (whose data are adjusted by a U.S. EPA-developed algorithm that compensates for some of the inaccuracies of the sensors),¹⁴² and can be used to inform personal decisions about exposure mitigation during wildfire smoke events.

Populations most vulnerable to health effects from wildfire smoke exposure include people with chronic illnesses including asthma, other lung diseases, and cardiovascular disease. Life stages can also affect susceptibility to health effects from smoke, with children, older adults, and pregnant people among the most vulnerable groups. Outdoor workers and people with lower incomes are more vulnerable because they tend to have less agency or resources to take action to mitigate their exposure to smoke, and people with high exposure to other pollutants may also be more susceptible to health effects than the general population.¹⁴³

¹³⁹ U.S. EPA AirNow Wildfire website: <https://www.airnow.gov/wildfires/>.

¹⁴⁰ CARB's Protecting Yourself from Wildfire Smoke website: <https://ww2.arb.ca.gov/protecting-yourself-wildfire-smoke>.

¹⁴¹ The Air District's Wildfire Safety website: <https://www.baaqmd.gov/about-air-quality/wildfire-air-quality-response-program/wildfire-safety>.

¹⁴² U.S. EPA AirNow Fire and Smoke Map for real-time PM_{2.5} data: <https://fire.airnow.gov/>.

¹⁴³ Wildfire Smoke Fact Sheet – At-Risk Groups of People: <https://document.airnow.gov/at-risk-groups-of-people-fact-sheet.pdf>.

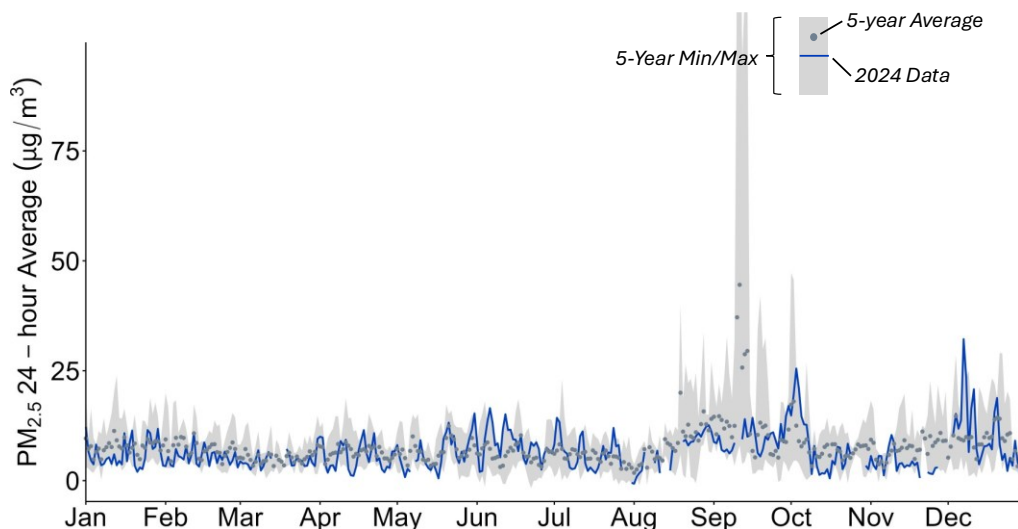


Figure 5-7. 24-hour average $PM_{2.5}$ concentrations at the San Francisco monitoring site, 2020-2024. $PM_{2.5}$ concentrations typically vary considerably over a year. Some of the highest concentrations occurred during periods of wildfire smoke.

Real-time air quality data can help inform the public in making decisions about reducing exposure to unhealthy air quality, such as choosing to reschedule outdoor activities like exercise when air quality is or is expected to be unhealthy. The Air District's website provides real-time air quality monitoring data from Air District air monitoring sites on its website. Air quality meteorologists at the Air District also issue daily air quality forecasts for the Bay Area, as well as Spare the Air Alerts when air quality levels are expected to be elevated. The public can view the daily air quality forecast and subscribe to receive forecasts and alerts by text and e-mail, and can download the Spare the Air mobile app, on the Spare the Air program website.¹⁴⁴ The Air District also issues Air Quality Advisories when air quality is expected to be poor in some areas for a short amount of time but not to the extent that a health-based standard (based on a 24-hour average for $PM_{2.5}$) is exceeded. These Advisories are listed on a banner at the top of the Air District website and are posted on Air District social media pages. Bay Area residents can also opt in to receive Air Quality Incident Notifications via email and text message.¹⁴⁵

Insights from Near-Road Air Monitoring Sites

Measurement data from Air District air monitoring sites and numerous studies of air monitoring data show that levels of several traffic-related air pollutants, such as NO_2 , CO, black carbon, UFP, $PM_{2.5}$, and VOCs, are often higher near busy roadways. Pollutant levels along roadways are typically higher when traffic is worse, such as during daily commute periods.

The Air District operates four near-road air monitoring sites in the Bay Area as part of a national network of near-road monitors required by U.S. EPA.¹⁴⁶ These sites are located alongside freeways with high traffic counts where maximum impacts from on-road pollution sources are expected and monitor for

¹⁴⁴ Website for the Air District's Spare the Air program: <https://www.sparetheair.org/>.

¹⁴⁵ Website for the Air District's Air Quality Incident Notification Sign-Up: <https://www.baaqmd.gov/en/contact-us/sign-up-for-information/air-quality-incident-notifications>.

¹⁴⁶ U.S. EPA Near Road Monitoring website: <https://www.epa.gov/amtic/near-road-monitoring>.

pollutants that are commonly associated with traffic, such as NO_2 , CO, and $\text{PM}_{2.5}$. Figure 5-8 shows the locations of the Air District's near-road air monitoring sites and Figure 5-9 shows a photo of the siting of the Oakland – Laney near-road monitoring site as an example of how these monitoring sites are oriented, which is located 20 meters downwind of I-880 along a segment of roadway that typically has among the highest Fleet Equivalent Annual Average Daily Traffic (FE-AADT) in the Bay Area.

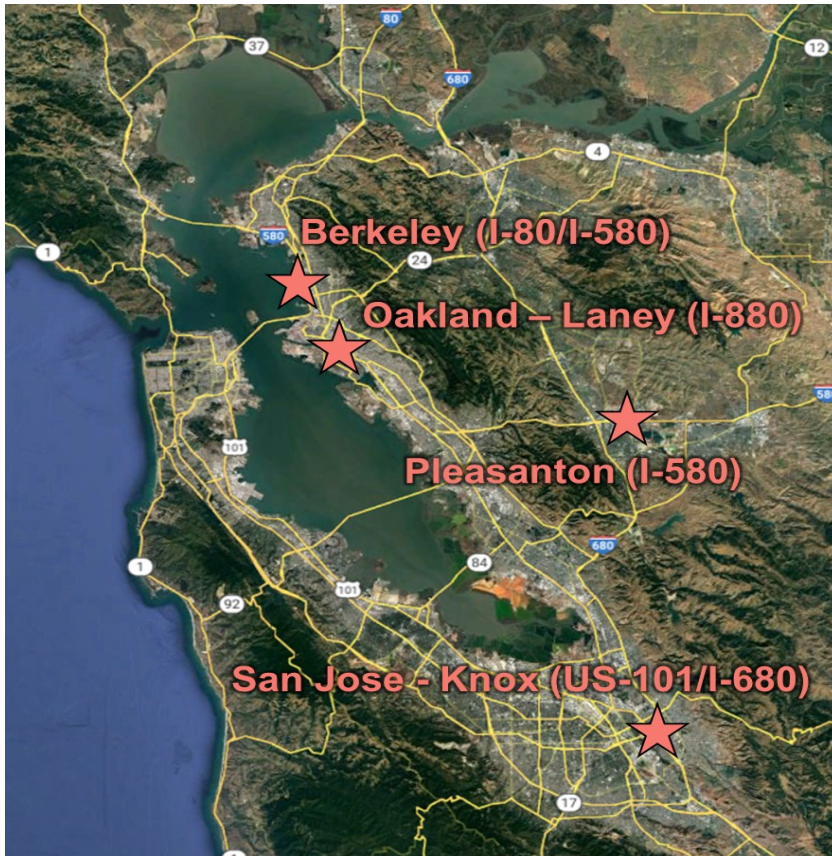


Figure 5-8. Locations of the Air District's near-road air monitoring sites.



Figure 5-9. Photo of the probe at the Oakland – Laney near-road air monitoring site near I-880 (bottom).¹⁴⁷

Figure 5-10 shows average concentrations of several pollutants by time of day over the period 2016–2020 at Air District monitoring sites, categorized by general siting location (near-road, urban/suburban, and rural). Concentrations of NO₂, CO, black carbon, and UFP were generally higher at the near-road monitoring sites (red lines) compared to other monitoring sites (blue and green lines). For PM_{2.5}, average concentrations at the near-road monitoring sites (red lines) were higher than many of the other sites, though concentrations at some of the non-near road urban/suburban sites (blue lines) were very similar to concentrations at near-road sites. Average peak hour concentrations of black carbon and UFP at the near-road monitoring sites were about twice as high as compared to most other monitoring sites and were highest at the Oakland – Laney monitoring site. The higher black carbon concentrations observed at the near-road monitoring sites may indicate a greater contribution from diesel truck exhaust. The rural monitoring site (green lines) that shows higher concentrations of black carbon in the evening hours is in a valley where residential wood burning is a dominant source of air pollution.

¹⁴⁷ Photo of the Oakland – Laney air monitoring site is from the California Air Resources Board. Air Monitoring Sites – Interactive Map (2019). <https://ww2.arb.ca.gov/applications/air-monitoring-sites-interactive-map>.

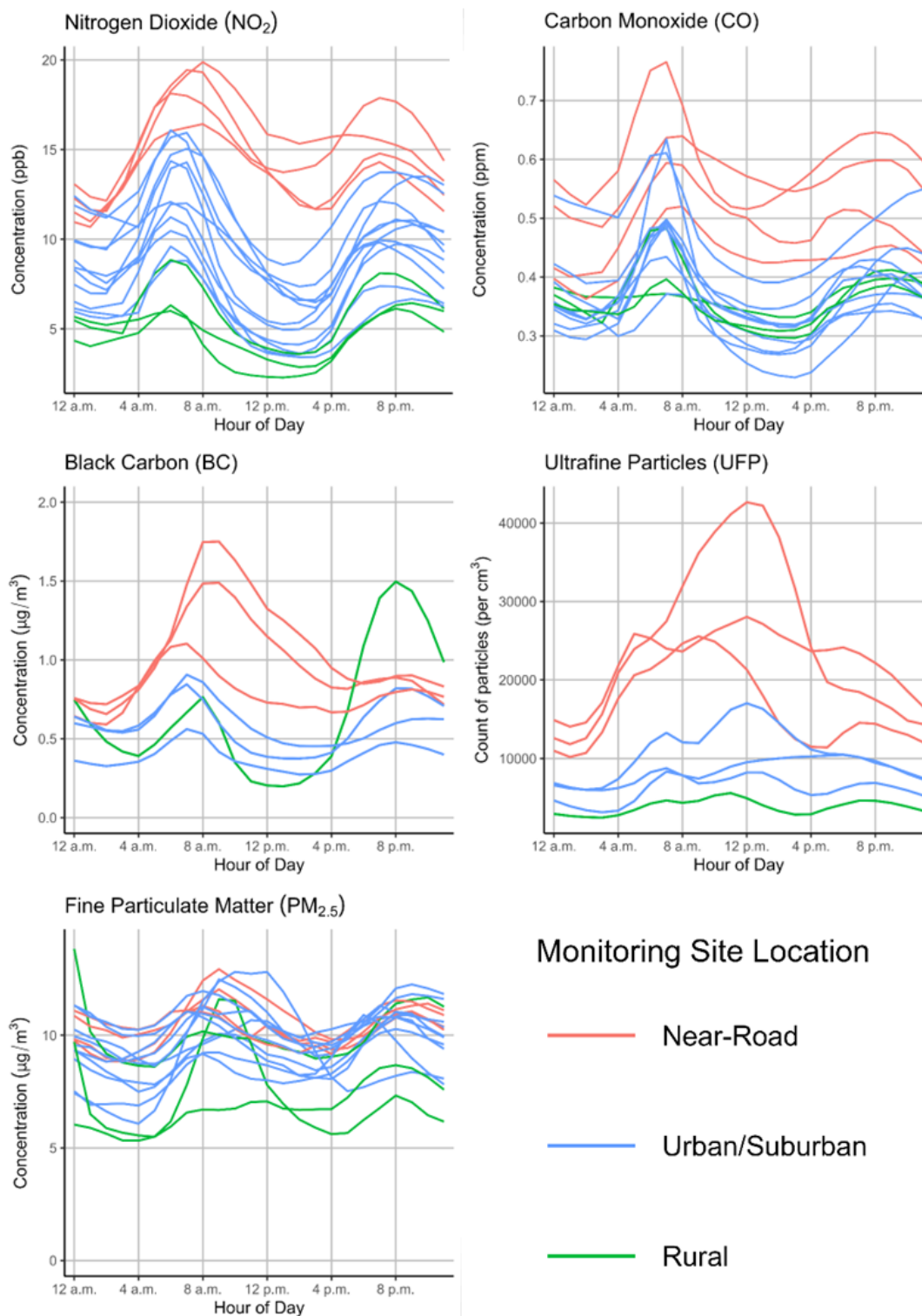


Figure 5-10. Average concentrations of nitrogen dioxide (NO₂), carbon monoxide (CO), black carbon (BC), ultrafine particles (UFP), and fine particulate matter (PM_{2.5}) by hour of day at Air District monitoring sites, 2016-2020. Each line represents data from one monitoring site.

Figures 5-11 and 5-12 show average $PM_{2.5}$ and NO_2 concentrations by time of day over the period 2020–2024 at the San Francisco monitoring site. Similar to patterns shown in Figure 5-23, concentrations of $PM_{2.5}$ and NO_2 were generally higher at the near-road monitoring sites (Berkeley Aquatic Park, Oakland – Laney, and San Jose – Knox) compared to the San Francisco monitoring site (black line).

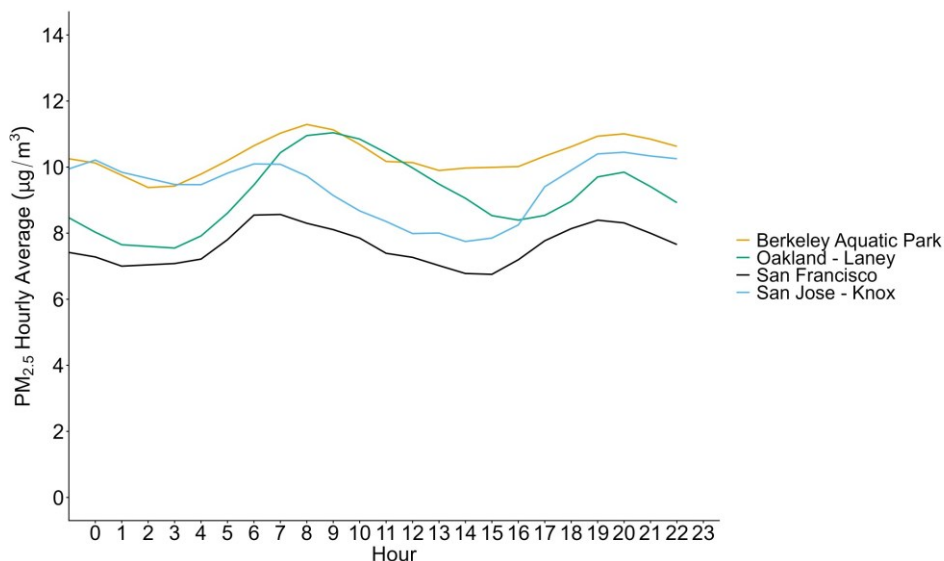


Figure 5-11. Average concentrations of fine particulate matter ($PM_{2.5}$) by hour of day at Air District monitoring sites, 2020–2024. Each line represents data from one monitoring site.

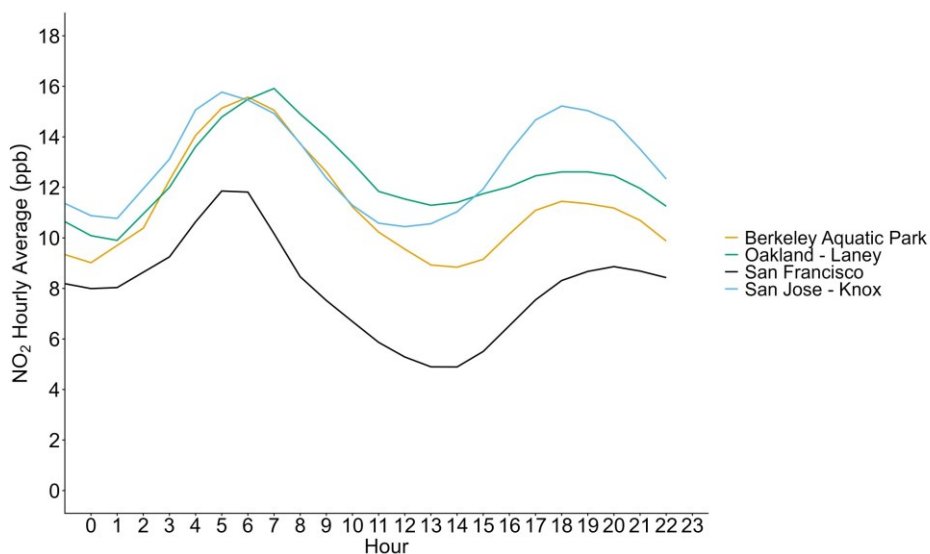


Figure 5-12. Average concentrations of nitrogen dioxide (NO_2) by hour of day at Air District monitoring sites, 2020–2024. Each line represents data from one monitoring site.

Concentrations of these pollutants fluctuate throughout the day due to changes in emissions, meteorology, and chemical reactions in the atmosphere. Pollutant concentrations generally increase during the morning commute period, due in part to increased emissions from traffic at that time. On any given day, the fluctuations and patterns in pollutant concentrations may be substantially different than the average concentrations shown in Figures 5-11 and 5-12.

The impacts shown by Air District near road air monitoring are consistent with numerous other studies that also found higher measured concentrations of traffic-related air pollutants near roadways.^{148, 149, 150} While these specific studies took place outside BVHP/SESF, their findings can be applicable to near-road environments more broadly. Throughout San Francisco, a mobile monitoring project conducted by Aclima found higher levels of traffic-related pollutants (NO₂ and PM_{2.5}) along Cesar Chavez St. and several freeway corridors, including I-280 and US-101.¹⁵¹ In addition, there are racial disparities in exposure to traffic-related air pollution, with communities of color often facing higher levels of harmful pollutants due to their proximity to busy roadways.¹⁵²

Insights from PM_{2.5} Sensor Data

In recent years, an expanding network of air quality sensors has provided additional information about PM_{2.5} concentrations at a larger number of locations in BVHP. In 2020 to 2024, separate networks of thirty-one publicly available PurpleAir and seven Clarity PM_{2.5} sensors deployed by Brightline Defense were located in BVHP. Air sensors have also been deployed by the following organizations: All Things Bayview, Safer Together, Greenaction, and San Francisco Air Quality (SFAQ) Manylabs. PM_{2.5} sensors can provide insight into differences in PM_{2.5} concentrations at different locations within BVHP, but measurements from sensors may be less accurate than those reported by monitors at Air District monitoring sites, and are subject to a number of limitations, including from interference by factors unrelated to air quality such as humidity and temperature, differences in measurement methods, algorithms used to report the data, and their placement in proximity to sources of pollution that may only affect a small area (such as cooking devices or cigarette smoke). Brightline Defense provided the hourly Clarity data included in this analysis, and the PurpleAir observations were quality-controlled and aggregated at the daily mean level by the Bay Air Center.¹⁵³ Daily mean concentrations were calculated from hourly Clarity and PurpleAir measurements for every day from 2020 to 2024 with at least 18 hourly measurements per day.

¹⁴⁸ Baldauf, R., Thoma, E., Hays, M. et al., Traffic and Meteorological Impacts on Near-Road Air Quality: Summary of Methods and Trends from the Raleigh Near-Road Study. *Journal of the Air & Waste Management Association*, 58:7, 865-878 (2008). <https://doi.org/10.3155/1047-3289.58.7.865>.

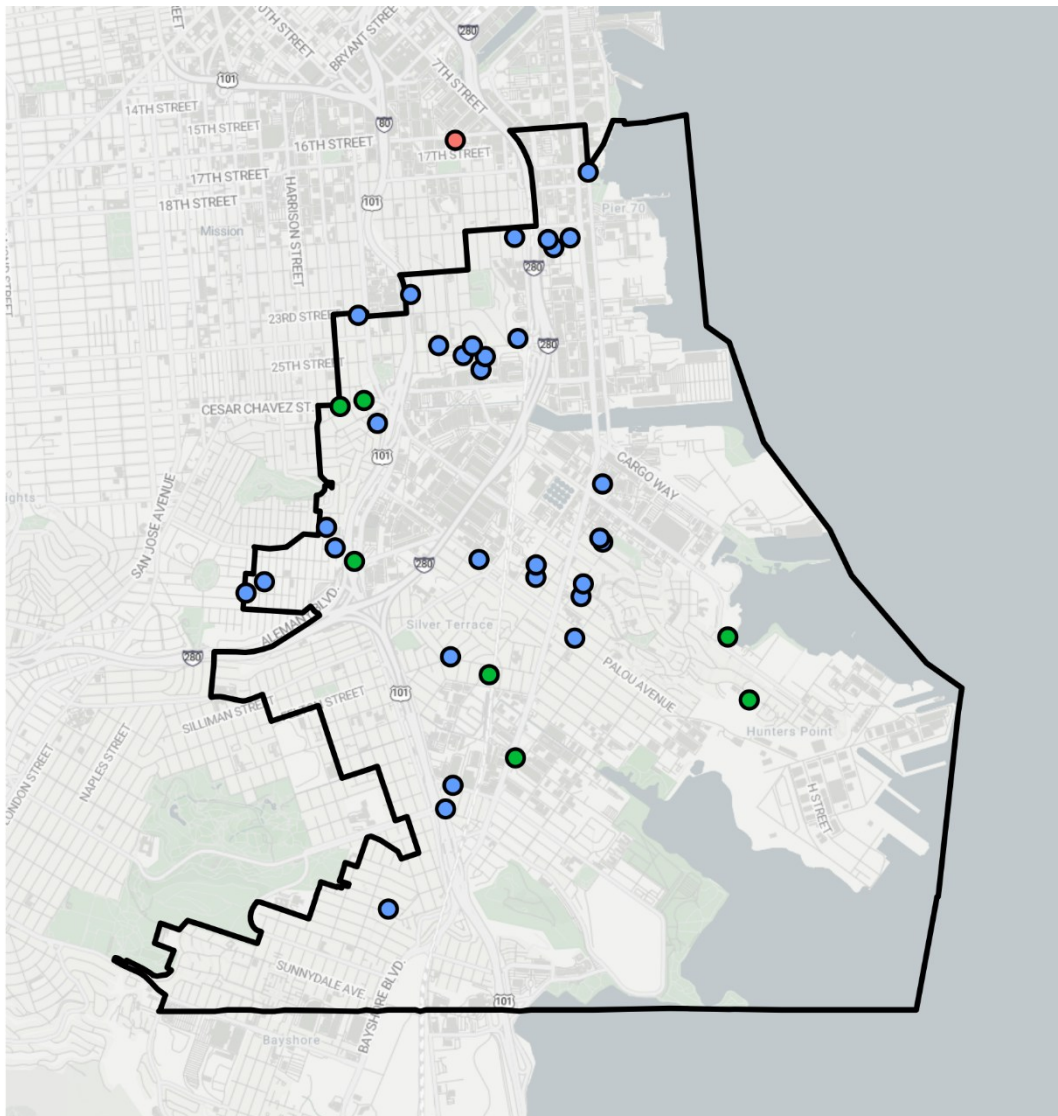
¹⁴⁹ Baldauf, R., Watkins, N., Heist, D. et al. Near-road air quality monitoring: Factors affecting network design and interpretation of data. *Air Qual Atmos Health* 2, 1–9 (2009). <https://doi.org/10.1007/s11869-009-0028-0>.

¹⁵⁰ Polidori A., Fine P. M. Ambient Concentrations of Criteria and Air Toxic Pollutants in Close Proximity to a Freeway with Heavy-Duty Diesel Traffic. Final report prepared by the South Coast Air Quality Management District (2012). <http://www.aqmd.gov/docs/default-source/air-quality/air-quality-monitoring-studies/near-roadway-study.pdf>.

¹⁵¹ Aclima's Air.Health website: <https://air.health/>.

¹⁵² Union of Concerned Scientists. Inequitable Exposure to Air Pollution from Vehicles in California. <https://www.ucsusa.org/sites/default/files/attach/2019/02/cv-air-pollution-CA-web.pdf>.

¹⁵³ Bay Air Center Air Sensor Dataset Frequently Asked Questions: <https://app.box.com/s/kakzbbwwpselxpykslkapjjozyfxb80>.



● Air District ● Clarity ● PurpleAir

Figure 5-13. Locations of $PM_{2.5}$ sensors from the Clarity and PurpleAir networks in BVHP and the location of the nearby Air District San Francisco monitoring site. The black line delineates the BVHP/SESF community boundary.

Overall trends in daily mean $PM_{2.5}$ concentrations observed at the Air District's San Francisco monitoring site are generally consistent with the trends observed at most of the Clarity and PurpleAir sensors, with the highest concentrations observed during wildfire smoke events at most sites (for example, in August 2020, when Northern California experienced multiple large fires). A heatmap of the difference in daily concentrations from the network-wide mean observed at each site is shown in Figure 5-14. Network-wide means were calculated for both the Clarity and PurpleAir sensor networks and compared to individual sensors within those networks separately. Despite high correlation in concentrations across sites, some locations, including The Box Shop Clarity site and the Dogpatch, 607 Andover St., and Mckinnon at Phelps Backyard PurpleAir sites, recorded consistently higher concentrations that may be indicative of contributions from sources of pollution located nearby. Figure 5-15 shows a time-series of concentrations at these selected sites with relatively high observed concentrations relative to the

network-wide averages, with the San Francisco monitoring site included in gray. Variability in $PM_{2.5}$ observations at the BVHP sensors follows those at the San Francisco monitoring site more closely during some periods than others, potentially indicating increased influence of local sources of pollution on $PM_{2.5}$ concentrations measured in BVHP. As one example, the Clarity sensor at The Box Shop typically records higher concentrations than the San Francisco monitoring site and other nearby sensors, with a mean $3.1 \mu\text{g}/\text{m}^3$ higher, ranging $0.5 \mu\text{g}/\text{m}^3$ to $12.7 \mu\text{g}/\text{m}^3$ higher across all individual days. PurpleAir sensors highlighted in Figure 5-15 have mean concentrations 1.0 to $1.5 \mu\text{g}/\text{m}^3$ higher than the PurpleAir network-wide daily mean, with individual days ranging from $4.1 \mu\text{g}/\text{m}^3$ lower to $5.8 \mu\text{g}/\text{m}^3$ higher at these sites. Generally, during high air pollution events affecting the whole region such as the September 2023 wildfires, concentrations more closely follow those observed at other locations. $PM_{2.5}$ concentrations follow seasonal trends, with generally higher concentrations in fall and winter due to increases in some sources of air pollution, like residential wood burning, and meteorological conditions with more stagnant air. Concentrations tend to be lower during the summer, except during wildfire smoke events.

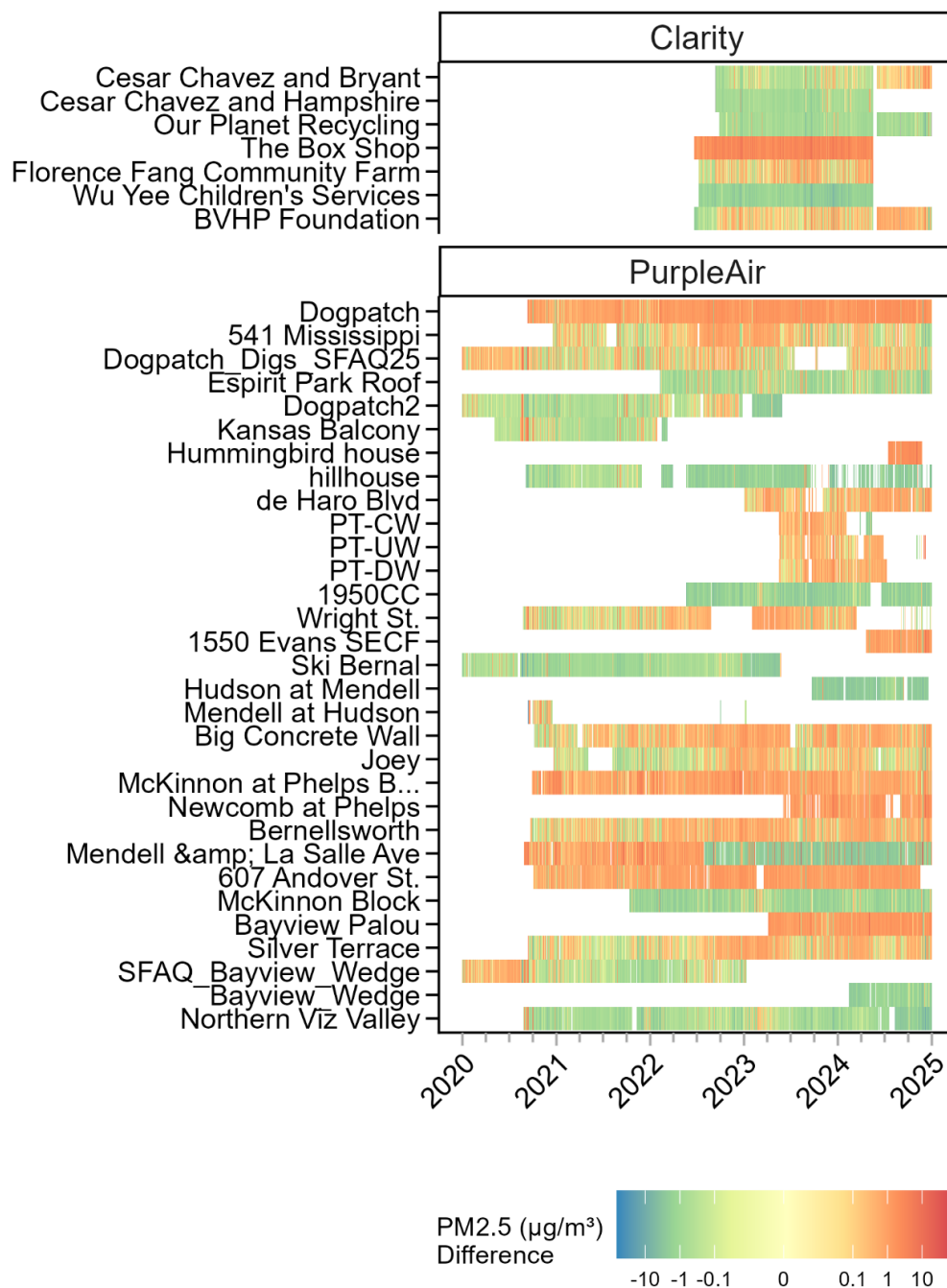


Figure 5-14. Daily difference from the network-wide daily mean of PM_{2.5} concentrations observed at Clarity and PurpleAir sensor networks within the BVHP community boundary.

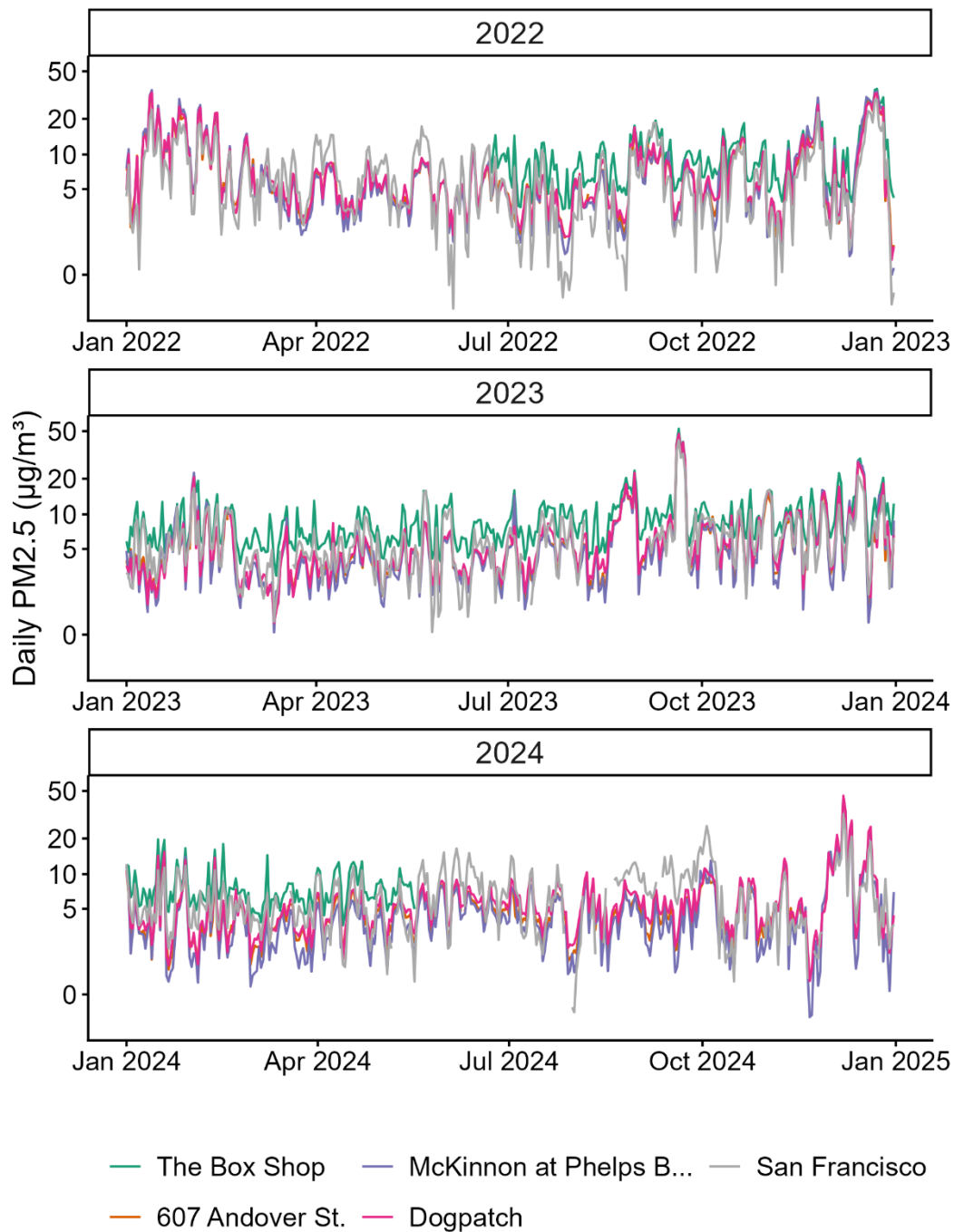


Figure 5-15. A time series of daily mean PM_{2.5} observations from selected sites with higher average concentrations within the BVHP community boundary in 2022 to 2024. Selected sites include The Box Shop Clarity sensor, and PurpleAir sensors labeled 607 Andover St., McKinnon at Phelps Backyard, and Dogpatch. Data are plotted with a log scale Y-axis to capture both high maximums and day-to-day variability in low concentrations. Observations from the San Francisco Air District monitoring site are additionally included in gray.

Trends and Variability in Air Toxics Data

VOCs are compounds that can easily evaporate into the air and contribute to air pollution. The Air District measures selected VOCs, many of which are TACs, at several air monitoring sites, including the San Francisco air monitoring site at 16th Street and Arkansas St. These VOCs are measured by collecting air into a canister for 24 hours, and the collected samples are then analyzed at the Air District's laboratory. VOC samples are collected at these monitoring sites every twelfth day throughout the year. VOCs can come from many kinds of facilities, operations, processes, and consumer products. Some general sources of VOCs in outdoor air are listed below, noting that not all of these types of sources are found in BVHP/SESF:

- Combustion of fuels, such as gasoline, diesel, wood, coal, and cooking oils
- Evaporation (vapors) from certain products, such as gasoline, paints, solvents, and cleaners
- Oil and gas refining, processing, transport, and storage
- Landfills, scrapyards, and water treatment facilities
- Smoke from residential wood burning, wildfires, structure fires, and prescribed fires

Table 5-5 lists the averages, maximums, and minimums of VOC samples as measured at the San Francisco monitoring site from 2020 to 2024 in comparison to measurements across all Air District monitoring sites (network). Concentrations of the several measured VOCs in Table 5-5 were similar or lower at the San Francisco monitoring site compared to the network average. The Air District's San Francisco monitoring site is located outside BVHP/SESF and in the Potrero Hill neighborhood near commercial, business, and light industrial activity. Moving inward from the BVHP/SESF community boundary, heavier industrial activity and associated traffic from nearby freeways (US-101 and I-280) likely influence concentrations to a greater extent than what is captured at the San Francisco monitoring site.

Table 5-5: Maximum, minimum, and 5-year average VOC concentrations (ppb) measured at the San Francisco air monitoring site in comparison to all Air District monitoring sites (Network) from 2020 to 2024.

	San Francisco			Network		
Volatile Organic Compound (VOC)	5-yr avg.	Max	Min	5-yr avg.	Max	Min
Acetaldehyde(a)	0.39	1.80	0.05	0.68	3.44	0.05
Acetone(b)	3.87	14.02	1.34	4.98	134.90	0.62
Benzene	0.10	1.39	0.004	0.13	1.86	0.004
Carbon tetrachloride	0.11	0.15	0.08	0.12	0.98	0.07
Chloroform	0.02	0.05	0.002	0.02	0.48	0.002
Dichloromethane	0.08	0.21	0.01	0.08	1.61	0.01
Ethyl alcohol(b)	3.17	23.6	0.62	4.02	455.46	0.01
Ethylbenzene	0.03	0.18	0.002	0.04	0.58	0.002

Formaldehyde(a)	1.14	3.10	0.05	1.61	9.27	0.02
Freon 113	0.06	0.08	0.05	0.06	0.62	0.004
m/p-Xylene	0.10	0.69	0.01	0.13	1.93	0.002
Methyl ethyl ketone(b)	0.23	1.00	0.08	0.26	1.92	0.01
o-Xylene	0.04	0.22	0.002	0.05	0.76	0.002
Toluene	0.19	0.90	0.005	0.29	3.03	0.004
Trichlorofluoromethane	0.22	0.25	0.16	0.22	0.67	0.16

(a) Acetaldehyde and formaldehyde are only measured at the San Jose – Jackson site by the Air District. Included concentrations are from CARB's air toxics program operated at the Air District's San Francisco site.

(b) Acetone, Ethyl alcohol, and Methyl ethyl ketone are not classified as TACs. They are measured as part of the Air District's air toxics monitoring program due to their important role as precursors for ozone formation in the Bay Area, which can be harmful to human health.

The measured VOCs at the San Francisco monitoring site such as benzene, toluene, ethylbenzene, and xylenes (BTEX compounds) have many sources in urban environments, including vehicle exhaust and commercial and industrial facilities. Benzene is a TAC of particular concern as it is a carcinogen with known health impacts even at relatively low concentrations. Most of the measured benzene concentrations have been below 0.5 ppb across the Air District's monitoring network, which is below OEHHA's chronic REL for benzene of 1 ppb (Figure 5-16). Many of the measurements above 1 ppb occurred during periods of wildfire smoke for 2020–2024. Instances of relatively higher benzene concentrations (over 0.5 ppb) can be seen for other monitoring sites in the Air District network outside periods of wildfire smoke influence.

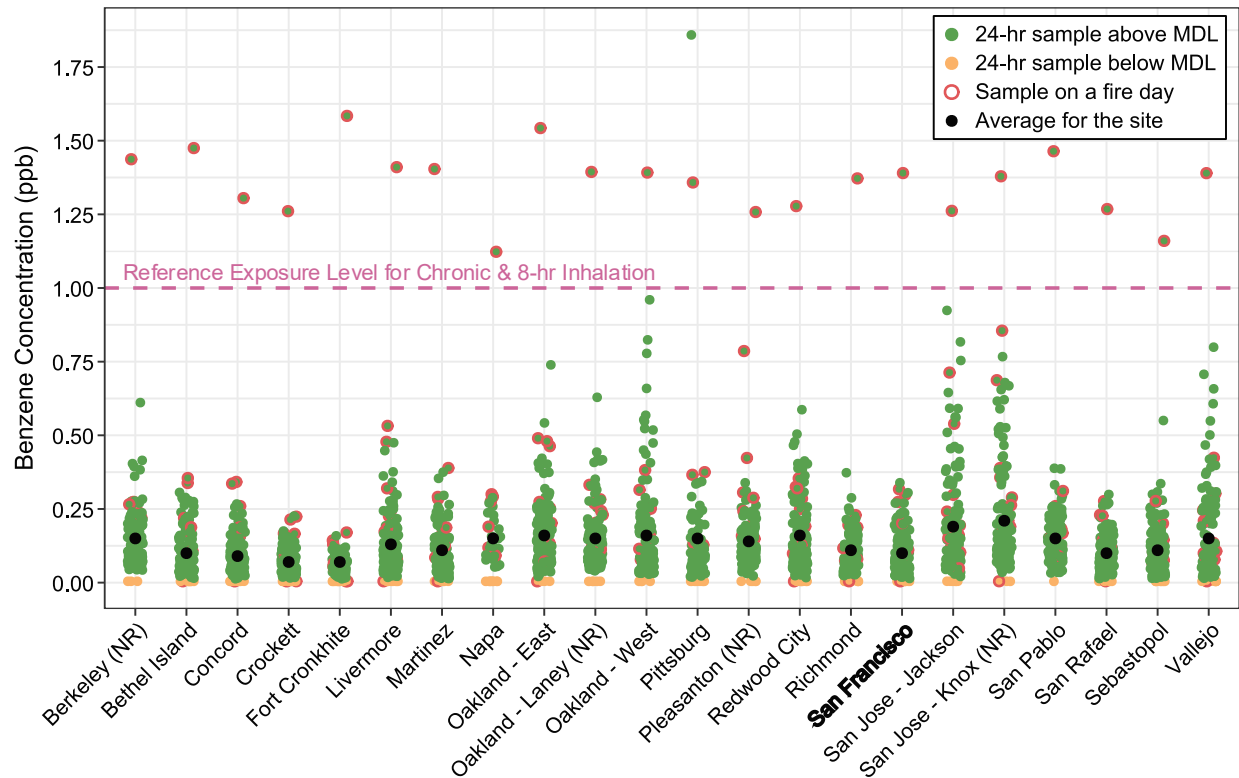


Figure 5-16. 24-hour benzene concentrations at Air District monitoring sites, 2020-2024. The y-axis shows benzene concentrations from roughly 0 to 2 parts per billion (ppb) and the x-axis shows different Air District monitoring sites. Each green or orange dot represents an individual 24-hour measurement, where green or orange dots outlined in red indicate measurements during wildfire smoke periods. The larger black dots indicate the 5-year average concentration at each monitoring site. "MDL" refers to the method detection limit, which is the minimum concentration of a pollutant that can be measured with confidence. "NR" refers to monitoring sites that are designated as near-road based on their location. Most benzene concentrations were below 1 ppb, which is the Reference Exposure Level for chronic and 8-hr inhalation.

Several monitoring sites in the Air District network, including San Francisco, often exhibit higher toluene and xylene concentrations compared to benzene. This is because benzene is restricted in industry and consumer products due to its carcinogenicity compared to the other BTEX compounds, which are often used as solvents. Similar to benzene, toluene and xylene concentrations measured at the San Francisco monitoring site are typically lower than those observed at other urban sites in the Air District network. As explained above, the Air District expects that concentrations at locations within the BVHP/SESF community boundary may be higher than those measured at the San Francisco monitoring site due to the density and proximity to local sources that emit these pollutants. All toluene and xylene concentrations measured at Air District monitoring sites are well below the OEHHHA chronic and acute RELs for toluene of 110 ppb and 1300 ppb, respectively, and for xylene of 200 ppb and 5000 ppb, respectively.

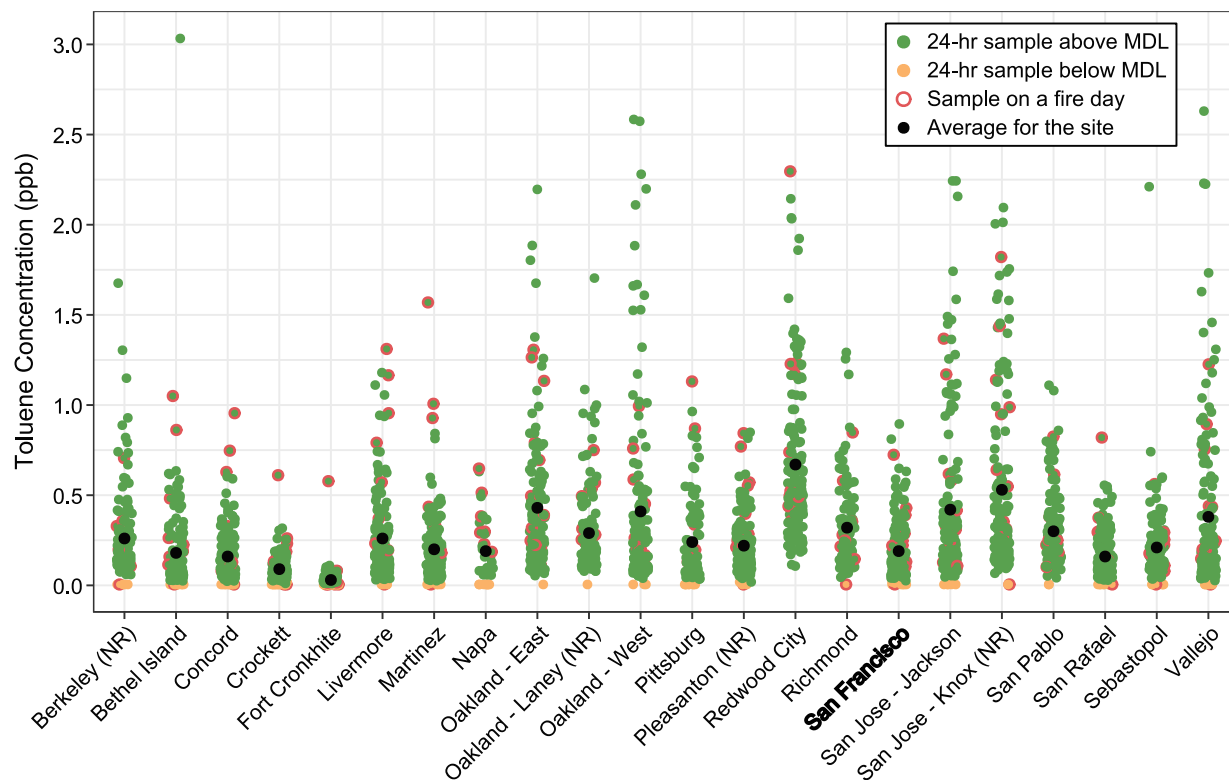


Figure 5-17. 24-hour toluene concentrations at Air District monitoring sites, 2020–2024. The y-axis shows toluene concentrations from roughly 0 to 3 parts per billion (ppb) and the x-axis shows different Air District monitoring sites. Each green or orange dot represents an individual 24-hour measurement, where green or orange dots outlined in red indicate measurements during wildfire smoke periods. The larger black dots indicate the 5-year average concentration at each monitoring site. “MDL” refers to the method detection limit and “NR” refers to monitoring sites that are designated as near road based on their location. Measured toluene concentrations have been well below chronic and acute Reference Exposure Levels for toluene of 110 ppb and 1300 ppb, respectively.

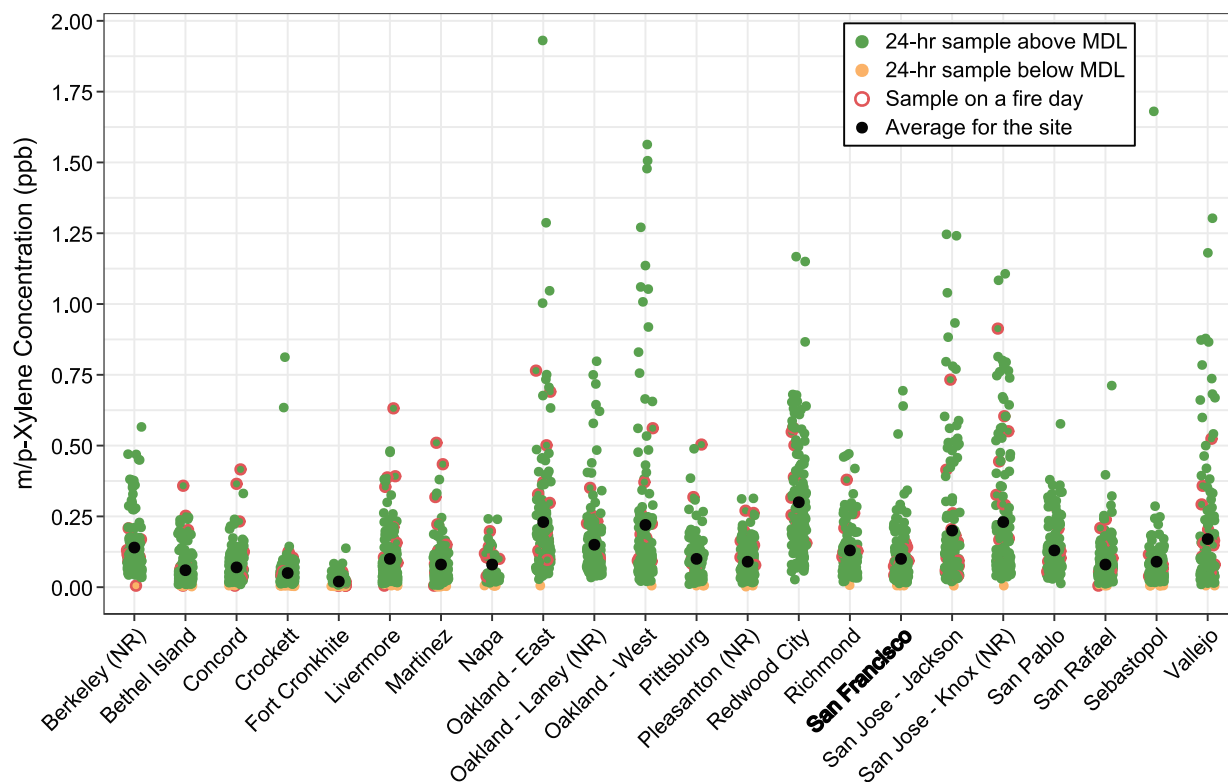


Figure 5-18. 24-hour m/p-xylene concentrations at Air District monitoring sites, 2020–2024. The y-axis shows m/p-xylene concentrations from roughly 0 to 2 parts per billion and the x-axis shows different Air District monitoring sites. Each green or orange dot represents an individual 24-hour measurement, where green or orange dots outlined in red indicate measurements during wildfire smoke periods. The larger black dots indicate the 5-year average concentration at each monitoring site. "MDL" refers to the method detection limit and "NR" refers to monitoring sites that are designated as near road based on their location. Measured m/p-xylene concentrations have been well below chronic and acute Reference Exposure Levels for m/p-xylene of 200 ppb and 5000 ppb, respectively.

Annual average concentrations of several monitored VOCs have decreased (improved) since routine monitoring began at Air District long-term air monitoring sites, but those decreases in concentrations have leveled off in recent years. Figure 5-19, Figure 5-20, and Figure 5-21 show annual average concentrations of benzene, toluene, and m/p-xylene, respectively, at the Oakland – East, Oakland – West, San Francisco, San Jose – Jackson, and San Pablo monitoring sites. The San Francisco and San Jose – Jackson monitoring sites have longer data records. Prior to the mid-1990s, annual average benzene concentrations were above 1.0 ppb, which is the REL for chronic and 8-hour inhalation of benzene. Annual average concentrations of benzene and toluene have decreased (improved) considerably since the early 1990s, though those improvements have leveled off in more recent years. An overall decline in annual average concentrations of m/p-xylene is also evident, noting that a shorter period of record is available for m/p-xylene since samples were not analyzed for that compound prior to 2003.

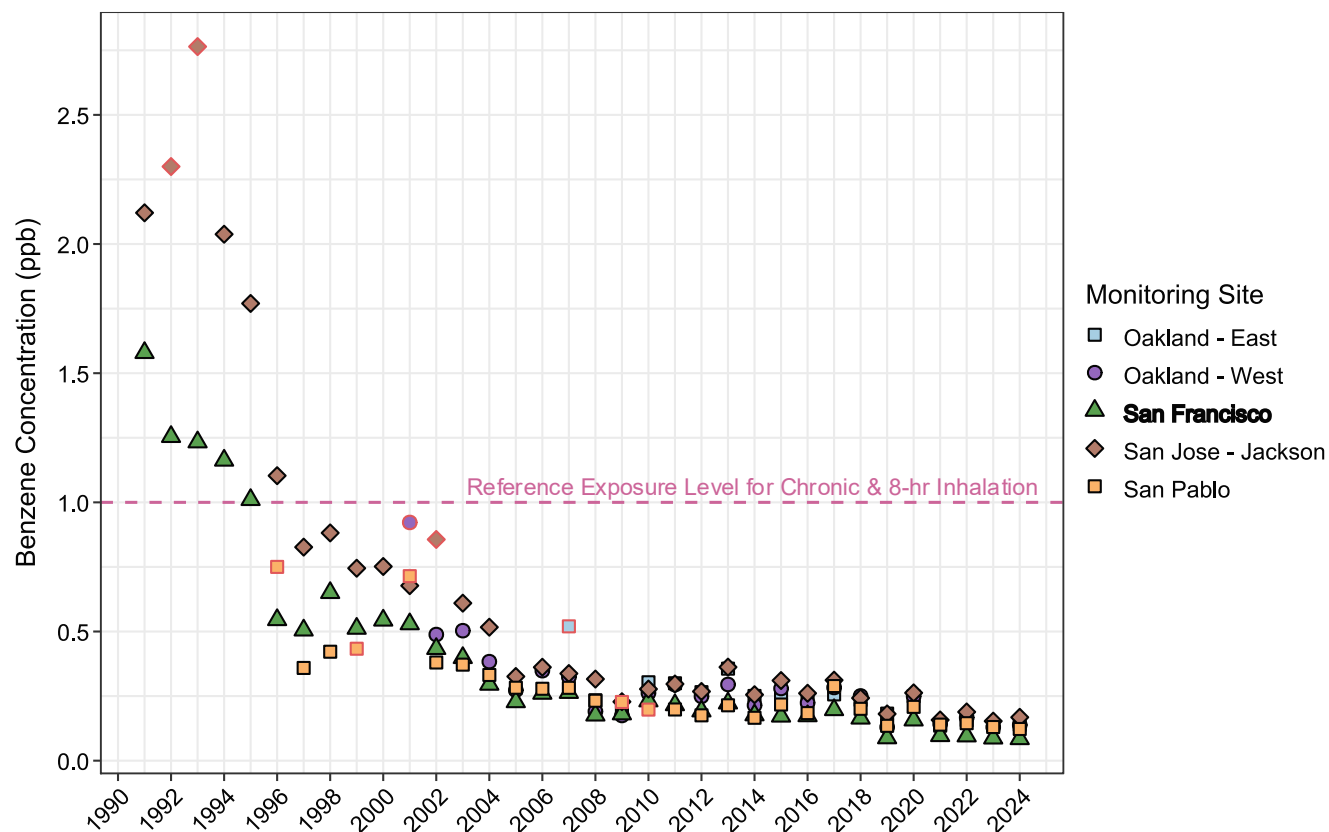


Figure 5-19. Annual average benzene concentrations at selected Air District monitoring sites. The y-axis shows annual average benzene concentrations and the x-axis shows years of measurements. Note that the monitoring sites have different periods of record and years with incomplete data are outlined in red. Annual average benzene concentrations have decreased (improved) considerably since the early 1990s, though those decreases have leveled off in more recent years. Annual average benzene concentrations are now typically below 0.25 ppb, which is below the Reference Exposure Level for chronic exposure to benzene of 1 ppb.

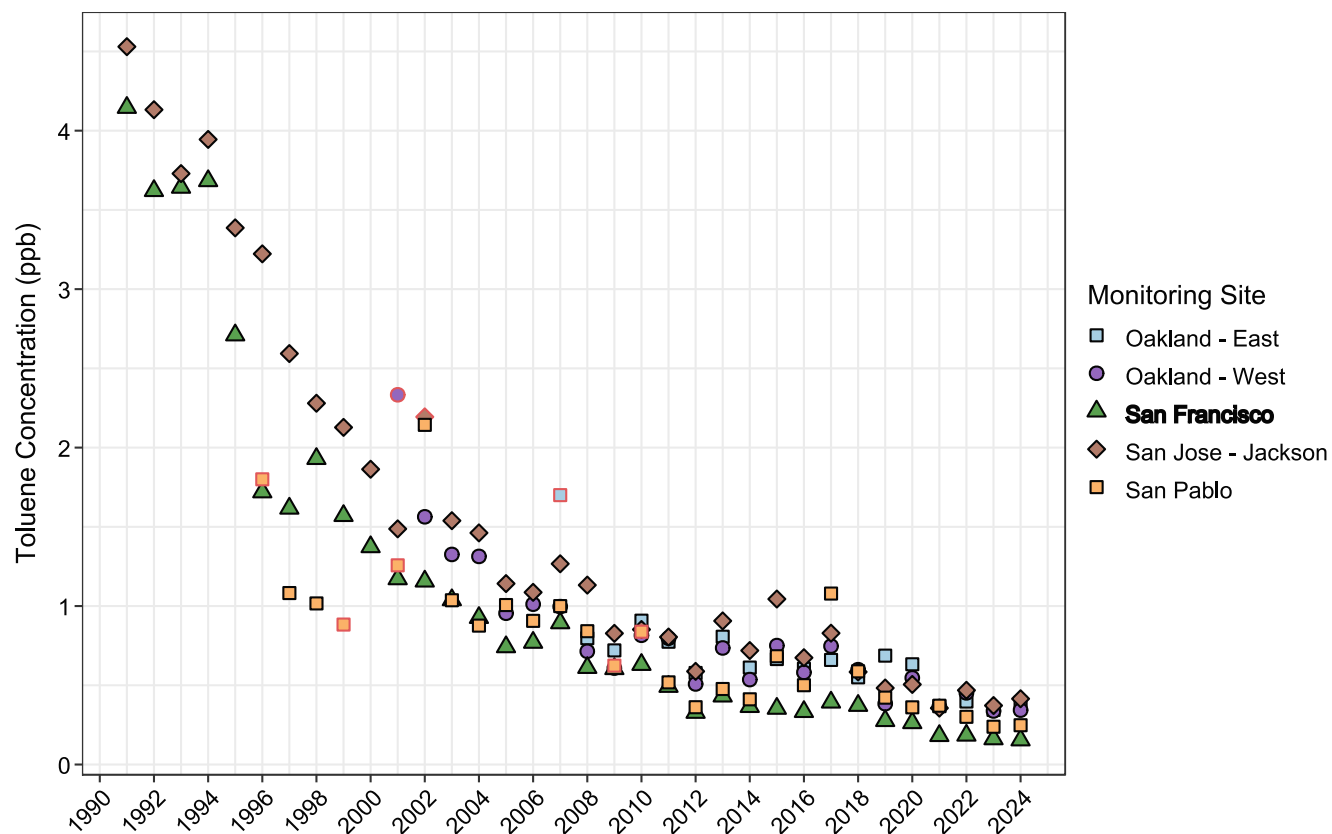


Figure 5-20. Annual average toluene concentrations at selected Air District monitoring sites. The y-axis shows annual average toluene concentrations and the x-axis shows years of measurements. Note that the monitoring sites have different periods of record and years with incomplete data are outlined in red. Annual average toluene concentrations have decreased (improved) considerably since the early 1990s. Annual average toluene concentrations are now typically below 0.5 ppb, which is well below the Reference Exposure Level for chronic exposure to toluene of 110 ppb.

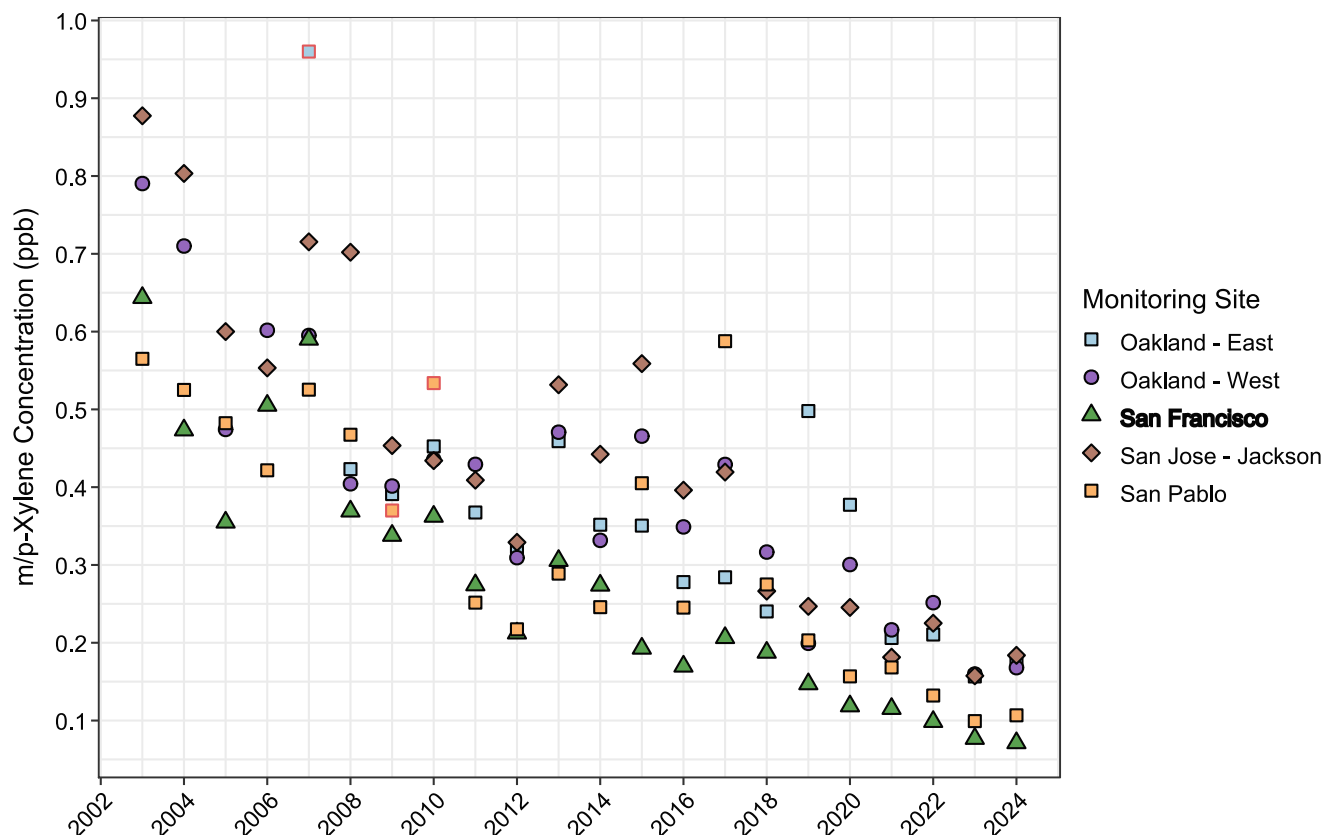


Figure 5-21. Annual average m/p-xylene concentrations at selected Air District monitoring sites. The y-axis shows annual average m/p-xylene concentrations and the x-axis shows years of measurements. Note that samples were not analyzed for m/p-xylene prior to 2003 and the monitoring sites have different periods of record. Monitoring years with incomplete data are outlined in red. Annual average m/p-xylene concentrations have generally decreased since the mid-2000s and are now typically below 0.5 ppb, which is well below the Reference Exposure Level for chronic exposure to m/p-xylene of 200 ppb.

In addition, the Air District is currently partnering with Marie Harrison Community Foundation and Leaders4EARTH to implement a community air monitoring project in BVHP/SESF. This study will use the Air District's air monitoring van to perform exploratory measurements of VOCs and PM around sources or receptors of interest to the community, including follow-up studies. This project is currently in progress, and data collected from this effort will be made available and used to support the implementation of CERP strategies.

Topography and Meteorology

The San Francisco Bay, which is adjacent to BVHP/SESF, is generally bounded by rugged hillsides and inland valleys and characterized by complex topography and meteorological conditions. Seasonal, and often daily, variations between predominant onshore winds (air moving from the ocean toward land) and offshore winds (air moving from land to ocean), in addition to mountain valley circulations, influence the fate and transport of emitted pollutants and their precursors. In general, from late spring to early autumn, winds prevail from the northwest off the Pacific Ocean, though these winds are significantly altered and distorted by the complex topography and geography of the Bay Area. For example, as onshore winds enter through the Golden Gate, they move into the East Bay hills and diverge, with one branch flowing northward into San Pablo Bay, the adjacent North Bay valleys, and through the Carquinez

Strait. A second branch extends southeastward into San Francisco Bay and into the Santa Clara Valley and the East Bay valleys. Pollutants generated locally in the Bay Area urban core tend to be transported downwind and inland each afternoon by these onshore winds.

From late autumn through early spring, winds are generally more variable and driven by passing high- and low-pressure systems. When low-pressure (storm) systems move through the Bay Area, stronger vertical mixing (cooler temperatures aloft) and winds typically lead to improved air quality.

At any time of year, periods of calm or light winds regularly occur, particularly when strong high pressure is present over the region, during the overnight and morning hours when local temperature and pressure gradients are minimized. In urban areas, winds may vary considerably over short distances due to channeling of winds through roadway corridors/canyons and due to microcirculations around buildings or other obstructions. Calm to light winds or offshore winds can reduce mixing and dispersion of pollutants, resulting in worsened air quality.

In some cases, air quality may be particularly impacted during meteorological conditions that occur relatively infrequently. For example, while stronger winds are generally associated with improved air quality for some pollutants, strong and gusty winds loft dust (PM_{10}) into the air from certain sources of air pollution that include vacant lots, construction sites, unpaved surfaces, bulk materials handling, or stockpiles. Studies have shown that windblown dust emission may begin to occur at as low as 15 mph and increase in magnitude with increased wind speed. During these conditions, windblown dust emissions can result in local-scale air quality issues downwind of such sources.

Figure 5-22 illustrates the seasonal nature of the meteorological conditions within BVHP/SESF. These conditions (both wind direction and wind speed) change from month-to-month and have a direct impact on which sources of air pollution may be contributing to elevated levels of air pollution on any given day. The spring and summer months (April–August) have the most consistent wind direction and strongest wind speeds throughout the year, with a high occurrence of hourly wind speeds above 15 mph from the west to southwest. This suggests that windblown dust from a variety of sources may be contributing to elevated PM_{10} during these time periods, while other pollutants may be lower.

The spring/summer pattern starts to change in September, and a different pattern emerges throughout the winter and into March when wind speeds become calmer and the wind direction begins to be more variable. During these months, there is not one dominant wind direction. These more variable wind speeds and directions may result in a different set of sources contributing to elevated air pollution levels throughout the community on a day-to-day basis. Strong winds during these months are often associated with passing storms and rain, which may not contribute to windblown dust emissions, but there are some periods of time when strong dry winds from east or northeast winds that are capable of producing windblown dust emissions. These conditions also tend to correspond with red flag warnings and increased probability of wildfires, which compound the risks of higher levels of air pollution from all sources.

These changes in meteorological patterns throughout the year suggest that the collection of sources contributing to increased exposure to air pollution is also changing (e.g., sources impacting downwind air quality are different in the fall and winter compared to the spring and summer).

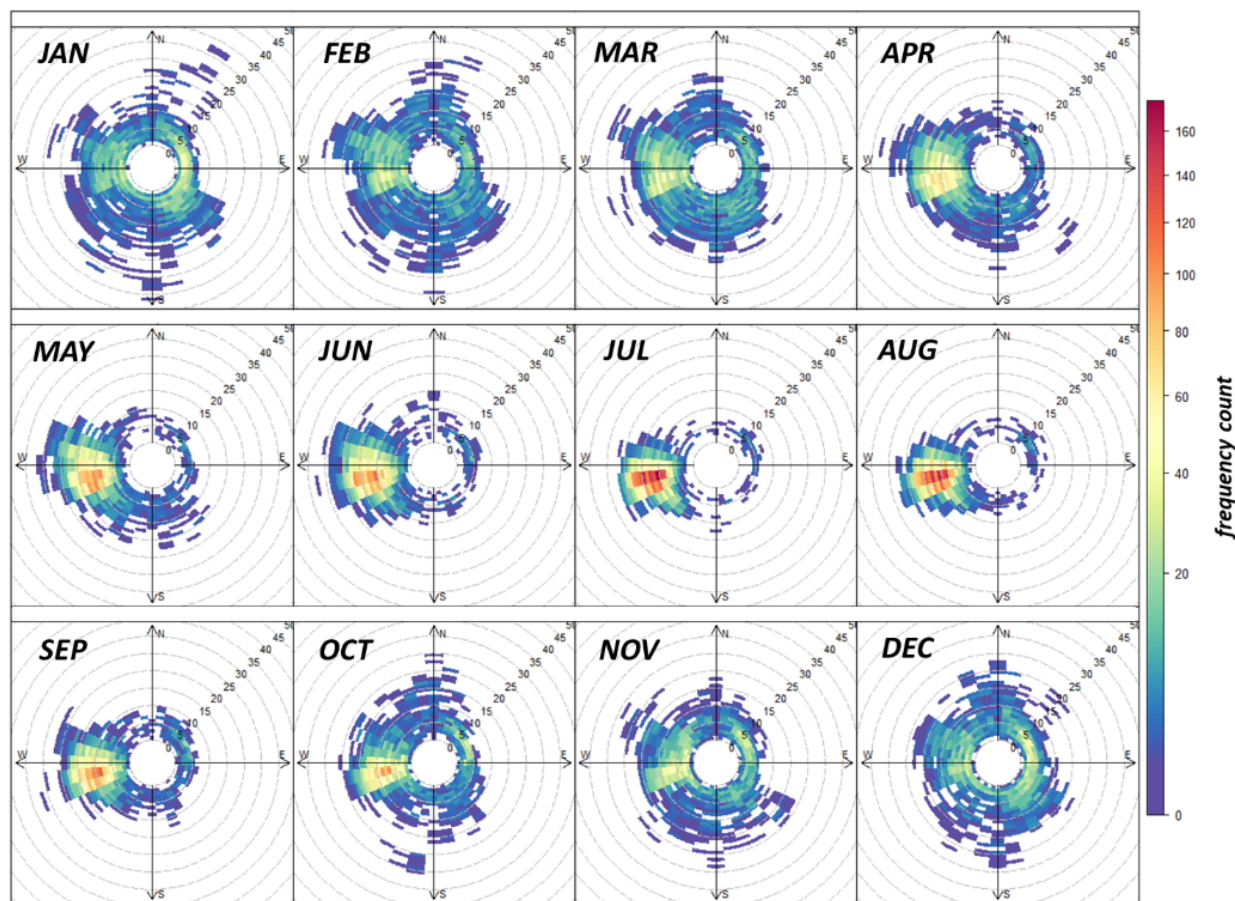


Figure 5-22. Hourly wind speed (mph) and direction (degrees) frequency plots from the San Francisco Southeast Wastewater Treatment plant separated by month. Wind directions are binned and counted in 30° increments at each wind speed, which increases from the center of the plot outward and are noted in the hashed circles and the diagonal numbers in the upper right portion of each monthly plot. The counts are then colored from higher (red) to lower (purple) and provide a visual as to which wind speed and direction combinations are more frequent in each month. For example, for the month of July (Jul) there is a higher frequency of wind speeds from 10-20 mph that are mostly coming from the west, while very few instances of wind speeds below 10 mph come from other directions.

Insights From Other Projects

Previous Short-Term Studies in BVHP/SESF

Since the late 1990's, there have been several short-term air monitoring studies performed in BVHP/SESF that were conducted to assess concentration levels of various pollutants throughout the community. Table 5-6 summarizes these efforts and includes details on the timeframe of the studies and the pollutants that were measured.

Table 5-6. Summary of additional air short-term air monitoring studies in BVHP/SESF

Description	Timeframe	Pollutants
Hidden Hazards of Bayview Hunters Point, Appendix J: Preliminary Investigation of Air Pollution in San Francisco's Hunters Point Region	1998	VOCs
State of the Air in Bayview Hunters Point: Results of the Bayview Community Air Monitoring Project (BayCAMP)	June 2004–June 2005	VOCs, PAHs, Hexavalent Chromium, Non-Methane Hydrocarbons, PM _{2.5} , SO ₂ , CO, NO, NO ₂ , O ₃
Hidden Hazards of Bayview Hunters Point, Appendix I: Determination of Volatile Organic Compounds in Bayview Hunters Point	April 2018–April 2019	VOCs
Aclima: San Francisco Annual Baseline	October 2019–September 2020	PM _{2.5} , NO ₂ , O ₃ , CO, CO ₂

The measurements included in the Hidden Hazards of Bayview Hunters Point report show that some short-duration elevated levels of VOCs were measured in localized areas of BVHP/SESF, including near schools and known sources of VOCs such as autobody shops and the San Francisco Southeast Treatment Plant compared to other areas in BVHP/SESF.

The BayCAMP study shows that the acute (Acute Health Index) and chronic (Chronic Health Index) health risks from the pollutants measured during the study were slightly higher and that cancer risk estimates were lower at the BayCAMP monitoring site compared to the San Francisco monitoring site. The report also shows that 24-hour PM_{2.5} concentrations were higher when compared to the San Francisco monitoring site, especially during higher PM_{2.5} days in the winter months. Since the BayCAMP monitoring site was located near Hilltop Park at the Earl P. Mills Community center and further away from emission sources, concentrations could likely be higher at different locations throughout Bayview Hunters Point that are closer to nearby sources. The Air District also notes that this data was collected 18 years ago and the composition of sources of air pollution within Bayview Hunters Point may be different today.

More recently, Aclima collected mobile measurements of various pollutants throughout San Francisco County by repeatedly driving road segments to estimate annual averages of those pollutants on a block-by-block level. These data were later aggregated into hexagon areas that cover approximately a square quarter mile by averaging all the data collected on road segments within a particular hexagon. PM_{2.5} hexagon values are both comparatively higher at locations near major roadways (I-280 and US-101) and locations near Cesar Chavez St., Amador St., and near Yosemite Slough and the Naval Shipyard Parcel E-2. Looking at San Francisco more broadly, higher areas of PM_{2.5} are found throughout portions of Bayview Hunters Point, Downtown San Francisco, including SOMA, and along the I-280 and US-101. Portions of the Outer Sunset and Outer Richmond also show higher areas of PM_{2.5} but is expected that those concentrations may be influenced by a sea spray and other environmental factors. Maximum PM_{2.5} road segment values were observed on Carroll Ave. between Ingalls St. and Arelious Walker Dr., Amador St., Carroll Ave./3rd St., and Underwood Ave./Ingalls St. NO₂ hexagon values were also comparatively higher near Cesar Chavez St., Pier 96, and Heron's Head Park.

Community-Led Environmental Air Research (CLEAR) Bayview Project

The Air District is currently partnering with Marie Harrison Community Foundation and Leaders4EARTH to implement a multi-year community air monitoring project in BVHP/SESF. This study will use the Air District's air monitoring van to perform exploratory measurements of VOCs and PM around sources or receptors of interest to the community, including several commercial and industrial facilities within the community. Measurements from the air monitoring van will initially provide snapshots in time of pollutant concentrations and may indicate what sources are contributing to elevated pollutant concentrations. It is anticipated that these exploratory measurements will also raise new questions that will inform the follow-up studies that will involve the deployment of portable monitors to provide temporal information at locations identified through the initial measurements. The CLEAR project will also educate and engage BVHP/SESF youth throughout the project on air pollution basics, air monitoring technologies, and data collection, analysis, and interpretation. Local youth and community partners will also be directly involved in co-developing the initial study methodology and participating in and contributing to data analysis, interpretation, and communication of results and findings to the broader community. While this project is currently in progress, it is expected that any data collected will be made available and used to support CERP implementation.

Emissions Inventory Development

For the BVHP/SESF community, a baseline emissions inventory was developed for the year 2022¹⁵⁴ that included two main categories of air pollutants, CAPs and TACs, as well as toxicity-weighted emissions (TWE)¹⁵⁵ information. The inventory covers the following four broad sectors of sources operating in and around the BVHP/SESF community boundary:

- **Stationary sources** – Facility-related sources and businesses that have been permitted or registered with the Air District have facility-specific emissions reported in the inventory.¹⁵⁶ Specific activities for some classes of non-permitted sources are also covered (e.g., fuel combustion at commercial operations).
- **Areawide sources** – Sources that are generally small, spread over large areas, and not identified with a single, identifiable location, such as fireplaces, water heaters, residential fuel combustion, and construction dust.
- **On-road mobile sources** – Motor vehicles that travel on roadways, such as cars, trucks, and buses. This includes road dust that is resuspended by vehicle traffic.
- **Off-road mobile sources** – Vehicles and equipment that do not operate on roadways, such as marine vessels, trains, and bulldozers.

¹⁵⁴ The year 2022 was selected based on CARB requirements, which call for baseline emissions to be calculated for the year prior to when the community received AB 617 designation, which was in 2023.

¹⁵⁵ Toxicity weighting provides a useful means of accounting for the relative toxicity of the different TACs in an inventory, as discussed in more detail later in this chapter.

¹⁵⁶ Note that the emissions inventory includes all facility-level sources captured in the District's California Emissions Inventory Data Analysis and Reporting (CEIDARS) database that is submitted to CARB annually. In addition to permitted and registered sources, this database includes emissions for facilities that have been exempted from permit requirements following an engineering evaluation and facilities whose permit has been voided due to non-payment of permit fees. Across Chapter 5: Air Quality Overview, the term "permitted" refers to this wider universe of sources captured in the CEIDARS database.

The baseline (2022) emissions inventory for the BVHP/SESF community covers sources within a rectangular area that covers the community boundary and some surrounding areas (see Figure 5-23). This “emissions inventory boundary” is larger than the community boundary so that the inventory can capture sources that are adjacent to the community but have the potential to impact community residents. The following sub-sections contain summary information and key findings related to the BVHP/SESF inventory, and Appendix D: Air Pollution Overview Supplemental Information, provides additional information on the methods and datasets used to develop the inventory. Appendix D: Air Pollution Overview Supplemental Information, also includes emissions forecasts for the years 2032 and 2037, which represent 5- and 10-year milestones from 2027, the potential year of CERP adoption. These forecasted emissions reflect the impact of anticipated growth and existing control programs and will be used for tracking purposes as the Plan is implemented.

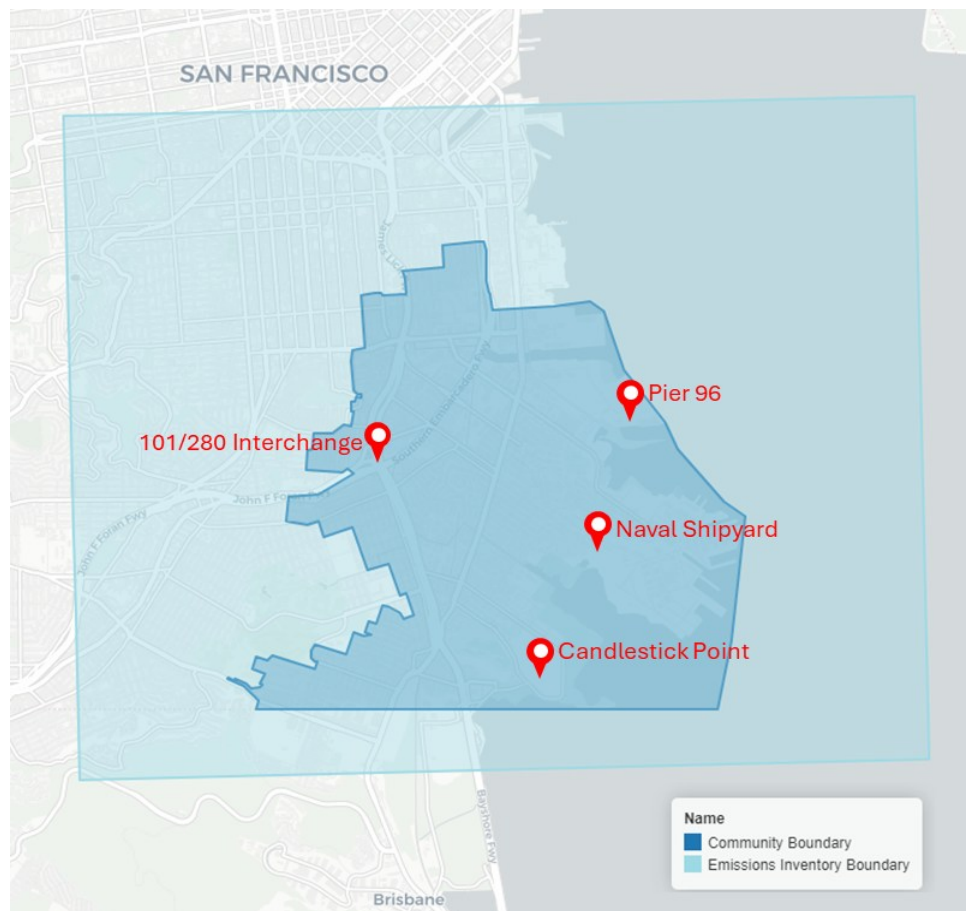


Figure 5-23. Map showing the community and emissions inventory boundaries for BVHP/SESF.

Emissions Inventory- Criteria Air Pollutants

For CAPs, the BVHP/SESF inventory includes emissions estimates for PM₁₀, PM_{2.5}, NO_x, SO_x, CO, total organic gases (TOG), and reactive organic gases (ROG). Table 5-7 summarizes CAP emissions by source sector, and these data show that source contributions vary by pollutant. For example, areawide sources account for the majority of PM₁₀ and PM_{2.5} emissions, stationary sources are important sources of organic gas (TOG and ROG) emissions, and off-road mobile sources dominate the inventory for NO_x, SO_x, and CO.

Table 5-7. BVHP/SESF 2022 CAP emissions by source sector in tons per year (tpy).

Source Sector	PM _{2.5}	PM ₁₀	NO _x	SO _x	CO	TOG	ROG
Stationary	19.0	46.8	131.5	18.3	103.4	3,910.4	968.9
Areawide	104.5	450.4	176.0	3.4	292.7	1,248.9	970.2
On-road	32.7	161.7	305.3	6.0	2,316.4	305.3	260.9
Off-road	27.0	32.1	786.2	15.5	7,014.3	607.3	549.1
TOTAL	183.3	691.0	1,399.0	43.2	9,726.8	6,072.0	2,749.1

Among the CAPs, PM_{2.5} is of special concern from a human health perspective. Fine particles of this size can travel deep into the lungs and bloodstream, where they can cause or contribute to premature deaths, long-term effects like heart disease and respiratory conditions like emphysema, and short-term effects like bronchitis and asthma attacks. Figure 5-24 provides a more detailed breakdown of PM_{2.5} emissions for each of the four source sectors listed in Table 5-8. This figure shows that areawide sources account for 57% of local PM_{2.5} emissions in BVHP/SESF. Key sources in this sector include residential fuel combustion, construction dust, and commercial cooking. Note that construction-related emissions may vary widely over time due to the transient nature of construction activity, and emissions estimation methods for this source category are under review by CARB and local air districts.

On-road mobile sources account for 18% of local PM_{2.5} emissions, with paved road dust being the largest contributor. This finding reflects recent trends showing that sharp reductions in tailpipe emissions have increased the relative importance of non-exhaust processes like road dust with respect to on-road PM_{2.5} inventories. Off-road mobile sources account for 15% of local PM_{2.5} emissions, with construction equipment being the largest contributor within that sector. Lastly, stationary sources account for 10% of local PM_{2.5} emissions; among the individual facilities in the stationary source inventory, the largest sources of PM_{2.5} are concrete batch plants, waste disposal, and rendering facilities.

Notably, the inventory includes a number of fugitive dust sources across the various sectors, including road dust, construction dust, and material handling at permitted facilities. When combined, these fugitive dust sources account for about one-third of local PM_{2.5} emissions. Moreover, it is likely that fugitive dust emissions are underestimated in BVHP/SESF, as the community is home to large, exposed areas like the former Naval shipyard and industrial areas with unpaved road segments. These types of sources are difficult to characterize and are not fully captured by the emissions inventory. In addition, emissions from some fugitive dust sources are likely underestimated. For example, road dust emissions,

which account for 10% of the local PM_{2.5} inventory, were estimated using default roadway silt loadings¹⁵⁷ from CARB that may not be representative of communities like BVHP/SESF that have dust track-out from unpaved areas, construction activities, and industrial facilities.

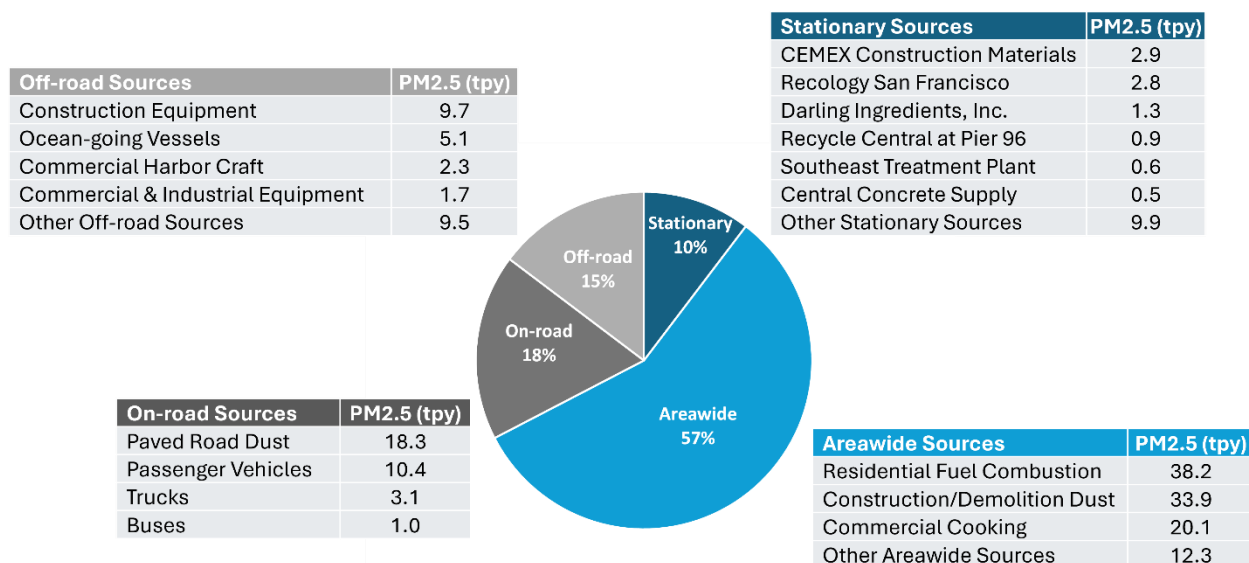


Figure 5-24. BVHP/SESF 2022 PM_{2.5} emissions with source sector breakdowns.

For some sources, the emissions inventory and supporting datasets contain spatial information that can be helpful for assessing impacts, as relatively small sources may be of concern if they are located near sensitive receptors and/or clustered with other sources. Reliable location information is available for sources like permitted facilities, on-road vehicles, rail lines, and shipping lanes. However, many areawide and off-road mobile sources are widely dispersed throughout the community and difficult to assign to specific locations. This is true, for example, of residential sources like fireplaces and lawn and garden equipment.

Because permitted facilities have known locations and are directly regulated by the Air District, a map of permitted sources in the BVHP/SESF area is provided in Figure 5-25, with each facility's circle sized in proportion to its PM_{2.5} emissions. This map shows that three of the six largest PM_{2.5} emitters among permitted sources are clustered along Amador Street. These facilities, which include two concrete batch plants (CEMEX and Central Concrete) and a rendering facility (Darling Ingredients), account for over 20% of PM_{2.5} emissions in the stationary source inventory and about 3% of total PM_{2.5} emissions from all local sources combined. These Amador Street facilities are also located several hundred meters from schools and residential areas, such as those located just south of Evans Avenue.

On-road mobile source emissions can also be mapped onto local roadways. Motor vehicles account for about 18% of the local PM_{2.5} inventory and are of particular concern in places where heavily traveled roadways pass through areas with sensitive receptors or densely populated areas. For example, Figure 5-26 shows a map with a portion of the BVHP/SESF road network. The red star within this map shows a block that is home to several sensitive receptors, including Silver Terrace Athletic Fields, a daycare, and a preschool. This block is adjacent to several busy roadways, including the US-101/I-280 interchange and Silver Avenue. As shown in the call-out box in Figure 5-26, the annual average daily traffic (AADT) on Silver Avenue is 6,353 vehicles, and similar or higher traffic volumes can be seen on nearby freeway segments.

¹⁵⁷ Silt loading values provide a representation of the amount of silt-sized material (particles equal to or smaller than 75 microns in diameter) per unit area that is present on a roadway surface. CARB has developed default values for various classes of roadways.

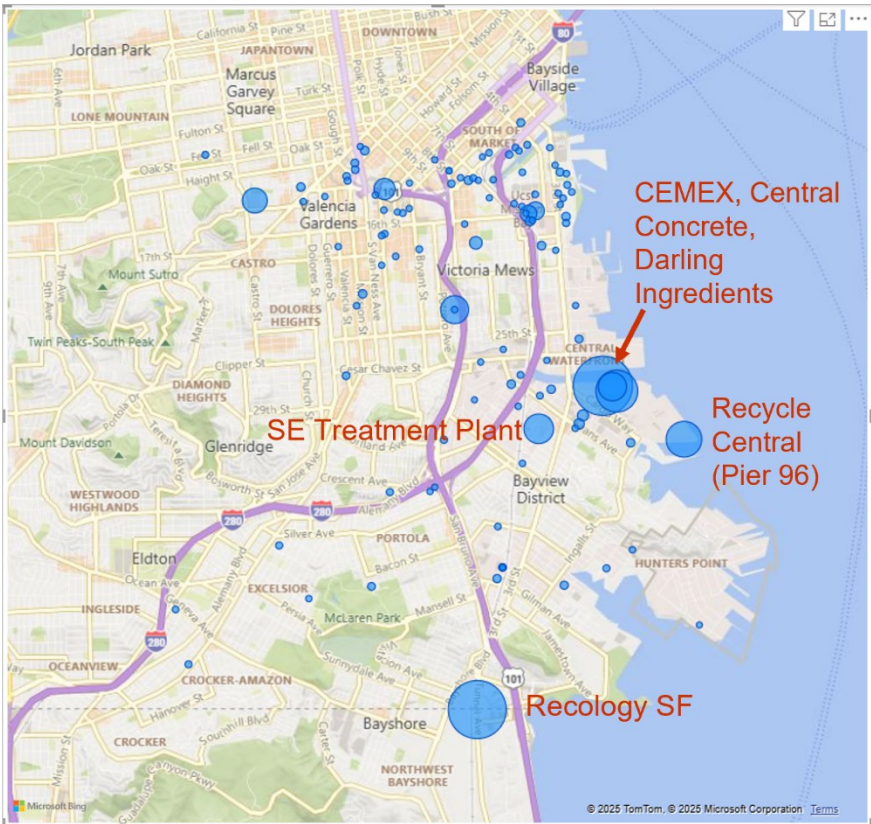


Figure 5-25. Map of BVHP/SESF permitted sources (circle size scaled to $PM_{2.5}$ emissions).

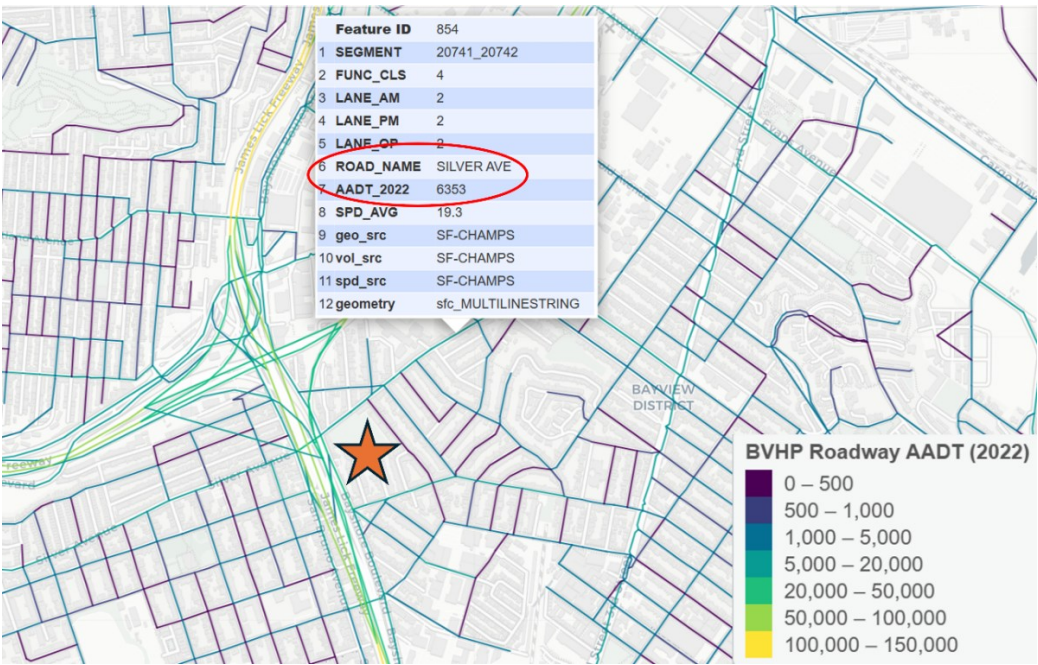


Figure 5-26. Map BVHP/SESF roadways with traffic volumes for Silver Ave. highlighted (the star denotes a block with sensitive source locations).

Emissions Inventory- Toxic Air Contaminants

TACs, also referred to as air toxics, are pollutants that are known or suspected to cause cancer and other serious health effects such as neurological, reproductive, developmental, cardiovascular, or respiratory conditions. Some examples of TACs include DPM; particulate metals such as arsenic, lead, manganese, and chromium; and volatile organic gases such as benzene and formaldehyde. The 2022 inventory for BVHP/SESF includes emissions estimates for 147 TACs.

Because these compounds have different toxicity levels and health effects, TWEs were calculated to help determine which TACs and sources may be of greatest concern. Importantly, TWEs do not quantify health risks, which requires additional information on pollutant concentrations and exposures. Rather, toxicity weighting provides a useful means of accounting for the relative toxicity of the different TACs in an inventory, and TWEs are calculated in two ways. For TACs listed as carcinogens, the mass emissions for each TAC emitted by a given source were multiplied by cancer potency factors from OEHHA and then summed. For TACs listed as causing other kinds of chronic health impacts (e.g., asthma, hypertension), emissions from a given source were divided by chronic RELs and then summed.¹⁵⁸

Table 5-8 provides a broad summary of TAC and TWE emissions for local sources in BVHP/SESF. The importance of toxicity weighting can be seen in the contributions of the various source sectors to total TAC emissions (unweighted) and cancer and chronic TWE. Mobile sources (on-road and off-road) account for only about one-quarter of total TAC emissions by mass but account for 82% of cancer TWE and 52% of chronic TWE. This finding can be explained by the fact that mobile sources emit many of the compounds with high relative toxicities. For example, Figure 5-27 shows the contributions of individual TACs to cancer and chronic TWE in BVHP/SESF, and the pie chart on the left shows that diesel particulate matter (DPM) is the key driver of cancer TWE in the community. Mobile sources such as marine vessels, construction equipment, trains,¹⁵⁹ and heavy-duty trucks account for about 95% of local DPM emissions, and mobile sources also account for over 80% of emissions for other key TACs, including 1,3-butadiene (99%), benzene (82%), and formaldehyde (74%).

Fugitive dust is another important source of TAC emissions in BVHP/SESF, as dust from construction projects, road dust, cement plants, and other sources may contain TACs such as arsenic, cobalt, manganese, and nickel.

Table 5-8. BVHP/SESF 2022 TAC and TWE emissions by source sector.

Source Sector	Total TAC mass (lbs)	Cancer TWE	Chronic TWE
Stationary	1,104,572	11,334	177
Areawide	1,080,733	9,128	455
On-road	325,793	12,048	222
Off-road	408,300	80,195	460
TOTAL	2,919,398	112,705	1,315

¹⁵⁸ Note that one or more of the OEHHA health values were available for 82 of the 147 TACs in the BVHP/SESF inventory. Emissions for the remaining compounds could not be included in the TWE calculations.

¹⁵⁹ In the 2022 inventory, trains are a significant source of DPM due to Caltrain activity. However, the Caltrain line between San Francisco and San Jose was electrified in 2024, and this electrification was not accounted for in the 2022 inventory.

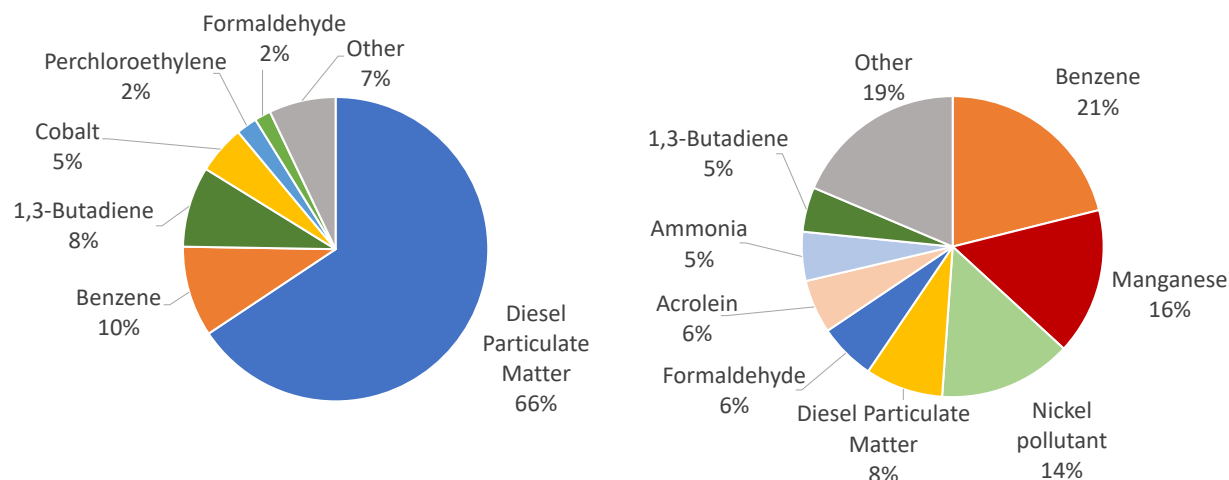


Figure 5-27. Contributions of individual TACs to total cancer (left) and chronic (right) toxicity-weighted emissions in BVHP/SESF.

Permitted sources play a small role in the overall TAC inventory but merit close attention for several reasons. First, permitted sources are directly regulated by the Air District, and their emissions are tracked on an annual basis. In addition, emissions from permitted sources are generally released from a concentrated set of stacks or release points, which can lead to localized exposure impacts, especially in comparison to areawide sources that are more diffuse. This concern is heightened if a facility or group of facilities is located near sensitive populations such as schools or senior centers. Lastly, some toxic compounds like hydrogen sulfide (H_2S) are primarily or entirely emitted by permitted sources.

To help identify permitted sources that are likely to have the greatest impact on human health in BVHP/SESF, these sources were evaluated from both an emissions and exposure perspective.¹⁶⁰ First, facility-level emissions were ranked for cancer and chronic TWE. This analysis led to the identification of a “Top 10” list based on facility-level contributions to total emissions from all permitted sources. Figure 5-28 shows emissions contributions for these 10 facilities, which account for 52% of permitted source cancer TWE and 85% of permitted source chronic TWE in BVHP/SESF.

Focusing on TACs leading to chronic health effects, Figure 5-28 shows that a wastewater treatment facility (Southeast Treatment Plant) and a concrete bath plant (CEMEX) combine to account for about three-fourths (74%) of chronic TWE emitted by permitted sources in the community, with a second concrete bath plant (Central Concrete) accounting for another 5%. For cancer TWE, DPM emissions from diesel generators are the largest contributors to the permitted source inventory. San Francisco General Hospital and the Verizon business on Newhall Street are examples of facilities with backup generators that rank highly in the permitted source cancer TWE inventory.

¹⁶⁰ Note that emissions data provides an estimate of the amount of a pollutant released into the atmosphere, while exposure information relates to the quantity of pollution in the air that residents are breathing. Exposure levels are impacted not just by emission levels, but by source locations, meteorology, and other factors.

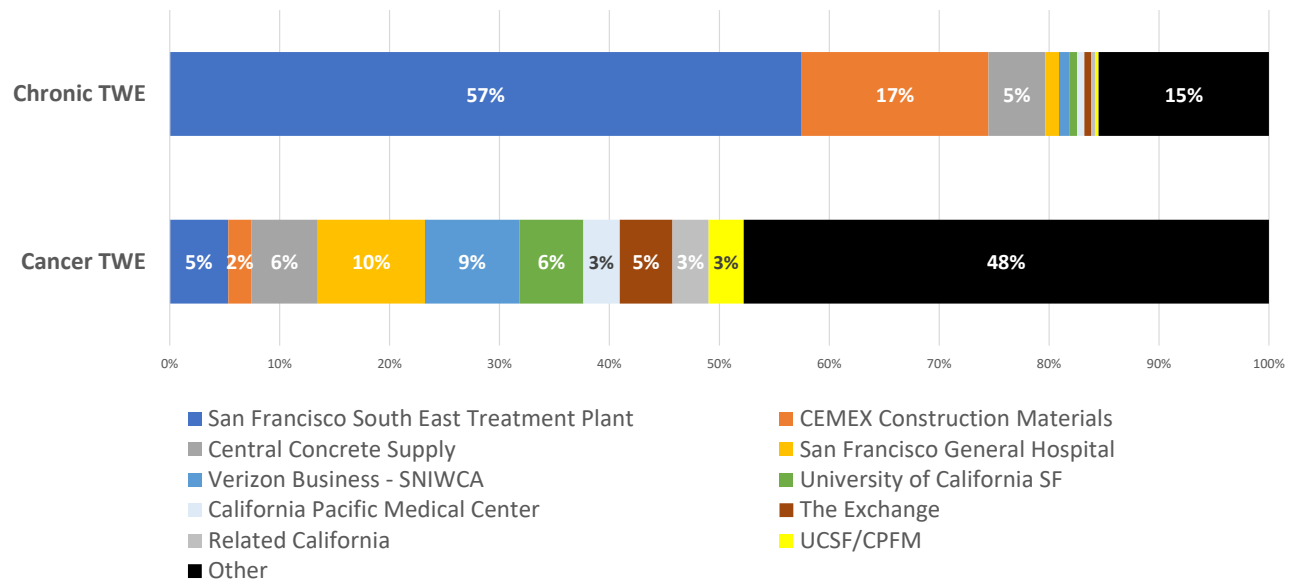


Figure 5-28. Top permitted sources of cancer and chronic TWE in BVHP/SESF.

Air Quality Modeling

Though the emissions inventory provides useful information on total annual emissions from a given source, other factors influence the impact of those emissions on human exposures, or the quantity of a pollutant in the air that people are breathing. For example, meteorological conditions, a source's location relative to residences, and a source's emissions release characteristics (e.g., an elevated stack vs. a low-level release) influence the source's contributions to exposures. Therefore, once the emissions inventory was completed, the Air District performed dispersion modeling for key local sources to provide a more complete picture of the impacts of those sources on the people in BVHP/SESF. The community-scale modeling was conducted with the U.S. EPA's AERMOD model, which combines emissions inputs, meteorological data, and other information to produce fine-grained pollutant concentration estimates near emissions sources.

For BVHP/SESF, AERMOD was used to estimate PM_{2.5} concentrations, DPM concentrations, cancer risk,¹⁶¹ and chronic hazard index (HI)¹⁶² at receptors spaced 50 meters apart, providing hyper-local, source-specific information. It should be noted that the modeling analyses focused on long-term average exposures and did not assess exposure to shorter variations in pollutant concentrations, which are better characterized by monitoring and other modeling approaches.

Because modeling requires reliable location information and other source characteristics, the community-scale modeling addressed sources for which such data were available. This requirement

¹⁶¹ Modeled cancer risk values represent an estimate of the chance that a person might develop cancer as a result of exposure to emitted carcinogens at a given residential location, assuming 30 years of exposure and accounting for increased susceptibility to carcinogens during infancy and childhood. Cancer risk values are expressed as the number of people who may develop cancer over their lifetime per million people exposed to modeled exposure levels.

¹⁶² In contrast to cancer risk, the chronic hazard index (HI) does not represent a probability. It is a score created by comparing modeled levels of multiple toxic air contaminants to officially established reference levels (RELs), above which there is reason to expect harmful effects.

limited sources modeled to permitted facilities, on-road mobile sources (including road dust), marine vessels, rail activity, transportation refrigeration units (TRU), and commercial cooking. Some important sources like construction activity and residential fuel combustion are too transient or widely dispersed to model accurately. Sources included in the modeling analysis account for roughly half of emissions in the local inventory, so this number varies by pollutant.¹⁶³

Separate AERMOD runs were performed for each individual source modeled (e.g., processes at permitted facilities or discrete road segments) so that the impacts of various sources could be tracked, compared, and combined into broader categories.

Mapped Modeling Results

Examples of overall modeling results are shown in Figures 5-29 and 5-30, which show annual average $PM_{2.5}$ concentrations and total cancer risk resulting from combined impacts of all modeled sources in BVHP/SESF. In Figure 5-29, areas with $PM_{2.5}$ concentrations exceeding $1 \mu\text{g}/\text{m}^3$ can be seen along the I-280 and US-101 freeways and major arterial roads like Cesar Chavez and 3rd Street. Permitted source locations previously identified can also be seen, such as businesses along Amador Street. In Figure 5-30, areas with higher levels of modeled cancer risk are largely associated with the I-280 and US-101 freeways due to DPM from heavy-duty trucks. The area along Jerrold Street that is home to several produce distribution facilities can also be seen due to local trucks, many of which are equipped with diesel-powered TRUs.

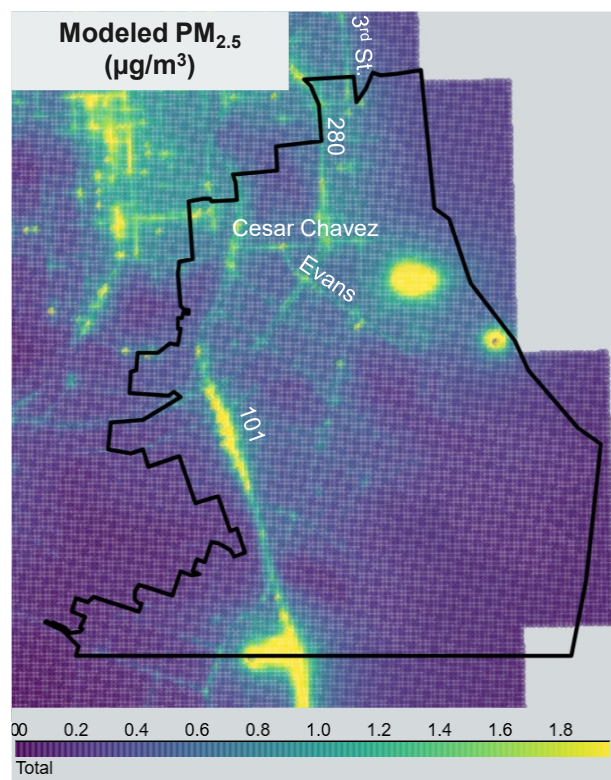


Figure 5-29. Annual average $PM_{2.5}$ concentrations resulting from all modeled sources in BVHP/SESF.

¹⁶³ For example, modeled emissions account for 40% of local $PM_{2.5}$ emissions and 60% of local cancer TWE.

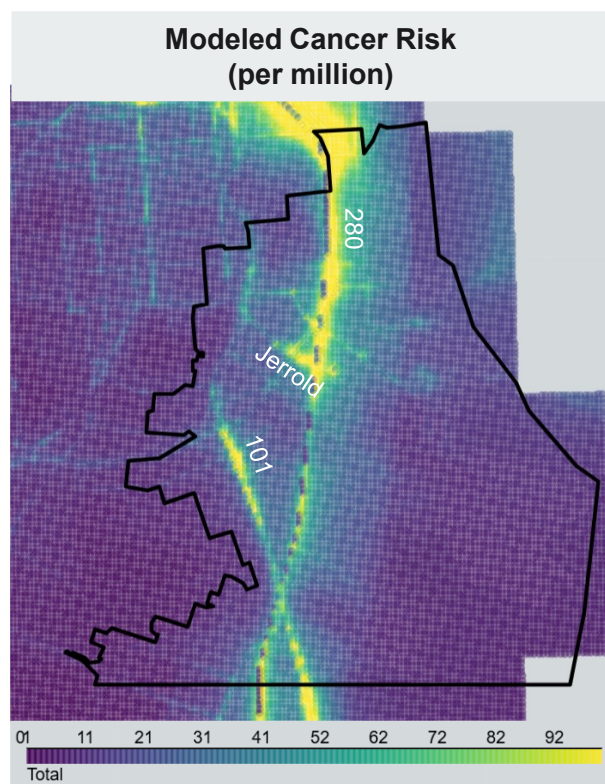


Figure 5-30. Total cancer risk resulting from all modeled sources in BVHP/SESF.

In addition to these high-level modeling results, dispersion modeling outputs for individual sources can also provide useful information on their potential impacts. For example, Figure 5-31 shows annual average $PM_{2.5}$ concentrations resulting from emissions released from three permitted facilities that operate along Amador Street. This figure also shows locations where sensitive populations live or gather, such as hospitals and schools. $PM_{2.5}$ concentrations of a few micrograms per cubic meter ($\mu g/m^3$) can be seen in the immediate vicinity of Amador Street, with $PM_{2.5}$ levels decreasing with distance from the facilities. The outer purple band with concentrations of 0.1 to 0.3 ($\mu g/m^3$) mostly covers industrial areas or portions of the Bay, but does extend south to just below Evans Street. While there are no residential areas within this purple band, it does cover two sensitive locations: the Bayview Child Health Center on 3rd Street and the Southeast Families United Children's Center on Evans Avenue. Notably, several sensitive locations can be seen along US-101 just south of the I-280 interchange, an area with modeled $PM_{2.5}$ contributions from local sources exceeding 1.5 $\mu g/m^3$ and cancer risk.

Figure 5-31 illustrates the importance of accounting for source locations in addition to emissions levels. However, it should be noted that the emissions inventory and modeling results may not capture total impacts from a given source. For example, an inventory may not include emissions from sources at a facility that are not covered by its operating permit, such as trucks accessing the site. This figure also highlights the importance of buffers between emissions sources and residential areas or places where sensitive populations gather.

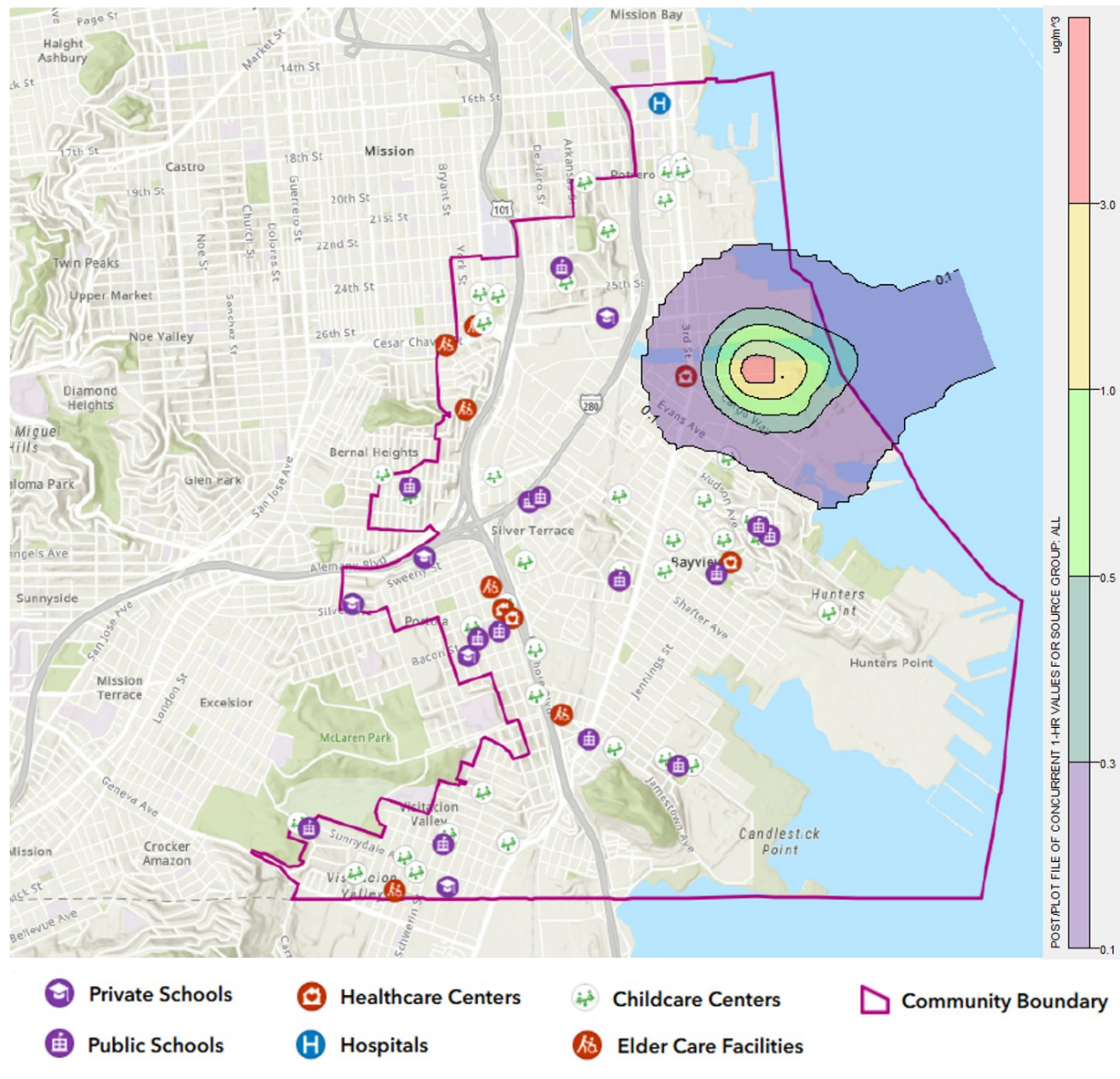


Figure 5-31. Annual average $\text{PM}_{2.5}$ concentrations ($\mu\text{g}/\text{m}^3$) resulting from Amador Street emissions. Locations of places where sensitive populations gather are shown on the map.

Emissions vs. Exposure

As noted above, a source's proximity to residences and sensitive receptors is also important from an exposure perspective. To evaluate pollutant exposures, the modeled $\text{PM}_{2.5}$ concentrations and cancer risk values from Figures 5-29 and 5-30 were combined with population data to calculate source contributions to average residential $\text{PM}_{2.5}$ concentrations and cancer risk values. These metrics provide information on how modeled sources contribute to pollutant levels to which the average BVHP/SESF

resident is exposed.¹⁶⁴ Importantly, a source's contribution to the emissions inventory for a given pollutant may not match its contribution to modeled exposures due to the source's location, prevailing wind directions, and other factors.

For example, Figure 5-32 shows stack bar charts with source contributions to PM_{2.5} emissions and exposures, with only modeled sources included. For stationary sources (permitted facilities and commercial cooking), combined contributions to emissions and exposures are similar, totaling about 40%. However, for on-road mobile sources, the contribution to average residential exposure (54%) is higher than the corresponding contribution to the modeling emissions inventory (44%). This result is due to the presence of roadways within residential areas. On the other hand, marine sources account for about 13% of the modeling inventory for PM_{2.5} but less than 1% of the average residential PM_{2.5} exposure. This result is due to the fact that marine sources operate on the outskirts of the community, with a significant portion of marine emissions resulting from vessels transiting past the community on their way to Redwood City and other ports. In addition, the community is often upwind of the marine sources due to prevailing wind patterns.

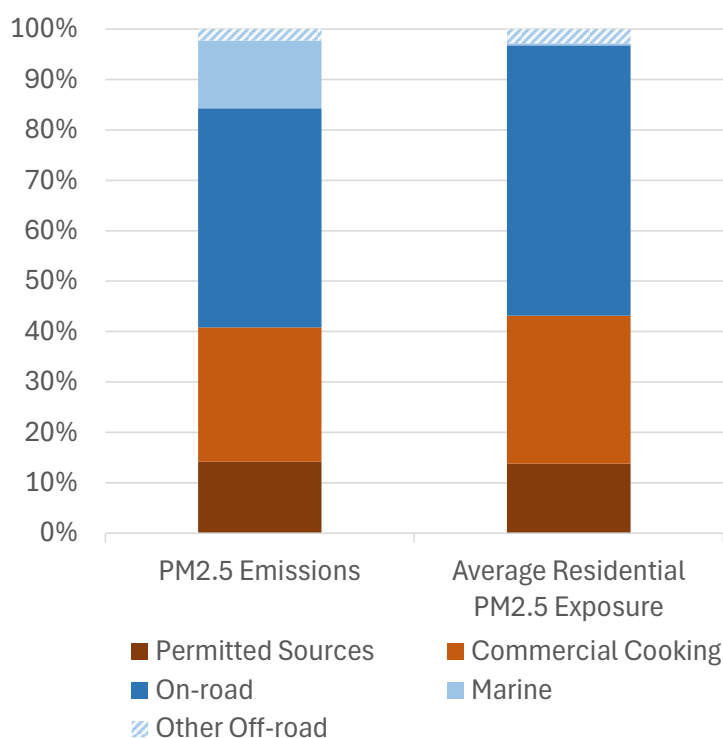


Figure 5-32. Source contributions to PM_{2.5} emissions and average residential PM_{2.5} exposures in BVHP/SESF.

Similarly, Figure 5-33 shows stack bar charts with source contributions to cancer TWE and average residential cancer risk, with only modeled sources included.¹⁶⁵ For both cancer TWE and modeled risk,

¹⁶⁴ Note that dispersion modeling of local sources does not provide an assessment of total exposure to air pollution, which includes pollutant transport from outside BVHP/SESF and the secondary formation of pollution in the atmosphere. Rather, the local source modeling gives information on the increment above "urban background" that is generated by sources within and around the community.

¹⁶⁵ Commercial cooking is not shown in Figures 5-34 and 5-35 because the emissions inventory for that source does not include any TACs that have been determined to cause cancer or non-cancer chronic health effects.

mobile sources are dominant due to their emissions of DPM. However, each source's contributions to cancer TWE and cancer risk tend to vary widely. For example, on-road mobile sources account for only 18% of cancer TWE in the modeling inventory but almost half (47%) of the modeled cancer risk. Again, this result is due to the proximity of heavily traveled roadways to residential areas. On the other hand, marine sources account for about 68% of the modeling inventory for cancer TWE but only 7% of the average residential cancer risk. As previously noted, this result is due to the location of marine sources and prevailing wind patterns.

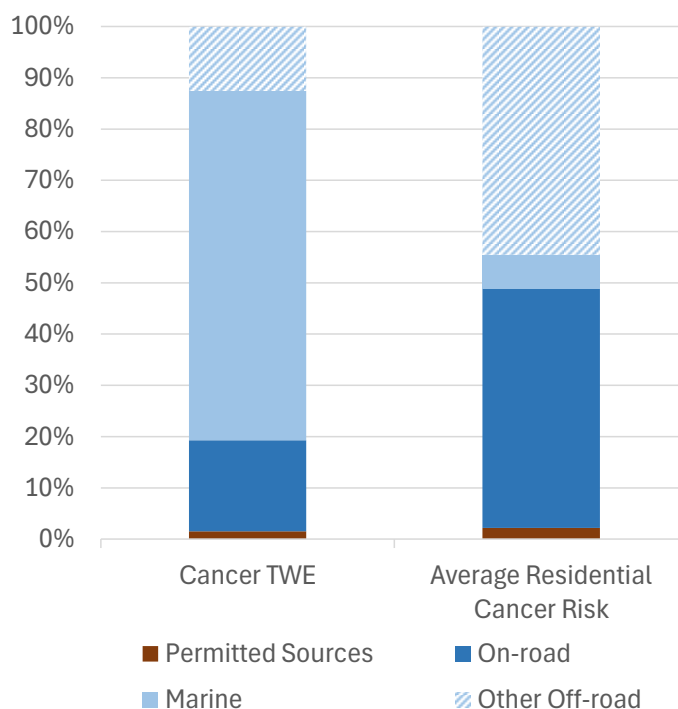


Figure 5-33. Source contributions to cancer TWE and average residential cancer risk in BVHP/SESF.

Lastly, Figure 5-34 shows stack bar charts with source contributions to chronic TWE and average residential chronic HI, with only modeled sources included. For both chronic TWE and modeled HI, on-road mobile sources are dominant, accounting for 67% of chronic TWE in the modeling inventory and 85% of the modeled chronic HI. As previously noted, this larger contribution to modeled exposure is due to the location of heavily traveled roadways within residential areas. By contrast, marine sources account for about 25% of the modeling inventory for chronic TWE but less than 1% of the average residential chronic HI, a pattern that was previously seen in the cancer risk results.

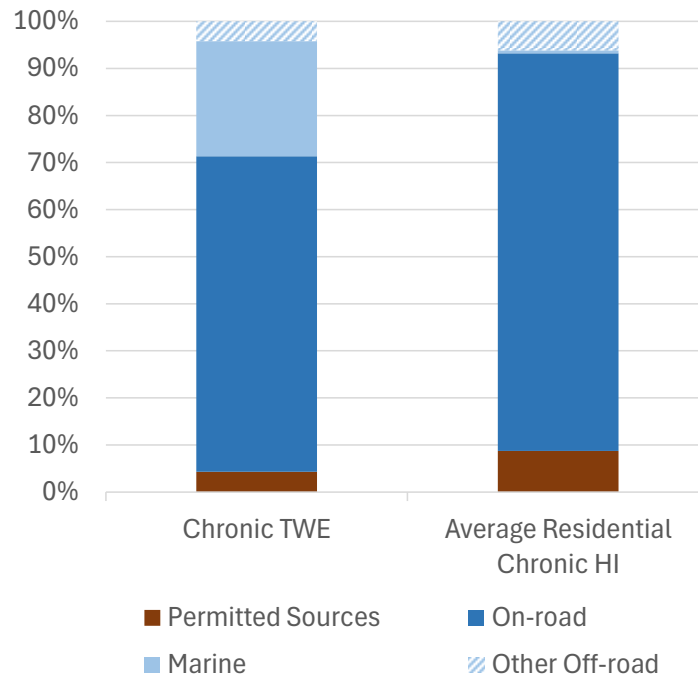


Figure 5-34. Source contributions to chronic TWE and average residential chronic HI in BVHP/SESF.

Connecting to Community Concerns

As described above, the CSC collected community input through a variety of public engagement efforts and used that information to develop a list of six focus areas (see Chapter 8: Focus Areas, Strategies, and Actions). Table 5-9 provides a summary of how the current air monitoring data, emissions inventory, and modeling analyses inform our understanding of the impacts of sources associated with each of these areas of concern.

Table 5-9. Community concerns and key takeaways from air monitoring, emissions inventory, and modeling data.

Area of Concern	Key Takeaways
Permitting & Enforcement	A 2022 emissions inventory for BVHP/SESF shows that key sources include residential fuel combustion, construction activities, road dust, commercial cooking, and permitted facilities.
Traffic & Transportation	- Mobile sources such as cars, trucks, ocean-going vessels and construction equipment are significant sources of several TACs in BVHP/SESF, including DPM, 1,3-butadiene, benzene, and acrolein. - Data from Air District monitoring sites and from numerous studies show higher levels of black carbon, UFPs, and other pollutants associated with traffic in locations near busy roadways.

PM, Dust & Construction Impacts	Fugitive dust sources such as cement plants, roadways, and construction projects are important PM_{2.5} sources, and other sources of fugitive dust are likely missing from the inventory or underestimated (e.g., dust from unpaved areas or material transport).
Monitoring & Data	- The San Francisco monitoring site is located outside of the BVHP/SESF boundary and may not capture potentially elevated concentrations in BVHP/SESF from local sources of pollution. - The currently available monitoring data collected in BVHP/SESF are limited in both geographic coverage and in the range of pollutants measured. - Additional efforts are needed to better understand the impacts of sources of air pollution on air quality in BVHP/SESF and fill gaps in knowledge that can inform policies that reduce emissions and exposure to air pollution in BVHP/SESF. - Air monitoring data from the Air District's – San Francisco monitoring site show that while levels of certain air pollutants have been in compliance with federal air quality standards, those levels have not improved over the last ten years.
Community Health Impacts	- It is expected that concentrations of certain air pollutants are likely higher in BVHP/SESF compared to other parts of San Francisco, especially on short time frames, and may vary significantly from place-to-place depending on proximity to nearby sources, variable operations, and meteorological conditions. - There are multiple different types of meteorological patterns (wind speed, wind direction, and inversions) that occur throughout the year that can affect which sources contribute to elevated levels of air pollution in different places.
PDR & Land Use	Data from additional sources (previous short-term monitoring studies, Aclima) highlight the potential for short-duration or intermittent elevated concentration levels of PM_{2.5}, NO₂, and VOCs that may occur at different locations throughout the community during different times of the year. These pollutants are associated with some of the sources of air pollution located within PDR and industrial land uses within BVHP. Exposure analyses highlight the importance of source locations relative to populated areas, which can be seen in comparisons between source contributions to emissions levels vs. modeled human exposures (e.g., on-road vehicles have a higher impact on exposures than their emissions levels would suggest due to the presence of heavily traveled roadways in and around residential areas). See Key Takeaways from Trucks & Transportation regarding on-road mobile sources.

Chapter 6: Enforcement Overview & Findings

The Bay Area Air District (Air District) and the California Air Resources Board (CARB) share enforcement responsibilities for air quality regulations in the Bayview-Hunters Point/Southeast San Francisco (BVHP/SESF) area, with the Air District primarily responsible for regulating stationary sources and CARB primarily responsible for regulating mobile sources. It is the goal of both agencies to implement robust enforcement programs in BVHP/SESF through its inspections to document violations and continue to implement new strategies to ensure regulated sites/facilities and equipment operate in compliance with applicable air quality rules and requirements.

This chapter highlights the enforcement activities in BVHP/SESF between 2022 and 2025. The data review and analyses from this chapter will be used to formulate additional enforcement strategies identified in Chapter 8: Focus Areas, Strategies, and Actions, which aim to be responsive to community concerns and improve enforcement outcomes in BVHP/SESF.

Enforcement Authority

The enforcement programs of the Air District and CARB strive to ensure compliance and minimize local and regional impacts from air pollution. This section summarizes the enforcement authority for stationary sources and mobile sources.

Stationary Sources

The California Health and Safety Code delegates Air Districts authority to adopt and enforce air pollution regulations to achieve state and federal air quality standards. The Air District enforces federal, state, and Air District regulations for a variety of stationary sources in the BVHP/SESF area. The following are the most frequent types of permitted stationary source in BVHP/SESF and corresponding rules or regulations:

- Asbestos renovation and demolition projects (Rule 11-2 and Rule 11-14)
- Naturally occurring asbestos - construction, grading, etc. (17 CCR, Section 93105)
- Generators/Stationary engines (Rule 9-8)
- Autobody shops (Rule 8-45)
- Gasoline dispensing facilities (Rule 8-7)
- Solvent and coating operations (Rule 8-4, Rule 8-16, Rule 8-19, Rule 8-31, and Rule 8-32)
- Boilers (Rule 9-7)
- Aggregate, concrete & asphalt operations (Regulation 6, Rule 6-1, Rule 6-6)
- Waste & recycling operations (Rule 8-34)

Mobile Sources

CARB is the primary authority for developing and enforcing regulations to control emissions from mobile sources and consumer products in California, except in cases where federal law preempts CARB's authority. The Air District may refer to, or partner with, CARB to investigate air quality concerns relating to the mobile sources listed below:

- Ocean-going vessels (OGV)
- Commercial harbor craft
- Off-road construction equipment
- Drayage trucks
- Transport refrigeration units
- Cargo handling equipment
- Heavy-duty truck idling
- On-board incineration on cruise ships
- Fuel sulfur and operational requirements within 24 nautical miles for ocean-going vessels
- At-Berth (Shore Power)

While CARB has authority to regulate emissions from these sources, authority to regulate parking and truck routes lies with the California Highway Patrol, San Francisco Police Department, and San Francisco Municipal Transportation Agency (SFMTA).

Enforcement of Stationary Sources

Air District Enforcement Program

The Air District Compliance & Enforcement Division has primary responsibility for administering the enforcement program of the agency. Inspectors are assigned geographical regions, and their roles include, but are not limited to, the following enforcement activities:

- Unannounced compliance verification inspections of permitted facilities,
- Investigations at sites/facilities that may not have an Air District permit,
- Air quality complaint investigations,
- Area patrols,
- Responding to and investigating major incidents such as fires associated with manufacturing or industrial processes, or other major air emission releases, and
- Coordinating across divisions on permitting and emissions testing, and with regulatory partners on enforcement concerns.

As of February 2026, 49 field staff are assigned to enforce and verify compliance with federal, state and Air District regulations across the nine Bay Area counties. Two inspectors are assigned to conduct compliance inspections and respond to air quality complaints in geographic areas incorporating BVHP/SESF. Additional nearby staffing resources are available to provide support and assistance in the BVHP/SESF area when needed.

Inspections at Permitted Facilities

Inspectors conduct routine, unannounced inspections of permitted, stationary sources and asbestos jobsites to ensure they are operating in compliance with air quality regulations. Inspections typically include the following:

- Review of permit requirements and conditions,
- Federal, state and Air District regulations that may apply,
- Operating parameters, monitoring and recordkeeping requirements,
- Process upsets and equipment malfunctions,
- Major incidents, such as fires or other air emission releases, and
- An assessment of any activities or operations without an Air District permit that may be an air quality concern.

Inspections at Sites that Do Not Have an Air District Permit

In addition to permitted facilities and asbestos job sites, inspectors also conducted inspections at sites suspected of operating without a required permit to ensure compliance with applicable federal, state, and Air District permit and regulation requirements. These sites included locations identified by community, such as the Community Steering Committee-led (CSC) Sources, Emissions and Data Gaps (SEDG) subcommittee list of sites suspected of operating without a permit. These inspection results are discussed in the BVHP/SESF Inspection Pilot Project section of this chapter.

Stationary Sources in the BVHP/SESF Area

This stationary source sub-section encompasses sites/facilities within the Community Emissions Reduction Plan (CERP) community boundary area and sites/facilities within the BVHP/SESF zip codes (94107, 94110, 94124, 94134, 94158, and 94188). This broader approach ensures the enforcement data for stationary sources is more inclusive and captures nearby air pollution sources that have the potential to affect air quality in BVHP/SESF. The number of permitted facilities fluctuates as they come into, or out of, operation, become exempt from permitting requirements, or lose permit status. As of May 13, 2025, there were 241 permitted facilities within the BVHP/SESF zip codes permitted by the Air District, as listed in Appendix E: Enforcement Overview and Findings Supplemental Information. Note that the appendix lists "Facility Type" as "Permitted", "Registered" or "All Sources Exempt." Additionally, facilities outside the CERP community boundary but within the listed zip codes are denoted by an asterisk. While not facilities, BVHP/SESF also has around 15 sites a year that trigger inspections for naturally occurring asbestos.

Figure 6-1 shows the total number of permitted facilities in BVHP/SESF by type. Facilities with only stationary engines and/or boilers account for 52% of the permitted facilities in the area. Accounting for 16%, the second largest facility type, are autobody shops, followed by retail and non-retail gas stations (13%), solvent and/or coating operations (9%) and all remaining operation types (9%). The remaining operation types are categorized as "Other" and include facility types such as wastewater treatment plants, food processing facilities, dry cleaners and concrete/asphalt operations.

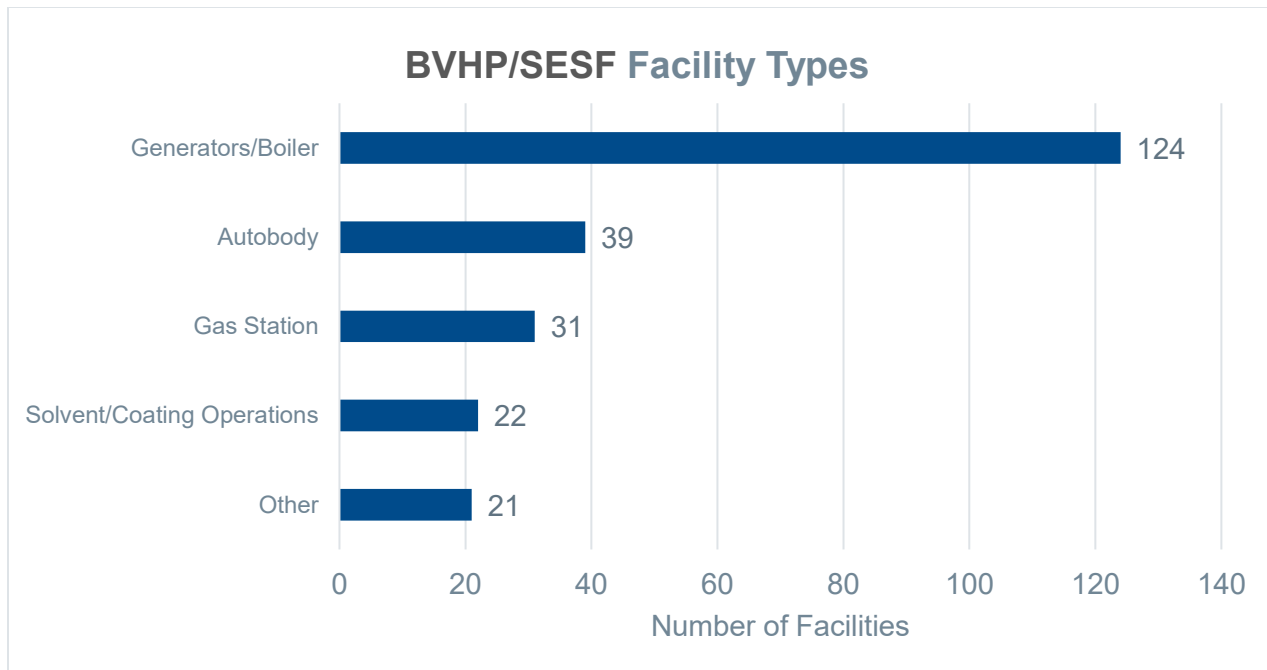


Figure 6-1. Types and number of permitted facilities in BVHP/SESF zip codes as of May 13, 2025.

4-Year Enforcement History of Stationary Sources

This section provides a closer look at the 4-year compliance and enforcement history within the BVHP/SESF zip codes (94107, 94110, 94124, 94134, 94158, and 94188). The data includes a summary of compliance inspections, air quality complaint investigations, and violations from January 2022 through December 2025.

Compliance Inspections

In the 4-year period from 2022 through 2025, inspectors completed 437 compliance inspections in BVHP/SESF. This includes compliance inspections at permitted facilities and at asbestos demolition/renovation job sites. The Air District conducted additional inspections at naturally occurring asbestos sites and in response to complaints, which are included in the Air Quality Complaint Investigations section.

Non-compliances identified during these inspections are further discussed in the “Notice of Violation and Notice to Comply” section of this chapter.

Air Quality Complaint Investigations

The Air District responds to and investigates all air quality complaints. Resolving air quality complaints is one of the Air District's highest priorities. The Air District's goal is to respond to air quality complaints within 30 minutes during regular business hours and investigate community concerns expeditiously. While inspectors are not first responders, complaint response and investigations are prioritized to achieve early intervention and resolutions to air quality concerns. Community members are encouraged to report an air quality complaint to the Air District as they are often the first to become aware of, and are impacted by, odors, visible emissions or other air pollution concerns. Inspectors meet with complainants to gather information and conduct investigations, onsite inspections at the alleged site/facility, and area patrols to pinpoint the site/facility of concern.

Air quality complaint investigations make up a large portion of the inspection activities in BVHP/SESF. From 2022 to 2025, a total of 361 complaints were reported and investigated by the Air District, an average of 90 complaints per year. The full list of complaints is in Appendix E: Enforcement Overview and Findings Supplemental Information.

Figure 6-2 shows the number of BVHP/SESF air quality complaints by type from 2022 to 2025. Odors were the greatest source of community complaints, accounting for 63% of total complaints in BVHP/SESF. The next most common complaint types were complaints of dust, followed by complaints of illegal fires. For complaints listed as "Other", the complainant either did not specify a complaint type, or it was related to excessive idling (only 3 complaints).

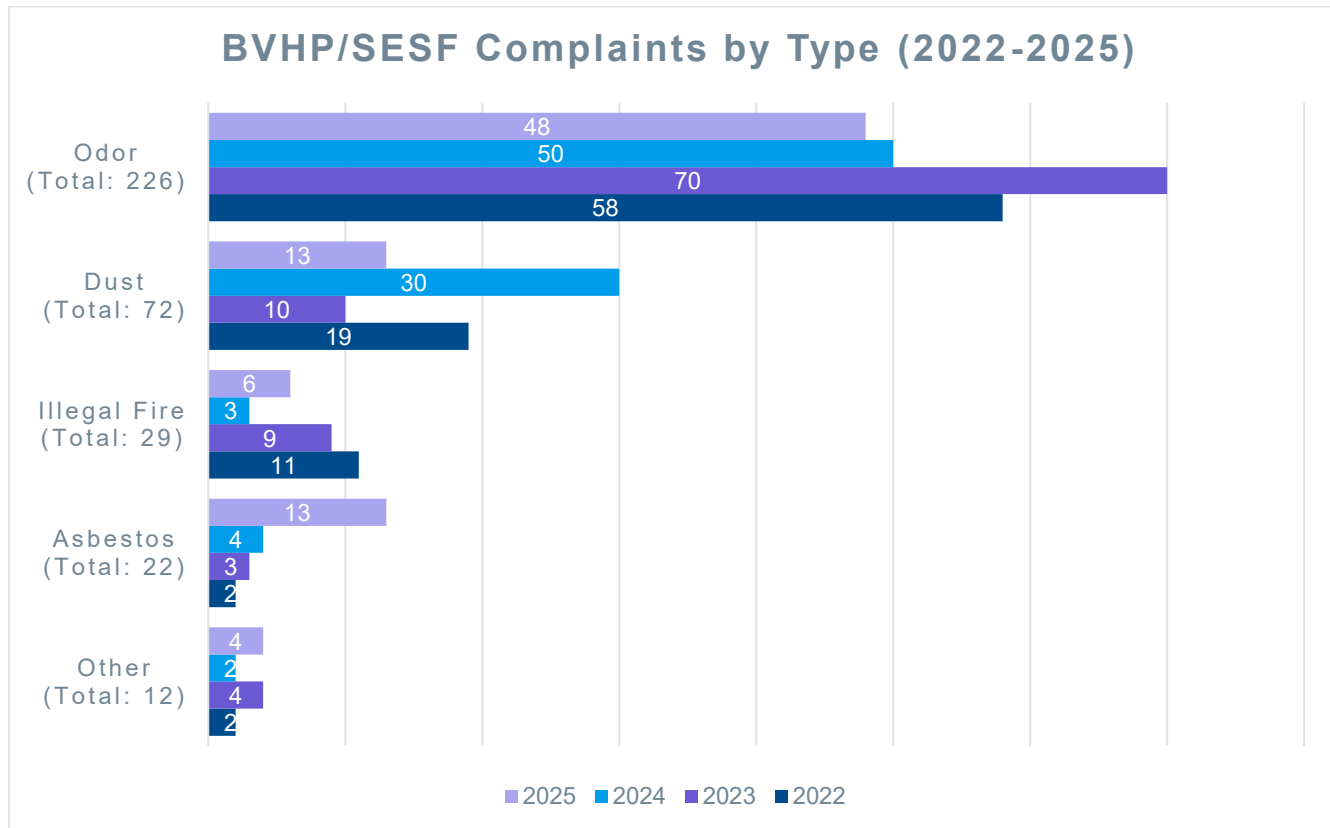


Figure 6-2. Types of air quality complaints in BVHP/SESF.

All air quality complaints are investigated regardless of whether an individual reports a complaint anonymously or provides their name and personal contact information. Personal information provided by complainants is treated as confidential information. The Air District respects the concerns of complainants that choose to retain anonymity.

Figure 6-3 shows that 29% of complaints were filed anonymously. A benefit of the Air District taking anonymous complaints is that individuals with privacy concerns are still empowered to request an investigation. While anonymous complaints do not allow inspectors to obtain additional information during their investigation from the complainant, the Air District provides helpful tips and guidance on the Air District website on how to be descriptive when reporting a complaint, which helps the Air District pinpoint potential compliance concerns more quickly.

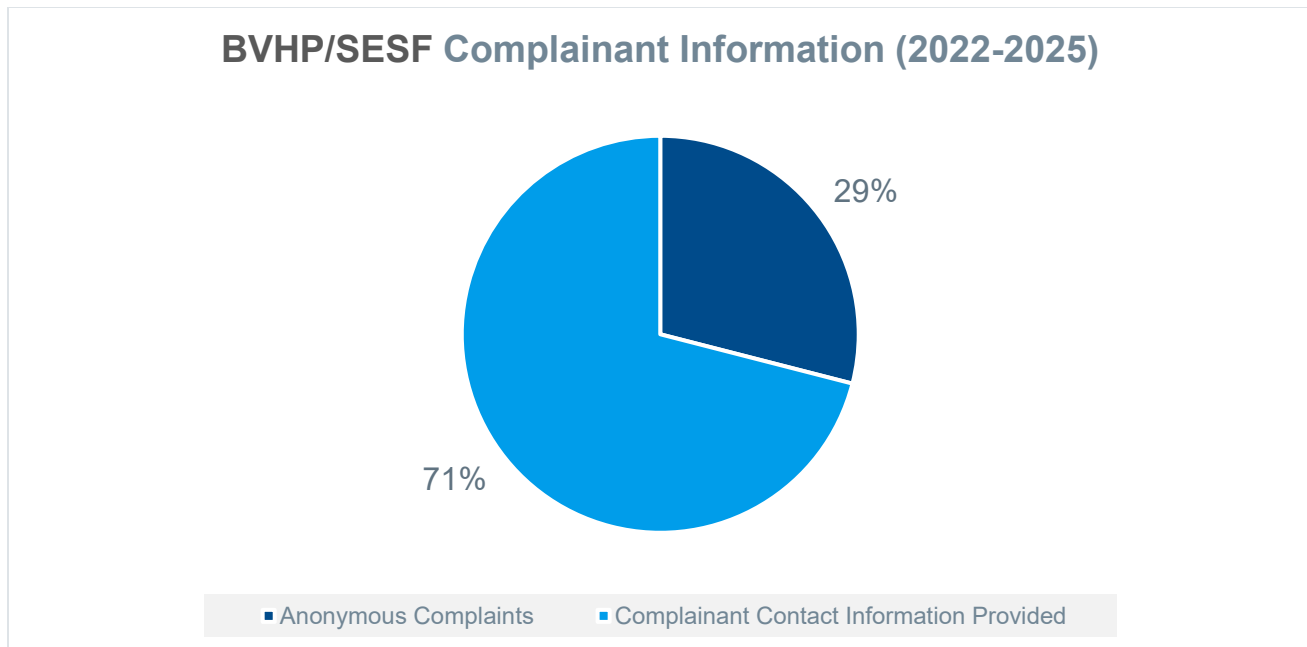


Figure 6-3. BVHP/SESF complaints - anonymous vs. complainant contact information provided.

Following the air quality complaint investigation process, the inspector documents the findings in a report. The inspector makes a determination of whether the "emission was observed and could be traced to the source (site/facility identified)," or the "emission was not observed and/or could not be traced to the source (site/facility not identified)."

If a violation is discovered, follow-up enforcement action may include issuing a Notice of Violation (NOV) for violation of federal, state, or Air District regulations. Alternatively, a Notice to Comply (NTC) may be issued for administrative, non-repetitive violations. In addition to documenting violations, inspectors may also provide compliance assistance and work with regulatory partners on compliance concerns. While inspectors respond to and investigate all air quality complaints, not all complaints reported to the Air District result in the issuance of a violation to the alleged site or facility. A violation of a specific rule or regulation must be documented by the inspector for an NTC or NOV to be issued.

Figure 6-4 shows that of the complaints received in BVHP/SESF between 2022 and 2025, 18% were verified and traced to a site/facility, higher than a typical District-wide rate of 13%. The chart also shows that 82% of complaint investigations resulted in the inspector not being able to observe the alleged emission and/or were not able to identify the source of the emission at the time of investigation. A complaint that is not verified by the inspector can indicate that other factors may have influenced the presence of emissions such as changes in meteorological conditions or operations at the facility at the time of the inspector's investigation. Inspectors are trained to identify potential sources of emissions through reviewing monitoring records, operator logs, and utilize different enforcement tools to determine if a violation occurred. All complaints, whether or not the presence of emissions was verified by the inspector, are tracked and help provide data points to inspectors to identify potential compliance problems and violations.

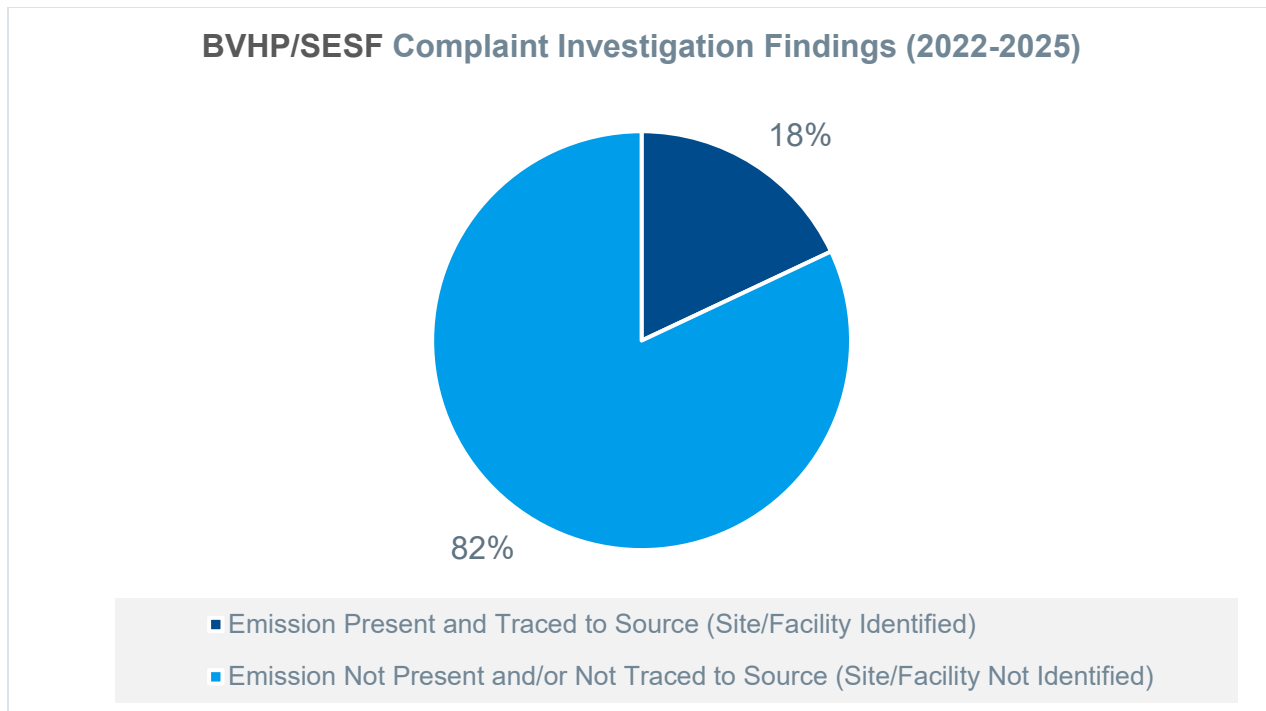


Figure 6-4. BVHP/SESF complaints - emission traced to source vs. emission not traced to source.

Notice of Violation and Notice to Comply

When a site/facility is discovered to be in violation of a federal, state, or Air District regulation, inspectors may take enforcement action by issuing an NOV or NTC.

NOVs hold polluters accountable and are used as a tool to deter non-compliance and ensure proactive measures are taken to prevent recurrence. The inspector provides the owner/operator with information to help the site/facility achieve compliance, assesses the measures taken to prevent the violation from recurring in the future, and tracks progress of corrective actions. These details are documented in the inspector's violation report.

An NTC may be issued for minor violations, which places the site/facility on notice about a compliance concern along with a compliance deadline. An NTC is only an option to address minor violations that are administrative and where emissions are negligible. Administrative violations are typically related to recordkeeping or late reporting. Sites/facilities must demonstrate that the violation is promptly addressed, and corrective actions are taken. Inspectors track NTC compliance status and may issue an NOV if the violation is not resolved. From 2022 to 2025, the Air District issued eight NTCs in BVHP/SESF. A full list of NTCs can be found in Appendix E: Enforcement Overview and Findings Supplemental Information.

From 2022 to 2025, 62 NOVs were issued for violations at both permitted and unpermitted sites/facilities in BVHP/SESF. Figure 6-5 summarizes the violations within three categories for each calendar year from 2022 to 2025, Operational, Permit-related, and Administrative, as discussed below:

- A total of 29, making up for 47% of violations, were for Operational violations. Operational violations include exceedances of emission limits, permitted usage limits, operating parameters, monitoring, maintenance, housekeeping, and abatement and control requirements. These operational requirements are specified in air quality rules and regulations, and the site/facility's permit conditions. A site/facility returns to compliance once they address operational issues to comply with applicable requirements. Examples of operational violations are exceeding a material

throughput limit, exceeding maximum engine operating hours, operating below a temperature requirement, not replacing air filters, and causing a public nuisance.

- A total of 29, making up for 47% of violations, were Permit-related. These relate to installing or operating equipment without an Authority to Construct (A/C) or Permit to Operate (PTO). A site/facility comes into compliance by either ceasing operation or obtaining an AC/PTO through the District's permitting process. This approval involves application submittal, a processing fee, and detailed evaluation by the Air District's Engineering Division.
- A total of four, making up for 6%, were for Administrative violations. These types of violations include inadequate recordkeeping or late reporting. Administrative requirements are specified in air quality rules and regulations and the facility's permit conditions. The site/facility can demonstrate a return to compliance by taking measures to keep required records and meet timelines.

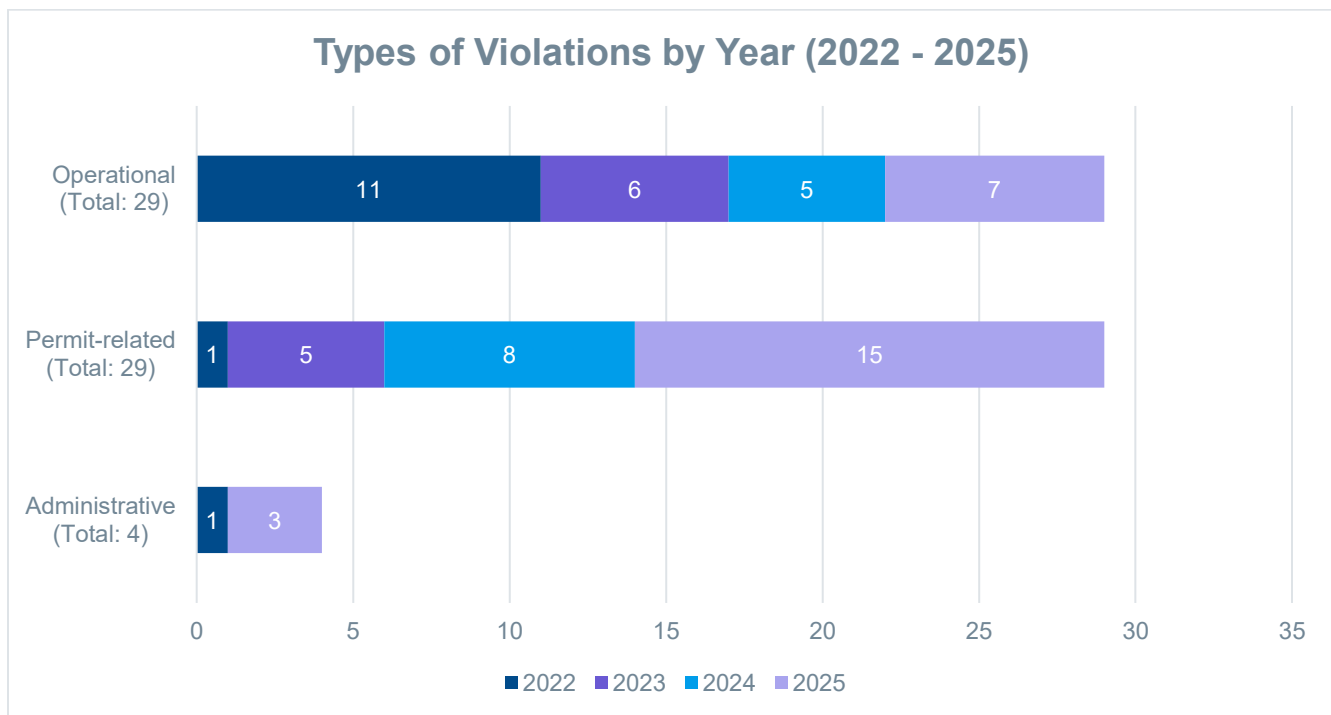


Figure 6-5. 2022-2025 BVHP/SESF violation summary by year.

Figure 6-6 shows sites/facilities in BVHP/SESF that received NOVs for two or more violations between 2022 and 2025. Of the 62 NOVs issued in BVHP/SESF, 48, or 77%, were issued to sites/facilities with multiple instances of non-compliance. The remaining 14, or 23%, of NOVs were issued to sites/facilities with one-time violations in the four-year timeframe.

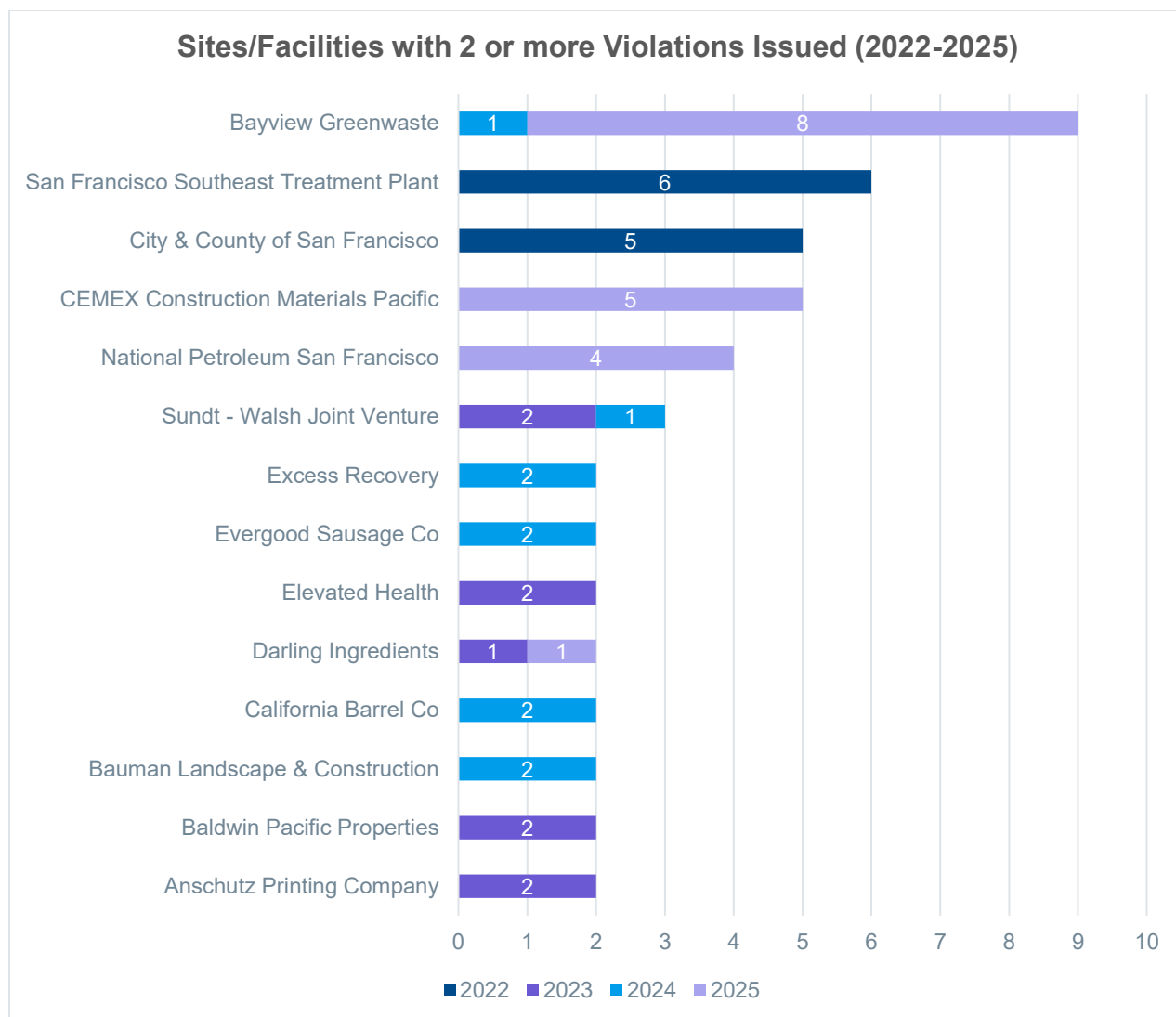


Figure 6-6. Summary of BVHP/SESF sites/facilities with two or more violations between 2022-2025.

BVHP/SESF Inspection Pilot Project

Overview

From March to December 2025, the Air District piloted new inspection strategies in BVHP/SESF that prioritized staff resources toward addressing community concerns raised by the CSC. Staff worked closely with the CSC to gather local knowledge and identify community-specific concerns. This effort identified 43 facilities to be prioritized for inspection to verify compliance with applicable air quality regulations and permit requirements.

The pilot also incorporated a data-driven assessment that reviewed all 237 permitted facilities in the BVHP/SESF, including compliance histories, past inspection information, violations, and air quality complaints to provide a more thorough understanding of potential areas of non-compliance and facilities to prioritize inspections.

Combining both community-identified air quality concerns with compliance and enforcement data allowed the Air District to strategically direct staffing resources to conduct inspections, investigations, weekend enforcement, and area patrols to pinpoint violations and ensure sites/facilities are operating in compliance.

Findings

The inspection results are summarized in Table 6-1 below. The Air District completed a total of 79 inspections during the pilot, with 43 based on a CSC-provided list of sites/facilities suspected of needing a permit and 36 based on Air District compliance and enforcement data. The Air District conducted three inspections on three different weekends as part of the pilot to provide greater presence in the community, conduct unannounced inspections, and ensure sites/facilities are not circumventing regulations outside of regular Air District business hours.

Table 6-1. Summary of inspection pilot project findings.

Targeted Inspections	Based on Community Knowledge	Based on Enforcement Data	Weekend Enforcement	Enforcement Summary
Sites/Facilities Inspected	43	33	3	79
Non-Compliant Sites/Facilities	5	14	1	20
Non-Compliance Rate	12%	42%	33%	25%
Notice of Violation Issued	2	11	1	14
Notice to Comply Issued	3	9	1	13

The results show that the data-based approach identified the most instances of non-compliance, with 11 notices of violation and nine notices to comply issued. Community-driven inspections had a lower non-compliance rate, and many reported sites were found to be exempt from permitting requirements, for example, due to low throughput of materials, or otherwise below a permit threshold. The partnership was successful in quickly addressing community concerns and helped discover five sites that were operating in violation that may not have been found without community input, helping to build trust and improve collaboration with the community on compliance concerns.

The pilot was successful at demonstrating that inspections could be prioritized using the new strategies with careful planning, coordination, and collaboration with the community, comprehensive data analysis strategies, and occasional weekend enforcement. The findings demonstrated a significant step forward in harnessing both enforcement data and community knowledge to effectively focus enforcement resources. The Air District plans to continue to implement these strategies in BVHP/SESF, as well as a broader rollout in other AB 617 communities in the upcoming months.

Enforcement of Mobile Sources

CARB Enforcement Programs

CARB's Enforcement Division aims to develop partnerships with BVHP/SESF community organizations to co-lead the development of community-focused action plans that reduce disproportionate exposures within the BVHP/SESF boundary. CARB is charged with enforcing regulations applicable to mobile sources, consumer products, and other area-wide categories, such as fuels, and climate programs, while the Bay Area Air District is primarily responsible for enforcement relating to stationary sources (e.g., auto body coating, metal shredding, aggregate plants).

CARB enforcement programs cover the vehicles we drive, the diesel engines that power our economy, consumer products that we purchase, and greenhouse gas (GHG) emissions from our industries and activities. The goal of CARB enforcement programs is to achieve comprehensive compliance with every regulation the CARB adopts. Through enforcement, we work to bring responsible parties into compliance and in doing so achieve a level playing field across industry so that no company can benefit from non-compliance at the expense of another, and to deter industry from future violations.

CARB applies enforcement programs in accordance with the [enforcement policy](#), which was updated in 2017. CARB uses data and inspections to identify potential non-compliance and then investigates each case.¹⁶⁶ Once a violation is identified, CARB notifies the potential violator and evaluates what happened. CARB works with the responsible party to achieve compliance and measure the relevant facts and circumstances of each case, relative to eight factors set in law and described in the enforcement policy, to determine an appropriate penalty. The case is settled when the responsible party has achieved compliance and paid an appropriate penalty. If the case cannot be settled, CARB works with legal staff to refer the case to California's Attorney General for litigation.

Field inspectors are a critical component of the diesel enforcement program. The inspectors work across the state to inspect trucks and other equipment for compliance with CARB's diesel regulations, such as Clean Truck Check, Solid Waste Collection Vehicle, Statewide Truck and Bus, Tractor-Trailer Greenhouse Gas, Off-Road Diesel Equipment, Commercial Vehicle Idling, and Transport Refrigeration Unit. Field inspectors also conduct inspections for compliance with Public Agencies and Utilities, Cargo Handling Equipment, Commercial Harbor Craft, Ocean Going Vessel, and Shore Power regulations. CARB inspectors examine heavy-duty vehicles and equipment at numerous locations throughout California, such as along roadsides, at California Highway Patrol scale facilities, warehouses, fleet yards, construction sites, truck stops, rest areas, ports, and rail yards.

CARB's enforcement activities can be found in CARB's Enforcement Data Visualization System (EDVS), located here: [Enforcement Data Visualization System – California Air Resources Board](#).¹⁶⁷ A guide to how to use EDVS is here: [Enforcement Data Visualization System \(ca.gov\)](#).¹⁶⁸ Additional information on CARB Enforcement Activity can be found in our Annual Reports: <https://ww2.arb.ca.gov/resources/documents/enforcement-reports>.

¹⁶⁶ CARB. Enforcement Policy. 2020. <https://ww2.arb.ca.gov/resources/documents/enforcement-policy>

¹⁶⁷ CARB. "Enforcement Data Visualization System (EDVS)" (web tool), accessed August 5, 2026. <https://webmaps.arb.ca.gov/edvs/>

¹⁶⁸ CARB. "Enforcement Data Visualization System." May 2021. https://ww2.arb.ca.gov/sites/default/files/2021-05/EDVS_052521_0.pdf.

Heavy-Duty Diesel Truck Enforcement

CARB regulations establish stringent emission requirements that new diesel vehicles must meet. Engine manufacturers are required to meet lower particulate matter (PM) and nitrogen oxide (NO_x) emission standards. Many manufacturers employ the installation of diesel particulate filters to meet the PM standard, as well as exhaust aftertreatment to meet the NO_x emission standard. These devices remove more than 95% of toxic diesel emissions from Heavy-Duty Diesel Trucks (HDDTs) when properly functioning. In addition, because diesel engines and equipment are designed to last decades, CARB's diesel fleet regulations require operators to replace older, higher polluting vehicles and equipment with cleaner vehicles, equipment, and technologies to provide emission reductions as quickly as possible. These regulations apply to operators of on-road diesel vehicles, such as trucks and off-road diesel vehicles and equipment, including construction and cargo handling equipment, transport refrigeration units, commercial harbor craft, and other sources. As a result of these programs, according to [EDVS](#), CARB has greatly reduced diesel PM and NO_x emissions and the statewide compliance rate was over 90% for diesel programs in 2024.¹⁶⁹

CARB has also developed a comprehensive heavy-duty vehicle inspection and maintenance regulation to ensure that vehicles' emissions control systems are properly functioning when traveling on California's roadways. The Board approved the regulation in December 2021, with implementation to be phased in starting January 2023. Dubbed the Clean Truck Check, the program combines periodic vehicle testing requirements with other emissions monitoring techniques and expanded enforcement strategies to identify vehicles in need of emissions-related repairs and ensure any needed repairs are performed. The Clean Truck Check subjects nearly all non-gasoline vehicles with a gross vehicle weight rating over 14,000 pounds that operate in California to periodic emissions testing. Similar to California's Smog Check program for light-duty vehicles, these testing requirements help ensure that heavy-duty vehicles operating in California remain equipped with properly functioning emissions controls, and when malfunctioning, that these systems get repaired in a timely manner. When fully implemented, the program will provide significant reductions in smog-forming and carcinogenic toxic air pollution necessary to achieve federal air quality mandates and healthy air in California's communities.

As reported in EDVS, CARB did not do any heavy-duty diesel inspections in 2022 within the BVHP/SESF community border. CARB completed 90 heavy-duty diesel inspections in 2023 and 163 inspections in 2024, as shown in Table 6-2 below. CARB will continue to work with the CSC to prioritize inspection locations to ensure that sufficient enforcement is taking place in the community.

¹⁶⁹ CARB. "EDVS" (web tool). <https://webmaps.arb.ca.gov/edvs/>

Table 6-2. Summary of CARB heavy-duty diesel inspections.

Program Categories	2023		2024	
	Inspections	Compliance Rate	Inspections	Compliance Rate
HDVIP-Emission Control Label	14	93%	22	91%
HDVIP-Smoke Opacity	12	0%	7	100%
HDVIP-Tampering	26	100%	48	100%
HDVIP-Reporting	-	-	17	88%
Idling	-	-	-	-
Off-Road	-	-	18	39%
Transport Refrigeration Unit	1	100%	3	100%
Truck and Bus	15	93%	24	92%
On-Board Diagnostics	10	80%	16	56%
MIL Status	12	100%	8	75%
Total Inspections	90		163	

Truck and Bus Rule

To comply with CARB's Truck and Bus rule and to legally operate in California, nearly all trucks and buses in California were required to have a certified 2010 or newer model year engine by January 2023. In fact, California is entering its sixth year where the California Department of Motor Vehicles (DMV) is holding registration for some trucks and buses that are not in compliance with CARB's Truck and Bus rule as a requirement of Senate Bill 1.¹⁷⁰ Due to CARB regulation implementation and enforcement, the compliance rate statewide for heavy-duty and light-duty trucks was 98% and 99%, respectively, as of January 2025. Trucks and buses that cannot demonstrate compliance with the statewide truck and bus rule will have registration holds placed on them with DMV and will be prevented from being driven legally in California. According to DMV data, as of January 2025, vehicles registered in the BVHP/SESF community zip codes had a 98.6% compliance rate for heavy-duty diesel vehicles and 99.7% for light-duty diesel vehicles. As of January 2025, the DMV placed 10 registration holds on BVHP/SESF heavy-duty diesel vehicles ranging from model year 2000 to 2010. In addition, DMV placed two registration holds on BVHP/SESF light-duty diesel vehicles with model years 2006 and 2007.

¹⁷⁰ California Senate Bill 1 (Beall), "Road Repair and Accountability Act of 2017," Chapter 5, Statutes of 2017.

Fuels

CARB is authorized to adopt standards, rules, and regulations to achieve the maximum degree of emission reduction possible from vehicular and other mobile sources to accomplish the attainment of the state ambient air quality standards at the earliest practicable date. CARB's fuels effort is made up of several components, which broadly fall into two categories: adopting and enforcing fuel specifications and controlling emissions from marketing and distributing fuels in California.

In 2025, CARB collected a total of 739 samples of motor vehicle fuel from Bay Area sources, including refiners and importers that supply service stations in the BVHP/SESF community and surrounding areas. CARB will increase inspections at service stations in the BVHP/SESF community to ensure compliance.

Other Areas of Mobile Enforcement

CARB enforces many areas related to mobile vehicles, including engines, fuel containers, refrigerants, and windshield washer fluids. All these programs contribute to CARB's overall efforts to tackle emissions of all types from all sources. See appendices for more information on these programs.

Consumer Goods

Consumer product inspections are an important regulatory tool to improve public health in the community. Consumer products, such as hairsprays, deodorants, and flooring, are widely used but can be sources of toxic air contaminants and volatile organic compounds (VOCs) that community members bring into their homes. As reported in EDVS, CARB did not do any Consumer Goods inspections for years 2022 through 2024 within the BVHP/SESF community border. CARB staff will work with the CSC to identify retailers in the community to target consumer product inspections and outreach in BVHP/SESF.

Portable Equipment Registration Program (PERP)

The Portable Equipment Registration Program (PERP) enables owners and operators of portable engines and other types of portable equipment to register their units under a single statewide PERP registration. Statewide registration allows equipment owners to operate portable equipment throughout California without having to obtain individual permits from local air districts. PERP operates as a revenue-neutral program. CARB collects inspection fees for new and renewed PERP registrations and distributes them the following year to each of the 35 local air districts to enforce State portable equipment regulations.

Stationary Sources

California state law gives local air districts the primary authority to regulate stationary sources for criteria pollutants. CARB has an important role in providing support to air districts with training and enforcement. Stationary source-focused programs in CARB's Enforcement Division are implemented consistently with legal authority through training and support, conducting analyses of air district rules, regulations, variances, and policies as required by state law including direct enforcement.

Summary Of Complaints Received

Reporting potential violations of air quality requirements can provide important information for enforcement. Staff investigates tips about non-compliance and takes all complaints very seriously. Often details can't be discussed during the inspection process but every attempt to resolve the complaint will be made. CARB takes enforcement action based on the investigation of the complaint which may lead to an NOV. Sometimes the investigations can take long and remain pending, other times the complaints are not actionable because CARB did not receive enough information to initiate an investigation. Based on the nature of the complaint, CARB may refer it to another agency that has the appropriate jurisdiction.

Table 6-3. Complaints received by CARB in 2022-2024.

Complaint	Number	Action Taken
Autobody and Upholstery Shop Emissions	1	Referred to Air District
Diesel emissions	1	Referred to CARB diesel complaints team
Dust	3	Referred to Air District
Excessive Idling	1	Referred to CARB diesel complaints team
Odor	4	Referred to Air District
Residential Building Complaint	1	Referred to SF Dept. of Building Inspection
Smoke	1	Referred to SF Public Health
Smoking vehicle	2	Referred to CARB's smoking vehicle complaints

From 2022 to 2024, CARB received 14 complaints from within the BVHP/SESF community boundary (Figure 6-3). CARB referred complaints of odors, dust, and autobody shops to the Air District for action. Other complaints outside of CARB or Air District enforcement jurisdiction were referred to other agencies. CARB received one idling complaint, one diesel emissions complaint, and one smoking vehicle complaint. CARB contacted the Responsible Party for the idling complaint to discuss California's idling requirements. The diesel emissions and smoking vehicle complaint investigations are pending as of December 2025.

An important part of AB 617 is increasing community awareness of the tools that are available to residents. Reporting complaints to both the Air District and CARB enables members of the public to play an active role in addressing air pollution concerns in their community. Both agencies rely on community input for identifying additional locations and sources of concern. CARB accepts and addresses all air quality complaints as they come into the system, including mobile sources and oil and gas facilities. To report a complaint to CARB regarding environmental concerns, please go to CARB's [online complaint page](https://www2.arb.ca.gov/environmental-complaints).¹⁷¹

¹⁷¹ CARB, "Environmental Complaints," California Air Resources Board, accessed August 5, 2026. <https://www2.arb.ca.gov/environmental-complaints>

Supplemental Environmental Projects

CARB has a Supplemental Environmental Project (SEP) policy that allows community-based projects to be funded from a portion, up to 50%, of the penalties received during the settlement of enforcement actions. SEPs can improve public health, reduce pollution, increase environmental compliance, and bring awareness to communities most burdened by environmental harm. As of December 2025, three SEPs are available for funding, and one SEP has been funded in BVHP/SESF.

Available SEPs:

- Bayview Hunters Point Environmental Justice Response Task Force Project (SEP23-007): This is a community-led task force where a wide range of pollution issues are raised and examined at monthly meetings. Greenaction for Health & Environmental Justice proposes to use SEP funds to support increased multilingual community outreach, support the Task Force's online pollution violation reporting system, and conduct air quality and environmental health education for residents and neighborhood youth. The SEP would also provide supplemental funding to support the operations and maintenance of local air monitors. (Amount Available: \$50,000)
- Enhancing Air Quality in Bayview Hunters Point Through PM_{2.5} Monitoring and HEPA Filter Intervention (SEP24-001): Bayview Community Concerned Citizens (BCCC) proposes to equip vulnerable households with PM_{2.5} monitors and HEPA filters. The process involves initial training, baseline air quality assessment, and distribution and maintenance of HEPA filters. The final phase entails data analysis and health impact surveys to assess the intervention's effectiveness. Over two years, BCCC will lead initial planning and community engagement, followed by the distribution and training on PM_{2.5} air monitors and HEPA filters. The project benefits Bayview Hunters Point's disadvantaged communities by reducing indoor pollutants and improving respiratory health. (Amount Available: \$125,000)
- Building Capacity for Environmental Justice in Bayview Hunters Point (SEP24-071): BCCC proposes to enhance BCCC's operational capacity to effectively facilitate the monthly BVHP/SESF Environmental Justice Taskforce meetings—a critical platform for community members to voice concerns and engage in substantial dialogue about pollution priorities. These monthly meetings are designed to inform, educate, and empower residents, addressing key environmental justice issues such as air quality, climate change, illegal dumping, and hazardous waste. BCCC will use SEP funds to increase outreach efforts to improve community participation, invest in essential meeting equipment and supplies, and secure consistent meeting space within the community. To support ongoing work to reduce idling in the community, BCCC will also utilize SEP funds to identify strategic locations near schools and other sensitive areas to install 20 bilingual 'No Idling' signs throughout the community. (Amount Available: \$200,000)

Funded SEP:

- To Reduce Contaminated Waste & Emissions Throughout Bay View Hunters Point Community (SEP23-006): This SEP aims to educate the Bayview Hunters Point community on the areas that are hardest hit by pollution due to the extreme high winds in certain areas throughout the community. First Generation Environmental Health & Economic Development (FGEHED) will educate community members on the health risks such as asthma, other respiratory illnesses and cancer that exist in those areas through Community Triangle Environmental Health Tours. During the tours, First Generation will share with tour participants the deep history of pollution impacts that the community has suffered over the years due to contaminated waste that blows severely throughout the community. (Amount Funded: \$263,952)

CARB staff can help community members or organizations identify where SEPs would be more impactful and assist with the submittal of proposals. For more information on SEPs, please visit: [Supplemental Environmental Projects \(SEP\)](#) or email SEP@arb.ca.gov.¹⁷²

CARB Glossary

CARB Heavy-Duty Diesel Vehicle Program Descriptions

Clean Truck Check - Heavy-Duty Inspection and Maintenance (HD I/M) Program: Modern heavy-duty diesel vehicles are equipped with aftertreatment systems like diesel particulate filters for controlling PM and selective catalytic reduction for cutting nitrogen oxides (NO_x) emissions. However, when emissions control components malfunction, this may result in unnecessary emissions. The Clean Truck Check ensures heavy-duty vehicles operating in California are well-maintained and repaired rapidly when needed, helping ensure businesses that operate them compete under the same requirements. This is through an integrated strategy combining roadside emissions monitoring to screen for potential high-emitting vehicles, improved emissions testing procedures using on-board diagnostics data, emissions checks, and data reporting at required intervals, and compliance verification requirements for freight contractors, seaports, and railyards.

Drayage: The Drayage Truck Regulation is part of CARB's ongoing efforts to reduce particulate matter (PM) and NO_x emissions from diesel-fueled engines and improve air quality associated with goods movement. Heavy-Duty Vehicles that carry goods to or from a port or intermodal facility are required to be equipped with a 2007 or newer model year engine. This requirement becomes stricter in 2023, when Drayage trucks are required to be equipped with a 2010 or newer model year engine, because Drayage trucks will be required to meet the standards of the Truck and Bus Regulation.

Heavy-Duty Vehicle Inspection Program: The Heavy-Duty Vehicle Inspection Program (HDVIP) requires heavy-duty trucks and buses to be inspected for excessive smoke and tampering, and engine certification label compliance. Any heavy-duty vehicle traveling in California, including vehicles registered in other states and foreign countries, may be tested. Tests are performed by CARB inspection teams at border crossings, California Highway Patrol (CHP) weigh stations, fleet facilities, and randomly selected roadside locations. Owners of trucks and buses found in violation are subject to minimum penalties starting at \$300 per violation. Also, the new HD I/M program, which started in January 2023, requires truck owners to take their truck to a certified inspector to verify that the emissions meet the 2010 engine standards, and to make sure the emission systems are running properly. The owner then must report the results to California Department of Motor Vehicles (DMV). If the owner fails to do so, there will be a hold on that truck's registration at DMV.

HDVIP-Emission Control Label: Several CARB diesel regulations require specific engine information, such as engine model year and engine family name, which is available from the emission control label (ECL) that is attached to your vehicle. All heavy-duty vehicles must have the ECL properly affixed to the engine. The ECL must be legible, maintained at the location originally installed by the engine manufacturer, and correspond to the engine serial number stamped on the engine.

HDVIP-Smoke Opacity: All heavy-duty diesel-powered vehicles must meet the applicable model year opacity standards, with higher standards required for vehicles with diesel particulate filters installed.

¹⁷² CARB. "Supplemental Environmental Projects (SEP)," accessed August 5, 2026. <https://ww2.arb.ca.gov/our-work/programs/supplemental-environmental-projects-sep>

HDVIP-Tampering: CARB enforces against vehicle owners (consumers) who have violated the law by tampering, modifying, or installing illegal parts on emission-controlled vehicles operated on a public highway.

Idling: Idling and opacity inspections are performed to ensure a heavy-duty vehicle (HDV) is compliant with emission standards and is not violating CARB's Idling regulation. Idling for more than five minutes is prohibited unless the HDV is certified clean idle and the vehicle is more than 100 feet away from a school or restricted area (exceptions apply). Vehicle owners and drivers in violation are subject to minimum penalties starting at \$300 per violation and up to \$1000 per day.

Off-Road Construction Equipment (Off-Road Regulation): Construction equipment is a major contributor to air pollution, especially when large construction projects are adjacent to neighborhoods. To address this source of air pollution, CARB adopted the nation's first regulation aimed at cleaning up off-road construction equipment such as bulldozers, graders, and backhoes. The off-road regulation requires off-road fleets to meet fleet average emission standards and be equipped with Best Available Control Technology (a few specific exceptions apply).

Smart Way: The Tractor-Trailer Greenhouse Gas Regulation requires 53-foot or longer dry van or refrigerated van trailers and the tractors that pull them on California highways to use certain equipment that the U.S. Environmental Protection Agency Smart Way program has verified or designated to meet their efficiency standards.

On-Board Diagnostics: Clean Truck Check's On-Board Diagnostic (OBD) test uses roadside emissions monitoring devices to screen vehicles that may have high emissions. Vehicles flagged as potential high emitters will receive a Notice to Submit to Testing (NST) from CARB Enforcement to ensure the vehicle is operating with properly functioning emissions control systems. Upon receipt of an NST, owners have 30 calendar days to submit to CARB a passing emissions compliance test performed by a credentialed tester.

MIL Status: If the Malfunction Indicator Light (MIL) communicates with the vehicle's on-board computer and relates the associated Diagnostic Trouble Codes (DTCs). If a DTC is currently causing the MIL to be commanded ON, there is an emissions-related issue with the vehicle. Thus, the vehicle will fail the test.

Statewide Truck and Bus: The Statewide Truck and Bus regulation requires diesel trucks with a Gross Vehicle Weight Rating (GVWR) greater than 14,000 pounds that operate in California to install diesel particulate filters or replace older engines with cleaner engine technology on a schedule based on the model year of the engine and GVWR.

Transport Refrigeration Unit: Transport Refrigeration Units (TRUs) are refrigeration systems powered by diesel internal combustion engines designed to refrigerate or heat perishable products that are transported in various containers, including semi-trailers, truck vans, shipping containers, and rail cars. Since diesel particulate matter has been identified as a toxic air contaminant, CARB adopted an Airborne Toxic Control Measure for TRUs and TRU generator sets. CARB staff inspect TRUs to ensure that the units are meeting labeling and in-use performance standards identified in the TRU regulation.

Consumer Goods Program Descriptions

Composite Wood Products: CARB's Airborne Toxic Control Measure to control formaldehyde emissions from composite wood specifically focuses on three products: hardwood plywood, particleboard, and medium-density fiberboard. Investigators in the Composite Wood Products program purchase samples of regulated products from outlets all over California. They inspect products and packaging for compliance with labeling requirements and send selected products to the laboratory for testing.

Consumer Products: Consumer Products are chemically formulated products used by household and institutional consumers. Some examples are detergents, cleaning compounds; polishes, floor finishes; cosmetics and personal care products; home, lawn, and garden products; disinfectants and sanitizers; aerosol paints and automotive specialty products. Consumer Products do not include other paint products, furniture coatings, or architectural coatings. Investigators in the Consumer Products program purchase samples of regulated consumer products from outlets all over California. They inspect product containers for compliance with registration and dating requirements and send selected products to the laboratory for testing.

Motor Vehicle Fuels Enforcement Program Description

CARB's Motor Vehicle Fuels Enforcement program is the inspection of California gasoline and diesel fuel at production, transport, and dispensing facilities. CARB Fuels Inspectors conduct frequent, unannounced inspections of refineries, service stations, distribution and storage, bulk purchaser, and consumer facilities throughout the state to obtain samples of gasoline and diesel fuels. The samples are then analyzed. The laboratory analyzes gasoline fuel for vapor pressure, distillation temperatures, total aromatics, olefins, oxygen, benzene, and sulfur contents. Diesel fuel is analyzed for sulfur, aromatic hydrocarbon content, and polynuclear aromatic hydrocarbon content.

Other Mobile Enforcement Program Descriptions

Non-California Certified Vehicles (49-State): The primary focus of enforcement is to ensure that all new vehicles sold, offered for sale, or used in the state are certified for sale in California. Under California's regulations, a new vehicle (defined as a vehicle that has fewer than 7,500 odometer miles) that is not certified to California's standards may not be sold within or imported into the state. If such a vehicle enters California, an NOV is issued.

Electric Vehicle Supply Equipment: Everyone should be able to use electric vehicle charging stations in a secure and reliable way. In 2013, the California State Legislature directed CARB to implement this principle through a regulation on electric vehicle charging stations, standardizing aspects of their operation and payment methods they accept. CARB's regulation, adopted in 2019, requires a commonly used payment method to be available and includes a host of requirements enhancing access and transparency.

Off-Highway Recreational Vehicle: CARB is responsible for preventing the illegal sale and use of Off-Highway Recreational Vehicles (OHRV). This includes all-terrain vehicles (ATVs), dirt bikes, sand cars, off-road utility vehicles, off-road sport vehicles, and other off-road recreational vehicles that have greater than 25 horsepower. The OHRV regulations require all off-highway recreational vehicles sold in California, model year 1998 and later, to be certified by CARB.

Portable Fuel Containers: The mission of this program is to ensure that spillage and evaporative emissions are minimized or eliminated through the implementation of low permeation plastics and automatic sealing nozzles. As of July 1, 2007, all portable fuel containers, or gas cans, sold in California must be certified by CARB as meeting the low-emission requirements.

Automotive Windshield Washer Fluid (AWWF): AWWF was a source of pollution in California's cities containing high levels of VOCs, which are a component of ground-level ozone formation and one of the main pollutants that compose smog. VOCs are used in AWWF as an anti-freeze, which reduces the temperature at which the fluid will freeze in cold weather. In most areas of California, milder temperatures do not necessitate the use of VOCs for AWWF to wet and clean vehicle windshields.

HFC-134a Refrigerant: This regulation applies to the sale, use, and disposal of small containers of automotive refrigerant with a Global Warming Potential value greater than 150. The regulation achieves

emission reductions through implementation of four requirements: (1) use of a self-sealing valve on the container, (2) improved labeling instructions, (3) a deposit and recycling program for small containers, and (4) an education program that emphasizes best practices for vehicle recharging. This regulation went into effect on January 1, 2010, and has been improved through amendments over the years. The latest amendment to the regulation was approved on April 13, 2017.

Dealer and Fleet Tampering: CARB enforces against any manufacturer, wholesaler, distributor, dealer, installer, retailer and/or repair shop or facility if they offered for sale or sold an uncertified vehicle, an illegally modified vehicle, or an illegal part, or installed an illegal part on an emission-controlled vehicle that is operated on a public highway. In addition, CARB enforces against commercial fleets that operate vehicles in violation of the law through tampering, modifying, or installing illegal parts on emission-controlled vehicles.

CARB Enforcement Resources

Enforcement Data Visualization System (EDVS): To help communities better understand CARB's enforcement efforts, provide community members a user-friendly way to access CARB enforcement information, and to facilitate the development of community emissions reduction programs, CARB's Enforcement Division developed [EDVS](#) for users to visualize CARB's enforcement activities across the state, including field inspections, case settlements, and SEPs on a map interface.¹⁷³

Annual Reports: Historically, CARB releases an [annual enforcement report](#) that highlights its enforcement efforts across the state, including in disadvantaged communities, summarizes recently closed cases, assesses compliance status in several programs, and provides detailed statistics about enforcement-related program activities.¹⁷⁴ CARB developed the [Enforcement Data Portal](#), which highlights CARB's enforcement efforts across the state.¹⁷⁵

¹⁷³ CARB, "EDVS" (web tool). <https://webmaps.arb.ca.gov/edvs/>

¹⁷⁴ CARB, "Historic Annual Enforcement Reports," accessed August 5, 2026. <https://ww2.arb.ca.gov/resources/documents/enforcement-reports>

¹⁷⁵ CARB, "Enforcement Data Portal," accessed August 5, 2026. <https://ww2.arb.ca.gov/our-work/programs/enforcement-policy-reports/enforcement-data-portal>

Chapter 7: Air Permitting Overview

Air quality permitting is one of the Bay Area Air District's (Air District) tools for protecting public health in communities across the Bay Area, including Bayview Hunters Point/Southeast San Francisco (BVHP/SESF). When an air quality permit application is submitted to the Air District, the permit engineer conducts a comprehensive engineering evaluation of the application to evaluate compliance with all [local](#) state, and federal regulations.¹⁷⁶

What Requires an Air District Permit?

Stationary sources that emit air pollution and are subject to air quality regulations may require an Air District permit. However, not all stationary sources are required to obtain a permit in order for us to regulate the sources effectively and protect public health.

Permits are generally required for sources where case-specific technical review and engineering judgement are needed to determine appropriate conditions, such as emission limits or control requirements. For other sources, where requirements are already clearly defined in regulations, issuing a permit may add limited value because the source is already subject to those rules. In these cases, requiring a permit could duplicate existing requirements without providing additional public health benefit, while also diverting resources from higher-impact regulatory work.

As such, many emission sources are exempt from permitting requirements, but this does not mean they are unregulated. Stationary sources must still comply with applicable Air District regulations, including specific emission limits and operational requirements that are designed to protect public health.

Examples of stationary sources that may require permits in the BVHP/SESF community include:

- Generators
- Gas stations
- Aggregate, concrete & asphalt operations
- Waste & recycling operations
- Wastewater treatment operations

Permit Application Review

The goal of the Air District's permitting program is to issue permits that are protective of public health and the environment, ensure that all applicable regulatory and legal requirements are met for a facility or process, and include compliance methods that a facility can reasonably meet and demonstrate.

The air permitting process consists of the following steps.

Step 1: Application Completeness Review

¹⁷⁶ Bay Area Air District, "Current Rules," accessed August 5, 2026. <https://www.baaqmd.gov/en/rules-and-compliance/current-rules>.

- The Air District reviews the application materials and often requests clarification or additional information from the Applicant.
- This review ensures there is sufficient information to evaluate emissions, applicable rules, and compliance.

Step 2: Preliminary Engineering Evaluation

- The Air District engineers conduct a detailed technical and regulatory review of the application to determine if the proposed equipment and operations comply with all applicable local, state, and federal air quality regulations.
- This review includes estimating air pollutant emissions, identifying applicable rules and regulations, evaluating potential health impacts to the nearby community, and determining whether the project must meet Best Available Control Technology (BACT) requirements.
 - BACT requires the most stringent, feasible emissions control technologies or practices, ensuring that permitted equipment uses up-to-date controls and operates as cleanly as possible. An example of BACT could be organic emissions from a spray booth controlled with a carbon adsorber system or particulate matter emissions from an aggregate processing operation controlled by venting to a baghouse.
 - Air District staff also evaluate toxic air contaminant emissions from recently permitted sources at the facility and will include these emissions when determining health impacts and the level of control necessary to reduce these emissions from the project to below health-protective thresholds. This includes an evaluation of best available control technology for toxics (TBACT) to ensure that emissions of toxic air contaminants are minimized to the greatest extent feasible.
- Based on these analyses, the project may need to be revised, and engineers propose operating and emissions limits to ensure compliance.

Step 3: Public Notice & Final Technical Review

- Air District engineers determine whether the project requires public notice and a 30-day public comment period. If required, the public notice is translated and distributed to the public.
- After the comment period, engineers review and respond to comments and may revise the engineering evaluation and permit conditions.

Step 4: Final Determination

- If the project meets all requirements, the Air District issues an Authority to Construct.
- The applicant then constructs the project and conducts required testing.
- After confirming compliance through test results, the Air District may issue a Permit to Operate.
- Issued permits establish enforceable conditions to ensure compliance with applicable laws and regulations and may include emission limits, operational limits, monitoring and/or testing requirements, recordkeeping requirements, and reporting and notification requirements.

Under its legal authority, the Air District generally must approve a permit if the applicant demonstrates that the proposed project can comply with all applicable air quality laws and regulations. The Air District requires many projects to be revised in order to meet applicable requirements. These revisions are captured in the permit conditions to ensure ongoing compliance. The Air District cannot deny a permit based on public opposition alone but may deny or require changes to a project to ensure compliance with air quality laws and regulations.

Permit Applications in BVHP/SESF

The number of permit applications received by year in BVHP/SESF and the City and County of San Francisco (the City) is shown in Figure 7-1 below. This does not reflect the number of permits issued.

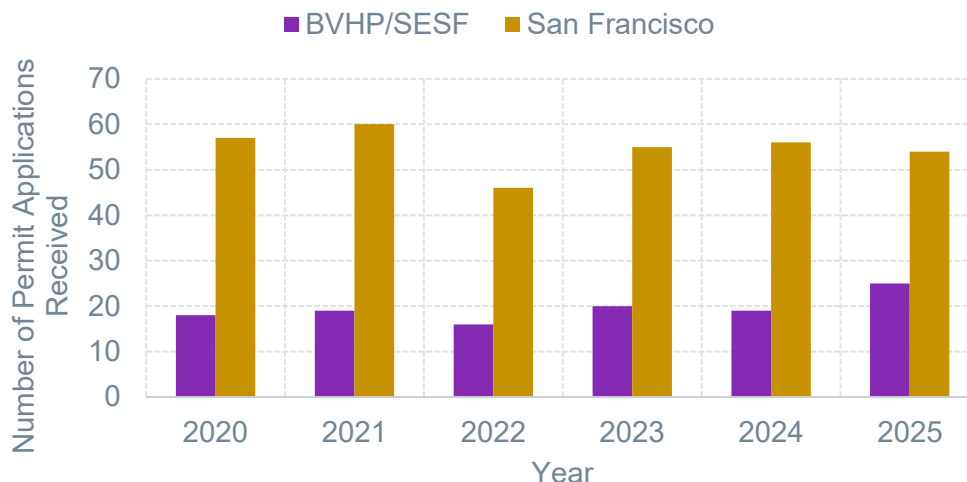


Figure 7-1. Number of permit applications received by year.

The number of permit applications in BVHP/SESF and San Francisco on official public notice over time is summarized in Figure 7-2 below. On December 15, 2021, the Air District adopted the rule amendment that requires public notice for new or modified sources located within an Overburdened Community, and which trigger a health risk assessment. This amendment was effective on July 1, 2022, which may have contributed to the increase in the number of permit applications on public notice in 2022 and future years.

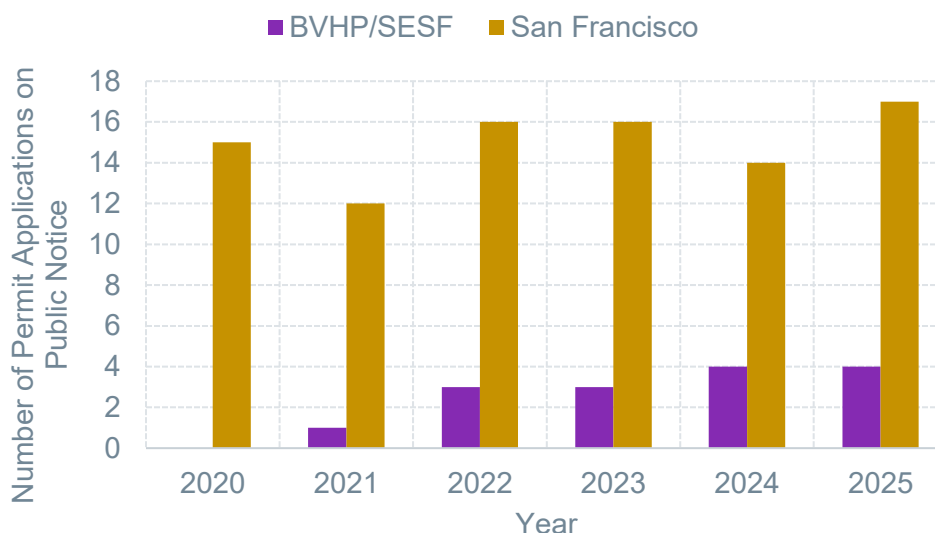


Figure 7-2. Number of permit applications on public notice by year.

Community Involvement in the Air Permitting Process

BVHP/SESF community members are encouraged to participate in the Air District's permitting process.

Public Participation During Permit Review

Every permit application received by the Air District is posted on the Air District's website while it is under review.¹⁷⁷ The public may submit comments on any permit application during this time. Comments may be directed to the Permit Ombudsman at PermitOmbudsman@baaqmd.gov.

Public Notice and Comment Periods

For certain projects, the Air District must provide formal public notice and an opportunity for public comment.¹⁷⁸ Public notices are posted on the Air District's website and are most commonly¹⁷⁹ required for:

- New or modified sources located within 1,000 feet of the boundary of a K–12 school; or
- New or modified sources located within an Overburdened Community (as defined by Regulation 2-1-243), and which trigger a health risk assessment pursuant to Regulation 2-5-401.

During a public notice and comment period, members of the public may submit comments to the designated project email inbox, which is listed on the public notice.

Providing Effective Public Comments

The Air District strives to provide meaningful opportunities for thoughtful and informed public participation in the permitting process. Public comments become part of the official record and are carefully reviewed and considered before a final permitting decision is made. The Air District responds to all public comments received during the permitting process directly to the commenters.

The most effective comments are clear, specific, and focused on air quality requirements within the Air District's authority.

The following suggestions are offered as guidance to improve community participation and inclusion in the permitting process. All comments received during the public comment period will be accepted and considered.

¹⁷⁷ Bay Area Air District. "Permit Applications Received." Accessed December 2, 2025. <https://www.baaqmd.gov/permits/public-notices/permit-applications-received>.

¹⁷⁸ Bay Area Air District. "Public Notices." Accessed December 2, 2025. <https://www.baaqmd.gov/permits/public-notices>.

¹⁷⁹ There are other types of public notices, which do not occur very often. These include notices as described in Air District Regulation 2-2-404 and Air District Regulation 2-6-412. These Regulations require public notice for specific permitting actions for Title V facilities. Title V facilities are often large industrial facilities like refineries and chemical plants. There are currently no Title V facilities in BVHP/SESF.

- **Be Brief and Objective:** Consider stating your opinion in a straightforward and objective manner. Your comment will become part of the public record.
- **Identify your Experience,** if applicable: If you are commenting in your capacity as a nearby resident, an official representative for an organization, or professional (scientist, engineer, attorney, doctor, elected official, etc.), consider stating that perspective.
- **Be Specific and Relevant:** Comments are most helpful when they relate to the facility or operation being permitted, and should state clearly the reason for your position. Comments are most effective when they:
 - Relate directly to air quality
 - Demonstrate familiarity with the proposal and, if available, the draft permit
 - Clearly explain the reason for your position
 - Reference specific permit conditions, calculations, analyses, or regulatory requirements
 - Include citations, data, or references where appropriate
 - Suggest how identified concerns could be resolved

Typical comments that may require further Air District review and consideration of the permit application include:

- Applying incorrect air quality standards or regulations
- Making errors in the data or calculations. Cite reference materials to support your position
- Using improper methodology, calculations, and/or analysis
- Failing to determine the ability to comply with emissions limitations or other regulatory requirements. Applicable local air quality regulations for stationary sources of emissions can be found at [Air District Rules and Regulations](#)¹⁸⁰

After thorough review and consideration of all comments from the public, government agencies, and other stakeholders, and careful analysis of the project's compliance status, the Air District determines whether the application meets all applicable air quality regulations. If it does, the Air District is legally required to approve the permit. Within 30-days after the issuance of the permit, any person who participated in the permit process, by submitting a comment, may file an appeal with the [Hearing Board](#).¹⁸¹ For specific language about appealing the decision to issue a permit, see [Regulation 2 Rule 1 Section 410.2](#).¹⁸²

While permitting decisions must follow specific regulatory requirements, public comments can help the Air District understand local concerns and can inform how we implement, interpret, and refine our regulatory programs.

¹⁸⁰ Bay Area Air District, "Current Rules." <https://www.baaqmd.gov/en/rules-and-compliance/current-rules>.

¹⁸¹ Bay Area Air District, "Hearing Board Rules and Forms," accessed August 5, 2026. <https://www.baaqmd.gov/en/about-the-air-district/hearing-board/rulesforms>

¹⁸² Bay Area Air District, "Regulation 2 Permits Rule 1 General Requirements," adopted January 1, 1980. https://www.baaqmd.gov/~/_media/files/planning-and-research/rules-and-regs/rg0201.pdf?la=en

By actively engaging in these regulatory processes, community members can help ensure facilities comply with air quality regulations and reduce neighborhood air pollution exposure.

Permitted Facilities Summary in BVHP/SESF

The Air District collaborated with the CSC's Sources, Emissions, and Data Gaps (SEDG) subcommittee to develop a summary of potential statuses. These statuses fall into the two categories of permitted and non-permitted and are explained further in the following sections. The SEDG subcommittee's Report is included in Appendix G: CSC/Co-lead Created Materials.

The section below also summarizes the known sites/facilities within the Community Emissions Reduction Plan (CERP) community boundary area and sites/facilities within the BVHP/SESF zip codes (94107, 94158, 94124, 94110, 94188, and 94134). This broader approach ensures the data for stationary sources is more inclusive and captures nearby air pollution sources that have the potential to affect air quality in BVHP/SESF. As of May 13, 2025, there are 307 known facilities within the BVHP/SESF zip codes that are identified by the Air District. The facility categories and statuses represent a snapshot in time and may not be a comprehensive list of all facilities in the area. Additional facilities may exist that have not yet been identified or classified. The status of facilities may also change over time.

Summary of Potential Permit Categories or Statuses

Permitted: Applied for and maintain an Air District permit based on their facility operations and sources. The permit may include conditions that are designed to keep the facility in compliance with all applicable air quality regulations.

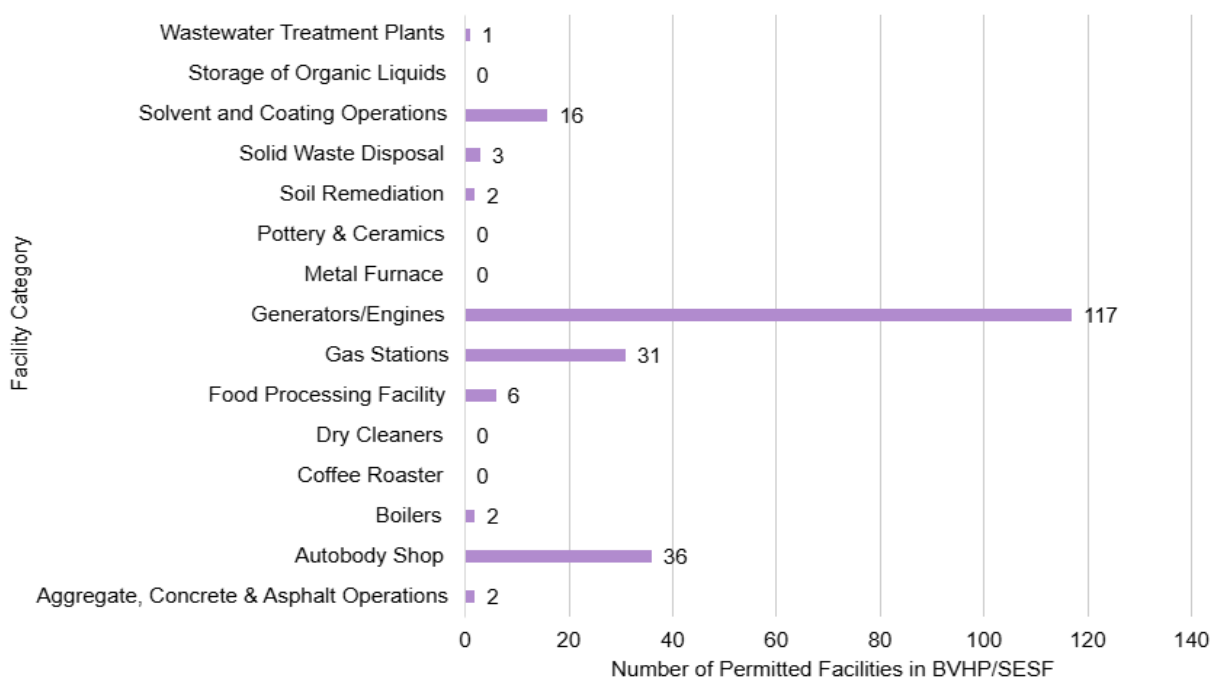


Figure 7-3. Number of permitted facilities in BVHP/SESF by facility category.

Non-Permitted: Community members have expressed concerns about facilities operating without an Air District permit. It's important to recognize that "non-permitted" facilities fall into several different

categories and is not an indication of compliance status. Whether a facility needs a permit depends on the type and size of its operations, as well as applicable regulatory requirements.

Some facilities are subject to Air District rules but do not require a permit based on the type or size of their operations. For example, certain equipment or activities may be permit-exempt or subject to registration requirements instead of permitting. Even when a permit is not required, these facilities must still comply with all applicable rules and regulations.

Another category includes facilities that have applied for an Air District permit but have not yet received one. This could be because the permit application is under review. Facilities in this category are not necessarily out of compliance; they may not have begun operating at the proposed level.

Facilities with expired permits represent another category. This means that a facility did not pay the permit renewal fees. In some cases, these facilities may have shut down; in others, they may still be operating. Facilities that continue to operate with an expired permit are in violation. The Air District has been prioritizing outreach and enforcement to bring these facilities back into compliance, so the number of known unpermitted facilities is expected to decrease by the time of CERP adoption.

The following categories were developed in collaboration with the SEDG to help clarify the range of non-permitted facility statuses:

- **Permit-Exempt**

- Facility may or may not have a formal Certificate of Exemption, but they are exempt from requiring an Air District permit
- Exempt facilities are not required to seek or have an Air District certificate of exemption but must be able to demonstrate that they qualify for an exemption at all times
- Facilities that are exempt are required to comply with all rules and regulations that apply to their operations

- **Registered**

- Certain pieces of equipment are exempt from needing a permit but are required to be [registered with the Air District](#)¹⁸³
- Facilities that are registered are required to comply with all rules and regulations that apply to their operations

- **Unpermitted (some reasons may include)**

- Permit-expired: Facility may have had a permit but have let it expire
- Facility knows they need a permit and have applied¹⁸⁴
- Other reasons
 - Facility applied for a permit but cancelled or withdrew their permit application
 - Facility unaware that they might be subject to air permits

¹⁸³ Bay Area Air District, "Registrations and Notifications," accessed August 5, 2026. <https://www.baaqmd.gov/en/permits/register-equipment>.

¹⁸⁴ Facilities in this category are not necessarily out of compliance. However, a facility may be out compliance if it is operating without a required permit.

- Facility knows they need a permit and have not applied
- Facility may have been exempt in the past but are no longer exempt. This could be due to changes in permit exemptions and/or changes in operations

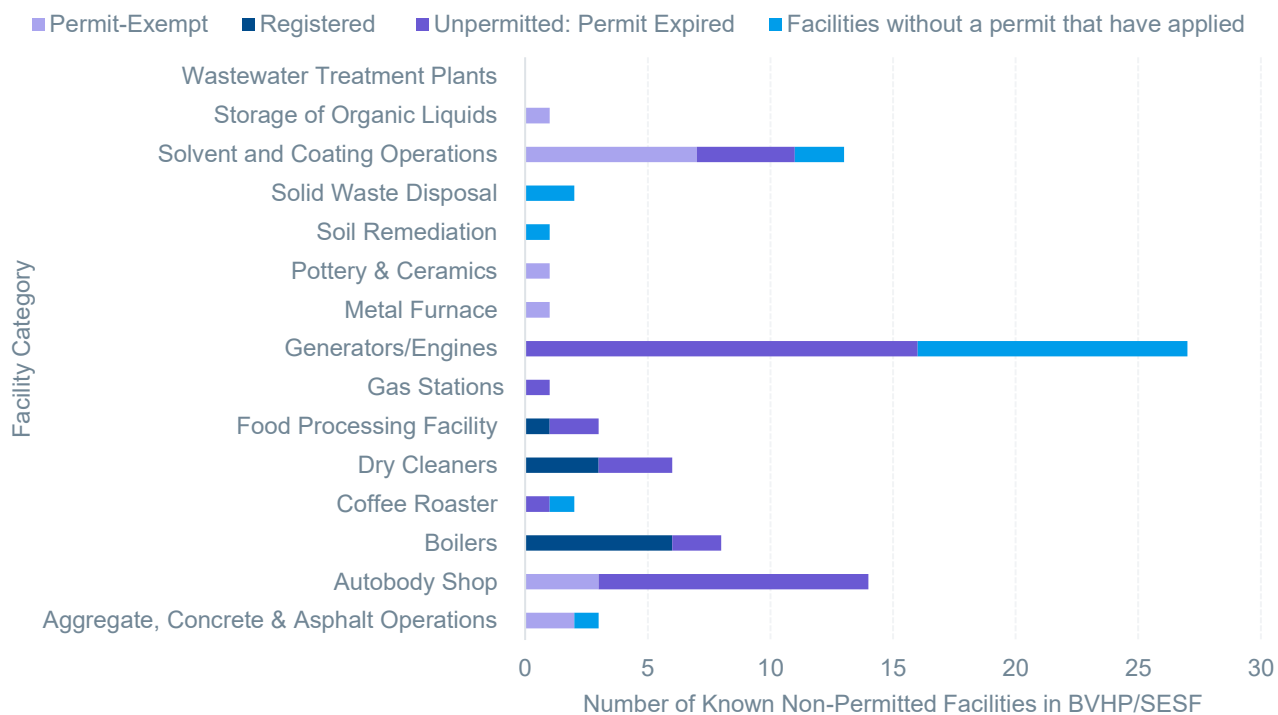


Figure 7-4. Number of known non-permitted facilities in BVHP/SESF by facility category and non-permitted status.

Permitted and Non-Permitted Facilities: A summary of the permitted and known non-permitted facilities by category in BVHP/SESF is included in Figure 7-5 and Table 7-1 below.

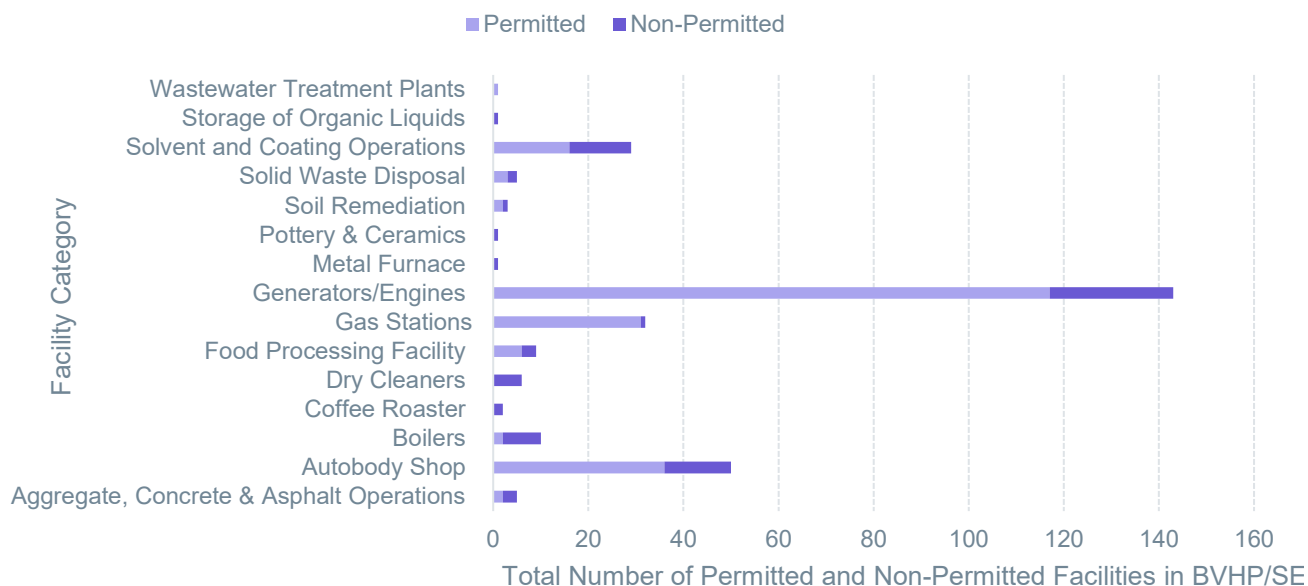


Figure 7-5. Number of known non-permitted and permitted facilities in BVHP/SESF.

Table 7-1: Number of known facilities by permit status and category as of May 13, 2025.

Category	Number of Facilities				
	Permitted	Non-Permitted			
		Registered	Permit-Exempt ¹⁸⁵	Unpermitted: Permit or Registration Expired	Facilities without a permit that have applied ¹⁸⁶
Aggregate, Concrete & Asphalt Operations	2	0	2	0	1
Autobody Shop	36	0	3	11	0
Boilers	2	6	0	2	0
Coffee Roaster	0	0	0	1	1
Dry Cleaners	0	3	0	3	0
Food Processing Facility	6	1	0	2	0
Gas Stations	31	0	0	1	0
Generators/Engines	117	0	0	16	10
Metal Furnace	0	0	1	0	0
Pottery & Ceramics	0	0	1	0	0
Soil Remediation	2	0	0	0	1
Solid Waste Disposal	3	0	0	0	2
Solvent and Coating Operations	16	0	7	4	2
Storage of Organic Liquids	0	0	1	0	0
Wastewater Treatment Plants	1	0	0	0	0
TOTAL	216	10	15	40	17

¹⁸⁵ Facilities that are exempt from permitting do not need an official certification by the Air District and therefore may not be included in this summary. However, these permit-exempt facilities or sources are required to comply with all local, state and federal regulations.

¹⁸⁶ This category includes facilities that have submitted permit application but have not yet received a permit to operate, meaning the application may require additional information or be under evaluation. This category excludes nine facilities that have an authority to construct. Only facilities that do not currently hold a permit to operate for any sources at their facility are included in this category. The data in this category is based on applications submitted before March 25, 2026.

Chapter 8: Focus Areas, Strategies, and Actions

Introduction and Overview

This chapter describes the approach taken to develop focus areas, problem statements, strategies, and actions. It also presents the Community Emissions Reduction Plan (CERP) strategies, organized by problem statements, and a list of actions to achieve the objectives of each strategy.

The Co-leads, Marie Harrison Community Foundation (MHCF), Bayview Hunters Point Community Advocates,¹⁸⁷ California Air Resources Board (CARB), Bay Area Air District (Air District), and the Community Steering Committee (CSC), engaged in several months of data-gathering and information-sharing efforts. These foundational activities helped to identify CERP focus areas and set the table for productive strategy brainstorming. This was followed by strategy development using a structured framework and collaboration with the CSC, its Planning and Strategies (P&S) subcommittee, the Technical Advisory Group (TAG), and other public agency representatives.¹⁸⁸ See Chapter 2: Community Partners, Outreach, and Engagement, for more information on groups and subcommittees. The following sections describe this process, and the final section of this chapter lays out CERP strategies and actions arranged by focus area.

Foundational Activities

Marie Harrison Community Foundation “Problems to Solutions”

In 2025, Co-lead MHCF drafted a statement documenting priority problem areas and potential solutions in Bayview Hunters Point/Southeast San Francisco (BVHP/SESF) to assist CERP strategy development. The problem areas included the following: a) Fugitive Dust and Shipyard Remediation, b) Small Industrial Sources and Facility Emissions, c) Freight and Mobile Source Micro-Hotspots, d) Volatile Organic Compounds (VOCs), Toxics, and Ultrafine Particles (UFPs), e) Southeast Sewage Treatment Plant and Wastewater Emissions, f) Cumulative Impacts and Health Data Justice, g) Indoor Air and School Protections, and h) Community Leadership and Enforcement Capacity. This documentation supported the development of CERP problem statements, strategies, and actions. See Appendix G: CSC/Co-lead Created Materials, for the full statement.

¹⁸⁷ Bayview Hunters Point Community Advocates were Co-lead through December 2025.

¹⁸⁸ TAG consists of government and academic professionals from science, health, and planning organizations. Public agencies represented on the TAG include the San Francisco Planning Department (SF Planning), San Francisco Department of Public Health (SFDPH), San Francisco Port (Port), and the Office of Environmental Health Hazard Assessment (OEHHA). Academic institutions represented include the University of California, San Francisco (UCSF). Apart from TAG-represented agencies, strategy writers collaborated with representatives from various agencies that contributed to CERP strategy development, which includes the California Air Resources Board (CARB), the San Francisco Municipal Transportation Agency (SFMTA), San Francisco Environment (SFE), San Francisco Department of Public Works (SFDPW), San Francisco Department of Homelessness and Supportive Housing (SFHSH), San Francisco County Transit Authority (SFCTA), the State Department of Toxic Substance Control, the U.S. Department of Navy, and the United States Environmental Protection Agency (U.S. EPA).

Emissions Inventory

The Air District generated a baseline emissions inventory for BVHP/SESF for the year 2022, as well as forecasted inventories for 2032 and 2037 (five and ten years after plan adoption). These inventories include two main categories of air pollutants—criteria air pollutants (CAPs) and toxic air contaminants (TACs)—as well as toxicity-weighted emissions (TWE) information. The baseline inventory provided critical information about pollution and sources, which supported strategy development. The data from the baseline emissions inventory are captured in Chapter 5: Air Quality Overview, and emissions forecasts are summarized in Appendix D: Air Pollution Overview Supplemental Information.

Air Quality Monitoring

The Air District provided trends for CAPs from 2015–2024 and TACs from 1990–2024, and more detailed analysis of PM_{2.5} data from local sensor networks within BVHP/SESF and nearby Air District monitoring sites. These data are captured in Chapter 5: Air Quality Overview, with additional information summarized in Appendix D: Air Pollution Overview Supplemental Information. Compared with other parts of San Francisco or other locations within the Bay Area, there is limited air monitoring data in BVHP/SESF. Additional tools are needed to better understand local air quality within BVHP/SESF. These findings supported the development of CERP strategies and actions in the Monitoring & Data focus area.

Sources and Emissions Data Gaps Subcommittee Report

The Sources and Emissions Data Gaps (SEDG) subcommittee was comprised of seven CSC members (see Chapter 2: Community Partners, Outreach, and Engagement, for more details). The subcommittee thoroughly reviewed the Air District's emissions inventory and analyzed additional data to prepare a final report of its findings. The report was provided at CSC meetings to support the strategy brainstorm phase of the CERP development process. Please refer to Appendix G: CSC/Co-lead Created Materials, for the report. The SEDG committee additionally informed and supported the development of the [BVHP/SESF Geospatial Data and Map Tool](#)¹⁸⁹ in collaboration with the Air District.

CSC Brainstorm List

The brainstorm list gathered initial action ideas from CSC and TAG members at various venues, including monthly meetings, subcommittee meetings, and Executive Subcommittee meetings, which included Co-Leads and Co-Chairs. The list supported strategy development and added to the input gathered during strategy brainstorming sessions.

¹⁸⁹ Bay Area Air District, "Bayview Hunters Point/Southeast San Francisco Geospatial Data and Map Tool" (web tool), accessed August 5, 2026. <https://experience.arcgis.com/experience/3ac387a7115f4832a40cfa326d2cfde7/>.

Strategy Framework

The strategy framework provides the organizing structure of CERP strategies while shaping the strategy co-creation process with the CSC. Figure 8-1 illustrates the framework and its core elements.

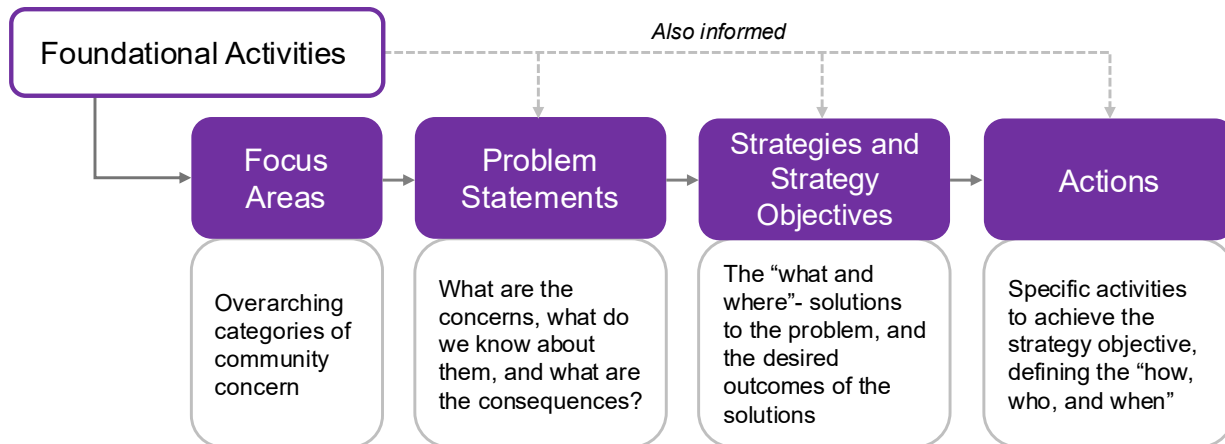


Figure 8-1. CERP strategy framework.

Focus Areas

Focus areas represent the categories of community air pollution concerns that organized strategy development for the CERP. They also help identify relevant subject matter expertise needed for strategies, as well as community and agency collaborators. The focus areas were initially developed by the SEDG subcommittee and were refined through discussions with the CSC (Figure 8-2). They are based on the foundational activities, drawing deeply from the community's lived experience as well as available emissions, monitoring, enforcement, and health data.

The six focus areas identified for this CERP are listed as follows:

1. Permitting and Enforcement (P&E)
2. Traffic and Transportation (T&T)
3. Particulate Matter (PM), Dust, and Construction Impacts (PM&D)
4. Monitoring and Data (M&D)
5. Community Health Impacts (CHI)
6. Production, Distribution, and Repair and Land Use (PDR)

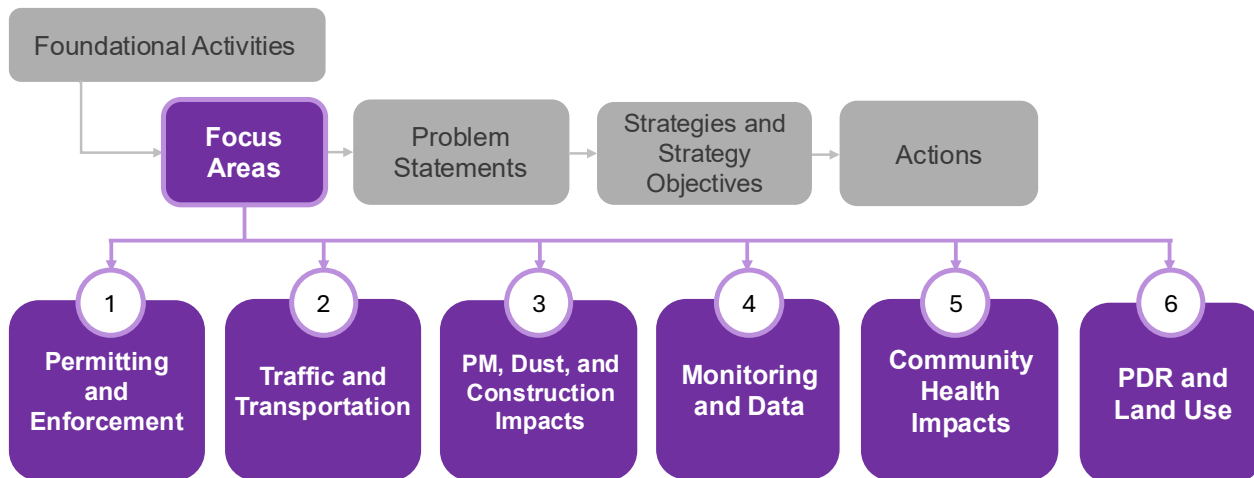


Figure 8-22. *The six CERP focus areas.*

Problem Statements

Problem statements are community concerns identifying the major challenges affecting air quality and health in BVHP/SESF. Each problem statement describes issues that have a significant negative impact on the lives of residents and families in the community. Each statement addresses three questions:

- What is the concern? A high-priority community issue that addresses air quality and health concerns
- What do we know? Includes local knowledge and/or technical information regarding the concern
- What are the consequences? Describes the risk to the community and identifies sensitive community members who are near pollutants of concern

Problem statements are organized by focus area and were developed through CSC input gathered during foundational activities. CSC and TAG members reviewed and provided feedback on the problem statements over several months. The titles of these statements are listed in Figure 8-3, and the detailed statements are presented within each focus area.

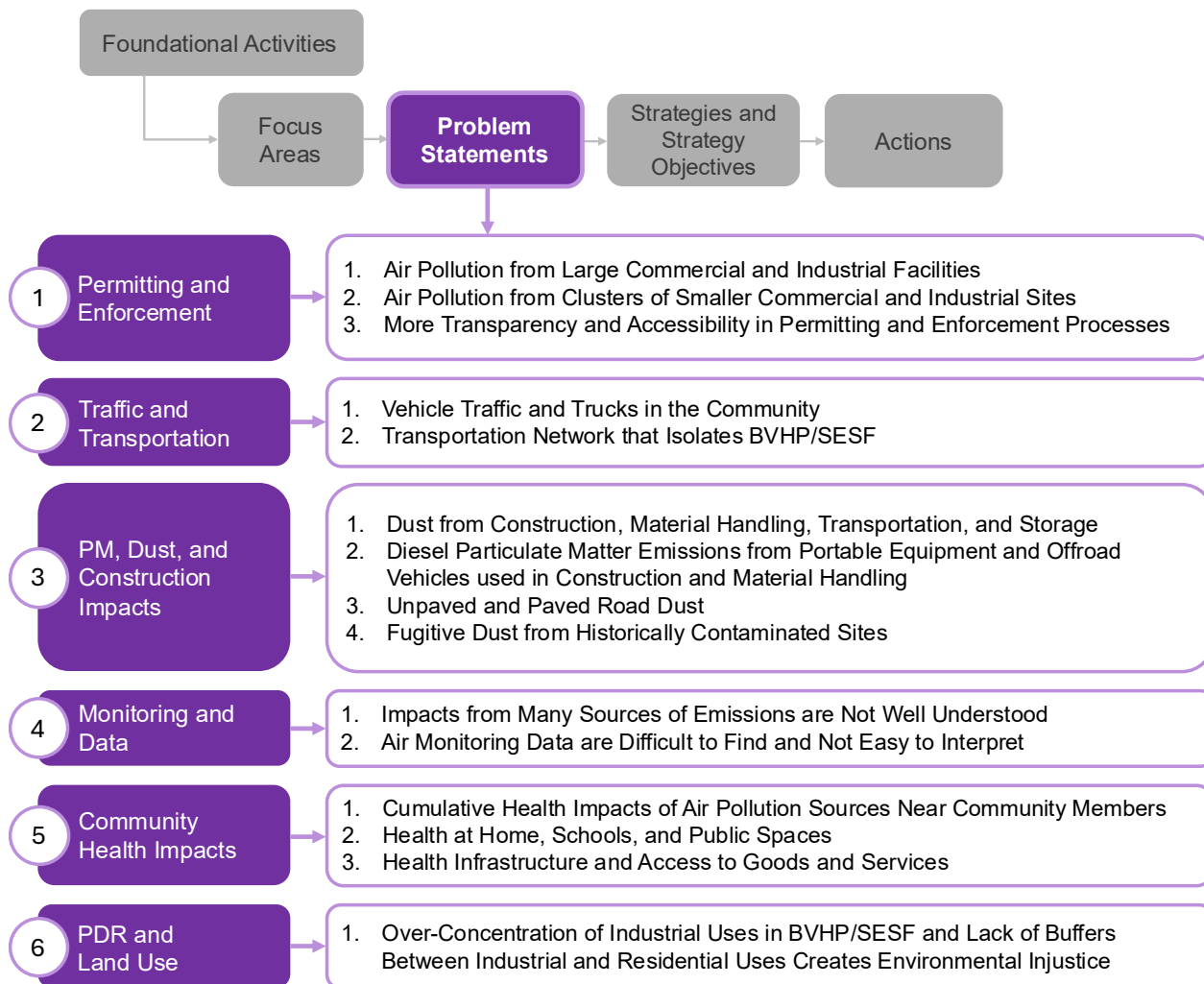


Figure 8-3. Titles of problem statements by focus area.

Strategies and Actions

Strategies and actions respond to the community concerns by identifying solutions and laying out a path to achieve the identified solution. Each strategy has the following components:

- **Strategy Objective:** The objectives state the changes that community members want a strategy to achieve, that is, the desired outcome of the strategy.
- **Actions:** The actions are specific and implementable measures that will achieve the strategy objective. Each action identifies a lead implementing agency to implement the stated measure, along with an anticipated initiation time frame.
- **Strategy metrics:** Strategy metrics consist of measurable outcomes for tracking strategy progress.

Each focus area had a writing team composed of Air District staff, P&S subcommittee members, and relevant TAG members. Writing teams were led by an Air District staff member and up to two P&S subcommittee members, often referred to as "Co-Captains." Over several months, writing teams iteratively developed strategies and actions for all problem statements in alignment with the community's desired vision, while considering the specific goals of reducing emissions and exposures to improve health outcomes in BVHP/SESF.

The strategy development process followed the sequence outlined in Figure 8-4. After problem statements were developed, CSC brainstormed potential solutions, which were then organized into thematic groups. The themes evolved into strategy outlines and draft actions (supported by CSC brainstormers), which were iteratively co-created with implementing agencies.

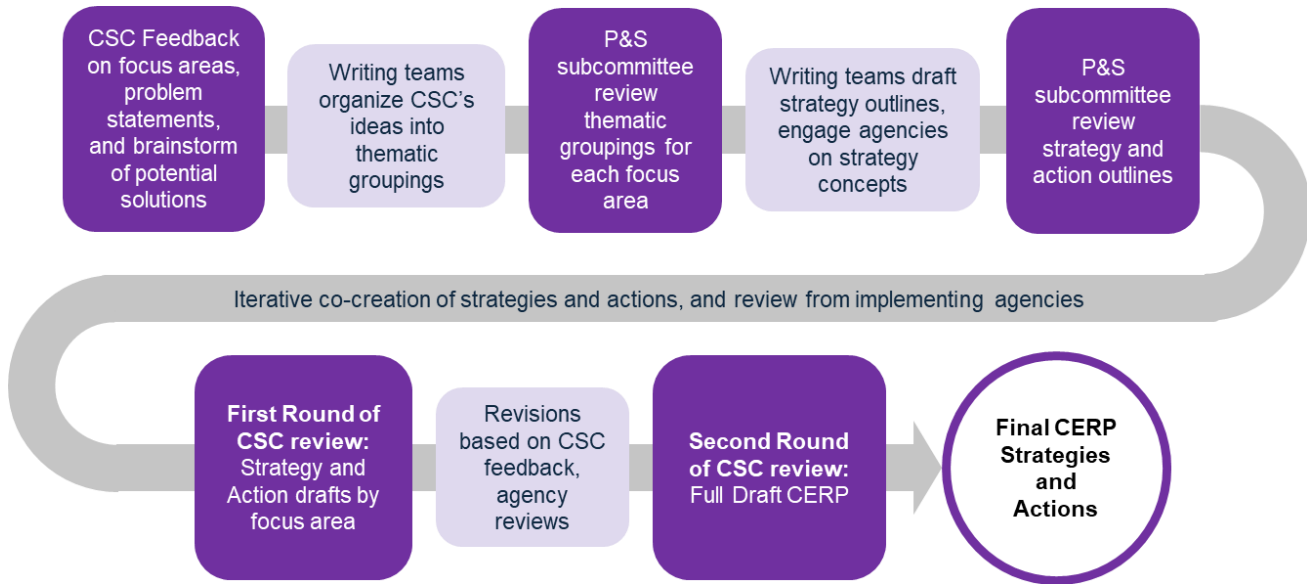


Figure 8-4. Strategy and action development process.

From October 2025 to April 2026, each CSC meeting was dedicated to discussing problem statements or strategy and action drafts of two focus areas at a time. The discussions were held at the in-person CSC meetings, with participants reviewing draft documents and answering prompts like "What resonates with you in this action?", "What is missing in this action?", or "What thoughts and questions do you have?" Additionally, the P&S subcommittee met monthly in a virtual setting to conduct a more detailed review of strategy and action development, as highlighted in Figure 8-4.

All writing and review processes were supported by TAG members and implementing agency representatives. Writing teams engaged in deep coordination with agencies to ensure buy-in and approval of strategy and action language. TAG members attended P&S subcommittee and CSC review sessions as needed to listen and answer questions, and they were joined by other agency representatives at CSC meetings.

The following sections cover each focus area's problem statements, strategies, and actions in detail. Action timeframes, defined below, capture when an action is anticipated to begin during the CERP implementation lifespan.

- **Early Action:** Can be initiated immediately
- **Short Term:** 2 years or less of CERP implementation
- **Medium Term:** 2–3 years of CERP implementation
- **Long Term:** 4+ years of CERP implementation

Note: Chapter 10: Implementation and Reporting, is a valuable companion to Plan strategies and actions, as it outlines the approach for CERP implementation. It provides information on agency roles in strategy/action implementation, community partnerships, CERP policy alignments, and implementation mechanisms (i.e., Incentives, Rule Development, Enforcement, Engineering and Permitting, Zoning and Land Use, Monitoring, Education, and Research/Further Study). Finally, it lays out the process for tracking CERP implementation progress, which includes Annual Implementation Plans, Annual Progress Reports, and the Fifth-Year Milestone Report.

Permitting and Enforcement

BVHP/SESF community members experience air pollution from a range of sources, which can contribute to poor health outcomes. This focus area will help reduce harmful emissions from stationary sources at commercial and industrial facilities.

Facilities that may have stationary sources include manufacturing plants, storage facilities, or warehouses that move, store or manage materials, concrete batch plants, recycling facilities, autobody shops, wastewater treatment, and metal fabrication. BVHP/SESF community members may be disproportionately impacted by air pollution due to how close they live, work, and play to stationary sources (facilities that operate from a fixed location).

Specific stationary source air pollution concerns include:

- Fine particulate matter (PM_{2.5}) and toxic air contaminants from concrete batching and aggregate operations that handle materials such as sand and gravel;
- Odors and potential toxic air contaminants from industrial facilities; and
- Clusters of smaller sites, such as autobody shops and waste transfer yards, which collectively may be an elevated source of VOCs or dust.

Within the BVHP/SESF emissions inventory, stationary sources of air pollution account for about 10% of local PM_{2.5} emissions, and about 13% of local TAC emissions in the inventory. These emissions contribute to long-term (chronic) health problems. Although the contribution of each stationary source to emission levels and human exposures can vary based on location and other factors, dispersion modeling of key local sources in BVHP/SESF showed that, overall, stationary sources have similar contributions to emissions and average residential exposures for PM_{2.5} and chronic hazard index values. One of the TACs that can lead to chronic and acute (short-term) health problems is hydrogen sulfide (H₂S), which is emitted by the San Francisco Public Utilities Commission (SFPUC) Southeast Treatment Plant.

Problem Statement 1: Air Pollution from Large Commercial and Industrial Facilities

Air pollution from larger commercial and industrial facilities is a concern because a relatively small number of facilities in BVHP/SESF contribute a large proportion of certain types of air pollution that can affect health. For example, the aggregate handling and concrete batching facilities on Amador Street contribute approximately 20% of known local PM_{2.5} emissions from stationary sources in the BVHP/SESF emissions boundary. Additionally, the contribution of some sources, such as fugitive dust, may not be fully captured in the emissions inventory. While the impact of these facilities on PM_{2.5} exposure may be mitigated by their distance from residential areas, there are locations nearby where people work and play. These large facilities may also emit toxic air contaminants (TACs), including diesel particulate matter (DPM) from heavy-duty equipment and trace metals such as arsenic, manganese, and nickel that may be present in airborne dust. Additionally, San Francisco Southeast Treatment Plant, which is a contributor of hydrogen sulfide, an odorous toxic air contaminant, is located close to where community members live.

Community members are concerned that these emissions occur in a community already burdened by multiple air pollution sources, increasing the potential for cumulative impacts that may not be adequately addressed through facility-by-facility permitting and enforcement. Community members have expressed concern that infrequent facility inspections and delayed permitting processes could lead to violations going undiscovered for an extended period.

Strategy 1: Incorporate Cumulative Impact Considerations in Air District Permitting

Strategy Objective: Incorporate cumulative impact and environmental justice principles in Air District permitting to ensure stronger protections and health-protective measures for community members. Cumulative impact considerations may include facility and neighborhood-level cumulative impacts.

No.	Actions
P&E 1.1	Develop a Program to Improve Environmental Justice/Civil Rights Considerations within the Air District Permitting Process: Develop new processes to better incorporate environmental justice and/or civil rights considerations in permitting decision-making in the BVHP/SESF area. Among other things, this action may result in increased opportunities for community engagement in the permitting process and/or in mechanisms for permitting decisions to better take into account cumulative impacts. The Air District's actions may include: • Consideration of what tool(s)—including rules or policies or other approaches—are most likely to be effective; • Evaluation of when in the permitting process it would be most effective to introduce environmental justice and/or civil rights considerations; • Identification of triggers for consideration of environmental justice and/or civil rights issues; and • Assessment of criteria that will be considered in an environmental justice and/or civil rights review. • Examples of potential outcomes from this program may include additional consideration in overburdened and/or AB 617 communities, including in BVHP/SESF, of whether permits should include public health protections like additional control equipment or required air monitoring. The Air District will engage with the BVHP/SESF CSC, regional community partners, and other stakeholders across the Bay Area on the proposed processes. This action is aligned with the implementation of the Air District Strategic Plan Strategy 2.10 "Civil Rights Laws" and Strategy 2.11 "Cumulative Health Impacts." Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 1.2	Evaluate Rule Amendment Opportunities to Strengthen and Improve Permitting Rules: Evaluate amendments that strengthen permitting rules to address concerns related to cumulative impacts. Examples of these amendments could include: • Rule 2-1 Permits: Assess potential adjustments to overburdened community (OBC) definition, including updating the definition to incorporate the most recently available CalEnviroScreen data without a loss in stringency, incorporating no-score census tracts adjacent to OBCs, and considering expanding the 1,000 ft census tract buffer. Currently, portions of BVHP/SESF, including Amador Street, are excluded from OBC maps and not subject to the more health-protective cancer risk threshold for permitting. • Rule 2-5 New Source Review of Toxic Air Contaminants: Update Table 2-5-1 TAC Trigger Levels, which contain the list of TACs and health effects values, to align with the newest and most stringent California Office of Environmental Health Hazard (OEHHA) Assessment compounds and values. Projects that are below the TAC Trigger Levels are exempt from Rule 2-5. The Air District should ensure that health protective trigger levels align with the most current and best available scientific information.

	This action is aligned with the implementation of the Air District Strategic Plan Strategy 1.2 "Stronger Regulations" and Strategy 2.11 "Cumulative Health Impacts." Implementation Lead: Air District Initiation Timeframe: Medium Term
P&E 1.3	Reduce Industrial Pollution on Unhealthy Air Quality Days: Evaluate the Air District's authority in a white paper to curtail commercial and industrial pollution during Spare the Air Days and Air Quality Advisories and assess potential rule and policy updates to reduce emissions and protect community health by reducing cumulative burden on unhealthy air quality days. Assess rule and policy strategies to curtail the most health-impacting industries, voluntary measures, and targeted inspections to reduce commercial and industrial emissions during periods when higher levels of PM_{2.5} are more likely to occur. The Air District will provide a 30–45-day public comment period on the white paper. Community engagement efforts should aim to seek feedback on the specific regulations being explored in the white paper to reduce industrial pollution on unhealthy air quality days. This action is aligned with the implementation of the Air District Strategic Plan Strategy 1.1 "Change Approach to Air Quality" and Strategy 1.2 "Stronger Regulations." Implementation Lead: Air District Initiation Timeframe: Long Term

Strategy 1 Metrics:

- Develop policy to improve EJ/Civil Rights considerations in permitting (yes/no)
- Air District shares assessment of rule amendment opportunities to strengthen and improve permitting rules (yes/no)

Strategy 2: Systemic Improvements to Air District Permitting Processes to Increase Efficiency and Stringency

Strategy Objective: Improve the timeliness of the Air District permitting process for new and expanded facilities and reduce the Air District permit backlog. Reducing the permit backlog can help reduce the number of under-permitted and unpermitted facilities in BVHP/SESF. Improve stringency for new or modified sources of emissions to reduce emissions of PM.

No.	Actions
P&E 2.1	Improve Permitting Processes for Greater Timeliness and Efficiency: Allocate resources to ensure permits can be completed efficiently and in a timely manner. Permit applications for facilities located in communities disproportionately exposed to air pollution, such as BVHP/SESF, especially those with a history of community concern, or with a history of notices of violation will be prioritized for timely review. At the same time, efforts will be made to ensure that improved timeliness does not sacrifice transparency, public participation, nor the proper application of permit requirements. This action is aligned with the implementation of the Air District Strategic Plan Strategy 4.01 "Timely Permits." Implementation Lead: Air District

	Initiation Timeframe: Short Term
P&E 2.2	Evaluate and Update Best Available Control Technology (BACT) Cost Effectiveness Threshold for PM₁₀ and Other Criteria Air Pollutants: A BACT evaluation is part of the permit review process for new or modified stationary sources of pollution and is required to minimize air pollution emissions from stationary sources. The Air District will recommend and implement policy to increase the BACT cost-effectiveness threshold for PM₁₀. This would enable the Air District to require more stringent control technologies and emissions limitations during the permitting process. The Air District will also evaluate the feasibility of amending the BACT cost-effectiveness thresholds for the other Criteria Air Pollutants to improve stringency. This action is aligned with the implementation of the Air District Strategic Plan Strategy 1.2 "Stronger Regulations." Implementation Lead: Air District Initiation Timeframe: Long Term

Strategy 2 Metrics:

- Develop policy to amend the BACT cost-effectiveness thresholds, as applicable (yes/no)

Strategy 3: Evaluate and Reduce the Health Risk from Toxic Air Contaminant (TAC) Emissions at Existing Industrial Facilities Through Implementation of Regulation 11 Rule 18: Reduction of Risk from Air Toxic Emissions at Existing Facilities

Strategy Objective: Evaluate and reduce health risk from TACs emitted from existing facilities subject to Rule 11-18. Update Rule 11-18 to be more health protective.

No.	Actions
P&E 3.1	Implement Rule 11-18- Reduction of Risk from Air Toxic Emissions at Existing Facilities: Prioritize implementing Rule 11-18 at applicable facilities located in BVHP/SESF and engage the CSC and community members throughout the process. Background: Under Rule 11-18, facilities that may pose elevated health impacts are identified and a facility-wide health risk assessment is conducted. If the results of the health risk assessment exceed the health-protective risk action levels defined in the rule, the facility is required to develop a Risk Reduction Plan to reduce those impacts. The current facility-wide risk action levels are: • Cancer Risk: 10 in one million • Chronic Hazard Index: 1.0 • Acute Hazard Index: 1.0 Collaborate with the CSC and community-based organizations to conduct outreach to notify and inform interested community members of the Health Risk Assessments and Risk Reduction Plans, if applicable, using clear, non-technical, and otherwise accessible language in an effort to promote informed responses, particularly from community members who may be most impacted by the results. Currently, facilities in or near BVHP/SESF that may be subject to a Rule 11-18 health risk assessment are all Phase II facilities. Phase II facilities have a lower potential for elevated

	health risks than Phase I facilities but are still considered a priority. Facilities currently on the Phase II Facility List for 11-18 implementation in BVHP/SESF include the San Francisco Southeast Treatment Plant,¹⁹⁰ CEMEX Construction Materials Pacific, Central Concrete Supply Inc., and the San Francisco General Hospital. The Air District uses annual emissions data to calculate annual prioritization scores, which are used to identify and prioritize facilities that may be subject to 11-18 implementation based on health impact potential. Phase I facilities have the highest potential for health risks and are currently prioritized for implementation. This action will prioritize the Phase II facilities located in BVHP/SESF for implementation. The current list of Phase I and Phase II facilities that trigger 11-18 is available on the website at https://www.baaqmd.gov/en/community-health/facility-risk-reduction-program/facility-risk-reduction-list.¹⁹⁰ Implementation Lead: Air District Initiation Timeframe: Medium Term
P&E 3.2	Rule Amendments to Improve Stringency of Rule 11-18 and the Facility Risk Reduction Program: Propose amendments to Rule 11-18 designed to address rule stringency. The Air District will examine potential measures to increase the health protectiveness of the rule, such as evaluating the current Risk Action Levels, more stringent risk reduction plan requirements, and evaluating additional strategies to protect community members from toxic air contaminant emissions. The Air District will engage with the CSC and community-based organizations on the potential amendments throughout the rulemaking process, such as through community presentations, opportunities for community feedback, and additional outreach. Any rule amendments must be approved by the Air District Board of Directors. This action is aligned with the implementation of the Air District Strategic Plan Strategy 1.2 "Stronger Regulations." Implementation Lead: Air District Initiation Timeframe: Long Term
P&E 3.3	Webpage Improvements for Rule 11-18 Facilities: Currently, the Air District website includes a searchable table for Rule 11-18 facilities in Phase I. To improve the transparency and accessibility of the Rule implementation, the Air District will update the Rule 11-18 Risk Reduction Facilities webpage to include Phase II facilities in a searchable table, beginning with an update to include facilities located in AB 617 communities and other priority communities (e.g., overburdened communities experiencing cumulative health impacts from facility operations). The current list of Phase II facilities is included in a PDF on the website at https://www.baaqmd.gov/community-health/facility-risk-reduction-program/facility-risk-reduction-list. Currently, a map of permitted facilities and their prioritization scores is available on the website at https://www.baaqmd.gov/en/about-air-quality/emission-inventory/toxic-air-contaminants/toxic-mapping-tool. This action is aligned with the implementation of the Air District Strategic Plan Strategy 2.03 "Make Data Accessible." Implementation Lead: Air District Initiation Timeframe: Short Term

¹⁹⁰ Bay Area Air District, "Rule 11-18 Risk Reduction Facilities," accessed August 5, 2026. <https://www.baaqmd.gov/en/community-health/facility-risk-reduction-program/facility-risk-reduction-list>

P&E 3.4	Provide Clear and Accessible Information on Rule 11-18: Improve the accessibility and transparency of Rule 11-18 implementation by providing clearer, more accessible information to the community. For each preliminary HRA, the Air District will develop and share an executive summary written in plain, non-technical language, alongside the complete technical report, to help community members better understand key findings and next steps. The Air District will also update the Rule 11-18 Frequently Asked Questions (FAQ) and provide regular updates to the BVHP/SESF CSC on Rule 11-18 implementation progress and major milestones. This action is aligned with the implementation of the Air District Strategic Plan Strategy 2.03 "Make Data Accessible." Implementation Lead: Air District Initiation Timeframe: Short Term
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Strategy 3 Metrics:

- Number of 11-18 facilities with a completed emissions inventory review
- Number of facilities with a published 11-18 preliminary health risk assessment (HRA)
- Rule 11-18 Phase 2 amendments initiated (yes/no)
- Facility Risk Reduction Program website improvements completed (yes/no)

Strategy 4: Enhance Compliance, Investigation, and Enforcement Protocols, and Incorporate Community Involvement

Strategy Objective: Enhance Air District enforcement with the aim of holding top polluting industries accountable.

No.	Actions
P&E 4.1	Implement Enhancements to Inspection Program: The Air District is enhancing its inspection program to better target and address air quality concerns in AB 617 communities such as BVHP/SESF. The program will prioritize inspections based on community and/or Community Steering Committee knowledge of local air quality issues, complaints, and utilize data-driven strategies (e.g., violations, past inspection history, etc.) to identify trends of non-compliance and establish inspection timeframes at priority facilities. The program integrates new strategies to address compliance concerns at facilities operating with pending permit applications and increases opportunities for collaboration with other regulatory agencies, such as the City's Code Compliance, to enhance coordination. An example of a strategy to harness community-identified compliance concerns is Action 11.4: Develop an Air Pollution Log as a Tool to Collect Community Observations. This action is aligned with the implementation of the Air District Strategic Plan Strategy 1.6 "New Enforcement Policy." Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 4.2	Assessment of Sites Suspected of Operating without a Required Permit: Investigate sites suspected of operating without a required permit to ensure compliance with applicable Air District, State, and Federal permit and rules requirements. This will include locations identified

	by community, such as the CSC-led Sources, Emissions and Data Gaps (SEDG) subcommittee list of sites potentially operating without a permit that may require a permit. Community involvement will be welcomed to keep the location list up to date and provide additional details, such as the reason a site is selected, and recommended priority order for inspectors to assess sites. This action is aligned with the implementation of the Air District Strategic Plan Strategy 1.5 "Enhance Violation Investigations." Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 4.3	Inspection of Facilities Prior to Issuance of Permit to Operate: To ensure community protection from potential air pollution impacts during the permit application evaluation period, conduct inspections to check if BVHP/SESF facilities are operating in compliance while their permit application for new or modified operations is pending. Inspections will be selected based on a new approach to consider increased potential emissions and whether the facility is a community-identified priority. This action is aligned with the implementation of the Air District Strategic Plan Strategy 1.6 "New Enforcement Policy." Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 4.4	Ensure Adequate Inspector Staffing: The Air District is prepared to utilize staffing resources efficiently and effectively to address inspection program needs. When additional staffing resources are required to meet inspection goals in BVHP/SESF, existing staff may be reallocated to assist. This action is aligned with the implementation of the Air District Strategic Plan Strategy 4.11 "Align Resources." Implementation Lead: Air District Initiation Timeframe: Medium Term
P&E 4.5	Regular Enforcement Updates: Provide updates to the BVHP/SESF CSC on complaint investigations, compliance inspections, facilities found in violation, any resulting permitting status, and subsequent steps to ensure compliance. The Air District will keep the CSC updated on potentially unpermitted sites identified by the CSC and respond to community questions regarding enforcement. This action is aligned with the implementation of the Air District Strategic Plan Strategy 2.1 "Community Partnership." Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 4.6	Provide List of Regulatory Partner Agencies and Contact Information on the Air District Website: There are times when the Air District receives or hears community concerns that fall outside of its regulatory authority or jurisdiction, and information is referred to the appropriate agency. To enhance awareness and support facilitating communication between concerned citizens and our regulatory partners, the Air District will provide general information regarding our regulatory partners on our website, including contact information to the partner agencies. When possible, this information will be directly conveyed to the complainant. This effort aims to improve community access to our partner agencies so that concerns can be communicated more timely.

	This action is aligned with the implementation of the Air District Strategic Plan Strategy 4.6 "Inspire Action." Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 4.7	Provide Compliance Assistance Resources: Promote compliance by improving the compliance assistance program, which helps facilities understand requirements to comply with applicable air quality regulations. Enhancing compliance resources and information made available on the Air District website will guide compliance and reduce emissions and harm. Compliance assistance materials include but are not limited to frequently asked questions, Compliance Advisories, forms, user guides, and other types of assistance materials such as those that may help with applying for an Air District permit in alignment with Action 10.2: Improve Permitting Assistance for the Applicant. This action is aligned with the implementation of the Air District Strategic Plan strategies 4.2 "Transparent Permit Process" and 4.7 "Customer Service." Implementation Lead: Air District Initiation Timeframe: Medium Term
P&E 4.8	Elevate the Investigation of Complaints and Violations on Port Property: Provide timely investigation and corrective action to lease violations and complaints related to air emissions and illegal dumping on Port property. Corrective actions can include lease enforcement, collaborating with regulatory agencies, and changes to Port operations. Implementation Lead: Port of San Francisco Initiation Timeframe: Early Action

Strategy 4 Metrics:

- Number of inspections to identify facilities operating without a required Permit to Operate in BVHP/SESF
- Number of inspections at newly permitted facilities in BVHP/SESF
- Number of compliance inspections in BVHP/SESF
- Add Regulatory Partner Agency Directory to Air District website (yes/no)
- Number and description of Compliance Assistance documents developed and posted on Air District website
- Written Port procedures for investigating complaints and, if necessary, issuance of lease violations completed (yes/no)

Problem Statement 2: Air Pollution from Clusters of Smaller Commercial and Industrial Sites

Small commercial and industrial sites may individually have a small air pollution footprint but collectively present a significant concern to the community, especially when clustered together where they may contribute to cumulative impacts. They can also be individually or collectively located close to places like daycares and schools where community members that are more sensitive to air pollution spend considerable time. Of particular community concern are auto body shops, diesel back-up generators (BUGs), material handling operations, and food-based businesses. Community members are concerned that infrequent facility inspections lead to violations going undiscovered for an extended period. Community members are also concerned that some facilities operate without a required permit and therefore avoid proper inspection oversight.

Strategy 5: Ensure Correct Permitting and Registration of Diesel Generators

Strategy Objective: Reduce the number of diesel-fueled generators that are not correctly permitted or registered.

No.	Actions
P&E 5.1	Increased Inspection Priority for Portable Diesel-Fueled Generators: Address the enforcement challenge posed by portable diesel-fueled generator engines by including these sources within the Air District's Inspection Program (see action 4.1: Implement Enhancements to Inspection Program). The Air District and CARB will also partner to develop inspector training for enforcement of portable engines for all staff assigned to BVHP/SESF. Background: Due to the nature of portable engines frequently moving through the community, accurate emissions estimates are difficult, and inspectors may not have opportunity to verify compliance. Portable engines issued a State registration under the Portable Equipment Registration Program (PERP) may freely move into the community area and operate for up to a year in one location. The only location-specific regulation requiring details of where equipment will operate applies to portable equipment designated with a home air district other than the Bay Area Air District, and only if operating for five or more days. There is no such location notification needed for registrations designated with Bay Area Air District as the home district. Implementation Lead: Air District, CARB Initiation Timeframe: Medium Term

Strategy 5 Metrics:

- Number of generators inspected that may require a permit or registration in BVHP/SESF
- Number of inspectors trained for enforcement of portable engines and equipment

Strategy 6: Reduce Emissions from Diesel Generators

Strategy Objective: Evaluate and reduce emissions from generators, especially near sensitive areas such as schools, through new or modified rules or enhanced enforcement of usage.

No.	Actions
P&E 6.1	Evaluate Opportunities to Reduce Localized Emissions and Address Impacts from Backup Generators: Evaluate regulatory development opportunities for Backup Generators (BUGs) through a white paper, rule-making process, or rule amendments. This evaluation will review BUG usage and impacts, including scrutinizing the valid use of BUGs during emergencies (particularly those near areas with sensitive community members like schools), and reviewing alternative technology options. The analysis could also include a review of potential amendments to permitting rules for new or modified BUGs or new rules/amendments for existing BUGs, such as phasing out lower tier engines and increasing stringency in Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines. Additionally, the analysis should include a review of facilities with larger volumes of BUGs, such as data centers on Paul Ave. Evaluate further guidelines, compliance actions, and incentives that could be used to reduce impacts from backup generators. The Air District will provide a 30–45-day public comment period on the white paper. Community engagement efforts should aim to seek feedback on the specific regulations being explored in the white paper. This action is aligned with the implementation of the Air District Strategic Plan Strategy 1.2 “Stronger Regulations.” Implementation Lead: Air District Initiation Timeframe: Early Action

Strategy 6 Metrics:

- Source evaluation (e.g., white paper) for BUGs completed (yes/no)

Strategy 7: Evaluate and Reduce Emissions from Commercial Cooking and Other Food Preparation Businesses

Strategy Objective: Improve the accuracy of the emissions inventory for restaurants and other food preparation businesses and identify cooking practices that may produce higher emissions. Rely on the improved emissions inventory to evaluate exposure to local residents, assess mitigation options, and, as practicable, reduce emissions.

No.	Actions
P&E 7.1	Source Evaluation and Technology Assessments: Conduct a technology assessment of commercial cooking emissions through two sponsored studies. The first study will collect actual activity data from restaurants throughout California to identify cooking practices based on cuisine, assess equipment usage, and quantify meat throughputs. The second study will focus on developing emission factors (by meat type and equipment) and testing control equipment.

	The Air District will share CARB's commercial cooking technology assessment reports with interested CSC and community members as they become publicly available. Implementation Lead: CARB Implementation Partners: Air District Initiation Timeframe: Short Term
P&E 7.2	Improve Commercial Cooking Emissions Inventory: Incorporate findings from CARB's commercial cooking technology assessment results to update the emissions inventory for restaurants. A final revision to the inventory at the completion of CARB's study will include revised emission factors and activity data. Implementation Lead: Air District Initiation Timeframe: Medium Term
P&E 7.3	Evaluate Air District Rule Amendments for Commercial Cooking: Based on the outcomes of 7.1 and 7.2, develop a commercial cooking white paper that considers whether additional actions are warranted, considering CARB commercial cooking technology assessment findings and improvements in the emissions inventory. Potential focus areas include: • Examining air pollution sources from food preparation in BVHP/SESF, including restaurants, food trucks, street food vendors and other commercial food-based businesses; • Evaluating potential amendments to Rule 6-2: Commercial Cooking Equipment; • Evaluating further guidelines, compliance actions, and incentives that could be used to reduce impacts from restaurants, food trucks, and street vendors. • The Air District will provide a 30–45-day public comment period on the white paper. Community engagement efforts should aim to seek feedback on the specific regulations being explored in the white paper. If the Air District develops further rulemaking, all regulatory proposals will consider socioeconomic implications. This action is aligned with the implementation of the Air District Strategic Plan Strategy 1.2 "Stronger Regulations" and Strategy 2.7 "Understand Local Air Pollution." Implementation Lead: Air District Initiation Timeframe: Long Term

Strategy 7 Metrics:

- California Air Resources Board (CARB) commercial cooking technology assessment released (yes/no)
- Update commercial cooking inventory methodology and inventory (yes/no)
- Commercial cooking white paper published (yes/no)

Strategy 8: Reduce Emissions from Auto Body and Auto Repair Shops

Strategy Objective: Identify and reduce air emissions from auto body and auto repair shop operations, including toxic air contaminant emissions, such as toluene, benzene, formaldehyde, and lead. Prioritize areas of BVHP/SESF where auto body and auto repair shops are most dense and in close proximity to residences, schools, and daycares.

No.	Actions
P&E 8.1	Auto Body and Repair White Paper: Develop an auto body and repair white paper that may include an assessment of BVHP/SESF sources. The Air District should evaluate the health risks of clusters of auto body and repair shops and explore ways to reduce the health impacts from auto body and repair shop operations near residences, schools and daycares. The white paper should evaluate stricter emission controls, best practices for auto body and repair shops to reduce toxic air contaminant and particulate matter emissions, and potential incentives to support auto body and repair retrofits and technology upgrades to reduce air quality impacts. The white paper could also consider the impact of smaller auto body and repair businesses that may be exempt from permit requirements, as well as temporary auto body and repair operations, and explore potential ways to address any related concerns. The white paper could consider evaluating auto body coatings vendor records as a method to enhance compliance. This action is aligned with the implementation of the Air District Strategic Plan Strategy 1.2 "Stronger Regulations" and Strategy 2.7 "Understand Local Air Pollution." Implementation Lead: Air District Initiation Timeframe: Long Term
P&E 8.2	Address Permitting at Auto Body and Auto Repair Shops: While implementing action P&E 4.2, the Air District will add auto body and auto repair shops as a priority community concern and will concentrate on these sources where they are located near people who are particularly sensitive to air pollution (such as childcare centers, schools, and residences). This action is aligned with the implementation of the Air District Strategic Plan Strategy 1.5 "Enhance Violation Investigations." Implementation Lead: Air District Initiation Timeframe: Medium Term
P&E 8.3	Strengthen Permitting and Risk Assessment Requirements for Auto Body Facilities: Refine toxic air contaminant emission estimates from auto body operations to better reflect current operations and material usage. This includes the addition of new toxic air contaminants to Regulation 2, Rule 5 Table 2-5 as outlined in P&E Action 1.2: Evaluate Rule Amendment Opportunities to Strengthen and Improve Permitting Rules. Implementation Lead: Air District Initiation Timeframe: Medium Term

Strategy 8 Metrics:

- Auto body white paper published (yes/no)
- Number of auto body facilities inspected in BVHP/SESF
- Refined TAC emissions estimates from auto body operations (yes/no)

Strategy 9: Evaluate and Reduce Emissions from Cannabis Cultivation and Extraction Facilities

Strategy Objective: Evaluate emissions from cannabis cultivation and extraction facilities and ensure they are properly permitted.

No.	Actions
P&E 9.1	Gather Information on Cannabis Cultivation and Extraction Facilities: Gather information from the CSC, other community members (e.g., District 10 CAC) and partner agencies (e.g., the City and the State of California) on cannabis cultivation and extraction facilities that may be operating in BVHP/SESF. This may include compiling a list of land use permit applications and licenses. Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 9.2	Seek to Incorporate Air Permitting Awareness in the City's Business Permitting Requirements: Incorporate air permitting awareness and requirements in the cannabis business permitting process for cannabis manufacturing, processing or testing ("extraction and cultivation operations"). This may include: Developing and distributing a clear flyer outlining equipment and activities that may require an Air District permit to the City. Integrating the Air District into the City's business permitting checklist or applicable materials to ensure early awareness. Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 9.3	Compliance Assistance: Improve compliance assistance outreach for cannabis extraction and cultivation by making outreach material available to the regulated community. Outreach methods will include posting information on the Air District website, providing electronic/printed materials during field inspections, sharing copies with the CSC, and requesting partner agencies share materials. Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 9.4	Address Permitting at Cannabis Cultivation and Extraction Facilities: Streamline permitting for the applicants and refine toxic air contaminant emission estimates from cannabis cultivation and extraction facilities to better reflect current operations and material usage. Implementation Lead: Air District Initiation Timeframe: Medium Term

Strategy 9 Metrics:

- List of cannabis cultivation and extraction facilities compiled (yes/no)
- Outreach materials produced (yes/no)

Problem Statement 3: More Transparency and Accessibility Needed in the Permitting and Enforcement Processes

Community members are unclear how to understand and provide timely input on permitting and enforcement processes. Inadequate transparency makes it difficult for community members to inform the permitting process, share insight on potential new sources of pollution, flag sites suspected of operating without a required permit, know when an inspection was conducted, find out about facilities in violation of air pollution rules, and understand potential sources of pollution in the community.

Strategy 10: Provide Clear and Accessible Air District Permitting Information

Strategy Objective: Improve the transparency and accessibility of the Air District permitting process for both the public and the applicant.

No.	Actions
P&E 10.1	Provide Clear, Complete, and Accessible Air District Permitting Information: Improve the transparency of the permitting process by providing clearer, more complete, and more accessible information to both applicants and the public, based on feedback from the BVHP/SESF CSC. The Air District will simplify communications about permits and the permitting process using clear, less technical language to better engage communities and applicants. This will include offering user-friendly reports for high-interest projects, enhancing web-based tools for permit applications and online tracking, using clear, accessible language in public notifications, developing a permitting FAQ, and ensuring easy access to data on permitted sources, including permit status, permit activity and related emissions. The Air District will improve public outreach through methods which may include working with the CSC to identify low-cost distribution channels such as email, SMS, and social media. This action is aligned with the implementation of the Air District Strategic Plan Strategy 4.02 "Transparent Permit Process." Implementation Lead: Air District Initiation Timeframe: Medium Term
P&E 10.2	Improve Permitting Assistance for the Applicant: Enhance the permitting assistance program through the following mechanisms: Improved outreach to common, small facilities, such as autobody shops, gas stations and dry cleaners. Updated resources such as flyers, permit handbook sections, and website pages to guide applicants through the permit or registration process and make the process more transparent to the public. This action is aligned with the implementation of the Air District Strategic Plan Strategy 4.02 "Transparent Permit Process." Implementation Lead: Air District Initiation Timeframe: Medium Term
P&E 10.3	Develop a Tool for Accountability and Transparency: Develop a public-facing tool that leverages a map platform to consolidate facility permitting, enforcement, and emissions information in one place. The tool may include permits, permit status, public notices, inspection frequency, violations, and emissions inventory data.

	Currently, there is a map on the Air District's website, which includes information such as Air Quality Forecasts, Facilities, Air Quality Monitoring, and Overburdened Communities. It is available at: https://www.baaqmd.gov/en/about-air-quality/interactive-data-maps The BVHP/SESF-specific data included in this tool can be shared with the CSC as part of P&E 4.5: Regular Enforcement Updates and P&E 10.1: Provide Clear, Complete, and Accessible Air District Permitting Information. This action is aligned with the implementation of the Air District Strategic Plan Strategy 2.03 "Make Data Accessible." Implementation Lead: Air District Initiation Timeframe: Medium Term
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Strategy 10 Metrics:

- Permitting resources updated to improve transparency for the public (yes/no)
- Permitting assistance resources updated (yes/no)
- Launch an interactive web portal with facility related information including permitting, emissions and compliance information (yes/no)

Strategy 11: Improve Accessibility to and Effectiveness of the Air Quality Complaint Program

Strategy Objective: Improve the effectiveness of the Air District Air Quality Complaint Program through the development of an expanded public information campaign and improved public engagement activities. Make program improvements and bridge gaps to help build community trust and confidence, and encourage greater participation in the program.

No.	Actions
P&E 11.1	Ongoing Community Education and Outreach on How to Make an Air Pollution Complaint: To ensure the community is empowered to have their voice heard about sources of air pollution, the Air District will provide complaint system educational workshops, and/or information, pamphlets, weblinks, and other ways community can spread the word on how to make a complaint, what information to include in a complaint, and how to track complaint status. Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 11.2	Comprehensive Review of the Air Quality Complaint Program: To incorporate community knowledge into the complaint program, the Air District will collect community feedback and recommendations on program enhancements. The goal is to make the program easier to understand, more transparent, and to be more responsive to community concerns. The Air District will explore the feasibility of integrating the complaint process with 311. Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 11.3	Improve Website Information and Data Accessibility for Community: Promote community empowerment by providing online access to compliance and enforcement data such as

	complaint data, inspection history, and violation history. The complaint information will maintain the confidentiality of complainants as allowed by law. Implementation Lead: Air District Initiation Timeframe: Medium Term
P&E 11.4	Develop an Air Pollution Log as a Tool to Collect Community Observations: Develop a user-friendly Air Pollution Log for the community to document and submit observations of concerning activities that may have an impact on air quality (e.g. dust and odors) through the Air District website. The tool allows people to submit additional observations, such as pictures and videos, to be used as supporting data and evidence that can help the Air District better pinpoint violations and/or identify potential sources of non-compliance. The information will allow the Air District to identify potential patterns of non-compliance that would initiate further investigation and follow-up. Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 11.5	Develop Whistleblower Tip Line for Workers in Industrial Businesses: The Air District is creating a whistleblower tip line for workers to anonymously report violations and concerning activities that may have an impact on air quality and public health. Share information on accessing this whistleblower tip line with the BVHP/SESF CSC. Implementation Lead: Air District Initiation Timeframe: Short Term
P&E 11.6	District Support for Knowledge and Skill Development Opportunities: Explore ways to assist in the development of knowledge of air quality rule development, inspections, and permitting. Examples may include improving outreach for our internship program in AB 617 or historically overburdened communities, such as BVHP/SESF, partnering with educational establishments, and producing educational videos. Implementation Lead: Air District Initiation Timeframe: Medium Term
P&E 11.7	CARB Support for Updating Enforcement Strategies to Improve Community Focus: CARB is committed to updating enforcement strategies as requested by the CSC, if said strategies are enforceable by CARB staff or if CARB can reasonably accommodate the request. The BVHP/SESF CSC may review CARB enforcement policies and make recommendations to focus this work on BVHP/SESF. Implementation Lead: CARB, CSC Initiation Timeframe: Long Term

Strategy 11 Metrics:

- Number of complaint program outreach opportunities and information sharing provided in BVHP/SESF
- Air Pollution Log publicly available (yes/no)
- Whistleblower Tip Line publicly available (yes/no)

Traffic and Transportation

BVHP/SESF is heavily impacted by on-road vehicle traffic. Community members are concerned about facilities that attract a large number of medium and heavy-duty trucks that travel through neighborhoods within the BVHP/SESF community, high-volume roadways such as the I-280 and US-101 freeways and the 3rd street corridor from Fitzgerald to Van Dyke, a freeway interchange, and busy surface streets such as Bayshore Boulevard and Cesar Chavez Street. Community members are also concerned about a range of off-road vehicles, including construction equipment, food trucks with portable generators, and ocean-going vessels anchored in the Bay. These mobile sources emit PM_{2.5} and toxic air contaminants, DPM, nitrogen oxides (NO_x), road dust, and other air pollution through tailpipe emissions and brake and tire wear. Exposure to these air pollutants contributes to negative health effects, including higher cancer risk, respiratory diseases, heart attacks, increased medical expenses, and early death. This is especially a concern for sensitive community members such as children with asthma and the elderly.

Concerns about traffic are heightened by the fact that high-volume roadways are often adjacent to areas where sensitive populations like children and the elderly spend time, such as athletic fields, community gardens, and schools. Additionally, vehicle emissions are often at or near ground level. As a result, on-road vehicle emissions generally have an outsized impact on the exposure of community members to local air pollution.

The number of facilities attracting significant truck traffic is growing and includes distribution centers and produce warehouses along Jerrold Avenue. Many diesel trucks carrying produce are also equipped with diesel-powered transport refrigeration units (TRUs). In addition, port terminals like Pier 94 have both marine vessels and trucks that move goods, and trucks travel to recycling and sorting operation at Pier 96.

Other traffic and transportation-related concerns include limited access to public transportation (including in certain areas and during off-peak times such as nighttime and weekends), traffic congestion, public safety, and less walkable and bikeable streets when compared to other neighborhoods. Lack of alternatives to driving is compounded by limited access to basic goods and services, which results in community members traveling out of the neighborhood to meet basic needs. As a result, BVHP/SESF community members have the highest rate of car ownership per household in San Francisco and own disproportionately older and more polluting vehicles.

Lastly, BVHP/SESF neighborhoods have a limited number of roads leading into and out of them, which causes traffic to be funneled onto fewer roadways causing congestion. For example, traffic bottlenecks are created by limited bridge access over Islais Creek, the US-101 interchange, closure of Jerrold Avenue, poor street quality and a limited roadway network. Together, these create a transportation system that increases travel times and concentrates traffic pollution within neighborhoods.

Problem Statement 1: Vehicle Traffic and Trucks in the Community

Diesel trucks, including those with diesel-fueled TRUs, are a concern because they travel through residential areas on neighborhood streets and idle in neighborhoods. In addition to acting as sources of air pollution, these heavy trucks cause road damage, further deteriorating already poorly maintained streets and freeways potentially leading to increased road dust. High-volume roadways such as the I-280 and US-101 freeways, the freeway interchange, and busy arterial roads like 3rd Street from Fitzgerald to Van Dyke, Bayshore Boulevard, Silver Avenue, and Cesar Chavez Street, are close to places where people especially sensitive to air pollution gather. For example, the freeway interchange and Silver Avenue are adjacent to a neighborhood that includes Silver Terrace Athletic fields, a community garden, and multiple schools.

Strategy 1: Protect Community from Truck-Related Emissions

Strategy Objective: Decrease truck traffic and emissions where people live, work, and gather through enforcement actions and strategic management of truck movement. Reduce or eliminate idling near more sensitive groups. Ensure that agencies with jurisdiction over truck activity engage with the CSC to ensure BVHP/SESF receives protections and investments reflecting the same level of care and priority afforded to the most protected neighborhoods in San Francisco.

No.	Actions
T&T 1.1	Prepare a Truck Traffic Study: Develop and implement a comprehensive Bayview Street Safety and Truck Relief Study for the BVHP/SESF neighborhood that prioritizes reducing truck traffic on local streets to better protect residential areas and improve safety. The study will analyze freight movement patterns and identify strategies to minimize conflicts between trucks and transit users, pedestrians, bicyclists, and motorists. It will recommend targeted safety improvements to mitigate the impacts of medium- and heavy-duty vehicles. An assessment on truck routes through freight data collection and public outreach will be used to identify best practices for addressing freight conflicts. The plan will seek to reduce disruptions caused by truck circulation, minimize impacts of trucking on the community, ensure industrial businesses can continue operating efficiently, and inform updates to the designated truck route map where needed. Implementation Lead: San Francisco County Transportation Authority (SFCTA) Initiation Timeframe: Early Action
T&T 1.2	Engage BVHP/SESF Community to Identify Priority Solutions for a Truck Traffic Study: Collaborate with the CSC, as well as other community members, to identify priority locations for reducing truck movement in BVHP/SESF. Determine community priorities that can inform the Bayview Street Safety and Truck Relief Study and investigate solutions that address key truck circulation concerns (e.g., conducting targeted enforcement where trucks are known to idle, reducing congestion near last mile distribution centers, optimizing truck route mapping, and implementing truck traffic calming measures to improve road safety). Implementation Lead: San Francisco County Transportation Authority (SFCTA) Initiation Timeframe: Short Term
T&T 1.3	Address Truck Idling and Off-Route Circulation: Pending data findings from the SFCTA Bayview Street Safety and Truck Relief Study, identify locations in BVHP/SESF where trucks are idling or traveling off designated routes. Where locations are identified and assessed as problem areas, implement targeted, preventative measures to discourage these behaviors, which can include improved signage, wayfinding and curbside management strategies. Prioritize near-term, low-cost solutions in areas with high truck activity to reduce community impacts and improve traffic flow. Implementation Lead: San Francisco Municipal Transportation Agency (SFMTA) Initiation Timeframe: Medium Term
T&T 1.4	Deploy Automatic License Plate Reader (ALPR) cameras: To characterize trucks and truck activity in BVHP/SESF (e.g., truck model year, truck counts), CARB will work with the CSC, Air District, and CHP to identify locations within the BVHP/SESF boundary for deployment of ALPR cameras up to twice a year. ALPR information will be collected only for the purposes of research, regulation development and implementation, emissions inventory, or enforcement of CARB's air quality regulations.

	Please see CARB's Enforcement Policy webpage, Appendix D: California Air Resources Board Automated License Plate Reader Privacy and Usage Policy.¹⁹¹ Implementation Lead: CARB Initiation Timeframe: Early Action
T&T 1.5	Deploy Portable Emissions Acquisition System (PEAQs): CARB will work with the CSC, Air District, and CHP to identify locations and deploy roadside inspections up to twice a year within the BVHP/SESF boundary that have high heavy-duty truck traffic or are a concern to the community. Implementation Lead: CARB Initiation Timeframe: Early Action
T&T 1.6	Roaming Idling Inspections and No Idling Signage Installation: Collaborate with the CSC and local agencies with signage and enforcement authority to identify locations where road idling is a significant concern (e.g., schools, parks, and residences) to conduct roaming idling inspections up to twice a year and prioritize installation of <i>No Idling</i> signage where feasible. Roaming idling inspections entail CARB inspectors driving around known truck hot spots to observe trucks and issue citations to truck drivers if they are idling beyond the regulatory limit. Implementation Lead: CARB Initiation Timeframe: Early Action
T&T 1.7	Truck Enforcement Workshop: Organize a workshop for local and regional regulatory agencies responsible for truck enforcement in BVHP/SESF. The workshop will focus on sharing promising practices for truck management and enforcement, and include a review of relevant data, case studies, and successful enforcement examples. The workshop will have a goal of providing a clear understanding of roles and responsibilities across agencies and a path for the community to report truck-related concerns. Participating agencies may include but are not limited to the CARB, the Air District, SFMTA, and SFCTA. CARB enforcement will provide an annual enforcement update to the CSC, including a summary of this workshop and any follow-up efforts. Implementation Lead: CARB Initiation Timeframe: Early Action

Strategy 1 Metrics:

- Truck Traffic Study developed with community input (yes/no)
- Increased enforcement activity limiting idling (yes/no)
- Signage on potentially identified priority locations for truck idling prevention is installed (yes/no)
- Number of touch points (meetings, emails, etc.) with CARB to inform and engage CSC members on preventing idling

Strategy 2: Address Emissions from Truck-Attracting Businesses, Warehouses, and Logistics Centers

¹⁹¹ CARB, "Enforcement Policy," Appendix D, 2020. <https://ww2.arb.ca.gov/resources/documents/enforcement-policy>

Strategy objective: Prioritize funding and incentives to accelerate adoption of zero-emission technologies. Integrate zero-emission design-build standards for medium- and heavy-duty vehicles charging into development plans to accelerate fleet transition away from diesel use at truck-attracting sites. Identify and target magnet sites where TRU activity is concentrated, such as distribution centers, cold storage facilities, and truck-attracting businesses, and reduce emissions by driving infrastructure investments using incentives and regulatory compliance/enforcement.

No.	Actions
T&T 2.1	Indirect Source Policy Package: Study feasibility and approach for a Bay Area Indirect Source (Magnet Source) policy package to address the impacts of large warehouses and other types of businesses that are “magnets” for heavy-duty truck trips. This package should assess the feasibility of reducing emissions associated with warehouses and distribution centers, including heavy-duty diesel vehicles, emergency generators, and TRUs in BVHP/SESF. The policy package could include rule making, model ordinances, and technical support to local governments to develop their own policies. The Air District will proactively update and seek input from all Bay Area CSCs and other impacted communities across the region. Implementation Lead: Air District Initiation Timeframe: Medium Term
T&T 2.2	Reduce TRU-related Emissions: Offer incentives to accelerate replacement of diesel TRUs with zero-emission alternatives and supportive infrastructure. Conduct targeted outreach that increases applications for TRU replacement projects and emission reductions in refrigerated warehouse operations around BVHP/SESF (e.g., along Cesar Chavez Street, the PDR district west of Third Street, and the warehouse district south of Carroll Street). Implementation Lead: Air District Initiation Timeframe: Medium Term
T&T 2.3	Install Electrical Hookups at Cold Storage Loading Bays to Prevent Idling: Offer incentives to increase the installation of conduits and electrical hookups at loading bays and encourage trucks and TRUs to apply best practices for plugging into onsite power for climate control and preventing idling. Implementation Lead: Air District Initiation Timeframe: Short Term
T&T 2.4	TRU Inspections: On an annual basis, CARB will conduct roadside TRU inspections in addition to inspections at cold storage facilities within the BVHP/SESF boundary. Implementation Lead: CARB Initiation Timeframe: Early Action
T&T 2.5	Boost Zero-Emission Trucking: Complete a feasibility study evaluating the installation of zero-emission charging and fueling infrastructure at Pier 96. Implementation Lead: Port of San Francisco (Port) Implementation Partners: San Francisco Public Utilities Commission (SFPUC), City Administrator (Central Shops) Initiation Timeframe: Early Action

T&T 2.6	Advance Zero-Emission Ferry Service: Facilitate the construction and operation of charging infrastructure at the Mission Bay Ferry Landing to support the transition to zero-emission ferry vessels. Implementation Lead: Port of San Francisco (Port) Initiation Timeframe: Early Action
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Strategy 2 Metrics:

- Indirect Source policy package developed (yes/no)
- Diesel-powered TRUs are replaced (yes/no)
- Pier 96 Feasibility Study Completed (yes/no)
- Mission Bay Ferry landing construction and charging infrastructure complete (yes/no)

Strategy 3: Reduce Emissions from Personal Vehicle Ownership

Strategy Objective: Prioritize funding to accelerate transition from high-emitting to lower-emitting and zero-emission light-duty vehicles. Conduct community outreach and engagement to reduce emissions from passenger vehicles.

No.	Actions
T&T 3.1	Reduce Emissions through Retirement of Older Vehicles: Encourage retirement or replacement of older light-duty vehicles. Apply lessons learned from past programs to design targeted outreach and incentives for local BVHP/SESF residents, with the goal of retiring or replacing 200 or more vehicles. Implementation Lead: Air District Initiation Timeframe: Early Action
T&T 3.2	Support Expansion of Cleaner Transportation Infrastructure: Coordinate charging infrastructure plans with EV growth in the area and use of incentive funding, with the dual goals of accelerating transition to zero-emissions vehicles in BVHP/SESF generally and achieving the goal in Action 3.1 specifically. Engage community to identify priority locations for installation of shared infrastructure. Implementation Lead: Air District Initiation Timeframe: Short Term

Strategy 3 Metrics:

- Number of vehicle replacement projects (a) awarded a grant, and (b) completed
- Number of charging infrastructure projects (a) awarded a grant, and (b) completed
- Community is involved in identifying priority locations for charging infrastructure (yes/no)

Problem Statement 2: Transportation Network that Isolates BVHP/SESF

The overall transportation network in BVHP/SESF is faced with unique accessibility and safety challenges due to a combination of constraints to the street grid. Getting to and from the neighborhood is limited to a few main streets and bridges, and, when combined with geographic barriers including freeways, railroad tracks, and the bay, results in congestion, idling and longer travel times. In certain areas, dead end streets, deteriorating streets, steep hills, lack of sidewalks, poor lighting, and heavily trafficked truck corridors contribute to perceptions that biking and walking are unsafe, which further motivates personal car use. This is a concern because of the high number of older, more polluting cars in BVHP/SESF. These factors create public safety challenges for all road users, including exposure to high-speed traffic, frequent truck movements, and unaddressed conflicts between vehicles, transit, pedestrians, and cyclists. Bottlenecks also slow the Muni "T" train line running along 3rd Street, which can be delayed at stoplights behind cars and trucks. Congestion, idling and longer travel times can contribute to community exposure to DPM, benzene, road dust, and other pollutants.

Strategy 4: Develop Safe, Connected, and Accessible Mobility Options for All Road Users

Strategy Objective: Reduce private automobile dependence by promoting transportation mode shift to public transit, walking, and biking through the implementation of safe and accessible infrastructure to accommodate all road users. Continue and pursue new plans for protected bike lanes, sidewalks, and transit amenities designed to meet diverse mobility needs. Repair sidewalk paving to reduce dust and health risks from unpaved surfaces, while improving connectivity to key local destinations and lowering vehicle emissions through increased walkability. These investments will greatly reduce the current safety risks faced by residents navigating traffic-heavy areas on foot and work towards creating a connected, multimodal network inclusive of walking, biking, and transit options, empowering community members to make sustainable transportation choices. For actions in which San Francisco Municipal Transportation Agency (SFMTA) is the implementation lead, please see Chapter 10: Implementation and Reporting, for more information on its approach to resource allocation and availability to pursue these actions.

No.	Actions
T&T 4.1	Improve Late-Night Transit Coverage on Existing Muni Owl Routes: Evaluate opportunities to enhance existing Muni Owl All-Nighter service, such as amending routes where service needs are identified by community within BVHP/SESF between 12-5 a.m. Coordinate with the CSC and the broader BVHP/SESF community to identify priority locations based on community needs and travel patterns. Promote Muni policy that enables buses during late night service to stop at any intersection along the route in BVHP/SESF upon passenger request. Highlight the regional transit connectivity of bus routes 29, 44, and 91 to the BVHP/SESF community. Implementation Lead: San Francisco Municipal Transportation Agency (SFMTA) Initiation Timeframe: Short Term
T&T 4.2	Prioritize Outreach in BVHP/SESF for Subsidized Transit Services: Prioritize areas in BVHP/SESF with gaps in transit accessibility for outreach events to raise awareness on subsidized transit options, such as the SF Paratransit, Clipper Start, Emergency Ride Home, Free Muni for Youth. Implementation Lead: San Francisco Municipal Transportation Agency (SFMTA) Initiation Timeframe: Early Action

T&T 4.3	Apply Lessons Learned from the Bayview Shuttle Program to Improve Public Transit Network: Leverage ridership data and community feedback from the Bayview Shuttle Program to identify priority destinations and travel patterns among shuttle users. Utilize these insights to inform targeted improvements to existing bus and rail service, including route modifications that enhance connectivity to key regional destinations such as: • SF General Hospital • 24th Street BART Station • Candlestick Park Point Implementation Lead: San Francisco Municipal Transportation Agency (SFMTA) Initiation Timeframe: Long Term
T&T 4.4	Well Maintained Bus Shelters: Maintain high-quality bus shelters free of vandalism and illicit paraphernalia to increase public safety. Coordinate regular maintenance and monitoring efforts to ensure shelters remain clean, safe, and serve their intended purpose. Implementation Lead: San Francisco Municipal Transportation Agency (SFMTA) Initiation Timeframe: Early Action
T&T 4.5	Street Lighting Improvements at Bus Shelters: Where feasible, expand the Muni Stop Lighting Project to key transit stops throughout BVHP/SESF to improve visibility, energy-efficiency for powering lighting, and nighttime safety. Leverage existing community relationships and outreach efforts, such as the BVHP/SESF CERP CSC, and coordinate with ongoing outreach efforts for SFMTA projects, such as the Muni T Third Street Improvement Project, to expand the scope of engagement and conduct targeted community outreach to identify priority locations for shelter improvements. Implementation Lead: San Francisco Municipal Transportation Agency (SFMTA) Initiation Timeframe: Short Term
T&T 4.6	Develop a Safe and Connected Bicycle Network: Engage BVHP/SESF community members, including the CSC, in building consensus around cycling protections and determine how active transit improvements should be prioritized in BVHP/SESF. Building on recommendations made in the Bayview Community Based Transportation Plan, San Francisco Biking and Rolling Plan, and the accompanying Bayview Hunters Point Community Action Plan, advance the development of the bicycle network in BVHP/SESF as part of a citywide circulation system, enhancing access to adjacent neighborhoods and the city as a whole. Prioritize connections to green spaces within BVHP/SESF community. Prioritize Class I (separated paths) and Class IV (separated bikeways) to create safe routes for cyclists of all ages and abilities, including children biking to school and residents commuting to transit connections. Address physical barriers such as freeway crossings and areas of high truck volume to improve access between BVHP/SESF and the rest of San Francisco. Implementation Lead: San Francisco Municipal Transportation Agency (SFMTA) Initiation Timeframe: Long Term
T&T 4.7	Expand Bicycle and Mobility Safety Education and Awareness: Conduct neighborhood-wide education and outreach programs to improve safety for cyclists and users of micromobility devices in BVHP/SESF and improve awareness among all road users. Deliver locally relevant, neighborhood-oriented education for biking beginners, safe riding practices, and bicycle repair. Build familiarity, confidence, and connection to biking and rolling among the BVHP/SESF community through organized community walks and rides, focusing on engaging with youth and families. Emphasize education on route planning, highlighting the

	neighborhood network, including the Bayview Community Pathway, to avoid high-injury corridors and areas with increased truck activity. Implementation Lead: San Francisco Municipal Transportation Agency (SFMTA) Initiation Timeframe: Early Action
T&T 4.8	Support T-Third Muni Metro Line as Main Transit Connection: Continue to pursue improvements to optimize T-Third service and access. Implement transit signal improvements in the current Muni T-Third Improvement Project and continue to pursue additional street safety improvements that prioritize train service to ensure efficient, reliable movement of the Muni T-Third Line. Improvements should highlight access to key destinations such as Downtown, Civic Center, and Chase Center, as well as to regional transportation options, such as BART and Caltrain. Implementation Lead: San Francisco Municipal Transportation Agency (SFMTA) Initiation Timeframe: Medium Term
T&T 4.9	Bayview Community Shuttle Service Improvements and Funding: Collaborate with the community to identify service improvements and potential key destinations outside of the existing service area. Develop a long-term sustainability plan to transition the program beyond grant dependency by optimizing pricing strategies and pursuing contracts and government funding opportunities. Implementation Lead: San Francisco Municipal Transportation Agency (SFMTA) Initiation Timeframe: Medium Term
T&T 4.10	Coordinate Implementation of Transportation Priorities in the BVHP/SESF CERP Across Agencies: Coordinate across relevant city, county, and state transportation agencies to implement BVHP/SESF CERP Traffic and Transportation (T&T) actions, consistent with the interagency coordination approach outlined in Chapter 10: Implementation and Reporting. Ensure that community priorities, including lighting, sidewalk repair, accessibility to diverse transit options, and truck management are considered in agency-led efforts. Use existing interagency coordination processes to align roles and responsibilities, support implementation, and track progress. Provide regular updates to the Community Steering Committee (CSC) on T&T action implementation. Implementation Lead: Air District Implementation Partners: San Francisco Municipal Transportation Agency (SFMTA), San Francisco County Transportation Authority (SFCTA), CARB, Port of San Francisco (Port), and others as specified Initiation Timeframe: Early Action

Strategy 4 Metrics:

- Number of bus shelters maintained
- Number of engagement events to promote transit resources
- Incentives awarded to improve bicycle infrastructure (yes/no)
- Multimodal connectivity to access local and regional destinations is improved (yes/no)
- Number of touch points (meetings, emails, etc.) with relevant city, county, and state departments and transportation agencies to inform and engage CSC members on the implementation of Transportation Priorities in BVHP/SESF

PM, Dust, and Construction Impacts

PM, including fugitive dust, is a longstanding source of concern for the BVHP/SESF community. PM is defined as a mixture of solid particles and liquid droplets found in the air. PM is often categorized by size, with particles that are 10 micrometers in diameter or smaller referred to as "PM₁₀" and fine particles 2.5 micrometers in diameter or smaller known as "PM_{2.5}." PM can also be categorized by material and composition, such as DPM. DPM is categorized by the State of California as a TAC. Fugitive dust includes both PM₁₀ and PM_{2.5} and is defined as PM that does not come from a physical stack or go through a control device but is released into the air through mechanical disturbance or by the wind. Fugitive dust in BVHP/SESF comes from a unique mixture of sources, including stationary sources like concrete plants, area sources like construction activities, mobile sources like vehicles creating road dust, and the transfer and transport of loose or uncovered materials.

PM, dust, and construction impacts are significant concerns for community members because of the impact on health and well-being, especially for youth and the elderly. PM and fugitive dust make it difficult to work outside or enjoy the outdoors. PM can cause cardiovascular and respiratory issues, and DPM exposure can increase cancer risk, negatively contributing to the health issues community members face.

Community members are concerned about the amount of construction underway and planned. They are concerned that dust from construction sites and PM emissions from construction equipment, both on- and off-road, are contributing to community health impacts. Community members are also concerned about construction that will disturb areas that contain historically contaminated soils, such as the Naval Shipyard, Candlestick Point, and other sites including brownfield sites. There is also concern that environmental factors, like wind, climate change, sea level rise, and flooding could disturb and release dust containing air toxics at these same sites.

There is also concern from community members on PM and dust emissions coming from materials being loaded/offloaded to and from sources like rail cars, barges, and trucks. Emissions are created from material transfer and handling and continue to spread throughout the area if loose materials are transported without cover.

There is also a concern that fugitive dust from roadways, both paved and unpaved, is impacting community members. This is of even greater importance where there are both unpaved and poorly maintained streets, such as near Underwood Street, and facilities with high PM emissions, for example, around Amador Street. Community members have also expressed concern about road dust created from heavy truck traffic in and around the warehouse district and vehicles driving on unpaved roads.

The goal of this focus area is to help address the impacts of PM, dust, and construction on community members to minimize community exposure to PM and fugitive dust emissions.

Problem Statement 1: Dust from Construction and Material Handling Activities, including Transportation and Storage

Construction and material handling activities, including the transportation and storage of materials, site grading, and demolition, can release fugitive dust which includes PM. Community members have noted that construction projects leave visible dust in their neighborhoods. Community members have also expressed concern that traffic (cars and trucks) going to and from construction sites are dispersing and tracking the dust around their community, including uncovered trucks transporting loose material. Community members also have concerns that construction sites are not using all appropriate dust control methods or are only using controls when an inspection is expected.

The community is also concerned about the large number of open storage piles of loose material and bulk storage areas such as waste transfer facilities, recycling centers, and scrapyards throughout BVHP/SESF. Mechanical disturbance and the wind cause dust emissions from these sources, which may contain harmful toxic air contaminants. Various types of materials are also transported throughout the community via rail cars, barges, and trucks. Fugitive dust can be created from the movement and transfer of materials and cause further impacts to the community during transport if materials are not properly covered. Community members are concerned that emission control methods are not being used to keep fugitive dust out of their neighborhoods,

Strategy 1: Reduce Fugitive Dust Exposure from Construction and Material Handling Activities

Strategy Objective: Increase requirements for emission control measures at construction sites and material handling facilities and increase enforcement of these measures. Reduce emissions associated with construction and material handling activities, including construction and demolition material transport, material sorting, scrap recycling, materials recovery, or other open-air handling of materials.

No.	Actions
PM&D 1.1	Rule Amendments to Reduce Fugitive Dust: Develop and propose rule amendments to address fugitive dust, as recommended in the Air District's White Paper on Fugitive Dust. This could include amendments to Regulation 6 - Rule 1 (General Requirements) and Rule 6 (Prohibition of Trackout) and should help address emissions from locations with the potential to generate fugitive dust, including construction sites, disturbed surface sites, and bulk material handling sites. The Air District will seek and consider community input during the rule development process. The rule amendments should aim to reduce fugitive dust emissions and exposure through increased accountability and stronger rule requirements for sources of fugitive dust, and improve the enforceability of these rules, including the following: - Implement best management practices (BMPs) through updated rule requirements, which may include watering, covering of material transport at facilities, and other mitigation requirements, to control fugitive dust. - Expand applicability of rule requirements and BMPs to include sites regardless of size (current Rule 6-6 applies to sites greater than 1 acre), and - Create a better understanding of where sources of fugitive dust are located and whether the land is contaminated for sites greater than one acre. Community engagement efforts should aim to educate the CSC and broader community on the rule development process, as well as seek feedback on the specific rule amendments being developed to reduce fugitive dust exposure. Engagement could be accomplished, for example, via workshops and/or meetings that are scheduled to provide appropriate lead

	time for the community to digest content and develop comments before the formal public comment period ends. Implementation Lead: Air District Initiation Timeframe: Early Action
PM&D 1.2	Rule Amendments for Metal Recycling Facilities: Develop and propose rule amendments, as recommended in the Air District's White Paper on Metal Recycling and Shredding Operations. This would include amendments to Regulation 6 - Rule 4: Metal Recycling and Shredding Operations and should help address sources of fugitive dust emissions from metal recycling facilities in BVHP/SESF, such as Circosta Metals. The Air District will seek and consider community input during the rule development process. The rule amendments should aim to: • Increase BMP applicability through updated rule requirements that apply to metal recycling facilities without shredders, • Strengthen enforcement and ensure consistent implementation BMPs across all facilities by prescribing a standardized set of required BMPs that all facilities must follow, such as required enclosures for stockpiles, • Improve regulatory oversight of metal recycling facilities, including in BVHP/SESF specifically, through a registration program. The registration program shall encompass facilities that may not operate a shredder but handle scrap metal; and • Minimize fugitive dust emissions, including fugitive dust that may contain toxic air contaminants. Community engagement efforts should aim to educate the CSC and broader community on the rule development process, as well as seek feedback on the specific rule amendments being developed to minimize fugitive dust/emissions from metal recycling facilities. Engagement could be accomplished, for example, via workshops and/or meetings that are scheduled to provide appropriate lead time for the community to digest content and develop comments before the formal public comment period ends. Implementation Lead: Air District Initiation Timeframe: Early Action
PM&D 1.3	Enhance Cross-agency Collaboration on Construction Site Compliance Checks: Work with regulatory agencies to maintain awareness of one another's inspection priorities and streamline peer-to-peer referrals between agencies. In support of this collaboration, engage in cross-agency awareness training and seek opportunities for outreach with partner agencies. Implementation Lead: Air District Implementation Partners: CARB, City and County of San Francisco Initiation Timeframe: Early Action
PM&D 1.4	Increase Inspector Oversight of Construction and Metal Recycling Sites: Conduct area patrols that assess compliance with dust control requirements related to public nuisance and visible emissions, as well as anticipated fugitive dust and metal recycling rule requirements at construction and metal recycling sites. The area patrols will include sources of air quality complaints, community concerns, and/or with interagency referrals received. Outcomes of this action will be shared with community through Permitting & Enforcement Action 4.5, "Regular Enforcement Updates." Implementation Lead: Air District Initiation Timeframe: Early Action

PM&D 1.5	Refine Estimates of Emissions and Air Quality Impacts from Construction Dust: Work with CARB and other partners to better understand emissions and air quality impacts from this source category. Fugitive dust emissions from construction projects are uncertain and highly variable. The Air District is currently collaborating with CARB to refine the methodology for calculating fugitive dust emissions from building construction. This improved understanding of construction impacts will provide a more accurate baseline for tracking emissions from this source sector going forward. Implementation Lead: Air District Implementation Partners: CARB Initiation Timeframe: Short Term
PM&D 1.6	Educational Campaign on Construction and Demolition Material Transportation Requirements: San Francisco Environment Department's Construction and Demolition (C&D) Zero Waste team will partner with a diverse group of stakeholders to better address community concerns around dust and particulate matter generated by the transport and processing of discarded C&D materials in BVHP/SESF. This will include increasing awareness of material transportation requirements for C&D debris in BVHP/SESF, which may be achieved by facilitating outreach events, trainings, and/or the distribution of educational materials to registered facilities, material transporters, and other impacted stakeholders. Implementation Lead: San Francisco Environment Department (SFE) Initiation Timeframe: Short Term
PM&D 1.7	Code Enforcement of Material Transport Requirements for Construction and Demolition Materials: Following the completion of PM, D & CI Action 1.6, San Francisco Environment Department's C&D Zero Waste team will lead efforts to prioritize code enforcement tactics as part of the engagement actions with transporters of C&D debris. Outreach and enforcement actions will be conducted at the entry points of C&D material recovery facilities in BVHP/SESF. These actions will help ensure compliance with all relevant provisions of Chapter 14 of San Francisco's Environment Code, including the appropriate transport of all C&D Debris in a fully enclosed or covered permitted vehicle or container. Additionally, SF Environment's C&D Zero Waste Team will lead efforts to convene other city departments that have existing regulations and requirements related to the safe collection and transport of discarded construction materials in the public-rights-of-way (PROW) and help coordinate compliance monitoring and code enforcement tactics accordingly. Implementation Lead: San Francisco Environment Department (SFE) Initiation Timeframe: Medium Term

Strategy 1 Metrics:

- Draft Rule Amendments to Reduce Fugitive Dust published (yes/no)
- Draft Rule Amendments for Metal Recycling Facilities published (yes/no)
- Rule Amendments to Reduce Fugitive Dust adopted (yes/no)
- Rule Amendments for Metal Recycling Facilities adopted (yes/no)
- Number of cross-agency awareness trainings
- Number of inspector area patrols
- Updated construction dust emissions inventory completed (yes/no)

- Establish quantifiable baseline metrics for vehicles with debris loads tarped at C&D debris recovery facilities in BVHP/SESF (yes/no)
- Compliance rates quantified for vehicles with debris loads tarped at C&D debris recovery facilities in BVHP/SESF after outreach and enforcement efforts. This will include delivering reports to communicate new metrics, number and type of enforcement actions, and outcomes of Notices of Violations (yes/no)

Problem Statement 2: Diesel Particulate Matter Emissions from Portable Equipment and Offroad Vehicles used in Construction and Material Handling

Construction and material handling in BVHP/SESF uses a variety of portable equipment and off-road vehicles, such as portable generators, cranes, excavators, and loaders. They can produce dust, and their combustion engines can emit particulate matter (PM) and toxic air contaminants, including DPM and benzene. These emissions can expose nearby community members to harmful air pollution. Among the toxic air contaminants in the BVHP/SESF emissions inventory, DPM is a leading contributor to cancer risk. As it becomes available, lower-emission hybrid and electric equipment can reduce or eliminate these emissions. At present, lower-emission hybrid and electric equipment is not widely used in BVHP/SESF for construction, material handling, and cargo handling.

Strategy 2: Incentivize Transition to Lower- and Zero-emission Portable Equipment and Offroad Vehicles

Strategy Objective: Reduce diesel emissions from portable equipment and offroad vehicles used in construction and material handling. Accelerate the replacement of portable equipment and offroad vehicles used in construction and material handling with lower- and zero-emission alternatives.

No.	Actions
PM&D 2.1	Review and Comment on California Environmental Quality Act Analysis of Proposed Projects: Focus on recommending use of the cleanest available equipment (such as Tier 4 or electric equipment) and best practices to minimize impacts, especially for construction projects through California Environmental Quality Act (CEQA) comment. Prioritize review of CEQA projects in BVHP/SESF that may have potentially significant air quality, climate, environmental justice, and/or cumulative impacts from operations and/or construction and publish Comment Letters on the Air District website. ¹⁹² Review will focus on air quality and other issues where the Air District holds expertise, and in alignment with the Air District's CEQA Thresholds and Guidelines and in particular, CEQA Guidelines Chapter 2: Best Practices for Centering Environmental Justice, Health and Equity and its supplemental guidance . ¹⁹³

¹⁹² Bay Area Air District, "Comment Letters," accessed August 5, 2026, <https://www.baaqmd.gov/en/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-comment-letters>

¹⁹³ Bay Area Air District, "CEQA Thresholds and Guidelines Update," accessed August 5, 2026, <https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines>;

Bay Area Air District, "California Environmental Quality Act Guidelines Supplemental: Guidance for Implementing Best Practices for Centering Environmental Justice, Health, and Equity in CEQA," April 2025.

https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/tools/california-environmental-quality-act-guidelines-supplemental_april-2025-pdf.pdf?rev=31b9ea743b354b25b67b4cd244d0a322&sc_lang=en

	Encourage the community to alert an assigned planning staff member who will serve as the BVHP/SESF CEQA liaison to projects that may have potentially significant air quality impacts on their neighborhoods. Implementation Lead: Air District Initiation Timeframe: Early Action
PM&D 2.2	Identify Technology Acceleration Opportunities: Identify and assess the portable equipment and offroad vehicles used in construction and material handling in BVHP/SESF. Evaluate upgrade options that could be the basis for further actions, such as Action 2.3. Implementation Lead: Air District Implementation Partner: CARB Initiation Timeframe: Short Term
PM&D 2.3	Incentivize Adoption of Cleanest Possible Portable Equipment and Offroad Vehicles: Based on the findings in Action 2.2, incentivize adoption of the cleanest possible diesel or zero-emission portable equipment and offroad vehicles used in construction and material handling. Implementation Lead: Air District Initiation Timeframe: Medium Term

Strategy 2 Metrics:

- Number of CEQA projects reviewed in BVHP/SESF
- Number of applications for funds and completed projects in BVHP/SESF
- Total incentive funds awarded and paid in BVHP/SESF

Strategy 3: Reduce Emissions at the Port of San Francisco

Strategy Objective: Reduce emissions, including DPM emissions, from Port operations. When feasible, replace higher emitting equipment with lower emitting and zero emission portable equipment and offroad vehicles.

No.	Actions
PM&D 3.1	Continue to Reduce Emissions and Health Risks from Port Construction Activities: Ensure all Port construction activities comply with applicable Standard Construction Measures and regulatory requirements that reduce environmental impacts of construction activities, including measures that reduce exhaust and dust emissions and ensure the proper handling of hazardous materials. Examples of these measures include equipment idling restrictions, use of the lowest-emission equipment available (Tier 4 or electric), and dust control best management practices. Implementation Lead: Port of San Francisco (Port) Initiation Timeframe: Early Action
PM&D 3.2	Accelerate Development of Pier 80 Shoreside Power: Complete the Pier 80 Shore Power Assessment, secure funding for detailed design documents and construction with the goal of completing shore power construction by the end of 2030.

	Implementation Lead: Port of San Francisco (Port) Implementation Partners: Other City permitting agencies, Pacific Gas & Electric (PG&E), San Francisco Public Utilities Commission (SFPUC), Air District Initiation Timeframe: Early Action
PM&D 3.3	Transition Port Assets to Electric Technologies: Support the transition from fossil fuels to zero-emission technologies in alignment with Port sustainability policies by establishing a preference for the procurement of electric assets such as service trucks, lawn mowers, weed whackers, and other types of maintenance equipment. Implementation Lead: Port of San Francisco (Port) Implementation Partners: City Administrator's Office, Air District Initiation Timeframe: Early Action

Strategy Metrics:

- Standard Construction Measures and any updates incorporated into contract specifications (yes/no)
- Detailed design documents to install shore power at Pier 80 completed (yes/no)
- Where available and feasible based on Port operations, new maintenance equipment is electric (yes/no)

Strategy 4: Improve Oversight of Portable Sources of Particulate Matter

Strategy Objective: Increase inspections of Portable Equipment Registration Program (PERP) equipment typically found at construction and material handling facilities to ensure that the required health protective conditions are in compliance.

No.	Actions
PM&D 4.1	Improve Oversight of Portable Equipment: Building on Permitting & Enforcement Action 5.1 "Increased Inspection Priority for Portable Diesel-Fueled Generators," improve enforcement oversight of portable construction and material handling equipment, such as sand screening and rock crushing equipment. The Air District and CARB will partner to develop inspector training for enforcement of Portable Equipment Registration Program (PERP), with an emphasis on PERP equipment commonly found at construction and material handling facilities, for all staff assigned to BVHP/SESF. Implementation Lead: Air District Implementation Partners: CARB Initiation Timeframe: Medium Term

Strategy 4 Metrics:

- Number of PERP inspections conducted in BVHP/SESF
- Number of inspectors that were trained on enforcement of portable engines and equipment, with an emphasis on PERP equipment commonly found at construction and material handling facilities

Problem Statement 3: Unpaved and Paved Road Dust

Road dust accounts for about 10% of known local PM_{2.5} emissions in BVHP/SESF. Exposure to PM and road dust can be higher for those working near busy industrial corridors, such as Amador Street and living and working near unaccepted streets, such as Underwood Street, where traffic creates visually observable dust.¹⁹⁴ Where roadways are paved, track out from construction sites and other facilities increases road dust emissions.

There are several public rights of way in BVHP/SESF that function as roadways but are not paved or well-maintained, including streets which are not accepted by the city for maintenance and therefore do not receive regular municipal street sweeping. Current counts suggest that 21% of the streets in District 10 are unaccepted.¹⁹⁵ Examples of these streets of concern are portions of Armstrong Ave, Wallace Ave, and Carroll Ave, among others. Many streets in BVHP/SESF are in worse condition than other areas of San Francisco. An estimated 25% of all unaccepted streets in San Francisco are in District 10.¹⁹⁶ Streets in poor condition can contribute to dust and track out concerns. Additionally, areas that receive infrequent or no street sweeping, such as congregation areas for recreational vehicles parked for long periods of time, are often under swept because these vehicles do not move and become obstacles for mechanical sweeping.

Strategy 5: Reduce Road Dust in BVHP/SESF

Strategy Objective: Increase street sweeping coverage and frequency to improve air quality equity. Improve conditions of unpaved, poorly maintained, and unaccepted streets in BVHP/SESF to reduce roadway dust.

No.	Actions
PM&D 5.1	Community-Led Identification and Prioritization of Streets for Dust-Reduction Improvements: Create a community-based inventory of under swept, unpaved, and otherwise poorly maintained streets in BVHP/SESF, including unaccepted streets. Prioritize roads and areas of top concern. Determine improvement opportunities, including whether there are any gaps in street sweeping that can be addressed. Potential criteria for prioritization may include level of traffic and proximity to places where people sensitive to air pollution may live or gather, such as homes, schools, daycares, and senior centers. The community will also identify preferred solutions for street improvement (e.g., greening, enhanced cleaning efforts, paving, or other ways to reduce road dust). Outcomes of this study will be shared with SFDPW when completed.

¹⁹⁴ Unaccepted Streets: Certain rights-of-way have not been "accepted" for maintenance by the City because they do not meet City standards for street construction. These typically include unimproved hillsides, certain alleys, and private streets in certain master-planned developments. For more information on road maintenance in San Francisco, visit <https://sfbetterstreets.org/learn-the-process/maintenance/index.html>

¹⁹⁵ Newman, Marina, and Kelly Waldron. 2026. "San Francisco's Forgotten Roads: Bayview Has 1/4 of City's 'Unaccepted Streets'" *Mission Local*, March 29, 2026. <https://missionlocal.org/2025/07/sf-bayview-unaccepted-streets/>.

¹⁹⁶ Ibid.

	Implementation Lead: CSC, Air District Implementation Partners: San Francisco Department of Public Works (SFDPW) Initiation Timeframe: Short Term
PM&D 5.2	Improve Street Sweeping in BVHP/SESF: Pending results of the street sweeping inventory in Action 5.1, implement a strategy for reducing road dust through street sweeping. This strategy may include changing street sweeping routes, assessing possible measures to increase effectiveness of street sweeping (e.g., watering), and increasing frequency in areas of heightened concern for the community, such as near schools, truck routes, and businesses that generate fugitive dust. Implementation Lead: San Francisco Department of Public Works (SFDPW) Initiation Timeframe: Medium Term
PM&D 5.3	Improve Conditions of Unpaved and Poorly Maintained Streets: Based on the results of Action 5.1, work with all relevant agencies to develop and implement street improvement plans that reduce road dust. Examples of possible actions include gathering appropriate stakeholder feedback on streets of concern, identifying funding opportunities to implement paving or improvement projects, assisting with cleaning of problematic streets, and tracking progress of street improvements. Implementation Lead: San Francisco Department of Public Works (SFDPW) Implementation Partners: Air District Initiation Timeframe: Medium Term

Strategy 5 Metrics:

- Community-Led Identification and Prioritization of Streets for Dust-Reduction Improvements completed (yes/no)
- Number of streets, including unaccepted streets, in BVHP/SESF with improved conditions

Problem Statement 4: Fugitive Dust from Historically Contaminated Sites

The community has substantial concerns that major redevelopment projects at Candlestick Point, the Naval Shipyard, and other sites with the possibility of contaminated soils (such as properties along Armstrong Street) could increase fugitive dust that contains toxic air contaminants, such as arsenic, lead and nickel, or radionuclides. The community is concerned that remediation and construction during redevelopment will result in the pollutants in the contaminated soil becoming airborne and dispersed with prevailing winds to nearby homes, playgrounds, schools, and gardens. These concerns are further amplified by the reality of climate change, including sea level rise and flooding, that could disturb and release toxic air contaminants at these same sites. Better methods for notification and tracking of activities at sites with historically contaminated soil are needed to ensure oversight and community member notification about potential exposure to fugitive dust that contains toxic air contaminants and/or radionuclides.

Strategy 6: Empower Community with Better Access to Information and Knowledge about Contaminated Sites

Strategy Objective: Increase transparency and community understanding of construction activity and development of sites with contaminated soil.

No.	Actions
PM&D 6.1	Develop a Database of Construction Sites with Contaminated Soils: Make the location data of construction sites with contaminated soils collected from Action 1.1 "Rule Amendments to Reduce Fugitive Dust" publicly available. This could include a publicly available map which shows sites where soil contamination is present. Implementation Lead: Air District Initiation Timeframe: Medium Term
PM&D 6.2	Use Existing Data on Contaminated Construction Sites to Inform Air District Actions: Explore and evaluate existing data to help inform and enhance policy, enforcement, or additional air monitoring related to contaminated construction sites, as necessary. This may include, for example, data from DataSF on construction sites subject to City and County of San Francisco Health Code Article 22A (Maher Ordinance). This data would be shared in a publicly available map, such as the BVHP/SESF Geospatial Data and Map Tool. As part of this effort, maintain and update the BVHP/SESF Geospatial Data and Map Tool to reflect the latest available map layers (schools, emissions sources, healthcare, social assistance, zoning) and add relevant data layers as necessary. Implementation Lead: Air District Initiation Timeframe: Medium Term

Strategy 6 Metrics:

- Database of construction sites with contaminated soils developed (yes/no)
- BVHP/SESF Geospatial Data and Map Tool maintained and updated as necessary (yes/no)

Strategy 7: Improve Accessibility and Transparency of Ongoing Activities and Air Quality Data at the Hunters Point Naval Shipyard

Strategy Objective: Improve coordination and communication regarding activities and air quality data at the Hunters Point Naval Shipyard.

#	Actions
PM&D 7.1	Improve coordination and communication with community members regarding ongoing activities and air quality data collected at the Hunters Point Naval Shipyard: Ongoing activities at the Hunters Point Naval Shipyard include active earthwork, trenching, storage and transport of contaminated soil, and the demolition of structures on site. Air monitoring data is also collected at numerous locations onsite. The Air District will ensure that there is better information sharing and promote coordination within the Air District and between partner regulatory agencies and the community. Additional efforts may include but are not limited to regular internal meetings and better tracking of ongoing activities to improve readiness to respond to community concerns and/or questions by providing plain-language interpretation of air monitoring data when community issues are identified. Implementation Lead: Air District Implementation Partners: U.S. Environmental Protection Agency (U.S. EPA), Department of Toxic Substance Control (DTSC)

	Initiation Timeframe: Early Action
PM&D 7.2	Increased Community Engagement regarding Activity at the Hunters Point Naval Shipyard: The U.S. Environmental Protection Agency (U.S. EPA) and Department of Toxic Substance Control (DTSC) will engage with the community more often on activities happening at the Hunters Point Naval Shipyard through increased presence and engagement with the Bayview Hunters Point Citizen Advisory Committee. This could include presentations at meetings, fact sheets, or office hours open to the community. Implementation Lead: U.S. Environmental Protection Agency (U.S. EPA) and Department of Toxic Substance Control (DTSC) Initiation Timeframe: Early Action
PM&D 7.3	Improve Incident Notification Reporting: The U.S. Environmental Protection Agency (U.S. EPA) and Department of Toxic Substance Control (DTSC) will make improvements to the risk management communication and incident notification reporting at the Hunters Point Naval Shipyard to reduce delays in informing partner agencies and community of potential emission exceedances and other issues. Implementation Lead: U.S. Environmental Protection Agency (U.S. EPA) and Department of Toxic Substance Control (DTSC) Initiation Timeframe: Early Action
PM&D 7.4	Navy Engagement with CSC on Hunters Point Naval Shipyard: The U.S. Navy will engage with the CSC regarding environmental cleanup activity at the Hunters Point Naval Shipyard through meetings and/or presentations with the CSC on a semi-annual or annual basis. This could include updates on environmental cleanup projects, building demolition activities, and air monitoring results. Implementation Lead: U.S. Department of Navy (Hunters Point Naval Shipyard) Implementation Partners: U.S. Environmental Protection Agency (U.S. EPA) Initiation Timeframe: Early Action

Strategy 7 Metrics:

- Air District coordination with the CSC on major announcements from Hunters Point Naval Shipyard (yes/no)
- Number of community engagement touchpoints between U.S. EPA, DTSC, and Bayview Hunters Point Citizen Advisory Committee
- Improvements made to risk management communication and incident notification reporting at Hunters Point Naval Shipyard (yes/no)
- Navy Engagement with CSC on Hunters Point Naval Shipyard completed on at least an annual basis (yes/no)

Monitoring and Data

Monitoring and Data focuses on approaches that enable a better understanding of total air pollution exposure and health risks in BVHP/SESF. BVHP/SESF contains a unique mix of sources that includes large industrial sources, materials handling facilities, concrete batch plants, recycling facilities, unpaved roads, autobody shops, metal fabrication, and mobile sources. Air monitoring can be another method, in addition to emissions inventories and air quality modeling, to get a better understanding of how emissions from local sources and air pollution from outside the community affect total air pollution exposure in BVHP/SESF.

The Air District conducts regulatory air monitoring throughout the Bay Area according to U.S. EPA requirements and conducts community air quality investigation projects to assess impacts from sources of concern identified by community members. The Air District also requires fenceline air monitoring at refineries and is considering fenceline air monitoring requirements for other types of facilities as well. There are also air monitoring projects conducted by community groups, academic researchers, or other agencies, as well as publicly available data from air sensor networks. Air monitoring data can be used to track progress in reducing levels of air pollution and exposure, better understand the causes of higher air pollution levels, characterize impacts from specific sources of air pollution, develop strategies to improve air quality, provide information for enforcement investigations, rule development, and permitting, evaluate public health risks, and assess the effectiveness of strategies.

Current air monitoring, including the Air District monitoring site at 16th and Arkansas Street is not representative of air pollution levels in BVHP/SESF. It is expected that concentrations are higher in BVHP/SESF, especially on short time frames, and may vary significantly from place-to-place depending on proximity to nearby sources, variable operations, and meteorological conditions. The currently available monitoring data collected in BVHP/SESF are limited in both geographic coverage and in the types of pollutants measured. Most air pollution data in BVHP/SESF is limited to air sensors that only measure PM_{2.5} and do not provide information on other air pollutants associated with sources of emissions within the community that have negative health outcomes. Also, because of the unique and complex mix of sources contributing to air pollution exposure, the information about some types of emissions from sources of concern identified by community members is uncertain or is not included in the emissions inventory. These include emissions of fugitive dust, fugitive VOCs, or short-duration spikes in emissions.

Community members have expressed the need for community involvement in the deployment of additional air monitors to inform changes to policies, track improvements in air pollution, and ensure accountability. There is also the need for that information to be shared openly with community partners and communicated in a transparent and accessible way.

This focus area will include efforts to better understand the impacts of sources of air pollution on air quality in BVHP/SESF and fill gaps in knowledge that can inform policies that reduce emissions and exposure to air pollution in BVHP/SESF, including rule development, improved permitting, targeted enforcement, or incentives. The Air District will also continue to prioritize support for air monitoring projects conducted by community members and local CBOs that are collecting data to learn more about sources of concern or unique mixes of sources.

This focus area will also help ensure that the existing and upcoming air monitoring data is accessible to community members and provided in multiple ways to ensure air quality data is easily understandable to a wide variety of audiences. Working together to increase the accessibility of air quality data and training community members on data interpretation will improve transparency and shared ownership of air quality knowledge to hold sources of air pollution and agencies that regulate them accountable. Accessible and transparent air monitoring data also provides more information about the cumulative air pollution impact from all sources of emissions that community members are affected by every day.

Problem Statement 1: Impacts from Many Sources of Emissions Are Not Well Understood

Many local sources in BVHP/SESF are not included in the emissions inventory, or the emissions estimates from these sources are uncertain. The lack of information about these sources creates a gap in knowledge about how these emissions affect exposure and health risks throughout the community. These types of sources can contribute to total levels of PM₁₀, PM_{2.5}, toxic air contaminants, and other pollutants that result in higher exposure to air pollution and contribute to negative health outcomes. There is a need to better understand local sources of emissions and how they impact total air pollution exposure experienced by community members and to support community-led air monitoring and data analysis projects within BVHP/SESF that are working on community-led solutions to better understand these issues.

Strategy 1: Prioritize Community-identified Sources of Concern and Use Air Monitoring to Improve the Understanding of Air Pollution Impacts from those Local Sources

Strategy Objective: Through partnership with community members, increase the understanding of local sources of emissions and use of air monitoring data to inform efforts to reduce emissions and/or exposure to air pollution. Develop partnerships, resources and opportunities to meaningfully involve community members in collecting data, particularly near local sources of air pollution and sensitive community members within BVHP/SESF.

No.	Actions
M&D 1.1	Community-Led Environmental Air Research (CLEAR) Bayview Project: Collaborate with Marie Harrison Community Foundation and Leaders4EARTH on implementing the Community-Led Environmental Air Research (CLEAR) Bayview project. Measurements will be focused on a priority list of specific facilities and air quality concerns identified by community members including but not limited to gaps in knowledge and sources of concern identified by the CSC's SEDG subcommittee. Once a priority list has been identified, the project will then match those sources and concerns with the appropriate air monitoring technologies, which can include use of Air District's mobile air monitoring van to perform exploratory measurements of VOCs and PM, including ultrafine particles (UFPs), where applicable. Follow-up studies may use other types of air monitoring to investigate issues identified by the mobile air monitoring van. The CLEAR project will also educate and engage BVHP/SESF youth throughout the project on air pollution basics, air monitoring technologies, and data collection, analysis, and interpretation. Local youth and community partners will also be directly involved in co-developing the initial study methodology and participating in and contributing to data analysis, interpretation, and communication of results and findings to the broader community. The measurements are expected to aid in identifying areas where VOC and PM levels are unusually high compared to surrounding areas. The data will inform efforts to reduce air pollution emissions and exposure through a variety of Air District programs. The Air District will use the findings to identify the root causes of the higher pollution levels and identify appropriate actions to address them. This may include some combination of enhanced compliance activities, strengthened regulations, or changes to other Air District approaches to reduce air pollution emissions and/or exposure. Findings from the project may also be shared with local agencies to inform additional actions in the CERP (see PDR 1.1 and 1.3). This action is aligned with the implementation of the Air District Strategic Plan Strategy 2.7 "Understand Local Air Pollution and 2.2 "Collect Community Data".

	Implementation Lead: Air District, Marie Harrison Community Foundation (MHCF), Leaders4EARTH Initiation Timeframe: Early Action
M&D 1.2	Support Community Conducted Air Monitoring or Air Quality Data Projects: Work with the Bay Air Center (https://bayaircenter.org/), an Air District-sponsored community resource, to provide support to community based organizations that are conducting air monitoring or data projects in BVHP/SESF, such as air monitoring projects funded by CARB Community Air Grants or U.S. EPA grants (for example, projects led by Bayview Concerned Citizens, Greenaction, and Safer Together).¹⁹⁷ Bay Air Center support for these projects can include grant application assistance, guidance on air monitoring technology and network design, on-site troubleshooting, and data analysis and interpretation. The Air District and Bay Air Center will work with the CSC to implement new types of support for the BVHP/SESF community and raise awareness about Bay Air Center services and available resources through direct outreach to the broader BVHP community. Specifically, the Bay Air Center conducts proactive outreach to community organizations conducting air monitoring or data projects in BVHP/SESF to ensure they are aware of available services and resources. New activities may include, but are not limited to, convening recurring meetings to bring together community air monitoring project teams to facilitate collaboration and strengthening of air quality monitoring projects throughout the Bay Area, development of a guide on how to scout for sensor locations and recruit community members to host sensors, and other types of support. This action is aligned with the implementation of the Air District Strategic Plan Strategy 2.2 "Collect Community Data" and 2.7 "Understand Local Air Pollution." Implementation Lead: Air District Initiation Timeframe: Early Action
M&D 1.3	Relocate the Air District's Regulatory Air Monitoring Site in San Francisco to a Location within BVHP/SESF: Consistent with the Air District's 2025 Five-Year Air Monitoring Network Assessment, relocate the San Francisco regulatory air monitoring site located at 16th and Arkansas St. to a location within BVHP/SESF.¹⁹⁸ As part of this process, the Air District will work with the CSC and community partners to gather input and recommendations for locations within BVHP/SESF that better represent the air pollution levels that community members experience on a regular basis and ensure that the new site continues to meet the U.S. EPA's requirements for regulatory monitoring. This action is aligned with the implementation of the Air District Strategic Plan Strategy 4.4 "Improve Air Monitoring", 2.2 "Collect Community Data", and 2.7 "Understand Local Air Pollution." Implementation Lead: Air District Initiation Timeframe: Long Term

¹⁹⁷ Bay Air Center. 2026. <https://bayaircenter.org/>.

¹⁹⁸ Bay Area Air District, "2025 Five-Year Air Monitoring Network Assessment," July 1, 2025. https://www.baaqmd.gov/~/_media/files/technical-services/air-monitoring-network-plans/2025_five_year_network_assessment-pdf.pdf?rev=b3e910d986154e4ab32ba81e3a0715f9&sc_lang=en

Strategy 1 Metrics:

- Marie Harrison Community Foundation CLEAR Bayview Project findings shared with the CSC and community members (yes/no)
- Number of requests and type of support provided to community conducted air monitoring or data analysis projects
- Public meeting held to gather community input before finalizing the relocation of the San Francisco air monitoring site to BVHP/SESF (yes/no)

Problem Statement 2: Air Monitoring Data Are Difficult to Find and Not Easy to Interpret

Air monitoring data is not easily accessed by the BVHP/SESF community, and what is available is often unclear. These barriers limit the community's ability to understand the problems that they experience on a day-to-day basis. Lack of accessible data also limits the Air District's ability to be transparent with community members about the air pollution affecting their health or address their concerns.

Strategy 2: Improve Access and Community Understanding of Air Monitoring Data

Strategy Objective: Increase transparency and accessibility of air pollution data provided to community members in a way that meets their needs. Equip community members with the knowledge to understand the air pollution data collected in BVHP/SESF. Inspire the next generation to collect their own data and engage with the local air pollution issues that affect them the most.

No.	Actions
M&D 2.1	Make Air Monitoring Data More Accessible: Coordinate with the CSC and interested local agency and community partners to build descriptions of existing air and emissions monitoring data, enable data downloads where feasible, and provide resources or visualization tools to clearly communicate insights, empowering communities to interpret and act on air and emissions data effectively. Efforts will include a focus on both the accessibility of real-time data to the public and datasets that may be informative to community-based organizations in their work in BVHP/SESF. Initial work will include developing and maintaining an inventory of air monitoring and emissions data in BVHP/SESF. This action is aligned with the implementation of the Air District Strategic Plan Strategy 2.3 "Make Data Accessible." Implementation Lead: Air District Initiation Timeframe: Short Term
M&D 2.2	Understanding Air Pollution Training: In collaboration with the Bay Air Center, work with the CSC and community partners to identify community members, community-based organizations, or other opportunities to provide training or workshops focused on increasing community members' understanding of air quality data, including forecasted air quality data, and how they can use that information to protect their health. The trainings will be tailored to meet community interests and needs and could include but are not limited to the following topics: 1) air pollution basics, 2) air monitoring technologies, 3) understanding air quality data, and 4) data analysis and interpretation. Trainings may be held in-person or virtually, depending on community preference and logistical constraints. The Air

	District will also explore the option to create a series of training videos that can be accessed by community members who are unable to attend in-person or virtual training sessions. This action is aligned with the implementation of the Air District Strategic Plan Strategy 2.2 "Collect Community Data" and 2.7 "Understand Local Air Pollution." Implementation Lead: Air District Initiation Timeframe: Early Action
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Strategy 2 Metrics:

- Air monitoring data inventory and other air monitoring data are shared with the CSC, when available (yes/no)
- Number of workshops or trainings and attendees regarding air pollution basics, air monitoring, air monitoring data analysis and interpretation, or other air quality topics as requested by community partners

Community Health Impacts

Community Health Impacts focuses on the well-being of individuals and populations through a community perspective. It considers recurring patterns of health inequities and the structural roots of these disparities. It also considers the longstanding, intergenerational cumulative health burdens experienced in the BVHP/SESF community and how this has impacted individuals, families, and their social networks.

Community members have frequently spoken about difficulty breathing due to asthma and other respiratory diseases, concerns about toxins in their bodies, and the prevalence of other health issues among children, elders, families, and unhoused members in their community. They have also raised that these health challenges add stress from lost income and missed school days, and that addressing them can be costly. Information included in Chapter 4: Community Description, shows that the median lifespan of BVHP/SESF residents is four years shorter than that of the average San Francisco resident. It also shows that children under age 4 in the Bayview Hunters Point and Visitacion Valley zip codes experience significantly higher rates of asthma-related emergency department (ED) visits and hospitalizations compared with children citywide in San Francisco. Across all age groups, asthma ED visit rates for the Bayview Hunters Point zip code were more than twice the citywide rate. For more data on health disparities in BVHP/SESF, please see Chapter 4: Community Description.

Community members raised the need for better access to healthcare and community resources to support their health and accessibility needs. Additionally, they have noted that there is limited access to goods and services needed for improved community health in daily life, such as healthy and culturally relevant food stores. There is also a lack of green infrastructure and nature-based amenities (e.g., trees, vegetation, parks, open spaces) that can help protect community members from air pollution exposure, adding to the community's concern about potential impacts on community health.

Problem Statement 1: Cumulative Health Impacts of Air Pollution Sources Near Community Members

Cumulative health impacts are a concern because compared to other communities in San Francisco, BVHP/SESF community members experience higher rates of asthma, cancer, and cardiovascular disease, a higher proportion of low birthweight births, and lower life expectancy. Some community members—including infants, children, the elderly, individuals with pre-existing conditions (e.g., asthma), pregnant women, and unhoused community members—are especially at risk of adverse health effects from multiple stressors including air pollution. For all community members, living, working, and playing next to pollution sources is concerning, however for those who are more sensitive to air pollution, it is of even greater concern. Community members have voiced the need to improve community health data and make systematic changes to decision-making, in order to better protect the community from the potential impacts of new sources of air pollution, or the expansion of existing sources (Note: also see the Permitting and Enforcement focus area).

Strategy 1: Improve Health Data, Consider Cumulative Impacts, and Support Community Capacity-Building

Strategy Objective: Strengthen health data collection, access, and transparency in the community. Improve community member, organization, and agency access to timely, user-friendly information on cumulative health impacts and overall community health to inform health-centered policy and decision-making. Build community capacity by supporting economic opportunities and community investments.

No.	Actions
CHI 1.1	Expand Access to BVHP/SESF Health Data: Explore partnerships between the San Francisco Public Health Department (SFPDH) and academic stakeholders to track and communicate health impacts in BVHP/SESF. These partnerships may include increasing community understanding of the Community Health Assessment (CHA) and other current and future health data collection and communication initiatives.¹⁹⁹ Implementation Lead: San Francisco Department of Public Health (SFPDH) Initiation Timeframe: Medium Term
CHI 1.2	Use Cumulative Impact Data to Prioritize Investments: Work with the CSC to (1) increase community understanding of the City's Environmental Justice Framework, including the City's Environmental Justice Communities Map, and (2) identify opportunities for the community to use the map to advocate for the BVHP/SESF neighborhoods.²⁰⁰ The City's Environmental Justice Communities Map incorporates cumulative impact data using the state's CalEnviroScreen 4.0 and incorporates additional local data on pollution burden and socioeconomic disadvantage. It identifies areas in the city that face a disproportionate burden of environmental health challenges and designates areas where policies and resources could be directed to promote community health. Implementation Lead: San Francisco Planning Department (SF Planning) Initiation Timeframe: Medium Term
CHI 1.3	Identify Localized Environmental Health Exposures: Examine methods to identify clusters of localized environmental exposures (such as encounters with poor air quality, lead, mold, odors, etc.) to support data-driven interventions, such as targeted health inspections. Draw learnings from existing programs such as Fix Lead SF to inform this effort.²⁰¹ Implementation Lead: San Francisco Department of Public Health (SFPDH) Initiation Timeframe: Medium Term
CHI 1.4	Support Community Capacity Building and Environmental Justice Efforts: Support community capacity-building efforts related to air pollution and health injustices. Review funding programs to reduce barriers in applying for funds and develop creative solutions for a greater variety of projects. Engage community members to inform improvements in funding programs and ensure broad outreach and engagement in the community. Additionally, work with the CSC and other community organizations to increase awareness and participation in the California Air Resources Board's Supplemental Environmental Projects (SEP) Program.

¹⁹⁹ SF Gov, "San Francisco Community Health Reports and Plans," May 7, 2024, <https://www.sf.gov/san-francisco-community-health-reports-and-plans>.

²⁰⁰ SF Planning, "Environmental Justice Framework | San Francisco General Plan," adopted May 2023. https://generalplan.sfplanning.org/Environmental_Justice_Framework.htm.

SF Planning, "Environmental Justice Communities" (map), January 2023. https://generalplan.sfplanning.org/images/environmental-justice-framework/Environmental_Justice_Communities-Map.pdf

²⁰¹ SF Department of Public Health, "Fix lead SF", <https://www.sf.gov/fix-lead-sf>

	Implementation Lead: Air District, CARB Initiation Timeframe: Short Term
CHI 1.5	Research Sustainable Funding Options Related to Employment Pathways for Green Jobs: Through the Air District's building electrification and urban greening work, and the Bay Area Regional Climate Action Plan (BARCAP), the Air District will assemble information about funding sources for workforce development in sustainable sectors. Implementation Lead: Air District Initiation Timeframe: Short Term
CHI 1.6	Reduce Emissions and Health Risks from the SFPUC Southeast Treatment Plant: SFPUC continues to comply with regulatory requirements and explore opportunities to implement environmental justice recommendations made through the SFPUC Biosolids Digester Facilities Project (BDFP)'s Environmental Justice Analysis Report (EJ Report). SFPUC continues to seek opportunities through Southeast Treatment Plant operation (e.g. equipment procurement, process improvements, etc.) to reduce emissions and health risks. Lead: San Francisco Public Utilities Commission (Wastewater Enterprise) Timeframe: Early Action
CHI 1.7	Promote Community Economic Development: SFPUC contracting promotes community economic development by developing the local contracting market, a pipeline of local workers for construction contracts (e.g. project labor agreement/PLA), and pathways to utility careers. • Creating economic opportunities and investing in the community helps reduce pollution exposure (e.g., economic mobility, healthcare, air filtration) and promotes community resilience. • SFPUC will ensure that Local Business Enterprise (LBE), Local Hire/PLA and other programs help develop an enduring local market for SFPUC's construction contracts. • SFPUC will also develop robust contracting requirements that complement existing legal requirements towards this goal. • SFPUC will promote access to local small businesses through the Contractors Assistance Center. • SFPUC will implement utility career exposure programs for youth and broader communities within the SFPUC service area. In addition to developing job pathways, utility career exposure also educates residents, increases awareness of SFPUC activities and related community health impacts, and promotes actions that protect community health. • Additionally, SFPUC will implement the Social Impact Partnership (SIP) program, where contractors voluntarily make financial and/or volunteer hour contributions to nonprofit organizations and public education provider beneficiaries that promote job exposure and training, public education, small business, and community and environmental health. Lead: San Francisco Public Utilities Commission (Workforce and Economic Program Services Bureau and Community Benefits Division) Timeframe: Early Action

Strategy 1 Metrics:

- Community-level health data for BVHP/SESF exists and is readily accessible (yes/no)
- Number of engagement touchpoints between city staff and community members on health data accessibility and Environmental Justice framework/Communities Map
- Methods established to identify environmental health exposures and connect them to interventions (yes/no)
- Number of engagement touchpoints between Air District and community members on improving Air District funding programs
- SFPUC documents progress on BDFP EJ Report recommendations.
- SFPUC documents emissions reducing operational activities.
- LBE utilization and Local Hire participation in construction projects in Bayview Hunters-Point and Southeast San Francisco
- Number of students served by utility career exposure programs in Bayview Hunters-Point and Southeast San Francisco
- Social Impact Partnership (SIP) program financial contributions and volunteer hours provided to beneficiaries in Bayview Hunters-Point and Southeast San Francisco
- See metrics from M&D Strategies 1 and 2

Problem Statement 2: Health at Home, Schools, and Public Spaces

Neighborhoods historically redlined often experience higher poverty rates, lower life expectancy, increased chronic diseases, poorer mental health, and reduced life expectancy at birth. Additionally, the entire city of San Francisco is vulnerable to the growing impact of air pollution due to climate change because the buildings, infrastructure, and services were not designed for extreme temperatures or greater number of poor air quality days. The community of BVHP/SESF is particularly and disproportionately sensitive to extreme heat and wildfire smoke because of the longstanding history of disinvestment in this community.

Many homes in BVHP/SESF are older and prone to mold and lead exposure, often retain cigarette smoke odors, and have gas stoves that can worsen air quality. These allergens and irritants are significant triggers for asthma attacks. Accumulated exposures in the home can impact respiratory health, especially for sensitive groups like the elderly and children, some of whom may already suffer from existing conditions such as asthma.

Schools are places where children spend many hours of their day. Schools and childcare facilities near roadways and certain types of businesses expose children to air pollution that can trigger asthma attacks and stunt lung growth. This is a concern because children's lungs are still developing, and early impacts on the lungs can contribute to health impacts later in life. Additionally, severe asthma attacks can result in missed school days and the need for medical appointments.

Inadequate buffers between legacy pollution sources, including freeways and interchanges, and public spaces, including parks and community gathering spaces, is a concern because the community does not feel safe to exercise or enjoy being outdoors. There is also a lack of adequate community spaces with air filtration to gather during poor air quality days, including days impacted by wildfires. This is a concern because community members, and especially those who are more sensitive to air pollution, do not have a place where they can find relief. Note: Also see the PDR and Land Use focus area.

Strategy 2. Reduce Pollution Exposure in Homes

Strategy Objective: Upgrade BVHP/SESF homes to provide healthy indoor air that supports strong respiratory health. Help ensure homes are energy efficient and protected from air pollution through electrification, weatherization, and air filtration, with frontline communities benefiting first and without a cost burden.

No.	Actions
CHI 2.1	BVHP/SESF Residential Air Filtration Program: Design and implement an incentive program that expands access to residential air filtration in BVHP/SESF. Draw lessons from past initiatives and latest research, particularly the CARB-funded REACT study (Reducing Exposure with Air Cleaners and Technology (REACT) in At-Risk Communities) in Bayview Hunters Point to inform the program.²⁰² Consult with the CSC about outreach and required educational support (including use and maintenance of air filtration units) for this program. Implementation Lead: Air District Initiation Timeframe: Short Term
CHI 2.2	Improve Access to Building Electrification Programs: Prioritize increasing BVHP/SESF community awareness of state, regional, and citywide initiatives to support building retrofits, weatherization, and electrification to improve indoor air quality in older homes. Improve awareness in the community about ongoing initiatives and engage the CSC in the implementation of such programs, including energy upgrade incentives through SFPUC/Hetch Hetchy Power Customer Programs, BayREN (Bay Area Regional Energy Network), the California Energy Commission's Equitable Building Decarbonization Program, and the San Francisco Climate Equity Hub, among others.²⁰³ Explore and implement strategies to help low-income homeowners and renters in BVHP/SESF benefit from existing local, state, and federal programs that offer financial assistance, energy audits, and other support for clean energy home retrofits and weatherization improvements. Engage the CSC in design and rollout of any future programs and provide regular updates on progress made in terms of home improvements and local workforce development, along with lessons learned. Implementation Lead: SF Environment Department (SFE) Implementation Partner: San Francisco Public Utilities Commission (PUC) Power Enterprise Initiation Timeframe: Short Term
CHI 2.3	Advance a Holistic Approach to Healthy Homes: Uplift and engage the BVHP/SESF community in regional and local efforts that synergize home repair, energy efficiency, electrification services, incentives, and maintenance to improve indoor and neighborhood air quality. This includes: Explore new funding and financing opportunities for electrification and retrofitting of older homes, while supporting existing programs and identifying opportunities to layer funding.

²⁰² Chelsea V. Preble, "Reducing Exposure with Air Cleaners and Technology (REACT) in At-Risk Communities," CARB, 2024. <https://ww2.arb.ca.gov/sites/default/files/2024-11/IL2%20-%20REACT%20-%20UCD.pdf>

²⁰³ SF Environment Department, "Climate Equity Hub", <https://www.sfenvironment.org/campaigns/welcome-climate-equity-hub>

	- Investigate or pilot a program to make electrification retrofits more affordable and accessible, including electrifying gas stoves and adding kitchen ventilation/range hoods, with an emphasis on low-income tenants. - Enhance awareness of indoor air pollutants (e.g., mold, smoke) and their health impacts, while providing guidance to improve air quality at home. - Collaborate with partners, particularly in the implementation of CHI 2.2. Implementation Lead: Air District Initiation Timeframe: Long Term
CHI 2.4	Explore Building Appliance Electrification Incentives: Pilot a building appliance incentive for low-income BVHP/SESF households to replace NO_x emitting gas furnaces and water heaters with zero-NO_x appliances. Implementation Lead: Air District Initiation Timeframe: Medium Term

Strategy 2 Metrics:

- Number of homes with air filtration devices/systems installed or deployed in BVHP/SESF
- Number of homes upgraded with energy efficiency, electrification, and/or weatherization improvements in the community
- Number of outreach touchpoints with the community on improving awareness of indoor air pollution and available electrification upgrade programs
- Building appliance incentive pilot developed (yes/no)

Strategy 3. Protect Schools, Community Spaces, and Sensitive Community Members from Pollution Exposure

Strategy Objective: Reduce exposure to harmful pollutants and improve indoor air quality at high-priority facilities serving sensitive populations outside the home. Make emergency and climate response services accessible, culturally supportive, responsive to community needs, and inclusive of all.

No.	Actions
CHI 3.1	Air Filtration at High-Priority Community Locations: Improve air filtration at high-priority locations in the community: - Upgrade air filtration at public schools in BVHP/SESF. - Engage the CSC, community members, and community organizations to gather input on other high-priority locations for air filtration upgrades in the community, such as Head Starts in public buildings, libraries, senior centers, etc. - Based on input gathered, explore potential air filtration upgrades at community identified high-priority locations, potentially through expanding the existing Air Filtration program or starting a new program. Implementation Lead: Air District Initiation Timeframe: Short Term

CHI 3.2	Support Clean Air Resilient Spaces in BVHP/SESF: Partner with interested community organizations to support and amplify the development and communication of community-serving spaces with air filtration, backup power, and other essential community services. This support includes: • Working with the community to prioritize community facilities such as places of worship, schools, libraries, etc. • Supporting the community to identify and apply for funding opportunities to establish and maintain resilient spaces. • Communicating publicly available resilient spaces to vulnerable community members during emergencies. Implementation Lead: City and County of San Francisco Initiation Timeframe: Long Term
CHI 3.3	Accessible Air Quality Notifications: Improve the accessibility and dissemination of air quality alerts in BVHP/SESF, including the Air District's Spare the Air Alerts, Air Quality Incident Notifications, and other alert systems as applicable. Consider including information on potential health impacts and protective measures in the alerts so community members can better protect themselves. Ensure that places where community members who are more sensitive to air pollution spend time, such as schools, childcare, and senior centers, are aware of critical notification systems and are signed up to receive alerts. Ensure that the community can make recommendations on improving the accessibility of notifications as needed. Implementation Lead: Air District Initiation Timeframe: Medium Term
CHI 3.4	Support Unhoused Communities During Air Quality Emergencies: Partner with San Francisco Department of Homelessness and Supportive Housing to improve existing outreach and support efforts for unhoused populations during poor air quality days, and other air quality emergencies, such as wildfire smoke events and local fires. This could include helping train street teams, improving inclement weather protocols, and other partnerships as considered appropriate. Implementation Lead: Air District Implementation Partner: San Francisco Department of Homelessness and Supportive Housing Initiation Timeframe: Short Term

Strategy 3 Metrics:

- Number of school air filtration systems upgraded in BVHP/SESF
- High-priority locations for air filtration determined with community members
- Number of clean air resilience spaces available to BVHP/SESF community members
- Health impacts and protective measures incorporated in air quality notifications
- Number of schools and high-priority community locations signed up to receive air quality alerts
- Number of touchpoints between Air District and City staff to improve existing outreach and support efforts to reduce poor air exposure for unhoused communities

Problem Statement 3: Health Infrastructure and Access to Goods and Services

Community members have expressed that they have limited access to goods and services needed for daily life and to promote health, such as grocery stores, physicians, dentists, optometrists, physical therapists, and fitness infrastructure. Communities living in areas such as India Basin, the former naval Shipyard, and Candlestick, including the Alice Griffith housing complex, are unable to meet daily needs within their neighborhoods and must travel through industrial areas to access basic services. As an example, the last pharmacy in BVHP/SESF closed in 2025. Community members need improved access to comprehensive healthcare infrastructure and services that center community needs, are culturally appropriate, and promote health equity.

Strategy 4. Improve Access to Healthcare and Health-Promoting Resources

Strategy Objective: Improve accessibility of comprehensive, preventative, and culturally grounded healthcare to BVHP/SESF residents. Make meaningful improvements are made in social determinants of health, where vulnerable populations are uplifted through equitable investments. Reduce physical distance of BVHP/SESF residents from essential health-promoting resources including grocery stores, pharmacies, parks, and green spaces, and build them into abundant, safe, and welcoming spaces to help every resident live a healthier, more vibrant life.

No.	Actions
CHI 4.1	Facilitate Linkages to Targeted Health Services: Improve awareness of available health resources for income-qualified community members, such as: • Immediate enrollment assistance for Medi-Cal. • Services at the Southeast Family Health Center. • Umoja Health Access Point, which provides comprehensive behavioral and sexual health services to San Francisco's Black communities, along with access to fresh food, testing, counseling, and support groups.²⁰⁴ Implementation Lead: San Francisco Department of Public Health (SFPDH) Initiation Timeframe: Medium Term
CHI 4.2	Improve Access to Asthma Home Visitations and Remediation: Increase awareness of California Advancing and Innovating Medi-Cal's (CalAIM) Community Supports services, which can include asthma remediation. Explore options to provide evidence-based training for community health workers and educators to build asthma counseling skills, preparing them to support individuals and families in managing asthma, reducing exposure to triggers, and improving control. Optimize internal and external resources for clinical providers supporting patients managing asthma-related symptoms at asthma clinics such as the Environmental Health Clinic at the Southeast Health Center, as well as community asthma support programs. Implementation Lead: San Francisco Department of Public Health (SFPDH) Initiation Timeframe: Short Term

²⁰⁴ Rafiki Coalition, "Umoja Health Access Point," Rafiki Coalition for Health and Wellness, May 27, 2026, <https://rafikicoalition.org/programs-and-services/umoja-hap/>.

CHI 4.3	Increase Pharmacy Access: Assess the capacity of San Francisco pharmacy vendors to provide direct home delivery services to BVHP/SESF. This assessment would aim to identify options for patients with limited access to in-person pharmacy services. Implementation Lead: San Francisco Department of Public Health (SFPDH) Initiation Timeframe: Medium Term
CHI 4.4	Food System Landscape Analysis: Work with community and city partners to conduct a landscape analysis of the food system in San Francisco that identifies opportunities to support all residents' equitable access to growing and purchasing healthy, affordable, climate-friendly food. Engage the BVHP/SESF community in this analysis and ground-truth results and recommendations with the CSC. Implementation Lead: SF Environment Department (SFE) Initiation Timeframe: Medium Term
CHI 4.5	Community Services and Programs at the Southeast Community Center: Offer robust community services and programs at the Southeast Community Center. Promoting the health, well-being, cultural, educational, and financial empowerment of Southeast residents helps reduce pollution exposure by fostering economic mobility, strengthening community advocacy, and building greater resilience. The Southeast Community Center (SECC) was originally constructed to mitigate the adverse environmental and social impacts of the Southeast Treatment Plant expansion projects during the 1970's and 1980's. The SECC is owned by the City and operated and maintained by the SFPUC for the benefit of Bayview Hunters-Point and Southeast communities. The long-standing partnership between the SFPUC and San Francisco's Southeast communities is designed to promote the health, well-being, cultural, educational, and financial empowerment of Southeast residents. Lead: San Francisco Public Utilities Commission (Community Benefits Division) Timeframe: Early Action

Strategy 4 Metrics:

- Number and variety of outreach touchpoints to inform and engage community members about available health services
- Asthma management training options for community health workers and educators available in the BVHP/SESF community (yes/no)
- Improved provider and patient experiences with asthma clinics and asthma support programs (yes/no)
- Pharmacy access options identified/available for patients with limited access to in-person pharmacies (yes/no)
- Food system landscape analysis results and recommendations shared and ground-truthed with the BVHP/SESF CSC and community members (yes/no)
- Number of local residents served by the SECC annually
- Number of annual events, workshops, and other activities at the SECC

Production, Distribution and Repair (PDR) and Land Use

The legacy of BVHP/SESF as the location of some of the city's heaviest industries has transformed over time; however, the community continues to have environmental justice concerns. In 2008, a large portion of the area's industrial neighborhoods were rezoned, with several areas rezoned as mixed-use or residential to accommodate the need for new housing separate from industrial uses. Other industrial areas were rezoned into Production, Distribution and Repair (PDR) districts intended for new and evolving industries and activities needing flexible operating space, freight loading, and large uncovered storage areas. The rezoning prohibited many of the heaviest industrial land uses, permitted others only as a "conditional use" subject to review, and further limited industrial uses into four different types of PDR districts. The PDR-2 zone is exclusively mapped in the Bayview Hunter's Point Southeast San Francisco area and permits a variety of relatively intense industrial and manufacturing uses. PDR districts do not permit housing (except shelters) and limit other uses that conflict with the intended industrial activity. The rezoning also established a typical half-block buffer zone (PDR 1-B) between most of the core PDR-industrial parcels and zoned residential areas (as well as requiring manufacturing uses to be enclosed within a range of 50-500 feet from any residential areas).

The community is concerned that PDR districts create land use clusters that negatively interface and create boundaries between residential neighborhoods. They are also concerned that in some locations there is a lack of sufficient buffers and adequate separation between uses, especially as there are some uses allowed in the PDR-1-B buffer zone with the potential to be incompatible with nearby residential uses. There is also a sense that community members must travel through industrial areas to meet their daily needs, even though some neighborhoods are connected by commercial districts and mixed uses, for example, along 3rd street.

The community is concerned about industrial uses, including the M-2 zoning district areas around Piers 80-96 that are under Port jurisdiction. Lands under Port jurisdiction are state lands held in trust by the Port and are restricted to certain uses subject to the public trust doctrine. The community is concerned about the intensity of heavy industrial uses in the M-2 district, especially from Islais Creek to Heron's Head. For example, cement plants, manufacturing, shipyards, and maritime operations are permitted. Additionally, BVHP/SESF is the location for the Southeast Treatment Plant, the City's largest wastewater treatment facility, which is in a P (public) zoning district. Many of these facilities are located adjacent to or in close proximity to residential areas, and the potential for air pollution emissions and odors is a concern to the nearby community.

In addition to creating stationary sources of air pollution, industrial land uses can also attract mobile sources of air pollution, such as heavy-duty trucks and off-road equipment, as well as other associated uses including auto and truck services, loading zones, storage yards, and terminal operations. These mobile sources (i.e., vehicles) travel on local streets, increasing pollution exposure (note: impacts from trucks and mobile sources are addressed in the Traffic and Transportation focus area).

A significant portion of the waterfront area zoned for redevelopment, such as the former Naval shipyard in Hunters Point, will necessitate extensive cleanup of legacy contamination before planned uses, such as housing, can be built. Redevelopment brings concerns about additional air quality impacts related to excavation and soil disturbance, construction impacts, and the potential for increased traffic (note: dust and construction impacts from contaminated sites are handled in the PM, Dust, and Construction Impacts focus area).

The legacy of discriminatory planning and policy practices, such as redlining (denying credit to predominantly Black neighborhoods), urban renewal (eliminating "blight", often targeting Black and Latinx neighborhoods), and redevelopment have contributed to the systemic inequities and injustices that are still present in existing land use patterns, such as having polluting facilities adjacent to

residential neighborhoods. The concentration of PDR, heavy industry, freeways, and utilities across the BVHP/SESF landscape contributes to the daily concerns of the community about the known and unknown presence of air pollution and its everyday impacts.

Problem Statement 1: Over-Concentration of Industrial Uses in BVHP/SESF and Lack of Buffers Between Industrial and Residential Uses Create Environmental Injustice

The community is concerned about the concentration of polluting industrial land uses and the need to buffer residential neighborhoods from these uses. Further, related activities such as heavy-duty trucks serving industrial uses are also a concern. BVHP/SESF has the highest amount of PDR zoning in San Francisco, in addition to the M-1 light and M-2 industrial zoning along the southeast waterfront. Between the PDR and M-2 zoning districts, a wide variety of industrial uses are permitted at varying distances from residential uses. Warehouse operations, service yards such as the SFDPW's yard on Cesar Chavez, San Francisco Public Utilities Commission facilities, fleet parking lots, equipment rental lots, and storage lots for towing companies attract diesel trucks and utility vehicles that pass through neighborhoods and can add to traffic in already heavily-trafficked corridors.

The community is concerned that the buffers and transitions between polluting industrial uses, heavily-trafficked areas, and where people live, particularly those living in affordable housing developments, are not adequate and contribute to higher levels of air pollution exposure.

Strategy 1: Further Environmental Justice through Careful Study to Pinpoint Possible Land Use Policy, Zoning Regulation, and Enforcement Protocol Improvements

Strategy Objective: Complete studies to inform policy changes that prioritize people's health, particularly those in closest proximity to sources of air pollution. Evaluate enforcement of land use policies to ensure Planning Code compliance further reduces harm in the community. Seek active participation from the CSC in scoping and completing an evaluation of facilities that generate pollutants of concern and in the development of health-protective land use policies.

No.	Actions
PDR 1.1	Evaluate Which Land Uses May Contribute to Disproportionate Air Pollution Burdens in Residential Neighborhoods: Scope and complete a land use study that identifies the types of facilities that could generate pollutants of concern, including PM, toxic air contaminants, and other pollutants associated with fugitive dust, diesel exhaust, and other sources that are currently allowed within land use categories of PDR zones across San Francisco. Identify the types of facilities that are most likely to contribute to disproportionate burdens on people most sensitive to air pollution and that are in proximity to residential neighborhoods. As part of the study, gather information on clusters of specific uses that generate pollutants of concern to understand the distribution of these allowed land uses across PDR zones citywide. Collaborate with the City and community on the scope, design, and process of the land use study. Use the findings to inform an evaluation of land use policy and zoning regulations (PDR 1.2), targeted approach to non-conforming businesses (PDR 1.3), code compliance (PDR 1.4), and prioritize installation of greening (PDR 2.1). Implementation Lead: Air District Initiation Timeframe: Short Term
PDR 1.2	Consider Whether Zoning Regulations Sufficiently Protect People from Air Pollutants of Concern: Based on the findings of PDR 1.1, conduct a land use assessment of the Planning

	Code to determine if land use types that generate PM, TACs, and other pollutants that contribute to disproportionate burdens require Planning Code amendments. Consider health-protective zoning regulations such as requirements for conditional use permits, new performance or operational standards, or updated minimum distance thresholds. Based on the assessment, develop and propose revised land use regulations as needed. Also consider exploring ways to confirm new businesses locating in PDR zones in the BVHP/SESF are permitted by zoning. Engage community members, local businesses, and other stakeholders in proposed Planning Code amendments or other changes to land use regulations. This action must be completed within 18 months of completing PDR 1.1. Implementation Lead: San Francisco Planning Department (SF Planning) Initiation Timeframe: Medium Term
PDR 1.3	Identify Extent of Non-conforming, Air Pollution-generating Uses: Using information from PDR 1.1 and PDR 1.2, consider targeted parcel research to identify non-conforming uses (those uses that do not conform to today's zoning regulations) in the areas where there are land use types that generate PM, TACs, and other pollutants near high-priority locations used by community members sensitive to air pollution. This targeted approach will enable a focus on the land use types and locations that will have the highest potential to reduce disproportionate air pollution burdens. Also, consider reducing discontinuance timeframes for specific land use types that generate pollutants of concern (i.e., if a current non-conforming business voluntarily closes, a new business in its place must conform to today's zoning). Implementation Lead: San Francisco Planning Department (SF Planning) Initiation Timeframe: Medium Term
PDR 1.4	Enhance Planning Code Compliance: Contingent upon the findings of PDR 1.1 and the assessment of PDR 1.2, enhance Planning Code compliance related to land use types generating PM, toxic air contaminants, and other pollutants contributing to disproportionate air pollution burdens. Consider making informational presentations on Planning Code violations at the Bayview Hunters Point Citizen Advisory Committee, and training agency staff and the public on the 311 Customer Service Center for land use issues, and Planning Code enforcement processes. Implementation Lead: San Francisco Planning Department (SF Planning) Initiation Timeframe: Medium Term

Strategy 1 Metrics

- Land use study complete (yes/no)
- Zoning regulations evaluated (yes/no)
- Targeted parcel research complete to identify non-conforming uses (yes/no)
- Planning Code amendments or other changes to land use regulations made (yes/no)
- Number of cases processed on planning code violations and enforcement processes

Strategy 2: Improve Air Quality through Urban Greening

Strategy Objective: Install and maintain green infrastructure, including vegetative buffers, tree canopies, living walls, and other screening interventions at priority locations along major thoroughfares, freeways, freight routes, and industrial zones adjacent to residences, schools, childcare facilities, parks, and sites where sensitive populations are present. Prioritize implementation in areas where high volumes of vehicle traffic and goods movement activities create conflicts with nearby sensitive land uses to mitigate localized air quality impacts and reduce community exposure.

No.	Actions
PDR 2.1	Prioritize Installation of Vegetative Buffers and Greening that Supports Air Pollution Exposure Reduction Near Pollution-generating Industrial Uses: Building on action PDR 1.1 and working with representatives from the City, the CSC, and potentially other partner agencies, the Air District will identify priority locations where vegetative buffers and green measures may help reduce exposure to pollution-generating industrial uses while also providing additional co-benefits. This will also include identifying the types of measures best suited for these locations and providing recommendations for installation and maintenance. Reference the City's Green Connections Plan to inform priority locations. This action will be completed within 12 months of concluding PDR 1.1. Implementation Lead: Air District Implementation Partners: City and County of San Francisco Initiation Timeframe: Medium Term
PDR 2.2	Prioritize Vegetative Buffers and Greening for Caltrans Rights-of-Way in BVHP/SESF: The Air District will work with representatives from the California Department of Transportation (Caltrans) District 4, the CSC, and potentially other partner agencies to identify, plan, and implement appropriate green infrastructure interventions along Caltrans Rights-of-Way (ROWs) in BVHP/SESF. The Air District will coordinate with the CSC, Caltrans, and partner agencies to identify high-priority locations for vegetative buffers and greening infrastructure, identify suitable greening treatments (e.g., vines for undercrossing areas), and determine appropriate plant establishment and irrigation methods consistent with Caltrans standards. Potential community priorities may include Phelps St., Bacon St., Silver Ave, and the 101/280 interchange, among others. Implementation Lead: Air District Implementation Partner: California Department of Transportation District 4 (Caltrans) Initiation Timeframe: Medium Term
PDR 2.3	Expand Community Greening Funding Resources: With attention to the resource developed in PDR 2.1, the Air District will design a funding strategy to support community greening projects through incentives. Implementation Lead: Air District Initiation Timeframe: Medium Term
PDR 2.4	Identify Institutional Barriers and Challenges to Greening: The Air District will work with the City to evaluate existing guidance, standards, and recommendations for landscaping and urban greening to identify institutional barriers and challenges to expanding and maintaining greening in BVHP/SESF. Based on this evaluation, recommendations to address the barriers and challenges will be catalogued and shared with the City and CSC. Implementation Lead: Air District

	Implementation Partners: City and County of San Francisco Initiation Timeframe: Medium Term
PDR 2.5	Support Community Greening: Support community greening through green infrastructure that promotes air quality as well as stormwater management. Green infrastructure captures stormwater before it enters San Francisco's combined sewer system. Green infrastructure has numerous public benefits, including filtering pollutants before they reach our waterways, reducing flood risk, and urban greening that provides greenspace while helping improve air quality. San Francisco is on track to meet the goal of capturing one billion gallons of stormwater each year using green infrastructure by the year 2050. SFPUC will continue funding and implementation of green infrastructure projects that promote urban greening, stormwater management, and improved air quality (e.g. rain gardens, green roofs, vegetated swales, green bulb-outs, etc.) Lead: San Francisco Public Utilities Commission (Urban Watershed Planning Division) Timeframe: Early Action

Strategy 2 Metrics

- The CSC is engaged in identifying priority locations for vegetative buffers (yes/no)
- Numbers and locations of vegetative buffers and greening projects (a) in development and (b) installed
- Number of engagement touchpoints on urban greening
- Funds invested to support priority urban greening projects (yes/no)
- Evaluation of institutional barriers catalogued and shared (yes/no)
- Green infrastructure projects initiated in BVHP/SESF

Strategy 3. PDR Businesses Innovate and Become Better Neighbors to Bayview Hunters Point and Southeast San Francisco Residents

Strategy Objective: Inform local businesses of air quality concerns in the community to support public health and environmental goals. Support local businesses to voluntarily adopt practices or technologies to address air quality and public health concerns.

No.	Actions
PDR 3.1	Educate Staff and Inform New Facilities that Could Generate Pollutants of Concern Seeking to Locate in the BVHP/SESF About Air Quality Issues: The Air District will explore partnerships with San Francisco Small Business Assistance Center, San Francisco Planning Department, and others to increase staff awareness of the air quality issues in BVHP/SESF related to land use permitting of potential pollution-generating businesses. The Air District will work with partners to develop infographics and other collateral material for businesses about the types of activities that contribute to air pollution. The Air District will work with partners to leverage land use permitting activities as an opportunity to provide information to new facilities that could generate pollutants of concern, including PM, toxic air contaminants, and other pollutants that are located in BVHP/SESF so that they are informed of the air quality issues and gain an understanding of the applicable air quality regulations and requirements. The initial focus will be on community-identified

	businesses that tend to generate impacts such as storage yards, demolition, auto body shops, cannabis manufacturing, etc. The Air District will continue to consult with the CSC to identify other types of businesses that may benefit from information related to air quality issues. This action will leverage the compliance assistance materials and resources developed for P&E 4.7, which seeks to help facilities comply with air quality regulations, and P&E 9.2, which seeks to improve air permitting awareness and requirements for cannabis operations. Implementation Lead: Air District Initiation Timeframe: Medium Term
PDR 3.2	Support Existing Facilities that Voluntarily Adopt Health Protective Practices to Reduce Air Pollution: The Air District will support existing facilities to understand how to make voluntary health protective improvements, such as adopting new technologies or making operational changes to reduce air pollution emissions and/or exposure impacts. The Air District will explore how to collaboratively engage facilities and community members in identifying innovations and opportunities to improve air quality in BVHP/SESF, including directing them to available funding and resources. Note: See P&E 4.1 for enforcement mechanisms for facilities of community concern. Implementation Lead: Air District Initiation Timeframe: Medium Term

Strategy 3 Metrics

- Partnerships with departments and agencies involved in business permitting made (yes/no)
- Collateral material (educational flyers, etc.) developed and distributed (yes/no)
- Number of facilities making voluntary health protective improvements (yes/no)

Strategy 4: Beautification, Inclusive Planning, and Community Programs at the Port of San Francisco

Strategy Objective: Port of San Francisco will help reduce local pollution sources, expand green infrastructure, and improve air quality for surrounding neighborhoods through investments in beautification, living shorelines, community partnerships, and environmentally forward leasing practices.

No.	Actions
PDR 4.1	Continue to Implement Southern Waterfront Beautification Projects: By 2028, complete Southern Waterfront Beautification projects incorporating local native plants, expanding the Port's native plant coverage by 0.5 acre and adding at least 50 native trees at various locations throughout the Southern Waterfront. Implementation Lead: Port of San Francisco (Port) Implementation Partners: Air District, San Francisco Department of Environment (SFE), Department of Public Works (SFDPW) Initiation Timeframe: Short Term
PDR 4.2	Support a Resilient Heron's Head Park and Design New Living Shorelines: Complete revegetation of the Heron's Head Shoreline Resilience Project and continue monitoring and, if necessary, perform adaptive management of the shoreline through 2033. Through the

	Regionally Advancing Living Shorelines Project led by the California Coastal Conservancy, design living shoreline features along the Pier 70 slipways and enhancements to the Pier 94 wetlands. Implementation Lead: Port of San Francisco (Port) Implementation Partners: Literacy for Environmental Justice, California Coastal Conservancy, Golden Gate Bird Alliance Initiation Timeframe: Early Action
PDR 4.3	Promote Inclusive and Transparent Southern Waterfront Planning and Development: Promote inclusive public engagement processes for Southern Waterfront planning and new leasing or uses by ensuring early, active participation, outreach to equity-focused organizations, diverse representation on the Southern Waterfront Community Advisory Committee, and broad distribution of information to community stakeholders. Consistent with the Port's Waterfront Plan, present applicable Southern Waterfront Port leases and development opportunities to the Port Commission and Southern Waterfront Community Advisory Committee for review and comment. Implementation Lead: Port of San Francisco (Port) Implementation Partners: Southern Waterfront Community Advisory Committee Initiation Timeframe: Early Action
PDR 4.4	Port Community Investment and Partnership: Advance the Port's development of a Community Partnership that proactively addresses climate change, builds climate resilience, reduces air emissions, minimizes impacts of goods movement on neighborhoods adjacent to Port jurisdiction, such as the Bayview, and creates robust biodiverse landscapes, while also investing in youth and adult workforce development. Implementation Lead: Port of San Francisco (Port) Implementation Partners: Port Commission, Southern Waterfront Community Advisory Committee Initiation Timeframe: Short Term
PDR 4.5	Promote Environmental and Community Benefits in Port Leases: Ensure new leases for tenants comply with applicable environmental strategies including, but not limited to, the Southern Waterfront Beautification policy, the Environmental Financial Assurance policy, and use limitations that minimize impacts on adjacent residential neighborhoods. Leases should incorporate measures that reduce environmental impacts and enhance community benefits. Ensure that short-term (0- to 10-year) and interim leases in the Southern Waterfront comply with use limitations. Limit the locations of heavy industrial uses, direct such uses away from adjacent residential neighborhoods, and include lease provisions to minimize impacts on neighborhoods. Implementation Lead: Port of San Francisco (Port) Implementation Partners: Southern Waterfront Community Advisory Committee Initiation Timeframe: Early Action

Strategy 4 Metrics

- Native plant coverage increased by 0.5 acres and at least 50 native trees planted in the Southern Waterfront (yes/no)
- 5-year wetland revegetation completed (yes/no)
- Design for living shorelines at Pier 70 slipways and Pier 94 wetlands completed (yes/no)
- Applicable Southern Waterfront Leases presented to the Southern Waterfront Advisory Committee (yes/no)
- Community Investment Impact Partnership Program approved (yes/no)

Chapter 9: Overview of California Air Resources Board's Statewide Actions

Note: This chapter is authored by the California Air Resources Board.

Community-scale air pollution exposure is caused by many factors, including the impacts of multiple pollution sources. Effective solutions require multiple strategies at both the statewide and local levels to deliver new emissions reductions directly within these communities. The California Air Resources Board (CARB) has adopted several comprehensive air quality and climate plans over the last several years to lay out new emissions reduction strategies. These plans include the recent State Strategy for the State Implementation Plan,²⁰⁵ California's 2022 Climate Change Scoping Plan,²⁰⁶ the California Sustainable Freight Action Plan,²⁰⁷ the Short-Lived Climate Pollutants Reduction Strategy,²⁰⁸ and the 2020 Mobile Source Strategy,²⁰⁹ along with a suite of incentive programs. CARB is continuing to develop air quality and climate plans that will further reduce emissions. The Community Air Protection Blueprint 2.0 contains additional strategy implementation guidance to reduce emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden, and reflects the experience and lessons learned from the first years of the program development and implementation.²¹⁰ Blueprint 2.0 further identifies additional actions to reduce the air pollution burden in heavily impacted communities throughout the state. Together, these plans provide a foundation for new actions identified as part of a community emissions reduction program.

This chapter illustrates CARB's role in the community emissions reduction program by broadly describing the regulatory and incentive-based statewide actions CARB has taken to reduce emissions statewide. It also highlights specific actions that address areas of concern identified by the Bayview Hunters Point/Southeast San Francisco (BVHP/SESF) Community Steering Committee (CSC).

Incentive Programs

CARB operates incentive programs that reduce the costs of developing, purchasing, or operating cleaner technologies. The programs help ensure cleaner cars, trucks, equipment, and facilities are operating in local neighborhoods by driving the development of new, cleaner technologies beyond

²⁰⁵ California Air Resources Board, 2022 State Strategy for the State Implementation Plan, September 12, 2022, available at: <https://ww2.arb.ca.gov/resources/documents/2022-state-strategy-state-implementation-plan-2022-state-sip-strategy>.

²⁰⁶ California Air Resources Board, California's 2017 Climate Change Scoping Plan, September 2022, available at: <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents>.

²⁰⁷ California Department of Transportation, California Sustainable Freight Action Plan, July 2016, available at: <https://dot.ca.gov/programs/transportation-planning/freight-planning/california-sustainable-freight-action-plan>.

²⁰⁸ California Air Resources Board, Short-Lived Climate Pollutant Reduction Strategy, March 2017, available at: <https://ww2.arb.ca.gov/resources/documents/slcp-strategy-final>.

²⁰⁹ California Air Resources Board, 2020 Mobile Source Strategy, October 2021, available at: <https://ww2.arb.ca.gov/resources/documents/2020-mobile-source-strategy>.

²¹⁰ California Air Resources Board, Community Air Protection Program Statewide Strategy and Implementation Guidance Blueprint 2.0, October 2023, available at: Community Air Protection Program Blueprint 2.0 | California Air Resources Board.

current legal requirements, and by accelerating their sales and adoption more rapidly than required by law. Specifically, these programs accelerate the introduction of advanced technology vehicles and equipment, advance the turnover of older and higher-emitting vehicles and equipment, and increase access to clean vehicles and transportation in disadvantaged communities and lower-income households.

While CARB is responsible for program oversight, some programs are implemented in partnership with local air districts. Examples of incentive programs implemented under such partnerships include:

- Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program)²¹¹
- Community Air Protection Incentives Program²¹²
- Proposition 1B: Goods Movement Emission Reduction Program²¹³
- Funding Agricultural Replacement Measures for Emission Reductions Program²¹⁴
- Low Carbon Transportation Investments and Air Quality Improvement Program (which includes the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project)²¹⁵

Community Air Protection Incentives

Since 2017, the California State Legislature (Legislature) has appropriated money annually from the Greenhouse Gas Reduction Fund for incentives to support Assembly Bill 617 (AB 617). In advance of initial AB 617 community selection in 2018, the Legislature directed that Community Air Protection (CAP) Incentives appropriated in Fiscal Year (FY) 2017–18 be focused on disadvantaged and low-income communities through the Carl Moyer Program and Proposition 1B Goods Movement Emission Reduction Program (Proposition 1B Program) to provide immediate air quality benefits in heavily impacted communities.

The Legislature appropriated \$1.6 billion in CAP Incentives since 2018. The Legislature initially appropriated incentives to generate immediate air quality benefits in communities most likely to participate in AB 617—primarily disadvantaged communities—as the program began to develop. Additionally, the Board set specific priority population investment targets for the funds: 70% in and benefiting disadvantaged communities and 80% in and benefiting disadvantaged or low-income communities. Through October of 2025, air districts have expended over \$837 million dollars with over \$342 million in AB 617 communities. More broadly, air districts have expended over \$653 million, or

²¹¹ For more information on the Carl Moyer Memorial Air Quality Standards Attainment Program, visit: <https://ww2.arb.ca.gov/our-work/programs/carl-moyer-memorial-air-quality-standards-attainment-program>.

²¹² For more information on the Community Air Protection Incentives, visit: <https://ww3.arb.ca.gov/msprog/cap/capfunds.htm>.

²¹³ For more information on the Proposition 1B: Goods Movement Emission Reduction Program, visit: <https://ww2.arb.ca.gov/our-work/programs/proposition-1b-goods-movement-emission-reduction-program>.

²¹⁴ For more information on the Funding Agricultural Replacement Measures for Emission Reductions Program, visit: <https://ww2.arb.ca.gov/our-work/programs/farmer-program>.

²¹⁵ For more information on the Low Carbon Transportation Investments and Air Quality Improvement Program, visit: <https://ww2.arb.ca.gov/our-work/programs/low-carbon-transportation-investments-and-air-quality-improvement-program>.

roughly 78%, in disadvantaged communities and over \$783 million, or roughly 93%, in disadvantaged and low-income communities.²¹⁶

To expand on initial funding options in the CAP Incentives Program Guidelines,²¹⁷ CARB developed a process for the air districts to fund new projects responsive to community priorities and to expand stationary source incentives. CARB staff worked with the air districts and California Air Pollution Control Officers Association (CAPCOA)²¹⁸ through late 2019 and early 2020 to ensure the process maximized flexibility to support projects requested by community members while simultaneously meeting the need to assess emissions reductions and other benefits. CARB staff published this expanded version of the CAP Incentives Guidelines in October 2020.

The revised guidelines allow air districts to quickly develop and fund projects to reduce emissions from stationary sources and to address those concerns identified and prioritized in each Community Emissions Reduction Plan (CERP) through Community-Identified Projects. As a criterion for CARB's approval of a CERP, air districts must describe the level of support they received from the CSC. Subsequent proposed project plans to implement incentives-based strategies and Community-Identified Projects must also document strong, widespread, and clear community support and include descriptions of community benefits, both those benefits that are quantifiable and those more qualitative in nature. The graphic below illustrates the process by which a project plan is developed and approved. This iterative process allows districts and CARB to account for complicated, unique, or unusual projects and ensure that they will be responsive to community needs.

Community Air Protection Project Plan Review Process

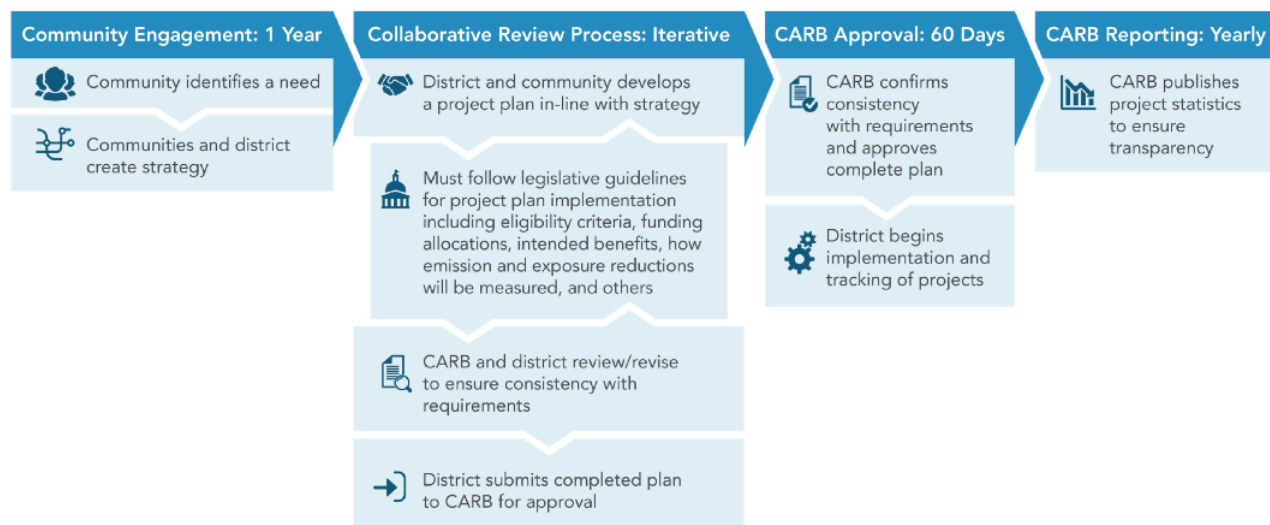


Figure 9-1. Community Air Protection Project Plan Review Process. Source: CARB

²¹⁶ Disadvantaged and low-income communities as defined by Assembly Bill 1550 (Gomez, Chapter 369, Statutes of 2016), read more here: <https://calepa.ca.gov/envjustice/ghginvest/>.

²¹⁷ California Air Resources Board, Community Air Protection Incentives Guidelines - <https://ww2.arb.ca.gov/capp/resources/community-air-protection-incentives-guidelines>.

²¹⁸ CAPCOA is a non-profit association that represents the 35 local air quality agencies in California.

Several innovative incentive projects were initiated in 2022 and funded by CAP Incentives. San Joaquin Valley Air Pollution Control District has numerous Community-Identified Projects totaling over \$75 million, including light-duty vehicle emission repair and replace, EV charging infrastructure, wood stove replacements, urban greening, lawn and garden, and a truck traffic re-routing study. With support from Portside Environmental Justice Neighborhoods' CSC, San Diego Air Pollution Control District proposed, and CARB approved, an electric truck pilot project for Portside to incentivize e-truck purchases as a Community-Identified Project. On behalf of their AB 617 communities, South Coast Air Quality Management District has had numerous Community-Identified Projects approved by CARB, including their AB 617 Clean Technology Truck Loaner Program, which provides opportunities for fleet owners to assess the suitability of zero-emission or near-zero-emission medium- or heavy-duty trucks and supporting infrastructure by allowing them to test drive the cleaner trucks for some time.

In 2023, staff recognized that other communities, particularly communities that have been consistently nominated but not yet selected for participation in the Community Air Protection Program,²¹⁹ could likewise benefit from their air districts implementing these kinds of innovative new projects and began to work with the air districts through a public process to revise the CAP Incentives Program Guidelines to expand eligibility to such projects statewide. Staff published [revised CAP Incentives Guidelines](#) in April 2024, incorporating many of the approved community-identified projects as new chapters eligible for any air district to implement in their most heavily impacted communities.²²⁰ Chapters include incentives for sensitive receptors (e.g., air filtration systems), agency partnerships, vegetative barriers and community greening, emergency diesel generator replacement, paving and bike path projects, dial-a-ride vehicle replacements, alternatives to agricultural burning, and low-dust nut harvester replacements.

Following the April 2024 update to the CAP Incentives Guidelines, staff began phase II updates to the Guidelines. After extensive collaboration with the air districts and CAPCOA and following a public workshop at the end of April, staff published revised CAP Incentives Guidelines in May 2025. The phase II update aligns the Guidelines' administrative requirements with those of the Carl Moyer Program and includes a new chapter on woodsmoke reduction projects patterned off the existing CAPCOA Woodsmoke Reduction Program.

Regulatory Programs

Federal, State, and local air quality agencies all work together to reduce emissions. At the federal level, the U.S. Environmental Protection Agency (U.S. EPA) has primary authority to control emissions from certain mobile sources, including sources that are all or partly under federal jurisdiction (e.g., some farm and construction equipment, aircraft, marine vessels, locomotives), which it shares in some cases with air districts and CARB. The U.S. EPA also establishes ambient air quality standards for some air pollutants. At the state level, CARB is responsible for controlling emissions from mobile sources and consumer products (except where federal law preempts CARB's authority), controlling toxic emissions from mobile and stationary sources, controlling greenhouse gases from mobile and stationary sources, developing fuel specifications, and coordinating state-level air quality planning strategies with other agencies.

²¹⁹ California Air Resources Board, Consistently Nominated Communities - <https://ww2.arb.ca.gov/capp/com/consistently-nominated-communities>.

²²⁰ CARB "Community Air Protection Incentives Guidelines," May 2025. <https://ww2.arb.ca.gov/capp/resources/community-air-protection-incentives-guidelines>.

Regionally, air districts are primarily responsible for controlling emissions from stationary and indirect sources through rules and permitting programs within their regions (except for consumer products in most cases).

CARB regulatory programs are designed to reduce emissions to protect public health, achieve air quality standards, reduce greenhouse gas emissions, and reduce exposure to toxic air contaminants. CARB establishes regulatory requirements for cleaner technologies (both zero and near-zero emissions) and their deployment into the fleet for cleaner fuels and to ensure in-use performance. CARB's regulatory programs are broad—impacting stationary sources, mobile sources, and multiple points within product supply chains from manufacturers to distributors, retailers, and end-users. CARB's regulations affect cars, trucks, ships, off-road equipment, consumer products, fuels, and stationary sources.

One important and relevant regulatory authority of CARB is to adopt measures to reduce emissions of toxic air contaminants from mobile and non-mobile sources, known as Airborne Toxic Control Measures (ATCM).²²¹ These regulatory measures include process requirements, emissions limits, or technology requirements. Additionally, CARB implements the Statewide Air Toxics "Hot Spots" Program²²² to address the health risk from toxic air contaminants at individual facilities across the State. The Air Toxics "Hot Spots" Program includes several components to collect emissions data, identify facilities having localized impacts, ascertain health risks, notify nearby residents of significant risks, and reduce those significant risks to acceptable levels.

Under the Air Toxics "Hot Spots" Program, air districts are required to set a threshold for facilities that pose a significant health risk and prioritize facilities for health risk assessments. Air districts also establish a risk value above which facilities must conduct a risk reduction audit and emissions reduction plan. Facilities must develop these health risk assessments, risk reduction audits, and emission reduction plans. CARB provides technical guidance to support smaller businesses in conducting health risk assessments and developing emissions reduction plans.

Additionally, CARB has pursued enforceable agreements with industry that result in voluntary but enforceable adoption of the cleanest technologies or practices and provide assurance that emissions reductions will be realized. CARB's agreement with the Union Pacific Railroad Company and BNSF Railway Company to accelerate the introduction of cleaner locomotives in the South Coast Air Basin is an example of an enforceable agreement.

The recent actions regarding three of California's Clean Air Act waiver actions taken under the guise of the Congressional Review Act were illegal. As Governor Newsom and former CARB Chair Liane Randolph said, California will defend its rights to protect public health. To address the need for immediate guidance, CARB issued this advisory to auto manufacturers: [Manufacturers Advisory Correspondence \(MAC\) ECCD-2025-03](#).²²³

On June 12, 2025, Governor Newsom announced California is suing the Trump administration over the President's approval of illegal resolutions aiming to undo key parts of the state's clean vehicles program. Below are links to statements from the Governor, Attorney General Rob Bonta, and CARB Chair Liane Randolph:

²²¹ California Health and Safety Code § 39650 et seq.

²²² Assembly Bill 2588, Air Toxics "Hot Spots" Information and Assessment Act, Connelly, Statutes of 1987, California Health and Safety Code § 44300 et seq.

²²³ CARB, "Manufacturers Advisory Correspondence (MAC) ECCD-2025-03: Regulatory Guidance for Engine and Vehicle Certification in California," August 25, 2025, <https://ww2.arb.ca.gov/sites/default/files/2025-08/MAC%20ECCD-2025-08.pdf>

- ['Assault on California continues': Governor Newsom sues Trump over illegal attempt to revoke state's clean air policies](#)²²⁴
- [California Will Not Waver in Defending Itself from Federal Overreach: Attorney General Bonta Sues Trump Administration for Attack on California's Clean Vehicles Program](#)²²⁵
- [CARB Chair Liane Randolph responds to President Trump's approval of illegal resolutions to revoke California's Clean Air Act waivers | California Air Resources Board](#)²²⁶

CARB Actions Related to the BVHP/SESF Community

This section highlights CARB actions that may relate to the BVHP/SESF community actions identified by the CSC. This list should not be interpreted as exhaustive but rather illustrative of some of the major statewide strategies driving emissions reductions in conjunction with those local-level strategies identified in this community's emissions reduction plan. More information on CARB's regulatory process can be found in the Online Resource and Document Index.²²⁷ The list of CARB actions and their anticipated benefits in current AB 617 communities is also available on the Program Community Hub.²²⁸

Recently Adopted CARB Regulations Relevant to the BVHP/SESF Community

In 2017, CARB approved the Incentive Funding to Support Immediate Emissions Reductions.²²⁹ The CAP Incentives Program focuses on implementing advanced technologies to reduce air pollution in California's most impacted communities. In April 2024, CARB updated the program guidelines to expand opportunities for disadvantaged areas by increasing eligibility and introducing new project categories based on five years of community-driven emission reduction efforts.

In 2019, CARB approved the At Berth Amendment.²³⁰ The intent of the At-Berth Control Measure is to ensure that emissions are reduced using a CARB-approved emission control strategy to control PM, NO_x, and Reactive Organic Gases (ROG) emissions from ocean-going vessels at berth, without increasing overall GHG emissions from this Control Measure, and that every ocean-going vessel meets visible emission standards at berth and at anchor. To achieve necessary emission reductions from ocean-going vessels at berth, all parties have responsibilities and requirements under this Control

²²⁴ Office of Governor Gavin Newsom, "'Assault on California Continues': Governor Newsom Sues Trump over Illegal Attempt to Revoke State's Clean Air Policies" (press release), June 12, 2025. <https://www.gov.ca.gov/2025/06/12/assault-on-california-continues-governor-newsom-sues-trump-over-illegal-attempt-to-revoke-states-clean-air-policies/>.

²²⁵ California Department of Justice, Office of the Attorney General, "California Will Not Waver in Defending Itself from Federal Overreach: Attorney General Bonta Sues Trump Administration for Attack on California's Clean Vehicles Program" (press release), June 12, 2025. <https://oag.ca.gov/news/press-releases/california-will-not-waver-defending-itself-federal-overreach-attorney-general>.

²²⁶ CARB, "CARB Chair Liane Randolph Responds to President Trump's Approval of Illegal Resolutions to Revoke California's Clean Air Act Waivers" (press release), June 12, 2025. <https://ww2.arb.ca.gov/news/carb-chair-liane-randolph-responds-president-trumps-approval-illegal-resolutions-revoke>.

²²⁷ Community Air Protection Program Resource and Document Index: <https://ww2.arb.ca.gov/capp/cst/resources-and-documents-index>.

²²⁸ Community Air Protection Program Communities: <https://ww2.arb.ca.gov/capp-communities>.

²²⁹ For more information on Incentive Funding to Support Immediate Emissions Reductions, visit: **Error! Hyperlink reference not valid.**

²³⁰ For more information on the At Berth Amendment, visit: **Error! Hyperlink reference not valid.**

Measure, including, but not limited to, vessel operators, terminal operators, ports, and operators of the CARB-Approved Emission Control Strategy.

In 2019, CARB approved the Advanced Clean Truck Regulation.²³¹ The regulation aims to accelerate the adoption of zero-emission vehicles (ZEVs) in the medium- and heavy-duty truck sector to reduce harmful emissions from on-road sources. Its objectives include achieving 100% zero-emission pickup and delivery by 2040, supporting the transition to zero-emission drayage trucks by 2035, and fostering a large-scale, self-sustaining ZEV market, with a focus on environmental benefits for disadvantaged communities.

In 2020, CARB approved the Heavy-Duty On-Road and Off-Road Engine In-Use Testing as part of the Heavy-Duty In-use Compliance Program.²³² To implement this strategy, CARB will conduct real-world screening of heavy-duty trucks and off-road engines operating in selected communities to target heavy-duty in-use compliance testing.

In 2021, CARB approved the Commercial Harbor Craft Amendment.²³³ The 2022 Commercial Harbor Craft Amendments aim to reduce emissions and protect public health by requiring cleaner combustion and zero-emission technologies for in-use and new vessels. These amendments introduce stricter regulations for vessels, expand requirements to previously exempt categories, and impose reporting and infrastructure obligations on facilities like seaports and marinas, accelerating the deployment of zero-emission and advanced technology.

In 2021, CARB approved the Clean Miles Standard.²³⁴ In May 2021, CARB adopted the Clean Miles Standard to reduce emissions from transportation network companies (TNCs) like Uber and Lyft, addressing concerns over increased vehicle miles traveled (VMT), congestion, and emissions. The regulation aligns with California's Advanced Clean Cars II regulations and the SB 375 program, which promotes regional greenhouse gas reductions through land use and transportation planning.

In 2021, CARB approved the Consumer Products Standards.²³⁵ The 2022 Consumer Products Standard Amendments lower VOC standards for various personal care products, extend the ban on certain toxic air contaminants and high global warming potential compounds, and eliminate the Two Percent Fragrance Exemption for most consumer products. They also promote the use of innovative propellants in selected products and enhance regulatory measures to reduce emissions and improve program transparency.

In 2021, CARB approved the Clean Truck Check program.²³⁶ The program combines periodic vehicle testing requirements with other emissions monitoring techniques and expanded enforcement strategies to identify vehicles in need of emissions-related repairs and ensure any needed repairs are performed. When fully implemented, the program will provide significant reductions in smog-forming and carcinogenic toxic air pollution necessary to achieve federal air quality mandates and healthy air in California's communities.

²³¹ For more information on the Advanced Clean Truck Regulation, visit: **Error! Hyperlink reference not valid.**

²³² For more information on Heavy-Duty On-Road and Off-Road Engine In-Use Testing, visit: **Error! Hyperlink reference not valid.**

²³³ For more information on Commercial Harbor Craft Amendment, visit: **Error! Hyperlink reference not valid.**

²³⁴ For more information on Clean Miles Standard, visit: **Error! Hyperlink reference not valid.**

²³⁵ For more information on Consumer Products Standards, visit: **Error! Hyperlink reference not valid.**

²³⁶ For more information on the Clean Truck Check Program, visit: **Error! Hyperlink reference not valid.**

In 2021, CARB approved the On-Board Diagnostic System Requirements (OBD II & HD OBD).²³⁷ CARB proposed updates to California's On-Board Diagnostic (OBD) regulations for various vehicle types to improve emission and performance monitoring. These revisions introduce stricter standards, modified phase-in schedules, and new reporting requirements, while addressing stakeholder feedback and balancing impacts on manufacturers and air quality objectives.

In 2021, CARB approved the Small Off-Road Engine Amendment.²³⁸ CARB amended regulations for small off-road engines to transition toward zero-emission equipment by 2035, setting stricter standards by 2024 and achieving zero emissions for generators by 2028. This initiative aims to reduce pollution from small off-road engines and improve public health, while aligning with California's climate and air quality goals.

In 2021, CARB approved the Amendments to the ATCM for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, and Facilities Where TRUs Operate.²³⁹ CARB's amendments to the TRU ATCM require transitioning diesel-powered truck TRUs to zero-emission technology, introducing stricter PM standards, and using refrigerants with lower global warming potential. Facility and TRU owners must comply with new reporting, labeling, and fleet turnover requirements, ensuring all truck TRUs in California are zero-emission by 2029.

In 2022, CARB approved the Advanced Clean Car 2 regulations.²⁴⁰ The Advanced Clean Cars II regulations will reduce emissions from light-duty vehicles between 2026 and 2035 by increasing the number of zero-emission vehicles and strengthening standards for gasoline-powered cars. These measures support California's goal of having all new passenger vehicles be zero-emission by 2035, as outlined in Governor Newsom's 2020 Executive Order.

In 2022, CARB approved the Advanced Clean Fleets (ACF) regulation.²⁴¹ The ACF regulation aims to reduce emissions from California's truck and bus fleets by introducing ZEV technologies, requiring targeted fleets to phase in ZEVs and manufacturers to produce only ZEV trucks starting in 2036. This regulation is expected to introduce 1.69 million ZEVs by 2050, improve air quality, and provide \$26.5 billion in health benefits while saving fleet owners an estimated \$48 billion.

In 2022, CARB approved the In-Use Locomotive Regulation.²⁴² The In-Use Locomotive Regulation will achieve emission reductions from diesel-powered locomotives and increase the use of zero-emission technology. The regulation will help meet California's public health, air quality, and climate goals by reducing criteria pollutants, toxic air contaminants, and greenhouse gas emissions for locomotives in-use.

²³⁷ For more information on On-Board Diagnostic System Requirements (OBD II & HD OBD), visit: **Error! Hyperlink reference not valid.**

²³⁸ For more information on the Small Off-Road Engine Amendment, visit: **Error! Hyperlink reference not valid.**

²³⁹ For more information on Amendments to the Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, and Facilities Where TRUs Operate, visit: **Error! Hyperlink reference not valid.**

²⁴⁰ For more information on Advanced Clean Car 2, visit: **Error! Hyperlink reference not valid.**

²⁴¹ For more information on Advanced Clean Fleets, visit: **Error! Hyperlink reference not valid.**

²⁴² For more information on the In-Use Locomotive Regulation, visit: **Error! Hyperlink reference not valid.**

In 2022, CARB approved the In-Use Off-Road Diesel Fueled Fleets Amendment.²⁴³ The amendments to California's In-Use Off-Road Diesel-Fueled Fleets Regulation, effective January 2024, accelerate the phase-out of older diesel vehicles and enforce stricter emission controls. These changes aim to reduce harmful pollutants, improve air quality, and support environmental justice, with funding available for cleaner technology.

In 2022, CARB approved the National Locomotives Standards Petition.²⁴⁴ In 2022, the U.S. EPA agreed to review and potentially strengthen locomotive emission standards in response to CARB's 2017 petition. The EPA aims to phase out older, high-emission locomotives and support zero-emission technology, with a focus on reducing pollution in disadvantaged communities.

In 2022, CARB approved the Off-Road Diesel Engine Emission Standards.²⁴⁵ The Regulation for In-Use Off-Road Diesel-Fueled Fleets reduces emissions by requiring fleet owners to phase out older diesel engines and adopt cleaner technologies. It enforces reporting and compliance deadlines based on fleet size, aiming to cut harmful pollutants and improve air quality, especially in impacted communities.

In 2023, CARB approved the Proposed Amendments to the Hexavalent Chromium ATCM for Chrome Plating and Chromic Acid Anodizing Operations.²⁴⁶ CARB's amendments to the Airborne Toxic Control Measure for chromium electroplating aim to phase out hexavalent chromium, a known carcinogen, by 2039. The amendments introduce alternative technologies, stricter emission controls, and prioritize health benefits for disadvantaged communities while addressing economic impacts.

In 2023, CARB approved the Heavy-Duty "Omnibus" Low Nitrogen Oxides (NO_x) Rulemaking.²⁴⁷ In August 2020, CARB approved stricter NO_x and particulate matter (PM) emission standards for heavy-duty vehicles, along with extending warranty and useful life requirements to ensure long-term emission control effectiveness. The amendments also introduced new compliance programs, incentives for zero-emission vehicles, and clarified regulations to better align with federal standards and support California's emissions reduction goals.

In 2023, CARB approved the Oil and Gas Amendment.²⁴⁸ The proposed amendments to the Oil and Gas Methane Regulation aim to enhance methane emissions reduction by transitioning to zero-emission pneumatics, banning associated gas venting, and tightening leak detection thresholds. Additional requirements include stricter reporting, compliance plans, and revisiting the heavy oil exemption for leak detection and repair.

In 2024, CARB approved the Zero Emission Off-Road Forklift Regulation.²⁴⁹ CARB's Zero-Emission Forklift regulation phases out gasoline and propane forklifts by 2026, replacing them with battery-electric and fuel-cell options to reduce pollutants like NO_x and fine particulate matter (PM_{2.5}). This initiative supports

²⁴³ For more information on the In-Use Off-Road Diesel Fueled Fleets Amendment, visit: **Error! Hyperlink reference not valid.**

²⁴⁴ For more information on the National Locomotives Standards Petition, visit: **Error! Hyperlink reference not valid.**

²⁴⁵ For more information on the Off-Road Diesel Engine Emission Standards, visit: **Error! Hyperlink reference not valid.**

²⁴⁶ For more information on Proposed Amendments to the Hexavalent Chromium Airborne Toxic Control Measure (ATCM) for Chrome Plating and Chromic Acid Anodizing Operations, visit: **Error! Hyperlink reference not valid.**

²⁴⁷ For more information on Heavy-Duty "Omnibus" Low NO_x Rulemaking, visit: **Error! Hyperlink reference not valid.**

²⁴⁸ For more information on Oil and Gas Amendment, visit: <https://ww2.arb.ca.gov/our-work/programs/oil-and-natural-gas-production-processing-and-storage>.

²⁴⁹ For more information on Zero Emission Off-Road Forklift Regulation, visit: **Error! Hyperlink reference not valid.**

California's climate goals, offering health benefits and economic savings while reducing emissions through 2043.

Future and Upcoming CARB Rulemakings

- Cargo Handling Equipment Regulation to Transition to Zero-Emissions: CARB plans to amend the [Cargo Handling Equipment regulation](#) to require zero-emissions technology at seaports and railyards, replacing diesel and other combustion-powered equipment like yard trucks and forklifts.²⁵⁰ The amendments may include an implementation schedule for new equipment and infrastructure, prioritizing early adoption in communities most impacted by air pollution.
- California Clean Construction: CARB's [voluntary program](#) would encourage fleets to adopt advanced technology and ZEVs beyond regulatory requirements, using a rating system to reflect their progress. The program would offer incentives such as access to jobs, public recognition, and marketing opportunities, motivating fleets to exceed standard practices as zero-emission technology becomes more available.²⁵¹
- Targeted Enforcement Administrative Modifications: This strategy will amend the CARB [Composite Wood Products ATCM](#), approved in 2007.²⁵² Composite Wood Products ATCM established formaldehyde emission standards for three types of composite wood products (hardwood plywood, particleboard, and medium-density fiberboard) and requires that all consumer goods that contain such materials (e.g., flooring, cabinets, furniture) destined for sale in California must comply with the Composite Wood Products ATCM.
- Phased Advanced Clean Equipment (PACE) Rule: CARB plans to [propose a regulation](#) in 2027 requiring off-road equipment manufacturers to sell a percentage of zero-emission equipment annually.²⁵³ This measure aims to increase zero-emission options in the off-road sector and support initiatives that encourage or mandate the adoption of cleaner technologies.
- Spark-Ignition Marine Engine Standards: The goal of this measure is to reduce emissions from new spark-ignition marine engines by adopting [more stringent exhaust standards](#) for outboard and personal watercraft, which currently do not use catalyst control technologies.²⁵⁴
- Off-Road New Diesel Engine Emission Standards (Tier 5): CARB is proposing [Tier 5 amendments](#) to significantly tighten emission standards for off-road diesel engines, targeting a 90% reduction in NO_x and 75% in PM, while introducing CO₂ standards for the first time.²⁵⁵ These changes aim to improve air quality, with implementation set for 2029 and enhanced compliance measures.

²⁵⁰ CARB, "Cargo Handling Equipment," accessed August 5, 2026, <https://ww2.arb.ca.gov/our-work/programs/cargo-handling-equipment>.

²⁵¹ CARB, "California Clean Construction Program," accessed August 5, 2026, <https://ww2.arb.ca.gov/california-clean-construction-program>.

²⁵² CARB, "Composite Wood Products Airborne Toxic Control Measure," accessed August 5, 2026, <https://ww2.arb.ca.gov/our-work/programs/composite-wood-products-program>.

²⁵³ CARB, "Potential Phased Advanced Clean Equipment (PACE) Regulation," accessed August 5, 2026, <https://ww2.arb.ca.gov/our-work/programs/potential-phased-advanced-clean-equipment-pace-regulation>.

²⁵⁴ CARB, "Spark-Ignition Marine Watercraft," accessed August 5, 2026, <https://ww2.arb.ca.gov/our-work/programs/spark-ignition-marine-watercraft>.

²⁵⁵ CARB, "Potential Amendments to the Off-Road New Diesel Engine Emission Standards: Tier 5 Criteria Pollutants and CO₂ Standards," accessed August 5, 2026, <https://ww2.arb.ca.gov/our-work/programs/tier5/about>.

- Transport Refrigeration Unit Regulation Part 2: CARB's [new regulation](#) for TRUs aims to reduce emissions by transitioning diesel-powered TRUs to zero-emission technology.²⁵⁶ The regulation focuses on improving public health near distribution centers and meeting California's climate goals, with new standards being implemented in phases.
- Zero-Emission Standard for Space and Water Heaters: CARB's [Zero-Emission Space and Water Heater Standards](#) aim to reduce greenhouse gas emissions and NO_x from building-related sources, supporting California's climate and air quality goals.²⁵⁷ The standards focus on transitioning to zero-emission technologies while ensuring affordability, equity, and health benefits for communities statewide.
- aim to reduce greenhouse gas emissions and NO_x from building-related sources, supporting California's climate and air quality goals.²⁵⁸ The standards focus on transitioning to zero-emission technologies while ensuring affordability, equity, and health benefits for communities statewide

²⁵⁶ CARB, "New Transport Refrigeration Unit Regulation in Development," accessed August 5, 2026, <https://ww2.arb.ca.gov/our-work/programs/transport-refrigeration-unit/new-transport-refrigeration-unit-regulation>.

²⁵⁷ CARB, "Clean Space and Water Heater Standards," accessed August 5, 2026, <https://ww2.arb.ca.gov/our-work/programs/clean-space-and-water-heater-standards>.

²⁵⁸ CARB, "Clean Space and Water Heater Standards," accessed August 5, 2026, <https://ww2.arb.ca.gov/our-work/programs/clean-space-and-water-heater-standards>.

Chapter 10: Implementation and Reporting

Achieving the goals outlined in the Bayview Hunters Point/Southeast San Francisco (BVHP/SESF) Community Emissions Reduction Plan (CERP) will require a strong commitment to both sustained implementation and consistent reporting on progress, including successes and challenges. This chapter outlines the strategy for implementing the CERP and providing updates to the Community Steering Committee (CSC), Air District Board of Directors, and the California Air Resources Board (CARB).

The CERP has been designed to be implemented within a five-year horizon, starting from its adoption by the Air District Board of Directors. It also includes a 10-year horizon for continued tracking to ensure sustained progress toward the CERP-level Goals that will be achieved through the strategies and actions described in Chapter 8: Focus Areas, Strategies, and Actions, in alignment with the CERP's Vision and Principles provided in Chapter 3: Vision, Principles, and Goals.

Government Collaboration and Agency Roles

Successful implementation will require coordination among multiple government entities. The Air District will facilitate the inter-agency collaboration necessary to advance the CERP. Key government implementation partners include CARB and the City and County of San Francisco (City), including, but not limited to, San Francisco Department of Public Health (SFDPH), San Francisco Municipal Transportation Agency (SFMTA), San Francisco Planning Department (SF Planning), San Francisco Environment Department (SFE), San Francisco Department of Public Works (SFDPW), and the Port of San Francisco. Other implementing agencies include the San Francisco County Transportation Authority (SFCTA), U.S. Environmental Protection Agency (U.S. EPA), the State Department of Toxic Substances Control (DTSC), and the U.S. Department of Navy. This section details the authority and responsibilities of each entity designated as a lead in implementing the CERP's actions.

As implementation progresses, new government partners may be identified and engaged.

Air District

The California Legislature created the Air District in 1955 as the first regional air pollution control agency in the country. The Air District is responsible for regulating stationary sources of air pollution in the nine counties that surround the San Francisco Bay Area: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma counties.

The Air District passes and enforces a wide variety of regulations on industries, businesses, and activities to ensure air pollution is minimized. The Air District also distributes over \$150 million in state and federal incentive funding every year to reduce air pollution from mobile and stationary sources, such as cars, trucks, school buses, port and construction equipment, lawn and garden equipment, and wood-burning stoves and fireplaces. This core work of the Air District is foundational to the region's efforts to reduce air pollution, protect people's health, and mitigate climate change.

The Air District will play a central role in implementing the CERP alongside the BVHP/SESF CSC, CARB, and local government partners in San Francisco. The Air District is uniquely positioned to bring together those responsible for carrying out the CERP. It is committed to providing the necessary resources for successful implementation, which includes efforts such as strengthening regulations and improving enforcement.

City and County of San Francisco

City departments participated in the process of developing the strategies and actions presented in the CERP, working with the BVHP/SESF CSC, the Air District, and other city agency partners. The participating departments recognize the importance of this collective investment and will pursue these actions to help meet the overall emissions reduction goals of the CERP. Implementing the CERP will require collaboration with and between multiple City departments. In addition, advancing the CERP strategies and actions may require additional staff and financial resources, often from regional, state, or federal sources, which may influence the timeline of delivery or outcome of any of the actions where City departments are the implementation lead.

The City holds authority over land use decisions through its Planning Department (SF Planning) and the Port of San Francisco, and over local roads, sidewalks, and biking and rolling infrastructure via the SFMTA in partnership with the San Francisco Department of Public Works. SF Planning is responsible for creating long-range equitable planning (i.e. strategic plans and policies for housing, transportation, urban design, land use, and sustainability), permit and development review (i.e., reviewing all development applications to ensure compliance with the San Francisco Planning Code, General Plan, State Law, and relevant design guidelines), and historic preservation of significant historical and cultural resources. SFMTA has oversight over the Municipal Railway (Muni) public transit, as well as bicycling, paratransit, parking, traffic, walking, and taxis. The San Francisco Board of Supervisors exercises this authority by passing ordinances and policies governing San Francisco, as well as making final decisions on planning, land use, and development projects.

San Francisco Department of Building Inspection (DBI), under the direction and management of the seven-member citizen Building Inspection Commission, oversees the building and life safety of San Francisco's 200,000 commercial and residential buildings. DBI's core services include reviewing plans and issuing permits, inspecting and verifying construction safety, responding to complaints and enforcing codes.

San Francisco Department of Public Works (SFDPW) designs and manages the construction of civic buildings and streets, maintains and greens the public right of way, and ensures civic buildings are clean and functional. The department also provides job training, removes hazards, paves streets, repairs bridges and public stairways, and improves accessibility.

The San Francisco Environment Department (SFE) manages San Francisco's climate and environmental goals and works on associated policies and programs, including energy efficiency initiatives.

The San Francisco Department of Public Health (SFDPH) protects and promotes the health of all San Franciscans through two main divisions: the San Francisco Health Network which provides direct medical care, and Population Health which addresses public health needs of the residents of San Francisco.

San Francisco County Transportation Authority (SFCTA) plans, funds, and delivers transportation projects to improve travel choices for residents, commuters, and visitors throughout San Francisco. SFCTA monitors travel activity on city streets and adopt plans for reducing traffic congestion and leads long-range planning to establish San Francisco's priorities for Plan Bay Area, the region's transportation, land-use, and housing plan.

The Port of San Francisco oversees 7.5 miles of waterfront lands—from Aquatic Park in Fisherman's Wharf to Heron's Head Park near India Basin—in public trust for the use and enjoyment of the people of California. The operating portfolio of the Port of San Francisco is composed of ground, commercial, retail, office, industrial and maritime industrial leases, including many internationally recognized landmarks. The Port Commission is responsible for the waterfront lands that Port of San Francisco develops, markets, leases, administers, manages and maintains. The Commission is a five-member board appointed for four-year term by the Mayor and confirmed by the Board of Supervisors.

California Air Resources Board

CARB is the lead agency for climate change programs and oversees all air pollution control efforts in California to attain and maintain health-based air quality standards, which includes regulating emissions from mobile sources (such as vehicles) and consumer products. While the U.S. EPA sets nationwide air quality and emissions standards, CARB addresses California's unique air quality challenges by establishing stricter emissions standards for a variety of pollution sources, including vehicles, fuels, and consumer products.

CARB's mission is to protect public health, welfare, and the environment by reducing air pollutants, while balancing the economic impact of these efforts. The agency also works to safeguard the public from the harmful effects of air pollution and develop programs to combat climate change. Initiatives include requirements for clean cars and fuels, as well as other innovative solutions to reduce greenhouse gas emissions.

Other Government Partners

Other government partners implementing actions within the CERP include the U.S. Environmental Protection Agency (U.S. EPA), the United States Navy (U.S. Navy) and the California Department of Toxic Substances Control (DTSC). The mission of the U.S. EPA is to protect human health and to safeguard the natural environment by developing and enforcing regulations, providing grants, studying environmental issues, sponsoring partnerships, teaching people about the environment and publishing information. The U.S. Navy is the naval warfare service branch of the United States Armed Forces and operates numerous major installations across the country, including California. DTSC regulates more than 100,000 entities across California to prevent the release of hazardous waste, clean up contamination, and ensure hazardous waste is handled safely.

Community Partnerships

Successful implementation will require close collaboration between the Air District, CSC, community Co-Lead, and others. These community partners will play a vital role in ensuring accountability and transparency while helping to prioritize and advance implementation of the CERP.

Community Steering Committee (CSC)

The CSC will play a vital role in implementing the CERP by guiding efforts to achieve CERP-level Goals and priorities aligned with the plan's Vision and Principles as provided in Chapter 3: Vision, Principles, and Goals.

Throughout the implementation process, the CSC will provide input and participate in action implementation, help hold agency partners accountable, and review progress to ensure the ambitions of the CERP are being met. Clear and effective communication between the CSC and Air District will be critical to ensure priorities are established early and that action implementation is in line with the community's goals.

As implementation of the CERP progresses and actions are refined, ad-hoc working groups or subcommittees may be formed as needed, depending on available resources. The formation of these groups will depend on the strategy and action priorities, availability of stipend funding, the capacity of staff and partner organizations, as well as community interest and availability.

Co-Leads

The Marie Harrison Community Foundation (MHCF) and the Air District will continue to serve as Co-Leads once the CERP is adopted, supporting the CSC as they engage with CERP implementation. The Co-Leads will be responsible for providing background materials to support CSC member participation and preparation for meetings. Co-Leads will also manage committee membership, including filling vacancies, and coordinate the development of meeting agendas in collaboration with the CSC Chairs. MHCF will also support outreach and education during action implementation, while the Air District will continue to provide administrative support to the CSC.

Strategic Plan Working Groups

As part of implementing its [2024–2029 Strategic Plan](#) (Strategic Plan), the Air District will convene community-centered working groups on a range of topics that align with CERP-level goals.²⁵⁹ These working groups will bring together diverse stakeholders to help shape policies, programs, and initiatives that reflect community needs and lived experience.

Opportunities to join specific working groups will arise over time as different components of the Strategic Plan move forward. The Air District is committed to early and ongoing engagement with BVHP/SESF and other AB 617 communities throughout this process.

Community Engagement During Implementation

Throughout implementation, the CSC will continue its role of helping guide community engagement efforts, strengthening the relationships and partnerships with community members, business owners, and other stakeholders established during the planning phase to support implementation of the strategies and actions. The Air District, in collaboration with other partners, may also hold periodic listening sessions and community workshops to build community awareness, share progress, and connect the community to resources and services that address immediate needs. This will provide an opportunity to hear community concerns, gather feedback, and make necessary adjustments to improve progress towards strategy and action implementation.

Certain actions in the CERP call for engagement and outreach in BVHP/SESF to address a range of issues of importance to the CSC. For example, an action under focus area **Reduction of PM, Dust, and Construction Impacts (PM&D 6.1)** calls for the Air District to collaborate with the CSC to create an inventory of unpaved and unaccepted poorly maintained streets in BVHP/SESF. In addition, an action under focus area **Traffic and Transportation (T&T 1.1)** requires the SFCTA to collaborate with the CSC, as well as other community members, to identify priority locations for reducing truck movement in BVHP/SESF.

Policy Alignment

This section explains how the implementation of the CERP will align with the Air District's Strategic Plan and with the policies of existing, locally adopted plans from various government agencies. By ensuring alignment, the implementation process will build on established frameworks, promote consistency, and avoid duplication of efforts, ultimately strengthening the impact of the CERP.

²⁵⁹ Bay Area Air District, "2024–2029 Strategic Plan" (web page), 2024. <https://strategicplan.baaqmd.gov/>

Air District Strategic Plan

In Fall 2023, the Air District began developing its Strategic Plan through collaboration with community leaders, staff, the Board of Directors, and partners. After identifying key strengths and areas for improvement, the Board of Directors approved the Strategic Plan on September 4, 2024.

During the five-year Strategic Plan implementation timeframe, the Air District will transform its workforce, operations, programs, and community engagement efforts to improve air quality, build trust, and lead with equity-centered environmental stewardship.

A key consideration for developing strategies and actions in this CERP is to ensure alignment with the Strategic Plan. This alignment offers several benefits, with two key advantages being:

1. **Efficient Use of Resources:** Aligning with the Air District's broader organizational priorities allows for more targeted and effective allocation of resources, including funding, staff capacity, and technical expertise. This approach minimizes duplication across initiatives and ensures focus on areas with the greatest potential for impact.
2. **Greater Coordination:** Aligning with the Strategic Plan ensures implementation of BVHP/SESF strategies and actions is part of a larger, unified effort. This fosters collaboration across the Air District and with community partners, leading to a more coordinated approach in addressing the air quality and environmental justice issues identified in the CERP.

Locally Adopted Plans

Strategy implementation also involves aligning with existing plans adopted by multiple government agencies. Rather than duplicating efforts, during CERP implementation, the CSC can proactively track implementation of adopted policies that address issues important to the CSC. The following local plans include policies for which the CSC may want to provide input to the appropriate City department(s):

- [Hunters Point Shipyard Area Plan \(Adopted: 2010\)](#)²⁶⁰
- [Candlestick Point Subarea Plan \(Adopted: 2010\)](#)²⁶¹
- [San Francisco General Plan, Air Quality Element \(Amended: 2023\)](#)²⁶²
- [San Francisco General Plan, Community Facilities Element \(Amended: 2011\)](#)²⁶³
- [San Francisco General Plan, Recreation and Open Space Element \(Amended: 2023\)](#)²⁶⁴
- [San Francisco General Plan, Environmental Protection Element \(Amended: 2023\)](#)²⁶⁵

²⁶⁰ SF Planning, "Hunters Point Shipyard Area Plan | San Francisco General Plan," adopted June 2010, amended July 2018. https://generalplan.sfplanning.org/Hunters_Point_Shipyard.htm

²⁶¹ SF Planning, "Candlestick Point Subarea Plan | San Francisco General Plan," 2010 adopted June 2010, amended July 2018. https://generalplan.sfplanning.org/Candlestick_Point_Subarea.htm

²⁶² SF Planning, "Air Quality Element | San Francisco General Plan," amended January 2023. https://generalplan.sfplanning.org/l10_Air_Quality.htm

²⁶³ SF Planning, "Community Facilities Element | San Francisco General Plan," adopted September 1990, amended June 2011. https://generalplan.sfplanning.org/l7_Community_Facilities.htm

²⁶⁴ SF Planning, "General Plan, Recreation and Open Space Element," adopted July 2014, amended July 2023. https://generalplan.sfplanning.org/l3_Recreation_and_Open_Space.htm

²⁶⁵ SF Planning, "Environmental Protection Element | San Francisco General Plan," adopted August 1995, amended January 2023. https://generalplan.sfplanning.org/l6_Environmental_Protection.htm

- [San Francisco General Plan, Safety and Resilience Element \(Adopted: 2023\)²⁶⁶](#)
- [San Francisco General Plan, Environmental Justice Framework \(Adopted: 2023\)²⁶⁷](#)
- [San Francisco Urban Forest Master Plan \(Completed: 2014\)²⁶⁸](#)
- [San Francisco Climate Action Plan - Draft \(Updated: 2026\)²⁶⁹](#)
- [San Francisco Hazard and Climate Resilience Plan \(Adopted: 2025\)²⁷⁰](#)
- [City and County of San Francisco Emergency Response Plan \(Revised: 2017\)²⁷¹](#)
- [Bayview Community Based Transportation Plan | SFMTA \(Adopted: 2020\)²⁷²](#)

Implementation Mechanisms

This section outlines the various mechanisms used to implement actions included in the CERP to reduce emissions and exposure in BVHP/SESF.

Incentives

The Air District's incentive programs aim to reduce pollution and exposure to pollution in the Bay Area. These programs fund voluntary projects that replace older, high-emission vehicles and mobile equipment with cleaner alternatives and that install clean infrastructure for mobile sources, as well as provide other localized benefits through programs and projects in communities. Other local, state, and federal incentives can also play a significant role in implementing air quality improvement actions.

Rule Development

California law outlines the process for creating air quality regulations. CARB and local air districts develop and implement rules to improve air quality and public health. Examples of rule-based actions include evaluating opportunities to strengthen rules, developing rule revisions and new rules, and improving accessibility and transparency of communications regarding rules.

²⁶⁶ SF Planning, "Safety and Resilience Element | San Francisco General Plan," adopted December 2022. https://generalplan.sfplanning.org/l8_Safety_and_Resilience.htm

²⁶⁷ SF Planning, "Environmental Justice Framework | San Francisco General Plan," adopted May 2023. https://generalplan.sfplanning.org/Environmental_Justice_Framework.htm;

²⁶⁸ SF Planning, SFDPPW, Urban Forestry Council, Friends of the Urban Forest, "San Francisco Urban Forest Plan," 2014. https://sfplanning.s3.amazonaws.com/default/files/plans-and-programs/planning-for-the-city/urban-forest-plan/Urban_Forest_Plan_Final-092314WEB.pdf

²⁶⁹ SFE, "San Francisco's Climate Action Plan 2026," April 2026. <https://www.sfenvironment.org/climateplan>

²⁷⁰ City and County of San Francisco Office of Resilience and Capital Planning, "Hazards and Climate Resilience Plan," August 2025. <https://onesanfrancisco.org/hazards-and-climate-resilience-plan>

²⁷¹ City and County of San Francisco, "Emergency Response Plan," April 2008; updated May 2017. https://media.api.sf.gov/documents/CCSF_Emergency_Response_Plan_April_2008_-_updated_May_2017_Posted.pdf.

²⁷² SFMTA, "Bayview Community Based Transportation Plan," adopted February 18, 2020. <https://www.sfmta.com/projects/bayview-community-based-transportation-plan>.

Enforcement

Several agencies oversee enforcement in BVHP/SESF. CARB enforces statewide rules and regulations related to mobile sources such as those ensuring heavy-duty truck engines meet the latest clean-air standards. The Air District enforces rules and regulations related to stationary sources, for example, industrial facilities or wood burning devices. The City enforces local zoning, planning, and traffic regulations, such as helping keep transport trucks on designated routes. Under an environmental justice framework, communities are essential partners to enforcement agencies in ensuring that rules and regulations are enforced effectively, promptly, and equitably.

Engineering and Permitting

In California, stationary sources such as factories may be required to obtain permits that specify allowable air pollution emission limits. The Air District has the authority to issue these permits. Additionally, land use entitlements are issued by SF Planning, and building permits are issued by DBI.

SFDPH oversees hazardous materials permits. Various state agencies, including the Department of Toxic Substances Control (DTSC) and the California Environmental Protection Agency (CalEPA), permit industrial activities involving hazardous materials.

Zoning and Land Use

Zoning and land use policies are mechanisms used by local governments (e.g., City and County of San Francisco) to regulate how land can be developed and used in different areas of a city or county. Zoning typically divides land into districts—such as residential, commercial, industrial, or mixed-use—with rules about what types of buildings and activities are allowed in each zone. These policy mechanisms help shape the built environment and can be used to protect public health and the environment. When applied thoughtfully, zoning and land use policies can improve air quality by creating buffer zones between pollution sources and sensitive land uses like homes, schools, and parks; restricting the expansion of polluting industries in overburdened neighborhoods; and encouraging development patterns that reduce vehicle use and emissions.

Monitoring

Air monitoring provides information on levels of different pollutants in the outdoor air we breathe in our communities. Air monitoring can identify air quality issues and inform efforts to reduce emissions and limit exposure. There are several methods for monitoring air quality, each with different purposes, strengths, and limitations. For example, stationary monitors (fixed in one location) can provide continuous data useful for comparison with air quality standards and for evaluating changes in air quality over time. In contrast, shorter-term monitoring projects using other types of approaches, such as mobile monitors (mounted on vehicles), can offer more targeted information, such as data on the air quality impacts of a specific facility or other community air quality concerns.

Education

Ongoing education efforts will focus on two key areas: equipping the community with technical knowledge related to CERP implementation and informing agencies about on-the-ground conditions in the BVHP/SESF community.

Research and Further Study

Further research, data analysis, and additional studies will be necessary to deepen the understanding of critical topics and to guide strategic decision-making.

Tracking CERP Implementation Progress

This section outlines the processes for creating the Annual Implementation Plan and Annual Progress Reports, key tools for tracking and reporting on CERP progress. The Implementation Plan will serve as an annual work plan, while the Progress Report will document progress, refine strategies, assess needs, and highlight successes. Together, these tools will support the continuous improvement and successful implementation of the CERP.

Annual Implementation Plan

Each year, the Air District and the CSC will collaborate to create an Implementation Plan that outlines priority topics for the upcoming year. For each of these topics, the plan will identify related strategies and actions. This plan will be developed in coordination with relevant implementers from the Air District, local government agencies, and other implementing partners. The process will begin with an annual call to gather information on priorities for the upcoming year. This will help ensure that the implementation of CERP strategies and actions align with planned initiatives.

The Implementation Plan will serve as an annual work plan. CSC meetings will be agendaized to align with the CSC priorities in the Implementation Plan. The Implementation Plan is a coordination tool; it is not expected to require significant additional resources beyond those already allocated for CERP implementation.

As needed, the CSC may identify community-level implementation opportunities—such as education, resource development, and engagement activities—to be included in the plan.

Starting in the second year of implementation, the development of each annual plan will begin with an evaluation of the previous year's activities. This evaluation will help identify and address any challenges that may be hindering progress toward achieving CERP-level Goals.

Annual Progress Reports

The CERP is a dynamic document that will be updated as needed to reflect progress and evolving priorities. The annual progress reports serve as the primary tool for evaluating the implementation of the CERP.

The Annual Progress Report will document the implementation of the CERP and provide an opportunity to refine strategies and actions, assess the need for additional efforts, and highlight key successes and lessons learned, in alignment with CARB's guidance ([Blueprint 2.0](#)).²⁷³ Refining strategies and actions may involve revising the language based on an evaluation of implementation progress, including successes, challenges, emerging opportunities, and updates to the community description. These reports provide a formal mechanism for the Air District and CSC to communicate agreed-upon changes to the public and CARB.

²⁷³ California Air Resources Board. "Community Air Protection Program Blueprint 2.0." 2025. [Community Air Protection Program Blueprint 2.0 | California Air Resources Board](#).

Monitoring progress toward achieving CERP-level Goals is crucial. Therefore, every strategy in the CERP includes metrics that are specific, measurable, community-focused, and directly tied to the actions. When these metrics are combined, they will provide a clear overview of progress on the CERP.

Further, the Annual Report will be evaluated by CSC. During its evaluation, the CSC will help determine which actions may need adjustment based on their implementation status. This will also help determine alignment with the next Annual Implementation Plan and whether any adjustments are needed.

Fifth-Year Milestone Report

The fifth annual report marks a significant milestone, as it represents the final year of the 5-year implementation horizon for the CERP. This report provides an opportunity for the Air District and the CSC to evaluate overall progress and develop an approach for completing any remaining actions.

The fifth annual report will also evaluate the effectiveness of the CSC process. This review will highlight strengths, challenges, and areas for improvement, particularly in governance and community engagement. Publication of this report is currently expected to occur during the 2032–2033 calendar years.

For the 5-year implementation milestone, the Air District will conduct a community-scale emissions inventory update that includes all emissions sources, including stationary and mobile sources. Appendix D: Air Pollution Overview Supplemental Information contains 5-year and 10-year “business as usual” forecasts, and the updated inventory generated at the 5-year milestone will be compared with these forecasts as a way of charting progress. The Air District will also continue exploring new methods to compare emissions inventory data with exposure data to help advance CERP-level Goals as provided in Chapter 3: Vision, Principles, and Goals, and reflect progress made.

Plan Acronyms and Glossary

Acronyms

AB 617	Assembly Bill 617, passed in 2017; founding legislation for the Community Air Protection Program
AB 98	Assembly Bill 98
AIM	Assessment Inventory & Modeling Division of the Air District
Air District	Bay Area Air Quality Management District or Bay Area Air District
BAAQMD	Bay Area Air Quality Management District or Bay Area Air District
BACT	Best Available Control Technology
BayREN	Bay Area Regional Energy Network
BIPOC	Black, Indigenous, and People of Color
BVHP/SESF	Bayview Hunters Point/Southeast San Francisco
BUG	Back-up Generator
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
C&E	Compliance & Enforcement Division of the Air District
CAP	Criteria Air Pollutant
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CERP	Community Emissions Reduction Plan
CEQA	California Environmental Quality Act
CHA	Community Health Assessment
CHI	Community Health Impacts Focus Area
CHP	California Highway Patrol
City	City and County of San Francisco
CLEAR	Community-Led Environmental Air Research
CSC	Community Steering Committee
DBI	San Francisco Department of Building Inspection
DPM	Diesel particulate matter
DTSC	California Department of Toxic Substances Control
ECM	Enhanced Care Management
ED	Emergency Department
EJ	Environmental justice
GHG	Greenhouse gases

HEPA	High efficiency particulate air filter
HRA	Health risk assessment
M&D	Monitoring and Data Focus Area
M&M	Meteorology & Measurements Division of the Air District
MUNI	San Francisco Municipal Railway
NAAQS	National Ambient Air Quality Standards
NO₂	Nitrogen dioxide
OEHHA	California Office of Environmental Health and Hazard Assessment
PDR	Production, Distribution, and Repair
P&E	Permitting and Enforcement Focus Area
PERP	Portable Equipment Registration Program
PM	Particulate matter
PM_{2.5}	Fine particulate matter, 2.5 microns or less in size
PM₁₀	Particulate matter, 10 microns or less in size
PM, D, & CI	Particulate Matter, Dust, and Construction Impacts Focus Area
PPB	Parts per billion
PPM	Parts per million
REACT	Reducing Exposures with Air Cleaners and Technology (CARB Study)
SEDG	Sources and Emissions Data Gaps Subcommittee
SEP	Supplemental Environmental Project
SF C&D	San Francisco Environment Department Construction & Demolition
SFCTA	San Francisco County Transportation Authority
SFDPH	San Francisco Department of Public Health
SFDPW	San Francisco Department of Public Works
SFE	San Francisco Environment
SFMTA	San Francisco Municipal Transportation Agency
TAC	Toxic air contaminant
TRU	Transport Refrigeration Unit
T&T	Traffic and Transportation Focus Area
TWE	Toxicity-weighted emissions, can be acute or chronic
UFP	Ultrafine particle(s)
U.S. EPA	United States Environmental Protection Agency
U.S. Navy	United States Navy
VOC	Volatile organic compound(s)
ZEV	Zero emission vehicle(s)

Glossary

Additional definitions related to the Community Air Protection Program are available in [Appendix A, Blueprint 2.0 Glossary](#) and through the general [CARB glossary](#).²⁷⁴

AB 617 - Assembly Bill (AB) 617 (C. Garcia, Chapter 136, Statutes of 2017) directs the state, in consultation with local air districts, to select communities in California that are exposed to high levels of air pollution. Selected communities will work with local air districts on action plans to reduce people's exposure to particulate matter and toxic air contaminants, and/or to develop community air monitoring plans.

Bill text: leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB61

Abatement Device - Devices designed to capture, remove and/or reduce pollutants that would otherwise be emitted into the air. Examples are baghouses, scrubbers, dust collectors, direct flame afterburners, vapor recovery units, and water sprayers.

Air - Air is the Earth's atmosphere. Air is a mixture of many gases and tiny dust particles. It is the clear gas in which living things live and breathe. It has mass and weight because it is matter. The weight of air creates atmospheric pressure.

Air District or Bay Area Air District or BAAQMD - The regional air pollution control agency with jurisdiction over the counties of Alameda, Contra Costa, Marin, Napa, San Francisco, Santa Clara, San Mateo, southwestern Solano County, and southern Sonoma County. The Air District oversees policies and adopts regulations for the control of air pollution from stationary sources, adopts clean air plans, offers incentives for emission reductions from mobile sources, enforces air quality rules, and collects, monitors, and models air quality data.

Air Pollution (Primary and Secondary) - Air pollution is contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution. Primary air pollutants are substances that are emitted directly from sources into the atmosphere. Secondary air pollutants are substances that form in the atmosphere as a result of chemical reactions. Common Air Pollutants described here: ww2.arb.ca.gov/resources/common-air-pollutants

Air Quality Index - An air quality index (AQI) is an indicator developed by government agencies to communicate the severity of air pollution levels to the public. As air pollution levels rise, so does the AQI, along with the associated public health risk. AQI levels range from 0 (Good air quality) to 500 (Hazardous air quality).

Air Quality Modeling - Air quality modeling is a computational approach to predicting the way pollutants behave in the atmosphere. These tools use input data like emissions, meteorology and topography to estimate air pollution concentrations for a specific location. Community-scale modeling is air quality modeling at the local level, to determine air pollution concentrations within a neighborhood or community. Read also "Air Quality Monitoring" District modeling tools: www.baaqmd.gov/about-air-quality/research-and-data/research-and-modeling

²⁷⁴ CARB, "Community Air Protection Program Blueprint 2.0," 2024, App. A, <https://ww2.arb.ca.gov/capp/mdc/bp2/community-air-protection-program-blueprint-20>; CARB, "Glossary," accessed August 6, 2026, <https://ww2.arb.ca.gov/glossary>.

Air Quality Monitor - An air quality monitor is a device that uses one or more than one sensor and other components to detect, monitor, and report on specific air pollutants like particulate matter (PM) or carbon dioxide and/or environmental factors such as temperature and humidity.

Area-Wide Sources - Sources of air pollution that individually emit relatively small quantities of air pollutants, but when grouped together may account for a considerable share of the total emissions in a geographic area. Examples include water heaters, lawn maintenance equipment, fireplaces, and consumer products like paint.

Attainment Area - A geographical area identified to have air quality as good as, or better than, the national and/or California ambient air quality standards. An area may be an attainment area for one pollutant and a nonattainment area for others. Also see "Nonattainment Area."

Best Practices to Reduce Emissions - Measures that reduce emissions and therefore reduce health risks from air pollution. Examples include retrofitting diesel generators to low or zero emitting technology, electrifying loading docks, limiting truck idling times, requiring low or zero emitting truck engines, and adding abatement devices to stationary sources.

Best Practices to Reduce Exposure - Measures that may not reduce actual emissions but reduce people's exposure to pollutants and reduce health risks. Examples include HVAC (heating ventilation, air conditioning) air filters, planting vegetation between a source of pollution and residential units, and prohibiting trucks on residential streets.

Back-up Generator (BUG) - BUGs include stationary generators and portable generators. Stationary generators are often sources of emergency power for commercial, industrial, and residential buildings. Portable generators are used as temporary power when and where an electrical grid is not available, at construction sites, outdoor gatherings such as concerts and festivals, and disaster recovery sites. See also "Diesel Engine."

Black Carbon - Black carbon is the sooty black material emitted from gasoline and diesel engines, coal-fired power plants, and other sources that burn fossil fuel. It comprises a significant portion of particulate matter. Inhalation of black carbon is associated with health problems including respiratory and cardiovascular disease, cancer, and birth defects.

Blueprint 2.0 - Blueprint (BP) 2.0 is the Statewide Strategy called for by AB 617 to reduce emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden. Community Air Protection Blueprint: ww2.arb.ca.gov/cappblueprint Part One of BP 2.0 defines the problem, sets forth guiding principles, and describes commitments for both CARB and air districts required by state statute. Read Part One to better understand the commitments CARB is making to support communities affected by high cumulative exposure burdens. Part Two of BP 2.0 provides implementation guidance for each element of the Statewide Strategy for air districts, communities, affected industry, and other partners so that they can participate in the process to improve air quality at the community scale. Read Part Two to better understand how to tap into the Community Air Protection Program resources.

CalEnviroScreen (CES) - Developed by the California Environmental Protection Agency and the Office of Environmental Health Hazard Assessment, CalEnviroScreen is a screening tool that is used to help identify communities disproportionately burdened by multiple sources of pollution and with population characteristics that make them more sensitive to pollution. The associated mapping tools make the results visually accessible. CalEnviroScreen: oehha.ca.gov/calenviroscreen See also "Disadvantaged Communities."

California Air Resources Board (CARB) - The state agency that oversees policies and adopts regulations for the control of air pollution from mobile sources and some stationary sources. CARB's mission is to promote and protect public health, welfare, and ecological resources through the reduction of air

pollutants while recognizing and considering effects on the economy. CARB is the lead state agency for climate change programs and oversees all air pollution control efforts in California to attain and maintain health-based air quality standards. CARB: ww2.arb.ca.gov

California Environmental Protection Agency (CalEPA) - A state government agency, established in 1991, that oversees and coordinates the activities of six boards, departments, and offices that are dedicated to improving California's environment. There are six boards, departments, and offices under the agency which consists of the California Air Resources Board (CARB), the Department of Pesticide Regulation (DPR), the Department of Resources Recycling and Recovery (CalRecycle), the Department of Toxic Substances Control (DTSC), the Office of Environmental Health Hazard Assessment (OEHHA), and the State Water Resources Control Board. The CalEPA boards, departments, and office are directly responsible for implementing California environmental laws that regulate air, water and soil quality, pesticide use and waste recycling and reduction, or play a cooperative role with other regulatory agencies at regional, local, state, and federal levels. CalEPA's mission is to restore, protect and enhance the environment, to ensure public health, environmental quality, and economic vitality. For a full list of CalEPA organizations, refer to CalEPA's home page: <https://calepa.ca.gov/>.

California Environmental Quality Act (CEQA) - CEQA is a state law that requires California public agencies to identify, disclose, and avoid or reduce significant environmental impacts of discretionary actions and decisions they make.

Cancer Risk - The likelihood that a person will develop cancer during their lifetime due to their level of exposure to toxic air contaminants.

Carbon Monoxide (CO) - CO is a colorless, odorless gas that can be harmful when inhaled in large amounts. CO is released when something is burned.

Cargo Handling Equipment (CHE) - Includes a variety of equipment at ports, warehouses, and rail yards including yard tractors, cranes, forklifts, and container handlers such as top picks and side picks, and bulk handling equipment, such as tractors, loaders, dozers, excavators, and backhoes.

Chronic Obstructive Pulmonary Disease (COPD) - COPD is a lung disease characterized by chronic obstruction of airflow that interferes with normal breathing and is generally progressive but may be partially reversible. The more familiar terms "chronic bronchitis" and "emphysema" are included within the COPD diagnosis. COPD is strongly associated with tobacco smoking but can occur in non-smokers as well and is a serious, life-threatening lung disease.

City and County of San Francisco - Consolidated city-county governance of San Francisco.

CARB's Civil Rights Policy and Discrimination Complaint Process - CARB's Civil Rights Policy and Complaint Process describes the CARB policy to provide fair and equal access to the benefits of a program or activity administered by CARB. This nondiscrimination policy also applies to people or entities, including contractors, subcontractors, or grantees that CARB utilizes to provide benefits and services to members of the public. Members of the public who believe they were unlawfully denied full and equal access to a CARB program or activity may file a civil rights complaint with CARB under this policy, including by filing a Civil Rights Complaint Form with CARB's Civil Rights Officer. More information included in the Blueprint section titled "Non-Discrimination Laws and CARB." The policy is available from the CARB and Civil Rights webpage: <https://ww2.arb.ca.gov/civil-rights-office>

Air District's Non-Discrimination Policy and Complaint Procedure: Please see <https://www.baaqmd.gov/en/About-the-Air-District/Office-of-Civil-Rights/Non-Discrimination>

Commercial Land Use - Commercial land use is a land use designated by the local governing body for retail, service, or office use, such as shopping malls, restaurants, office buildings, grocery stores, pharmacies, banks, hotels, or movie theatres.

Community Air Protection Program (CAPP) - CARB established this program to implement the requirements set forth in Assembly Bill 617 to reduce emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden. The Program is administered by CARB's Office of Community Air Protection (OCAP) and implemented by CARB and air districts. Other agencies and stakeholders participate in various implementation and engagement activities to support emissions and exposure reductions. CAPP: ww2.arb.ca.gov/capp. See also "Assembly Bill 617."

Community Air Protection Incentives (CAP Incentives) - One of three categories of Community Air Protection Program funds which can be used on projects that accelerate emissions reductions faster or beyond what regulations require by putting cleaner technology and practices into use sooner than laws require. The other two categories of Program funds are Community Air Grants and Implementation Funds. Community Air Protection Incentives: ww2.arb.ca.gov/our-work/programs/community-air-protection-incentives. Community Air Protection Program Funding Budget: ww2.arb.ca.gov/our-work/programs/resource-center/ab-617-implementation/ab-617-budget

Community Emissions Reduction Plan (CERP) - A documented plan, called for by AB 617 for CARB selected communities with high cumulative exposure burdens for toxic air contaminants and criteria air pollutants, which has specific requirements that include the plan being consistent with the Blueprint 2.0, emissions reduction targets, specific reduction measures (actions), a schedule for the implementation of measures, and an enforcement plan. AB 617 explicitly states that the CERPs shall result in emissions reductions and that both the air district and CARB are "responsible for measures," which we call "actions" in this document, consistent with our respective authorities. AB 617 also requires that air districts consult with "the state board, individuals, community-based organizations, affected businesses, and local governmental bodies in the affected community" as they adopt a CERP.

Community-Focused Enforcement - CARB's Enforcement Division applies community-focused enforcement by targeting their efforts in areas where they are needed most and partnering with community members to allow community priorities to inform and guide enforcement activities. Partnering with community members helps to ensure that community priorities are central in the development of the enforcement plans and in the guidance of its implementation.

Community- Identified Project - These project types are available for projects in a community selected by CARB for a CERP as described in the 2019 CAP Incentives Guidelines, Chapter 6: Stationary Source and Community-Identified Projects. This chapter was added in 2020 to increase flexibility and allow air districts greater opportunities to use incentives to address the concerns of the most heavily impacted communities across the State. Example projects include zero-emission car-sharing programs, parking lot paving, vegetative barriers, agriculture-related incentives, and truck routing studies.

Community Air Protection Incentives: ww2.arb.ca.gov/our-work/programs/community-air-protection-incentives

Community-scale Modeling - Community-scale modeling is air quality modeling at the local level, to determine air pollution concentrations within a community. See also "Regional-scale Modeling."

Concentration - The amount of a specific pollutant present in the atmosphere per unit volume of air (e.g. micrograms per cubic meter).

Construction Equipment - Heavy equipment such as excavators, bulldozers, and loaders that are used in construction projects. This equipment is usually diesel powered.

Criteria Air Pollutants - U.S. EPA has set National Ambient Air Quality Standards (NAAQS) for six pollutants, including ozone and particulate matter. These are referred to as the "criteria" air pollutants. CARB has set California Ambient Air Quality Standards (CAAQS) for the same six pollutants, as well as for four additional pollutants. Information about harmful health impacts of these air pollutants: <https://ww2.arb.ca.gov/resources/common-air-pollutants>

Criteria air pollutants include:

- particulate matter both sized 10 microns or less (PM10) and 2.5 microns or less (PM2.5),
- photochemical oxidants (including ozone),
- carbon monoxide,
- sulfur dioxide (SO₂),
- nitrogen dioxide (NO₂),
- sulfates,
- lead,
- vinyl chloride
- hydrogen sulfide, and
- visibility reducing particles.

Maps at this link show areas in attainment (below set standards) or non-attainment (above standards): <https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations> See also "National Ambient Air Quality Standards (NAAQS)."

Cumulative Air Quality Impact - A cumulative air quality impact is an environmental impact which results from the additive impacts of actions or projects when added to other past, present, and reasonably foreseeable future actions. For example, a manufacturing facility, an autobody shop, and a construction site may each have an air quality impact that is not substantial when considered by itself but may have a substantial cumulative air quality impact when all three are considered together. See California Office of Environmental Health Hazard Assessment (OEHHA) Cumulative Impacts: Building a Scientific Foundation Report: <https://oehha.ca.gov/sites/default/files/media/downloads/calenviroscreen/report/cireport123110.pdf>

Diesel Engine - A diesel engine is an internal combustion engine powered by diesel fuel that creates incomplete combustion that results in the release of particulate matter and other pollutants. Also called a compression-ignition engine. Diesel engines can power mobile, portable, and stationary equipment.

Diesel Particulate Matter (DPM) - The solid material in diesel exhaust. Diesel particulate matter is typically composed of carbon particles ("soot", also called black carbon) and numerous organic compounds, including over 40 known cancer-causing organic substances. More than 90 percent of diesel particulate matter is less than 1 micron in diameter and thus is a subset of particulate matter less than 2.5 microns in diameter. Overview of diesel exhaust and health: www.arb.ca.gov/research/diesel/diesel-health.htm

Disadvantaged Communities (DAC) - According to state law (SB 535 De León, Statutes of 2012), CalEPA designates these communities based on geographic, socioeconomic, public health, and environmental hazard criteria. These areas may include, but are not limited to:

- Areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure, or environmental degradation.
- Areas with concentrations of people that are of low income, high unemployment, low levels of home ownership, high rent burden, or low levels of educational attainment.

California Health and Safety Code Section 39711, subdivision (a): [leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB53](https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB53)

Discriminatory Zoning - Land-use regulations or policies that intentionally or effectively segregate communities by race/ethnicity.

Discriminatory Real Estate Lending Practices - Government policies to create and maintain housing segregation, primarily through lending practices such as redlining, which refers to the practice of denying credit to residents of ethnically diverse (predominantly Black) neighborhoods.

Dispersion Model - A computer program that uses a variety of input data to characterize the spreading of atmospheric pollutants emitted by one or more sources.

Emissions - Substances discharged into the air (e.g., by a smokestack or an automobile engine).

Emissions Inventory - Compilations of data that estimate the amount of pollution emitted by sources within a defined geographic area over a specific period of time (usually one year) and commonly reported as tons per day or tons per year. A community emissions inventory is an important piece of the technical foundation of a Community Air Monitoring Project (CAMP) and a CERP. By visualizing and understanding the emissions inventory specific to a community's boundary, this can help with prioritizing the largest emissions sources or most harmful pollutants for focused action. Emission Inventories: ww2.arb.ca.gov/capp-resourcecenter/data-portal/carb-emission-inventory-activity. The Emissions Inventory Documentation webpage describes all source types and links to statewide data: ww2.arb.ca.gov/emission-inventory-documentation

Environmental Justice - According to California law, environmental justice means the fair treatment and meaningful involvement of people of all races and incomes with respect to development, implementation and enforcement of environmental laws, regulations, and policies. California law states that "environmental justice" includes, but is not limited to, all the following:

(A) The availability of a healthy environment for all people.

(B) The deterrence, reduction, and elimination of pollution burdens for populations and communities experiencing the adverse effects of that pollution, so that the effects of the pollution are not disproportionately borne by those populations and communities.

(C) Governmental entities engaging and providing technical assistance to populations and communities most impacted by pollution to promote their meaningful participation in all phases of the environmental and land use decision-making process.

(D) At a minimum, the meaningful consideration of recommendations from populations and communities most impacted by pollution into environmental and land use decisions.

California Government Code Section 65040.12, subdivision (e):

leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV§ionNum=65040.1

Environmental Protection Agency (U.S. EPA) - The Environmental Protection Agency is the federal agency responsible for control of air and water pollution, toxic substances, solid waste, and cleanup of contaminated sites. The U.S. EPA sets national ambient air quality standards for criteria air pollutants, such as particulate matter.

Exposure - Human contact with one or more contaminants in the atmosphere in quantities and duration that have the potential to produce adverse health impacts.

Fine Particulate Matter (PM_{2.5}) - Fine PM or PM_{2.5} consists of particles 2.5 microns or less in diameter, including ultrafine PM.

Funding - Money available to the Air District that can be used for incentives and incentives administration.

Fugitive Dust - Fugitive dust includes both PM₁₀ and PM_{2.5} and is defined as particulate matter that does not come from a physical stack or go through a control device but is released into the air through mechanical disturbance or by the wind.

Gasoline Dispensing Facilities (GDF) - Gasoline dispensing facilities are gas stations.

Greenhouse Gases (GHG) - Greenhouse gases are gases in the atmosphere that have a warming effect on the climate, including but not limited to carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, perfluorocarbons and hydrofluorocarbons.

Green Workforce - A broad group of careers that contribute directly to moving society and the built environment towards sustainability.

Ground-level Ozone - Ozone is a gas composed of three atoms of oxygen. Ozone occurs both in the Earth's upper atmosphere and at ground level. Ozone can be good or bad, depending on where it is found. Ozone at ground level is a harmful air pollutant because of its effects on people and the environment, and it is the main ingredient in "smog." Ozone and Health:

ww2.arb.ca.gov/resources/ozone-andhealth

Hazardous Air Pollutants - Hazardous air pollutants are those known to cause cancer and other serious health impacts. The Clean Air Act requires the U.S. EPA to regulate hazardous air pollutants, also known as air toxics, from categories of industrial facilities in two phases.

Health Risk Assessment (HRA) - A health risk assessment is the calculation of probable health impacts based on exposure to pollution. See also "Toxic Air Contaminants."

High Efficiency Particulate Air Filters (HEPA filters) - High efficiency particulate air filters are a type of mechanical air filter that work by forcing air through a fine mesh filter that traps small harmful particles such as pollen, pet dander, dust mites, and tobacco smoke. HEPA filters can also remove between 50% and 98% of particles in air, depending on the particle size and the filter minimum efficiency reporting value (MERV) rating. See also "Minimum Efficiency Reporting Value."

High Priority Locations - Locations in the community where sensitive community members may spend time, such as schools, daycares, libraries, senior centers, etc. See also "Sensitive Community Members."

Hot Spot - A hot spot is an area where toxic air contaminant concentration levels are higher than in the overall region. "Hot Spots" is also a California program (Health and Safety Code Section 44300 et seq.) that requires certain stationary sources to report the type and quantity of specific toxic substances they routinely release into the air.²⁷⁵ The program identifies high priority facilities and requires facilities posing significant risks to notify all exposed individuals. "Hot Spots" website: ww2.arb.ca.gov/our-work/programs/ab-2588-air-toxics-hot-spots. "Hot Spots" Inventory Guidelines related to data collection: <https://ww2.arb.ca.gov/our-work/programs/ab-2588-air-toxics-hot-spots/hot-spots-inventory-guidelines>. See also "Toxic Air Contaminants."

Incentive - A structured payment in response to a verifiable project that reduces air pollution, reduces air pollution exposure, or reduces community vulnerability to air pollution.

Indirect Sources - Any facility, building, structure, installation, or combination thereof which generates or attracts mobile source activity that results in emissions of any pollutant (or precursor) for which there is a state ambient air quality standard. For example, shopping centers, office buildings, sports facilities, housing developments, warehouses, and airports.

²⁷⁵ California Health and Safety Code § 44300 – 44394, "Air Toxics "Hot Spots" Information and Assessment Act of 1987" (AB 2588).

Industrial Land Use - Industrial land use is land designated by the local governing body for manufacturing, assembly, and distribution of goods. May include land uses such as ports, factories, warehouses, and repair and equipment maintenance shops.

Jurisdiction - The legal term for an agency's authority to act under applicable laws. It also refers to the territory or area over which it may exercise that authority.

Land Use - Land use refers to the human use of land, such as agricultural, residential, industrial, mining, and recreational. Local agencies, like cities and counties, have primary jurisdiction over land use decisions. California state law governs local agencies' land use decision-making. Land use planning is the public process to designate the local land uses for an area in long term plans. California state law requires all cities and counties to have a general plan that contains a "land use element" which uses text and maps to designate the future use or reuse of land within a given jurisdiction's planning area. The land use element serves as a guide to zoning and official decisions regarding the distribution and intensity of development, and the location of public facilities and open space. Plans are generally subject to CEQA review. Zoning or zone designations are the legally regulated, more specific descriptions of land uses. The California Institute for Local Government provides resources about land use and planning: www.cailg.org/planningbasics

Governor's Office of Planning and Research provides guidelines and technical advisories for general plans: opr.ca.gov/planning/general-plan/guidelines.html. CARB hosts this website for more information on land use: ww2.arb.ca.gov/our-work/programs/resource-center/strategydevelopment/land-use-resources

Lead (Pb) - Lead is a naturally occurring element found in small amounts in the earth's crust. While it has some beneficial uses, it can be toxic to humans and animals, causing health effects.

Micrograms per meter cubed ($\mu\text{g}/\text{m}^3$) - Micrograms per meter cubed is a unit of measurement used to specify the concentration of a pollutant. Concentrations of particulate matter (PM) are typically reported in $\mu\text{g}/\text{m}^3$, and $\mu\text{g}/\text{m}^3$ is the unit of measure for the National Ambient Air Quality Standards (NAAQS) for $\text{PM}_{2.5}$ and PM_{10} . See also "PM" and "NAAQS."

Mixed-use Land Use - Mixed-used land use is land designated by the local governing body for two or more land uses, such as residential, commercial, cultural, institutional, and/or industrial uses. For example, mixing housing with office and retail uses (both considered commercial land use).

Mobile Sources of Air Pollution - Mobile sources of air pollution are sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats, trains, and airplanes. 2020 Mobile Source Strategy which is linked to other programs: ww2.arb.ca.gov/resources/documents/2020-mobile-source-strategy

National Ambient Air Quality Standards (NAAQS) - Federal health-based standards set by the Environmental Protection Agency for criteria air pollutants to protect public health with an adequate margin of safety.

Nitrogen Dioxide (NO_2) - Nitrogen Dioxide (NO_2) is one of a group of highly reactive gases known as oxides of nitrogen or nitrogen oxides (NO_x). Other nitrogen oxides include nitrous acid and nitric acid. NO_2 is used as the indicator for the larger group of nitrogen oxides.

Nonattainment Area - A geographic area identified by the U.S. Environmental Protection Agency and/or CARB as not meeting either the National Ambient Air Quality Standards or the California Ambient Air Quality Standards for a given pollutant.

Office of Community Air Protection (OCAP) - The division within CARB that administers the Community Air Protection Program.

(California) Office of Environmental Health Hazard Assessment (OEHHA) - Under CalEPA, OEHHA serves as the scientific foundation for CalEPA's environmental regulations and provides valuable information to consumers, policy makers and manufacturers on the safety of chemicals in our environment. OEHHA's mission is to protect and enhance the health of Californians and our state's environment through scientific evaluations that inform, support and guide regulatory and other actions. CARB staff and communities will also continue to collaborate with OEHHA and the California Department of Public Health on various public health related activities associated with the implementation of the Program. Office of Environmental Health Hazard Assessment: www.oehha.ca.gov/

Off-road Vehicles - Off-road vehicles are vehicles designed for use on unpaved surfaces; for example, in construction, freight, and agricultural uses. Types include scrapers, backhoes, loaders, and forklifts. Quad bikes and ATVs (all-terrain vehicles) are also off-road vehicles.

On-road Vehicles - On-road vehicles are vehicles designed for use on paved roads, for example passenger cars, buses, motor homes, vans, motorcycles, and various sizes of trucks.

Particulate Matter (PM) - Particulate matter includes a wide range of disparate particles that vary greatly in terms of size and mass, physical state (solid or liquid), chemical composition, toxicity, and how they behave and transform in the atmosphere. PM is commonly characterized based on particle size. Ultrafine PM includes the very smallest particles less than 0.1 micron in diameter (one micron equals one-millionth of a meter). Fine PM or PM_{2.5} consists of particles 2.5 microns or less in diameter (includes ultrafine PM). Coarse PM refers to particles between 2.5 microns and 10 microns in diameter. These particles can penetrate lung tissue and the bloodstream and cause serious health effects, including premature mortality and a wide range of respiratory and cardiovascular problems. The term "coarse" particles may be misleading; it should be emphasized that even "coarse" particles are still very tiny, many times smaller than the diameter of a human hair. PM₁₀ consists of particles 10 microns or less in diameter (includes ultrafine, fine and coarse PM). Inhalable Particulate Matter and Health (PM_{2.5} and PM₁₀): ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health

Parts per billion (ppb) - Parts per billion is a unit of measurement used to specify the concentration of a pollutant, such as in ambient air quality standards. For reference, ppb is the equivalent of one drop in one billion drops of water or about one drop of water in a swimming pool. The NAAQS standard for sulfur dioxide (SO₂) is measured in ppb. See also "ppm" and "NAAQS."

Parts per million (ppm) - Parts per million is a unit of measurement used to specify the concentration of a pollutant, such as in ambient air quality standards. For reference, one ppm is the equivalent of about one cup of water in a swimming pool, and one ppm is equivalent to 1,000 ppb. The NAAQS standards for carbon monoxide (CO), nitrogen dioxide (NO₂) and Ozone (O₃) are measured in ppm. See also "ppb" and "NAAQS."

Production, Distribution, and Repair (PDR) - Production, Distribution, and Repair is a zoning classification in San Francisco for light industrial activities that produce, move, or fix goods, such as manufacturing, wholesaling, and repair services. PDR zoning is concentrated in the neighborhoods of Eastern San Francisco. <https://sfplanning.org/resource/industrial-land-san-francisco-production-distribution-and-repair-pdr>

Redlining - See "Discriminatory Real Estate Lending Practices."

Regional-scale Modeling - Regional-scale modeling is air quality modeling at a regional level to determine air pollution concentrations across a large domain. See also "Community-scale Modeling."

Residential Land Use - Residential land use is land designated by the local governing body for dwelling units. It can include single-family and/or multi-family housing and often specifies the number of dwelling units allowed per lot or acre. For example, R-1 means the parcel is zoned for a single-family residence.

Resilience Spaces - Publicly accessible, community-serving facilities that provide resources, support, and gathering spaces both daily and during emergencies. Also known as Community Resilience Centers, or Resilience Hubs.

Rule Development - Rule Development is the process the Air District uses to write regulations that govern stationary sources of air pollution in the Bay Area. This process includes technical research, engagement with affected stakeholders, public meetings to allow input by affected parties such as industries and communities, and the preparation of a socio-economic analysis and CEQA determination. For a list of current rules and regulations see: <https://www.baaqmd.gov/rules-and-compliance/current-rules>.

Safe Routes to School (SRTS) - Safe Routes to School is an international movement and a federal program to make it safe, convenient, and fun for children, including those with disabilities, to bicycle and walk to school.

Sensitive Land Uses - Sensitive land uses are places where sensitive populations are most likely to spend their time, such as schools, playgrounds, daycare centers, nursing homes, medical facilities, and residential communities. See also "High Priority Locations" and "Sensitive Community Members."

Sensitive Community Members - Sensitive community members (sometimes called sensitive receptors) are people, including infants, children, the elderly, those with pre-existing conditions (such as asthma), pregnant women, and athletes (due to higher breathing rates), who are at greater risk than the general population to the adverse health effects of air pollutants. See also "High-priority Locations" and "Sensitive Land Uses."

Stationary Sources of Air Pollution - Stationary sources of air pollution are non-mobile sources of air pollution such as boilers, gas turbines, petroleum refining and processing units, and manufacturing equipment that emit air pollutants. A facility, such as a power plant or refinery, houses multiple sources within its property.

Solvent Cleaning Operations - A process using solvents or solvent vapor to remove water insoluble contaminants such as grease, oils, waxes, carbon deposits, fluxes, and tars from metal, plastic, glass, and other surfaces.

Sulfur Dioxide (SO₂) - Formed by the burning of fossil fuels and other sources such as industrial processes and natural sources, SO₂ can affect both health and the environment. Short-term exposures to SO₂ can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO₂. U.S. EPA's national ambient air quality standards for SO₂ are designed to protect against exposure to the entire group of sulfur oxides (SO_x). SO₂ is the component of greatest concern and is used as the indicator for the larger group of gaseous sulfur oxides (SO_x).

Sulphur Dioxide basics: <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics>

Title VI of the Civil Rights Act of 1964 - Title VI prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance. More information is included in the Blueprint section titled "Non-Discrimination Laws and CARB"

U.S. Code, Title 42 Section 2000d et seq.:
[uscode.house.gov/view.xhtml?req=\(title:42%20section:2000d%20edition:prelim\)](https://uscode.house.gov/view.xhtml?req=(title:42%20section:2000d%20edition:prelim))

U.S Department of Justice, Civil Rights Division overview of the Civil Rights Act:
www.justice.gov/crt/fcs/TitleVI-Overview

Toxic Air Contaminants (TACs) - According to the California Health and Safety Code, a TAC is "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or

which may pose a present or potential hazard to human health." CARB identified TACs: ww2.arb.ca.gov/resources/documents/carb-identified-toxic-aircontaminants

Toxicity Weighted Emissions (TWE) - TACs have different levels of toxicity, which means that an equal amount of different TACs can result in different degrees of health effects. To account for these differences, toxicity weighted emissions are calculated by multiplying an emissions estimate (e.g., lbs or tons) by its toxicity factor for different classes of health effects. This weighting process allows the relative toxicity of different TACs in the inventory to be compared.

Transit-oriented Development (TOD) - A type of land use that includes a mixture of housing, office, retail and/or other amenities integrated into a walkable neighborhood and located within a half mile of quality public transportation. See also "Mixed-use Land Use."

Transloading - The operation of transferring cargo from one transportation mode to another. May also refer to the operation of transferring cargo from one container to another for reasons such as consolidation, weight restrictions, palletizing, leasing contract requirements, or supply chain management (e.g., to synchronize delivery of goods to meet real-time demands).

Transport - Windblown movement of air pollutants emitted at an upwind location to another downwind location.

Unaccepted Street - Certain rights-of-way have not been "accepted" for maintenance by the City because they do not meet City standards for street construction. These typically include unimproved hillsides, certain alleys, and private streets in certain master-planned developments.

Vehicle Miles Traveled (VMT) - Vehicle miles traveled is the number of miles a vehicle is driven and can be used to measure the number of miles traveled for all vehicles in a geographic region over a given period of time. Annual VMT denotes the miles driven over one year.

Zero-emission Vehicle (ZEV) - A zero-emission vehicle is a battery electric, hydrogen fuel cell electric, or other alternatively fueled vehicle that has no direct emissions (evaporative or tailpipe) of pollution.

