SECTION 02

Executive Officer Statement

We continued to address disparities in air quality and health protections by expanding partnerships in historically disadvantaged communities. At the same time, our climate protection work progressed to accelerate electrification and incentivize greenhouse gas reductions by funding cutting-edge technologies.

We expanded our Wildfire Air Quality Response Program to increase protections from wildfire smoke for those most vulnerable. Through partnerships with public health entities, we provided air filtration units to low-income residents with respiratory conditions. In an ongoing partnership, we provided the Red Cross with additional portable air filtration units to deploy to wildfire evacuation centers.

The Air District strengthened our collaborative work with the Bay Area communities most impacted by air pollution. A community steering committee was formed to address impacts in the Richmond-North Richmond-San Pablo area that will reduce pollution exposure and address the health disparities faced by this community. In West Oakland, we worked alongside community co-leads to begin implementing the Community Action Plan to secure funding for a variety of pollution-reduction measures in this overburdened area.

Our Board of Directors participated in a series of environmental justice trainings focused on the historical connection between racial segregation, structural racism and current-day environmental injustices in the Bay Area and nationally. In November, the Board formed the agency’s first Community Advisory Council — a diverse group of residents from the most impacted Bay Area communities — who will provide key input on Air District programs and further our equity-forward policy agenda.

We adopted important amendments to Rule 6-5, which will tighten controls on particulate matter pollution from refineries and provide stronger health protections for nearby communities. In December, we amended our permitting rules to better protect overburdened communities through more stringent health risk limits and an extended timeframe for public feedback.

Air District staff and Board members participated in the COP26 UN Climate Summit in Glasgow, Scotland, to share our innovative work and learn about programs being implemented abroad that address this most urgent crisis. Despite the increasing challenges of climate change, our purpose is clear: to protect and improve the global climate, air quality, and public health for all Bay Area residents.
**Wildfire Air Quality Response Program**

The Air District continues to enhance wildfire preparedness efforts and strengthen the program through new projects that improve indoor air, health and equity for those most vulnerable to wildfire smoke. In 2021, a partnership was formed with the Regional Asthma Management and Prevention (RAMP) to help distribute home air filtration units to those who are enrolled in the California Asthma Mitigation Project, a state program that provides in-home asthma assessments and care for those who are low-income and diagnosed with poorly controlled asthma. Partnerships with the American Red Cross and county Offices of Emergency Services were also created to help support wildfire emergency response efforts by providing portable air filtration units to evacuation and sheltering facilities and publicly accessible congregate facilities.

A new grant program with an additional funding of $3M from the state will be available through Assembly Bill 836, Wildfire Smoke Clean Air Centers for Vulnerable Populations Incentive Pilot Program, initiated by Assembly Member Buffy Wicks and the Air District in 2019 to better prepare the region for wildfire smoke. The grant program will allow counties to apply for funding to conduct air filtration and ventilation retrofits and purchase air filtration units and replacement air filters with the goal of establishing a network of Cleaner Air Centers in the Bay Area. The Air District continues to seek long-term solutions to prepare for catastrophic wildfires and smoke impacts and build resiliency across the region with our partners.

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**Richmond-North Richmond-San Pablo Community Path to Clean Air**

In March 2021, the Air District’s Board of Directors announced the establishment of a community Steering Committee to help guide the development of the Community Emission Reduction Plan for the Richmond-North Richmond-San Pablo area. This Steering Committee is made up of people who live, work and serve communities in the plan area and represent the diversity of the community. The committee, led by Co-Chairs Y’Anad Burrell and Alfredo Angulo Castro, will be instrumental in helping the Air District reduce pollution exposure and address health disparities in an area that has historically experienced a disproportionately high exposure. Air monitoring has been conducted throughout 2021, as part of the 2020 Community Air Monitoring Plan. Insights from these monitoring projects, including a mobile air toxics study conducted by the Air District, are used to support the development of emissions reduction strategies.

**West Oakland Community Action Plan**

The Air District and the co-lead partner, West Oakland Environmental Indicators Project, worked together to continue implementation of the West Oakland Community Action Plan. Through partnerships with community and agencies, the Steering Committee focused on securing funding for a healthy homes initiative, urban greening, access to free transit, reducing diesel pollution from port and freight operations, and creating health-protective policy changes to the City of Oakland’s planning code. The Sustainable Port Collaborative formed to further support zero-emission goals at the Port of Oakland. WOEIP is also overseeing the development of an ad hoc Health Equity Advisory Committee of the Steering Committee to evaluate the plan implementation progress.

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**The Sustainable Port Collaborative**

formed to further support zero-emission goals at the Port of Oakland.

**Air Monitoring in Refinery Fenceline Communities**

The Air District hosted a virtual community meeting in June on shaping the future of our air monitoring efforts in Benicia—a refinery fenceline community. The Air District, with help from the City of Benicia, identified potential locations in Benicia for a new air monitoring station, and community members and stakeholders had the opportunity to inform final site selection.
In a groundbreaking move, on Nov. 17, 2021, the Board of Directors approved the formation of the Air District’s inaugural Community Advisory Council, consisting of 17 community members from across the Bay Area, including two seats reserved for youth. The Board created the CAC in response to community input and in furtherance of an equity-forward policy agenda. The CAC, which is a Brown Act advisory council of the Board, will choose its own areas of focus, and provide input on key Air District policies and programs. The council members not only reflect the diversity of the Bay Area and the lived experiences in communities heavily impacted by air pollution, but are also individuals with diverse skill sets and a range of relevant knowledge and technical experience. The CAC held their first meeting in January 2022.

The Committee will prioritize traditionally marginalized and disinvested communities in Air District policies and programs.

Assessing Pollutant Impacts on Bay Area Communities

In 2021, the Air District took the lead on several fronts to assess, report, and regulate fine particulate matter (PM$_{2.5}$). In a cross-agency collaboration, the Air District conducted rulemaking to reduce PM$_{2.5}$ from fluidized catalytic cracking units (FCCU) at Bay Area petroleum refineries. To support this amended regulation, we developed targeted emissions estimates, a modeling-based evaluation of air pollution levels, and a novel equity analysis by race and ethnicity showing who is most exposed to air pollution.

To support future rulemaking efforts, we developed improved estimates of particulate matter emissions from residential wood burning, nitrogen oxide emissions from natural gas combustion, and ammonia emissions from a variety of sources. Collaborating with the US EPA and CalEPA, the Air District worked to develop and apply improved methods to assess health impacts from PM$_{2.5}$. The Air District also developed improved emissions reporting methods for large industrial facilities in relation to the Criteria Pollutants and Toxics Emissions Reporting statewide regulation.
Rule 6-5 Amendments to Reduce Particulate Pollution from Refineries

The Air District Board of Directors adopted amendments to Rule 6-5: Particulate Emissions from Refinery Fluidized Catalytic Cracking Units. Fluidized catalytic cracking units are some of the largest individual sources of particulate matter emissions in the San Francisco Bay Area. Reductions of particulate matter are needed to ensure progress towards attainment of all state and national air quality standards and to achieve cleaner air and improved public health outcomes in the region.

Air Filtration Units Distributed to Pier 94 Transitional Housing Residents

In 2020, the City of San Francisco established a transitional housing site in the Bayview Hunters Point neighborhood to better protect public health during the COVID pandemic. The 123 RV trailers that house residents at the site are situated near several different sources of air pollution, including concrete and materials recycling and handling facilities. To help address particulate matter exposure of shelter residents, the Air District delivered air filtration units and replacement filters to the United Council for Human Services to distribute to all Pier 94 transitional housing site residents.

Regulation 2 Permitting Rules Amendments

In response to concerns from the public regarding ongoing permitting activities in overburdened communities — as well as information that demonstrates variation in air quality and health vulnerability at the community level — the Air District Board of Directors adopted amendments to the permitting rules to prioritize environmental justice considerations and further promote the protection of public health and the environment.
The Air District continued our work in 2021 to reduce greenhouse gas emissions and further climate protections.

Climate Protection Grants: Incentivizing Heat Pump Water Heaters

Through its Climate Protection Grant Program, the Air District funded coordinated projects to incentivize and build the market for heat pump water heaters. Utilizing the Bay Area’s very low-carbon electricity, switching from natural gas water heating to electric pump water heaters reduces greenhouse gas emissions and harmful air pollutants. The Air District’s grants supported projects of the Bay Area Regional Energy Network, StopWaste, the City of San Jose, Marin County and Silicon Valley Clean Energy. In addition to providing incentives to low-income and regular electricity customers, these projects worked together to build a regional market for heat pump water heaters by addressing key barriers at every point in the supply chain.

Climate Tech Finance Program

The Air District awarded a loan guarantee to EvGateway, an electric vehicle solutions management company focused on accelerating the adoption and use of electric vehicles by making them easier to use. EvGateway has developed a software portfolio which enables operators of EV chargers to manage and operate their chargers as well as allowing consumers to locate and reserve available chargers, see amenities available at the chargers, view charging rates, and pay for their vehicle charging. EvGateway licenses its software to Siemens, Tritium and Revel through a white label program. In addition, EvGateway operates and maintains vehicle chargers for companies and municipalities, including Southern California parks, beaches, and the City of Los Angeles.

Building Decarbonization Webinar Series

As part of its Building Decarbonization Program, the Air District convened a three-part webinar series on building decarbonization to facilitate the exchange of programs and policy approaches from around the Bay Area. Topics included the connection between public health and other community benefits and building retrofits, addressing equity while decarbonizing the existing building stock, and building low-carbon resilience after wildfires. Speakers featured staff from Bay Area local governments and community choice energy programs.
Bay Area Healthy Homes Initiative

The Air District is supporting the expansion of Contra Costa County’s asthma pilot project to Alameda County, as the Bay Area Healthy Homes Initiative. Through the initiative, the Air District works with county health departments, the Bay Area Regional Energy Network, and other local partners to bring comprehensive solutions to improve health outcomes for low-income asthma patients. The program implements in-home retrofits including energy efficiency and switching to electric appliances to reduce indoor exposure to air pollution, reduce climate pollutants, and increase residents’ disposable income from energy savings. The initiative will track indoor air quality improvements, residents’ health outcomes, and climate pollutant reductions to document the program’s benefits and serve as a blueprint for integrated health-protective programs across the Bay Area.

Sustainable Aviation Fuel Report

The report entitled, Sustainable Aviation Fuel: Greenhouse Gas Reductions from Bay Area Commercial Aircraft, was released by the Air District in 2021, examining the potential positive air quality effects of sustainable aviation fuel. Sustainable aviation fuel, or SAF, is a drop-in replacement for conventional jet fuel that can significantly reduce full-fuel-cycle greenhouse gas emissions from jet aircraft engines. It is currently required to be used in a blend with conventional jet fuel, at up to 50 percent SAF by volume.
Commuter Benefits and Flex Your Commute Programs

In May, the Air District and the Metropolitan Transportation Commission announced the rollout of a new compliance option for the regional Commuter Benefits Program, which requires Bay Area employers with 50 or more employees to provide commuter benefit options to their employees. Now, employers can select a telework option that would allow their employees to work one or more days a week from home if their workload permits.

The Air District launched the Flex Your Commute messaging program, promoting a partnership between Bay Area employers and employees to encourage sustainable commuting and to rethink how their workforce commutes. The program provides messaging and tools to help motivate employees to choose sustainable commute options—including telework—as the Bay Area transitions toward a reimagined work environment.

560 new publicly available chargers were funded through Charge! and VW programs

Expanding Electric Vehicle Adoption

In 2021, the Air District continued its work to increase electric vehicle adoption in the region. Through the Charge! and VW programs, $5.94M in grants was awarded to add 560 publicly available chargers to the Bay Area’s electric vehicle charging network. The VW funding was part of a $5M state-wide program administered by the Air District for EV charging.

The Clean Cars for All (CCFA) program helped low-income residents replace older vehicles with clean air vehicles or alternative mobility options, primarily in disadvantaged communities. CCFA has awarded more than $20M to more than 2,400 eligible residents since the program began in March 2019 and continues to be a popular program. Additionally, the Air District secured $11.33M in state funding to continue support for the program.

Staff continue efforts to bring EV charging to residents of multi-family buildings and initiated a project in partnership with StopWaste to provide education, outreach, and technical assistance for multi-family building owners and managers regarding EV charging infrastructure. Finally, staff finalized the EV Acceleration Plan, which reviews the current EV ecosystem in the region and identifies areas for future expansion.

Emission Reductions Grant Funding

Seven zero-emission tractors were deployed under the FARMER Program

Thirty class 8 zero-emission trucks were funded for deployment at the Port of Oakland

2,000 older polluting cars were removed from the road through the Vehicle Buy Back program

Nine zero-emission electric yard trucks were contracted to replace old diesel equipment

$76M was awarded to incentivize over 2,900 clean air projects

30 marine engines were awarded to be replaced with cleaner technologies
**Sources of Annual Fine Particulate Pollution**

- Wood Smoke: 21.4%
- Other Industrial/Commercial Processes: 18.3%
- Geological Dust: 16.5%
- Fuels Combustion - Stationary Sources: 12.0%
- On-Road Motor Vehicles: 10.8%
- Wildfires & Planned Fires: 8.6%
- Off-Road Mobile Sources: 7.6%
- Commercial Cooking: 4.2%
- Animal Waste: 0.6%

**Sources of Annual Nitrogen Oxide Pollution**

- Other Mobile Sources: 53.4%
- On-Road Motor Vehicles: 28.5%
- Fuels Combustion - Stationary Sources: 16.0%
- Other Sources: 2.1%

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- **a)** Greenhouse gas (GHG) emissions estimates used 100-year time horizon global warming potentials relative to carbon dioxide and are based on the IPCC’s Fifth Assessment Report. The high global warming potential gases sector includes gases used for refrigeration, air conditioning, semiconductor manufacturing, and power distribution. The Air District’s latest GHG emissions estimates can be found here: baaqmd.gov/capghg. The Air District recently collected methane measurements to further evaluate source-specific methane emissions estimates; associated inventory reconciliation may result in changes to GHG emissions reported here.
- **b)** The percentage estimates were developed based on the Air District’s currently available base year inventory data. These estimates do not reflect specific emissions changes in year 2021 from COVID-19 and wildfires.
- **c)** The Air District is in the process of updating the base year inventory to reflect changes in recent state and local regulations and emissions data.
- **d)** This category includes aircraft, ships, trains, construction equipment and other off-road equipment.
- **e)** This category includes industrial and commercial processes other than fuels combustion.
Pollutant samples were analyzed in the Air District lab in 2021.

The Air District strives to promote practices that support diversity, equity and inclusion in the workplace and the broader community.

Bay Area Demographics by Gender

Air District Staff Demographics by Gender

<table>
<thead>
<tr>
<th>Year</th>
<th>Male (%)</th>
<th>Female (%)</th>
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<tbody>
<tr>
<td>2021</td>
<td>58%</td>
<td>42%</td>
</tr>
<tr>
<td>2020</td>
<td>57%</td>
<td>43%</td>
</tr>
<tr>
<td>2019</td>
<td>58%</td>
<td>42%</td>
</tr>
<tr>
<td>2018</td>
<td>59%</td>
<td>41%</td>
</tr>
<tr>
<td>2017</td>
<td>61%</td>
<td>39%</td>
</tr>
</tbody>
</table>

*American Community Survey (ACS) Census Bureau

5,196 pollutant samples were analyzed in the Air District lab in 2021.
Bay Area Demographics by Race and Ethnicity**

Air District Staff Demographics by Race and Ethnicity**

*American Community Survey (ACS) Census Bureau
** Total percentages may vary by 1% due to rounding
2021 Revenue

$105,581,725
State and Other Grants

$56,376,275
Perm-Related Revenue

$39,778,798
County Property Tax

$3,612,624
Federal Grants

$1,063,752
Other Revenue

TOTAL
$206,413,174

2021 Expenditures

$84,506,530
Program Distribution

$78,508,161
Personnel

$28,828,722
Services and Supplies

$3,501,905
Capital Outlay

TOTAL
$195,345,318

2021 Air Pollution Complaints

2,199
ODOR

1,358
WOOD SMOKE

202
DUST

194
SMOKE

180
OTHER (INCLUDES COMMERCIAL IDLING, FLARING, GAS STATIONS AND UNPERMITTED SOURCES)

159
OUTDOOR FIRES

119
ASBESTOS

TOTAL complaints in 2021
4,711
**2021 PERMITTING ACTIVITY**

**BAY AREA PERMITTED FACILITIES**
- Refineries: 5
- Major Facilities (Excludes Refineries): 77
- Gasoline Dispensing Facilities: 2,286
- All Other Facilities: 8,103

Total Permitted Facilities: 10,171
Permitted Devices and Operations: 26,319

**NEW PERMIT APPLICATIONS**
- Major Source Review (Title V): 71
- New Source Review (NSR): 1,071
- All other applications: 26

Total New Permit Applications: 1,171

**HEALTH RISK SCREENING ANALYSES**
- Diesel Engines: 166
- Gasoline Dispensing Facilities: 12
- Other Commercial/Industrial Facilities: 70
- Hydrogen Sulfide Modeling: 1

Total Health Risk Screening Analyses: 249

**FACILITY HEALTH RISK SCREENING ANALYSES**
- Preliminary: 2
- Draft: 1
- Final: 0

Total Facility Health Screening Analyses: 3

**RULES ADOPTED OR AMENDED**
- Regulation 3: Fees - amendments adopted
- Rule 2-6: Major Source Review, Fluidized Catalytic Cracking Units
- Rules 8-1, 8-5, 8-6, 8-7, 8-8, 8-9, 8-10, 8-18, 8-28, 8-33, 8-39, 8-44, 8-53

December 15, 2021
- Regulation 2: Permits - amendments adopted
- Rule 2-1: General Requirements
- Rule 2-5: Toxic New Source Review

**2021 CIVIL PENALTIES AND VIOLATIONS**
- Civil Penalties: $1,263,163
- Violations Resolved with Penalties: 638

**2021 COMPLIANCE AND ENFORCEMENT ACTIVITY**
- Total Compliance Inspections: 16,326

**LABORATORY**
- 2021 ANALYSES PERFORMED IN THE LAB
  - Samples provide information about pollutant levels in ambient air, which help to identify areas for further reductions.
  - Particulate Matter: 3,718
  - Toxics: 1,119
  - Source-Oriented Analyses: 0
  - Interagency and Development Projects: 29

Total: 5,196

**SOURCE TEST ACTIVITY**
- Number of Source Tests in 2021
  - Refinery Source Tests: 3
  - Title V Source Tests (Excludes Refineries): 9
  - Non-Title V Source Tests: 29
  - Gasoline Dispensing Facilities: 124
  - Other Misc. Source Tests (contractors): 17,582

Total Source Tests: 17,327
Total Violations: 84
Compliance Rate: 99.9%

**2021 EMISSION REDUCTIONS FROM AIR DISTRICT INCENTIVE PROJECTS**

**OFF-ROAD EQUIPMENT AND INFRASTRUCTURE**
- Total Funds Awarded: $23.7M
- Estimated Annual Emissions Reduction for the Projects Funded (TONS/YEAR)
  - Oxides of Nitrogen (NOx): 118.7
  - Reactive Organic Compounds (ROG): 10.9
  - Particulate Matter (PM_{10}): 4.6

Total: 134.2

**ON-ROAD VEHICLES AND INFRASTRUCTURE**
- Total Funds Awarded: $36.2M
- Estimated Annual Emissions Reduction for the Projects Funded (TONS/YEAR)
  - NOx: 64.1
  - ROG: 3.6
  - PM_{10}: 20.7

Total: 90.7

**OTHER PROJECTS (INCLUDING TRIP REDUCTION)**
- Total Funds Awarded: $5M
- Estimated Annual Emissions Reduction for the Projects Funded (TONS/YEAR)
  - NOx: 3.7
  - ROG: 6.6
  - PM_{10}: 15.3

Total: 27.8

**CONGESTION MANAGEMENT AGENCY PROJECTS**
- Total Funds Awarded: $10.2M
- Estimated Annual Emissions Reduction for the Projects Funded (TONS/YEAR)
  - NOx: 18.1
  - ROG: 18.5
  - PM_{10}: 46.4

Total: 82.8

**2021 EXCEEDANCES OF AIR QUALITY STANDARDS**
- Final certification of exceedance data will occur May 1, 2022.
- Ozone
  - Days over National 8-Hour Standard: 9
  - Days over California 1-Hour Standard: 5
  - Days over California 8-Hour Standard: 5
- Particulate Matter
  - Days over National 24-Hour PM_{10} Standard: 0*
  - Days over California 24-Hour PM_{10} Standard: 0*
  - Days over National 24-Hour PM_{2.5} Standard: 2

* Pending final certification of exceedance data

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**BAY AREA AIR QUALITY MANAGEMENT DISTRICT | 2021 ANNUAL REPORT**

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**NOTES:**
- Pending final certification of exceedance data
- Final certification of exceedance data will occur May 1, 2022.
Air District-Sponsored Bills

The following Air District-sponsored bills did not advance.

AB 762 (Lee) – Requires private schools and some charter schools to adhere to public school notification requirements during the CEQA process prior to new construction.

AB 426 (Bauer-Kahan) – Adds toxic air contaminants to pollutants eligible for local air district regulation under “indirect source rules.”

Funding Allocations

$50M was allocated from the Greenhouse Gas Reduction Fund for statewide AB 617 implementation, and $260M for AB 617 incentives — roughly equal to last year’s allocation. The Air District is expecting to receive $9M in implementation funding and $30M in incentive funding.

$30M was allocated statewide to a new incentive program for zero-emission commercial lawn and garden equipment.

$75M was allocated statewide to continue the Clean Cars For All Program.

Budget caps were removed that artificially lowered funding to the Carl Moyer Program, resulting in a one-time increase of $150M statewide for 2022, and an ongoing increase of roughly $40M.

Due to the constraints of COVID-19, the 2021 legislative session was limited in scope. Despite these hurdles, funds for 2022 were secured at the state level for several Air District programs.

From the State Capitol

Who Is the Air District?
The Bay Area Air Quality Management District does not discriminate on the basis of race, national origin, ethnic group identification, ancestry, religion, age, sex, sexual orientation, gender identity, gender expression, color, genetic information, medical condition, mental or physical disability, or any other attribute or belief protected by law. It is the Air District’s policy to provide fair and equal access to the benefits of a program or activity that we administer. The Air District will not tolerate discrimination against any person(s) seeking to participate in, or receive the benefits of, any program or activity offered or conducted by us. Members of the public who believe they or others were unlawfully denied full and equal access to an Air District program or activity may file a discrimination complaint with us under this policy. This non-discrimination policy also applies to other people or entities affiliated with the Air District, including contractors or grantees that we utilize to provide benefits and services to members of the public. Auxiliary aids and services including, for example, qualified interpreters and/or listening devices to individuals who are deaf or hard of hearing, and to other individuals as necessary to ensure effective communication or an equal opportunity to participate fully in the benefits, activities, programs and services will be provided by the Air District in a timely manner and in such a way as to protect the privacy and independence of the individual. Please contact the Non-Discrimination Coordinator identified below at least three days in advance of a meeting so that arrangements can be made accordingly. If you believe discrimination has occurred with respect to one of our programs or activities, you may contact the Non-Discrimination Coordinator identified below or visit our website at www.baaqmd.gov/accessibility to learn how and where to file a complaint of discrimination. Questions regarding this policy should be directed to the Air District Non-Discrimination Coordinator, Suma Peesapati, at 415.749.4967 or by email at speesapati@baaqmd.gov.