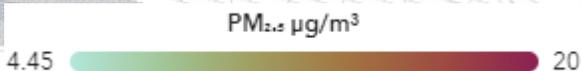


AB617 in West Oakland Community-Based Air Pollution Abatement Planning



- 1) Marcus Garvey Commons**
High NO₂ emission levels
Near freeway and truck routes
- 2) Peralta near Mandela Pkwy**
High No₂ and PM_{2.5}
Significant industrial activity
- 3) West Oakland Health Council**
High No₂ and PM_{2.5}
On main thoroughfare



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Title Page Photo Sources: 1. West Oakland Air Quality | Aclima. <http://insights.aclima.io/west-oakland>. Accessed May 20, 2021. 2. Owing Our Air: The West Oakland Community Action Plan. Bay Area Air Quality Management District; 2019.

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Executive Summary

California's Assembly Bill 617 (AB617) was passed in 2017 to make air quality management more responsive to communities which experience disproportionately poor air quality and health impacts. AB617 requires air quality planning to occur at a community scale – a radical change for air quality law. This case study explores the successes and challenges of a first-year AB617 location, West Oakland, and the process of writing a Community Emissions Reduction Program (CERP).

This case study contains a brief history of the racist environmental policies that produced the ongoing unequal exposure to air pollution in West Oakland; a profile of community leadership and advocacy; and details on the development of the West Oakland CERP. While still a work in progress, both the West Oakland abatement planning process, and AB617 more broadly, offer important lessons for community organizations, government agencies, and scholars interested in environmental justice in environmental planning and governance.

The AB617 process in West Oakland represents community empowerment in several ways. First, there was a shift in power relationships between government agencies and communities, wherein community constituents gained increased control, relative to past air planning efforts. Second, there was a re-scaling of governance between state, regional, and local levels that changed the way various government agencies work together, allowing them to work across typical silos. Report recommendations include ways to support increased racial equity and improved community engagement in AB617 efforts in West Oakland and around California.

The AB617 program process has many elements. The community Air Monitoring Programs (CAMPs) and CERPs process in selected communities identify air pollution sources, create air pollution inventories, and

create air pollution reduction plans. Other notable program elements include: 1. A statewide technology clearinghouse of best available control and retrofit technologies. 2. Enhanced statewide emissions reporting. 3. Accelerated air quality rule development to retrofit pollution controls on industrial facilities, which applies to all communities, not just AB617 communities. 4. Increased penalty provisions statewide. 5. A statewide strategy for reducing emissions in all communities affected by high cumulative exposure burden. This is regional incentive money given to air districts and not restricted to AB617 communities. 6. A statewide community air monitoring data portal (AQView). See the law's guiding document on, the *AB617 Blueprint*, for more information on how the bill text is translated into bill implementation.¹

As seen in Figure 1, the AB617 administration process is as follows: regional air districts (Air Districts) nominate communities or communities self nominate. The California Air Resources Board (CARB) selects communities for AB617 participation among those nominations. Then, Air Districts work with selected communities to develop a CAMP or a CERP. CERPs aim to create locally-focused air pollution reduction strategies to eliminate exposure to air pollution in communities. Where necessary, CAMPs create air monitoring networks designed and co-managed by communities. The design of a CAMP is driven by the community participants, but monitoring, installation, maintenance, and data collection is performed by the Air Districts. Separate and distinct from the CAMPs and CERPs, but also part of AB617, are Community Air Grants. Some community groups have received grants to perform air monitoring. Air monitoring through the Community Air Grants is managed by the recipient. This is separate and outside of work done by the Air Districts and community members as part of

a CAMP or a CERP.

The AB617 guiding document created by CARB - the AB617 Blueprint - stipulates that CAMPs and CERPs be created by Community Steering Committees (CSCs).¹ Since the AB617 bill text does not explicitly require the convening of CSCs, the Blueprint states that CAMPs and CERPs be considered and discussed with CSCs and that the air districts.

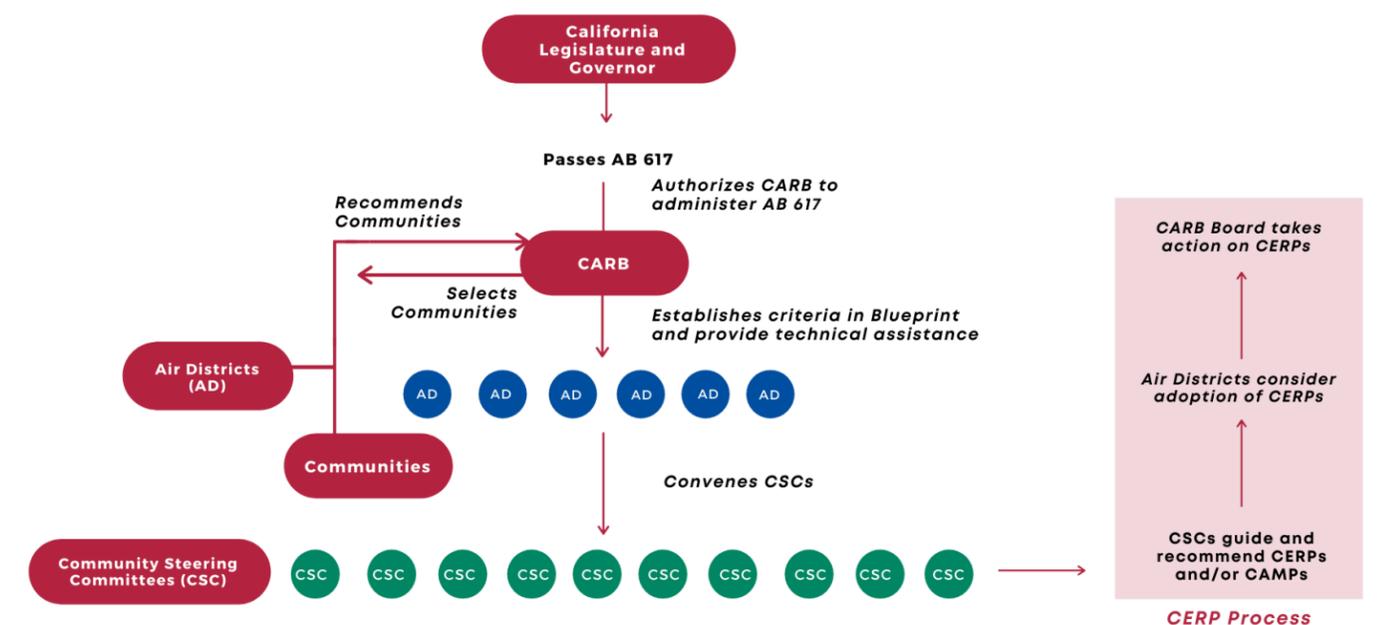
Both CERPs and CAMPs need to be formally adopted by regional Air Districts' Boards and then vetted and approved by CARB. While Air Districts are legally required to participate in AB617, other governments whose work may help, or support air pollution reduction abatement can participate. For example, county health departments, cities, maritime ports, and regional authorities like metropolitan transportation commissions, many of whom were active in the West Oakland AB617 process, are not legally mandated or given State funding to participate. The fact that local governments are encouraged or expected to contribute

but are not incentivized to do so is an area where the statute could be strengthened. Municipal governments have power over local land use planning - an important tool for addressing air pollution exposure.

In West Oakland, the Bay Area Air Quality Management District (BAAQMD) chose the West Oakland Environmental Indicators Project (WOEIP) - a local environmental justice nonprofit - as their primary partner community organization for the AB617 CERP. Due to the wealth of existing air quality monitoring data collected by WOEIP, BAAQMD, and other research partners, the West Oakland AB617 process did not develop a CAMP - the only community to forgo this step out of the initial ten first-year AB 617 pilot sites.²

To develop the CERP, WOEIP and BAAQMD formed a "Co-Leads team" that shared responsibility for recruiting the West Oakland Community CSC, organizing meetings, as The following table summarizes findings in

Figure 1: AB617 CERP and CAMP CSC Process



and selected CSC members (2021). The CSC created the CERP strategies and acted as the final decision-making body in the process via consensus-based decision making. The CSC members were co-recruited by WOEIP and BAAQMD. Per a report by London et al., in most other first-year AB617 sites Air Districts led the recruitment (2021). However, in most CSCs the large majority of applicants were approved to be CSC members and community members were encouraged to encourage others to apply. In Imperial, for example, the community organization partner Comite Civico del Valle and the Air District acted as joint co-chairs for the CSC process in much the same way as in West Oakland.²

It is important to note that there are differences in the definition of “equity” in the CERP planning process and subsequent CERP implementation efforts. Using the City of Oakland’s Racial Equity Implementation guide as a framework, the West Oakland CERP reflects equity principles in three ways.³ First, community engagement was comprehensive and gave community residents a high degree of decision-making power. Second, the CERP’s description of the community includes air pollution related health disparities. Third, its goals center on the reduction of health disparities and air pollution exposure disparities between sub-neighborhoods, defining a desired outcome.⁴ However, the CERP does not disaggregate data on racial groups most impacted by air pollution within West Oakland, or mention racial equity – only health equity. Best practices require that racial data be disaggregated to the greatest degree possible⁵. Therefore, in the ongoing CERP implementation process, stakeholders are working to further embed equity by defining specific racial groups most harmed by air pollution (i.e., elderly Black residents), creating evaluation and accountability frameworks with metrics to measure progress towards the CERP goals. This will help clarify racial equity gaps in current air pollution policy and the steps necessary to ameliorate them. The recommendations section below outlines specific ways racial equity can be further integrated into CERP implementation processes.

Summary of Results

The following table summarizes findings in terms of successes and challenges for the main elements of the planning process.

AB 617 Process Element	Successes	Challenges
Agencies with Jurisdiction in West Oakland	<ul style="list-style-type: none"> The Collaborative Problem-Solving Model (created by WOEIP) was used as a framework for the process and to build trust and positive relationships between stakeholders with historically diverging agendas and interests. The process provided opportunities for inter-agency work that transcended existing government silos between different local and state authorities, consolidating expertise and technical support from diverse jurisdictions. Community stakeholders had a high level of control over decision-making and process design. The CSC was recruited in a joint effort between WOEIP and BAAQMD. Community power throughout the process. 	<ul style="list-style-type: none"> Outreach and communication to the general West Oakland public was not fully sustained throughout the process. BAAQMD and WOEIP had different standards and expectations for community engagement that had to be addressed iteratively, as opposed to proactively / in advance. The co-lead team did not have a comprehensive mechanism (dedicated time and space) to receive in-person feedback from CSC members.
Content and Education	<ul style="list-style-type: none"> CSC members developed skills and knowledge on all topics related to air pollution mitigation and planning. 	<ul style="list-style-type: none"> Learning was time consuming for community residents and involved study and work outside of meetings. Community residents were not paid for their participation in the planning process.
CERP Timeline, and Compliance with the CARB AB617 Blueprint	<ul style="list-style-type: none"> The CERP planning process hit all legislative milestones required by the California Air Resources Board (CARB). 	<ul style="list-style-type: none"> The one-year timeline was too short, impacting all other process elements negatively. Lacked a majority community representation on the CSC as stipulated in CARB’s Blueprint.
Innovations	<ul style="list-style-type: none"> The goals and targets of the WOCAP are unique; they address air pollution disparities between individual West Oakland neighborhoods. Strategies built on other local and regional plans to fill in existing gaps in air pollution mitigation policy and programming. Sustained funding for implementation provided a continuing platform for community engagement and control. Collaborative Problem-Solving Model helped achieve community co-leadership. Hyper-local air pollution modeling helped the CSC develop targeted strategies. 	<ul style="list-style-type: none"> Quantifiable metrics for each strategy were not created.
Equity	<ul style="list-style-type: none"> Race data was included in baseline information for health outcomes and demographics at the aggregate West Oakland level. Equity training from Oakland’s Department of Race and Equity was given to the CSC. 	<ul style="list-style-type: none"> Race data was not used to assess pollution exposure differences between populations. We do not know which racial groups in which census tracts are most exposed to air pollution. Racial equity and health outcomes in strategies or targets were not identified. The racial demographics of CSC members were not representative of the demographics of West Oakland.

Summary of Recommendations

The following table summarizes recommendations for relevant agencies involved with AB617.

AB 617 Process Element	BAAQMD & Other Air Districts	CARB	Legislature & Other State Agencies
Community Engagement; Increasing Funding, Capacity, and the Timeline	<ul style="list-style-type: none"> Train air district staff on co-led community engagement, cultural sensitivity, and transformative/restorative justice methodologies. Compensate community resident CSC participants for their time. Adapt AB617 process elements to be appropriate for, and inclusive of, youth constituents. 	<ul style="list-style-type: none"> Support peer-to-peer learning for AB617 communities via symposiums etc. 	<ul style="list-style-type: none"> Require that the CARB and Air District Boards include one or more community representatives from an AB617 community. Extend the CERP planning timeline to two or three years. However, this may not be advisable if revising the legislation creates opportunities for the bill to be weakened by opponents. Fund AB617 in perpetuity.
Education and Participation	<ul style="list-style-type: none"> Host education modules with cohorts of recruited CSC members prior to starting a CERP process to introduce fundamental concepts of air pollution regulation. Increase Co-Lead and CSC interaction opportunities. 	<ul style="list-style-type: none"> Create interactive education modules that cover topics relevant to air planning and regulation. Build an education timeline for these modules that allow them to be tailored to unique needs of each community. Track CSC attendance and participation. 	<ul style="list-style-type: none"> The Office of Planning and Research (OPR) offers technical assistance on land use and transportation planning, as it relates to issues of air pollution for community-based AB617 participants in CERP and CAMP processes.
AB617 Blueprint Re-visioning	<ul style="list-style-type: none"> Support communities participation in the AB617 <i>Blueprint</i> re-visioning. 	<ul style="list-style-type: none"> Create a protocol to investigate Air Districts if community members bring complaints about disenfranchisement and to ensure that Air Districts comply with the AB617 <i>Blueprint</i>. Write guidance documentation to help communities use co-led and community-centered models of engagement. 	<ul style="list-style-type: none"> Guarantee sustained funding for CERP and CAMP Planning and implementation. Re-write Community Air Grant eligibility to include partner agencies such as health departments and cities. Prioritize cities embarking on SB 1000 work that overlaps with AB617 priorities.
Equity	<ul style="list-style-type: none"> Use the City of Oakland's Racial Impact Analysis methodology to embed racial equity in all engagement, data evaluation, and in strategy creation, prioritization, and implementation. Create quantifiable and equity-based metrics for each CERP strategy. Consider adding goals and targets that strive to lower air pollution levels in West Oakland to those of the best Bay Area or East Bay neighborhoods. 	<ul style="list-style-type: none"> Include racial equity alongside health equity in the next version of the <i>Blueprint</i>.¹ Enforce the <i>Blueprint</i> requirement that community residents comprise half the CSC. Institute a requirement that CSCs include youth and at least one representative from all demographic groups for people of color present in an AB617 community. 	<ul style="list-style-type: none"> The Office of Planning and Research and CARB create an AB617-specific manual on land use, transportation, and community development strategies for equity-based air pollution mitigation. This manual should be accessible for community groups. Publish the manual in all major languages spoken in AB617 communities. Amend California Code, Health and Safety Code - HSC § 39711 (a) (2), which AB617 references, to include "groups that have experienced racial discrimination and exclusion."⁷

Introduction

The objective of California Assembly Bill (AB) 617 (2017) is to reduce exposure to harmful airborne pollutants in areas disproportionately burdened by air pollution to improve health and achieve environmental justice. However, the law's goal of cleaner air is clear but the path to improved air quality is not prescriptive, allowing flexibility and a wide range of interpretation within the bounds of the CARB *Blueprint*.

The California Air Resources Board (CARB) identified West Oakland as an AB617 participant community because of the neighborhood's severe air pollution emissions, high air pollution-related disease rates, and the prevalence of social vulnerabilities, e.g. persistent poverty.⁸ This report documents the West Oakland effort to create a Community Emissions Reduction Program (CERP). West Oakland was one of the first communities to write a CERP. The West Oakland CERP is titled the "Owning Our Air: West Oakland Community Action Plan", or WOCAP.

Under AB617, CERPs become the guiding documents for local emission reduction programs. Unlike past BAAQMD community engagement efforts in which community participation manifested primarily in the form of input, CARB stipulates that CERP processes be co-led by community representatives. Since the WOCAP will direct the BAAQMD's work in West Oakland for years to come, the key objectives of this research are to identify the planning practices that worked well and warrant replication, areas for improvement, and approaches that better address health and racial inequities. The lessons from this case study can inform air pollution monitoring, abatement, and planning in other designated AB617 communities. This paper may also be useful to other states or local governments that have adopted or are considering AB617-like legislation.

Research Questions

This research questions were designed by the researcher, Lily MacIver, in collaboration with the West Oakland Environmental Indicators Project - the lead community organization.

1. What was the nature of the community engagement and how was power shared between community stakeholders and non-community constituents?
2. What were the successes and challenges of the process, and how could the process be improved?
3. What were the innovations of the West Oakland AB617 CERP process?
4. How did the process and resulting Plan include equity? And, equity be further incorporated into the continuing AB617 implementation process?

Methods

This study is based on participant observation of community meetings and interviews with key participants. Participant observation lasted from August 2018 to December 2020.

For interviews, key participants are defined as the CSC and the Co-Lead team members. The CSC is composed of residents of West Oakland, environmental nonprofit representatives, government agency representatives, and a local business representative. The Co-Lead team includes staff from the lead community organization, the West Oakland Environmental Indicators Project, and the lead government agency, the Bay Area Air Quality Management District.

There were two sets of semi-structured interviews. The first set interviewed 22 people from April to May 2019, in the middle of the West Oakland Planning process. The second set interviewed 23 people at the end of the process (October to December 2019). Nineteen people were interviewed both times, with three people dropping out of the study and four more added in the second round of interviews, resulting in an 86% follow-up rate.

Background

Many people in the US currently live in areas where elevated air pollution concentrations adversely impact health and quality of life. Frequently, those most impacted by air pollution are low income and people of color, who, due to deliberate patterns of institutional racism (e.g. housing segregation, single family zoning, and policies such as redlining) live near sources of air pollution.⁹

The Clean Air Act (CAA), passed in 1970, and amended 1977 and 1990 is federal legislation that regulates emissions of conventional and hazardous air pollutants from stationary sources, like factories, and mobile sources, like trucks. The law charges the Environmental Protection Agency (EPA) with the creation of National Ambient Air Quality Standards (NAAQS) to protect public health and wellbeing, along with hazardous air pollution and mobile source emission standards. And while overall air quality has improved nationally since the CAA was passed, both race and income-based air pollutant exposure inequalities persist.^{10,11} To some extent, these circumstances are an unintended result of the CAA's regulatory structures and historic technological limitations. The law charges the Environmental Protection Agency (EPA) with the creation of National Ambient Air Quality Standards (NAAQS) to protect public health and wellbeing, along with hazardous air pollution and mobile source emission standards. And while overall air quality has improved nationally since the CAA was passed, both race and income-based air pollutant exposure inequalities persist.^{10,11} To some extent, these circumstances are an unintended result of the CAA's regulatory structures and historic technological limitations.

The CAA's ambient air quality and technology standards have lowered both regional and local pollution emissions. There are, however, gaps that allow air pollution hot spots to persist, and disproportionately

affect disadvantaged communities.¹² For example, one study found that in the United States from 1995-2004, low-income Black communities experienced consistently higher levels of air pollution exposure than white communities.¹³

The 1970, 1977, and 1990 CAA Amendments employed a system of regional monitoring stations designed to measure average air pollution concentrations at representative locations. Achievement of National Ambient Air Quality (NAAQS) standards was based on measurement from these, often widely disbursed, air quality monitors. The system was not set up to measure air quality everywhere, because it was simply too expensive at the time to maintain a dense network of air quality monitors to assess local conditions. There are six common (criteria) pollutants – particulate matter, ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead – for which EPA set national standards under the CAA. So, while progress has been made in meeting national standards, neighborhood-level air pollution hot spots often went undetected by “super-sparse,” high cost, regulatory grade, monitoring networks.

NAAQS were supplemented by new source review permitting requirements. These required air pollution permit applicants to conduct air quality monitoring and modeling assessments in the area around proposed sites of new, large sources of air pollution. The purpose was, in part, to protect regional and local air quality from new or modified sources. While these assessments did tend to look at air quality impacts more locally than the NAAQS, they generally did not apply to mobile sources of air quality, to smaller disbursed sources of fugitive or episodic emissions, or to older sources. Hence air pollution hot-spots near freeways, ports and freight transport centers, oil and gas facilities were not addressed by this part of the CAA.

Technology standards for new mobile (e.g., tailpipe standards for cars and trucks, equipment standards) are a third layer of air quality protection that also clearly had benefits for air quality, particularly in many local areas. But these, generally, do not address rising cumulative impacts from changing patterns of mobile source pollution.

The gaps in these control measures coincide with economic, social, and political factors that made air pollution hot spots in low-income neighborhoods invisible. These communities often lack: 1) political power to force recognition and action on air pollution; 2) time and economic resources to gather data and evidence of local conditions and health impacts; and 3) ability to prioritize environmental harm over other community stressors related to poverty, education, housing, and employment.

However, recent social, political, and technological changes create opportunities to address air pollution hot spots in disadvantaged neighborhoods. First, in some parts of the country, disadvantaged groups have gained enough political and economic power to force governmental action on air pollution hot spots. Second, new low-cost monitoring technology is available to measure air quality at the local level with reasonably good levels of accuracy. We now have the tools and energized constituencies needed to address the profound equity issues of air pollution hot spots in impacted communities. This is the most important unfinished business of state and federal clean air laws and deserves attention at multiple levels of government and civil society.

This paper describes a case study of one Californian policy measure, AB617, that identifies and attempts to correct air pollution hot-spots in disadvantaged neighborhoods. AB617 was adopted in 2017 as part of a

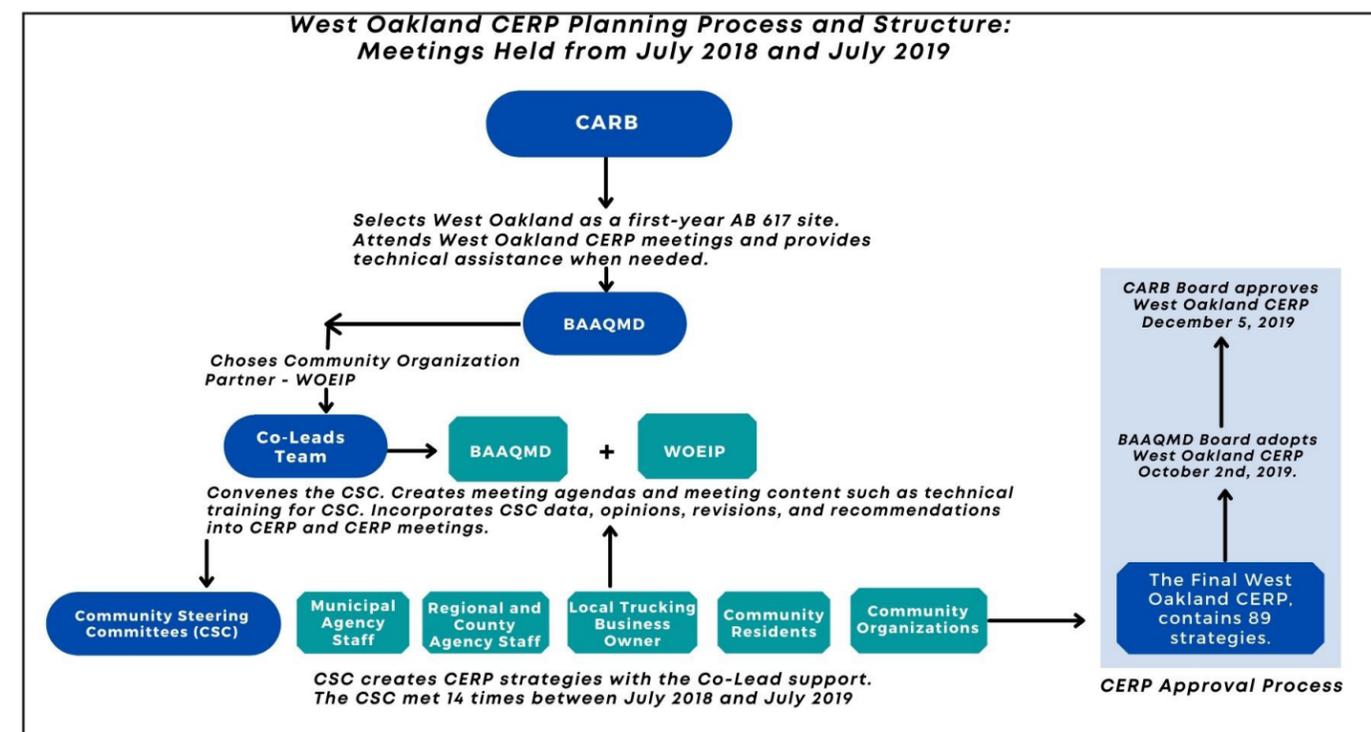
compromise package of legislation that extended the cap and trade system for greenhouse gases. For additional discussion of the history of AB617 see Fowlie, et al., *Climate Policy, Environmental Justice, and Air Pollution*, Brookings Institute, October 2020.¹⁴

AB617

AB617 establishes a new opportunity for a community-centered framework to ameliorate air pollution in neighborhoods that have long struggled with environmental injustice.¹⁵ The bill and CARB's AB617 *Blueprint*, which details a community engagement process (the CSC structure) to meet the goals of the legislation (community-centric planning), aim to empower communities as active partners in the identification, evaluation, and reduction of exposure to air pollutant. These documents do so by stipulating that communities should engage in air plan writing and implementation in concert with Air Districts – something unprecedented in air legislation.

As mentioned previously, the California Air Resources Board (CARB) selects communities for AB617 participation. Then regional air districts (Air Districts) work with communities to improve air quality by developing Community Air Monitoring Plans (CAMPs) and Community Emissions Reduction Programs (CERPs). CAMPs create air monitoring networks meant to be designed by communities. CERPs aim to identify locally focused air pollution control strategies and to reduce exposure to air toxins where people live and breathe. CARB's AB617 guideline document created – the *Blueprint* – stipulates that CAMPs and CERPs be considered and discussed with CSCs and that the Air Districts work with CSCs in these processes. A CSC must be composed of at least half neighborhood residents, and also include community organizations, and

Figure 2. West Oakland CERP Planning Process and Structure (post nomination)



local governments and businesses. One of West Oakland's primary failings was that their CSC composition did not meet the 50% standard – the majority of the West Oakland CSC was and still is composed of (in ongoing implementation as of 2021) government representatives, and not community residents.

The benefit of numerous government participants is their collective authority. For example, the ability to change local law, municipal code, and amend and add programs to address air pollution or air pollution health impacts. These types of resources help reduce mobile and stationary pollution emissions sources and their impact. While Air Districts are legally required to participate in AB617, other relevant governments such as health departments, and municipal and regional authorities, like cities and ports, are not mandated or funded to participate. The participation of diverse government representatives in the West Oakland process resulted, in part, from

WOEIP's history of advocacy.

WOEIP was chosen by BAAQMD as the primary partner community organization for AB617 in West Oakland due to their existing partnerships with local regional, state, and federal agencies, deep ties in the community, and expertise with air pollution-related citizen science. WOEIP and BAAQMD formed a Co-Leads team that collectively provided technical assistance and direction for CSC meetings (see Figure 2). The CSC was made up of community stakeholders like residents, business owners, and government staff and was charged with co-creating plan content. The CSC had final decision-making power in the development of CERP

In West Oakland, WOEIP and BAAQMD co-recruited the CSC with WOEIP setting the criteria to prioritize who would be invited to join the CSC. WOEIP used their relationships with community organizations to conduct recruitment outreach to West Oakland nonprofits, religious institutions, education

organizations, local businesses, neighborhood associations, and residents. Many of these stakeholders attended meetings but dropped out over time. Stipends, as will be discussed later, will likely improve CSC retention.

In terms of CSC composition, the West Oakland CERP says, “Eighteen primary CSC members joined the CSC, and an average of 5-15 CSC and community members combined attended most meetings.” By cross referencing participant observation notes with BAAQMD attendance lists, we conclude that three community residents from organizations representing community residents directly, regularly attended CSC meetings. The CSC does not include the Co-Leads team, which was made up of BAAQMD and WOEIP staff, so WOEIP staff were not counted as community residents. However, there were nonprofits on the CSC that also represented community interests.

Figure 3. Composition of the CSC Members and Their Affiliations

Stakeholder Group	Affiliation	Participants
Agencies with Jurisdiction in West Oakland	<ul style="list-style-type: none"> Port of Oakland Metropolitan Transportation Commission Alameda County Public Health Department U.S. Environmental Protection Agency East Bay Municipal Utility District City of Oakland California Air Resources Board* 	9
Local Industry	<ul style="list-style-type: none"> AB Trucking Prescott Oakland Point Neighborhood Association, BayPorte Village Neighborhood Watch West Oakland Neighbors 	2
Non-Profits Representing Local Interests	<ul style="list-style-type: none"> Urban Biofilters New Voices Are Rising Dellums Institute for Social Justice Environmental Defense Fund 	4
Community Residents and Organizations	<ul style="list-style-type: none"> Prescott Oakland Point Neighborhood Association BayPorte Village Neighborhood Watch West Oakland Neighbors 	3
Total		18

*CARB staff participated on the CSC with a non-voting observer status.

In West Oakland, the CERP was designed to be community-led and had a strong process that allowed WOEIP and the CSC to have increased decision-making power, however the largest CSC constituency came from government agencies (Figure 3). Out of all of the first-year AB617 communities, West Oakland had the lowest percent of community residents on its CSC.2 Additionally, the racial demographics of CSC members did not represent the major demographic groups of West Oakland. While racial representation is not a requirement for CSCs in the *Blueprint*, it is recommended in this report to support racial equity by ensuring every racial group in a community have a voice and “seat at the table.”

AB617-type air quality planning has no established precedence. Its goals are lofty – namely, to empower everyday people to step into the role of an expert planner and policymaker; to be co-creators in an equity-based participatory process. However, as noted previously, the omission of equity in the *Blueprint* means that this was not conveyed in the early years of the program. So, equity in AB617 is still a work-in-process. To embed equity successfully requires creative practices that empower both agency staff and communities in their collaborative efforts. Examples include supporting government and agency staff to work across traditional silos and increasing access to documents in multiple languages and without professional jargon.

West Oakland’s History

Across the U.S., traffic-related air pollutants disproportionately impact urban communities with a resident majority of low-income people and people of color.9,16 West Oakland is one such community. It is surrounded by heavily trafficked freeways crucial to the regional goods movement from the Port of Oakland, numerous industrial and freight businesses, a railway, the elevated metro line thoroughfare, and a post office distribution center – all of which generate

significant transportation-related pollution. These pollution sources expose residents to toxic chemicals in emissions, which presents a serious local health threat. Compounding the effects of transportation-related pollution are stationary sources of pollution from local industrial businesses like recyclers. These conditions are not new; generations of West Oakland residents have experienced disproportionate impacts from air pollution. Place of residence is strongly correlated with life outcomes, such as illness from exposure to pollution (Peterson and Krivo 2010).17 Air pollutants themselves have been linked to serious and long-term health impacts. In West Oakland, residents experience higher rates of asthma emergency room visits and death from air pollution-related diseases such as stroke, heart attack, cancer, and chronic lower respiratory diseases than the City of Oakland population at large (CalEnviroScreen 4.0, CAPE Vital Statistics).18,19 A recent study also found a statistically significant connection between air pollution and a higher risk for heart attack, heart surgery, and coronary disease in West Oakland’s elderly population.20 In 2017, the California EPA’s Environmental Justice Task Force designated East and West Oakland as communities with serious pollution and health burdens.21

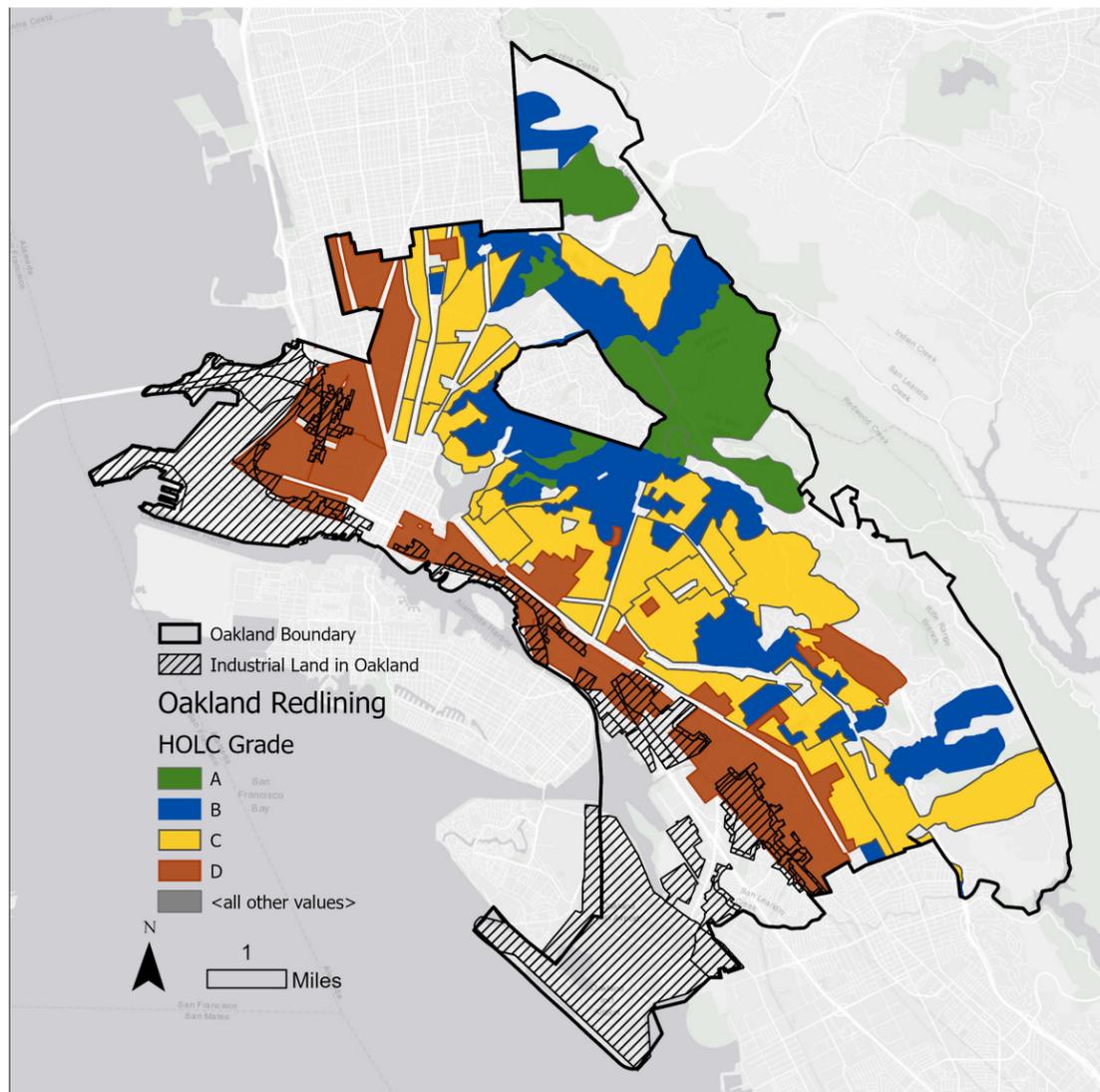
Discriminatory land-use practices in Oakland helped forge an urban landscape in which neighborhoods that were historically low-income communities of color are closest to the most polluting industries and roadways. The relationship between racial discrimination and property has shaped economic mobility and air pollution exposure landscapes in Oakland. Nationally, the Home Owners’ Loan Corporation (HOLC) engaged in redlining and housing exclusion that lasted from the 1930s to the 1960s. The Federal Home Loan Bank Board assessed real estate ‘risk levels.’ Inherent in their calculations was the belief that racial integration has a negative effect on property values. Neighborhoods with the lowest ratings typically contained older housing stock, and many low-income

communities and communities of color were redlined – marked as ineligible for insured loans. Black neighborhoods, and The legacy of housing discrimination underpins the US racial wealth gap. For the median American household, home equity constitutes two-thirds of all wealth.²³ Housing policies such as redlining, which encouraged discriminatory lending practices, prevented Black people from purchasing homes, widening the racial wealth gap in the US. A 2020 Brookings study found that the average white family today has a net worth of \$171,000, while the average Black family has a net worth of \$17,000.²⁴

Racial covenants, redlining, and federal housing subsidies helped generate a highly racialized urban landscape of divestment and neglect in Oakland. The HOLC map for Oakland in Figure 4 shows the redlined areas limited Black homeownership to areas adjacent to industrial land

Figure 4. Redlining in Oakland - HOLC Map

Sources: Robert K. Nelson and Edward L. Ayers, accessed June 1, 2020, <https://dsl.richmond.edu/panorama/redlining/>. City of Oakland Bureau of Planning and Building, zoning effective March 20, 2018 per Ordinance 87089.

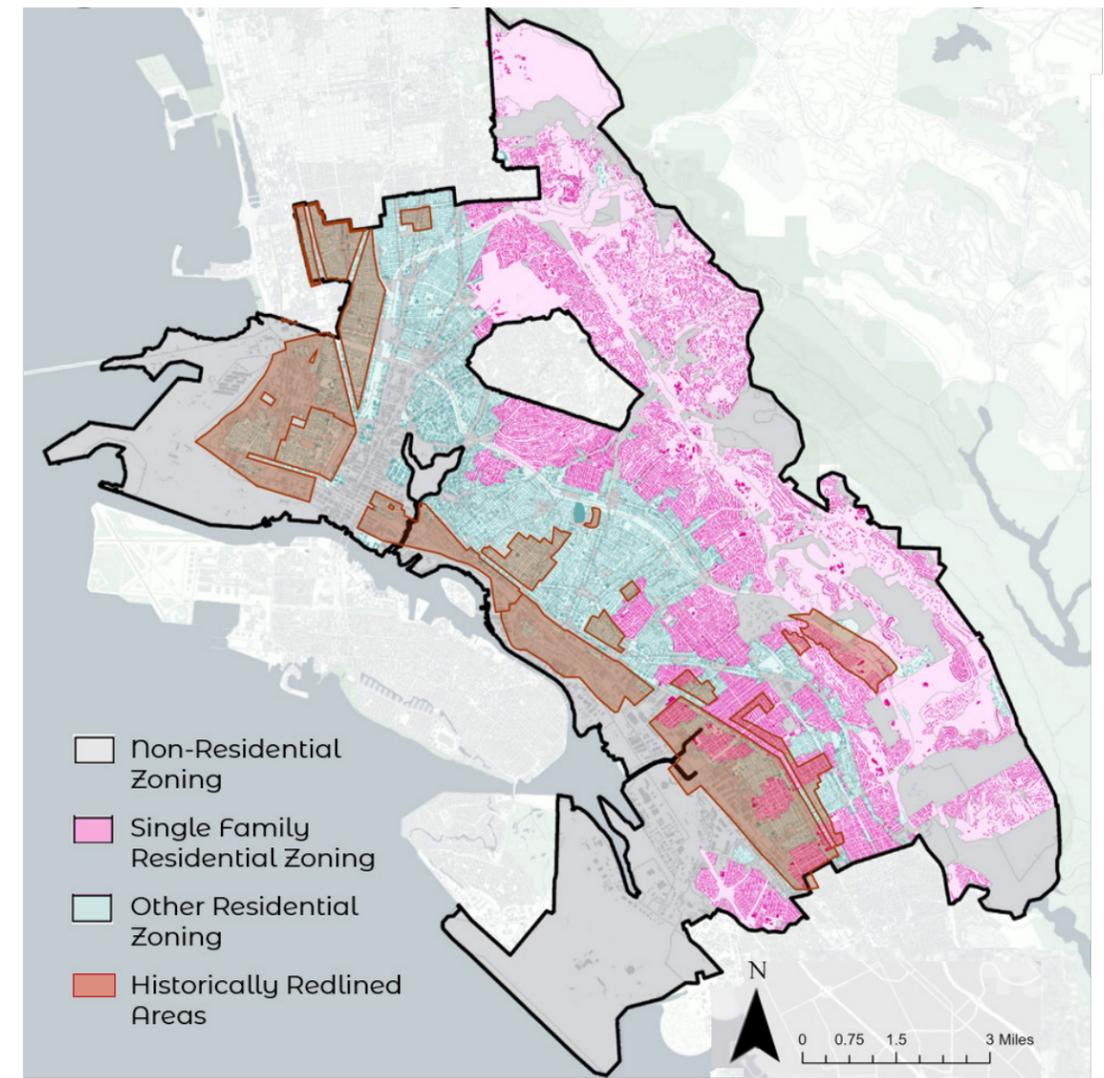


and the I-880 freeway.^{25,26} Historically redlined areas are also zoned for higher densities and multi-family housing such as apartment complexes.

Single-family zoning prohibits a community from developing any building type other than detached single-family homes. In the Bay Area and Oakland, this zoning system maintains racial and economic segregation.²⁷ Single-family homes are more expensive than multi-family homes, and disproportionately exclude middle and low-income families and people of color (ibid). As seen in Figure 5, 64% of Oakland residential land is zoned exclusively for single-family homes, and residents in these areas are predominantly white. The denser and less.

Figure 5. Residential Zoning and Redlining in Oakland

Sources: Robert K. Nelson and Edward L. Ayers, accessed June 1, 2020, <https://dsl.richmond.edu/panorama/redlining/>. Mendenian, Stephen. 2020. "Racial Segregation in the San Francisco Bay Area, Part 5 | Othering & Belonging Institute." August 11, 2020. <https://belonging.berkeley.edu/racial-segregation-san-francisco-bay->



neighborhoods that were historically low-income communities of color are closest to the most polluting industries and roadways. The relationship between racial discrimination and property has shaped economic mobility and air pollution exposure landscapes in Oakland. Nationally, the Home Owners' Loan Corporation (HOLC) engaged in redlining and housing exclusion that lasted from the 1930s to the 1960s. The Federal Home Loan Bank Board assessed real estate 'risk levels.' Inherent in their calculations was the belief that racial integration has a negative effect on property values. Neighborhoods with the lowest ratings typically contained older housing stock, and many low-income communities and communities of color were redlined – marked as ineligible for insured loans. Black neighborhoods, and even neighborhoods adjacent to Black communities, were considered by the HOLC to be “hazardous” for investment.²²

The legacy of housing discrimination underpins the US racial wealth gap. For the median American household, home equity constitutes two-thirds of all wealth.²³ Housing policies such as redlining, which encouraged discriminatory lending practices, prevented Black people from purchasing homes, widening the racial wealth gap in the US. A 2020 Brookings study found that the average white family today has a net worth of \$171,000, while the average Black family has a net worth of \$17,000.²⁴

Racial covenants, redlining, and federal housing subsidies helped generate a highly racialized urban landscape of divestment and neglect in Oakland. The HOLC map for Oakland in Figure 4 shows the redlined areas limited Black homeownership to areas adjacent to industrial land and the I-880 freeway.^{25,26} Historically redlined areas are also zoned for higher densities and multi-family housing such as apartment

complexes. The presence of adverse influences as represented by smoke, odors, and fog, also contributed to redlining, thus linking polluting land uses and the presence of people of color.²⁷

Single-family zoning prohibits a community from developing any building type other than detached single-family homes. In the Bay Area and Oakland, this zoning system maintains racial and economic segregation.²⁸ Single-family homes are more expensive than multi-family homes, and disproportionately exclude middle and low-income families and people of color (ibid). As seen in Figure 5, 64% of Oakland residential land is zoned exclusively for single-family homes, and residents in these areas are predominantly white. The denser and less-expensive multi-family housing is in predominantly Black and Latinx communities in East and West Oakland (ibid). Most multi-family zoning in Oakland is concentrated in previously redlined areas (Figure 5).

During the era of racial covenants and redlining, low-income families of color could not easily build equity via real estate, impeding intergenerational wealth accumulation and economic mobility.²⁹ With stunted economic mobility, many families could not, and still cannot, afford the expensive rents and mortgages of housing far from pollution hot spots, such as West Oakland. Together, policies like single-family zoning and redlining have helped keep Oakland's low-income communities of color in housing near the worst air pollution sources.

West Oakland was targeted for freeway construction, and in 1958 the Cypress Freeway (I-880) was completed. This elevated, double-decker freeway divided West Oakland physically and led to eminent domain property demolitions that displaced 600 families - especially harmful because West

Oakland was one of the few places where black families could own houses.³⁰ The additional construction of the Grove Shafter Freeway (I-980) completed between 1969 and 1970, and MacArthur Freeway (I-580) from 1960 to 1966 entombed the neighborhood with freeways on all sides. Urban renewal projects destroyed over 5,000 housing units in West Oakland and induced the economic decline of the once-thriving commercial center of West Oakland on 7th Street.³¹

The racially exclusive policies, practices, and developments in West Oakland, and the public health crises they spurred, have been the subject of activism for years, which laid the groundwork for AB617.

WOEIP - Air Activism and Research

Residents of West Oakland have actively confronted legacies of environmental racism for decades. One respected community leader is Ms. Margaret Gordon, who co-founded WOEIP in 2002 and currently co-directs it with Brian Beverage. In 2004, WOEIP began working with the Pacific Institute, a well-regarded environmental think-tank based in Oakland. This partnership produced a publication called Neighborhood Knowledge for Change, which showed the disproportionate burden of diverse toxic pollutants in West Oakland and marked the start of West Oakland's long-standing citizen science efforts (ibid). As a lifelong asthmatic, Ms. Margaret became interested in the causes and triggers of asthma after one of her sons and three of her grandchildren developed the condition. WOEIP has worked collaboratively with neighborhood organizations, physicians, researchers, and public officials for the last twenty years to help West Oakland residents secure a clean environment, safe neighborhoods, and access to economic opportunity. WOEIP uses citizen science projects that produce data to support pollution reduction advocacy.^{32,33}

West Oakland had more technical expertise than many other communities selected for AB617 funding, due to the preexisting research, data, and experience with air quality research and science led by WOEIP and BAAQMD.³⁴ With its foundation of citizen science projects, and due to a wealth of regulatory agency data, scientific studies, and Community-Based Participatory Action Research (CBPAR) via partnerships with academics, the West Oakland CSC jumped straight to writing a CERP. WOEIP's work on air quality issues spans advocacy, research, and policy writing in collaboration with organizations and institutions such as UC Berkeley, the Environmental Defense Fund (EDF), Google EarthView, Aclima, BAAQMD, and the EPA's Region 9 office.

WOEIP has been researching mobile sources of air pollution (vehicles) in West Oakland for almost two decades. Pollution from vehicles is particularly prevalent in the West Oakland neighborhood due to freight-related trucking in and around the Port of Oakland. In 2003, WOEIP started a diesel truck pollution research project with the Environmental Protection Agency (USEPA) Region 9 division.³⁵ Three years later, as part of the Ditching Dirty Diesel Collaborative, WOEIP contributed to the publication *Paying with Our Health*, a report on the health cost of the freight industry in California.³⁶ In 2008, WOEIP trained and hired residents to survey heavy truck traffic on residential streets in partnership with BAAQMD. Community researchers gathered over 16,000 data points on truck movements in the community, and the Air District produced a final report on the study. Findings showed which parts of the neighborhood truck traffic most impacted and what kind of trucks were using neighborhood streets outside of the City of Oakland-sanctioned routes. The study provided supportive data to the California Air Resources Board's (CARB) health impact

report on West Oakland, which showed elevated cancer risks in areas of heavy truck traffic.

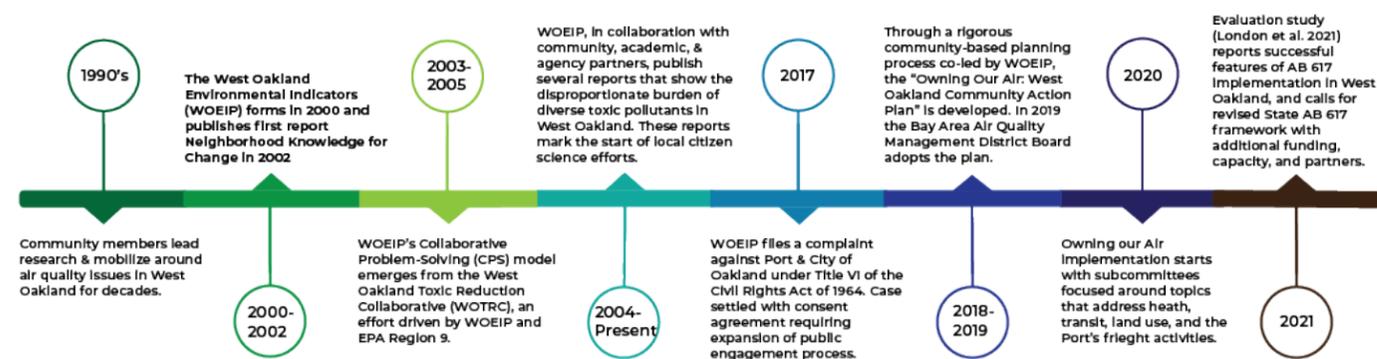
Beyond identifying sources of air pollution, monitored data for specific pollutants has been an important metric for air justice in West Oakland. In 2008, WOEIP worked with Intel Corporation’s UC Berkeley research partnership to document particulate matter exposure using personal air monitors at ground level, where residents breathe. Participants used particulate monitors with GPS tracking as they walked through the neighborhood to document air quality in residential, industrial, and commercial zones.³⁷ The Intel/WOEIP Common Sense Community project demonstrated that regional ambient air quality measurements do not represent the pollution levels experienced by residents in the most burdened neighborhoods. WOEIP has since trained hundreds of residents to use industrial particulate monitors and participate in citizen science projects. WOEIP participated in the outreach and organization of the project, offered perspectives on data analysis, and provided advocacy messaging for publication.

WOEIP’s experience with Intel was a springboard to their community partnership with the Google Earth Black Carbon Mapping

project in 2014, an initiative funded by EDF. With lead researchers from the University of Texas and hardware development by Aclima, Google Earth View collected data for ten months in 2015 on the streets of West and East Oakland. Results mapped the presence of black carbon, nitric oxide, and nitrogen dioxide levels in 60-meter segments along all streets in West Oakland neighborhoods. These data are used by health researchers such as EDF and Kaiser affiliates to examine the link between areas with high levels of diesel pollution and illness like asthma, heart disease, and stroke.²⁰

WOEIP began collaborating with UC Berkeley researchers in 2016 to develop a low-cost black carbon monitoring network in West Oakland. This project, dubbed 100 by 100, partnered with West Oakland residents and business owners to install 100 low-cost black carbon sensors on front porches and yards in the neighborhoods for 100 days. In addition to placing their monitors throughout the community, researchers placed experimental sensors alongside BAAQMD’s monitors for quality testing. This history of collaborative work put WOEIP in a good position to co-design the AB617 process in West Oakland.

Figure 6. Timeline of WOEIP’s Activism



WOEIP’s Collaborative Problem-Solving Process

This section explores the method behind West Oakland AB617 process structure and its dynamics - a method built on a history of local air activism. While data are crucial to understanding the air issues specific to West Oakland and therefore forms a springboard for generating solutions, the process of engaging the community in planning is equally important.

Concerned community members formed WOEIP in 2002 and worked with the USEPA to address brownfield sites in the neighborhood. In 2003, the USEPA partnered with WOEIP to produce the Clearing our Air report, which addresses air pollution impact from diesel trucks. These efforts created the West Oakland Toxics Reduction Collaborative (WOTRC), an effort driven by WOEIP and the EPA’s Region 9 staff. The WOTRC’s Partnering Agreement, a document that outlined the roles and responsibilities of all parties, was developed from 2003 to 2005. This partnering agreement shared power between community and government stakeholders in a novel way, clarifying the rules of collaboration.^{35,38} The WOTRC was active from 2005-2009.

From WOTRC’s work, WOEIP developed a model they call the Collaborative Problem Solving method (CPS), which is similar but not identical to the USEPA’s methodology by the same name.³⁹ CPS engages diverse stakeholders and facilitates partnerships that address a common issue using consensus-based decision-making. WOEIP developed their CPS method to engage with government agencies, employing it from 2006 on. WOEIP’s CPS seeks to share decision-making power equally between community and state authorities and leverage the combined resources of stakeholders (for example - community-based organizations, government agencies,

industry, and academia) to find solutions to shared issues. It is a community-based process in which community members are considered primary decision-makers, and agency staff provide technical assistance. The goal is to create a collective vision supported by residents, government, and regulators, that achieves measurable outcomes to improve local quality of life.

WOEIP staff say the CPS process is most successful when agency leadership fully endorses power-sharing with communities, as was the case for the WOTRC and AB617 in West Oakland. Richard Grow, a CSC member and a retired environmental engineer formally with the US EPA Region 9 and agency project lead for the WOTRC, said, “All parties need to talk openly and frankly about the barriers to problem-solving and work together to find solutions that work for everyone.” This model is different from typical agency engagement approaches; it asks that community voices



be centered and that additional funds be allocated for staff to develop community partnerships and long-term processes. The CPS method also requires resident co-leadership and the reconciliation of any conflicting agendas through consensus-based decision making and neutral facilitation. Furthermore, CPS addresses barriers to participation by requiring food, childcare, and translation services at all meetings and stipends for community member participation. Since lack of trust is a common barrier to collaboration in historically disadvantaged communities. The neutral facilitation, formal partnership agreements, conflict resolution process, and consensus decision-making in the CPS process helps to build trust. Neutral facilitation, for example, supports healthy communication and assures that all voices respected. Conflict resolution helps stakeholders resolve disagreements as they arise and reconcile disparate perspectives and approaches.

Partnership agreements are another key CPS model element. They align varying agendas, allowing work to progress toward a common set of goals. They outline operating principles, objectives, roles, and responsibilities to ensure that all stakeholder interests are made clear and help guarantee accountability on all sides. These agreements are essential memorandums of understanding designed to level power structures, so that communities can participate equally in decision-making. Depending on the target issues and the needs of the group, partnering agreements can outline working relationships that are informal or highly structured.

“The road to collaborative planning has been an uphill struggle,” remarks Brian Beveridge, WOEIP co-director. Today, through consistent research, campaigns, and engagement with government, WOEIP and their collaborators (USEPA Region 9, BAAQMD, diverse researchers, and

the Port of Oakland) have raised the political visibility of air quality issues, spurred change in regional and local air management practice - strengthening their community engagement components.

BAAQMD’s Community Engagement Before AB617

Prior to AB617, the Air District conducted most of its community engagement through its Community Air Risk Evaluation Program (CARE).⁴⁰ Since 2004, the CARE Program has focused on Bay Area communities that have the highest pollution levels and aims to “Engage the communities and other stakeholders (local industry, government agencies, etc.) [...] to craft mitigations that extend beyond what the Air District could do alone.”⁴¹ BAAQMD developed this collaborative approach internally. It was not required practice for all California Air Districts at this time, nor is it now. The CARE program’s methodology and level community engagement helped prepare BAAQMD for the hyper-local approach, the intense community partnerships, and the sustained engagement required in AB617 efforts. As one BAAQMD staff member expressed, this is the “...first time we have partnered explicitly with the community. First time we have had to take their input as equals. On the planning side, this is the first time we have had to spend so much time working with the community, then ever before for a plan. Previous plans were all regional (9 counties). There was outreach but it was at the county level. In our last clean air plan we did not have a meeting in every county.”

Results: Process Successes

Community Engagement and Empowerment

The West Oakland AB617 process represents a shift in power relationships around air quality planning between Bay Area air governance and community groups. We define this shift in three ways; first, community members' agency in the process, which expanded compared to previous air planning efforts. Second, local non-profit WOEIP co-created the process using their CPS model – this promoted collaboration and built trust. Third, WOEIP co-convened the CSC using existing relationships to bring local stakeholders and agencies to the process. Lastly, the scale of work moved from regional to local, increasing the opportunity for participatory community planning. “Before AB617 there was a desire for community engagement, but it was not required,” says a senior Air District Staff person. “AB617’s requirement allows us to do work we began [before AB617] with more ease. It also helps to localize and focus our work, where before, we focused regionally. AB617 has allowed us to expand the scope of what we can do.”

CSC members, especially community residents, saw the CERP process as a unique opportunity to make decisions collaboratively with governments. CSC members developed skills and knowledge on air pollution mitigation and planning to write abatement strategies that improve their neighborhoods' air and share their lived experience. Past air plans and air quality initiatives in West Oakland have not attempted to share planning and decision-making power with community stakeholders on equal terms with agency professionals; their community engagement components were not nearly as time-intensive, nor did they provide comprehensive topical training to the layperson. As one WOEIP staff person attested, “The other air plans were not community-based. There have been health

risk assessments, studies, air projects with the Port of Oakland, but never has there been an air plan developed with the residents. This level of community air planning has never been done before [within BAAQMD].” London et al.’s report, compares the extent of community leadership in AB617 processes across California. The West Oakland CERP process ranks as highest on their continuum of community power.²

The Collaborative Problem-Solving Method

Since the CPS method was the framework used to guide the process structure and content, the author of this paper assessed its elements to determine how and to what extent it helped level power between the community and government participants. Four elements of the Model were investigated: 1) the partnering agreement (charter), 2) consensus decision-making, 3) the co-lead and CSC structures, and 4) power-sharing in terms of division of community engagement roles between WOEIP and BAAQMD - specifically, who recruited the CSC and how general community outreach was done.

The Partnering Agreement (The Charter)

All CSC and co-lead members signed the partnering agreement. However, interviews showed that the partnering agreement was most important for the Co-Leads.⁴² Their working relationship created the process content and structure, which required weekly meetings and extensive collaboration. All co-lead members agreed almost unanimously that the partnering agreement supported the co-lead team and the CERP process by clearly defining how power would be shared before planning started, thus facilitating co-working.

Consensus Decision-Making

Consensus decision-making was viewed

favorably by all CSC members interviewed. However, CERP planning had a short, one-year timeline, making decision-making seem rushed to certain community and non-profit participants – they were often asked to make decisions with little preparation and to decide on many things at once. Similarly, non-BAAQMD government staff wanted more time to vet strategies internally and to iteratively revise strategies with community residents.

Co-Leads and CSC

The CSC accepted the role of Co-Leads in creating and guiding the process and its content due to the high levels of trust between CSC members and WOEIP. However, community residents voiced a desire for more participation in planning the meeting content and more opportunities to discuss feedback and concerns with the Co-Leads outside of meeting times. Many CSC members interviewed had recommendations for improving the co-lead’s communication with the CSC, which is discussed in the Challenges section.

The process did not feel entirely inclusive for youth on the CSC. These youth participated through a non-profit youth leadership program and primarily lived in other parts of Oakland. They are therefore described here as non-profit participants instead of community members. Critiques from youth were often along these lines: “I don’t feel like I have ownership in the process. A lot of it feels like they are talking at us.” When asked about what would solve this issue of inclusion, the youth interviewed said they would like to be included to some degree in the CSC meeting design so that the meeting content would be more relevant to their demographic. This level of inclusion might require youth representation on the co-lead team.

Community Engagement - Formation of the CSC and Outreach

Community engagement with the CPS method required agencies to share power in all aspects of air quality planning, helping dismantle patterns of community exclusion from environmental governance by increasing the level of community control and, potentially, participation. The CSC created the CERP strategies and identified the government agencies responsible for implementation.

A primary example of power-sharing was the collaborative recruitment of the CSC, an effort shared by WOEIP and BAAQMD. As Ms. Margaret Gordon explained, “BAAQMD staff has never participated in this type of engagement with the community. Developing the Steering Committee was based on relationships we built with organizations and individuals on different projects, initiatives, and programs in the last 20 years. We have set the criteria to prioritize who would be on it. It was also a joint effort between BAAQMD and WOEIP.” The formation of the CSC by a community-based organization placed power in local hands. However, as WOEIP is a small organization, continuous community outreach to boost community awareness of the ongoing CERP process and garner new participants was not possible. The co-formation of the CSC by a community-based organization helped share decision-making power with community stakeholders.

WOEIP received \$100,000 in financial support from the BAAQMD through a Master Services Agreement contract because of their Co-Lead role they play. This funding was not a Community Air Grant, it was an extra monetary investment to support local capacity. This type of support for local CBO participation and co-leadership offers a model that could be instructive for other CSCs and Air Districts.

Trust and Relationship Building

Trust supported process functionality and had three facets. First, interviews revealed that trust is important between community residents and the lead community organization, WOEIP. West Oakland resident participants were willing to work with government agencies. This marked a change; past interactions had not been positive, marring relationships. Residents explicitly stated they participated because WOEIP was in a co-leadership role, and therefore they felt that their interests, and those of the community at large, would be better represented. Second, trust between WOEIP and participating government agencies was vital. This trust helped the Co-Leads forge a viable and productive working relationship, necessary for the collaboration required to co-design and run the overall process. Third, WOEIP's long history of local air quality advocacy and the professional capital they developed through this work assisted them in recruiting partner agencies (e.g., the City and Port of Oakland) to participate as CSC members, and garnered their continued participation.

Most of the relationships between participants are not new. Years of contact or collaboration prior to AB617 built relationships between community stakeholders and agencies. As one BAAQMD staff member recalled, "I think there is a level of trust between the Air District and WOEIP from the years of working together that carries over into the AB617 process." This cannot be overemphasized. As on CARB staff said, "It's safe to say that when considering the now 15 CSCs in the mix, only in West Oakland do we see the investment made in the many years prior that made working on an air quality plan under 617 seem like a natural next step. Even within the districts, this level of investment is unique."

The relationships between WOEIP and community members were particularly

important. As one community CSC member said, "Having WOEIP there as a trusted party and collaborator for the community was very important. They were a trusted messenger. We had to have them in the room, or it would not have worked. Me, in particular, and some of my neighbors would not have trusted the process. They needed to sell it to us. We have participated in other processes and had to be convinced it was not a gigantic waste of time."

Community residents did not come into the process trusting of all participating government agencies; words such as 'cynical' and 'skeptical' were used to describe attitudes at the beginning of the process. However, in the final round of interviews, community residents said that they had felt heard and listened to and acknowledged that government agencies were trying to center community voices in the process, even if their efforts were imperfect. The researchers see these shifting perspectives as the growing pains of agencies restructuring community engagement to share power with residents.

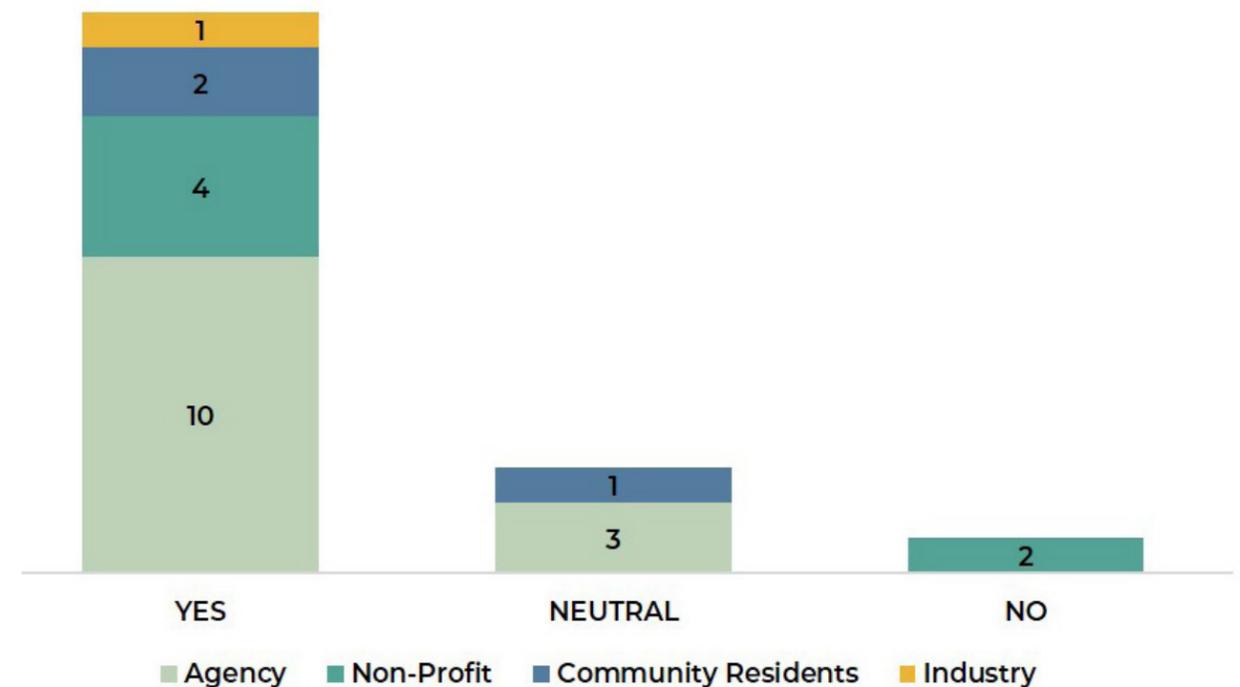
Participant observation showed that a diverse set of agencies participated in the planning process consistently. The level of government agency commitment to the AB617 process, whether through the air district or other participating agencies, would not have been possible without buy-in from their leadership. Along with the intensive allocation of staff time and funding to the process, interviews with senior staff affirmed BAAQMD leadership as supportive of the West Oakland AB617 process. The inaugural meeting was held at Oakland City Hall with the mayor in attendance – signifying a commitment of City leadership to the process's success. One BAAQMD staff member attested to this, saying "Having this leadership present [from the City of Oakland] was a critical first step in committing to allocating resources and leveraging other complementary programs

already underway [to achieve Plan goals]." The researchers recommend that agencies send senior staff who work directly under department directors to attend AB617 planning meetings. It is crucial that attending staff have a high level of knowledge and can speak comfortably on behalf of their departments. Directors came to occasional planning meetings in West Oakland, to pledge support and show political dedication in lieu of legal obligation to uphold an AB617 plan. If directors come to select planning meetings to, for example, present educational information or answer complex questions, this will increase community trust in partnering agency commitments. In the implementation process, more junior staff can sit on subcommittees as best fits their respective work scopes.

To help discern if the CPS was successful, interviewees were asked if, through the process, trust increased between two primary stakeholder groups - government

and locally based interests (community residents, nonprofits, and business). Building trust was identified as especially important for community members and nonprofit representatives, because past engagement with government entities in West Oakland was said to largely be negative and wrought with frustration due to unfulfilled promises. For government agencies, community engagement is time and resource-intensive, but community buy-in and relationships built through engagement are invaluable. Community partnerships and resident knowledge can help government programs and policies more accurately respond to community needs. The majority of agency staff interviewed confirmed that their trust had indeed increased. So, collaborations at this scale and of this type – where community members or organizations are equal partners – can be positive, making a case for this type of intensive investment of time and resources from government entities.

Figure 7. Increase in Stakeholders' Trust due to the Planning Process



Trust was also assessed in terms of CSC member confidence that participating agencies would deliver emissions reductions via completion of their respective strategies. For BAAQMD staff, when assessing their own organization, their level of confidence that BAAQMD would complete their strategies was high. Other agency staff were less confident in their organizations. This difference is correlated to the lack of legal requirement for other agencies to implement the CERP and the lack of funding available for the participation of partner agencies. Similarly, CSC community residents and non-profits were more confident in BAAQMD's implementation of CERP strategies than other agencies.

Interviews showed that relationships were strengthened through the intensive planning period, particularly between the lead community organization, WOEIP, and the lead agency, BAAQMD. In contrast, community residents reported less relationship-building. Instead, they described an increase in BAAQMD staff availability and accessibility, especially in helping them navigate the enforcement services BAAQMD offers and its complexities. It is important to note that BAAQMD enforcement did not meet community resident expectations for ideal responsive time to resident air quality complaints, such as backyard burning or odor complaints. Enforcement staff are often the first points of contact for community members, and, as such, enforcement programs are an opportunity to build trust and relationships.

In the West Oakland CERP process, there was a commitment to collaboration, especially from the Co-Leads. As one nonprofit co-lead said, "We need to continue to have discussions about the nature of the AB617 process, so people know this is a safe space to work in, so they know they can bring their honesty and questions. And that this isn't the community trying to get a bunch of power so we can attack the agencies. That is a significant clarification to make from the beginning—that this is not the place for confrontational politics; this is the place for collaborative problem-solving."

This collaborative spirit was also paired with humility from agency staff. As one BAAQMD planner said: "Trust takes time and if you say you are going to do something, do it. And if you blow it, apologize. Be respectful, transparent, and honest. This is imperative for air districts and government when working with the community." The CPS process asks that all stakeholders collaboratively find pathways toward a common goal via transparency about their respective needs and goals.

Inter-Agency Government Participation

The CSC had diverse representation from a variety of local governments and organizations. This was an intentional part of CSC recruitment – the assumption was that diverse expertise would allow for resource pooling and promote collaboration between normally siloed jurisdictions. Collaboration will be especially important in CERP implementation because many strategies require collective action from community constituents, government agencies, and occasionally local business leaders. Prior to AB617, there were no extensive networks of inter-agency and community-inclusive working groups on pollution reduction that spanned the scales of state, regional, and neighborhoods. AB617 offers a place to pilot comprehensive and collaborative ecosystems of inter-agency air planning, centered on environmental justice improvements in the most impacted communities.

It will take continued effort, however, to address decades of conflict between public agencies, residents, and community organizations. With proper funding, BAAQMD, and all California Air Districts, might use AB617 to nurture new networks of air abatement planning. Such networks can integrate cities, counties, regional and transportation authorities, school districts, public health agencies, and other state agencies beyond their established partnerships to maximize public health improvements via emission and exposure reductions.

Stakeholder diversity also allowed CSC members to form new relationships between participating community stakeholders, which brings their local knowledge to bear on the process, agenda-setting, and outcomes. It is also fruitful for agency partnerships, especially amongst agencies which hold jurisdiction over various pollution sources. For example, while BAAQMD regulates stationary sources by permitting polluting equipment and CARB is the primary regulator of mobile sources in California, the City of Oakland impacts some mobile sources of pollution by permitting businesses generating frequent truck trips near residential areas. To measure CERP ongoing strategy success, collaboration will also be important. The Alameda Public Health Department, BAAQMD, and the City of Oakland Planning Department, for example, might work together to track improvements in air quality and in health indicators correlated to CERP strategies like zoning amendments and transportation projects that seek to reduce pollution emissions.

In both the planning process and in its implementation phase, BAAQMD staff and hired contractors supported the process by doing ongoing administrative tasks essential to process function, such as meeting planning and coordination, preparation of materials and note-taking, and technical assessments

to answer CSC questions. Such backbone staff have also been cited as crucial to successful Health in all Policies efforts.^{43–45} High levels of support are costly, and the BAAQMD staff interviewed expressed uncertainty about how such resource-intensive support will be sustained, with current staffing, while adding additional AB617 communities in the Bay Area Region. To help solve this problem, AB617 funding could be increased by the Legislature to support not only community organizations and air districts but also offered to partner local government agencies. Many cities around the Bay Area and across California will need to update their general plans in coming years, involving the creation of an environmental justice element under SB 1000, the Planning for Healthy Communities Act of 2016.⁴⁶ AB617 and SB 1000 have synergistic goals, i.e. to improve health equity, and reduce pollution in communities experiencing environmental injustice due to legacies of systemic racism. Municipal government participation in AB617 can inform and be built into SB 1000 work, making it a sensible investment of staff time.⁴⁷

All government agencies confront a cost-benefit analysis tension between investing large amounts of staff time and resources in engagement and quantifying the outcomes and benefits of such engagement. While costly, relationships with community members are valuable to the government for many reasons, such as preventing lawsuits via early buy-in on projects and policies and providing local data points for "ground-truthing".

A different way to view this conundrum is to apply an equity framework that looks at societal costs in addition to an efficiency viewpoint. We must recognize the role that governments at all levels have played in creating and perpetuating systems of racial

inequity and thus their role today in dismantling systemic racism. We can also ask how government-community partnerships and engagement can empower communities to correct environmental injustices and create and guide racially equitable government policies, programs, and resource distribution. As one BAAQMD senior staff member said, “This process [AB617] is a lot more strategic for building a groundwork for change, but it is less efficient for staff time.” Putting decision-making power in the hands of communities may be at odds with prioritizing efficient resource allocation. Even so, while an equity-based approach might not be fast and might be costly for agencies, it also has the potential to achieve justice and reduce racial disparities by prioritizing the most impacted communities and uplifting resident visions of place. By reducing health burdens in these communities, larger-scale societal gains can be created, such as extended life expectancy, preventing cases of childhood asthma, and increasing maternal and child health. If the dollars associated with these gains were calculated, it is likely that they would outweigh the cost to the government of time spent supporting participatory planning, cultivating relationships for shared decision-making, and intensive outreach and engagement.

Local Emissions Modeling

To complement previous citizen science pollution monitoring data from WOEIP and their technical partners, BAAQMD modeled emissions sources, pollutant burdens, and cancer risk by sub-neighborhoods within West Oakland. However, modeling results were not compared to WOEIP’s previous collaborative research and monitoring projects. For example, data from the UC Berkeley 100x100 study was not used to validate modeling projections.

The modeled emissions inventory identified

where exposure was likely most severe and provided novel data for CSC decision-making on CERP strategies and emission reduction targets and goals. While monitoring data show where pollution is, modeling answers different questions than monitoring - providing targeting on where airborne toxic contaminants come from and what sources are responsible. Along with identifying what sources contribute most to local air pollution impacts, the modeling team assessed how much emissions would have to be reduced by, and from what sources, to meet the CERP’s goals.

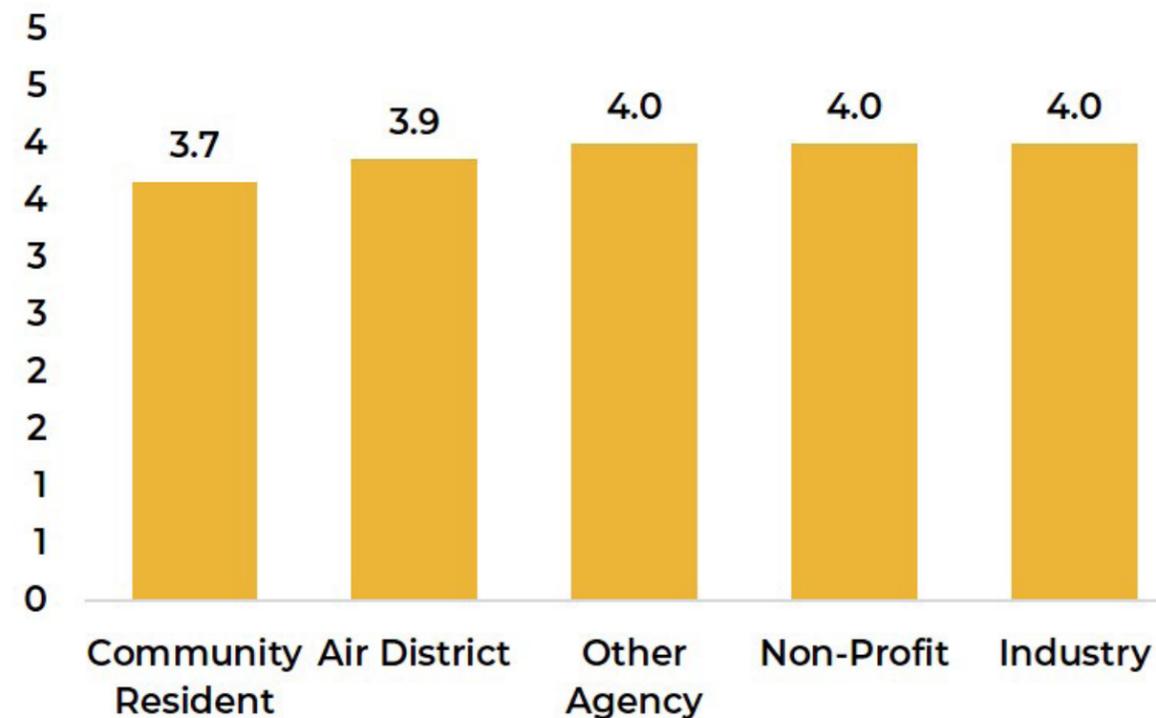
Modeling for air plans in the past was done on a larger regional scale. The CERP’s new hyper-local scale model created pollution exposure estimates spaced by about 65 feet, and gave more granular information to the CSC, helping them look at more accurate block-by-block street-level estimates. The older regional models were useful, however, in identifying emissions from outside of West Oakland, providing external “background” pollution levels.

BAAQMD will package the source code from the technical assessment to share with other air districts. In addition, multiple staff presented papers on aspects of the WOCAP technical assessment at the Air and Waste Management Association 2020 annual meeting. This dissemination of knowledge will make replicability easier, but doing so will require political will from other air districts.

Participant Satisfaction

Interviewees were asked, in the middle of the process and at the end, how satisfied they were with the CERP process overall. The average satisfaction for interviewees was 3.9, with little to no overall change over time. Participants were hesitant to rank process satisfaction, citing doubts about the CERP’s ability to generate meaningful change for

Figure 9. Participant Confidence that the CERP will lead to

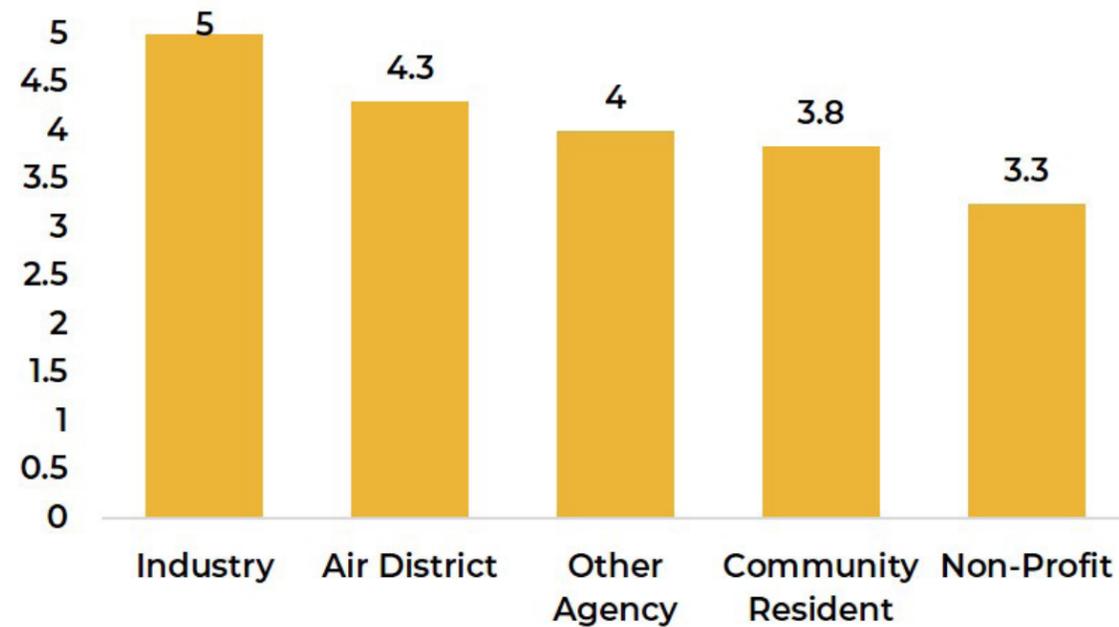


N = 20: BAAQMD = 7, Industry=1, Other Agency = 3, Community Resident = 3, Non-Profit = 6

the West Oakland community. These doubts came from, in part, a perceived history of government plans formed with weak implementation programs and non-existent enforcement elements. While these doubts are valid, many interviewees also acknowledged that nothing truly transformative is ever easy and that difficulty in the planning phase does not mean the CERP will not be successfully implemented. Industry and BAAQMD staff were most satisfied, while community residents and local non-profits were least satisfied. At the

end of the planning process participants were also asked how confident they were that AB617 would bring positive change to West Oakland in terms of improved air quality on a scale of 1 - 5. Respondents almost uniformly responded with a high rank of 4.

Figure 8. Participant Satisfaction with the CERP Process (1-5 Scale)



N = 16: BAAQMD Staff = 5, Industry = 1, Other Agency = 3, Community Resident = 3,

Equity

The City of Oakland’s Department of Race and Equity (DRE) Director trained the CSC in their Racial Equity Implementation Guide and equity methodologies on two occasions.³ These trainings were meant to provide tools to write CERP strategies that dismantle legacies of structural racism in environmental governance to operationalize equity. Based on the DRE’s Racial Equity Implementation Guide, we found that the CERP process put equity into practice in three ways.³ First, the CPS gave community residents shared decision-making power and equal control over many process elements. Second, the CERP included data by race for health disparities and demographics at the aggregate West Oakland level. Third, CERP goals and targets aimed to protect health by reducing air pollution exposure differences between sub-neighborhoods, defining a concrete outcome to work towards.⁴

However, the West Oakland CERP can go further in its implementation of the DRE Racial Equity Implementation Guide. The In AB617’s first year, health disparities were only included in goals in West Oakland and Long Beach/ Carson’s CERPs (London et al. 2021).²

However, the West Oakland CERP can go further in its implementation of the DRE Racial Equity Implementation Guide. The recommendations section will discuss areas for improvement.

Results: Process Challenges

Short Timeline

While the CERP planning process hit all legislative milestones required by CARB, such as completion of California Environmental Quality Act (CEQA) requirements, both the community and agency co-lead participants were hard-pressed to meet the timeline set by statutory deadlines. As one co-lead member said “The major hurdle is the schedule itself. [...] If you ask any planner in any agency, they would say they would never schedule an entire planning process in one year, beginning to end, and they are professionals that write plans. I think we have been tested severely, to see if AB617 could work. I think we are demonstrating that it can work.”

The ambitious one year timeline mandated by law timeline, coupled with the fact that the process had no precedent, had several impacts identified by CSC members. For one, community residents said they would have benefited from more time to understand the technical subject matter presented in meetings and to develop easily implementable CERP strategies. Second, interviewees thought that more time would allow the Co-Leads to more thoroughly educate and support the CSC in their understanding and deliberations. One co-lead member detailed the difficulty of the statutory timeline, saying: “We are hard pressed to create an agenda and content for the next monthly meeting in only three weeks.” The short timeline necessitated packing a lot of material into each meeting, which reduced time for interactive exercises, discussion, and strategy creation and revision. On several occasions, just as small group conversations took a cohesive form in which all parties understood each others’ perspective and started to agree on a collectively formed idea, their breakout session ended. Youth CSC members also expressed frustration with exercises during breakout sessions, saying they were not appropriately engaging for their ages and abilities. Youth suggested that these exercises

include more game-like elements. Interviews with WOEIP and BAAQMD staff revealed that the curtailment of discussion runs counter to the key goal of empowering CSC members in the CERP writing and decision-making.

“The actual strategy development has been done by the CSC, with a lot of assistance and knowledge delivery and guidance. One of the hardest parts is creating [meeting] exercises that give the CSC the tools they need to do an evaluation...The development of exercises for CSC meetings has been quite a challenge. We want their deliberations to be meaningful and not just a continuing aggregation of opinion. That would reduce it to what it [planning processes] usually is. You know, “Here is a bunch of stuff you don’t understand, give us your opinion on it and we’ll issue a plan anyway.” So, we really wanted this to be an informed process.” – Co-Lead team member

Technical Education

Air monitoring, planning, and regulation is technically complex; it involves understanding the chemical makeup of air pollution, air pollutant pathways, health costs of poor air quality, the respective authorities of municipal agencies, and existing enforcement and abatement measures—all to identify new strategies that build on current ones. The Co-Leads attempted to present this information to community stakeholders in digestible formats and chunks. The short, expedited timeline led the Co-Leads to create the meeting content each month, present it to the CSC at that month’s meeting, therein asking for CSC input. Interviews showed that it was, however, difficult to teach an audience of laypersons about extremely technical and complex subjects and then ask them to make informed decisions (that will affect their lives for years to come) immediately after the instructions without a grace period to master this new information. One co-lead

member agreed, saying “...the CSC are given bite-sized challenges that planners have, so we can at least say that the community had the opportunity to debate and grapple with some of the issues that go into these types of plans. It is a pretty heavy lift to ask citizens to do work that would normally be done by engineers and planners.”

Further complicating matters, there was little time to send out materials in advance and no time to design the arc of content for the entire process. CSC members would have liked to know in advance what the general content was for each month so they could provide feedback on process trajectory as well as on the content of upcoming meetings. Community residents on the CSC expressed frustration with the amount of time it took to digest meeting material, prepare for meetings, and again, how little time in advance the meeting material was sent out. For example, as one community resident mentioned, “We haven’t been receiving a lot of information to prepare with and the information we do receive is not given with adequate time for preparation. Every meeting, we kind of find out what’s going on that day.” Furthermore, as representatives of sub-neighborhoods, some community residents on the CSC felt an additional burden of disseminating the information from CSC meetings to their respective community groups or neighbors.

While the modeled data was a new approach that offered information, which had never before been available on such a local scale, it was also a struggle to translate its utility for the CSC.

“The other challenge, from the data side, was that for a community like West Oakland that had [existing] data, it is unclear what is most helpful. Is it modeled data or measured data? Perhaps there was too much data and it created confusion for the Steering Committee and community. They had measured data

and were waiting for modeled data. These show slightly different things. The modeled data look at different pollutants and show different hot-spots. It hinders the Steering Committee ability to home in on problem areas.” – Co-Lead member

The information presented to the CSC was dense, and the quantity was significant. Asking CSC members to come up with solutions and strategies without an example left possibilities open-ended and avoided creating leading answers and certain types of bias. However, this also caused frustration. The community members did not know what kind of solutions were possible, and agency professionals were frustrated when strategies required intensive time and resources outside of existing scopes of work and programming. In future AB617 Plan writing, the researchers recommend giving examples of potential solutions, specifying what is legally possible, and what strategies would require laws or city codes to be changed or amended.

In future AB617 planning processes, a loose topic schedule or framework could be developed with CSCs at the start. To avoid timeline challenges, Air Districts can do informal community engagement in advance of the CERP one-year timeline countdown. It is the researchers’ understanding that this is the approach BAAQMD is taking with the Richmond / San Pablo AB617 community that came after West Oakland.

Strategy Integrity and The Challenge of Bureaucratic Creativity

We hypothesize that a longer timeline would have allowed more time for writing the CERP’s strategies, making them clearer and, therefore, easier to implement. Interviewees agreed that detailed and well-edited strategies would potentially increase the ease of implementation and the ability of the

CERP to meet its goals. Some non-BAAQMD government representatives on the CSC presented concerns around how, and if, they would be able to implement CERP strategies, stating that they saw the strategies as vague and below professional and technical standards.

CERP strategies also elicited concern because many ask agencies to be creative, and some might warrant the invention of a new program, initiative, or silo-transcending partnership outside of existing scopes of work. For example, the City of Oakland is tasked with Strategy 25, which reads: “To address potential changes in local pollution exposure, the City of Oakland works with local community groups to address gentrification and the pricing out of long-term residents caused by gentrification. This effort includes meetings with local community groups and incentives and loans targeted to existing businesses and residents. Funding for this effort is identified as needed.” There is no single department responsible for addressing gentrification, therefore it is likely that a coordinated effort is needed between the City’s Departments of Economic Development, Housing, Planning and Building, as well as the Mayor’s Office. While some strategies face barriers because they are non-traditional, i.e., require creativity, such as this gentrification strategy, others might be politically difficult, requiring more resources or political will than presently exists.

Government staff interviewed were stressed when CERP strategies requested new programs or initiatives because no funds were attached to these requests. These concerns came from staff at the City of Oakland, the Port of Oakland, the Alameda County Public Health Department, and BAAQMD. Tight budgets and the inherent inflexibility of some of their department bureaucracies were thought to make future CERP strategy implementation difficult. Staff will have to find creative ways to fund implementation,

either via new grants, or rolling them into existing efforts. OakDOT found a solution by applying to various government grants with WOEIP for AB617 implementation. Yet, these concerns did not diminish the general enthusiasm and commitment to the success of the process from government staff interviewed.

“Genuinely, I did not think that the strategies were well developed. It felt like some strategies were included just because someone proposed them. [...] We did not have enough time to think through if each one would work. We have 89 strategies that came about in 2-3 meetings and they aren’t well fleshed out. The weak link is that if those strategies are not well thought out they reduce feasibility and therefore the probability of a successful implementation. More time could have been spent thinking through if the strategies would work. That being said, implementation will do this.” – Agency Staff

If there were more time for strategy writing and for planning generally, the CSC could iteratively revise strategies numerous times before finalizing them. Several iterations would allow time to answer and research any technical concerns with strategies. For example, some entities such as the City of Oakland had to consult their staff attorneys on the legality of certain strategies assigned to them. Other agencies needed time to research how WOCAP strategies did or did not fit in current work plans. Adopting strategies without understanding if an agency truly has the capacity to execute the strategies they are tasked with, along with the fact that they are not funded to implement AB617 as BAAQMD is, will increase the likelihood that

Community and Nonprofit Capacity

Closely related to the preceding challenge of bureaucratic creativity is that of capacity. Capacity was an issue for all participants, but especially for community residents and WOEIP. Community members perceived the necessary time investment as challenging. WOEIP was hard-pressed to maintain their ideal level of public-facing communication and community engagement – one in which they would continuously encourage community residents to attend meetings and engage with the CERP process. WOEIP, as a small organization, was not able to recruit CSC members and meeting attendees continuously throughout the process to fill positions when participants dropped out. Ideally, WOEIP would have liked to create a website for AB617 updates and to have authored a monthly newsletter for residents to increase community awareness of the CERP process.

The three residents on the CSC also mentioned that West Oakland residents were not engaged adequately, and recommended the Co-Leads support them in outreach to the broader community through their local neighborhood networks.

“A newsletter would make things a lot easier. It would have been nice to have a newsletter that we could send out. You know, here are the major takeaways. It would be nice to have a communications person in the room. It doesn’t even have to be a whole newsletter, just a two-pager that we could print and pass out to people. Especially, when I am at my neighborhood meetings, I only get so much time and if I go at the end, many people have left by then. If we could hand out the flyer and it says here’s what we talked about [in the last meeting] and here’s what we will talk about, and there’s free dinner, then maybe we would get more takers [to attend meetings].”

- Community Resident

Community Engagement Challenges

The majority of participating government staff were generally pleased with the experience - perhaps due to their increased efforts to do more inclusive community engagement than ever before. All community constituents viewed the community engagement positively when compared to previous air planning efforts, but not without its own challenges. The Co-Leads, for example, did not have adequate time to form a comprehensive and shared understanding of community engagement expectations before the process launch. As a WOEIP co-lead said, “It was challenging trying to get the BAAQMD staff on the same page as us about how community engagement is supposed to be implemented for the Steering Committee. The challenge is that we did not have time to do a real orientation on what community engagement is for BAAQMD staff. The Air District staff does technical, administrative work like air modeling, but do not have a clear understanding or experience of working closely with communities.”

Youth participants were critical of how they were engaged. They requested a more tailored approach to fit their needs and to assist in their productive contribution. Youth participants would have benefited from a closer relationship with the Co-Lead Team and being involved directly in planning meeting content. However, the Co-Lead Team did not have a comprehensive mechanism (dedicated time and space) to receive in-person feedback from CSC members like the youth participants.

While AB617 increases and improves community engagement funding to California Air Districts, further study is needed to assess if additional funding is needed to make engagement equitable for all participating communities. Comprehensive community engagement will look different for each community undertaking an AB617

process.

West Oakland’s history of environmental injustice and activism has set the bar high – for example, WOEIP’s CPS method asks for power to be shared equally with community-based stakeholders.

Equity

As mentioned previously, the CSC did not have a 50% community resident membership, the racial demographics of CSC members were not representative of all racial groups in West Oakland, residents on the CSC were not paid in the CERP planning process, and engagement to community members was not sustained throughout the process. The following section will discuss ways to embed equity into the implementation process.

There was also some disagreement on the CERP’s targets. Specific targets for desired future conditions were set for diesel PM, PM2.5, and cancer risk, and are based on a 2017 baseline model year findings. The overall targets seek to reduce exposure disparities within the neighborhoods of West Oakland. The CERP’s 2025 targets aim to make all West Oakland neighborhoods’ air as clean as the average 2019 West Oakland neighborhood. The 2030 targets aim to make air quality exposure in all West Oakland neighborhoods meet the exposure conditions of 2019’s least polluted West Oakland neighborhoods.⁴ In terms of equity, the targets address air pollution disparities between West Oakland neighborhoods, but do not consider racial differences in exposure between neighborhoods. Nor do the CERP’s targets consider disparities in air pollution emissions and exposure by race between Oakland neighborhoods or Bay Area communities.

Some CSC members approved of the goals’ intentions and others thought they fell short. Other CSC members thought the targets should have been more aspirational

and geared towards making West Oakland air quality levels similar to the Oakland neighborhoods with the best air quality. As one Co-Lead member said “We struggled a lot with how to set targets for these overburdened communities. There is no acceptable level of cancer risk. The more we learned about particulate matter the more we learned that there is not an acceptable level. Do you want all of the Bay Area to be as clean as Bolinas? That is not possible. So, within the West Oakland community, they want to get to the point where there is no inequity - that no community bears a disproportionate burden. That is a community-centric statement of intention rather than some numeric target. Then there’s the question, what is disproportionate? The air in Oakland will always be dirtier than Sebastapol because of population density.”

While emissions data for all Bay Area roads does not exist publically now, BAAQMD is partnering with a company called Aclima to monitor all Bay Area streets via drive-by monitoring. With these data, West Oakland air can be compared to areas in Oakland or the Bay Area with similar land uses and population density. This approach is a relative one, and not based on a statute like the NAAQS that delineates numeric health-based standards for a handful of what are known as criteria air pollutants. The CARB Blueprint does not specify any emissions thresholds that CERPs should try to achieve for both criteria and non criteria air contaminants. No standardized targets are specified in the *Blueprint*, or law, AB617 only requires emissions reductions of health-harming pollutants.

Recommendations

Equity

A 2019 study on modeled on-road PM2.5 levels found that in California, on average, Black Californians are exposed to PM2.5 pollution at 43 percent more than white Californians and Latinx Californians are exposed to PM2.5 pollution 39 percent more than white Californians. 48 Additionally, the lowest-income households in California live in communities where, “PM2.5 pollution is 10 percent higher than the state average while the highest income households live where PM2.5 pollution is 13 percent below the state average.”(ibid) These findings lend weight to the urgency of integrating racial equity into all AB617 efforts.

Legislature:

Amend California Code, Health and Safety Code - HSC § 39711 (a)(2), which AB617 references, to further define “disadvantaged communities.” Add the language “groups that have experienced racial discrimination and exclusion.” This language promotes equity by naming the primary source historical and ongoing oppression that leads to a “disadvantaged” status for populations.

BAAQMD and CARB:

What the CERP fails to do, in terms of racial equity, is disaggregate data on racial groups most impacted by air pollution within West Oakland. Best practice requires that racial data be disaggregated. Therefore, in the ongoing CERP implementation process, stakeholders are working to further embed equity by defining specific racial groups most harmed by air pollution, creating evaluation and accountability frameworks with metrics to measure progress towards the CERP goals, and continuing to elucidate racial equity gaps in current air pollution policy and the steps necessary to ameliorate them.

The West Oakland CERP can go further in its implementation of the City of Oakland's Racial Equity Implementation Guide.³ Future West Oakland AB617 and BAAQMD work can do the following:

1. To more equitably engage community stakeholders most impacted by racial disparities in air pollution exposure, CSC members should be representative of the major demographic groups of West Oakland. We recommend this including missing groups like faith-based organizations, homelessness advocates and organizations, Latinx constituents, and education representatives.
2. Define racial groups (with the highest existing health burden that air pollution may add cumulatively to) and closest to air pollution sources within West Oakland.
3. Gather quantitative and qualitative data on the systemic drivers of disparities, such as histories of racist policies like redlining, exclusive single-family zoning, and the decision-making behind location of industrial zoning in Oakland.
4. Define “Racial Equity Outcome(s)”
 - Identify racial equity gaps in current air pollution management and adjacent programming. For example, what policies, plans, and programs that regulate air quality do not consider air pollution exposure disparities by race?
 - CERP goals and targets should define desired racial equity outcome(s), such as health sensitive populations (such as children and seniors) or sensitive receptors (sites in which sensitive populations spend time such as school or senior centers), and all potential stakeholder groups in West Oakland. Furthermore, the CARB Blueprint that outlines

- CERP goals and targets should define desired racial equity outcome(s), such as health targets for specific racial groups worst impacted by pollution. The Blueprint requirements around health are loose. It only asks that CERPs include health risks to inform the identification and selection of emissions reduction strategies, consider health in light of any new air monitoring data, and explore community health data's potential relationship to pollutant exposure. To identify specific health targets, we recommend the method a recent paper used to estimate health burden, risk, and caseload be used by BAAQMD.⁴⁹
 - Health targets are a complicated issue because: 1) public health data are not always available at the census and block group levels for mortality by race; 2) some State public health data are not publicly available; and, 3) Air District and health department collaborations on health tracking are not uniform across geographies. However, London et al. shows that a lack of health targets and, more generally, a health nexus to emissions reductions was a complaint numerous CSC had about their CERPs.²
 - Consider adding goals and targets that strive to lower air pollution levels in West Oakland to those of the best Bay Area or East Bay neighborhoods.
5. Based on the above steps, identify all "Equity Gaps," which are defined as "anticipated barriers and burdens impacting access for those most impacted by racial inequity" and define steps needed to correct racial inequities.³
6. To promote transparent evaluation and accountability, include equity-based metrics that can measure progress towards CERP goals. This will help define who will be better off if CERP strategies succeed. For

example, if step one and two show that black residents are most vulnerable to air pollution related diseases, live closest to pollution sources, and have the least access to health services, ways to track these indicators are essential to see if conditions improve for these demographics. A worst-case scenario might be that gentrification pressure causes a decrease in the black population in West Oakland, leading to the displacement of the people the CERP stood to help the most, but we cannot understand disparities in CERP benefits unless we track vulnerable populations by race.

- Metrics for improving equity need to be associated with every CERP strategy. A strategy-by-strategy equity analysis can help rank and prioritize strategies for implementation and to target limited agency resources.
- Guaranteed enforcement is not required for certain CERP strategy implementers like municipal government. BAAQMD is obligated to implement its strategies, but other agencies will implement them on good-faith alone. Some, like the City of Oakland, do not have enforcement capacity in certain departments. For example, the Planning and Building Department issues permits to businesses that generate many mobile sources of emissions, but they have no staff to check and see if permit terms are violated in a way that increases emissions. The report, Equitable Enforcement to Achieve Health Equity, should be consulted for guidelines on equitable policy enforcement.⁵⁰

These missing components are due to the short planning timeline the CSC was working under. **However, the ongoing CSC subcommittees implementing the CERP can build out the equity components in each CERP strategy to remedy these discrepancies.**

Paying Community Residents

West Oakland CSC members were not offered monetary compensation. Community residents' expertise, time, and effort was essential to the West Oakland AB617 process. Resident involvement should be encouraged and valued. Relying on volunteers from the community is a precarious approach, especially because you risk only attracting community members who have either the financial means to participate, those with higher incomes, or people with time, such as retirees. This will skew representation towards a certain demographic. In contrast, payment ensures more equitable access to participation and hopefully increasingly diverse representation.

In a 'community-led' process, which will inherently require a larger time commitment from community members, we recommend stipends be used to compensate resident participants who are unaffiliated with an organization and have no recourse for payment for their efforts. The West Oakland AB617 process involved a large time commitment both in meetings and beyond. As one interviewee said "I would love to be paid. I think we [CSC members] all would. There is a lot of studying so I can give my opinion." Not only do residents provide localized knowledge relevant to air pollution, but their expertise also often encompasses a lived history of a place - something most government staff will not be able to replicate. Fortunately, CARB now requires stipends to CSC members and the inclusion of resident stipends in Air District AB617 budgets through guidelines in implementation grants. The next Blueprint revision should ensure compliance with this requirement.⁵¹

CSC Representation and Recruitment

Even if WOEIP staff are counted, community representation did not cover all the sub-neighborhoods, all sensitive populations (such as children and seniors) or sensitive receptors (sites in which sensitive populations spend time such as school or senior centers), and all

Photo: CSC Members - Katherine Funes New Voices are Rising Coordinator and Student Participant

Source: CARB Environmental Justice Blog. Rose Foundation for Communities and the Environment. <http://carbej.blogspot.com/2019/10/rose-foundation-for-communities-and.html>. Accessed May 19, 2021.



AB617 implementation requires that a CSC's membership should be majority community residents.¹ The majority of the West Oakland CSC was government representatives.

BAAQMD should ensure that all AB617 committees for planning and plan implementation include:

- A membership that is majority community residents (as the CARB Blueprint dictates)
- Representation from each neighborhood or each identified Impact Zone
- Representation from each sensitive population. We define sensitive populations here as groups who are particularly vulnerable to air pollution. (seniors, youth, schools, and the homeless community - as relevant)
- Representation from interest groups such as the faith community, the locally-owned businesses, and political representatives – such as the West Oakland council person.

One youth participant asked for “More outreach to more youth groups and maybe other demographics. I think there should be more people of color there. I want more diversity and persons from the LGBTQ community. Everyone deserves to be represented.” Staff from the Alameda Department of Public Health suggest that community participants are recruited based on a weighted equity analysis of those most impacted by health disparities from local air pollution.

Mechanisms for Increased CSC Engagement

Residents voiced a desire for more participation in the meeting content planning and more spaces for CSC members to voice concerns to the Co-Leads team outside of meetings. All the community resident CSC members interviewed wanted more opportunities to engage with the Co-

Leads. We recommend offering engagement for CSC members outside of CSC meetings to increase members' sense of inclusion and ownership of the process.

BAAQMD:

- **Office hours:** One community CSC member recommended that “...there should be office hours at WOEIP offices. Either once a month or every week. If you have a class, then there are office hours. It's another way to support the Steering Committee.” Office hours would offer a time to address CSC members concerns and clarify any confusion on meeting content. Office hours could also provide a space for more collaboration on process design and content creation between the Co-Leads and CSC members.
- **Subcommittees:** The creation of subcommittees for specific air pollution topics was planned at the start of the West Oakland process but did not materialize. Subcommittees, theoretically, would provide opportunities for CSC members to work on strategy writing. Subcommittees are thought to potentially bolster perceptions of inclusion because they offer a space for active participation on specific topics – something the CSC wanted more of.

As one community CSC member said: “They [Co-Leads] mentioned towards the beginning that there would be subcommittees for us to be more involved but those never materialized. Perhaps because of a capacity issue, and I can sympathize with that. But it has made it seem like not much of a community-driven process because we enter these meetings, and it feels like everything has already been done and decided and we just get steered in a direction.”

- **Cohort Model:** One agency staff member suggested instituting a cohort model

for community constituents on the CSC. A cohort is a group of people that enter a program together and remain together for its duration. For AB617 planning processes, Air Districts can offer community CSC members a series of educational training in the beginning to form a shared foundation of knowledge on air pollution science, abatement methods, land use regulation, and how state regulatory contexts interact with regional and local ones. Special consideration will need to be made for youth participants and for non-English speaking participants.

- **Planned Timeline:** Flexibility should be built into the CERP process, so that there is time to revisit material when needed for comprehension or creative thinking. If a timeline is charted for an entire CERP planning process in advance, we recommend including buffer weeks with no set topics or predetermined agenda to provide flexibility.

Participation and Attendance

Attendance grew in the first ten months of the CSC meetings from the general public and saw a slight drop off in CSC membership. However, a core group of CSC members saw sustained attendance after the first few months.

BAAQMD:

- **Create clear definitions** for community stakeholders. WOEIP was from the community, despite being co-conveners. In this report, nonprofits were not counted as community residents, even though they represent community interests. However, each CSC in future AB617 sites can self-identify to indicate who they represent.
- **Counting attendance and participation:** Both attendance and participation at meetings are assumed to be indicators of

inclusion and shared control of the process. Detailed tracking is recommended to ensure that both reflect the community's demographics by race, gender, and age. Meeting minutes and attendance sheets can be used to accomplish this goal. Tracking attendees by race would allow us to say definitively if the Latinx community in West Oakland, for example, was missing from the discourse. Including the interests and perspectives of all stakeholders, especially Black, Indigenous, and people of color and vulnerable populations, such as persons with disabilities, is crucial to achieving equity in AB617. Future attendance and participation tracking should be capable of discerning between residents from the CERP “plan area” of West Oakland, gender, age, race, etc., as well as interest groups by sector (business, government, youth etc.). These metrics can help track the engagement of the broader community who attend to observe and are not CSC members.

- **Track CSC strategy origins:** We recommend tracking which strategies originated from community, industry, or government stakeholders. This could allow community members to quickly see their influence in the CERP and to feel ownership. In West Oakland, it was unclear which strategies originated from what stakeholder group. Tracking strategy origin would also help other government agencies keep track of which strategies speak to their existing plans and program and can be included in current scopes of work, and which will need additional funding and staff time.

Increasing Funding, Capacity, and the Timeline

Equitable community engagement requires substantial investments of resources and staff time. In the fiscal year 2017-2018, the

California Legislature appropriated \$10 million for AB617 community grants, but the need is much greater. We recommend increasing funding to community groups that organize and support their communities' participation in CERP and CAMP processes. Increasing funding will allow community advocates to achieve the following recommendations. Air districts stepping into health-poor communities long neglected by investors and government will have to reconcile with these communities' histories of environmental injustice and compassionately assist communities in building equitable futures. Participatory and community co-led planning can address past traumas, but they must be consistent and well funded.

CARB:

- **Support a platform for peer-to-peer community education** between communities and between Air Districts. West Oakland and other communities that have gone through either CAMP or CERP processes can advise communities embarking on AB617 projects. Additionally, Air Districts in regions new to AB617 work would benefit from consulting with seasoned community organizations and Air Districts.

BAAQMD and CARB:

- **Grow capacity for equity:** More funding is needed to support and grow their capacity for and competence in community engagement and equity planning methodologies. We recommend further training and hiring of community engagement staff to bolster Air District and CARB capacity. One BAAQMD staff recommended that Air Districts "...approach this process [AB617] with humility and an open mind." They continued to say that "There is a lot of wisdom in the community, and it needs space to come out. This process

is creating that space." All agency staff, including the engineers, need skills like facilitation and mediation, beyond their job descriptions to work with community residents.

California Legislature:

- **Fund local government participation,** such as cities and health departments, to support AB617 efforts in their jurisdictions. This funding could incentivize participation from these authorities. It could also help local agencies do feasibility analysis of community strategies. Agencies voiced concerns about having limited ability to discern if strategies from community residents and advocates were possible based on their existing resources and if they had legal precedent. Funding agencies on AB617 Committees would allow them to do feasibility studies and provide this information to residents thereby supporting the creation of well-formed strategies.
- **Guarantee sustained funding** for CERP Planning and implementation to provide a continuing platform for community co-led air pollution mitigation work.
- **Change the board requirements** for air districts to include community representation or create a community advising body.
- **Instate a 3 or 2-year planning timeline.** However, this may not be advisable if revising the legislation creates opportunities for the bill to be weakened by opponents during revisions. The CSC members need more time to digest material and synthesize data in order to produce comprehensive strategies that

- are novel and go beyond what BAAQMD, Port of Oakland, City of Oakland, or the Health Department plans, and programs achieve.

As BAAQMD senior staff said, "I think the principal challenge [of AB617] is time. We go into communities with graduate degrees and decades of experience and expect community members to pick all the knowledge up in months...When the folks in the legislature put the program together, they wanted to hold the air districts accountable and not be locked in an endless planning exercise. It has been problematic from the community perspective. They have not had time to come up to speed on the nomenclature and what the trade-offs are. If rushed, decisions put the Steering Committee at a disadvantage. From a staff perspective, it was hard to put together a 100-page document that will be approved by the board and have the agency logo on it. There were a lot of late nights and weekends. This system isn't working right now. We are trying to game the system by laying the groundwork in advance. With Richmond [the next community in the Bay Area writing a CERP], it will likely take us three years. You need a year to build community trust, a year to do the modeling and technical work, and a year to do the plan."

Every time an Air District has a public meeting about a highly visible or controversial facility they should be thinking about the location as a potential 617 community and engaging accordingly. This is why the West Oakland history is so instructive – it was born in conflict, leading to activism, and ultimately agency-community collaboration.

Communications

California Legislature:

- **OPR Support for AB617:** The Office of Planning and Research works with CARB to compile and create a new AB617-specific manual on land use, transportation, and community development strategies for equitable (race and health equity) air pollution mitigations. This manual should be targeted towards Air Districts and community groups. Publish the manual in all major languages spoken in AB617 communities. The tools currently available, including the Blueprint, do not center equity and or consider the special requirement participatory community-based planning might entail.^{6,51}

BAAQMD:

The limited capacity and timeline caused a lack of robust and consistent external communications. The lack of communications limited efforts to inform West Oakland residents about their local AB617 process. As a solution, numerous CSC members recommended a newsletter and a community-hosted website.

- **Newsletter:** We recommend that a monthly newsletter in all languages spoken by local communities be created and used as a tool for community outreach and to garner participation from community members.

- **Website maintained by the partner community organization:** While BAAQMD hosted a public AB617 website, this did not allow WOEIP, who was charged with doing the community outreach legwork, to monitor website traffic, valuable information useful for informing outreach efforts. As one WOEIP staff member said, "Like any good private sector organization, we should know how well information is being accessed and digested."

Recommendations for Blueprint Re-visioning

CARB:

Include communities in the writing of the next *Blueprint* iteration. As Ms. Margaret Gordon said, “CARB should be more open and more transparent. Especially before they established the AB617 *Blueprint*. This was not a document that was influenced by the communities. It should have been.” However, many equity concerns are addressed in the suggested List of Topics to Discuss for Inclusion written by the AB617 Consultation Group for the Blueprint revision.⁵²

- **Update the AB617 Blueprint** to include racial equity guidelines for community engagement and goals.
- **Include racial equity** alongside health equity in the next version of the Blueprint.
- Enforce the Blueprint requirement that community residents on a CSC make up half of the CSC.
- **CSC representation:** Institute a requirement that CSCs represent all demographic groups representing people of color present in an AB617 community.
- **Write guidance documentation** to help other AB617 communities use co-led community-centered models of engagement for increased community empowerment in CERP and CAMP processes. Consider including in the next Blueprint revision.

Developing an AB617 Suggested Curriculum

CARB can support Air Districts with further development of their educational modules.⁵³ They have created videos but can go further. More detailed modules will support Air Districts’ community education efforts and CSCs informed decision making. There are various papers written on citizen science and education for air monitoring.^{56,57} A recommended curriculum can help ensure

that all AB617 processes are providing community participants with the same level of technical knowledge.

We recommend creating written materials with visual infographics and interactive activities. It is recommended that modules be appropriate for youth as well as adults, and that they be in the various languages spoken by CSC members. The benefits of interactive exercises are that they can generate discussions in real time and might help a CSC cohort build solidarity and trust via a collective experience. Written materials can be adapted to local contexts by Air Districts, helping CSC members to understand their unique regulatory and industrial contexts. For example, West Oakland contends with pollution from a large port, but Central Valley communities have to navigate pesticide and herbicide drift from the agricultural industry.

These types of topics can be developed into curriculum modules: 1) Environmental Hazards from Air Pollution, 2) Land Use Function, Planning, and Tools, 3) Mapping Pollution and Human Vulnerability, and 4) Local Air Pollution Modeling. Ideally, this curriculum would include material for an intensive education period for a CSC cohort starting an AB617 process. The curriculum should also focus on making technical concepts appropriate for and inclusive of youth constituents and be available in all languages spoken in AB617 communities.

Include equity, restorative justice and transformative justice principles and practices.⁵⁸ These elements will likely help build trust between community constituents and government participants. London et al. reports that many CSC reported a lack of accountability and transparency from Air Districts.

AB617’s innovative nature and potential to be co-led by the community might be

settings for restorative justice. Restorative justice purports that traditional ways of addressing grievances do not adequately meet the needs of victims, perpetrators, and communities – leaving issues unresolved. In contrast, a restorative justice approach uses a participatory framework to bring all stakeholders together and start by educating the perpetrators on the harm they have caused. Then, in a supportive setting, all parties actively work towards a constructive solution. Importantly, the people most affected have the most decision-making power – deciding how to deal with their grievances and heal from trauma through community-led reconciliations.

AB617 offers opportunities to use a restorative justice approach. The bill requires CARB to “provide grants to community-based organizations for technical assistance and to support community participation in the implementation...”^{15(p617)} The CARB *Blueprint* further clarifies the ‘participation,’ requiring that AB617 processes be community-driven, use and respect community knowledge, and asks air districts to convene CSCs comprised of half community members and other stakeholders as relevant.¹ Thus, setting the stage for communities to reconcile with the perpetrators of local air pollution and regulators that fail to protect their public health.

Conclusions

Lessons from the West Oakland AB617 Experience

The West Oakland AB617 process has been a collective process that has empowered community members to write air policy – the first-ever attempt to do so in the Bay Area. The West Oakland CSC, using WOEIP’s CPS method, was able to bring various stakeholders together in collaboration and create a plan that was co-led by the community and integrates community knowledge of air pollution issues. AB617 affirms the idea that community voices must be recognized as equal to those of agency experts to generate original solutions to air quality issues.

This report finds that the process structure is working and that making the improvements suggested here will not require major changes to the structure components. Community co-leadership and the CPS model were powerful tools for centering community voices in air planning and monitoring efforts and can be replicated. As one senior BAAQMD staff person said:

“The community co-leadership model is revolutionizing the way we do business and has changed our outlook and approach to community outreach. It turned from something that staff dreaded doing because they got yelled at to something that staff seek out. Now we have our community partners there to keep us from doing or saying things that aggravate the community. A lot of time we don’t understand the local context and we don’t understand how to talk to the community. The people that work here are engineers, and their work in their cubes is very different from talking to a community. The co-lead model hashes out what we talk about meetings, when we talk about it, and how - which is very helpful. [...]. It shifts the conversation from what we do with our

technical work, graphs and models, to what the community thinks should happen with their air.”

The CERP writing process drew on WOEIP’s expertise in building community knowledge through participatory research and popular education, and their experience creating partnerships with diverse stakeholders. BAAQMD’s technical expertise underpinned the entire effort, from the CEQA assessment to the air pollution modeling. Moreover, incorporating the CPS power-sharing into the structures of the CERP process and the use of the City of Oakland Department of Racial and Equity guidelines incorporated principles of racial and environmental justice. Just as the environmental justice movement seeks to empower low-wealth people and people of color to confront discriminatory legacies that have put them in harmful physical, economic, political, and social positions, the West Oakland CERP prioritizes the health, wellbeing, and voices of these communities. AB617 strategies, if co-written by community residents, can hold governments accountable for reversing the damage of past discriminatory policies and practices. These distinct qualities allowed West Oakland to overcome the challenges experienced by many of the other AB617 communities.² To show commitment to equity and support the long-term success of AB617, the hyper-local modeling, the West Oakland CPS structure, and the use of equity frameworks should be used by BAAQMD and mandated by CARB for other Air Districts.

However, AB617 in California has not realized its full potential to create equity-based change in air pollution emissions and exposure. All levels of government are complicate in creating and perpetuating systems of racial inequity and thus have a role today in dismantling systemic racism. The Legislature, CARB, and Air Districts need to figure out how to create and sustain extensive

collaborations with other authorities (cities, counties, health departments, etc.) to maximize the potential of CAMPs, CERPs, and community air grant initiatives. A re-imagining of AB617 through the People's *Blueprint* process for example, could better operationalize equity into CAMPs, CERPs, and AB 617 funding efforts. Lastly, building staff capacity to do equitable community engagement and incorporate racial justice into air planning and programming is difficult but essential for maximizing the long-term benefits to impacted communities. BAAQMD, had taken important steps toward operationalizing equity by creating an office of Diversity, Equity, and Inclusion in 2017, adding an equity-oriented department into its institutional structure.⁵⁹

Replicability and Transferability

If other places seek to replicate the West Oakland AB617 process and do not have established, trusting relationships between stakeholders, we recommend the use of the CPS method alongside a restorative justice approach. Research results from this study indicate that CPS helps to build relationships and trust through power-sharing and transparent, participatory decision-making. However, many communities that have long struggled with environmental injustice would be well served by first going through the steps of restorative justice: identifying injustices and their impact, and those responsible for these injustices committing to putting right the harm. Restorative justice can help clean trauma of the past before any AB617 process can suture those wounds in the present.

As a path towards community-led air planning, the CPS model can likely be used in other contexts and at varying scales of government. All its components are replicable with proper resources. Community-level hyper-local air pollution modeling is also a cutting-edge technology application that

supports localized approaches to air planning. One BAAQMD senior staff endorsed the West Oakland CERP process by saying, "I think parts of it are replicable. Community-based decision-making is replicable. It could be a model for the rest of California and other states. The exposure modeling helps provide the tools for the community to make decisions. These two things are the real gems of 617." After CERP planning concluded, the City of Oakland asked WOEIP to facilitate a community benefits agreement using the CPS method for the proposed Oakland A's baseball stadium, a large development project in West Oakland.⁵⁷ This adoption of the CPS method in the broader landscape of local governance is another indicator of its replicability.

In other AB617 communities, CARB and Air Districts can also consider using racial equity frameworks, working towards a power-sharing process wherein Air Districts share decision-making heavily with CSCs, increase Air District competency in racial and environmental justice approaches to air planning, re-vision CARB's role with authority to require Air Districts to follow the recommendations outlined here, and revise AB617 *Blueprint* with AB617 community members from AB617 communities.

While there is still room for improvement in AB617 implementation, and adapting implementation in other states warrants further analysis, the timing of this type of policy may be opportune. National institutions are increasingly acknowledging environmental injustice as a public health and racial equity issue. New policy models like AB617 can serve as templates for other US states. In sum, the West Oakland CERP process offers a number of lessons that can inform the implementation of AB617 at other sites in California as well as informing parties interested in environmental justice policy creation and implementation around the US.

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