Owning Our Air: West Oakland Community Action Plan

FIFTH YEAR ANNUAL REPORT

October 9, 2024

Submitted to: California Air Resources Board

Submitted by: Bay Area Air Quality Management District, West Oakland Environmental Indicators Project and the West Oakland Community Action Plan Community Steering Committee

West Oakland Environmental Indicators Project

WOCAP
THE WEST OAKLAND COMMUNITY ACTION PLAN

Bay Area Air Quality Management District

Contents

Introduction

Assembly Bill 617 is a State-mandated program that uses a community-based approach to reduce local air pollution in disproportionately impacted communities. This program aims to improve community health by reducing exposure to local air pollution sources in the most impacted neighborhoods through the development of Community Emission Reduction Plans (CERP). *Owning Our Air: The West Oakland Community Action Plan* (WOCAP) is the CERP developed to reduce the health effects of air pollution in West Oakland.

West Oakland's early industrial history is reflected in today's land use pattern. The area is a mix of industrial, commercial and residential uses. Freight oriented land uses are also prevalent in the neighborhood. The Port of Oakland, US Post Office and other freight and industrial operations generate substantial truck trips. The neighborhood is bisected by a network of truck routes and is bounded by four interstate highways as well as railyards and rail lines. This intense mix of uses has created a disproportionate air pollution burden for the local community.

The WOCAP is a joint effort between the West Oakland Environmental Indicators Project (WOEIP) and the Bay Area Air Quality Management District (Air District). As "Co-Leads" the Air District and WOEIP have worked with the WOCAP Steering Committee, a group of residents, researchers, academics, public agencies, non-profits, and community institutions to implement WOCAP strategies. The strategies are designed to reduce both air pollution emissions and exposure to air pollution. Reporting on strategy progress is a requirement of the AB617 program.

The California Air Resources Board's (CARB) is responsible for implementing AB 617. CARB released Blueprint 2.0[1] which provides guidance on CERP content and annual reporting for air districts and community partners. The WOCAP is now entering its fifth year of implementation and according to Blueprint 2.0, the Air District and community steering committees are required to assess the progress of strategy implementation and provide a summary of whether the 5-year targets were met. This fifth annual WOCAP report highlights progress made over five years of implementation (2020 – 2024).

The year 2024 marks a significant milestone in WOCAP implementation because that is the final year of the implementation schedule originally envisioned to meet the plan targets.[2] This Fifth Year Annual Report provides a reflection into key areas of WOCAP implementation including community process and enforcement efforts. It includes a summary of the results of five years of emission reduction grant investments. It provides benchmark data related to demographic and public health conditions in West Oakland, as well as an update to the emissions inventory to assess progress

[1] https://ww2.arb.ca.gov/sites/default/files/2024-04/BP2.0_FULL_FINAL_ENG_2024_04_09.pdf
[2] Table 6-4 Owning Our Air: The West Oakland Community Action Plan Implementation Schedule

towards achieving plan targets. Finally, it evaluates the WOCAP strategies that did not make progress over the last five years and recommends a course of action for each of these strategies.

WOCAP Emissions Reduction Highlight

WOCAP demonstrated an effective reduction of air pollution and health risk in an impacted community under the AB 617 program. Based on the Air District and the community collaborative analysis, Diesel Particulate Matter (DPM) was identified as the biggest air pollution concern in West Oakland, with tugboats noted as a significant source of DPM. During implementation of WOCAP, DPM emissions from local sources declined by 31% and the 2025 DPM exposure targets have largely been realized for most impact areas. DPM reductions were due to a combination of CARB statewide regulations (e.g., limiting emissions from heavy-duty trucks) and targeted deployment of incentives in West Oakland which resulted in upgrades of older, dirtier tugboats to newer and cleaner models.

The components of the fifth year report have been discussed with the CSC throughout the course of the summer and into fall 2024.

- **June** CSC meeting – Air District and Port strategy revisions
- **July** CSC meeting – Other agency-led strategy revisions (City of Oakland – Planning Dept. Sustainability Dept., Dept. of Transportation, Public Works; Alameda County Public Health Department; Caltrans; OEHHA)
- **August** CSC meeting – review community profile
- **September** CSC meeting – review emissions inventory update, investment summary and enforcement summary

Implementation Timeline

The timeline below traces the organic evolution of WOCAP implementation. Community involvement in the WOCAP implementation process was a high priority for the Co-Leads, the Air District and WOEIP. The Co-Leads followed CARB's guidance and used a community steering committee (CSC) model of engagement. The steering committee process provided a platform to track public agency's important strategy implementation work and provided an organizing space for government and community to discuss, brainstorm and advocate for implementation of WOCAP strategies.

The Plan was written from 2018 to 2019. The timeline below covers the implementation years through 2024.

2019

Air District adopted WOCAP in October; California Air Resources Board adopted WOCAP in December

2020

Implementation subcommittees formed grouped by 1) Port & Freight, 2) Land Use, 3) Health and Living Buffers, 4) Bike, Walk, Transit

- Break out groups during monthly CSC meetings to discuss strategy implementation approaches
- Each subcommittee has co-chairs, one agency representative and one community CSC member

COVID-19 declared a global pandemic and transition to virtual setting; monthly Zoom subcommittee meetings for each of the four groups, in addition to monthly CSC meetings

"Oakland's Very Own Speaker Series" at monthly CSC meetings: interview and Q&A with of one of West Oakland's activists, historians, or culture bearers – grounds the attendees in the West Oakland experience

Strategy Implementation Highlights

- Air District works with Oakland Unified School District to install 4 high-efficiency air filtration systems in the following schools: KIPP Bridge Academy, Martin Luther King, Jr. Elementary, Prescot, and Hoover Elementary (Strategy #75)
- CARB adopts the Advanced Clean Truck Regulation (Strategy #29)

2021

Subcommittees wind down and re-alignment discussions ensue at monthly CSC meetings to clarify roles and contributions of guests, partners and agencies

Strategy Implementation Highlights

- Urban Greening grants from Metropolitan Transportation Commission (MTC) Alameda County Transportation Center (ACTC), California Air Resources Board (CARB) and Port of Oakland totals $1 million (Strategy #12)
- Air District updates Complaint Policy to improve referral system (Strategy #Enf-AD-4) and outreach materials about backyard burning (Strategy #Enf-AD-2)
- Air District funds incentives to repower tugboats with cleaner diesel engines (Strategy #50)

2022

Out of the realignment phase, a conceptual structure for Implementation Projects and "Ad Hoc" committees introduced that resulted in the Health Equity Advisory Committee (HEAC)

Guidance for guest speakers developed to ensure speakers relate all content to WOCAP and specific to West Oakland, focus on providing enough context for community to understand the issue and ground the content in the principles of environmental justice

Community engagement plan developed to provide an approach to recruitment for new steering committee members and an orientation for new members

Strategy Implementation Highlights

- City of Oakland amends heavy-duty truck parking regulations (Strategy #38)
- Air District awards a $4.5 million grant to AC Transit to expand capacity of a hydrogen fueling facility to support fueling of hydrogen powered buses (Strategy #52)

2023

Co-Leads create annual CSC meeting calendar and standardize CSC meeting preparation. CSC meeting calendar includes:

- Semi-annual enforcement updates from Air District, CARB, City of Oakland Code Enforcement and Truck Parking Enforcement
- Semi-annual updates on strategy implementation progress
- Project "deep dives" coordinated with important partner agencies deadlines to organize CSC input and comments on relevant agency-led initiatives such as the City of Oakland's Environmental Justice Element
- End of the year celebration Town Hall
- Regular reflections (surveys) to assess internal cohesion and external CSC/public level of understanding and level of satisfaction with the process
- Roll call at monthly CSC meetings to boost accountability of CSC members

Strategy Implementation Highlights

- Caltrans commissions a study of the benefits of roadside vegetation as a method to reduce exposure to air pollution (Strategy #16)
- City of Oakland adopts Environmental Justice General Plan Element (incorporating WOCAP strategies #22 and #83) and truck-intensive business zoning rules requiring more stringent rules within 500 feet of residential and other health-protective industrial zoning updates (Strategy #5)

2024

Continue annual CSC meeting calendar

Transition to holding quarterly virtual public CSC meetings and monthly CSC member-only working sessions to encourage more participation from CSC members

Strategy Implementation Highlights

- WOEIP holds community meetings and works to design mitigation plan for the Prescott Greening project (Strategy #12)
- Air District publishes a Metal Recycling White paper (Strategy #68)

- Air District funds two electric infrastructure projects totaling over $6.5 million that will support truck fleets servicing the Port of Oakland (Strategy #53), and three tugboat projects were awarded over $9 million to repower the tug engines to Tier 4 engines, the cleanest diesel engine available (Strategy #50)

Emission Reduction Grants - Investment Summary

The Air District uses incentive programs to implement WOCAP strategies, expediating air quality improvement in West Oakland by providing grant funding for clean air projects to businesses, public agencies, and residents. Projects typically involve the replacement and upgrade of old, dirty, heavily polluting mobile equipment and engines with cleaner options. Grant funding is provided only toward projects that go above and beyond regulatory requirements which advances community health by encouraging equipment owners to transition to clean technologies sooner than required by regulation. Programs primarily focus on emissions and exposure reductions of criteria pollutants including nitrogen oxides (NO_x), reactive organic gases (ROG) and particulate matter (PM), and toxic air contaminants such as diesel particulate matter.

Five Years of Incentive Funding in West Oakland At-A-Glance

Over the last five years, the Air District has funded 114 projects reducing air pollution in West Oakland, with over $51 million invested in these projects. The Air District estimates that over 1,000 tons of NO_x, ROG, and PM emissions will be removed over the course of the projects' lifespans.

Some highlights of West Oakland projects include:

- **Cleaner Tugboats:** Repowering 13 tugboats with cleaner engines.
- **Hybrid Cranes:** Upgrading 16 rubber-tired gantry (RTG) cranes at the Port from diesel to cleaner diesel-electric hybrids.
- **Zero-Emission Trucks:** Replacing 32 trucks and yard trucks with zero-emission models, and purchasing 30 new hydrogen fuel cell drayage trucks
- **Electric Charging Stations:** Installing over 100 electric charging stations to support the transition of heavy-duty truck fleets to zero emissions, and adding 55 electric vehicle chargers for cars and trucks.
- **Vehicle Scrapping:** Scrapping 64 older residential vehicles.

Figure 1 below provides a breakdown of the 114 projects by equipment category. Each project may have funded multiple pieces of equipment and engines. Figure 2 below provides a breakdown of the total calculated emissions reductions by criteria air pollutant for projects determined to benefit West Oakland.

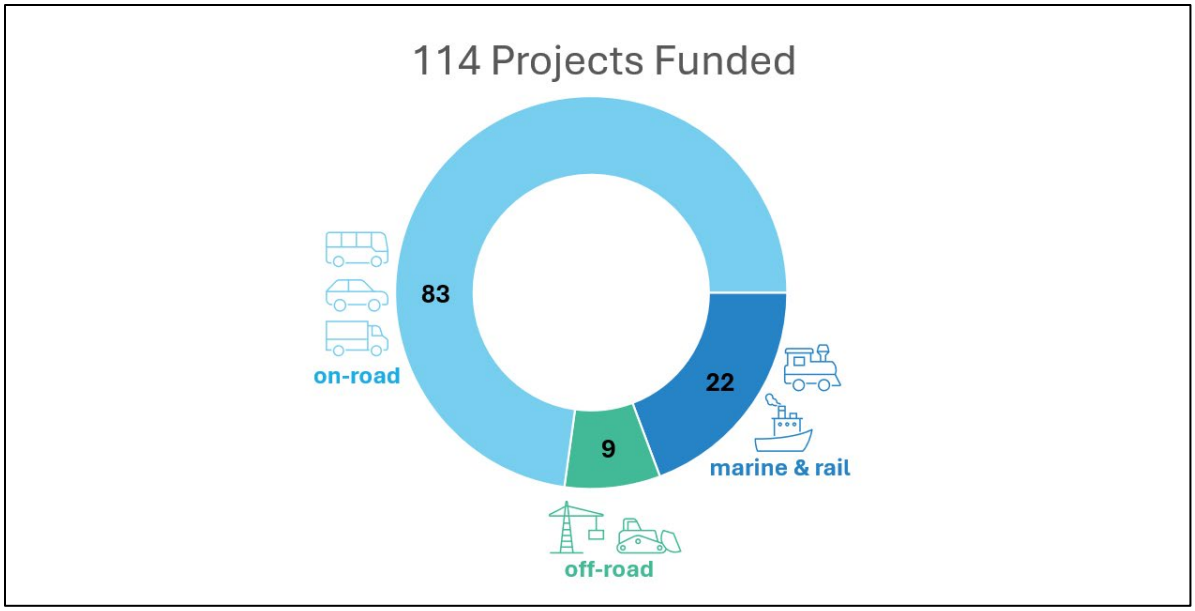

Figure 1 Incentive Projects Overview by Equipment Category

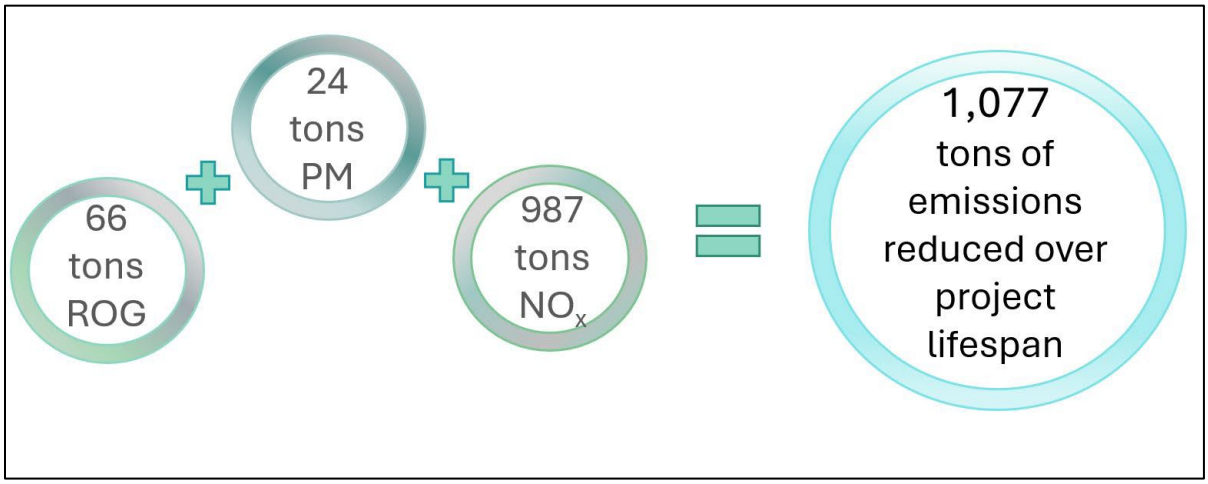

Figure 2 West Oakland Emissions Reductions Resulting from Incentive Investment

Progress on Incentives-Related Strategies

Over the last five years, the Air District grant programs have shifted to better align with the WOCAP strategies that aim to clean up diesel and other air polluting operations in and around West Oakland. The Air District has expanded and directed focus on outreach to West Oakland mobile equipment operators, increased award amounts for residential vehicle projects within West Oakland, and enacted eligibility requirements for certain programs that limit awards only to projects within priority communities such as West Oakland.

Some of the key strategies the Air District has focused incentives programs on include:

- Supporting the purchase of electric vehicles and equipment, including installing charging infrastructure at the Port of Oakland and for businesses throughout West Oakland. (Strategy #41, #49, #52, #53, #54)
- Upgrading tugboats, barges, and locomotives at the Port of Oakland to cleaner engines. (Strategy #50, #51)
- Offering programs for residents to retire their old vehicles or upgrade to cleaner alternatives. (Strategy #48)

The Air District is committed to continuing to support emission reduction strategies through existing grant programs and has also begun preliminary development of future programs to address remaining gaps in strategy implementation. For example, the Air District is working to develop a lawn and garden grant program to scrap and replace lawn and garden equipment with electric options (Strategy #54) and a truck replacement program to support owners of small fleets that want to upgrade to electric (Strategy #41, #53).

Enforcement Progress

The Air District led implementation of six WOCAP enforcement-related strategies. This section reviews the implementation progress, CSC engagement in these strategies and provides a recap of compliance and enforcement data during implementation. Although the Air District achieved many of its enforcement-related strategies such as creating informational flyers on open burning, updating the Air District's Complaint Policy and routinely presenting to the community steering committee (CSC), the work is not done. The conclusion of this section points to the important work of the Air District's Strategic Plan to continue enforcement efforts in West Oakland and other priority communities.

WOCAP Enforcement-Related Strategy Implementation Progress

WOCAP contains six Air District led Compliance and Enforcement strategies. Five of the strategies are complete. The final strategy is an ongoing action in which the Air District and CARB continue to consult with community on where there may be unpermitted sources of emissions. For details, see the strategy tracking table in Appendix 1.

Summary of CSC Input into Enforcement Activities

Enforcement activities in West Oakland are a reoccurring topic at the CSC meetings. Twice per year the CSC receives updates on the WOCAP enforcement strategies relating to Air District inspections of permitted facilities, complaints and facility violations. Likewise, CARB presents on enforcement of mobile sources such as truck idling and marine enforcement (inspecting cargo handling equipment, ocean going vessel fuel inspections and commercial harbor craft inspections, etc.). Additionally, the City of Oakland reports on heavy-duty truck parking enforcement and unpermitted industrial-related businesses in West Oakland (i.e., "code enforcement"). One objective is for enforcement staff to hear first-hand from the community. Some themes that have emerged from these meetings include:

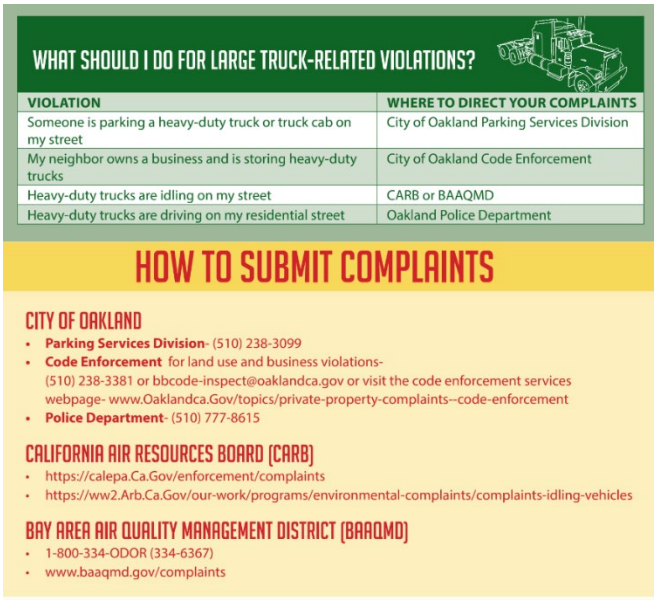

Figure 3 WOCAP Enforcement Flyer

- Request from agencies for community to be enforcement's "eyes, nose and ears" and thus to report any perceived violations using as much detail as possible (location, pictures, and identifying information such as license plates and vehicle numbers). To assist with this, as depicted in Figure 3, the WOCAP Co-Leads developed an enforcement flyer to help with resident outreach.
- Community feedback to enforcement agencies has included:
    - Address after hours enforcement (before 5am, after 5pm and on weekends).
    - Provide joint enforcement and coordination.
    - Enforcement presentations need to go beyond data snapshot (of complaints, violations and inspections) and to help community understand what the data means. For example, which violations are most harmful and what happens once complaints are made using plain, every day words.

Summary of Compliance and Enforcement Data

Figure 7, located at the end of this section, summarizes compliance and enforcement data for WOCAP from January 2019 through 2024. The data reported reflects the work of the Air District's Compliance and Enforcement Division who is responsible for performing core compliance and enforcement program activities that include:

- Unannounced, compliance inspections of Air District permitted facilities.
- Investigations of community complaints and general air quality concerns.
- Taking enforcement actions when non-compliance is discovered.
- Responding to and investigating major incidents such as fires associated with manufacturing or industrial processes, or other major air emission releases.

Figure 7 reports compliance and enforcement metrics which center around **inspections**, **violations** and **complaints**, each of which are described below.

Understanding Compliance Inspections Presented in Figure 7

Air District inspectors conduct routine, unannounced compliance inspections of stationary sources that have an Air District Permit to Operate. These permitted source inspections occur at facilities such as metal shredding facilities, chemical plants, sewage treatment plants, coating operations, printing facilities, auto body shops, and Gasoline Dispensing Facilities (GDF). GDF or gas station inspections are conducted at facilities which dispenses gasoline or other fuels directly into the fuel tanks of motor vehicles.

In addition to inspections at permitted facilities, Air District inspectors conduct compliance inspections at various construction sites and demolition projects that involve the demolition of a building/structure or the removal of asbestos-containing materials from a building/structure.[3]

Compliance & Enforcement Metrics	
Category	**Sub Category (Meeting)**
Enforcement	Gas Station Inspections
Enforcement	Asbestos Inspections
Enforcement	Source Inspections Permitted Facilities
	Inspections Totals
Violations	*Gas Station*
Violations	*Asbestos*
Violations	*Other*
	Violations Totals
Complaints	*Odor*
Complaints	*Fire out*
Complaints	*Train*
Complaints	*Woodsmoke*
Complaints	*Asbestos Inspections*
Complaints	*Dust*
Complaints	*Idling Truck*
Complaints	*Gas Station*
Complaints	*Other*

Figure 4 Excerpt from Figure 7 Compliance & Enforcement Data, highlighting inspections

Why is there a focus on GDFs and Asbestos in reporting?

Figure 4 highlights the inspections data excerpt. Within the Compliance & Enforcement Division, GDFs and Asbestos have dedicated enforcement programs due to the substantial volume of sites/facilities and asbestos job notifications that require consistent oversight. These programs necessitate specialized teams of inspectors to ensure timely and thorough inspections, maintaining compliance with air quality regulations. Hence inspection reporting (and violation reporting) focuses on "**Gas Station Inspections**", "**Asbestos Inspections**" and "**Source Inspections Permitted Facilities**".

Understanding Violations Data Presented in Figure 7

There are three general types of violations that Air District inspectors can issue:

- Administrative: Typically associated with recordkeeping or reporting requirements.

[3] Air District inspectors routinely conduct unannounced inspections of permitted sources and asbestos project sites. As part of the inspection, Air District inspectors meet with the owner or operator of a facility to ensure sources are operating in compliance with Air District regulations, permit requirements and other State and Federal Air Quality Regulations. Inspectors conduct inspections of equipment, operational processes and review associated records to determine a facility's compliance status.

- Operational: Emissions-related (e.g., emission exceeded regulatory standard or failed source test).
- Permit: Sources operating without an Authority to Construct or Permit to Operate.

When a Gas Station or an Asbestos job site receives a violation notice from the Air District, it could fall under any of the above categories. Violations issued to Gas Stations are typically cited for Reg. 2-1 (permit violations) or Reg. 8-7 (operational or administrative standards). Violations issued to Asbestos job site are cited under Reg. 11-2 (operational or administrative standards). Asbestos job sites are not permitted by the Air District; however, they must comply with air quality standards detailed in Regulation 11, Rule 2 when removing and or disturbing asbestos containing materials.

Compliance & Enforcement Metrics	
Category	**Sub Category (Meeting)**
Enforcement	Gas Station Inspections
Enforcement	Asbestos Inspections
Enforcement	Source Inspections Permitted Facilities
	Inspections Totals
Violations	*Gas Station*
Violations	*Asbestos*
Violations	*Other*
	Violations Totals
Complaints	*Odor*
Complaints	*Fire out*
Complaints	*Train*
Complaints	*Woodsmoke*
Complaints	*Asbestos Inspections*
Complaints	*Dust*
Complaints	*Idling Truck*
Complaints	*Gas Station*
Complaints	*Other*
	Complaints Totals

Figure 5 Excerpt from Figure 7 Compliance and Enforcement Data highlighting violations

Figure 5 highlights the violations excerpt. Notice of Violations are issued to facilities or job sites found to be operating in violation of air quality regulations. In addition to citing the types of sources and regulations violated, these notices document the compliance issue and cause, the extent of harm associated with the violation and how the violation was stopped or corrected. When a Notice of Violation is issued, the facility is required to correct the violation and may have to pay a monetary penalty, including taking steps to prevent it from happening again. Facilities that do not correct violations or take measures to prevent them risk increased penalties for repeat violations.

Understanding Complaints Data Presented in Figure 7

The Air District receives a wide variety of air quality related complaints. Below are brief descriptions of each type of complaint that are reported to the Air District, highlighted in Figure 6:

- **Odor**: Complaints related to unpleasant or strong smells emanating from a facility or location, which may affect the surrounding community.
- **Fire Out**: Complaints regarding an outdoor fire or illegal burn, including residual smoke.
- **Train**: Complaints involving emissions caused by train operations, including idling trains and rail yard activities.
- **Woodsmoke**: Complaints related to smoke produced by burning wood from residential fireplaces, wood stoves, or outdoor firepits, impacting air quality.
- **Asbestos**: Complaints about the release or presence of asbestos fibers, typically during demolition, renovation, or improper handling of asbestos-containing materials.

Compliance & Enforcement Metrics	
Category	**Sub Category (Meeting)**
Enforcement	Gas Station Inspections
Enforcement	Asbestos Inspections
Enforcement	Source Inspections Permitted Facilities
	Inspections Totals
Violations	*Gas Station*
Violations	*Asbestos*
Violations	*Other*
	Violations Totals
Complaints	*Odor*
Complaints	*Fire out*
Complaints	*Train*
Complaints	*Woodsmoke*
Complaints	*Asbestos Inspections*
Complaints	*Dust*
Complaints	*Idling Truck*
Complaints	*Gas Station*
Complaints	*Other*
	Complaints Totals

Figure 6 Excerpt from Figure 7 Compliance and Enforcement Data highlighting complaints

- **Idling Truck**: Complaints about commercial vehicles or buses left running while stationary, contributing to air pollution and potential health hazards in the vicinity.
- **Dust/Particulate:** Complaints regarding visible dust or particulate matter in the air, often generated by construction, industrial activities, etc.
- **Gas Stations**: Complaints concerning emissions or odors from gas station operations, including fuel dispensing and storage.
- **Other**: Complaints concerning emissions that do not fit into any of the categories above.

The public may report air quality complaints to the Air District 24 hours a day, 7 days a week[4]. Air District staff investigate every complaint to achieve early intervention on potential problems and to allow the Air District to be proactive in protecting public health.

How the Complaint Process Works:

For each complaint, the inspector responds and investigates to determine whether the alleged source is violating an air pollution regulation. As part of the investigation, the inspector conducts a compliance inspection at the facility to ensure there is no ongoing violation of an air quality regulation or permit requirement. The inspector takes appropriate enforcement actions, such as

[4] https://www.baaqmd.gov/en/online-services/air-pollution-complaints/complaint-policy-and-procedures

issuing a Notice of Violation, when the alleged source is determined to be in violation. This may include working with and referring information to other local enforcement partners when a violation pertains to other jurisdictions and authorities. Each complaint is assigned a complaint reference number, which is provided to the complainant and can be used to obtain the complaint investigation details and final report. As a general overview of our complaint process:

- When a complaint is filed, our dispatch center records the complaint and sends the complaint details to the inspector.
- When the inspector receives the complaint, they will reach out to the complainant by phone and/or meet with the complainant in person as part of the investigation to determine the possible source and cause of emissions.
- During the investigation, if the inspector can identify a potential source of emissions or if an alleged source is provided by the complainant, then the inspector will conduct an inspection at the alleged site to determine compliance with applicable air quality regulations and ensures the site mitigates and resolves any emissions or compliance issues. The inspector takes enforcement action if an air quality violation is discovered.
- Upon completion of the investigation, the inspector will determine the complaint status and follow up with the complainant on the investigation findings if requested. A copy of the investigation report may be requested when first reporting the complaint or after the Inspector's investigation through the Air District's Public Records.

Compliance & Enforcement Metrics		Period 1 JAN 2019 - AUG 2020	Period 2 SEPT 2020 - JUN 2021	Period 3 JUL 2021 - JUN 2022	Period 4 JUL 2022 - JUN 2023	Period 5 JUL 2023 - JUN 2024	5YR TOTALS
Category	Sub Category (Meeting)	Amount	Amount	Amount	Amount	Amount	Amount
Enforcement	Gas Station Inspections	12	46	8	2	0	68
Enforcement	Asbestos Inspections	12	5	20	9	1	47
Enforcement	Source Inspections Permitted Facilities	143	53	156	64	2	418
Inspections Totals		**167**	**104**	**184**	**75**	**3**	**533**
Violations	*Gas Station*	1	3	1	2	0	7
Violations	*Asbestos*	8	2	2	1	0	13
Violations	*Other*	15	5	6	20	6	52
Violations Totals		**24**	**10**	**9**	**23**	**6**	**72**
Complaints	*Odor*	60	21	19	7	30	137
Complaints	*Fire out*	2	1	1	2	2	8
Complaints	*Train*	1	0	0	0	0	1
Complaints	*Woodsmoke*	6	7	1	9	0	23
Complaints	*Asbestos Inspections*	4	1	0	2	2	9
Complaints	*Dust*	11	3	13	5	12	44
Complaints	*Idling Truck*	6	8	0	3	0	17
Complaints	*Gas Station*	1	0	0	0	1	2
Complaints	*Other*	5	3	9	4	9	30
Complaints Totals		**96**	**44**	**43**	**32**	**56**	**271**

Figure 7 Compliance & Enforcement data throughout WOCAP implementation

Appendix 2 contains bar charts of the data in the table above that can be used to see patterns within this data.

Key Takeaways from Figure 7 Compliance and Enforcement Data

- **Compliance inspections** waned during the last reporting year (Period 5). This is due in part to the cyclic nature of the inspections program.
    - GDFs have longer inspection frequencies ranging from 2-4 years. GDF inspections are due again in 2024, so the Air District anticipates inspection numbers to go up during the next report.
    - Asbestos inspections do not have set inspection frequencies because they are based on notifications of jobs that involve the removal of asbestos. Asbestos inspections are done based on priority and the nature of the specific job.
    - The majority of the permitted sources in West Oakland were inspected in previous reporting periods. Inspections done during reporting periods 1 & 2 will be due for inspections again later in 2024, so the Air District anticipates inspection activity to pick back up.
- Violations spiked in the 2022-2023 period due to the Radius Recycling (formerly Schnitzer Steel) fire.
- Overall, we are seeing a downward trend of **complaints** coming from West Oakland and in most complaint categories (e.g. Odor, Woodsmoke, Asbestos, Train, Idling Trucks). When looking at the top three complaint categories (Odor, Dust, and Other) we see a significant downward trend for "Odor" and slight increase trend of "Dust" and "Other."

Future Enforcement Activities

The Air District will continue the work of holding industry accountable, proactively working with community to identify enforcement concerns and creating more transparent and community-friendly reporting through its newly created Strategic Plan. Released for public review and comment in July of 2024, three out of the five goals directly address improvements to and reaffirm commitments to compliance and enforcement activities.

Draft Strategic Plan[5] Excerpts

> ***Goal 1*** *"…To achieve impact, we will also strengthen our regulations, permitting and enforcement policies, and improve how we hold industry accountable when our regulations are violated."*
>
> - ***Strategy 1.5 Enhance Violation Investigations: "…****We will enhance our procedures for investigating violations of Air District regulations in communities overburdened by air pollution to better protect community health." (page 39)*
> - ***Strategy 1.6 New Enforcement Policy:*** *"…We will collaborate with communities to develop an enforcement policy to better prevent violations of air quality regulations." (page 39)*

[5] https://www.baaqmd.gov/en/about-the-air-district/mission-statement/draft-strategic-plan

Goal 2 *"…We will directly engage with communities about compliance and enforcement activities, including recent incidents or other air pollution violations, our enforcement response, the extent of public harm, and legal actions we may take."*

- ***Strategy 2.5 Air Quality Complaints: "…****We will improve the complaint process to ensure it is effective and transparent (page 51)*
- ***Strategy 2.6: Talk with Communities:*** *"…Meet regularly with community members on compliance and enforcement activities, recent incidents or other air pollution violations, enforcement response, the extent of public harm, and legal actions we may take." page 53)*

Goal 4 *"…We will also increase the efficiency and effectiveness of our inspection and investigation resources to improve compliance rates and increase the impact of our enforcement programs."*

- ***Strategy 4.5 Improve Compliance Investigations: "…****We will increase the efficiency and effectiveness of inspection and investigation resources to improve compliance and increase the impact of our enforcement program." (page 78)*

Community Description Update

This section presents an update to the demographic, socio-economic and health indicators from the original WOCAP. New indicators related to children (including newborns and infants) and adolescents' health were added due to their heightened level of vulnerabilities to air pollution exposure.[6] These additional health indicators include: low birth weight, pre-term birth, and students who are asthmatic within Oakland Unified School District (OUSD).

Community Profile Update Caveats and Limitations

Rather than attribute any causality to health outcomes from WOCAP implementation, this section of the report seeks to update the population and health characteristics for the area. Most changes in health outcomes take a long time to see. Many other factors influence health outcomes beyond the potential emission reductions from WOCAP implementation.

The update has several limitations. First, some health indicators are available at the ZIP code level while others are available at the Census Tract level. With the expansion of ZIP code 94607 and changing Census Tract boundaries, the geographic comparisons within West Oakland are not exact. Second, results were averaged across multiple years to account for delays in data releases and small responses at the Census Tract level. Lastly, the COVID-19 pandemic impacted behavior,

[6] National Institute of Environmental Health Sciences. Air Pollution and Your Health. Date last accessed 19 August 2024. https://www.niehs.nih.gov/health/topics/agents/air-pollution

health metrics, and environmental conditions. COVID-19 infections and deaths disproportionately affected African Americans and Latinos.[7]

The information is generally presented in a 'before WOCAP' and 'after WOCAP implementation' format. Depending on the availability and release of data, it either follows:

- 2013-2017 before WOCAP (baseline) and 2018- 2022 after WOCAP (benchmark)
- 2016-2018 before WOCAP (baseline) and 2020-2022 after WOCAP (benchmark)

Additional minor variations exist but they align to the 'before WOCAP and 'after WOCAP' approach.

Population Characteristics

Approximately 29,000 people live in West Oakland.[8] Figure 8 shows the percentage of population by race based on the American Community Survey 5-year estimates (2013-2017 and 2018-2022) for the WOCAP area. Across the entire Bay Area region, the Asian and other/multiethnic populations grew at a faster rate than the rest of the racial or ethnic groups. West Oakland continues to be a community with a much higher proportion of African American/Black residents than the rest of the Bay Area. Approximately 39% of the population in West Oakland is African American compared to 10% in Alameda County and 6% in the Bay Area as a whole.

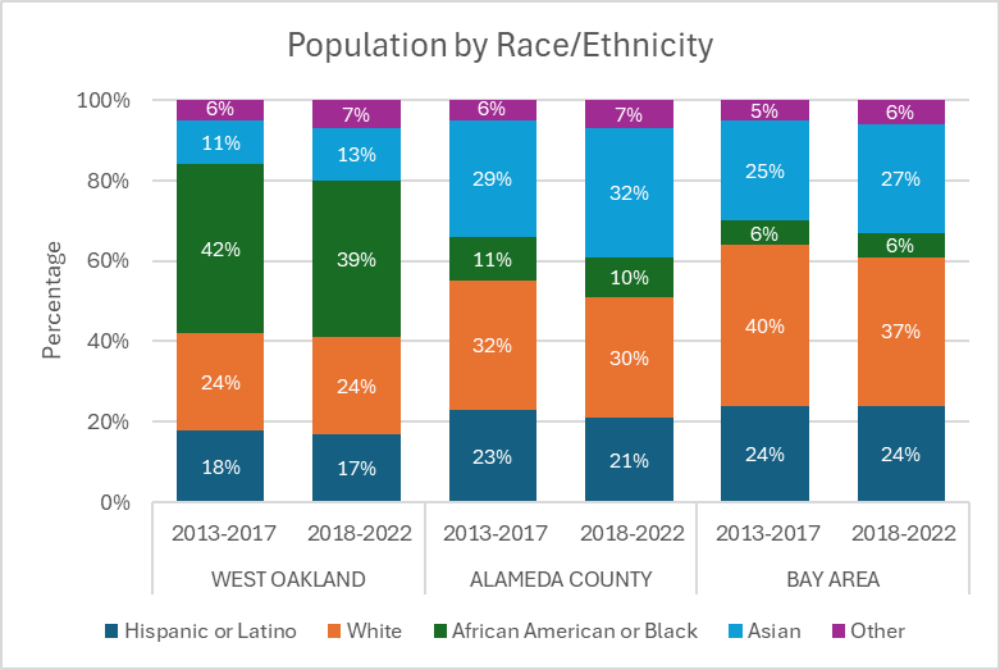

Figure 8 Race Demographics for West Oakland, Alameda County, and the Bay Area. Source: ACS, 2013-2022

[7] Reitsma, Marisa B., et. al. Racial/Ethnic Disparities in COVID-19 Exposure Risk, Testing, And Cases At The Subcounty Level in California. https://www.healthaffairs.org/doi/10.1377/hlthaff.2021.00098

[8] American Community Survey (ACS) 2013-2022 DP05 (Census Tracts: 4014, 4015, 4016, 4017, 4018, 4022, 4024, 4025, 4026, 4027, 9819, 9820)

Approximately 41% of the population in West Oakland lives below the Bay Area poverty level (two times the federal poverty level), compared to 19% in Alameda County, and 18% in the Bay Area as a whole. Across the Bay Area, there has been an overall decrease in poverty rates with an 11% decrease observed in West Oakland. Figure 9 shows income, Figure 10 shows education level, and Figure 11 shows employment status for West Oakland, Alameda County, and the region based on the American Community Survey 5-year estimates (2013-2022). Compared to the baseline years of 2013-2017, West Oakland showed a 2% decrease in educational attainment and 3% decrease in unemployment.

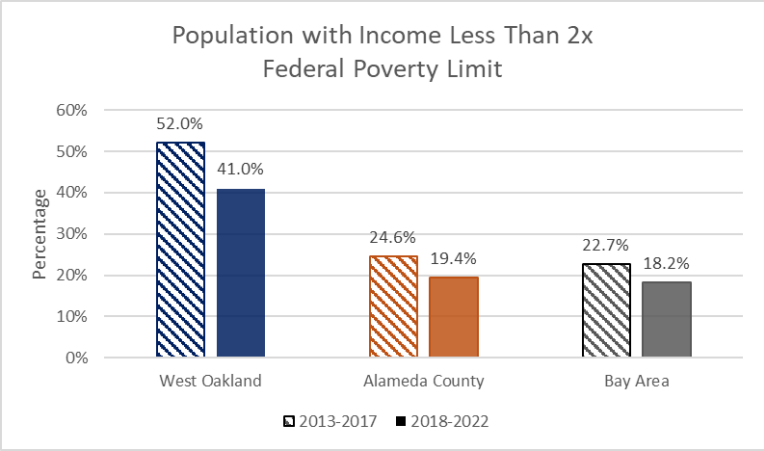

Figure 9 Poverty in West Oakland, Alameda County, and the Bay Area. Source: ACS, 2013-2022

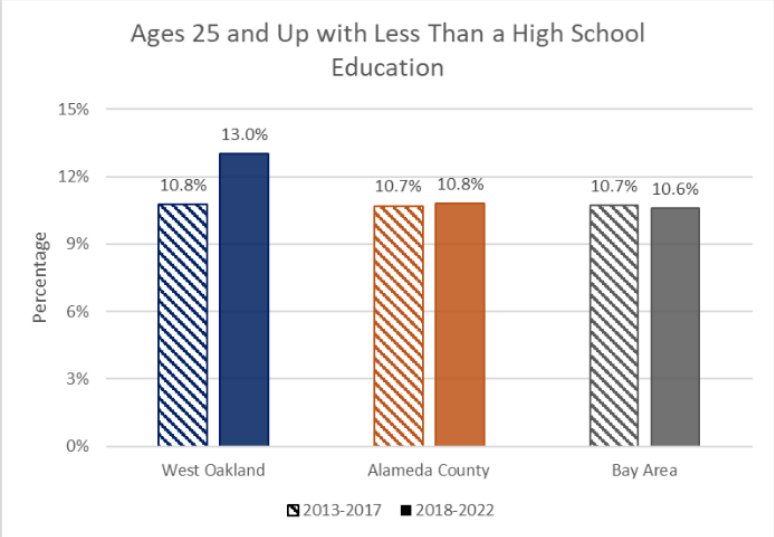

Figure 10 Educational Attainment in West Oakland, Alameda County, and the Bay Area. Source: ACS, 2013-2022

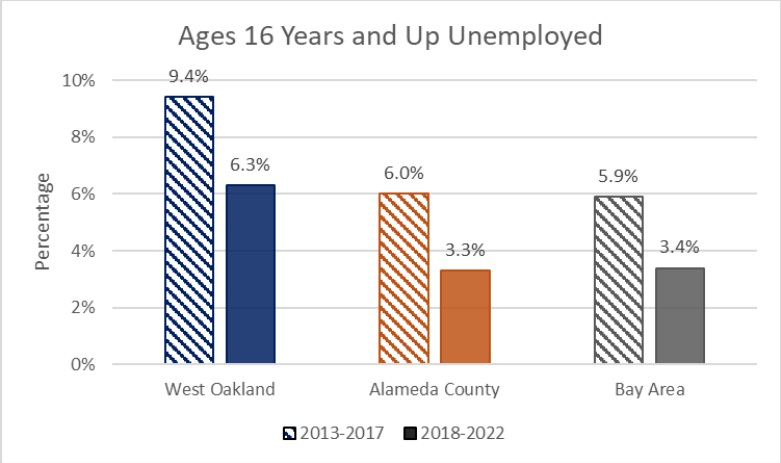

Figure 11 Unemployment rates in West Oakland, Alameda County, and the Bay Area. Source: ACS, 2013-2022

Health Conditions in West Oakland

Life expectancy at birth is a statistic that estimates the average number of years a newborn infant could live if the mortality rates at the time of their birth were to remain the same throughout their life. Figure 12 shows life expectancy in West Oakland compared to Alameda County based on data from the Alameda County Department of Public Health.[9] Across the two time periods and within each location, there was not a difference in life expectancy, however West Oakland has a lower life expectancy compared to Alameda County. Figure 13 shows that African Americans in West Oakland continue to be living approximately 15 years fewer than those with the highest life expectancy. From the period 2020-2022, African Americans in West Oakland have a life expectancy of 73.2 years.

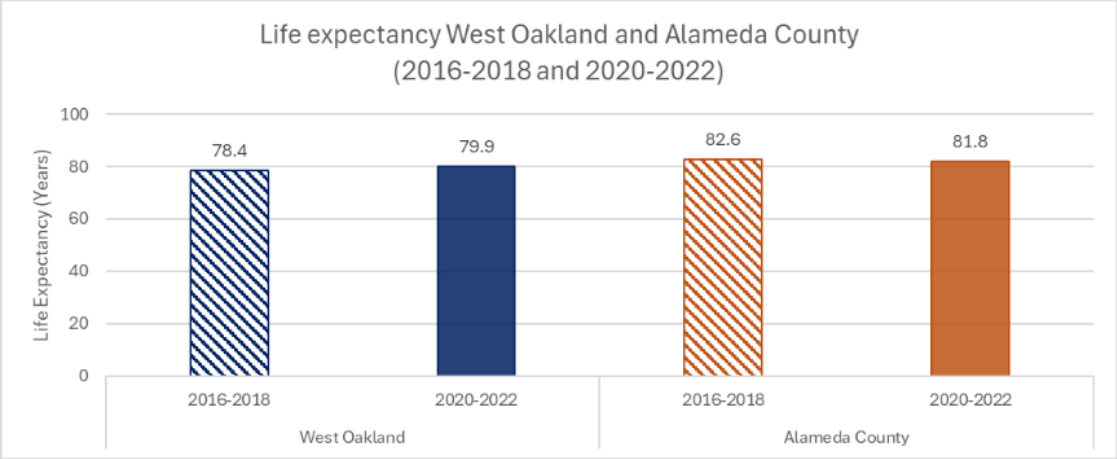

Figure 12 Life Expectancy in West Oakland and Alameda County from 2016-2018 and 2020-2022. Source: ACPHD CAPE, with data from Alameda County vital statistics files 2016-2018 and 2020-2022

[9] ACPHD CAPE, with data from Alameda County vital statistics files 2016-2018 and 2020-2022

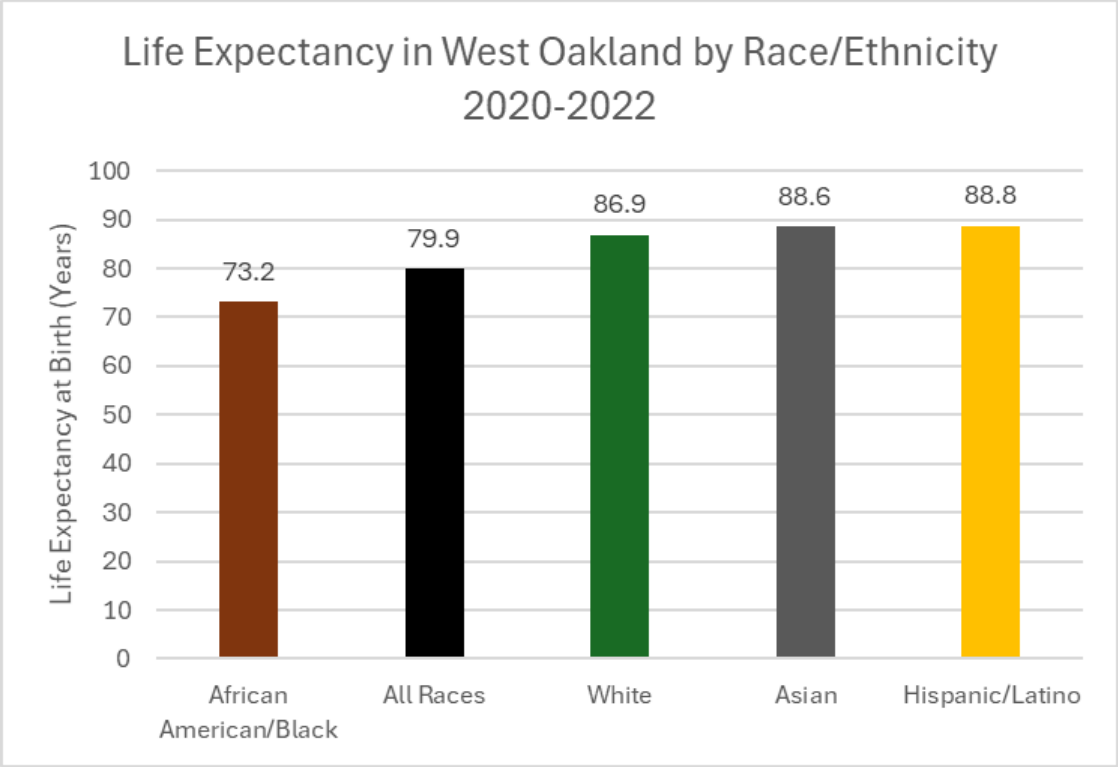

Figure 13 Life Expectancy in West Oakland by Race/ Ethnicity from 2020-2022. Source: ACPHD CAPE, with data from Alameda County vital statistics files 2016-2018 and 2020-2022

Chronic diseases continue to be the leading cause of death and disability in Alameda County. Mortality rates are a measure of frequency of deaths in a specific population over a given time period. Age-adjusted mortality rates takes into account comparisons between groups of people with different age distributions. They are used to control for effects of age differences between different diseases. For example, older people may be more prone to certain diseases than younger ones. Figure 14 shows the mortality rate of stroke, heart disease, and cancer mortality – all of which can be partly influenced by poor air quality. The chart shows deaths per 100,000 people in West Oakland and Alameda County. Although there appears to be a decrease in number of deaths related to heart disease and cancer death for West Oakland, there was no statistically significant difference across the two time periods. Additionally, West Oakland and Alameda County residents experience similar rates of death from cancer, heart disease and strokes in 2020-2022.

Figure 15 shows that although West Oakland residents continued to experience higher rates of asthma emergency visits and hospitalizations, both regions saw approximately a 62% decrease for all ages.[10] This may be attributed to the overall decrease in the number of emergency department visits for non-COVID-19 related health conditions. As shown in Figure 16, asthma emergency visits and hospitalizations for children in West Oakland also decreased for both the West Oakland and Alameda County geographies, by approximately 38% and 44%, respectively.

[10] ACPHD CAPE, with data from HCAI 2016-2018 and 2019-2021

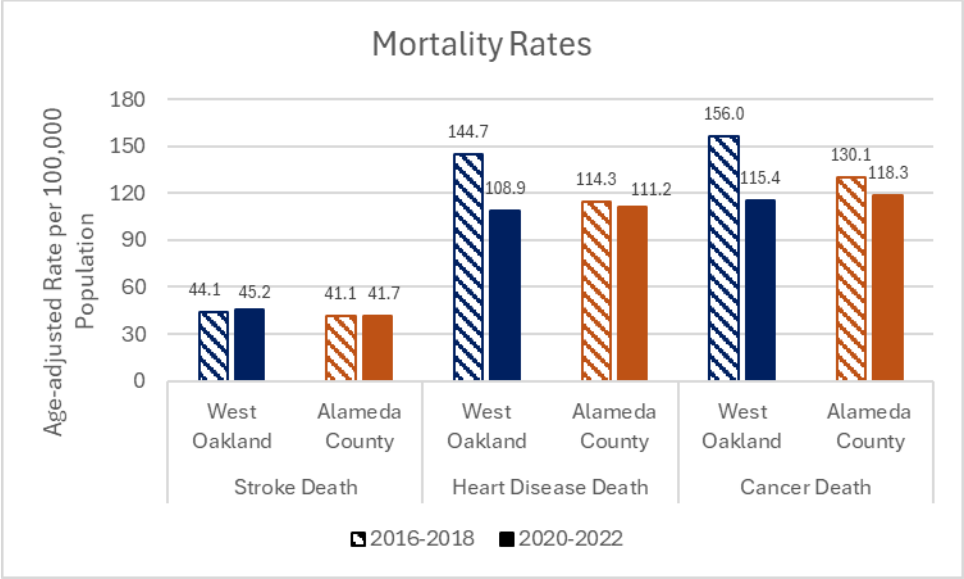

Figure 14 Mortality rates in West Oakland, Alameda County, and the Bay Area. Source: ACPHD CAPE, with data from Alameda County vital statistics files 2016-2018 and 2020-2022

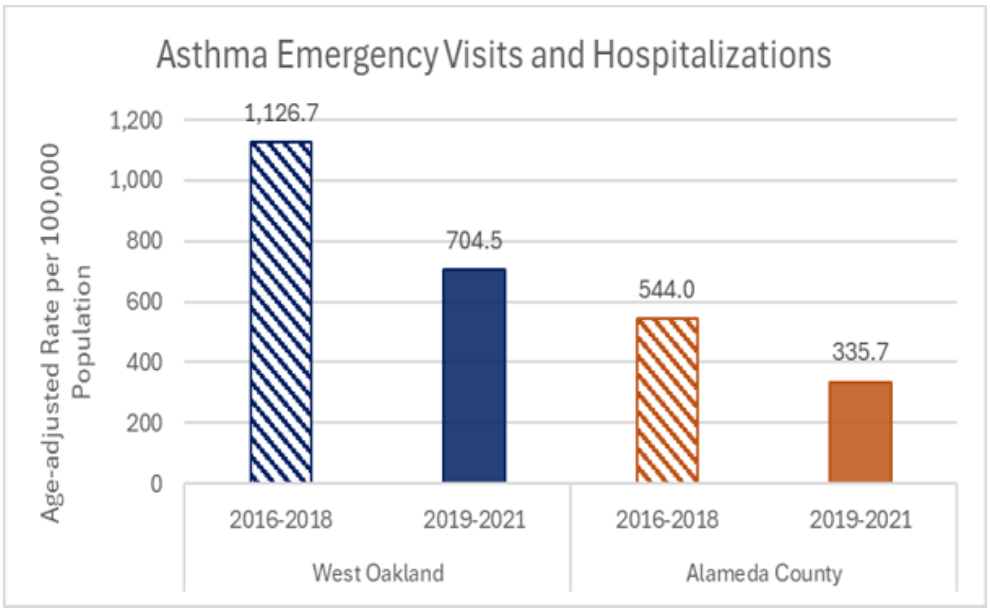

Figure 15 Asthma Emergency Department Visits and Hospitalization in West Oakland and Alameda County from 2016-2018 and 2019-2021. Source: ACPHD CAPE, with data from HCAI 2016-2018 and 2019-2021

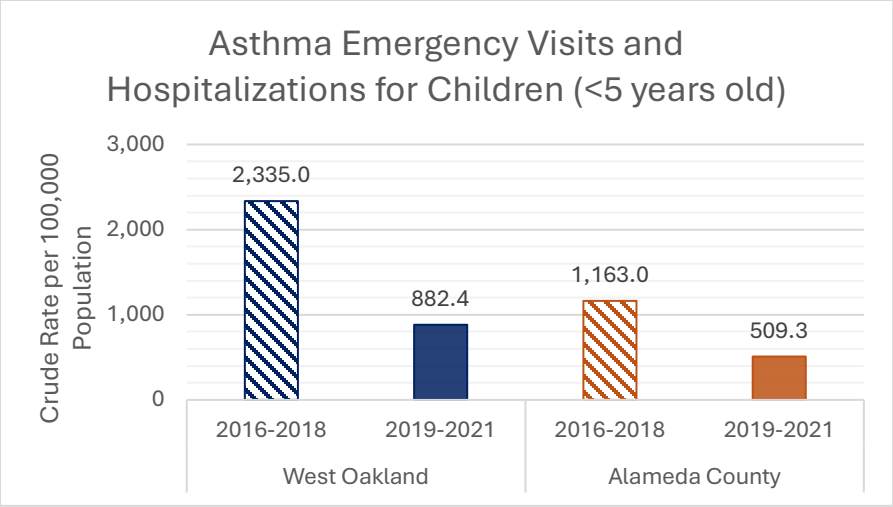

Figure 16 Asthma Emergency Department Visits and Hospitalization for Children (<5 years old) in West Oakland and Alameda County from 2016-2018 and 2019-2021. Source: ACPHD CAPE, with data from HCAI 2016-2018 and 2019-2021

The community description update sought to incorporate potential trends in low birth weight rates and preterm birth rates for West Oakland and Alameda County.[11] Preterm birth, also known as premature birth, is when a baby is born before 37 weeks of pregnancy. Figure 17 reflects a slight increase in the preterm birth rate, but these results were not significant across the two geographies. Low birth weight is when a baby weighs less than 5 pounds 8 ounces (2,500 grams) at birth, regardless of gestational age. Figure 18 shows a significant difference between low birth weight rates in West Oakland compared to Alameda County.

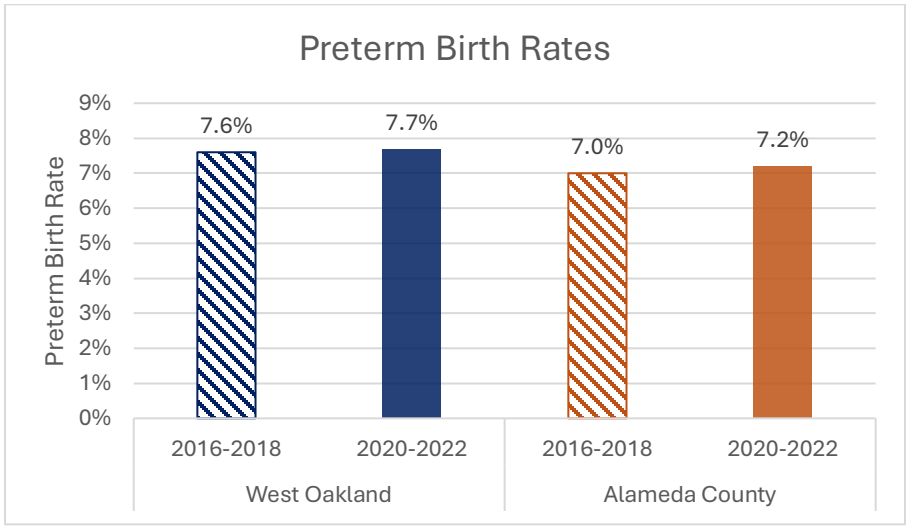

Figure 17 Preterm Birth Rates in West Oakland and Alameda County from 2016-2018 and 2019-2021. Source: ACPHD CAPE, with data from Alameda County vital statistics files 2016-2018 and 2020-2022

[11] ACPHD CAPE, with data from Alameda County vital statistics files 2016-2018 and 2020-2022

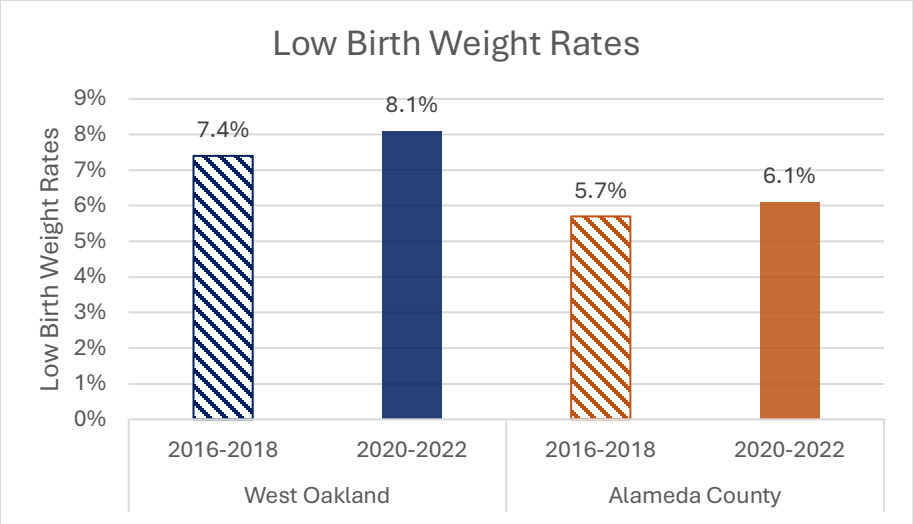

Figure 18 Low Birth Weight Rates in West Oakland and Alameda County from 2016-2018 and 2019-2021. Source: ACPHD CAPE, with data from Alameda County vital statistics files 2016-2018 and 2020-2022

Lastly, the community profile sought to better understand asthma rates among students within Oakland Unified School District (OUSD). Figures 19 - 21 reflect high rates of asthma at West Oakland schools, a higher percentage of days absent among asthmatic students, and a high rate of asthma-related medical incidents in West Oakland school year 2023-2024.[12]

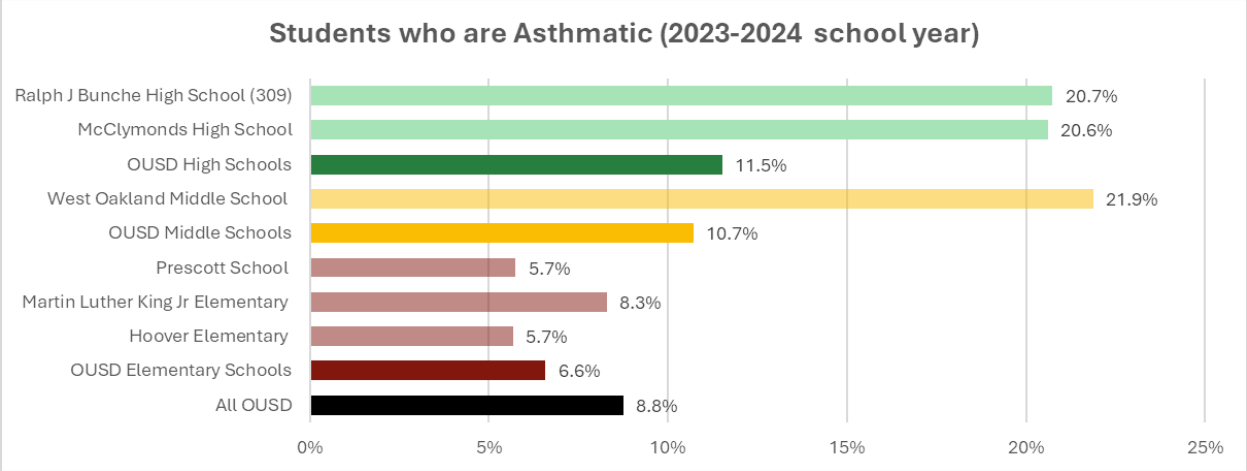

Figure 19 Students who are Asthmatic from within Oakland Unified School District from 2023-2024

[12] Oakland Unified School District, with data from 2023-2024.

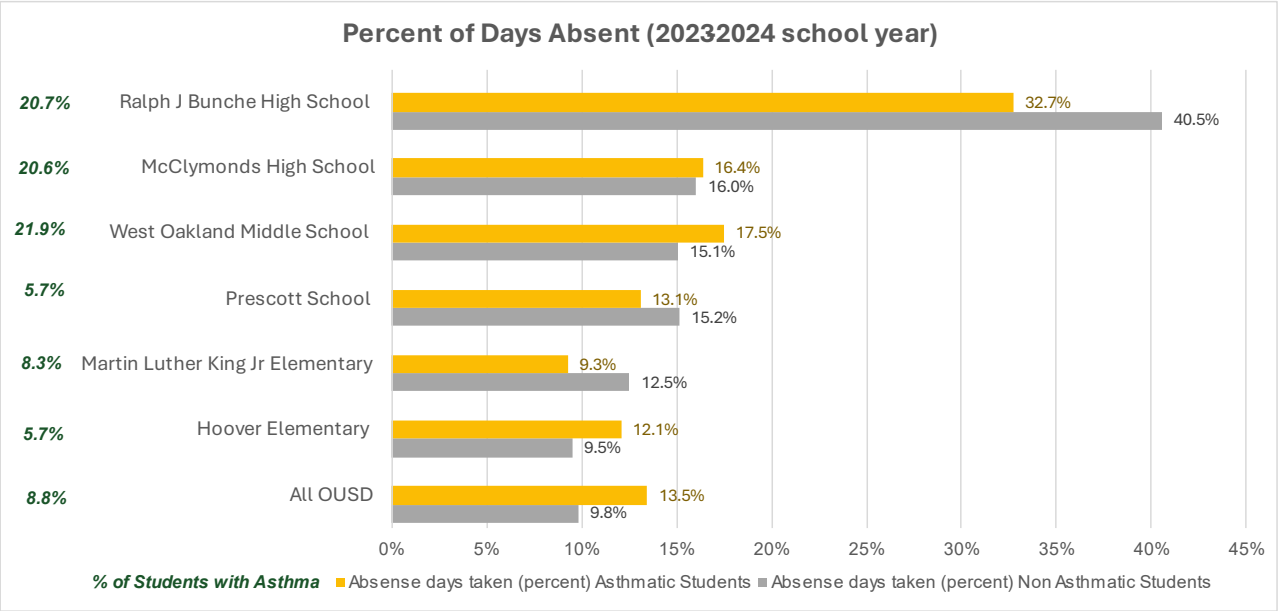

Figure 20 Oakland Unified School District asthmatic and non-asthmatic students from and the percentage of absence days from 2023-2024

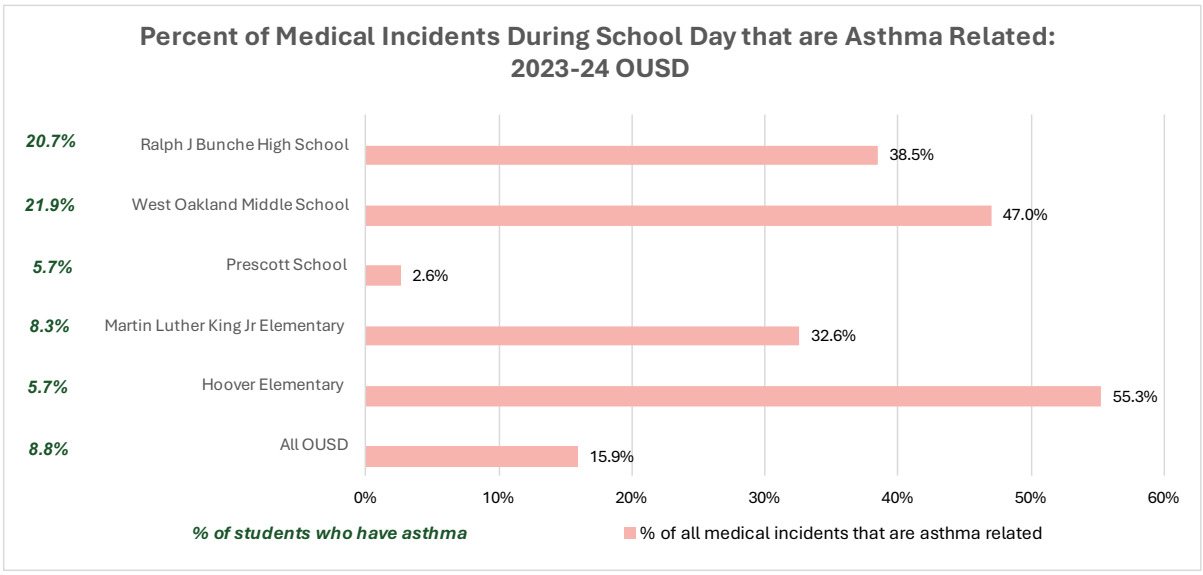

Figure 21 Percent of medical incidents during school days that are asthma related in 2023-2024 from Oakland Unified School District.

Emissions Inventory Update

Background

During development of the WOCAP, the Air District worked with the CSC and CARB to develop a community-scale emissions inventory for local sources in West Oakland. The original emissions inventory was developed for a base year of 2017 and forecast years of 2024 and 2029 (5 and 10 years from the WOCAP adoption year of 2019). Once compiled, the emissions data were combined with meteorological inputs in the AERMOD dispersion model to estimate pollutant concentrations and cancer risk resulting from local sources. This evaluation focused on fine particulate matter ($PM_{2.5}$), diesel particulate matter (DPM) and cancer risk, and human exposures and risks were estimated for seven community-identified impact zones that the CSC selected based on analyses of monitoring data. For each zone and the community as a whole, the contribution of key local sources (e.g., permitted sources, port-related sources, etc.) to air quality impacts was estimated based on modeling results. Findings from this exposure assessment were then used to support strategy development and to establish plan targets.

As part of the development of this fifth-year report, the 2024 emissions inventory was updated to account for activity changes, plan strategies, and regulatory programs that have been implemented since the adoption of the WOCAP. Emissions changes were also used to adjust prior modeling and exposure results, providing an assessment of progress toward plan targets over the past 5 years. In addition, an updated forecast of 2029 emissions from local sources was developed to assess further progress that is anticipated in the years ahead.

Methods

To the extent possible, the methods and datasets used to update the 2024 and 2029 emissions inventories are consistent with those used in the development of the 2017 baseline inventory presented in the WOCAP. This use of "historical methods" provides a measure of changes relative to the original 2017 baseline and facilitates the evaluation of progress toward WOCAP goals and targets. However, emissions inventory methods and datasets improve over time, and some of the tools and datasets used to develop the original WOCAP emissions estimates are no longer current.[13] Therefore, Air District staff developed an alternative "best methods" inventory that estimates progress against an updated 2017 baseline (see Appendix 3). In both inventories, percentage changes against the 2017 baseline are similar.

The main focus of emissions inventory updates was the set of high-priority local sources included in the exposure analyses, which includes on-road mobile sources, port- and rail-related sources, and permitted facilities. However, inventory updates also include other local sources for which sufficient data were unavailable to support modeling (e.g., restaurants, residential sources, and

[13] For example, since the WOCAP was adopted, CARB has released the EMFAC2021 mobile source model to replace the EMFAC2017 model used for WOCAP emissions estimation for on-road motor vehicles.

construction activities). Table 1 summarizes the information used to develop emissions updates for key sources. Notably, emissions for port-related sources were based on a variety of datasets, including a 2020 port inventory, vessel call data from the Marine Exchange, and data on berthing hours and shore power usage from port staff. In consultation with CARB, port-related emissions were forecast from 2024 to 2029 using projections developed by the San Francisco Bay Conservation and Development Commission (BCDC).

Table 1. Information used to update emissions for key West Oakland sources.

SOURCE	UPDATED INFORMATION
On-road Vehicles (Highway and Street)	
On-road vehicles, like cars and trucks, including exhaust, fuel evaporation, brake & tire wear, and road dust	Fleet turnover, regulatory impacts, and activity changes from the EMFAC model; impacts of new CARB regulations
Port	
Ships maneuvering & berthing, harbor craft, dredging, bunkering, Port trucks, cargo handling equipment, and OGRE & BNSF railyards	2020 Port of Oakland Inventory, Marine Exchange data, berth electrification updates, engine upgrades for tugs and gantry cranes, revised growth rates for port activities.
Rail	
Rail lines (including passenger rail), and UP railyard	Latest activity and fleet data; impacts of new CARB locomotive regulations
Permitted	
Schnitzer, EBMUD, Dynegy, Pinnacle Ag Services, Sierra Pacific, CASS, California Cereal, CA Waste (10th St), and many others	Latest Air District reporting data
Other	
Ferries, Schnitzer (ships), Schnitzer trucks and other truck-related businesses	Latest activity and fleet data; impacts of new CARB regulations

As noted in Table 1, the updated emissions also account for the impact of new CARB regulations that were adopted after the WOCAP was completed, including the heavy-duty inspection and maintenance (HDIM) program, the commercial harbor craft (CHC) regulation, and the in-use locomotive regulation.

Emissions Summary

The combination of plan actions, existing and new statewide regulations, fleet turnover, and other changes resulted in significant emissions reductions in West Oakland between 2017 and 2024. Emissions of DPM and cancer risk-weighted emissions,[14] of which DPM is the leading component, were estimated to decrease by 31% and 28%, respectively, between those years (Figures 22 and 23). Progress was less significant for $PM_{2.5}$ emissions, which decreased by 10% between 2017 and

[14] Cancer risk-weighted emissions are estimated by multiplying the emissions of all relevant toxic air contaminants in the inventory by their cancer slope factor (CSF) and a dosage factor, then summing the results. CSFs are used to estimate the risk of cancer associated with exposure to a particular carcinogen.

2024 (Figure 24). For all three classes of pollutants, further emissions reductions between 2024 and 2029 are forecasted to be approximately 7%, largely due to forecasted growth in on-road motor vehicle activity from the EMFAC model and BCDC's annual forecasted growth of 2.3% for activities at the Port of Oakland. These emissions forecasts are highly uncertain, particularly for the port, which has had decreases in vessel calls and container shipments in recent years.

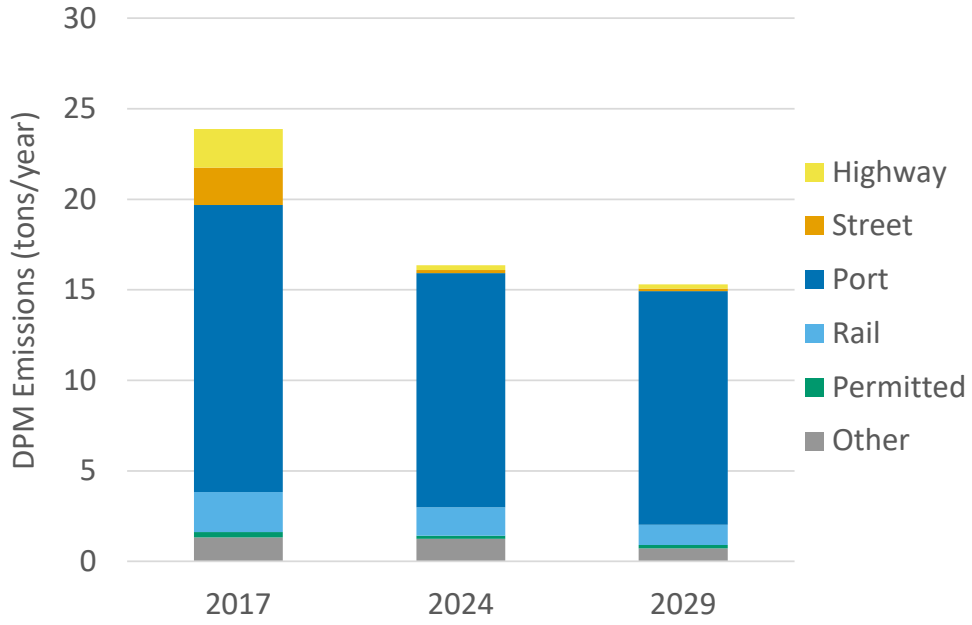

Figure 22 West Oakland DPM emissions by year and source category.

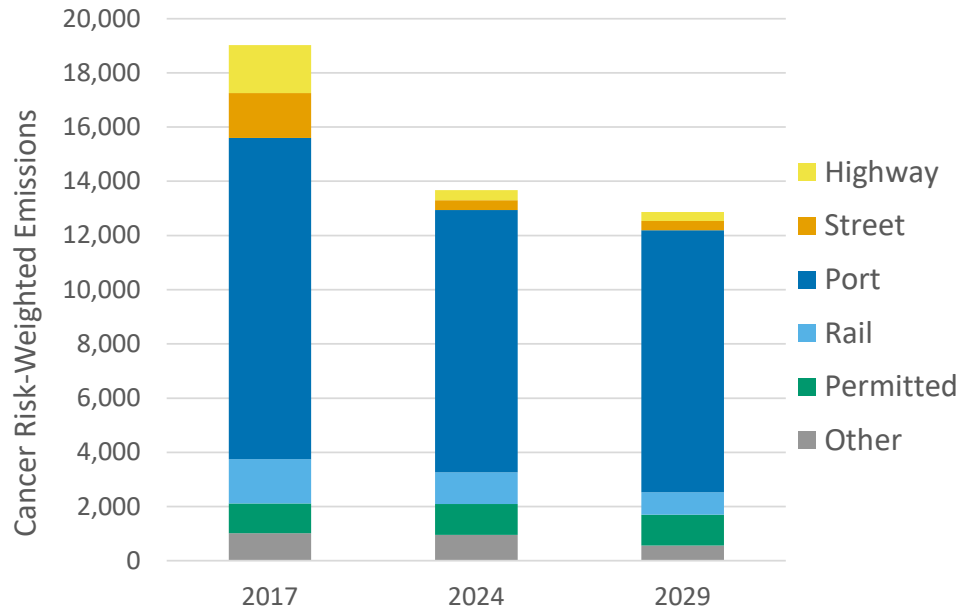

Figure 23 West Oakland cancer risk weighted emissions by year and source category.

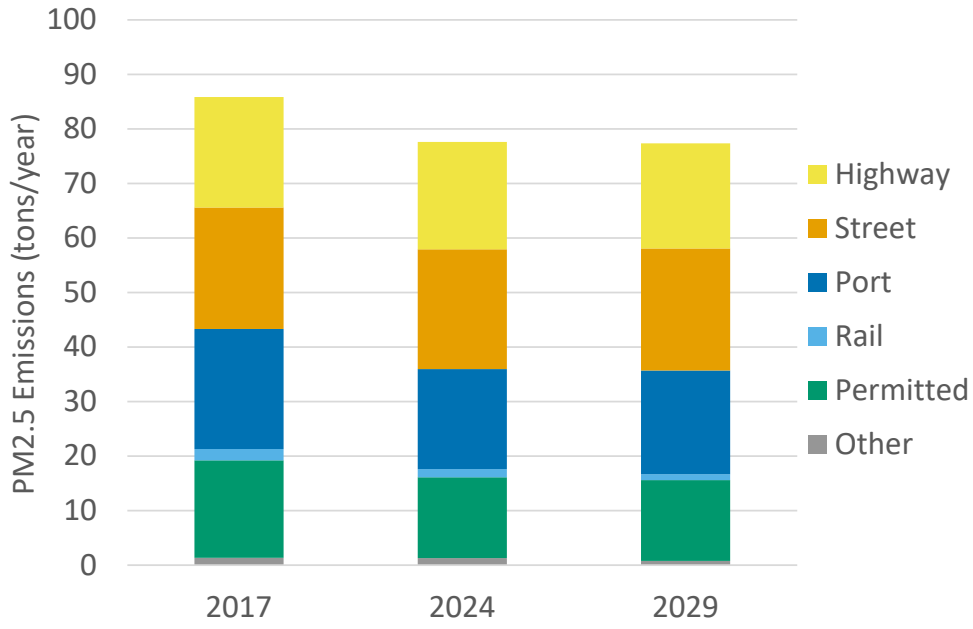

Figure 24 West Oakland PM2.5 emissions by year and source category.

Significant reductions in DPM emissions reflect the impact of local, regional, and statewide efforts to target diesel sources. For example, Figure 22 shows large reductions in DPM emissions from on-road mobile sources (highways and streets), which result from existing statewide regulations like

CARB's Truck and Bus Rule and new regulations like the HDIM program. Large DPM emissions reductions were also achieved for port-related sources like tugboats and other harbor craft, largely through grant-funded engine upgrades. Table 2 shows 2024 emissions reductions for West Oakland resulting from key statewide and local actions.

Table 2. 2024 emissions reductions estimated for key statewide and local actions.

Action	Affected Sources	2024 Reductions (tons)		
		PM2.5	DPM	Cancer Risk-Weighted
Heavy-Duty Inspection and Maintenance (HDIM)	Heavy-duty diesel vehicles	0.15	0.16	115
Expanded Berth Electrification	Ocean-going vessels at the Port of Oakland	1.36	0.23	174
Cargo handling equipment engine upgrades through grant programs[a]	Rubber-tired gantry (RTG) cranes at the Port of Oakland	0.30	0.30	223
Harbor craft engine upgrades through grant programs[a]	Assist tugs, dredgers, bunkering barges	2.02	2.08	1,555
TOTAL		3.83	2.77	2,067

[a]Note that the reductions shown were estimated for the single year of 2024, while reductions discussed in the grants investment summary on page 7 are cumulative over multiple years.

Progress in reducing $PM_{2.5}$ emissions is less significant due to the wide variety of sources emitting $PM_{2.5}$, including non-combustion sources such as fugitive dust. Table 2 shows that the key actions listed have reduced $PM_{2.5}$ emissions from heavy-duty trucks, harbor craft, and ocean-going vessels at berth. However, emissions from other $PM_{2.5}$ sources, such as road dust, have remained the same or increased between 2017 and 2024. Tables A4-1 – A4-3 in Appendix 3 provide more details on emissions changes for specific source types to help interpret these overall changes.

Exposure Assessment and Targets

Human exposures to air pollution from a given source are affected not just by the source's emissions levels, but by other factors such as meteorology, the proximity of populated areas to the source, and the source' release characteristics (e.g., elevated stack vs. low-level release). Therefore, Air District staff updated the exposure modeling results presented in the WOCAP to evaluate progress toward reducing exposures and meeting plan targets.[15] Note that all modeling results and targets focus on impacts from local sources, not total pollutant exposure resulting from air pollution transport and other non-local factors. WOCAP targets can be summarized as follows:

> *By 2025, all West Oakland neighborhoods will have the same air quality as today's [2017] average West Oakland neighborhood, and by 2030, all West Oakland neighborhoods will have the same air quality of today's [2017] "cleanest" West Oakland neighborhood.*

For DPM, this approach resulted in a 2025 target of having all seven impact zones at or below an average residential DPM exposure of 0.25 µg/m^3 (attributable to local sources only). Based on modeling results, 4 of the 7 impact zones had residential average DPM concentrations attributable to local sources that exceeded 0.25 µg/m^3 in 2017, as shown in Figure 25. When DPM emissions reductions between 2017 and 2024 are accounted for, only one zone (2) is slightly above the 2025 target, and DPM exposure reductions range from 38% (zone 2) to 62% (zone 7). For the community as a whole, average residential DPM exposures attributable to local sources were reduced by 56% between 2017 and 2024. Note that this reduction exceeds the overall DPM emissions reduction of 31% described in the emissions inventory section above. The larger reductions in exposure are primarily due to significant DPM reductions for on-road mobile sources (highways and streets), which operate within residential areas (unlike marine sources). It should also be noted that results for cancer risk levels track DPM results closely, as shown in Figure 26.

[15] This update was done by scaling prior modeling results using the emissions changes outlined above and in Appendix 4. AERMOD treats the modeled pollutants as inert (i.e., no chemical transformations are considered), so resulting concentrations scale linearly with emission levels.

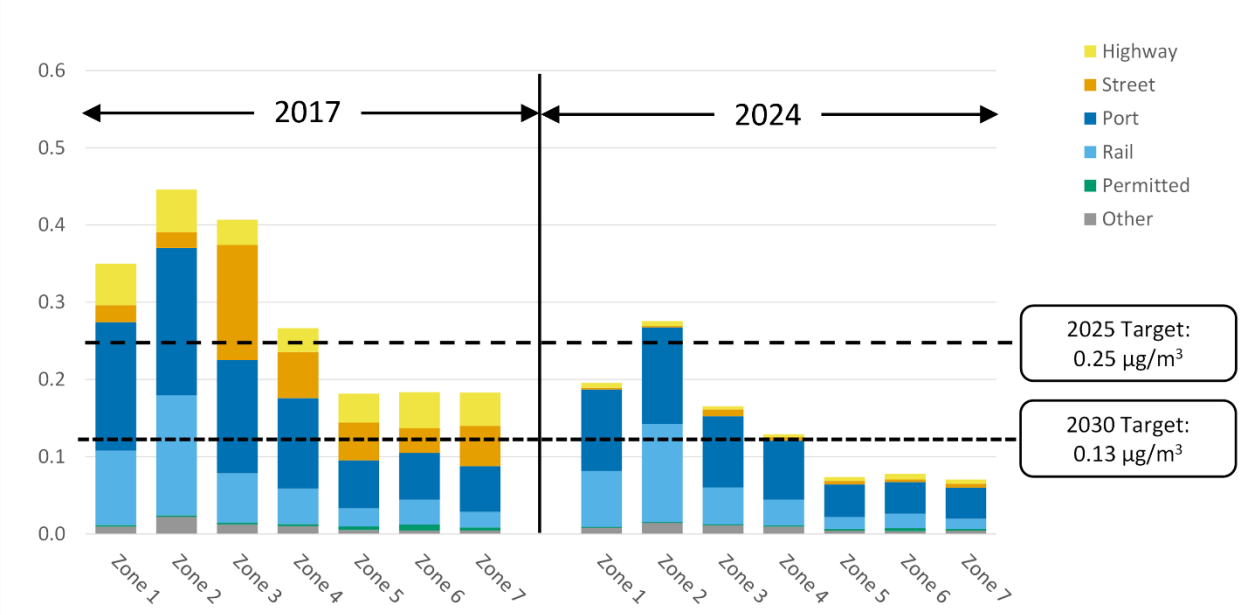

Figure 25 West Oakland DPM concentrations by impact zone and source category (modeled local sources).

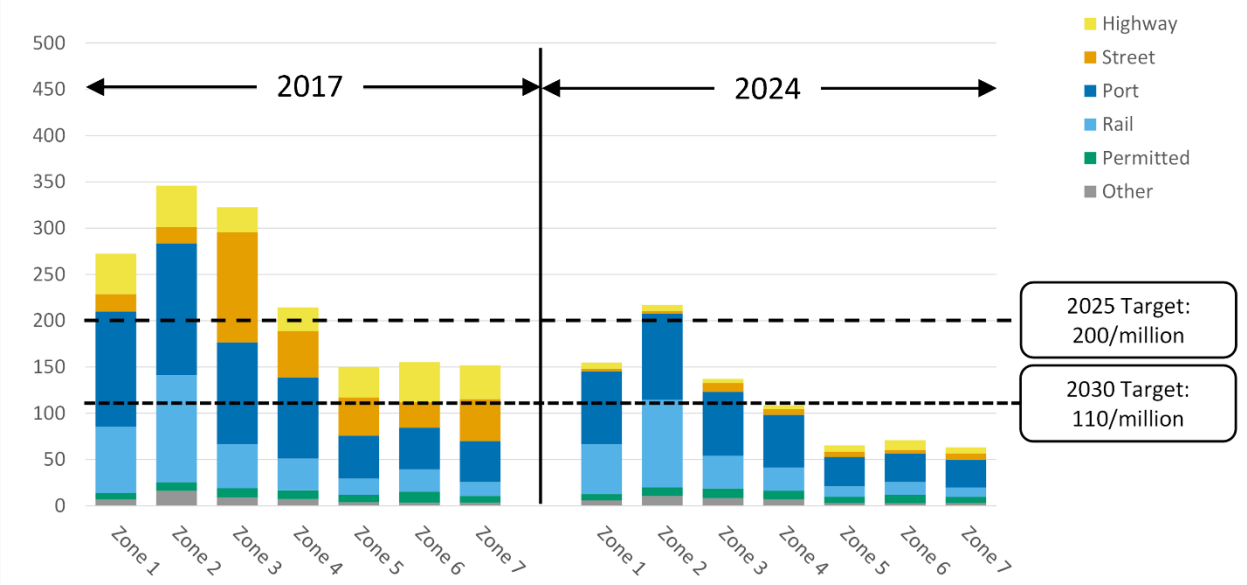

Figure 26 West Oakland cancer risk levels by impact zone and source category (modeled local sources).

For average residential $PM_{2.5}$ exposures, progress between 2017 and 2024 was less pronounced than for DPM and cancer risk, as discussed in the emissions inventory section above. For $PM_{2.5}$, the 2025 target called for all seven impact zones to be at or below an average residential $PM_{2.5}$ exposure of 1.7 µg/m³ (attributable to local sources only). Based on modeling results, 5 of the 7 impact zones exceed the 2025 target in 2017, as shown in Figure 27. When $PM_{2.5}$ emissions reductions between 2017 and 2024 are accounted for, three zones (3, 5, and 6) remain above the

2025 target. However, $PM_{2.5}$ exposures were reduced across all zones, with reductions ranging from 3% (zone 5) to 20% (zone 1). And for the community as a whole, average residential $PM_{2.5}$ exposures attributable to local sources were reduced by 56% between 2017 and 2024.

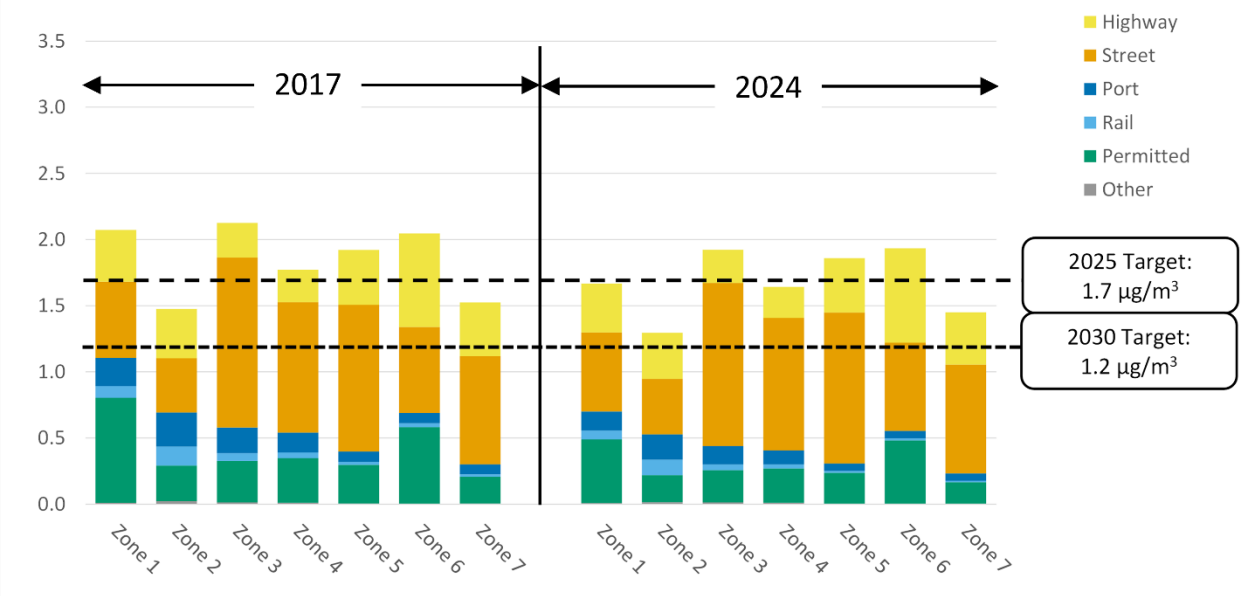

Figure 27 West Oakland PM2.5 concentrations by impact zone and source category (modeled local sources).

Conclusions

The updated emissions inventory and exposure assessment shows that DPM emissions from local sources targeted by the WOCAP were reduced by 31% between 2017 and 2024 due to plan actions, statewide regulations, fleet turnover, and other factors. These emissions reductions lowered average residential DPM exposure attributable to local sources by 56% across West Oakland, with exposure reductions ranging from 38% to 62% across the 7 impact zones identified by the CSC. Reductions were less pronounced for $PM_{2.5}$, as emissions from key local sources decreased by 10% and average residential exposures attributable to local sources were reduced by 8% overall and by 3% to 20% across the 7 impact zones. These findings point to significant progress in reducing impacts from the diesel sources of greatest concern to the CSC and to the need for enhanced local and regional efforts to address $PM_{2.5}$ impacts.

Strategy Evaluation

A key component of the Blueprint 2.0 fifth year annual report is an assessment of each strategy. Blueprint 2.0 calls for a rationale for all strategies that are modified or removed from the plan.[16] As the Air District, WOEIP and agency partners wrapped up the fifth year of WOCAP implementation, the Air District began the process of assessing strategies. The majority of strategies are complete,

[16] Blueprint 2.0, page 95.

in progress, or ongoing. The assessment contained in this report focused on the remaining strategies for which no progress was reported during five years of WOCAP implementation.

The Air District began the strategy revision process by working with the designated lead agencies to propose a course of action for each strategy such as revise the strategy, continue the strategy or close out the strategy along with a rationale for each recommendation. The Air District and WOEIP then discussed the strategy assessment with the CSC in two parts. In June 2024, they discussed with the CSC Air District and Port-led strategies. In July of 2024, the Air District and WOEIP talked through the other agency-led strategies with the CSC. Once all CSC feedback was received, the Air District and WOEIP Co-Leads further revised the strategy revisions and shared with the CSC for final review over email. Appendix 4 contains the detailed strategy assessment. A summary of the assessment is included in this section.

A total of 29 strategies were assessed.

- 13 strategies recommended to be revised
- 3 strategies recommended to be continued
- 3 strategies identified as complete
- 10 strategies recommended to be closed out

Strategies that are recommended to be revised relate to continuing the work on reducing the impact of transport trucks (Strategy #67) and to call for agencies to work together to advocate for and fund electrification of rail industry (Strategy #64, #65). Strategies related to minimizing emissions exposure from the Port of Oakland and the East Bay Municipal Utility District were also proposed to be revised. Strategies have been revised that call for the Port to study the truck traffic and public health impacts from larger container ships, (Strategy #43), to continue the work of "greening" the shipping industry (Strategy #63) and to continue to make progress on electrifying Port operations (Strategy #21). A strategy was revised to analyze odors from EBMUD (Strategy #FSM-4). A call to study the impacts of toxic air contaminants and cumulative exposure was also included as a strategy revision (Strategy #82). Additional revisions related to studying the effects of street sweeping (Strategy #59), include health in all policies guidance (Strategy #76), create a smoking ban in residential buildings in Oakland (Strategy #77), use participatory budgeting for investments in environmental justice neighborhoods in Oakland (Strategy #79) and finally to increase marketing of West Oakland health clinics and resources (Strategy #85).

Strategies that will be continued include optimizing the Port's appointment system (Strategy #FSM-6), assessing trucks parked in the Caltrans right-of-way (Strategy #7) and implementing truck traffic calming improvements (Strategy #40).

Completed strategies included the City of Oakland studying development impact fees (Strategy #13), the City of Oakland developing policy to limit fugitive dust (Strategy #27) and making Dynegy Power Plant more sustainable (Strategy #74).

Strategies proposed to be closed out relate to Air District Regulation 8-5 to limit emissions of organic compounds from storage tanks that, once studied more in-depth, turned out to not have an appreciable impact on emissions reduction (Strategy #73). Strategies for which alternate initiatives were identified to meet the intent of the strategy included avoiding displacement in West Oakland (Strategy #25), green building approaches to housing construction (Strategy #86), updating conditions of approval for carbon free electricity (Strategy #88) and expanding asthma management (Strategy #84). Some strategies were found to be exceptionally challenging from an implementation perspective and for which other strategies could achieve desired improvements such as limiting the hours that trucks can operate in West Oakland (Strategy #9) and street closures near schools (Strategy #58). Other strategies were duplicative of existing strategies (Strategy #18 and #84). Finally, some strategies became obsolete due to changes in economic conditions such as low uptake of carshare after the pandemic, plus new initiatives replacing car share (Strategy #46) and changes in "last mile delivery", such as Amazon delivery services that take packages to a person's doorstep (Strategy #80).

Conclusion

WOCAP strategy implementation progress is due to the interdisciplinary collaboration among government agencies, the proactive approach taken by the West Oakland Environmental Indicators Project to develop innovative projects and due to the advocacy of the WOCAP steering committee. The last five years of implementation resulted in tangible progress as highlighted throughout this report. Significant incentive grant funding has been used to replace old, dirty, heavily polluting mobile equipment and engines with cleaner options. This investment along with the implementation of other strategies has resulted in significant emissions reductions in West Oakland, particularly for DPM and cancer risk-weighted emissions as described in the emissions inventory update section. Enforcement strategies were completed that involved addressing backyard burning, updating complaint procedures and regularly reporting to the WOCAP steering committee. The WOCAP steering committee along with agency partners spent several months reviewing the strategies that did not make progress during the last five years and developed a recommended action and supporting rationale to either revise the strategy, continue the strategy or close out the strategy.

For more information, visit the Air District's WOCAP webpage at https://www.baaqmd.gov/community-health/community-health-protection-program/west-oakland-community-action-plan

See also the West Oakland Environmental Indicators Project webpage at https://woeip.org/featured-work/

Appendices

Appendix 1 Strategy Status Update

Appendix 2 Compliance & Enforcement data charts

Appendix 3 Emissions Inventory Update Technical Appendix

Appendix 4 Strategy Assessment