



# 3. Reducing Pollution Exposure and Improving Air Quality

Clean air, water, and land are some of the building blocks for healthy neighborhoods. However, Oakland’s urban setting, economic history, and past policy and land use choices mean that communities in West and East Oakland, primarily communities of color, experience some of the highest pollution levels in the state. As discussed in Section 2.2, high pollution exposure has a direct impact on human health, leading to disproportionate levels of negative health outcomes like asthma, cardiovascular disease, or cancer in communities burdened by pollution. This section covers existing environmental factors such as pollution and other natural and human-made environmental hazards that affect Oakland residents. It identifies baseline conditions related to the SB 1000 topics of pollution exposure, air quality, and unique or compounded health risks. In addition to environmental justice, these topics correspond most closely with the Land Use and Transportation, Open Space, Conservation, and Recreation (OSCAR) and Safety Elements of the General Plan.

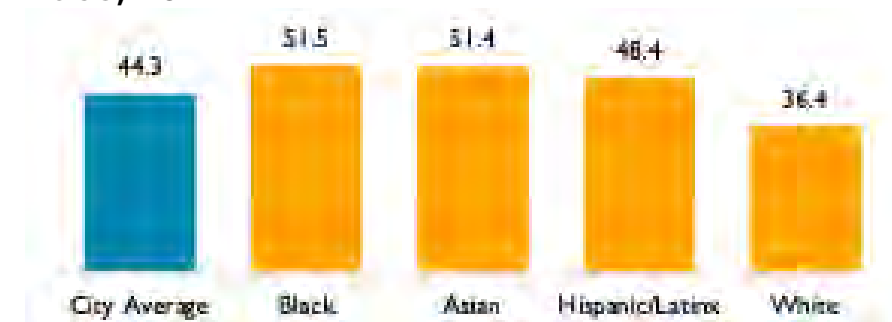
## 3.1 ISSUES AND DISPARITIES

### POLLUTION BURDEN

Oaklanders experience pollution of various kinds: air pollution, water contamination, and exposure to hazardous materials. Exposure to these pollutants varies significantly, with higher concentrations in EJ Communities. Pollution exposure occurs when people come into direct contact with air, food, water, and soil contaminants. While Oakland has a relatively lower CalEnviroScreen 4.0 Pollution Burden score than the rest of California, this relatively low citywide value hides the disproportionate pollution burden experienced by some Oakland communities. **Chart EJ-2** below shows that there are higher concentrations of Black, Indigenous, and people of color (BIPOC) communities living in census tracts that have higher pollution burden scores, meaning that they are more at risk than white populations. Residents living in EJ Communities often live close to polluting industrial uses or adjacent to freeways and major truck routes. This disproportionate exposure directly impacts the health of vulnerable populations.

On average, census tracts in Oakland have an overall CalEnviroScreen 4.0 Pollution Burden percentile score of 44.3, meaning that census tracts in the city are less impacted by environmental effects and exposures than more than half of tracts in California. However, four of Oakland’s tracts rank in the top 10th percentile in the entire state for pollution burden: Port Upper, Jingtletown/Kennedy, Melrose, and Brookfield Village/Hegenberger – all of which are identified as EJ Communities in this Element.

**Chart EJ-2: Citywide Census Tract Average of CalEnviroScreen 4.0 Pollution Burden Score by Race, 2021**



*Note: Race is assigned to the racial group with the plurality (highest proportion) within a census tract.*

*Source: CalEnviroScreen 4.0, CalEPA, 2021*

## SENSITIVE LAND USES

The California Air Resources Board (CARB) defines sensitive receptors as “children, elderly, asthmatics, and others who are at a heightened risk of negative health outcomes due to exposure to air pollution,” and the locations where these sensitive receptors congregate, such as schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities, are considered sensitive receptor locations (also referred to as sensitive land uses).<sup>36</sup> In the short and long term, an individual’s exposure to pollution of any kind (air, water, or land) in their community can lead to chronic conditions or negative health outcomes including asthma or increased risk of cancer. Communities of color are at higher risk for exposure to pollution and hazards in neighborhood environments at an early age. Exposure to these conditions, particularly during sensitive developmental stages, contributes to health disparities later in life.<sup>37</sup> As discussed earlier in Section 2.1, a history of racially discriminatory policies and practices have created inequitable development patterns in Oakland that expose BIPOC communities and low-income communities to greater concentrations of pollution and other health risks.

Data from the Alameda County Public Health Department shows that residents of West Oakland and Downtown Oakland have higher rates of asthma emergency room visits as well as stroke and congestive heart failure compared to the rest of the city. On

<sup>36</sup> California Air Resources Board, “Sensitive Receptor Assessment,” <https://ww2.arb.ca.gov/capp-resource-center/community-assessment/sensitive-receptor-assessment>, accessed February 21, 2023.

<sup>37</sup> Chenghao Wang, et. al, “Rethinking the urban physical environment for century-long lives: from age-friendly to longevity-ready cities,” *Nature Aging* 1 (2021): 1088-1095, <https://doi.org/10.1038/s43587-021-00140-5>, accessed March 8, 2022.

the other hand, residents of the Oakland hills are expected to live up to seven years longer than those from the flatlands in West Oakland and downtown.<sup>38</sup> These outcomes are not a coincidence; legacy land use decisions based on racially discriminatory practices (discussed in Section 2.1) have resulted in and perpetuated environmental injustices such that Oaklanders with the least ability to pay for and recover from environmental health threats are also the most impacted.

Land use incompatibility is one of the most important contributors to environmental burdens on an EJ Community. Mixing sensitive land uses with known or foreseeable pollution or natural hazards can create or compound health risks. According to WOEIP’s 2002 report, “Neighborhood Knowledge for Change”, 10 percent of sensitive sites in Oakland, like schools, hospitals, and homeless shelters were located within one-eighth of a mile of industrial facilities at high risk for chemical accidents. **Figure EJ-8** maps the location of existing sensitive land uses in Oakland, with residential areas shown in yellow. Since 2002, the proportion

<sup>38</sup> Environmental Defense Fund, “How pollution impacts health in West Oakland,” 2019, <https://www.edf.org/airqualitymaps/oakland/pollution-and-health-concerns-west-oakland>, accessed February 15, 2022.

of sensitive uses other than residentially zoned areas shown in **Figure EJ-8** that are within one-eighth of a mile of high- or very-high hazard ranking industrial facilities has increased to over 30 percent.

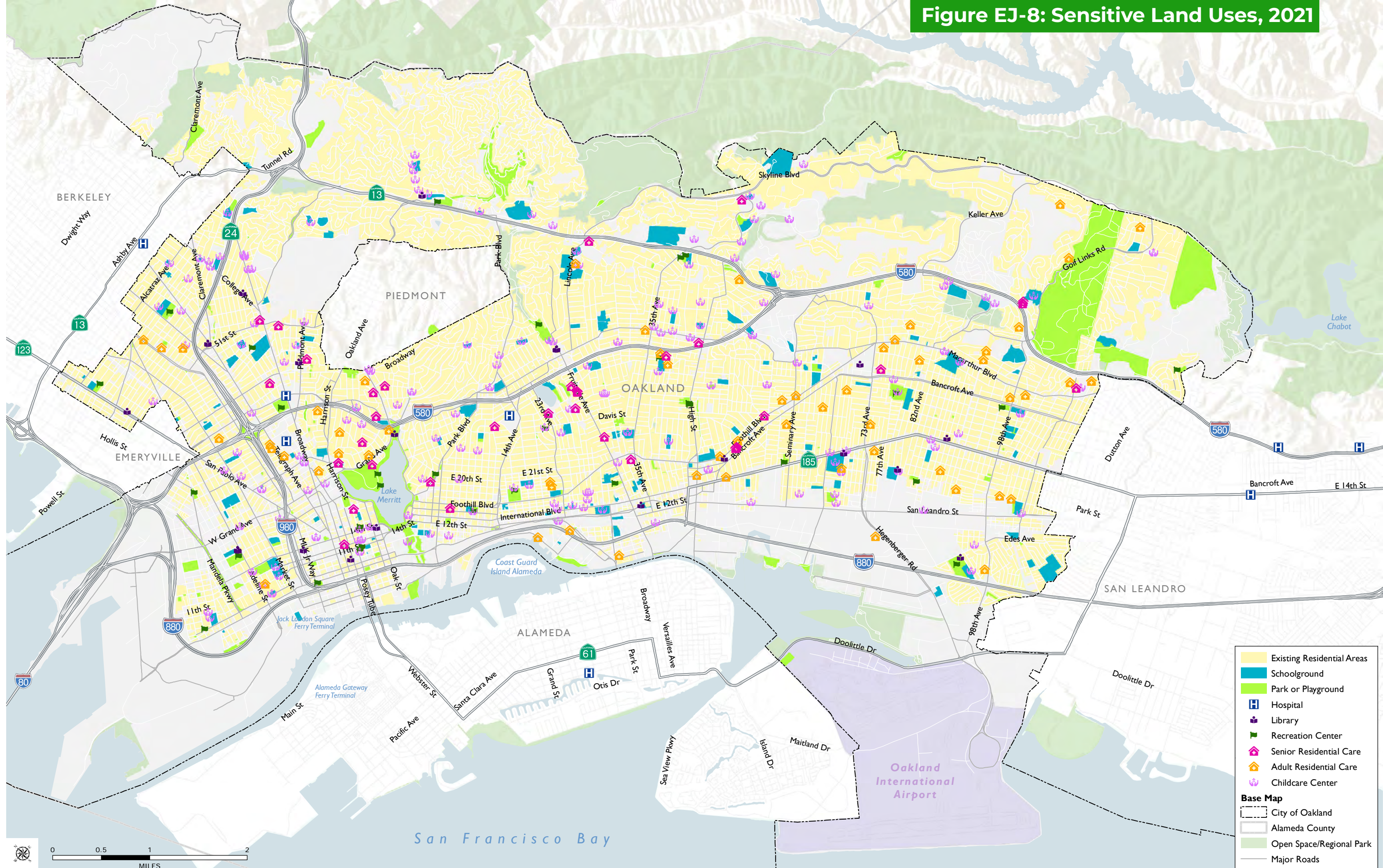
## AIR QUALITY

Outdoor air pollution comes from many sources, such as vehicle exhaust, construction and industrial activities, smoke from fireplaces and wildfires, and pollen from local plants. Transportation and industrial sites can release exhaust and chemicals that contribute to increased rates of asthma, congestive heart failure, and stroke. These pollution sources exacerbate health impairments and increase the economic burden from hospitalizations and healthcare. In Oakland, the concentration of sites that release chemical pollution is four times higher in high-poverty neighborhoods than that of more affluent neighborhoods.<sup>39</sup> Census tracts in West and East Oakland are particularly affected by air pollution due to their proximity to traffic and industrial uses.

<sup>39</sup> City of Oakland, Oakland 2030 Equitable Climate Action Plan, July 2020, <https://cao-94612.s3.amazonaws.com/documents/Oakland-ECAP-07-24.pdf>.



Figure EJ-8: Sensitive Land Uses, 2021



## Types of Air Pollutants

Following the Clean Air Act, the U.S. Environmental Protection Agency (EPA) tracks six common air pollutants, called “criteria air pollutants” that are found all over the U.S. and have been shown to harm human and environmental health as well as cause property damage. These criteria air pollutants are ground-level ozone, particulate matter, carbon monoxide (CO), lead, sulfur dioxide (SO<sub>2</sub>), and nitrogen dioxide (NO<sub>2</sub>). EPA calls these pollutants “criteria” air pollutants because it sets National Ambient Air Quality Standards (NAAQS) for them based on the latest scientific information regarding their effects on human health or welfare. In addition to the NAAQS, criteria air pollutants in California must meet State standards established by the California Air Resources Board (CARB). Both the national and State standards help protect the public from harmful pollutants.

Of criteria air pollutants, particulate matter finer than 2.5 micrometers in size (PM<sub>2.5</sub>) poses the greatest health risk because they can penetrate deep into the lungs or even get into the bloodstream, resulting in a wide range of health effects.<sup>40</sup> PM<sub>2.5</sub> commonly comes from combustion sources of all fuel types, including diesel, along with particulates such as from road dust.

Certain air pollutants are known to increase the risk of cancer and/or other serious health effects. These are classified as “toxic air contaminants” (TACs, known federally as “hazardous air pollutants”), some of which do not have a safe level of exposure (i.e., any amount of exposure is considered substantially harmful). One of the most concerning TACs is diesel particulate matter (DPM), which is a type of PM<sub>2.5</sub> that is emitted as exhaust from diesel fuel combustion.

The West Oakland Community Action Plan (WOCAP) identifies 89 potential community-level strategies and control measures intended to reduce criteria pollutant and TAC emissions and decrease West Oakland residents’ exposure to TAC emissions.

<sup>40</sup> United States Environmental Protection Agency, “How Does PM Affect Human Health?” EPA Region 1, last updated February 3, 2023, <https://www3.epa.gov/region1/airquality/pm-human-health.html>, accessed February 21, 2023.

## Mobile Sources

Mobile air pollution sources include on-road motor vehicles (cars and trucks) and off-road vehicles and equipment (such as aircraft, trains, and ocean-going vessels) and are Oakland’s primary source of air pollution. Exhaust and chemical outputs from the transportation and industrial sectors, including the Port of Oakland, contribute to the climate crisis and increased rates of asthma, congestive heart failure, and stroke, as well as increased economic burden from hospitalizations and health care.<sup>41</sup> Ocean-going vessels and trucks serving the Port bring disproportionate levels of diesel pollution and fine particulate matter to West Oakland and communities living along the I-880 and I-980 freeway corridors. In addition to degrading local air quality, these toxic pollutants are absorbed in soils and contaminate groundwater. Heavy rains and floods bring pollutants to the surface, contaminating streets and waterways.

New regulations from CARB will require, starting in January 2023, that every vessel coming into a regulated California port, such as the Port of Oakland, use either shore power (e.g., plug in to the local electrical grid) or a CARB-approved control technology to reduce harmful emissions, such as diesel particulate matter and nitrogen oxides (NO<sub>x</sub>). The Port of Oakland is also in the beginning stages of designing infrastructure that would help transition to carbon-free, heavy-duty trucks and cargo-handling equipment, including the replacement of a substation and electrical infrastructure for generating solar power.

## Stationary Sources

Stationary air pollution sources include industrial facilities, gasoline stations, power plants, dry cleaners, waste disposal, and sites of other commercial and industrial processes. Stationary sources resulted in 26 percent of the city’s total PM<sub>2.5</sub> emissions in 2018. The Bay Area Air Quality Management District (BAAQMD or “Air District”), is the local air pollution control district for the San Francisco Bay Area Air Basin and regulates stationary sources of air pollution. Permitted stationary sources of TACs in Oakland include industrial facilities, gasoline stations, power plants, dry cleaners, waste disposal facilities (such as landfills and wastewater treatment plants), and other commercial and industrial processing sites (such as metal processing and chemical manufacturing facilities).

<sup>41</sup> City of Oakland, 2030 Equitable Climate Action Plan, July 2020.



## Utilizing Local Data to Map Block-by-Block Air Pollution

Conventional air monitoring is conducted by a network of stationary air quality monitors dispersed throughout an area. Agencies such as CalEPA and BAAQMD operate their own networks. Private and non-profit partners can help supplement air quality monitoring data by providing additional monitors throughout their communities. However, estimating local levels of pollution is difficult because air monitoring stations are typically located many miles away from each other, and the data from these stations has to be averaged and/or estimated at a level that can mask out significant levels of pollution in certain neighborhoods.

Community groups in West and East Oakland have partnered with researchers at the Environmental Defense Fund and the University of Texas at Austin and technological companies like Google and Aclima to map, measure, and analyze pollution data at the neighborhood level, where pollution can be eight times higher at one end of a block compared to the other.

The Planning and Building Department has partnered with WOEIP to incorporate data from this study into this EJ Element. The EJ Communities screening analysis and maps included in the Baseline Report and this Element have utilized this hyperlocal data wherever feasible. This EJ Element directs the City to further incorporate more finer-grained community data to inform City programs and policies.

Diesel particulate matter, primarily emitted by industrial sources such as container ships and ocean-going vessels, cargo-handling equipment, railyards, trucks, and industrial operations of Port tenants, is concentrated in the industrial areas of West Oakland and along western portions of I-880, as shown in **Figure EJ-9**. Many of these industrial uses depend on truck transport on designated routes, which bring disproportionate levels of diesel pollution, fine particulate matter, and black carbon to West and East Oakland along the I-880 and I-980 freeway corridors due to the truck ban on I-580. As a result, PM2.5 is concentrated primarily

along the I-980 and I-880 freeways in the southern half of the city, as shown in **Figure EJ-10**. Nitrogen oxides (NOx), a precursor to ground-level ozone (a criteria air pollutant tracked by CARB), are also generally concentrated in the industrial parts of West Oakland and the Oakland International Airport. Policies in the EJ Element seek to reduce concentrations of particulate matter and air pollutants and protect sensitive uses from pollution's existing effects. In partnership with the West Oakland Environmental Indicators Project (WOEIP), the Environmental Defense Fund (EDF) conducted a Health Impact Assessment of Oakland that

further refined the localized health risks of nitrogen dioxide (NO2) concentrations to Oakland residents.<sup>42</sup> Using data from this study, **Figure EJ-11** shows where the mortality (proportion of annual deaths) attributable to NO2 is greatest in Oakland. **Figure EJ-12** shows how Oakland neighborhoods are affected by air quality overall, with the census tracts in blue and dark blue being the most burdened according to our Air Quality topic indicators. The Air District is leading a coordinated regional effort to generate community-based solutions for improving air quality and public health in impacted communities, pursuant to Assembly Bill (AB) 617. AB 617 requires local air districts and CARB to reduce air pollution in the most impacted communities through several methods, including development of Community Emissions Reduction Plans in collaboration with community members. In 2018, West Oakland was selected for this program. WOEIP partnered with BAAQMD to develop the West Oakland Community Action Plan, which focused on reducing exposure to pollutants from sources such as Port-related activities, trucks, industrial sources, road dust, and residential burning. In 2021, East Oakland was selected for the program. The Air District, in partnership with Communities for a Better Environment and the East Oakland community, initiated the first Community Steering Committee meeting for the East Oakland AB 617 Community Emissions Reduction Plan process on September 15, 2022. The committee will meet monthly to develop a Community Emissions Reduction Plan to improve air quality and public health in the impacted communities of East Oakland.

The City will support these efforts through land use or zoning changes to limit additional air quality burden in EJ Communities shown in **Table EJ-3**; prioritizing air quality improvements, such as distribution of air filters, priority urban greening or buffering, or other strategies to protect existing residents; using BAAQMD tools in assessing impacts and requiring higher air filtration ratings in new development, continuing to implement recommendations in the 2030 ECAP, and coordinating with community groups.

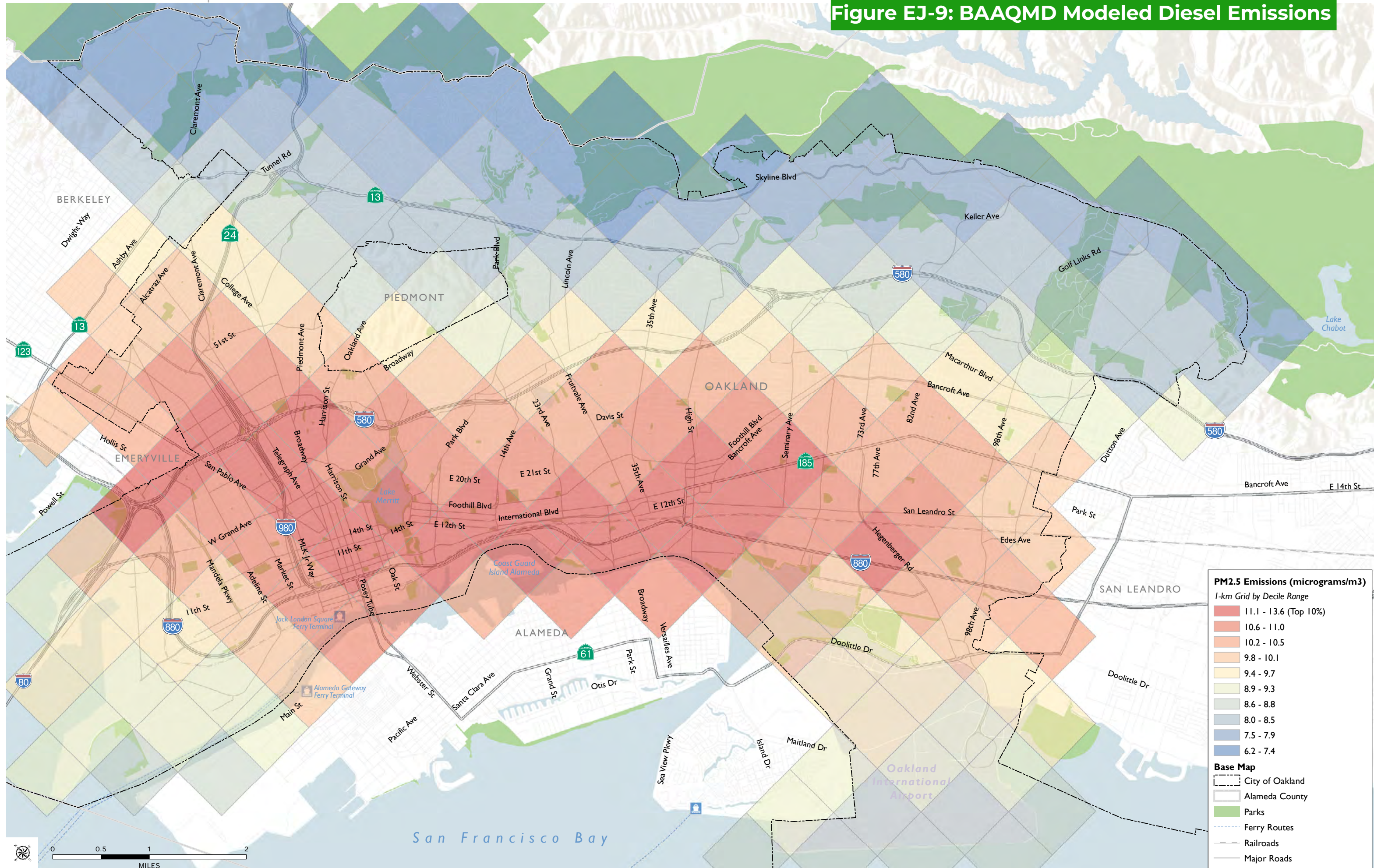
42 Veronica A. Southerland, et al., "Assessing the Distribution of Air Pollution Health Risks within Cities: A Neighborhood-Scale Analysis Leveraging High-Resolution Data Sets in the Bay Area, California," *Environmental Health Perspectives* 129, no. 3 (March 2021), <https://doi.org/10.1289/EHP7679>.

**Table EJ-3: Top 10th Percentile Tracts by Indicator — Air Quality**

PM2.5		DIESEL		TRAFFIC		TOXIC RELEASES	
Tract Name	Score	Tract Name	Score	Tract Name	Score	Tract Name	Score
Jingletown/Kennedy	<b>1.00</b>	Jack London Square	<b>1.00</b>	Sobrante Park	<b>1.00</b>	Fitchburg	<b>1.00</b>
Chinatown	<b>0.99</b>	Acorn Industrial*	0.99	Brookfield Village	<b>0.99</b>	Lockwood/Coliseum/Rudsdale	<b>0.99</b>
Fruitvale/Hawthorne	<b>0.98</b>	Jack London Gateway	<b>0.98</b>	Port Upper	<b>0.98</b>	Paradise Park/Golden Gate	0.98
Pill Hill	<b>0.97</b>	Acorn	<b>0.97</b>	Eastmont Hills	0.97	Bushrod/North Oakland	0.97
Downtown	0.96	Chinatown/Laney	<b>0.96</b>	Adams Point North	0.96	Panoramic Hill	0.96
Oakland Estuary	<b>0.96</b>	Port Lower*	0.96	Adams Point East	0.96	Brookfield Village/Hegenberger	<b>0.95</b>
Chinatown/Laney	<b>0.95</b>	Port Upper	<b>0.95</b>	Laurel/Upper Peralta Creek	0.95	Santa Fe/North Oakland	0.95
Fruitvale	<b>0.94</b>	Chinatown	<b>0.94</b>	Foothill Square/Toler Heights	0.94	Upper Telegraph/Fairview Park	0.94
Hoover/Foster	<b>0.93</b>	Downtown/Old Oakland	0.93	Mills College	0.93	New Highland	<b>0.93</b>
Uptown/Downtown	<b>0.92</b>	Prescott/Mandela Peralta	<b>0.92</b>	Trestle Glen	0.92	Bushrod/Childrens Hospital	0.92
Melrose	<b>0.91</b>	Oakland Estuary	<b>0.91</b>	Jingletown/ Kennedy	<b>0.91</b>	Sobrante Park	<b>0.91</b>
Eastlake	0.90	Prescott	<b>0.90</b>	Temescal West	0.90	Rockridge	

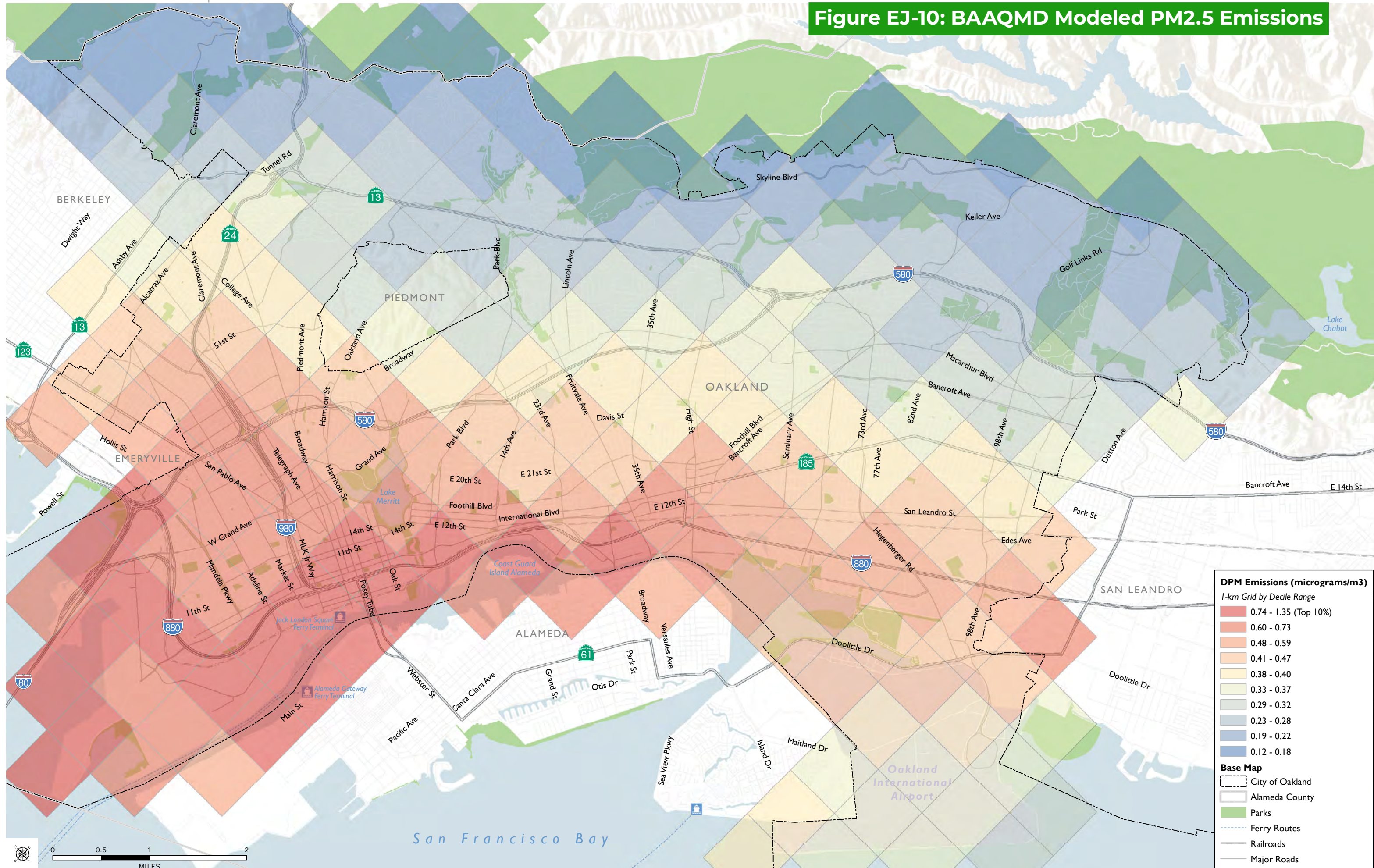
Note: Bolded census tracts in blue are EJ Communities.  
 \* Indicates census tract with low population.

Figure EJ-9: BAAQMD Modeled Diesel Emissions



SOURCE: BAAQMD, 2021; City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2021

Figure EJ-10: BAAQMD Modeled PM2.5 Emissions



**DPM Emissions (micrograms/m3)**  
 1-km Grid by Decile Range

- 0.74 - 1.35 (Top 10%)
- 0.60 - 0.73
- 0.48 - 0.59
- 0.41 - 0.47
- 0.38 - 0.40
- 0.33 - 0.37
- 0.29 - 0.32
- 0.23 - 0.28
- 0.19 - 0.22
- 0.12 - 0.18

**Base Map**

- City of Oakland
- Alameda County
- Parks
- Ferry Routes
- Railroads
- Major Roads

SOURCE: BAAQMD, 2021; City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2021

**Figure EJ-11: NO2 and Health Effects**

Note: Data provided courtesy of EDF as published in the Bay Area Air Pollution HIA (2021).

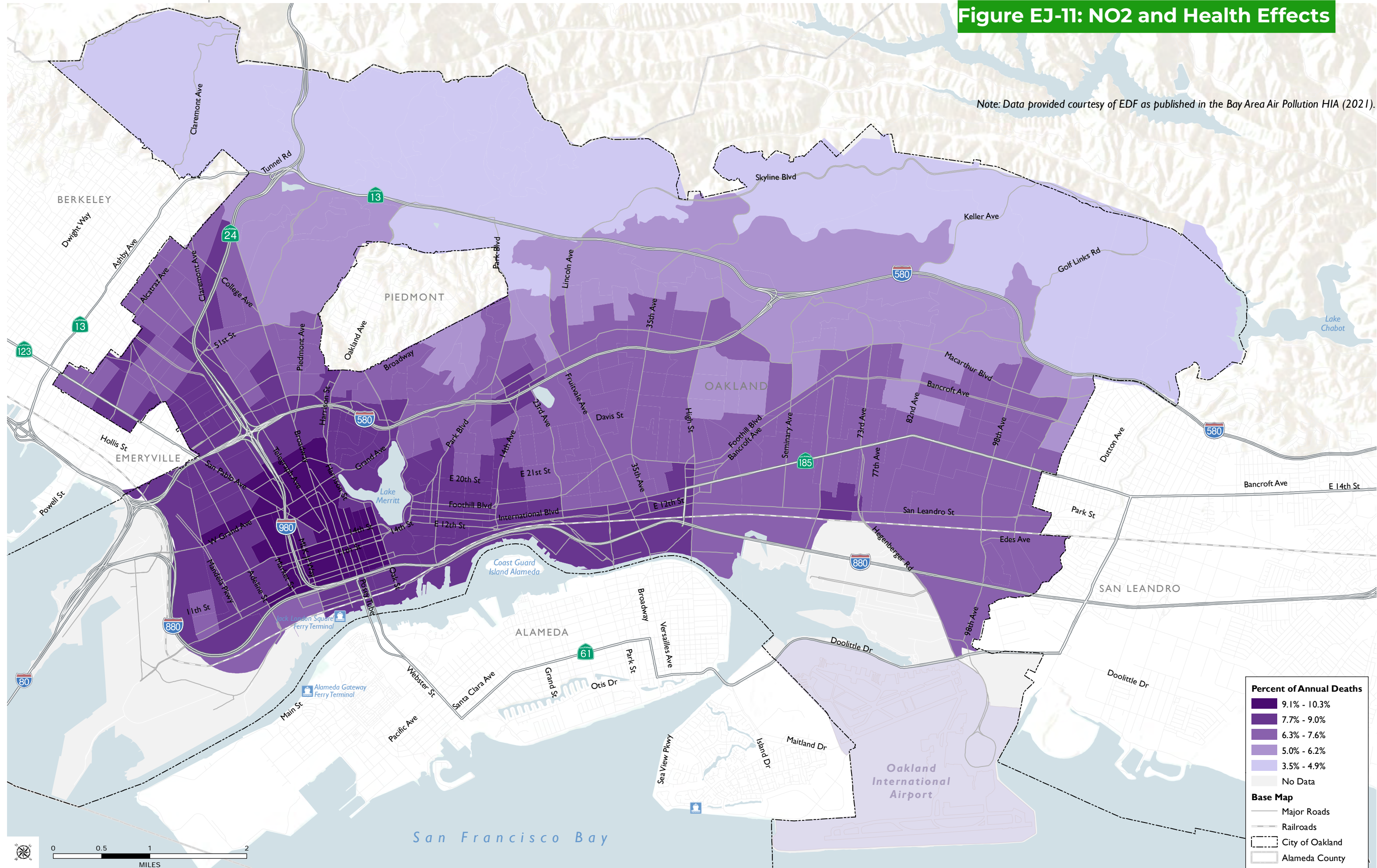
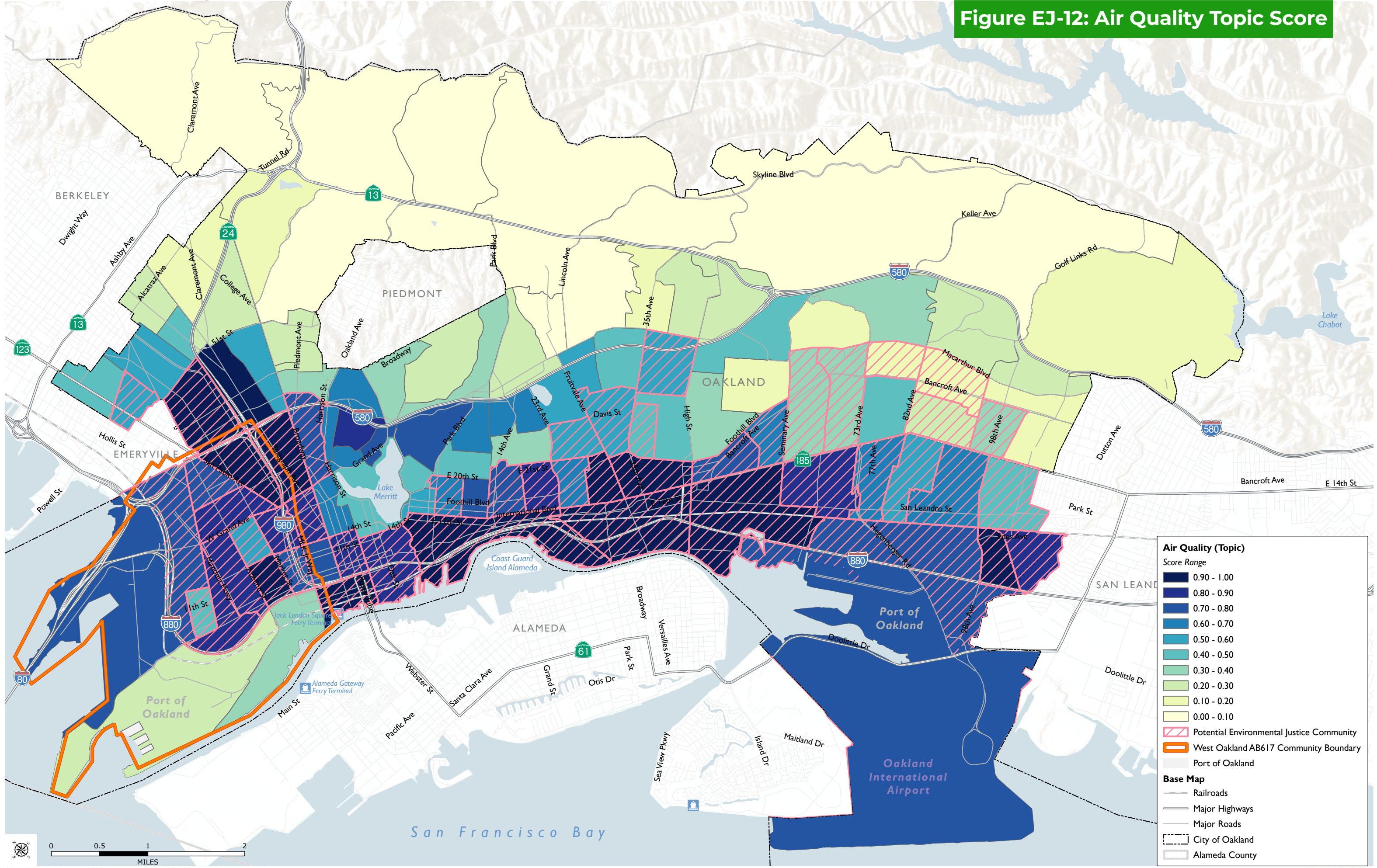




Figure EJ-12: Air Quality Topic Score



**Air Quality (Topic)**  
Score Range

- 0.90 - 1.00
- 0.80 - 0.90
- 0.70 - 0.80
- 0.60 - 0.70
- 0.50 - 0.60
- 0.40 - 0.50
- 0.30 - 0.40
- 0.20 - 0.30
- 0.10 - 0.20
- 0.00 - 0.10

Potential Environmental Justice Community  
West Oakland AB617 Community Boundary

Port of Oakland

**Base Map**

- Railroads
- Major Highways
- Major Roads
- City of Oakland
- Alameda County

0 0.5 1 2  
MILES  
SOURCE: City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2022

## Building Resilience: West Oakland Community Action Plan (WOCAP)

In 2018, WOEIP partnered with BAAQMD to develop the West Oakland Community Action Plan (WOCAP): “Owning Our Air.” The plan was adopted by BAAQMD and CARB in 2019 and set ambitious goals to protect the community’s health. The WOCAP sets targets to reduce disparities in air quality and ultimately achieve improvements that match today’s cleanest air quality for all neighborhoods in West Oakland by 2030.

The 2020 Annual Report highlights progress on implementation, including 29 replacements for low-emission equipment, four Minimum Efficiency Reporting Value (MERV) 16 air filters installed at schools, and incorporation of relevant strategies in the West Oakland Truck Management Plan, among other early implementation wins.

The EJ Element includes several policies that support implementation of the WOCAP to continue reducing air emissions in the West Oakland AB 617 Community. The Element also directs the City to support similar processes and outcomes in other areas of the city that are disproportionately affected by air pollution.

## WATER QUALITY

The quality of the water that people drink, use, and play in has a direct effect on their health, and when the sources of this water are compromised, the contamination can make people sick. The quality of water infrastructure—or the services through which residents obtain their water—also plays a pivotal role in public health. However, all too often, infrastructure investments align with the geography of wealth, resulting in underinvestment and disinvestment in low-income communities and communities of color. As a result, people of color are more likely to live in areas with higher rates of contaminated water, stormwater and wastewater overflows, and increased risks of flooding.<sup>43</sup>

<sup>43</sup> Pacific Institute, A Twenty-First Century U.S. Water Policy, Chapter 3: Water and Environmental Justice (2012), <http://pacinst.org/wp-content/>

GeoTracker is a statewide data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater. This database contains records for sites that require cleanup, such as leaking underground storage tanks (LUSTs), Department of Defense Sites, and Cleanup Program Sites. GeoTracker also contains records for various unregulated projects as well as permitted facilities including irrigated lands, oil and gas production, operating permitted underground storage tanks, and land disposal sites. Additionally, the State Water Resources Control Board (SWRCB) maintains the California Integrated Water Quality System (CIWQS) to monitor and regulate environmental places of interest such as agricultural facilities and operations that may affect water quality. CalEnviroScreen assesses threats to groundwater quality based on these two databases.

While most Oakland residents have access to high-quality drinking water, groundwater threats like LUSTs, gasoline stations, military cleanup sites, and industrial sites including the airport are some of the water quality issues that affect many parts of Oakland. According to CalEnviroScreen 4.0, more than half of Oakland’s census tracts score in the 80th percentile or higher for groundwater threats. As mapped in **Figure EJ-13** these census tracts are generally located closer to the waterfront, whereas census tracts with lower scores (i.e., that are less exposed to groundwater threats) are generally located in the Oakland hills. As sea level rise and climate change affect Oakland into the future, rising groundwater tables could worsen groundwater contamination threats.<sup>44</sup>

An example of recent local groundwater contamination occurred in 2020, when the Oakland Unified School District shut down McClymonds High School in West Oakland for a week after officials found trichloroethylene, a cancer-causing chemical, in the groundwater under the school. The source was likely the five active cleanup sites within half a mile of the school. The City will

[http://pacinst.org/wp-content/uploads/2013/02/water\\_and\\_environmental\\_justice\\_ch3.pdf](http://pacinst.org/wp-content/uploads/2013/02/water_and_environmental_justice_ch3.pdf). (via *Clean Water For All, Water, Health, and Equity: The Infrastructure Crisis Facing Low-Income Communities & Communities of Color – and How to Solve It*, October 23, 2018, [http://protectcleanwater.org/wp-content/uploads/2018/10/FINAL-CWC\\_Report\\_Full\\_report\\_lowres-003-3.pdf](http://protectcleanwater.org/wp-content/uploads/2018/10/FINAL-CWC_Report_Full_report_lowres-003-3.pdf). Accessed February 14, 2022.)

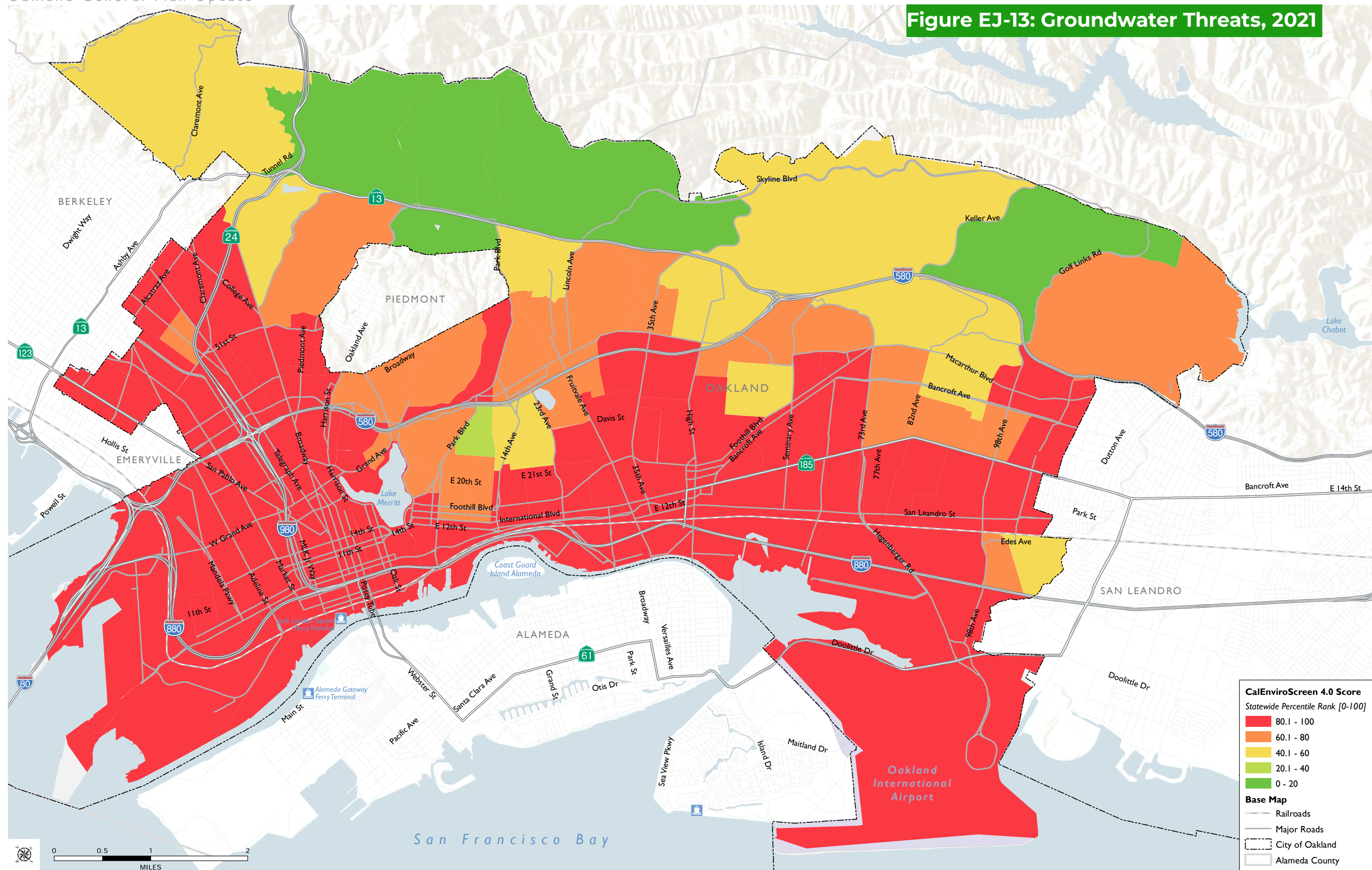
<sup>44</sup> Policies on sea level rise are found in the Safety Element.

continue to support the San Francisco Regional Water Quality Control Board and California Department of Toxic Substances Control (DTSC) to assess cleanup sites in EJ Communities with high groundwater contamination threat.

A consortium of cities and agencies, including Oakland, work to protect water quality in the county through the Alameda County-wide Clean Water Program. This program regularly monitors and conducts special studies of the county’s creeks, wetlands, and the San Francisco Bay to assess the watershed; inspects industrial and commercial business facilities; provides public information and engages the public; ensures municipal maintenance; regulates new construction development; and prevents stormwater pollution from illicit discharges, pollutant spills, and construction activities.



Figure EJ-13: Groundwater Threats, 2021



SOURCE: CalEPA Office of Environmental Health Hazard Assessment, 2021; City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2021

In 2019, the City of Oakland developed a Green Stormwater Infrastructure Plan<sup>45</sup> that complies with SWRCB’s Municipal Regional Stormwater Permit<sup>46</sup>, helps implement the Alameda Countywide Clean Water Program, and seeks to protect and restore Oakland’s watersheds. “Green stormwater infrastructure” refers to a variety of practices and engineered facilities designed to detain and clean, capture and reuse, or infiltrate stormwater runoff to reduce the volume of runoff and improve water quality. In accordance with the City’s Resilient Oakland Playbook, Oakland will use green stormwater infrastructure to manage stormwater and reduce minor localized flooding risks, as well as provide urban greening benefits, such as improved air quality and reduced urban heat island effects, especially for neighborhoods that have limited access to parks and green space.

To address water quality issues, the City will continue to collaborate with water providers, support residents and businesses in avoiding stormwater and groundwater contamination, and prioritize implementation of green stormwater infrastructure projects in EJ Communities shown in **Table EJ-4** in partnership with community groups. EJ Communities are shown bolded and highlighted in **Table EJ-4**.

45 City of Oakland, Green Stormwater Infrastructure Plan, September 30, 2019, [https://cao-94612.s3.amazonaws.com/documents/Oakland-GSI-Plan-Final-20190930\\_sm.pdf](https://cao-94612.s3.amazonaws.com/documents/Oakland-GSI-Plan-Final-20190930_sm.pdf).

46 California Regional Water Quality Control Board, San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (Order No. R2-2022-0018; NPDES Permit No. CAS612008), May 11, 2022, [https://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/stormwater/MRP/mrp5-22/R2-2022-0018.pdf](https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/MRP/mrp5-22/R2-2022-0018.pdf).

**Table EJ-4: Top 10th Percentile Tracts by Indicator — Water Quality**

GROUNDWATER THREATS		IMPAIRED WATER BODIES <sup>1</sup>	
Tract Name	Score	Tract Name	Score
<b>Port Upper</b>	<b>1.00</b>	<b>Oakland Estuary</b>	<b>1.00</b>
<b>Chinatown</b>	<b>0.99</b>	Jingletown/Kennedy	0.99
<b>Fruitvale/Hawthorne</b>	<b>0.98</b>	<b>Melrose</b>	<b>0.98</b>
<b>Pill Hill</b>	<b>0.97</b>	<b>Brookfield Village/Hegenberger</b>	<b>0.94</b>
Downtown	0.96	<b>Lower San Antonio East</b>	<b>0.94</b>
<b>Oakland Estuary</b>	<b>0.96</b>	Eastlake Clinton West	0.94
<b>Chinatown/Laney</b>	<b>0.95</b>	<b>Eastlake Clinton East</b>	<b>0.94</b>
<b>Fruitvale</b>	<b>0.94</b>	<b>Ivy Hill</b>	<b>0.94</b>
<b>Hoover/Foster</b>	<b>0.93</b>	Lower San Antonio West	0.93
<b>Uptown/Downtown</b>	<b>0.92</b>	<b>Jack London Square</b>	<b>0.91</b>
<b>Melrose</b>	<b>0.91</b>	<b>Chinatown/Laney</b>	<b>0.91</b>
Eastlake	0.90	-	<b>0.90</b>

*Note: Bolded census tracts in blue are EJ Communities.*  
<sup>1</sup> Only includes 11 tracts in top decile due to ties. Next highest score for Impaired Water bodies is 0.68.



### HAZARDOUS MATERIALS AND TOXINS

Industrial activities and related transportation and logistics infrastructure, including freeway and rail corridors, have been a central part of the city’s economic history and development. Though regulation and oversight of these sites have become more stringent over time, the historic and current use, storage, or transport of hazardous materials as part of these industrial and commercial operations have resulted in soil and groundwater contamination from spills or leaks of hazardous materials or petroleum products, even recently.

People may be exposed to hazardous materials through three possible pathways:

- Breathing: When contaminants attach to small dust and soil particles or occur as a vapor, breathing can expose people.
- Eating or Drinking: Exposure can happen when people eat or drink contaminated water, food, specks of dust, or soils. Children that suck their fingers or chew toys contaminated with dust or soils may be exposed.
- Direct Contact: Skin can absorb some contaminants from direct contact with contaminated dust and soil particles, the contaminants themselves, or vapors.

There are several types of hazardous sites in Oakland: cleanup sites, hazardous waste sites, and solid waste sites. Toxic release sites and threats to groundwater may also result in exposure to hazardous materials and are described in the preceding sections.

The Safety Element includes goals, policies, and actions related to hazardous materials and toxins, such as review of proposed facilities, enforcement of standard conditions of approval for investigation of remediation, and coordination with other agencies. The EJ Element expands on these policies and actions to help further reduce impacts of hazardous materials on sensitive receptors.

### Cleanup Sites

Superfunds are sites that are part of an environmental program established to address abandoned hazardous waste sites. Superfunds have levels of contamination that may pose a threat to human life. Superfund cleanup involves placing sites in a National Priorities List and establish an appropriate cleanup plan. The EPA is responsible for removal actions, enforcement, and community involvement.

Other cleanup sites that are not federally owned are regulated by a cleanup program conducted by SWRCB or any of the nine Regional Water Quality Control Boards. Examples include rail yards, ports, equipment supply facilities, metals facilities, industrial manufacturing and maintenance sites, dry cleaners, bulk transfer facilities, refineries, landfills, and some brownfields. Unauthorized releases detected at cleanup sites vary but could include hydrocarbon solvents, pesticides, perchlorate, nitrate, heavy metals, and petroleum constituents, among others.

A brownfield is a property where contamination is present and may complicate future use of the site. Generally, these sites are cleaned up by the owner, previous owner, or state governments. Brownfields can indirectly and directly impact public health in many ways. Brownfields can affect community cohesion and morale, for example, due to the presence of abandoned and derelict structures, especially in EJ Communities that suffer from a disproportionate number of brownfield sites. Brownfields can also have negative economic impacts if continued operation of existing on-site infrastructure including roads, sewer, and electricity diverts City funds that could be used for services elsewhere.<sup>47</sup> Brownfields can also directly impact public and environmental health due to contamination that can pollute soil, air, and water resources on- and off-site.<sup>48</sup> Contaminants often found at brownfield sites include lead, petroleum, asbestos, arsenic, and volatile

<sup>47</sup> Center for Creative Land Recycling. "White Paper: Community Transformation Through Brownfields Redevelopment." July 2021. Accessed December 27, 2022, [https://www.cclr.org/wp-content/uploads/2021/07/25\\_community-transformation-through-brownfield-redevelopment.pdf](https://www.cclr.org/wp-content/uploads/2021/07/25_community-transformation-through-brownfield-redevelopment.pdf)

<sup>48</sup> Minnesota Department of Health, "Brownfields and Public Health," Accessed October 5, 2022, <https://www.health.state.mn.us/communities/environment/places/brownfield.html#health>.

organic compounds from manufactured chemicals such as degreasers and paint strippers. These contaminants can cause serious health problems, including mesothelioma, lung cancer, kidney damage, and birth defects.<sup>49</sup>

Cleaning up and reinvesting in these properties can help reduce disparities in adverse health outcomes by preventing exposure to hazardous substances. Revitalizing brownfield sites also offers opportunities to bring jobs back into an area, clean up blight in a neighborhood, increase community connectivity, restore local ecologies, reduce the effects of urban heat islands, and promote physical activity and recreation.

### Hazardous Waste Sites

Hazardous waste sites may contain chemicals that are harmful to health. Only certain facilities are allowed to treat, store, or dispose of this type of waste. Hazardous waste can range from used automotive oil to highly toxic waste materials produced by factories and businesses. The Department of Toxic Substances Control (DTSC) maintains data in the EnviroStor Hazardous Waste Facilities Database and Hazardous Waste Tracking System on permitted facilities that are involved in the treatment, storage, or disposal of hazardous waste as well as information on hazardous waste generators. Although this database includes information about illegal and abandoned sites, it is noted that it may not necessarily capture all incidences of potential exposure to hazardous materials in a community.

According to EnviroStor and GeoTracker as of March 2022, there were approximately 1,700 documented hazardous materials sites throughout Oakland, mainly located near the southern half of the city and in West Oakland (Figure EJ-14). While more than half are "closed" cases (e.g., have been cleaned up or taken other corrective action), numerous hazardous materials sites may still contain contaminants that pose a threat to the public and environment if these sites were disturbed without appropriate

<sup>49</sup> US Environmental Protection Agency, "Environmental Contaminants Often Found at Brownfield Sites," Accessed October 5, 2022, [https://www.epa.gov/sites/default/files/2019-10/documents/environmental\\_contaminants\\_often\\_found\\_at\\_brownfield\\_sites.pdf](https://www.epa.gov/sites/default/files/2019-10/documents/environmental_contaminants_often_found_at_brownfield_sites.pdf).

protective or remediation measures. Almost a quarter of all sites are actively being remediated and five percent of sites are currently operational and certified to handle hazardous materials. In tandem with the Safety Element, which includes several policies to minimize health and safety impacts related to the use, storage, manufacture, and transport of hazardous materials, policies in the EJ Element support improving land use compatibility, performance standards to avoid health and safety impacts to sensitive uses, and changes to conditional use permitting that phase out incompatible uses more quickly. Impacted communities most burdened by hazardous materials are shown in Table EJ-5.



Credit: Environmental Protection Agency

## SOLID WASTE SITES

Solid waste sites are places where garbage from homes, factories, or businesses is collected, processed, or stored. These include landfills and composting or recycling facilities, most of which require permits to operate. As of July 2021, there were 14 solid waste facilities in Oakland, with the largest concentration in East Oakland, north of the Coliseum. According to CalRecycle's Solid Waste Information System (SWIS) database, six of the 14 solid waste facilities in Oakland are active: two facilities operated by Bee Green Recycling & Supply, one operated by Asphalt Shingle Recyclers, one by Independent Recycling Services in the Coliseum Industrial Complex, and two by California Waste Solutions facilities in West Oakland. The number of solid waste sites and facilities in predominantly Latinx census tracts is over seven times higher than in predominantly Asian census tracts, and nearly five times higher than predominantly white census tracts. The census tracts with the most solid waste sites and facilities include Melrose, Port Upper, and Lockwood/Coliseum/Rudsdale, while 63 census tracts in the city have none at all.

### *Institutional Framework and Responsibilities*

There are a number of federal, State, regional, and local agencies that are responsible for addressing hazards. These agencies are described in detail in Section 3.1 of the Safety Element. Facilities that are subject to cleanup, permitting, enforcement, and investigation efforts are tracked by the Department of Toxic Substances Control (DTSC)'s EnviroStor database and include sites such as

Federal Superfund (National Priority List) and State Superfund sites, military facilities, voluntary cleanup sites, and school sites being evaluated for possible contamination. The State Water Resources Control Board (SWRCB) maintains the GeoTracker database to regulate leaking underground storage tanks (LUSTs); Department of Defense facilities; spills, leaks, investigations, or cleanups; and landfills. As described in the Safety Element, the City will work closely with agencies responsible for monitoring, enforcement, and cleanup, in addition to community-based organizations working on environmental justice issues.

## ILLEGAL DUMPING

Abandoned trash, or illegal dumping, also contributes to an unhealthy and unsafe living environment and has a negative impact on neighborhood quality. Illegal dumping can contribute to land, water, and air pollution in a neighborhood and may contain harmful substances. Accumulation of illegal dumping can also be fire hazards. Figure EJ-15 shows the rate of service requests received by the Oakland Call Center (OAK 311) for illegal dumping per 1,000 people in each census tract. In general, tracts along the freeways, particularly I-880 and I-580, have higher rates of illegal dumping and geographically correspond with the West Oakland and East Oakland neighborhoods (with some exceptions). Tracts in the Oakland hills to the northwest have very few reports of illegal dumping in comparison. Environmental Justice Communities most burdened by illegal dumping are shown in **Table EJ-5**.

City efforts to tackle illegal dumping include the creation of Oaktown PROUD, a campaign by and for Oaklanders, to Prevent & Report Our Unlawful Dumping. The campaign's strategy for reducing illegal dumping organizes City and community efforts into the three E's (focus areas): Education, Eradication, and Enforcement. As a part of the Oaktown PROUD outreach campaign to reduce littering and dumping, the City is working with Oakland Unified School District (OUSD) high school students, teachers and administrators to manage the Oaktown PROUD Student Ambassador Program, detailed below. Students take the knowledge they have gained to educate people about the problem of litter and dumping in Oakland and provide resources and guidance on what they can do to help.

The City has also taken steps to eradicate illegal dumping. The Public Works Department proactively sends Garbage Blitz teams to clean up known hot spots and illegal dumping. In 2019, the City established an Environmental Enforcement Officers (EEOs) unit, a team of civilian investigators who monitor heavy dumping sites and refer cases for legal action when necessary. EEOs enforce and keep illegal dumpers accountable by contacting suspected dumpers, encouraging them to abate blight using available services, and issuing citations when adequate evidence is found. Since its inception, the Oaktown PROUD campaign has continued to be implemented in partnership with the City Council, neighborhood advocates, community-based organizations, and businesses.<sup>50</sup>

<sup>50</sup> City of Oakland, "City of Oakland and Community Leaders Launch 'Oaktown PROUD' Action Campaign to Combat Illegal Dumping," posted January 14, 2020, last updated July 28, 2020, <https://www.oaklandca.gov/news/2020/city-of-oakland-and-community-leaders-launch-oaktown-proud-action-campaign-to-combat-illegal-dumping#:~:text=Oaktown%20PROUD%20is%20a%20campaign,promote%20community%20pride%20and%20volunteerism.,> accessed December 21, 2022.

**Table EJ-5: Top 10th Percentile Tracts by Indicator — Hazardous Materials/Illegal Dumping**

CLEANUP SITES		HAZARDOUS WASTE SITES		SOLID WASTE SITES <sup>1</sup>		INDUSTRIAL ZONES <sup>2</sup>		ILLEGAL DUMPING	
Tract Name	Score	Tract Name	Score	Tract Name	Score	Tract Name	Score	Tract Name	Score
<b>Port Upper</b>	<b>1.00</b>	Acorn Industrial*	1.00	<b>Melrose</b>	<b>1.00</b>	<b>Melrose</b>	<b>0.92</b>	Acorn Industrial*	1.00
<b>Prescott/Mandela Peralta</b>	<b>0.99</b>	<b>Jack London Square</b>	<b>0.99</b>	<b>Port Upper</b>	<b>0.99</b>	<b>Port Upper</b>	<b>0.92</b>	<b>Port Upper</b>	<b>0.99</b>
<b>Oakland Estuary</b>	<b>0.98</b>	Paradise Park/Golden Gate	0.98	<b>Lockwood/Coliseum/Rudsdale</b>	<b>0.98</b>	<b>Brookfield Village/ Hegenberger</b>	<b>0.92</b>	<b>Melrose</b>	<b>0.98</b>
Acorn Industrial*	0.97	Piedmont Ave South	0.97	<b>Brookfield Village/ Hegenberger</b>	<b>0.97</b>	<b>Fitchburg</b>	<b>0.92</b>	<b>Oakland Estuary</b>	<b>0.97</b>
<b>DeFremery/ Oak Center</b>	<b>0.96</b>	<b>Brookfield Village/ Hegenberger</b>	<b>0.96</b>	<b>Prescott</b>	<b>0.96</b>	<b>Sobrante Park</b>	<b>0.92</b>	Foothill Square/Toler Heights	0.96
<b>McClymonds</b>	<b>0.96</b>	<b>New Highland</b>	<b>0.96</b>	Chabot Park	0.95	<b>McClymonds</b>	<b>0.92</b>	<b>Fitchburg</b>	<b>0.95</b>
<b>Clawson/Dogtown</b>	<b>0.95</b>	<b>Oakland/Harrison West</b>	<b>0.95</b>	Sequoyah	0.95	<b>DeFremery/Oak Center</b>	<b>0.92</b>	<b>McClymonds</b>	<b>0.95</b>
<b>Prescott</b>	<b>0.94</b>	<b>Acorn</b>	<b>0.94</b>	<b>Fitchburg</b>	<b>0.94</b>	<b>Jack London Square</b>	<b>0.92</b>	<b>Hoover/Foster</b>	<b>0.94</b>
<b>Melrose</b>	<b>0.93</b>	<b>Port Upper</b>	<b>0.93</b>	<b>Prescott/Mandela Peralta</b>	<b>0.93</b>	Port Lower*	0.92	<b>Clawson/ Dogtown</b>	<b>0.93</b>
<b>Jingletown/ Kennedy</b>	<b>0.92</b>	<b>Pill Hill</b>	<b>0.92</b>	<b>Jingletown/ Kennedy</b>	<b>0.92</b>	Acorn Industrial*	0.92	<b>Chinatown</b>	<b>0.92</b>
<b>Hoover/Foster</b>	<b>0.91</b>	<b>Jack London Gateway</b>	<b>0.91</b>	<b>New Highland</b>	<b>0.91</b>	<b>Prescott/Mandela Peralta</b>	<b>0.91</b>	<b>Jingletown/Kennedy</b>	<b>0.91</b>
<b>Jack London Square</b>	<b>0.90</b>	<b>Downtown/Old Oakland</b>	<b>0.90</b>	-	0.90	<b>Jingletown/Kennedy</b>	<b>0.91</b>	Golf Links	0.90

*Note: Bolded census tracts in blue are EJ Communities.*

*\* Indicates census tract with low population.*

*1. Only includes 11 tracts in top decile due to ties. Next highest score for Solid Waste Sites is 0.88, and next highest for Illegal Dumping is 0.66.*

*2. Maximum score is 0.92 due to ties.*

### Building Resilience: Oaktown PROUD

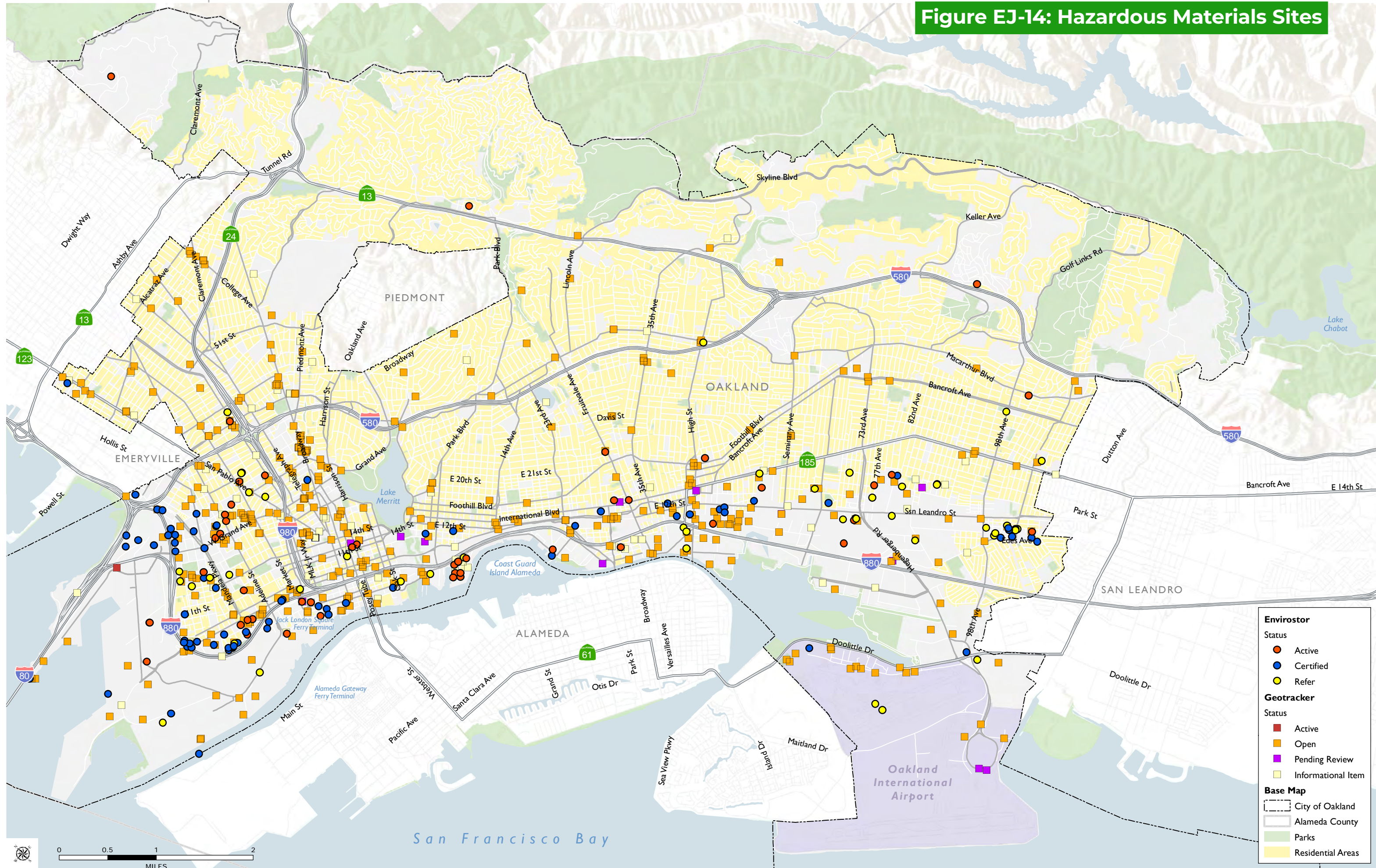
Oaktown PROUD is a campaign by and for Oaklanders to reduce illegal dumping and improve our neighborhoods. The campaign name contains an urgent call to action for all Oaklanders to “Prevent & Report Our Unlawful Dumping (PROUD).” The Oaktown PROUD campaign uses the City of Oakland’s Three E’s strategy to reduce illegal dumping by organizing City and community efforts into three focus areas: Education, Eradication and Enforcement. As a part of the Oaktown PROUD outreach campaign to reduce littering and dumping, the City of Oakland is working with OUSD high school students, teachers, and administrators to manage the

Oaktown PROUD Student Ambassador Program. This program was sparked by ideas from Oakland students and currently operates at Oakland and Skyline high schools. The focus of the students’ work is to take the knowledge that they gain through a summer program and use that information to educate people about the problem of litter and dumping in Oakland and provide resources and guidance on what they can do to help.

*Source: Oaktown PROUD website*



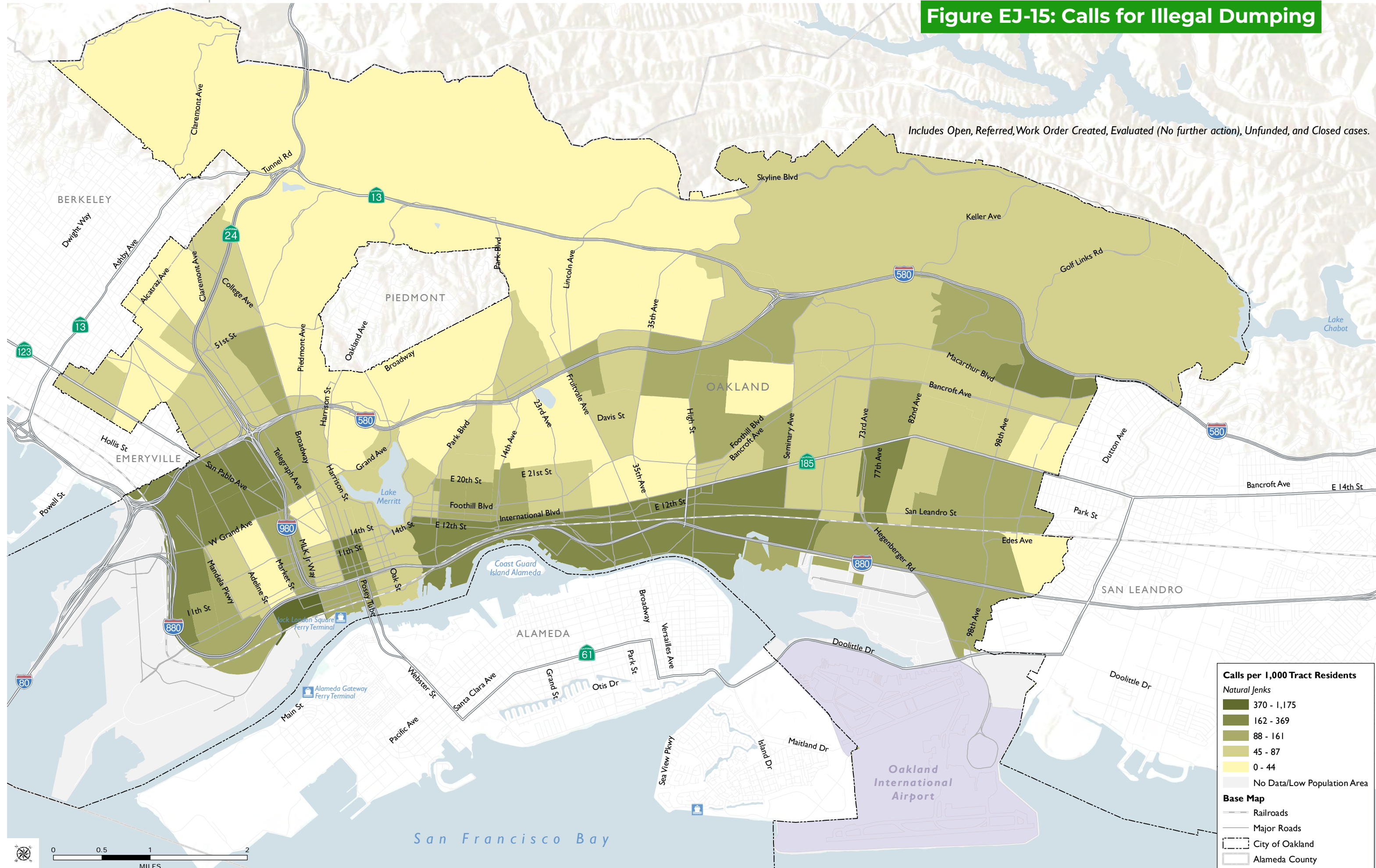
Figure EJ-14: Hazardous Materials Sites



SOURCE: ESA, 2022; City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2022; DTSC, 2021; SWB, 2021

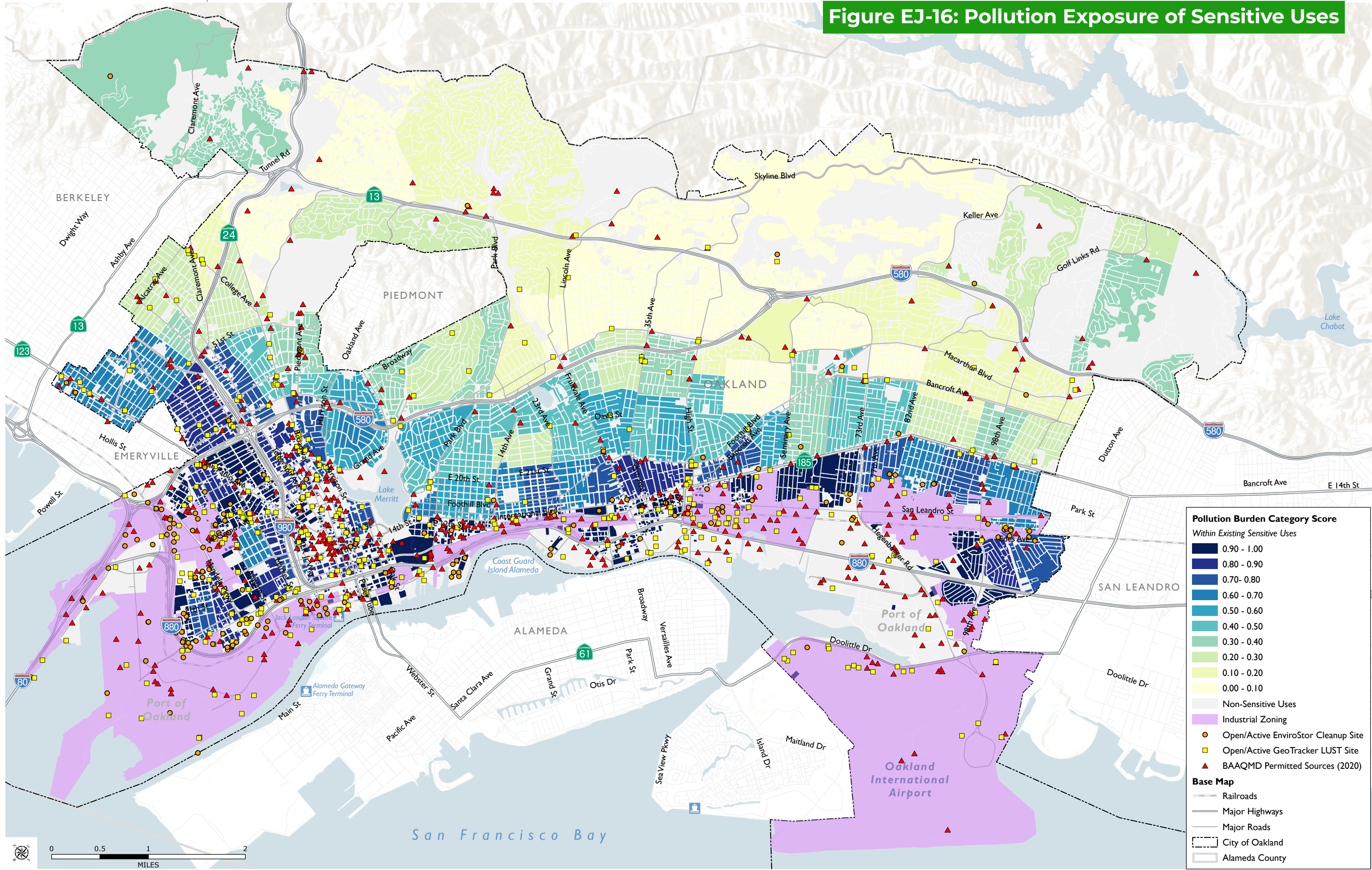


**Figure EJ-15: Calls for Illegal Dumping**



SOURCE: City of Oakland, 2021; City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2022

Figure EJ-16: Pollution Exposure of Sensitive Uses



**Pollution Burden Category Score**

*Within Existing Sensitive Uses*

- 0.90 - 1.00
- 0.80 - 0.90
- 0.70 - 0.80
- 0.60 - 0.70
- 0.50 - 0.60
- 0.40 - 0.50
- 0.30 - 0.40
- 0.20 - 0.30
- 0.10 - 0.20
- 0.00 - 0.10

Non-Sensitive Uses

- Industrial Zoning
- Open/Active EnviroStor Cleanup Site
- Open/Active GeoTracker LUST Site
- BAAQMD Permitted Sources (2020)

**Base Map**

- Railroads
- Major Highways
- Major Roads
- City of Oakland
- Alameda County

SOURCE: City of Oakland, 2021; ALAMEDA County GIS, 2021; Dyett & Bhatia, 2022  
 Sensitive uses include existing residential uses, schools/educational facilities, religious/institutional uses, and hospitals.

## 3.2 GOALS AND POLICIES

### GOAL EJ-1 REDUCE POLLUTION, MITIGATE THE IMPACTS OF POLLUTION ON EXISTING SENSITIVE LAND USES, AND ELIMINATE ASSOCIATED PUBLIC HEALTH DISPARITIES.

#### Toxic Air Contaminants

- EJ-1.1 Toxic Air Contaminants.** Reduce the public's exposure to toxic air contaminants through appropriate land use and transportation strategies, particularly in Environmental Justice Communities and other areas most burdened by air pollution, as identified in [Figure EJ-12](#).
- EJ-1.2 Truck Emissions and Pollution Exposure.** Minimize air pollution and exposure of sensitive land uses to truck pollution, particularly in EJ Communities and other areas most burdened by air pollution, while recognizing the Port of Oakland's role as the highest-volume shipping port in Northern California.

#### Industrial/Sensitive Land Use Compatibility

- EJ-1.3 Industrial Uses Near Sensitive Land Uses.** Ensure that heavy industrial uses are adequately buffered from residential areas, schools, and other sensitive land uses. In new industrial developments, require adequate mitigation of air contaminant exposure and vegetative barriers near large stationary and mobile sources of air pollution.
- EJ-1.4 Performance Standards.** Develop performance standards in the zoning code applicable to new industrial and commercial developments to minimize or avoid the potential for adverse effects related to air quality, noise, or safety on adjacent existing residential uses. This could include expansion of the S-19 Health and Safety Protection Combining Zone to include air quality effects.

**EJ-1.5 Regulate Polluting Uses.** Develop more stringent permitting standards and limit the number of variances approved for new, high-intensity, industrial or commercial land uses near sensitive uses in Environmental Justice Communities. *See also Policy SAF-5.1.*

**EJ-1.6 Enhanced Enforcement.** Prioritize code enforcement to address illegal land uses and activities that cause pollution and are hazardous to health in EJ Communities.

#### Air Filtration and Reducing GHG

*Many of the strategies to reduce GHG will be included in the forthcoming Land Use and Transportation Element (LUTE) update (including mixed land uses and transportation policies).*

**EJ-1.7 Truck-Related Impacts.** For new warehouses and truck-related businesses, reduce impacts from truck loading and delivery including noise/vibration, odors, air pollution, and greenhouse gas emissions.

**EJ-1.8 Air Filtration.** Consistent with the State's Building Energy Efficiency Standards for air filtration in effect as of January 1, 2023, require newly constructed buildings of four or more habitable floors to include air filtration systems equal to or greater than Minimum Efficiency Reporting Value (MERV) 13 (ASHRAE Standard 52.2), or a particle size efficiency rating equal to or greater than 50 percent in the 0.3-1.0 micrometer range and equal to or greater than 85 percent in the 1.0-3.0 micrometer range (AHRI Standard 680).

**EJ-1.9 Electric Vehicle Charging.** Require industrial and warehouse facilities to provide electrical connections for electric trucks and transport refrigeration units in support of CARB regulations.

**EJ-1.10 Reduce Emissions from Port Operation.** Support Port of Oakland's efforts to reduce emissions as part of operation and compliance with CARB regulations. This could include:

- Support of zero-emission drayage truck operations through appropriate local ordinance amendments, including allowable weight limits for single-axle, zero-emission trucks on local streets, and developing an investment plan for needed upgrades.
- Provision of data or staff time to study of the effects on truck flow and congestion due to increasing visits from larger container ships, the feasibility of an off-terminal container yard that utilizes zero-emission trucks to move containers to and from the marine terminals, and the potential efficiency gains from increasing the number of trucks hauling loaded containers on each leg of a roundtrip to the Port.

#### Construction and Building Emissions

**EJ-1.11 Building Electrification.** Continue to enforce compliance with Oakland's Building Electrification Ordinance, which requires new buildings to be natural gas-free and support the transition of existing buildings to natural gas alternatives in order to improve safety and air quality and reduce health risks. This could include:

- Ensuring that all new developments reduce on-site natural gas combustion through electrification of heating and cooking technologies.

**EJ-1.12 Construction Site Impacts.** Through standard conditions of project approval, code enforcement, and other regulatory mechanisms, require new development to minimize disturbances of natural water bodies and natural drainage systems caused during construction and to implement measures to protect areas from road dust, erosion and sediment loss.

Credit: Amir Aziz



**EJ-1.13 Emissions from Construction Activities.** Require projects to implement construction air pollution and greenhouse gas emissions controls and applicable mitigation strategies for all construction sites to the maximum extent feasible. Refer to Best Construction Practices and Best Available Retrofit Control Technology (BARCT) recommended by BAAQMD.

**EJ-1.14 Reduced Exposure to Air Pollution for Project Occupants.** Incorporate measures to improve indoor air quality and reduce exposure to air pollution in new development projects.

**Air Quality Monitoring and Assessment**

**EJ-1.15 Sensitive Uses.** Coordinate with BAAQMD and community partners in evaluating human exposure to toxic air contaminants, particularly in Environmental Justice Communities, and impose conditions as appropriate on projects to protect public health and safety beyond those in the City’s 2020 standard conditions of approval.

**EJ-1.16 Community Air Protection.** On an ongoing basis, support BAAQMD, community members, businesses, and other stakeholders in developing and implementing Community Air Monitoring Plans, Community

Emissions Reduction Plans, and other air pollution control initiatives pursuant to AB 617. Supportive City actions may include:

- Participation on steering committees and technical advisory committees.
- Co-investments that leverage additional funding for actions in EJ Communities.
- Utilization of community-collected air quality data in policy development and evaluation.
- Contracts with community partners and other air pollution monitoring organizations to obtain more granular pollution data.

**EJ-1.17 Data-Informed Efforts.** Collaborate with BAAQMD, community organizations, and other stakeholders to use air quality monitoring data to inform area-specific improvement actions outside of AB 617-related efforts. Such actions may include:

- Prioritizing areas for capital investments with co-benefits for air quality, such as the planting of trees and installation of EV charging infrastructure.

- Integrating air quality improvement actions into planning efforts, such as new specific plans, master plans, or area plans that will guide development in impacted areas.
- Limiting the establishment of new sources of air pollutants in areas with elevated levels of pollutant concentrations unless appropriate mitigation is implemented.
- Obtaining and using hyperlocal data along with community ground-truthing to more accurately inform development of air quality improvement strategies that are most effective and responsive to the needs of EJ Communities.
- Seeking opportunities to enhance existing air monitoring efforts, such as by working with BAAQMD and helping to expand the current monitoring network, especially where sensitive uses are within close proximity (within 500 feet) of pollution sources.
- Partnering with industrial and warehouse facility owners, community-based environmental and energy justice organizations to install rooftop solar PV systems to power EV charging stations.

**EJ-1.18 Impact Assessment and Mitigation.** Continue to use BAAQMD modeling tools and guidance documents as appropriate to identify and mitigate air quality impacts from proposed development projects.

**EJ-1.19 Regional Coordination.** Support air quality planning efforts led by other local, regional, and State agencies while simultaneously leveraging City authority and resources to focus on reducing air pollution burden in EJ Communities.

## GOAL EJ-2 PROTECT OAKLAND WATER SUPPLIES FROM CONTAMINATION.

### Water Quality

- EJ-2.1 Clean Water Programs.** Promote environmental stewardship and pollution prevention activities with outreach, assistance, and incentives for residents and businesses, particularly in EJ Communities and areas with impaired surface and groundwater, as identified in **Figure EJ-13**.
- EJ-2.2 Water Quality Hazard Prevention.** Remediate and clean up sites with known or potential contamination, as mapped in **Figure EJ-14** or identified on GeoTracker, that impact or potentially impact water quality. Continue to support the San Francisco Regional Water Quality Control Board and California Department of Toxic Substances Control to assess cleanup sites, leaking underground storage tanks, and gasoline stations in EJ Communities with high water contamination threat.
- EJ-2.3 Protect and Restore Creeks and Wetlands.** Protect, enhance, and restore riparian corridors and wetlands, increasing biodiversity and access for residents to existing creeks and wetlands. Collaborate with environmental justice organizations and EJ Community residents to co-develop environmental stewardship and pollution prevention programs with outreach, assistance, and incentives for residents and businesses.
- EJ-2.4 Stormwater Management.** Reduce stormwater runoff by implementing the Green Stormwater Infrastructure Plan to help conserve water, protect water bodies, and mitigate localized flood risk from large storm events.

## GOAL EJ-3 PREVENT, REDUCE, AND CLEAN UP ILLEGAL DUMPING.

### Illegal Dumping and Blight

- EJ-3.1 Design for Graffiti Reduction.** Establish guidelines based on Crime Prevention Through Environmental Design (CPTED) standards and other best practices that decrease opportunity for graffiti.
- EJ-3.2 Blight Control and Prevention.** Control and mitigate impacts of blight-producing industrial and commercial activities with a high tendency of attracting trash and litter, such as recyclers, fast food restaurants, warehouses and industrial sites, vacant lots, and other businesses that may attract blight.
- EJ-3.3 Proactive Illegal Dumping Cleanup.** Support the expansion of proactive cleanup crews that target illegal dumping “hot spot” areas in EJ Communities, as identified in **Figure EJ-15**.
- EJ-3.4 Illegal Dumping Enforcement.** Continue to enforce dumping as an illegal activity, including surveillance of hot spots, ticketing, and expansion of Environmental Enforcement Officers. Periodically assess enforcement efforts to ensure discriminatory patterns do not emerge.
- EJ-3.5 Community Education on Illegal Dumping.** Expand community campaigns in EJ Communities to prevent dumping, inform neighbors about affordable services, and support youth leadership. Examples include education about Bulky Block parties and engagement of the Oaktown PROUD Student Ambassadors.



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